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A new climate of fairness.

August 27, 2014

Sent via Certified U.S. Mail and e-mail

Commonwealth of Pennsylvania, Department of Environmental Protection
Southwest Regional Office

Attention: Regional Clean Water Program Manager; Elizabeth Farley,
Environmental Engineering Specialist; Susan Malone, Regional Director
400 Waterfront Dr.

Pittsburgh, PA 15222-4745
elfarley@pa.gov

Re: Comment on NPDES Draft Permit No. PA0254771 for Tenaska PA
Partners, LLC

Dear Regional Clean Water Program Manager, Mses. Farley and Malone,
and others:

Mountain Watershed Association, home of the Youghiogheny
Riverkeeper, through undersigned counsel, submits the following
comment on a draft NPDES permit for Tenaska PA Partners, LLC.

The Mountain Watershed Association (MWA) is a grassroots
organization dedicated to protecting, preserving and restoring the Indian
Creek and greater Youghiogheny River watersheds. In 2003, MWA became
home of the Youghiogheny Riverkeeper, a program which has expanded
MWA's vision into the Youghiogheny River watershed and allows for
partnerships with nearly 200 other Waterkeeper programs worldwide.
MWA has a unique approach in that it pursues on-the-ground restoration
of past damage while also advocating on issues negatively impacting our
watershed. MWA, through the Youghiogheny Riverkeeper program,
conducts extensive water quality monitoring around the Youghiogheny
River basin and also manages the Youghiogheny River Water Trail, an
initiative which promotes paddling on the Youghiogheny River from
Confluence to McKeesport, PA. MWA has 1,200 members, many of whom
live and recreate in the watershed.

The Pennsylvania Department of Environmental Protection (DEP)
initially noticed a draft NPDES permit on March 15, 2014 (March Draft

Permit), which came with a fact sheet (March Fact Sheet). After revisions, the Department noticed the revised draft NPDES permit (July Draft Permit) on July 12, 2014, along with a revised fact sheet (July Fact Sheet). On August 6, 2014, Ms. Elizabeth Farley, an Environmental Engineering Specialist at DEP, granted MWA's request for a 15-day extension and allowed for comments to be submitted on or before August 27, 2014.

MWA appreciates the opportunity to comment and DEP's willingness thus far to re-notice the draft NPDES permit for this facility as significant changes are made. MWA has found that the July Draft Permit and the July Fact Sheet (which incorporates unmodified portions of the March Fact Sheet) are deficient in various ways. MWA urges DEP to not issue the permit. At the very least, MWA asks that DEP address the comments below in a revised draft permit and fact sheet, and re-notice the revisions to the public before making a permit decision.

1. When DEP develops fact sheets and draft NPDES permits, Section 27 of the Pennsylvania Constitution requires DEP to prevent the infringement of Pennsylvanians' environmental rights and to protect public resources held in trust for current and future generations of Pennsylvanians.

Article 1 Section 27 of the Pennsylvania Constitution states:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

In the recent *Robinson Township, Washington County v. Commonwealth* decision by the Pennsylvania Supreme Court, the Court made clear that Section 27 creates individual environmental rights that government cannot infringe.¹ *Robinson Township* also made clear that all levels of government must act as trustees to adequately manage public natural resources through conserving and maintaining them, not for their own benefit but for the benefit of the public to whom they belong.

Government agencies like DEP have an obligation to assess whether its actions would cause an unreasonable "actual or likely degradation" of air or water quality, or of the natural or scenic values of the environment.² They cannot act in a way that infringes on the public's right to clean air, pure water, or the preservation of natural, scenic, historic, or aesthetic values.³ As trustees of those natural resources owned by the public, local governments have a duty to ensure their

¹ 83 A.3d 901 (Pa. 2013).

² *Id.* at 951-955.

³ *Id.* at 952.

proposed actions will “prevent and remedy the degradation, diminution or depletion” of the resources now for the current generation and in the future for future generations.⁴ Trustees like DEP must “deal impartially with all beneficiaries” of the trust, and must “balance the interests of present and future beneficiaries.”⁵

By requiring the preservation of natural, scenic, historic, and aesthetic values, the Constitution protects Pennsylvanians from any action by DEP that unreasonably causes actual or likely deterioration of those values.⁶ To the extent Section 27 requires DEP to be *more protective* than what is required by the water quality laws, it must comply with Section 27 and add any additional protections necessary to ensure the preservation of constitutionally-protected values.

2. DEP must apply all the necessary technology-based effluent limits, must exercise its Best Professional Judgment when required, and must account for all pollutants of concern.

For any new source, where effluent limitation guidelines (“ELGs”) exist for a particular industry, the permit writer must implement technology-based effluent limitations for pollutants covered by the ELGs or, if pollutants of concern are not covered by the ELG, the permit writer must use her “best professional judgment” (BPJ) to perform a case-by-case analysis of technology-based effluent limitations for each pollutant of concern not covered by the ELG.⁷ In the absence of applicable ELGs, the Department cannot adopt WQBELs (under 25 Pa. Code Ch. 93) or effluent standards from Chapter 95, without first exercising BPJ to develop technology-based effluent limitations for the pollutants at issue.⁸

The Department’s *Effluents Limitations Guidance* echoes these requirements. To ensure that the most stringent effluent limit governs, permit writers may not simply skip directly to developing WQBELs, when there is no applicable ELG. Rather, “[t]echnology-based effluent limitations for industrial dischargers are to be developed based upon *either* effluent limitation guidelines (ELG’s) officially promulgated by EPA, *or* (in the absence of a promulgated EPA ELG) through the use of “best professional judgment” (BPJ) of the Permit Writer.”⁹ For COD,

⁴ *Id.* at 952-959.

⁵ *Id.* at 959.

⁶ *Id.* at 953.

⁷ 40 C.F.R. § 122.44(a)(1) (incorporated by reference at 25 Pa. Code § 92a.44); 40 C.F.R. § 125.3(c).

⁸ *See Shenango Inc. v. DEP*, 934 A.2d 135, 139 (Pa. Commw. 2007) (referring to *Shenango Inc. v. DEP*, EHB Docket No. 2002-259-L (adjudication) (Pa. Env. Hrg. Bd. Nov. 1, 2006) (concluding that conducting a BPJ analysis was necessary when a particular industry lacked ELGs)); *see also*, 33 U.S.C. § 1342(a)(1)(B); 40 C.F.R. § 125.3(d).

⁹ *Effluent Limitations Guidance*, ch. 2, at 1 (emphasis in original); *see id.*, ch. 4, at 13 (stating that, where the wastes to be treated at a treatment facility are not covered by any ELG, “technology-based limitations would have to be developed based upon Best Professional Judgment”).

BOD₅, total dissolved solids, temperature, alkalinity, sulfate, chloride, phosphate, nitrate, silica, calcium, magnesium, total hardness, sodium, manganese, and NH₄ – pollutants not addressed by ELGs – the Department must demonstrate that it exercised BPJ to develop technology-based effluent limitations (or describe why each pollutant is not “of concern”) and then compare those limitations with WQBELs or effluent standards, before selecting an effluent limitation for incorporation into the Permit.

The development of technology-based effluent limitation for new sources through BPJ requires careful consideration of the “(i) age of equipment and facilities involved; (ii) the process employed; (iii) the engineering aspects of the application of various types of control techniques; (iv) process changes; (v) the cost of achieving such effluent reduction; and (vi) non-water quality environmental impacts.”¹⁰ EPA’s NPDES Permit Writers’ Manual states that “[w]hen establishing case-by-case effluent limitations using BPJ, the permit writer should cite in the fact sheet or statement of basis both the approach used to develop the limitations...and how the limitations carry out the intent and requirements of the CWA and the NPDES regulations.”¹¹ This obligation involves clear identification of data and information used to develop the effluent limitation.¹²

For outfall IMP 101, which receives cooling tower blowdown wastewater, DEP applies the New Source Performance Standard (NSPS) in 40 C.F.R. Part 423. The effluent limitation guideline (ELG) for cooling tower blowdown includes effluent limitations for the following:

- TSS and oil and grease (for low volume waste sources),¹³
- copper and iron (for chemical metal cleaning wastes),¹⁴
- total residual chlorine (for 25mw or more facilities),¹⁵
- total chromium, total zinc, and the 126 priority pollutants in Appendix A of the ELG.¹⁶

Not all of the pollutants listed in the ELG are addressed in the Fact Sheet or the Draft Permit for Tenaska’s proposed facility. In addition, many pollutants listed in the Application do not appear to have been evaluated using BPJ or the Fact Sheet lacks clear identification of “data and information used in developing the [technology-based] effluent limitations” and does not describe how that information was used.¹⁷

¹⁰ 40 C.F.R. § 125.3(c), (d).

¹¹ U.S. EPA NPDES PERMIT WRITERS’ HANDBOOK (September 2010), § 5.2.3.1.

¹² *Id.* at § 5.2.3.6.

¹³ 40 C.F.R. § 423.15(c).

¹⁴ *Id.* at § 423.15(d).

¹⁵ *Id.* at § 423.15(h)(1).

¹⁶ *Id.* at § 423.15(j)(1).

¹⁷ U.S. EPA NPDES PERMIT WRITERS’ HANDBOOK (September 2010), § 5.2.3.6.

It is unclear why DEP did not impose the New Source Performance Standard for Copper and Iron

It appears that DEP did not apply the chemical metal cleaning wastes portion of the cooling tower blowdown new source performance standard or the zinc limitation. Originally, DEP addressed both copper and zinc in water quality-based effluent limitations for outfall 001, but did not appear to conduct a technology-based effluent limitation analysis for those same pollutants. Then, in response to Tenaska's comment that its source water will not contain the previously anticipated zinc and copper concentrations, DEP decided that those pollutants are no longer pollutants of concern. Yet, DEP does not explain in the Fact Sheet or the Addendum how Tenaska can avoid the chemical metal cleaning wastes portion of the NSPS that would require a copper and iron limitation in the permit. In addition, a zinc limitation, which has no connection to the chemical metal cleaning wastes portion of the ELG, is also required by the NSPS.¹⁸ Regardless of the source water used for cooling tower blowdown, the NSPS requires that DEP impose effluent limitations on copper, iron, and zinc as technology-based effluent limitations.

Not all pollutants of concern were addressed in setting technology-based effluent limitations

There is no evidence that the Department developed, as it is required to do, technology-based effluent limitations for the pollutants listed in Tenaska's permit application, but not addressed in the NSPS for cooling tower blowdown. These pollutants include the following: COD, BOD₅, total dissolved solids, temperature, alkalinity, sulfate, chloride, phosphate, nitrate, silica, calcium, magnesium, total hardness, sodium, manganese, and NH-4.¹⁹ While it may be the case that the Department did not consider some of these pollutants as "pollutants of concern," such an analysis is not clearly provided in the Fact Sheet. The Department's *Technical Guidance for the Development and Specification of Effluent Limitations* expressly states: "In any given discharge situation, the most stringent effluent limit(s) (i.e. water quality-based, technology-based, or effluent standard-based) shall govern and shall be incorporated into the permit...."²⁰ Unless technology-based effluent limitations are developed for the sixteen pollutants listed above, the Department cannot establish that it has adopted the most stringent limit for each.²¹

The Department should lower the instantaneous maximum limit for temperature

The Department states in the March Fact Sheet that the temperature limit at Outfall 001 is based on "effluent limits given to similar facilities."²² The Department does not inform the public in the Fact Sheet what limits have been given to similar facilities or what facilities it

¹⁸ *Id.*

¹⁹ Tenaska's Permit Application, Appendix I, page 11.

²⁰ Doc. No. 362-0400-001, ch. 4, at 1 (last edited Dec. 27, 2007).

²¹ 25 Pa. Code § 92a.12(a).

²² At 2.

considered as similar. However, in the attached discharge permit for a Tenaska facility in Texas, a temperature limit of 95 degrees was applied as a daily maximum. Due to the similarity in the two Tenaska facilities, we respectfully request that DEP adjust the temperature limit to at least 95 degrees as a daily maximum.

3. DEP must conduct a water quality-based analysis to determine whether WQBELs are necessary for TDS, chloride, bromide, iron, and manganese.

DEP must ensure the maintenance and protection of existing uses, and the water quality necessary to achieve those uses.²³ NPDES permits must include any effluent limitations necessary to meet water quality standards.²⁴ Effluent limits can be technology-based (TBELs) or water quality-based (WQBELs).

If there exists an effluent limitation guideline (ELG) for the relevant industrial sector, then the TBELs defined in the ELG should be applied. (As explained above, if there is no ELG, or if the ELG does not address a particular pollutant, DEP must first exercise its BPJ to develop a TBEL.) DEP must then develop WQBELs for every pollutant of concern. DEP must then compare all the applicable effluent limits and place the most stringent limits in the permit. DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* expressly states: "In any given discharge situation, the most stringent effluent limit(s) (i.e. water quality-based, technology-based, or effluent standard-based) shall govern and shall be incorporated into the permit...."²⁵

All the receiving streams have designated Warm Water Fishes uses. The Youghiogheny River also has a designated Potable Water Supply use. Apart from those designated uses, the streams may have distinct existing uses, which DEP must determine and protect as part of any final permit.²⁶ Nothing in the Fact Sheets indicates that DEP made the required existing use determination, and that should be corrected.

In the March Fact Sheet, DEP rightly states that TDS, chloride, bromide, and sulfate are pollutants of concern, which the permit must address. DEP conducted a water quality-based analysis of sulfates, using its PENTOXSD program, but did not conduct a water quality-based analysis for TDS, chloride, and bromide.

With regard to TDS, DEP failed to conduct a water quality-based analysis to determine the necessity of WQBELs. In the March Fact Sheet, DEP discussed TDS in a section entitled "Water Quality Based Effluent Limitations".²⁷ However, DEP spent much of the time discussing 25 Pa.

²³ 25 Pa. Code § 93.4a(b).

²⁴ 42 U.S.C.A. § 1311(b)(1)(C).

²⁵ Doc. No. 362-0400-001 at Ch. 4 (last edited Dec. 27, 2007).

²⁶ 25 Pa. Code § 93.4c(a)(1)(i).

²⁷ At 3-4.

Code Chapter 95 and its application to TDS mass loadings. Chapter 95 *does not* contain water quality based effluent limitations. Chapter 95 contains treatment requirements for new and expanding mass loadings of TDS contained in a wastewater discharge. Where the waste was not generated from oil and gas exploration and production, the effluent limit of 2,000 mg/L TDS automatically applies.²⁸ Because Chapter 95 does not require a water body-specific analysis, the Chapter 95 limits DEP has applied to TDS in the Draft Permits *are not* *WQBELs* and do not arise from a water quality-based analysis. The only way to know whether the Chapter 95 TDS limits are sufficient, and whether *WQBELs* are necessary to protect stream uses, is to conduct the water quality-based analysis and apply the more stringent of the two kinds of limits. DEP has conducted water quality-based analyses for TDS for other permits, so there is no reason for it to have skipped that step here (see, for example, the 2008 Water Quality Protection Report for Draft NPDES Permit No. PA0253723, Amendment No. 1, noticed in the Pennsylvania Bulletin on January 29, 2011).

With regard to chloride and bromide, just as with TDS, DEP did not conduct a water quality-based analysis to determine the necessity of *WQBELs*. It may be that PENTOXSD is not an appropriate tool to use to conduct a water quality-based analysis of those three pollutants, but DEP can obviously use other tools (mass-balance equations, for example) to address that. DEP did conduct a mass balance analysis of total residual chlorine precisely to determine whether *WQBELs* would be necessary to protect the aquatic life use. Nothing in the Fact Sheets or Draft Permits indicates that DEP performed a mass balance or any other such analysis for TDS, chloride, and bromide.

For chloride and bromide, the absence of a water quality-based analysis is especially troublesome. While other states have already done so, DEP has yet to develop water quality criteria for chloride and bromide to protect fishery uses. The absence of criteria is all the more reason for DEP to conduct rigorous *WQBEL* determinations since *WQBELs* are often the only limits available for protection of fishery uses in Pennsylvania from the significant risk posed by chloride and bromide. As streams and their fisheries are clearly public resources protected by the Pennsylvania Constitution, Section 27 requires DEP to rigorously determine the necessity of *WQBELs* to protect those resources.

In addition, though DEP acknowledges in the March Fact Sheet that bromides in streams are problematic because they can lead to the creation of carcinogenic total trihalomethanes (TTHMs) at public water suppliers who intake the bromide-laden water, DEP does not investigate whether a numeric limit for bromide is necessary. Again, to protect Pennsylvanians' constitutional rights, DEP is obligated to at least conduct a serious water quality-based analysis to determine the necessity of numeric limits for bromide.

²⁸ 25 Pa. Code § 95.10(c).

DEP made similar errors with regard to iron and manganese. In the July Fact Sheet's table entitled Toxics Screening Analysis // Water Quality Pollutants Of Concern, DEP expressly identified iron and manganese as pollutants of concern that were not amenable to a PENTOXSD analysis for derivation of WQBELs. However, DEP provided no water quality-based analysis at all. Again, where DEP has identified pollutants of concern, after determining TBELs, it must determinate WQBELs and must apply the most stringent limits.

In summary, DEP must:

- Make a determination of existing uses of the receiving streams
- Provide for public notice and comment any analyses it performed to develop water quality based effluent limitations for TDS, chloride, bromide, iron, and manganese.
- If it did not perform water quality based analyses for TDS, chloride, bromide, iron, and manganese, DEP must do so and must notice those analyses in a revised fact sheet, and must incorporate the resulting WQBELs where those WQBELs are more stringent than the limits derived from the exercise of BPJ and the application of Chapter 95.

4. DEP should include additional permit conditions that other permitting authorities have imposed for a similar facility operated by the Applicant's parent/sister company.

On December 29, 2011, the Texas Commission on Environmental Quality issued a state NPDES permit to Tenaska Gateway Partners, Ltd. for the Tenaska Gateway Generating Station (TPDES Permit No. WQ0004111000), which is the same kind of facility at issue here. The Texas permit requires whole effluent toxicity testing in order to protect aquatic life.

DEP has the authority to require WET testing to protect stream uses, especially aquatic life uses.²⁹ WET testing is especially relevant where the effluent will contain numerous pollutants that, in the aggregate, may have a synergistic toxic effect on aquatic organisms. DEP should require WET testing in this instance because the Applicant will be discharging dozens of pollutants in its effluent. The Applicant submitted various Material Safety Data Sheets with its application reflecting the variety of chemicals that will be used in the Applicant's industrial process. Additionally, based on the July Draft Permit and the Fact Sheets, the discharge will include oil and grease, lead, chromium, zinc, chlorine, TDS, bromide, chloride, and sulfates. WET testing will ensure that DEP can identify any unacceptably high toxic effects formed by the synergistic reactions of all those pollutants and can as a result require the Applicant to adjust its discharge practices.

If DEP is going to issue a NPDES permit for this facility, the permit should require WET testing.

²⁹ 25 Pa. Code §§ 16.52 and 92a.21(d).

5. DEP must require Applicant to comply with the applicable industrial stormwater discharge rules by submitting pollutant estimates and the sources for those estimates.

Applicants seeking an individual NPDES permit for stormwater discharge associated with industrial activity must submit the information detailed in 40 C.F.R. §§ 122.21(g)(7) (effluent characteristics) and 122.26(c)(1) (requirements for stormwater discharges). Pennsylvania has incorporated these rules.³⁰

40 C.F.R. § 122.26(c)(1)(i)(G) states in full:

Operators of new sources or new discharges (as defined in § 122.2 of this part) which are composed in part or entirely of storm water **must include estimates for the pollutants or parameters listed in paragraph (c)(1)(i)(E) of this section instead of actual sampling data, along with the source of each estimate.** Operators of new sources or new discharges composed in part or entirely of storm water must provide quantitative data for the parameters listed in paragraph (c)(1)(i)(E) of this section within two years after commencement of discharge, unless such data has already been reported under the monitoring requirements of the NPDES permit for the discharge. Operators of a new source or new discharge which is composed entirely of storm water are exempt from the requirements of § 122.21 (k)(3)(ii), (k)(3)(iii), and (k)(5).

(emphasis added). Where the discharge is composed entirely of stormwater, certain requirements are waived.³¹ The proposed stormwater discharges from the Applicant's facility clearly do not meet that standard. As a result, in this instance there are *no exceptions* to the rule that the Applicant must include estimates and sources for those estimates.

DEP is wrong, then, when it states in the July Fact Sheet that "Tenaska did not submit estimates as required by 40 CFR 122.26(c)(1)(i)(G) but the DEP agrees with Tenaska's assertion that it is unlikely outfalls 002-004 will discharge pollutants at levels of concern, [sic] Therefore, DEP is only requiring Tenaska [sic] comply with the requirement under 40 CFR 122.26(c)(1)(i)(G) to provide samples within two years of commencement of the discharge." First, Section 122.26(c)(1)(i)(G) says "must include" estimates and their sources; it does not leave any discretion to the permitting authority. Second, when erring at all, Section 27 of the Constitution requires that DEP err on the side of more environmental protection, not less. Again, in this instance, there is simply no discretion and no need for erring: DEP must require the Applicant to provide estimates and their sources simply according to the water quality laws.

³⁰ 25 Pa. Code § 92a.32(a).

³¹ 40 C.F.R. § 122.26(g); 25 Pa. Code § 92a.32(a).

Section 27 may very well require that DEP ask for more information on estimates, or for a shorter timeframe than 2 years for sample collection; it certainly *does not allow* DEP to create an exception that would increase the risk of harm to public resources where no such exception exists.

DEP must prepare a new fact sheet that imposes the requirements for stormwater pollutant estimates and their sources. Because that will require a significant revision to the application and the fact sheet, and perhaps to the ultimate draft permit, DEP should again make available for public notice the revised fact sheet and draft permit so that the public can scrutinize the Applicant's estimates and DEP's imposition of permit limits based on the estimates.

* * *

If there are questions about this comment, please contact us anytime.

Respectfully submitted,

For Mountain Watershed Association, home of the Youghiogheny Riverkeeper

FAIR SHAKE ENVIRONMENTAL LEGAL SERVICES



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*Admitted in Pennsylvania



TEXAS COMMISSION ON ENVIRONMENTAL
QUALITY

P.O Box 13087
Austin, Texas 78711-3087

TPDES PERMIT NO.
WQ0004111000
*[For TCEQ office use only -
EPA I.D. No. TX0118559]*

This is a renewal of TPDES
Permit No. WQ0004111000
issued on June 30, 2006.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Tenaska Gateway Partners, Ltd.

whose mailing address is

1044 North 115th Street, Suite 400
Omaha, Nebraska 68154-4446

is authorized to treat and discharge wastes from the Tenaska Gateway Generating Station, a combined-cycle electrical power generation plant, (SIC 4911)


located adjacent to State Highway 315, approximately 0.5 mile southwest of the intersection of State Highway 315 and State Highway 840, and approximately 7.5 miles northeast of the City of Mount Enterprise, Rusk County, Texas

via pipeline directly to Toledo Bend Reservoir in Segment No. 0504 of the Sabine River Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight on April 1, 2016.

ISSUED DATE: December 29, 2011


For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge cooling tower blowdown and previously monitored effluents (treated demineralized wastewater, neutralized wastewater, boiler blowdown, and storm water via Internal Outfall 101) subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1.5 million gallons per day (MGD). The daily maximum flow shall not exceed 2.0 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average lbs/day	Daily Maximum (mg/L)	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)				1/day	Flow-meter
Temperature (°F)(*1)	(Report)	(Report)	N/A	1/day	In-Situ
Free Available Chlorine (*1)	2.5	(0.5)	0.5	1/week (*2)	Grab
Chromium, Total	N/A	(0.2)	0.2	1/quarter (*3)	Grab
Zinc, Total	N/A	(0.878)	(0.878)	1/quarter (*3)	Grab

(*1) See Other Requirement No. 4.

(*2) Samples shall be representative of periods of chlorination.

(*3) Samples shall be taken when using cooling tower maintenance chemicals containing chromium or zinc.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location: At Outfall 001, after mixing of all wastewaters and prior to the discharge point on the west bank of the Sabine River approximately 10 river miles downstream of the US Highway 84 bridge over the Sabine River in Shelby County, Texas.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 101

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated demineralized wastewater, neutralized wastewater, boiler blowdown, and storm water subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum mg/L	Single Grab	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/day	Flow-meter
Total Suspended Solids	30	100	100	1/week	Grab
Oil and Grease	15	20	20	1/week	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day by grab sample
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 101, exit the plant sump and prior to mixing with cooling tower blowdown.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

- a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.
- b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.
- c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.
- d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.
- e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.
- f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

- a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.
 - i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.
 - ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.
- b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.
- c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

- d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

- e. Bacteria concentration (Fecal coliform, E. coli, or Enterococci) – the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements of made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.
- f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).
- g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

- a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (b).
- b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.
5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.
6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division

(MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TCW Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

- a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.
- b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

- a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.
- c. Records of monitoring activities shall include the following:
 - i. date, time, and place of sample or measurement;
 - ii. identity of individual who collected the sample or made the measurement.
 - iii. date and time of analysis;
 - iv. identity of the individual and laboratory who performed the analysis;
 - v. the technique or method of analysis; and
 - vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

- a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
 - b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:
 - i. Unauthorized discharges as defined in Permit Condition 2(g).
 - ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.
 - iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.
 - c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.
 - d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.
8. In accordance with the procedures described in 30 TAC §§35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

- a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

- i. One hundred micrograms per liter (100 µg/L);
 - ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
 - iv. The level established by the TCEQ.
- b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- i. Five hundred micrograms per liter (500 µg/L);
 - ii. One milligram per liter (1 mg/L) for antimony;
 - iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
 - iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
- c. For the purpose of this paragraph, adequate notice shall include information on:
 - i. The quality and quantity of effluent introduced into the POTW; and
 - ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

- a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.
- b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:
 - i. Violation of any terms or conditions of this permit;
 - ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
 - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

- a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.
- c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.
- e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.
- f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.
- h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.
- i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

- a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.
- b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then

in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

- a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;
 - iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.
- c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.
- d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.
- e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.
- f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

- a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.
- b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

8. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

- a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:
 - i. the permittee;
 - ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
 - iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.
- b. This notification must indicate:
 - i. the name of the permittee;
 - ii. the permit number(s);
 - iii. the bankruptcy court in which the petition for bankruptcy was filed; and
 - iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in

order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 - 319.29 concerning the discharge of certain hazardous metals.
3. Domestic wastewater treatment facilities shall comply with the following provisions:
 - a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.
 - b. The permittee shall submit a closure plan for review and approval to the Land Application Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.
4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.
5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.
6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).
7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.
 - a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the

necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

- b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.
 - c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.
9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.
 10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.
 11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:
 - a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.
 - b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.
 - c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.
 - d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid

waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.

- e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.
- f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:
 - i. Volume of waste and date(s) generated from treatment process;
 - ii. Volume of waste disposed of on-site or shipped off-site;
 - iii. Date(s) of disposal;
 - iv. Identity of hauler or transporter;
 - v. Location of disposal site; and
 - vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 5, within 24 hours from the time the permittee becomes aware of the violation followed by a written report within five working days to TCEQ Region 5 and the Enforcement Division (MC 224):

POLLUTANT	MAL (mg/L)
Chromium (Total)	0.010
Zinc (Total)	0.005

Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the minimum analytical level (MAL) for the parameters specified above.

When an analysis of an effluent sample for any of the parameters listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero (0) shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero (0) based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form.

"The reported value(s) of zero (0) for ____ [list parameter(s)] ____ on the self-reporting form for [monitoring period date range] ____ is based on the following conditions: 1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and 2) the analytical results contained no detectable levels above the specified MAL."

When an analysis of an effluent sample for a parameter indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that parameter, the level of detection achieved shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. A zero (0) may not be used.

2. There shall be no discharge of domestic sewage. Domestic sewage shall be routed to an authorized septic tank or drainfield system for treatment and disposal.
3. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used in transformer fluid.
4. DEFINITIONS
 - A. The "flow weighted average temperature" (FWAT) shall be computed and recorded on a daily basis. FWAT shall be computed at equal time intervals not greater than two hours. The method of calculating FWAT is as follows:

$$FWAT = \frac{\text{SUMMATION (INSTANTANEOUS FLOW x INSTANTANEOUS TEMPERATURE)}}{\text{SUMMATION (INSTANTANEOUS FLOW)}}$$

The “daily average temperature” shall be the arithmetic average of all FWAT’s calculated during the calendar month.

The “daily maximum temperature” shall be the highest FWAT calculated during the calendar month.

- B. The term “free available chlorine” shall mean the value obtained using the amperometric titration method for free available chlorine described in “Standard Methods for the Examination of Water and Wastewater”
 - C. The term “average concentration” as it relates to chlorine discharge means the average of analyses made over a single period of chlorine release which does not exceed two hours.
 - D. The term “metal cleaning waste” means any wastewater resulting from cleaning (with or without chemical compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning. Discharge of metal cleaning waste is not authorized in this permit.
 - E. The term “chemical metal cleaning waste” means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning. Discharge of chemical metal cleaning waste is not authorized in this permit.
5. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point of discharge.
 6. The 126 priority pollutants (Appendix A of 40 CFR Part 423) contained in chemicals added for cooling tower maintenance, except chromium and zinc, shall be limited in the discharge to “no detectable amount.” The permittee shall be responsible for determining the composition of maintenance chemicals. The permittee shall report the proposed usage of any chemical which contains any of the 126 priority pollutants and shall obtain approval from the permitting authority prior to usage of such chemicals.
 7. This provision supersedes and replaces Provision 1, Paragraph 1 of MONITORING AND REPORTING REQUIREMENTS found on Pages 4-5 of this permit.

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 – 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the location(s) specified on the reporting form or the instruction sheet, by the 25th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on the approved TPDES self-report form, Discharge Monitoring Report (DMR) Form EPA No. 3320-1, signed and certified as required by MONITORING AND REPORTING REQUIREMENTS No. 10.

8. The permittee is hereby placed on notice that this permit may be reviewed by the TCEQ after the completion of any new intensive water quality survey on Segment No. 0504 of the Sabine River Basin and any subsequent updating of the water quality model for Segment No. 0504, in order to determine if the limitations and conditions contained herein are consistent with any such revised mode. The permit may be amended, pursuant to 30 TAC Section 305.62, as a result of such review.

9. COOLING WATER INTAKE STRUCTURE REQUIREMENTS: 316(b) of the Clean Water Act (CWA)

Because of the low intake velocity and the use of cooling towers, this facility meets the conditions that reflect the best technology available (BTA) for minimizing adverse environmental impact (AEI). If the facility changes its method of process cooling, method of receiving cooling water, or constructs its own cooling water intake structure, the permittee shall submit a major amendment application to the TCEQ so that the proposed changes can be reevaluated for compliance with applicable 316(b) regulations.

The permittee shall operate and maintain its cooling water configuration in a manner that continues to meet BTA for minimizing AEI.

48-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply to Outfall 001 for whole effluent toxicity testing (biomonitoring).

1. Scope, Frequency and Methodology

- a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival of the test organisms.
- b. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof:
 - 1) Acute static renewal 48-hour definitive toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.
 - 2) Acute static renewal 48-hour definitive toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and submit a valid test for each test species during the required reporting period for that species. A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution. A repeat test shall include the control and all effluent dilutions and use the appropriate number of organisms and replicates, as specified above. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

- c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations are 6%, 8%, 11%, 15%, and 20% effluent. The critical dilution, defined as 15% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.
- d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, a Chemical-Specific (CS) limit, a Best Management Practice (BMP), additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.
- e. Testing Frequency Reduction
 - 1) If none of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species.
 - 2) If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee shall continue quarterly testing for that species until the permit is

reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant lethal effects, the permittee will resume a quarterly testing frequency for that species until the permit is reissued.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:

- 1) a control mean survival of 90% or greater;
- 2) a Coefficient of Variation percent (CV%) of 40 or less for both the control and critical dilution. However, if significant lethality is demonstrated, a CV% greater than 40 shall not invalidate the test. The CV% requirement does not apply when significant lethality occurs.

b. Statistical Interpretation

- 1) For the water flea and fathead minnow tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof.
- 2) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The EPA manual, "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004), provides guidance on determining the validity of test results.
- 3) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 90% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.
- 4) The NOEC is defined as the greatest effluent dilution at which no significant lethality is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which significant lethality is demonstrated. Significant lethality is herein defined as a statistically significant difference at the 95% confidence level between the survival of the test organism(s) in a specified effluent dilution compared to the survival of the test organism(s) in the control (0% effluent).
- 5) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 2 above.
- 6) Pursuant to the responsibility assigned to the permittee in Part 2.b.2), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The above-referenced guidance manual will be used when making a determination of test acceptability.

- 7) Staff will review test results for consistency with rules, procedures, and permit requirements.
- c. Dilution Water
- 1) Dilution water used in the toxicity tests shall be the receiving water collected at a point upstream of the discharge as close as possible to the discharge point, but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall; (a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge, or (b) utilize the closest downstream perennial water unaffected by the discharge.
 - 2) Where the receiving water proves unsatisfactory as a result of preexisting instream toxicity (i.e. fails to fulfill the test acceptance criteria of item 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
 - a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of item 2.a;
 - b) the test indicating receiving water toxicity was carried out to completion;
 - c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3 of this Section.

The synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or a natural water in the drainage basin that is unaffected by the discharge, provided the magnitude of these parameters will not cause toxicity in a synthetic dilution water control that has been formulated to match the pH, hardness, and alkalinity naturally found in the receiving water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

- d. Samples and Composites
- 1) The permittee shall collect a minimum of two composite samples from Outfall 001. The second composite sample will be used for the renewal of the dilution concentrations for each toxicity test.
 - 2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
 - 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for the subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.
 - 4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum numbers of effluent portions, and the sample holding time, are waived during that sampling period. However, the permittee must have collected an effluent composite sample

volume sufficient to complete the required toxicity tests with renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Enforcement Division (MC 224).

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof, for every valid and invalid toxicity test initiated whether carried to completion or not. The full reports shall be retained for 3 years at the plant site and shall be available for inspection by TCEQ personnel.
- b. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit. All Table 1 reports must include the information specified in the Table 1 form attached to this permit.
 - 1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12 month period.
 - 2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6 month period.
 - 3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th, for biomonitoring conducted during the previous calendar quarter.
 - 4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.
- c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:
 - 1) For the water flea, Parameter TEM3D, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 2) For the water flea, Parameter TOM3D, report the NOEC for survival.
 - 3) For the water flea, Parameter TXM3D, report the LOEC for survival.
 - 4) For the fathead minnow, Parameter TEM6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 5) For the fathead minnow, Parameter TOM6C, report the NOEC for survival.
 - 6) For the fathead minnow, Parameter TXM6C, report the LOEC for survival.

- d. Enter the following codes on the DMR for retests only:
 - 1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this Part apply only when a toxicity test demonstrates significant lethality. Significant lethality is defined as a statistically significant difference, at the 95% confidence level, between the survival of the test organism at the critical dilution when compared to the survival of the test organism in the control.

- a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates significant lethality. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test. The retests shall also be reported on the DMRs as specified in Part 3.d.
- b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.
- c. The provisions of item 4.a. are suspended upon completion of the two retests and submittal of the TRE Action Plan and Schedule defined in Part 5 of this Section.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a Toxicity Reduction Evaluation (TRE). The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:
 - 1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080)

and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

- 2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;
 - 3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and
 - 4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.
- d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
- 1) results and interpretation of any chemical specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;
 - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
 - 3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and
 - 6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

- f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

- g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.
- h. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify CS limits.

TABLE 1 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

Dates and Times Composites Collected No. 1 FROM: _____ Date _____ Time _____ TO: _____ Date _____ Time _____
 No. 2 FROM: _____ Date _____ Time _____ TO: _____ Date _____ Time _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water _____

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	8%	11%	15%	20%
24h	A						
	B						
	C						
	D						
	E						
48h	A						
	B						
	C						
	D						
	E						
Mean at test end							
CV%*							

*Coefficient of Variation = Standard Deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less (p = 0.05) than the control survival?

CRITICAL DILUTION (15%): _____ YES _____ NO

Enter percent effluent corresponding to the NOEC below:

1) NOEC survival = _____% effluent

2) LOEC survival = _____% effluent

TABLE 1 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

Dates and Times Date Time Date Time
 Composites No. 1 FROM: _____ TO: _____
 Collected No. 2 FROM: _____ TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	8%	11%	15%	20%
24h	A						
	B						
	C						
	D						
	E						
48h	A						
	B						
	C						
	D						
	E						
Mean at test end							
CV%*							

* Coefficient of Variation = standard deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less (p = 0.05) than the control survival?

CRITICAL DILUTION (15%): _____ YES _____ NO

Enter percent effluent corresponding to the NOEC below:

1) NOEC survival = _____ % effluent

2) LOEC survival = _____ % effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity testing (biomonitoring)

1. Scope, Frequency and Methodology

- a. The permittee shall test the effluent for lethality in accordance with the provisions in this Section. Such testing will determine compliance with the Surface Water Quality Standard, 307.6(e)(2)(B), of greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.
- b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof:
 - 1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.
 - 2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

A valid test result must be submitted for each reporting period. The permittee must report, then repeat, an invalid test during the same reporting period. The repeat test shall include the control and the 100% effluent dilution and use the appropriate number of organisms and replicates, as specified above. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

- c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and/or dilution water shall consist of a standard, synthetic, moderately hard, reconstituted water.
- d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, a Best Management Practice (BMP), Chemical-Specific (CS) limits, additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.

2. Required Toxicity Testing Conditions

- a. Test Acceptance - The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.
- b. Dilution Water - In accordance with item 1.c., the control and/or dilution water shall consist of a standard, synthetic, moderately hard, reconstituted water.
- c. Samples and Composites
 - 1) The permittee shall collect one composite sample from Outfall 001.

- 2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
- 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.
- 4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report required in Part 3 of this Section.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Enforcement Division (MC 224).

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof, for every valid and invalid toxicity test initiated. All full reports shall be retained for 3 years at the plant site and shall be available for inspection by TCEQ personnel.
- b. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit. All Table 2 reports must include the information specified in the Table 2 form attached to this permit.
 - 1) Semiannual biomonitoring test results are due on or before January 20th and July 20th for biomonitoring conducted during the previous 6 month period.
 - 2) Quarterly biomonitoring test results are due on or before January 20th, April 20th, July 20th, and October 20th, for biomonitoring conducted during the previous calendar quarter.
- c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:
 - 1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
 - 2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
- d. Enter the following codes on the DMR for retests only:

- 1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
- 2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

4. Persistent Mortality

The requirements of this Part apply when a toxicity test demonstrates significant lethality, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 24-hours.

- a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These additional effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour. The retests shall also be reported on the DMRs as specified in Part 3.d.
- b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a Toxicity Reduction Evaluation (TRE). The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:
 - 1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600-

/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

- 2) **Sampling Plan** - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;
 - 3) **Quality Assurance Plan** - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and
 - 4) **Project Organization** - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.
- d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
- 1) results and interpretation of any chemical-specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;
 - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
 - 3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and
 - 6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.
- f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12

consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

- g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall specify the control mechanism(s) that will, when implemented, reduce effluent toxicity as specified in item 5.g. The report will also specify a corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.
- h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 307.6.(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.

The requirement to comply with 307.6.(e)(2)(B) may be exempted upon proof that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g. metals) form a salt compound. Following the exemption, the permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

- i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify a CS limit.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____ % effluent

TABLE 2 (SHEET 2 OF 2)
 FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

Water Quality Protection Report

Shallenberger Constuction, Inc.
Ronco Industrial Wastewater Treatment Facility
NPDES PA0253723-A1
Masontown Borough, Fayette County

January 4, 2011

Prepared by:

Ryan Decker
Water Management
PA Department of Environmental Protection
400 Waterfront Drive
Pittsburgh, PA 15222
(412) 442-4000

Project Description:

New Existing/Renewal Amendment Transfer

A. NPDES Application/Permit No. PA0253723
Part II Permit No. 2608201

B. Applicant: Shallenberger Construction, Inc. Municipality: Masontown Borough
Facility: Ronco Industrial Wastewater Treatment Facility County: Fayette

C. Type of Waste(s): Industrial Sewage Storm water Mine / Oil & Gas Extraction

D. Facility Classification: Major Minor E. U.S.G.S. Quad(s): Masontown

F. SIC Code(s): 1389, 4953 G. NAICS Code(s): 213112, 562219

Water Uses and Criteria:

A. Receiving water: Monongahela River Stream code: 37185 HUC/Reach: 05020005000221
Drainage Area: 4,520 mi², Yield: 0.1053 cfs/mi², Flow: 476 ft³/s (Q₇₋₁₀ low-flow)

Based on data from: Low-Flow Statistics for Pennsylvania Streams: <http://pa.water.usgs.gov/pc38/flowstats/>

Elevation: 763 ft, Slope: 0.0001 ft/ft, Existing / Designated Use: WWF

Aquatic Life Use Attainment Status: Attaining Non-attaining Unassessed/Undetermined

TMDL Listing Date: N/A Impairment Causes: _____

TMDL Completion Date: N/A Impairment Sources: _____

Exceptions to standard uses: _____ Exceptions to specific criteria: None
Add: Navigation Add: _____
Delete: _____ Delete: _____
Impoundment: _____ Special uses: _____

B. Secondary water: Ohio River Stream code: 32317 HUC/Reach: 05030101000149
Drainage Area: _____ mi², Yield: _____ cfs/mi², Flow: _____ ft³/s (Q₇₋₁₀ low-flow)

Based on data from: _____

Elevation: _____ ft, Slope: _____ ft/ft, Existing / Designated Use: WWF

Aquatic Life Use Attainment Status: Attaining Non-attaining Unassessed/Undetermined

TMDL Listing Date: N/A Impairment Causes: Fish Consumption use impaired by PCBs & Dioxins

TMDL Completion Date: N/A Impairment Sources: Recreational use impaired by pathogens

Exceptions to standard uses: _____ Exceptions to specific criteria: _____
Add: Navigation Add: See ORSANCO Pollution Control Standards
Delete: _____ Delete: See ORSANCO Pollution Control Standards
Impoundment: _____ Special uses: _____

C. Downstream PWS location: Carmichaels Municipal Water Authority RMI: 75.03
Stream Name: Monongahela River Distance from discharge: 4.05 Miles
Stream flow at intake: 501 ft³/s, Intake: 1.0 Mgd

Outfalls:

Outfall 001 Lat. 39° 51' 13" Long. 79° 55' 29" RMI: 79.08 Stream Monongahela River

Maximum Discharge Flow Rate: 0.5 Mgd Based on data from: Module 3 of the NPDES permit application

Treatment System Description: Flow equalization, chemical addition (barium precipitation), settling/clarification, aeration, chemical addition (calcium/strontium precipitation), settling/clarification, micro-filtration

Discharge Sources and Characteristics: Wastewaters from oil and gas well-drilling and production

I

Technology Limits

- Section 304(b) of the Federal Clean Water Act (CWA) requires technology limits to be considered.
- Section 301(b)(2)(C) of the CWA requires compliance with best available technology (BAT) by March 31, 1989.
- Sections 304(b)(2)(B), 304(b)(4)(B), and 402(a)(1) of the CWA allow for the establishment of effluent limits on a case-by-case basis (Best Professional Judgment or BPJ).
- 40 CFR 125.3(d) requires that six factors be considered in developing effluent limits based on BPJ. For BAT, they are: 1) the age of the equipment and facility, 2) the process employed, 3) the engineering aspects of the application of various types of control techniques, 4) process changes, 5) the cost of achieving such effluent reduction and, 6) non-water quality environmental impact (including energy requirements).

Shallenberger Construction, Inc. ("Shallenberger") operates the Ronco Industrial Wastewater Treatment Facility ("Ronco facility") for the treatment of fluids generated from the drilling and production of natural gas and oil wells. Shallenberger is authorized to discharge treated effluent to the Monongahela River in accordance with its existing NPDES permit, PA0253723, issued on September 25, 2008. As of yet, no permitted discharges from the Ronco facility have occurred.

In order to address deficiencies in the September 25, 2008 NPDES permit relating to the applicability of Federal Effluent Limitations Guidelines and high TDS and sulfate concentrations in the Monongahela River (to which Shallenberger would be a contributor), Shallenberger entered into a Consent Order and Agreement (CO&A) with DEP on August 28, 2009. The CO&A included a proposed permit amendment that was issued in draft on January 6, 2010. Upon review of the draft permit amendment by EPA, it was determined that the effluent limitations did not meet the applicable regulatory and policy requirements (federal and state) that had been applied to similar centralized waste treatment facilities since the permit amendment was proposed in the Shallenberger-DEP CO&A. Therefore, a new NPDES permit amendment application was submitted by Shallenberger on October 21, 2010 from which the NPDES permit amendment is being re-drafted to comply with applicable DEP and EPA policies and regulations as described in the following paragraphs of this section.

Outfall 001 – Effluent limitations in the existing draft permit amendment include the following:

Parameter	Monthly Avg. (mg/L)	Daily Max (mg/L)	Instant Max (mg/L)
Flow		0.5	
Iron	3.5		7.0
Oil and Grease	15		30
Total Suspended Solids	30		60
Acidity		Monitor	
Alkalinity		Greater than acidity	
Barium	14.4	28.0	
Chlorides	Monitor and Report		
Total Dissolved Solids	500	750	
Osmotic Pressure (mOs/kg)	1,632	2,546	
Sulfates		250	
BOD 5-Day	53		163
Copper	0.757	0.865	
Zinc	0.420	0.497	
Acetone	7.97	30.2	
Acetophenone	0.0562	0.114	
2-Butanone	1.85	4.81	
o-Cresol	0.561	1.92	
p-Cresol	0.205	0.698	
Phenol	1.08	3.65	
Pyridine	0.182	0.370	
2,4,6-Tricholophenol	0.106	0.155	
Strontium	Monitor and Report		
pH	within the range of 6.0 to 9.0 s.u.		

Table 1. Technology-based concentration effluent limitations from proposed permit amendment (CO&A).

Centralized Waste Treatment Point Source Category (40 CFR Part 437) – The Ronco facility is classified as a new source in accordance with 40 CFR 122.29(b) *Criteria for new source determination*. A new source, as defined in 40 CFR 122.2 and referenced under 40 CFR 122.29 is any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced: (a) after promulgation of standards of performance under section 306 of the Clean Water Act (CWA) which are applicable to such source, or (b) after proposal of standards of performance in accordance with section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306. The Ronco facility was constructed after promulgation of applicable standards of performance (40 CFR 437—discussed below), which is why it is classified as a new source.

New sources are subject to New Source Performance Standards (NSPS). According to EPA, NSPS reflect effluent reductions that are achievable based on the best demonstrated control technology. New facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies. As a result, NSPS should represent the most stringent controls attainable through the application of the best available control technology for all pollutants (i.e., conventional, non-conventional, and priority pollutants). In establishing NSPS, EPA is directed to take into consideration the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements.

NSPS applicable to the Ronco facility are described in Federal Effluent Limitations Guidelines (ELG) 40 CFR 437 – Centralized Waste Treatment Point Source Category. A Centralized Waste Treatment facility ("CWT facility") is defined by 40 CFR 437.2 as "any facility that treats (for disposal, recycling or recovery of material) any hazardous or non-hazardous industrial wastes, hazardous or non-hazardous industrial wastewater, and/or used material received from off-site." This includes facilities that treat waste received exclusively from off-site and facilities that treat waste generated on-site as well as waste received from off-site. As a facility that will treat industrial wastewater received from off-site generators, the Ronco facility is classified as a Centralized Waste Treatment facility.

CWT facilities are classified in four subcategories under 40 CFR 437: Subpart A – Metals Treatment and Recovery, Subpart B – Oils Treatment and Recovery, Subpart C – Organics Treatment and Recovery, and Subpart D – Multiple Wastestreams, a combination of two or more of the previous subparts' wastewaters. The applicability sections of each of the subcategories state the following:

- Subpart A – Metals Treatment and Recovery (437.10(a)): "—this subpart applies to that portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of metals from, both metal-bearing wastes received from off-site and other CWT wastewater associated with the treatment of, or recovery of metal-bearing wastes."
- Subpart B – Oils Treatment and Recovery (437.20(a)): "—this subpart applies to that portion of the discharge of wastewater from a CWT facility that results from the treatment or recovery of oil from both oily wastes received from off-site and other CWT wastewater associated with the treatment of, or recovery of oily wastes."
- Subpart C – Organics Treatment and Recovery (437.30(a)): "—this subpart applies to that portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of organic material from, both organic wastes received from off-site and other CWT wastewater associated with the treatment of, or recovery of organic wastes."
- Subpart D – Multiple Wastestreams (437.40(a)): "facilities that treat wastes subject to more than one of the previous subparts must comply with either provisions of this subpart or the applicable provisions of subpart A, B, or C. The provisions of this subpart are applicable to that portion of wastewater discharges from a centralized waste treatment facility that results from mixing any combination of treated or untreated waste otherwise subject to subpart A, subpart B, or subpart C of this part only if a facility requests the permit writer or control authority to develop subpart D limitations (or standards) and establishes that it provides equivalent treatment as defined in §437.2(h)."

Fracturing and production wastewaters that are treated at the Ronco facility exhibit the characteristics of more than one subcategory (i.e., a single waste stream contains metals, oils, and organics). In order to ensure that all of the pollutants present in oil and gas wastewaters are properly controlled, all applicable subcategories (A, B, and C) will be applied at the end-of-pipe. This is consistent with the language of the ELG because:

1. The whole waste stream is treated for the three types of waste (metals, oils, and organics). That is, each "portion" of the discharge to which Subpart A, B, or C would apply constitutes the entirety of the treated discharge.
2. Subpart D limitations were not requested by the applicant and equivalent treatment was not demonstrated so the facility must comply with the applicable provisions of the other subparts per 40 CFR 437.40(a).

NSPS from Subparts A, B, and C are shown in the Table 2.

Parameter	Metals – Subpart A		Oils – Subpart B		Organics – Subpart C	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
BOD ₅	—	—	—	—	53.0	163
Oil and Grease	50.2	205	38.0	127	—	—
Total Suspended Solids	11.3	29.6	30.6	74.1	61.3	216
Antimony	0.0312	0.111	—	—	—	—
Arsenic	0.0199	0.0993	1.33	2.95	—	—
Cadmium	0.163	0.782	0.0102	0.0172	—	—
Chromium	0.0522	0.167	0.323	0.746	—	—
Cobalt	0.0703	0.182	18.8	56.4	—	—
Copper	0.216	0.659	0.242	0.500	0.757	0.865
Lead	0.283	1.32	0.160	0.350	—	—
Mercury	0.000246	0.000641	0.00647	0.0172	—	—
Nickel	0.309	0.794	—	—	—	—
Selenium	0.0698	0.176	—	—	—	—
Silver	0.0122	0.0318	—	—	—	—
Tin	0.0367	0.0955	0.165	0.335	—	—
Titanium	0.00612	0.0159	—	—	—	—
Vanadium	0.0518	0.0628	—	—	—	—
Zinc	0.252	0.657	4.50	8.26	0.420	0.497
Acetone	—	—	—	—	7.97	30.2
Acetophenone	—	—	—	—	0.0562	0.114
Bis(2-ethylhexyl) phthalate	—	—	0.101	0.215	—	—
2-Butanone	—	—	—	—	1.85	4.81
Butylbenzyl phthalate	—	—	0.0887	0.188	—	—
Carbazole	—	—	0.276	0.598	—	—
o-Cresol	—	—	—	—	0.561	1.92
p-Cresol	—	—	—	—	0.205	0.698
n-Decane	—	—	0.437	0.948	—	—
Fluoranthene	—	—	0.0268	0.0537	—	—
n-Octadecane	—	—	0.302	0.589	—	—
Phenol	—	—	—	—	1.08	3.65
Pyridine	—	—	—	—	0.182	0.370
2,4,6-Trichlorophenol	—	—	—	—	0.106	0.155

Table 2. NSPS, in mg/L, from 40 CFR 437.14(a) (Subpart A), 437.21 (Subpart B), and 437.31 (Subpart C).

The most stringent limitations from each of the subcategories will be imposed at Outfall 001. Nearly all of the parameters in Table 2 have the most stringent limitations listed under only one subcategory. The two exceptions are copper and zinc. For copper, the most stringent monthly average limit is listed under Subpart A (0.216 mg/L) and the most stringent daily maximum limit is listed under Subpart B (0.500 mg/L). For zinc, the most stringent monthly average limit is listed under Subpart A (0.252 mg/L) and the most stringent daily maximum limit is listed under Subpart C (0.497 mg/L).

25 Pa. Code Chapter 95.10 – Chapter 95.10 was promulgated on August 21, 2010 and describes treatment requirements for new and expanding mass loadings of Total Dissolved Solids (TDS). Certain types of discharges are excluded from Chapter 95.10's treatment requirements including:

"Maximum daily discharge loads of TDS or specific conductivity levels that were authorized by the Department prior to August 21, 2010. These discharge loads will be considered existing mass loadings by the Department." (25 Pa. Code § 95.10(a)(1))

With regard to the definition of the term "authorized," DEP's guidance document "Chapter 95 – Total Dissolved Solids, Statement of Policy Defining the Term "Authorization"," states the following:

"For the purpose of this regulation [Chapter 95.10], any discharge of TDS or specific conductance level permitted, registered, approved, certified or by other means granted permission by DEP prior to August 21, 2010, that contained a detectable level of TDS upon issuance, regardless of whether effluent limits for TDS or specific conductivity were included in the authorization would be exempt from the provisions of this regulation to the maximum level of TDS historically present in that approved discharge."

Shallenberger did not provide any effluent quality estimates with the original permit application. However, the quality of the influent to the treatment facility was provided with the original permit application. Due to a lack of dedicated TDS treatment in the facility's design at the time the original permit application was submitted, it is reasonable to conclude that influent TDS concentrations would also be representative of effluent TDS concentrations. Based on this determination, maximum TDS discharge loadings of up to 328,809 lbs/day (78,800 mg/L TDS for a 0.5 MGD discharge) could be considered "authorized" by the original NPDES permit issued on September 25, 2008. The amendment application, which provides for the future installation of TDS treatment facilities, anticipates a TDS discharge concentration of 500 mg/L after the TDS treatment is operational. A discharge concentration of 500 mg/L of TDS corresponds to a TDS discharge loading of 2,086 lbs/day at the 0.5 MGD discharge flow rate. Based on the TDS loading prior to August 21, 2010, as described above, and the amendment application's new estimate for TDS discharge loading (which assumes the eventual use of TDS treatment), the discharge would be neither new or expanding and would therefore be exempt from Chapter 95.10's treatment requirements.

However, presently, TDS treatment is not installed at the Ronco facility so an effluent TDS concentration of 500 mg/L cannot be achieved. As described previously, in the absence of TDS treatment, it is reasonable to conclude that the influent TDS loading is also representative of the effluent TDS loading. As such, a discharge from the Ronco facility prior to the installation of TDS treatment would exhibit a TDS loading of 1,405,290 lbs/day (337,000 mg/L TDS for a 0.5 MGD discharge) as given on Module 4 of the permit amendment application for the facility's influent wastewater. The difference between this 1,405,290 lbs/day maximum TDS loading and the original permit's 328,809 lbs/day maximum TDS loading constitutes an expansion of TDS loading in the discharge, which subjects the discharge to Chapter 95.10's treatment requirements. Therefore, any discharge of TDS in excess of 328,809 lbs/day from the Ronco facility prior to the installation of TDS treatment (i.e., treatment capable of reducing TDS discharge concentrations to levels authorized prior to August 21, 2010) would ordinarily have to meet Chapter 95.10's treatment requirements. In this case, the Department and Shallenberger have entered an enforceable agreement ("Consent Order and Agreement") allowing Shallenberger some amount of time to design, construct and put into operation the treatment necessary to meet limits of 500 mg/L average and 750 mg/L maximum for TDS and 250 mg/L maximum for sulfate in the facility's discharge. The installation and operation of the treatment will allow Shallenberger to comply with the Chapter 95 requirements.

Additional Technology-based Effluent Limitations – In addition to the effluent limitations assigned based on 40 CFR 437, other technology-based effluent limitations are assigned based on applicable DEP guidance documents and Best Professional Judgment.

Oil and Gas Wastewater Permitting Manual – The Department has written a guidance document for oil and gas well permitting entitled: Oil and Gas Wastewater Permitting Manual ("O&G Permitting Manual") dated October 30, 2001. This manual states that surface water discharges are allowed from oil and gas well operations if the wastewaters are removed to an off-site treatment facility (i.e., a CWT facility) such as the Ronco facility. The O&G Permitting Manual also recommends technology-based effluent limitations for TSS, Oil and Grease, Total Iron, Acidity, and pH as shown in Table 3.

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Total Suspended Solids	30	60
Oil and Grease	15	30
Iron, Total	3.5	7.0
Acidity	Less than Alkalinity	
pH	between 6.0 and 9.0 at all times	

Table 3. Technology-based effluent limitations for oil and gas wastewater treatment facilities.

The O&G Permitting Manual also requires that wastewater treatment facilities accepting oil and gas extraction-related wastewaters include the following components in the treatment system design:

- a. Flow equalization to ensure optimum treatment efficiency of the facilities and minimization of water quality impacts.
- b. Gravity separation and surface skimming, or equivalent technology, for oil and grease removal.
- c. Chemical addition for pH control and metals removal, if necessary (a pH range of 8.0 - 8.5 is desirable).
- d. Aeration, or equivalent technology, for reducing volatile petroleum hydrocarbons and oxidation for metals removal.
- e. Settling (retention) or filtration for removal of solids, including oxidized metals.

These components and/or equivalent technologies are already installed or shall be installed at the Ronco facility as part of this permit amendment and accompanying WQM Part II permit amendment.

Benzene, Ethylbenzene, Toluene, Xylenes, and Total BTEX – In the original water quality protection report, benzene, ethylbenzene, toluene, and xylenes were identified as parameters of concern for discharges from the Ronco facility. At that time, BAT effluent limitations were not imposed for those parameters. Since then the Department has determined that the treatment technologies employed by Centralized Waste Treatment facilities for oil and gas well wastewaters must address these organic constituents. Two common treatment technologies that are used to treat BTEX parameters are granular activated carbon and air stripping units. These technologies, alone or in combination, readily remove organic pollutants at treatment efficiencies of up to 99% as observed for numerous dischargers covered under the Department's PAG-5 General Permit for Petroleum Product Contaminated Groundwater Remediation Systems that utilize such technologies. Table 4 shows the BPJ limits for these additional pollutants of concern that are achievable using the two technologies described above. If BTEX parameters are present in the treatment facility's influent, the limits in Table 4 are intended to be achievable by technologies that may be readily employed.

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Benzene	0.001	0.002
Ethylbenzene	Monitor and Report	Monitor and Report
Toluene	Monitor and Report	Monitor and Report
Xylenes	Monitor and Report	Monitor and Report
Total BTEX	0.1	0.2

Table 4. Additional BPJ technology-based effluent limitations for organic parameters-of-concern.

Metals, Radionuclides, and Miscellaneous Parameters – Other technology-based effluent limitations are considered for parameters of concern not covered by the ELG or O&G Permitting Manual. Strontium and barium were both identified as parameters of concern for this site in supporting documentation for the 2008 NPDES permit. Barium was assigned effluent limitations based on technology considerations and strontium was listed as a parameter to monitor and report. In the Department's April 11, 2009 Permitting Strategy for High-TDS Wastewater Discharges, a 10 mg/L effluent standard was proposed for barium and strontium. Prior to the promulgation of Chapter 95.10, DEP was imposing the 10 mg/L effluent standard for barium and strontium as BPJ of BAT. Chapter 95.10 provides for a limit of 10 mg/L effluent standard for barium and strontium. With this permit amendment, Shallenberger has specifically targeted barium and strontium for removal, not just to satisfy Chapter 95.10 requirements, but also because significant concentrations of those constituents are generally considered to prohibit reuse of the water for fracturing. As such, based on the foregoing, the 10 mg/L barium and strontium effluent standards will be imposed. The 10 mg/L standard is more stringent than the existing limits and monitoring requirements for both barium and strontium so it will be imposed as the monthly average limit for those parameters.

Technology limitations for aluminum and manganese will be imposed because those parameters are present in the influent wastewater to the treatment system and are typically used as indicator pollutants for similar types of pollutants (settleable solids). A maximum dissolved iron limit will also be added in accordance with 95.2(4). Chapter 95.2 also requires that dischargers of oil-bearing industrial wastewaters meet pH limitations between 6.0 and 9.0 standard units and 15 mg/L average and 30 mg/L maximum oil and grease limitations; however, these requirements are already imposed as technology limitations by the O&G Permitting Manual (see Table 3).

Gross alpha, and radium 226/228 have been identified as pollutants of concern for oil and gas flowback wastewaters due to the presence of Naturally-Occurring Radioactive Material (NORM) in the geologic formations where drilling is taking place. No numerical technology limits are recommended for gross alpha and radium 226/228, but monitoring and reporting will be required. It is expected that the aluminum, iron, manganese, barium, and strontium limitations may be readily met with numerous types of conventional metals treatment technologies, including the treatment processes proposed by the applicant (chemical addition for precipitation). The recommended technology limitations and monitoring requirements for aluminum, manganese, dissolved iron, barium, strontium, gross alpha, and radium 226/228 are shown in Table 5. Note that daily maximum effluent limitations for aluminum, manganese, barium, and strontium are calculated as twice the monthly average limit.

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Aluminum	4.0	8.0
Manganese	2.0	4.0
Iron, Dissolved		7.0
Barium	10	20
Strontium	10	20
Gross Alpha	Monitor and Report	Monitor and Report
Radium 226/228	Monitor and Report	Monitor and Report

Table 5. Additional BPJ technology-based effluent limitations for metals and radionuclides.

Flow monitoring will be required in accordance with 25 Pa. Code Chapter 92a.61(d)(1). Also, the roles of acidity and alkalinity as a monitored parameter and limited parameter, respectively, will be reversed so that the limits and monitoring requirements for those parameters are consistent with the O&G Permitting Manual and other CWT facilities receiving oil and gas extraction wastewaters (i.e., acidity will be limited as "less than alkalinity" and alkalinity will be monitored and reported to verify that acidity is less than alkalinity).

In summation, the following technology-based effluent limitations are recommended for Outfall 001. For parameters that are assigned technology-based effluent limitations from multiple sources, the most stringent limitations are imposed.

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Flow (Mgd)	Monitor and Report	
BOD-5 Day	53.0	163
Oil and Grease	15	30
Total Suspended Solids	11.3	29.6
Aluminum	4.0	8.0
Antimony	0.0312	0.111
Arsenic	0.0199	0.0993
Barium	10	20
Cadmium	0.0102	0.0172
Chromium	0.0522	0.167
Cobalt	0.0703	0.182
Copper	0.216	0.500
Iron, Total	3.5	7.0
Iron, Dissolved		7.0
Lead	0.160	0.350
Manganese	2.0	4.0
Mercury	0.000246	0.000641
Nickel	0.309	0.794
Selenium	0.0698	0.176
Silver	0.0122	0.0318
Strontium	10	20

Table 6. Technology-based effluent limitations for Outfall 001.

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Tin	0.0367	0.0955
Titanium	0.00612	0.0159
Vanadium	0.0518	0.0628
Zinc	0.252	0.497
Benzene	0.001	0.002
Ethylbenzene	Monitor and Report	
Toluene	Monitor and Report	
Xylenes	Monitor and Report	
Total BTEX	0.1	0.2
Acetone	7.97	30.2
Acetophenone	0.0562	0.114
2-Butanone	1.85	4.81
o-Cresol	0.561	1.92
p-Cresol	0.205	0.698
Phenol	1.08	3.65
Pyridine	0.182	0.370
2,4,6-Trichlorophenol	0.106	0.155
Acidity	Less than alkalinity	
Alkalinity	Monitor and Report	
Gross Alpha	Monitor and Report	
Radium 226/228	Monitor and Report	
pH	between 6.0 and 9.0 at all times	

Table 6 (continued). Technology-based effluent limitations for Outfall 001.

II

Water Quality Limits

- Section 302(a) of the Federal Clean Water Act (CWA) allows establishment of water quality limits.
- Section 303(a)(1) of the CWA allows States to adopt water quality standards.
- Section 303(d) of the CWA requires States to designate water uses (Chapter 93 of the Department's Rules and Regulations).
- Section 303(c) of the CWA requires States to develop water quality criteria (Chapters 16 and 93).
- PENTOXSD version 2.0c for Windows® is a single discharge, mass-balance water quality modeling program that includes consideration for mixing, first-order decay and other factors to determine recommended water quality-based effluent limitations for toxic substances and several non-toxic substances.

PENTOXSD Analysis – Outfall 001 discharges are evaluated for water quality impacts using PENTOXSD. Parameters selected for analysis include those given technology-based effluent limitations in Section I (except those that are not included in the model) and any other parameters that are present or may be present in the discharge in elevated concentrations. Based on these criteria, the chosen parameters include: acetone, aluminum, antimony, arsenic, barium, benzene, cadmium, chromium (III), chromium (VI), cobalt, copper, total and dissolved iron, ethylbenzene, fluoranthene, lead, manganese, MBAS, mercury, nickel, osmotic pressure, p-cresol, phenol, selenium, silver, strontium, toluene, 2,4,6-trichlorophenol, vanadium, xylene, and zinc. The results of the analysis, included in Section V – References, show that the following water quality-based effluent limitations apply:

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Copper	0.537	0.838

Table 7. Water quality-based effluent limitations for Outfall 001.

TDS and Sulfate – 40 CFR 122.44(d)(1)(i) requires that NPDES permits contain limitations to control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water (40 CFR 122.44(d)(1)(ii)).

For CWT facilities (such as the Ronco facility) that are authorized to discharge treated wastewater from drilling and production of natural gas wells, TDS and sulfate have been identified as parameters of concern as indicated by the limitation of those parameters under 25 Pa. Code Chapter 95.10(b)(3)(iii) for such discharges. TDS and sulfate are important with respect to 40 CFR 122.44(d)(1)(i) because the Monongahela River—the receiving stream for Outfall 001—has exhibited excursions above State water quality standards for TDS and sulfate (see Table 8). To ensure that treated discharges from the Ronco facility do not cause or contribute to TDS and sulfate excursions above numeric criteria for those parameters in the Monongahela River, limitations for TDS and sulfate must be considered.

Parameter	Monthly Average (mg/L)	Maximum (mg/L)
Total Dissolved Solids	500	750
Sulfate	—	250

Table 8. Pennsylvania numeric criteria for TDS and sulfate (Chapter 93.7(a) – Table 3)

TDS criteria are applicable at the point of a surface potable water supply withdrawal (25 Pa. Code Chapter 96.3(d) requires compliance with potable water supply criteria 99% of the time). Although the nearest surface potable water supply withdrawal is located four miles downstream of Outfall 001, a discharge from the Ronco facility may still have an impact at that withdrawal because TDS is a conservative pollutant (i.e., TDS persists in the water column). In the NPDES permit amendment application, TDS concentrations in the Ronco facility's influent were reported as 121,066 mg/L average and 337,000 mg/L maximum based on 22 analyses. Despite an anticipated TDS effluent concentration of 500 mg/L, there are currently no controls for TDS at the Ronco facility. If TDS criteria are already exceeded upstream of Outfall 001 and the Ronco facility discharges TDS at any concentration greater than criteria, then there is a greater likelihood that TDS in the Monongahela River will exceed TDS criteria at the withdrawal.

The likelihood of an excursion above TDS criteria at the potable water supply withdrawal depends on the TDS discharged by the Ronco facility and also on the concentrations of TDS in other discharges and tributaries that enter the Monongahela River between Outfall 001 and the withdrawal. Although the cumulative effect of these additional flows may mitigate a high TDS discharge from the Ronco facility, there are no guarantees that a reduction in TDS would occur (other discharges and tributaries may add to TDS) or that if a reduction would occur, that it would be sufficient to result in compliance with TDS criteria at the withdrawal 99% of the time.

Based on the information presented above, a reasonable potential exists for a discharge from Outfall 001 to contribute to a TDS excursion above Pennsylvania's TDS criteria. Therefore, to ensure that there is no contribution to a TDS excursion, TDS criteria shall be imposed as effluent limitations at Outfall 001.

Sulfate concentrations in the Ronco facility's influent were reported as 251 mg/L average and 5,000 mg/L maximum based on 22 analyses. As with TDS, sulfate is a conservative pollutant for which no treatment is currently available at the Ronco facility. Based on these facts and the factors described above with respect to achieving potable water supply criteria 99% of the time, there is a reasonable potential for a discharge from the Ronco facility to contribute to a sulfate excursion above Pennsylvania's sulfate criterion. Therefore, the sulfate criterion will be imposed as an effluent limitation at Outfall 001 to ensure that the Ronco facility does not contribute to a sulfate excursion.

As discussed earlier, the Consent Order and Agreement between the Department and Shallenberger obligates Shallenberger to construct and operate waste water treatment necessary to meet the 500 mg/L average and 750 mg/L maximum limits for TDS and the 250 mg/L maximum limit for sulfate placed in the NPDES permit. These limits, when met, prevent Shallenberger from causing or contributing to an exceedance of the water quality criteria for TDS and sulfate in the Monongahela River.

In addition to TDS and sulfate limits, DEP will also require monitoring and reporting for chloride and bromide as potentially significant contributors to dissolved solids concentrations.

Osmotic Pressure – Osmotic pressure limitations in the original permit were "set based [on] the reported application concentrations." Since no new limitations were calculated from the PENTOXSD Analysis, the osmotic pressure limitations of the original permit will be retained.

Water quality-based effluent limitations for Outfall 001 are summarized in Table 9.

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Copper	0.537	0.838
Osmotic Pressure (mOs/kg)	1,632	2,546
Total Dissolved Solids	500	750
Sulfate	Monitor and Report	250
Chloride	Monitor and Report	Monitor and Report
Bromide	Monitor and Report	Monitor and Report

Table 9. Water quality-based effluent limitations for Outfall 001.

III

Storm Water

The Department's policy for storm water discharges is to either (1) require that the storm water be uncontaminated, (2) impose "monitor and report," establish effluent goals and require the permittee to submit a Storm Water Pollution Prevention Plan (SWPPP), or (3) impose effluent limits. In all cases a storm water special condition is placed in the permit. Storm water effluent data reported in the application are compared to stream criteria, EPA's Mutli-Sector General Permit "benchmark values," ELGs and other references while considering site specific conditions such as stream flow and location to determine if actual discharge concentrations of various pollutants in storm water warrant further controls. If there is insufficient data available, or if pollutant levels are excessive, monitoring for specific pollutants and/or a SWPPP are required in the permit. Otherwise, the storm water outfalls are simply listed as discharge points. In either case, a special condition is added to the permit to include some of the key components of the Department's General Permit (PAG-03) for Discharges of Stormwater Associated with Industrial Activities.

Shallenberger did not identify any point source discharges of storm water in either the original permit application or in the amendment application so no limitations or monitoring requirements are necessary. However, any discharges of storm water in the form of sheet flow runoff should be managed using appropriate BMPs.

IV

Effluent Limitations and Monitoring Requirements

- Section 301(b)(1)(C) of the Federal Clean Water Act (CWA) allows for the establishment of effluent limits that are more stringent than technology-based limits.
- 40 CFR 125.62 requires States to establish a monitoring program (i.e., sample type, monitoring frequency).
- Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).
- Sampling frequencies are based on Technical Guidance for the Development and Specification of Effluent Limitations
- The requirement to monitor flow is from 25 Pa. Code Chapter 92a.61(d)(1).
- Technology limits in Section I are compared to the water quality limits in Section II. The more stringent of the two will be imposed.

Conclusions and Recommendations

Effluent limitations are imposed based on the most stringent limitations provided by technology (Table 6) and water quality-based (Table 9) considerations. The resultant effluent limitations for Outfall 001 are shown in Table 10, below. In accordance with DEP's Technical Guidance for the Development and Specification of Effluent Limitations (Chapter 6, Table 6-4), the monitoring frequency for all parameters will be 1/week with the exception of flow and pH, which will be measured continuously and daily, respectively. Twenty-four hour composite sampling will be required for all ELG parameters, all metals, gross alpha, and radium 226/228 (Note: Module 3 of the amendment application describes the discharge as a 24-hour/day occurrence). All other parameters will require grab samples. Mass limitations are imposed in accordance with 40 CFR 122.45(f) and are calculated using the most restrictive concentration limits and the design flow of the treatment facility (0.5 MGD).

Parameter	Limit Basis	lbs/day		mg/L		
		Monthly Avg.	Daily Max	Monthly Avg.	Daily Max.	Inst. Max.
Industrial Wastewater						
Flow (MGD)	Regulation	Monitor and Report				
BOD-5 Day	Technology	221	680	53.0	163	
Oil and Grease	Technology	63	130	15	30	
Total Suspended Solids	Technology	47.2	124	11.3	29.6	
Aluminum	Technology	17	33	4.0	8.0	
Antimony	Technology	0.1302	0.463	0.0312	0.111	
Arsenic	Technology	0.0830	0.4143	0.0199	0.0993	
Barium	Technology	42	83	10	20	
Cadmium	Technology	0.0426	0.0718	0.0102	0.0172	
Chromium	Technology	0.2178	0.697	0.0522	0.167	
Cobalt	Technology	0.2933	0.759	0.0703	0.182	
Copper	Technology	0.901	2.09	0.216	0.500	
Iron, Total	Technology	15	29	3.5	7.0	
Iron, Dissolved	Technology		29		7.0	
Lead	Technology	0.668	1.46	0.160	0.350	
Manganese	Technology	8.3	17	2.0	4.0	
Mercury	Technology	0.001026	0.002675	0.000246	0.000641	
Nickel	Technology	1.29	3.31	0.309	0.794	
Selenium	Technology	0.2913	0.734	0.0698	0.176	
Silver	Technology	0.0509	0.1327	0.0122	0.0318	
Strontium	Technology	42	83	10	20	
Tin	Technology	0.1531	0.3985	0.0367	0.0955	
Titanium	Technology	0.02554	0.0663	0.00612	0.0159	

Table 10. Effluent limitations and monitoring requirements for Outfall 001.


Parameter	Limit Basis (Tech/WQ)	lbs/day		mg/l		
		Monthly Avg.	Daily Max	Monthly Avg.	Daily Max.	Inst. Max.
Industrial Wastewater						
Vanadium	Technology	0.2161	0.2620	0.0518	0.0628	
Zinc	Technology	1.05	2.07	0.252	0.497	
Benzene	Technology	0.004	0.008	0.001	0.002	
Ethylbenzene	Technology	Monitor and Report		Monitor and Report		
Toluene	Technology	Monitor and Report		Monitor and Report		
Xylenes	Technology	Monitor and Report		Monitor and Report		
Total BTEX	Technology	0.4	0.8	0.1	0.2	
Acetone	Technology	33.3	126	7.97	30.2	
Acetophenone	Technology	0.2345	0.476	0.0562	0.114	
2-Butanone	Technology	7.72	20.1	1.85	4.81	
o-Cresol	Technology	2.34	8.01	0.561	1.92	
p-Cresol	Technology	0.855	2.91	0.205	0.698	
Phenol	Technology	4.51	15.2	1.08	3.65	
Pyridine	Technology	0.759	1.54	0.182	0.370	
2,4,6-Trichlorophenol	Technology	0.442	0.647	0.106	0.155	
Osmotic Pressure (mOs/kg)	Water Qual.			1,632	2,546	
Total Dissolved Solids	Water Qual.	2,090	3,130	500	750	
Sulfate	Water Qual.	Report	1,040	Report	250	
Chloride	Water Qual.	Monitor and Report		Monitor and Report		
Bromide	BPJ	Monitor and Report		Monitor and Report		
Acidity	Technology	Monitor and Report		Less than alkalinity		
Alkalinity	BPJ	Monitor and Report		Monitor and Report		
Gross Alpha (pCi/L)	BPJ			Monitor and Report		
Radium 226/228 (pCi/L)	BPJ			Monitor and Report		
pH	Technology			not less than 6.0 nor greater than 9.0 s.u.		

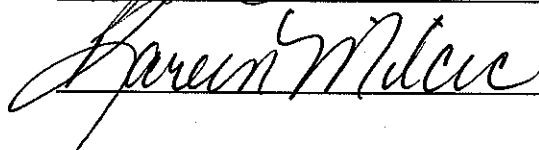
Table 10 (continued). Effluent limitations and monitoring requirements for Outfall 001.

Effluent limitations rationale:

1. Guidelines/References: Oil and Gas Wastewater Permitting Manual; NPDES Permit Writer's Manual
2. Regulations: 25 Pa. Code Chapter(s) 16, 92a, 93, and 95
3. Water quality computer models: PENTOXSD for Windows v2.0c

Approvals:

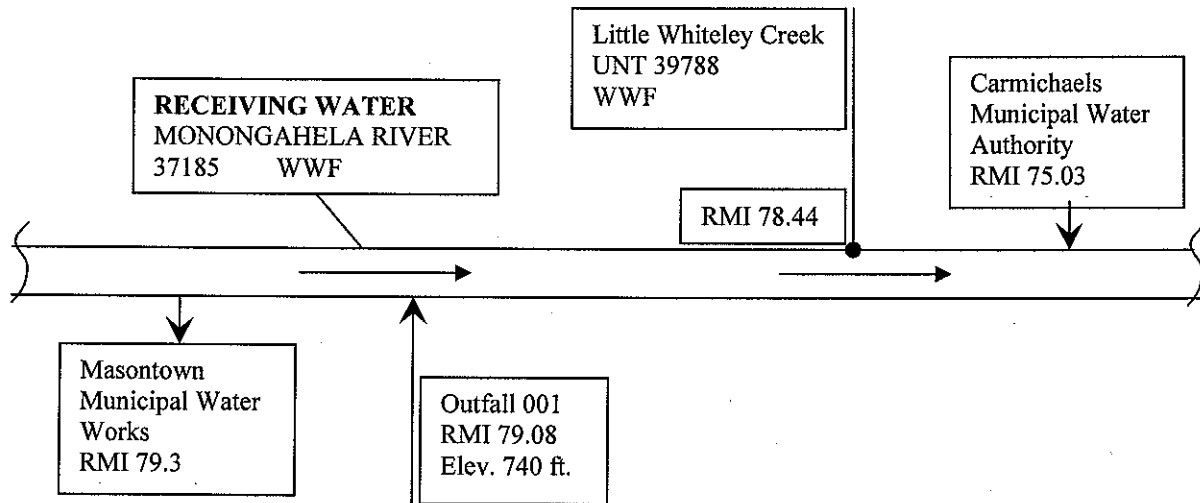
Reviewer: Permits/WQ  Date 2/3/11

Chief: Permits/WQ  Date 2/4/11

V

References

Shallenberger Construction Inc. – Industrial Wastewater Treatment Facility



PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
37185	79.08	763.00	4521.05	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow (cfs)	Stream Flow (cfs)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Rch Velocity (fps)	Rch Trav Time (days)	Tributary		Stream		Analysis		
								Hard (mg/L)	pH	Hard (mg/L)	pH	Hard (mg/L)	pH	
Q7-10	0.11	0	497	0	580	15	0	0	133.3	6.5	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
Outfall 001	'A0253723-A	0	0.5	0	0	0	0	0	0	100	7.11

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
2,4,6-TRICHLOROPHENOL	106	0	0.5	0.5	0	0	0	0	1	0
ACETONE	7970	0	0.5	0.5	0	0	0	0	1	0
ALUMINUM	1440	0	0.5	0.5	159	0	0	0	1	0
ANTIMONY	31.2	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	24	0	0.5	0.5	0	0	0	0	1	0
BARIUM	10000	0	0.5	0.5	48	0	0	0	1	0
BENZENE	2.48	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	10.2	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, III	52.2	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	52.2	0	0.5	0.5	0	0	0	0	1	0
COBALT	70.3	0	0.5	0.5	0	0	0	0	1	0
COPPER	757	0	0.5	0.5	5	0	0	0	1	0
DISSOLVED IRON	7000	0	0.5	0.5	0	0	0	0	1	0
ETHYLBENZENE	100	0	0.5	0.5	0	0	0	0	1	0
FLUORANTHENE	26.8	0	0.5	0.5	0	0	0	0	1	0
LEAD	160	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	2898	0	0.5	0.5	218.7	0	0	0	1	0
MBAS	322.4	0	0.5	0.5	0	0	0	0	1	0
MERCURY	0.246	0	0.5	0.5	0	0	0	0	1	0
NICKEL	34	0	0.5	0.5	8.1	0	0	0	1	0
OSMOTIC PRESSURE	8900	0	0.5	0.5	0	0	0	0	1	0
P-CRESOL	205	0	0.5	0.5	0	0	0	0	1	0
PHENOL	1080	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	69.8	0	0.5	0.5	0	0	0	0	1	0
SILVER	12.2	0	0.5	0.5	0	0	0	0	1	0
STRONTIUM	10000	0	0.5	0.5	0	0	0	0	1	0
TOLUENE	100	0	0.5	0.5	222.7	0	0	0	1	0

TOTAL IRON	3500	0	0.5	0.5	0	0	0	0	1	0
VANADIUM	51.8	0	0.5	0.5	0	0	0	0	1	0
XYLENE	100	0	0.5	0.5	0	0	0	0	1	0
ZINC	1840	0	0.5	0.5	50	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
37185	79.00	762.99	4521.13	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow (cfs)	Stream Flow (cfs)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Rch Velocity (fps)	Rch Trav Time (days)	Tributary		Stream		Analysis	
								Hard (mg/L)	pH	Hard (mg/L)	pH	Hard (mg/L)	pH
Q7-10	0.11	0	497	0	580	15	0	133.3	6.5	0	0	0	0
Qh		0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
		0	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
2,4,6-TRICHLOROPHENOL	0	0	0.5	0.5	0	0	0	0	1	0
ACETONE	0	0	0.5	0.5	0	0	0	0	1	0
ALUMINUM	0	0	0.5	0.5	0	0	0	0	1	0
ANTIMONY	0	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	0	0	0.5	0.5	0	0	0	0	1	0
BARIUM	0	0	0.5	0.5	0	0	0	0	1	0
BENZENE	0	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	0	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, III	0	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	0	0	0.5	0.5	0	0	0	0	1	0
COBALT	0	0	0.5	0.5	0	0	0	0	1	0
COPPER	0	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	0	0	0.5	0.5	0	0	0	0	1	0
ETHYLBENZENE	0	0	0.5	0.5	0	0	0	0	1	0
FLUORANTHENE	0	0	0.5	0.5	0	0	0	0	1	0
LEAD	0	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	0	0	0.5	0.5	0	0	0	0	1	0
MBAS	0	0	0.5	0.5	0	0	0	0	1	0
MERCURY	0	0	0.5	0.5	0	0	0	0	1	0
NICKEL	0	0	0.5	0.5	0	0	0	0	1	0
OSMOTIC PRESSURE	0	0	0.5	0.5	0	0	0	0	1	0
P-CRESOL	0	0	0.5	0.5	0	0	0	0	1	0
PHENOL	0	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	0	0	0.5	0.5	0	0	0	0	1	0
SILVER	0	0	0.5	0.5	0	0	0	0	1	0
STRONTIUM	0	0	0.5	0.5	0	0	0	0	1	0
TOLUENE	0	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	0	0	0.5	0.5	0	0	0	0	1	0
VANADIUM	0	0	0.5	0.5	0	0	0	0	1	0
XYLENE	0	0	0.5	0.5	0	0	0	0	1	0

ZINC

0 0 0.5 0.5 0 0 0 0 1 0

PENTOXSD Analysis Results

Hydrodynamics

<u>SWP Basin</u>		<u>Stream Code:</u>			<u>Stream Name:</u>						
19A		37185			MONONGAHELA RIVER						
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
79.080	497	0	497	0.7735	2.4E-05	15	580	38.6667	0.05722	0.08545	1000+
79.000	497	0	497	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
79.080	1688.90	0	1688.90	0.7735	2.4E-05	25.6821	580	22.5838	0.11343	0.0431	727.101
79.000	1688.90	0	1688.90	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number	AFC						
79.08	Outfall 001	PA0253723-A1	Q7-10:	CCT (min)	15	PMF 0.096	Analysis pH 6.505	Analysis Hardness 132.769	
Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)		
ANTIMONY	0	0	0	0	1100	1100	68998.3		
ARSENIC	0	0	0	0	340	340	21326.75		
CADMIUM	0	0	0	0	2.652	2.846	178.49		
CHROMIUM, III	0	0	0	0	718.64	2274.176	142649.3		
CHROMIUM, VI	0	0	0	0	16	16.293	1022.008		
COPPER	5	0	0	0	17.553	18.284	838.276		
LEAD	0	0	0	0	87.805	117.12	7346.464		
MERCURY	0	0	0	0	1.4	1.647	103.313		
NICKEL	8.1	0	0	0	595.12	596.313	36904.19		
SELENIUM	0	0	0	0	NA	NA	NA		
SILVER	0	0	0	0	5.238	6.162	386.52		
ZINC	50	0	0	0	148.989	152.341	6469.406		
PHENOL	0	0	0	0	NA	NA	NA		
2,4,6-TRICHLOROPHENOL	0	0	0	0	460	460	28853.84		
BENZENE	0	0	0	0	640	640	40144.47		
ETHYLBENZENE	0	0	0	0	2900	2900	181904.6		
TOLUENE	222.7	0	0	0	1700	1700	92887.42		
FLUORANTHENE	0	0	0	0	200	200	12545.15		
ALUMINUM	159	0	0	0	750	750	37229.91		
TOTAL IRON	0	0	0	0	NA	NA	NA		

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
79.08	Outfall 001	PA0253723-A1						
	DISSOLVED IRON	0	0	0	0	NA	NA	NA
	MANGANESE	218.7	0	0	0	NA	NA	NA
	BARIUM	48	0	0	0	21000	21000	1310000
	COBALT	0	0	0	0	95	95	5958.944
	VANADIUM	0	0	0	0	510	510	31990.12
	ACETONE	0	0	0	0	450000	450000	2.822E+07
	P-CRESOL	0	0	0	0	800	800	50180.59
	XYLENE	0	0	0	0	1100	1100	68998.3
	MBAS	0	0	0	0	NA	NA	NA
	OSMOTIC PRESSURE	0	0	0	0	NA	NA	NA
	STRONTIUM	0	0	0	0	NA	NA	NA

CFC

Q7-10:	CCT (min)	720	PMF	0.665	Analysis pH	6.5	Analysis Hardness	133.222
Parameter	Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	
ANTIMONY	0	0	0	0	220	220	94302.65	
ARSENIC	0	0	0	0	150	150	64297.26	
CADMIUM	0	0	0	0	0.3	0.335	143.471	
CHROMIUM, III	0	0	0	0	93.742	109.002	46723.42	
CHROMIUM, VI	0	0	0	0	10	10.395	4455.804	
COPPER	5	0	0	0	11.443	11.92	2971.312	
LEAD	0	0	0	0	3.434	4.584	1964.863	
MERCURY	0	0	0	0	0.77	0.906	388.305	
NICKEL	8.1	0	0	0	66.29	66.49	25036.79	

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number							
79.08	Outfall 001	PA0253723-A1							
	SELENIUM		0	0	0	0	4.6	4.989	2138.593
			Dissolved WQC. Chemical translator of 0.922 applied.						
	SILVER		0	0	0	0	NA	NA	NA
	ZINC		50	0	0	0	150.642	152.781	44107.07
			Dissolved WQC. Chemical translator of 0.986 applied.						
	PHENOL		0	0	0	0	NA	NA	NA
	2,4,6-TRICHLOROPHENOL		0	0	0	0	91	91	39007
	BENZENE		0	0	0	0	130	130	55724.29
	ETHYLBENZENE		0	0	0	0	580	580	248616.1
	TOLUENE		222.7	0	0	0	330	330	46216.67
	FLUORANTHENE		0	0	0	0	40	40	17145.94
	ALUMINUM		159	0	0	0	NA	NA	NA
	TOTAL IRON		0	0	0	0	1500	1500	965300.9
			WQC = 30 day average. PMF = 1.						
	DISSOLVED IRON		0	0	0	0	NA	NA	NA
	MANGANESE		218.7	0	0	0	NA	NA	NA
	BARIUM		48	0	0	0	4100	4100	1730000
	COBALT		0	0	0	0	19	19	8144.319
	VANADIUM		0	0	0	0	100	100	42864.84
	ACETONE		0	0	0	0	86000	86000	3.686E+07
	P-CRESOL		0	0	0	0	160	160	68583.74
	XYLENE		0	0	0	0	210	210	90016.16
	MBAS		0	0	0	0	NA	NA	NA
	OSMOTIC PRESSURE		0	0	0	0	50	50	21432.42
			Units for WLA and Effluent Limit = Milliosmoles per kilogram.						
	STRONTIUM		0	0	0	0	NA	NA	NA

THH

Q7-10: CCT (min) 720 PMF 0.665 Analysis pH NA Analysis Hardness NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
79.08	Outfall 001	PA0253723-A1							
	ANTIMONY		0	0	0	0	5.6	5.6	2400.431
	ARSENIC		0	0	0	0	10	10	4286.484
	CADMIUM		0	0	0	0	NA	NA	NA
	CHROMIUM, III		0	0	0	0	NA	NA	NA
	CHROMIUM, VI		0	0	0	0	NA	NA	NA
	COPPER		5	0	0	0	NA	NA	NA
	LEAD		0	0	0	0	NA	NA	NA
	MERCURY		0	0	0	0	0.05	0.05	21.432
	NICKEL		8.1	0	0	0	610	610	258011.6
	SELENIUM		0	0	0	0	NA	NA	NA
	SILVER		0	0	0	0	NA	NA	NA
	ZINC		50	0	0	0	NA	NA	NA
	PHENOL		0	0	0	0	21000	21000	9000000
	2,4,6-TRICHLOROPHENOL		0	0	0	0	NA	NA	NA
	BENZENE		0	0	0	0	NA	NA	NA
	ETHYLBENZENE		0	0	0	0	530	530	227183.6
	TOLUENE		222.7	0	0	0	1300	1300	462005.6
	FLUORANTHENE		0	0	0	0	130	130	55724.29
	ALUMINUM		159	0	0	0	NA	NA	NA
	TOTAL IRON		0	0	0	0	NA	NA	NA
	DISSOLVED IRON		0	0	0	0	300	300	128594.5

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
79.08	Outfall 001	PA0253723-A1						
	MANGANESE	218.7	0	0	0	1000	1000	335121.7
	BARIUM	48	0	0	0	2400	2400	1000000
	COBALT	0	0	0	0	NA	NA	NA
	VANADIUM	0	0	0	0	NA	NA	NA
	ACETONE	0	0	0	0	3500	3500	1500000
	P-CRESOL	0	0	0	0	NA	NA	NA
	XYLENE	0	0	0	0	70000	70000	3E+07
	MBAS	0	0	0	0	500	500	214324.2
	OSMOTIC PRESSURE	0	0	0	0	NA	NA	NA
	STRONTIUM	0	0	0	0	4200	4200	1800000

CRL

Qh:	CCT (min)	720	PMF	0.995				
	Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY	0	0	0	0	NA	NA	NA
	ARSENIC	0	0	0	0	NA	NA	NA
	CADMIUM	0	0	0	0	NA	NA	NA
	CHROMIUM, III	0	0	0	0	NA	NA	NA
	CHROMIUM, VI	0	0	0	0	NA	NA	NA
	COPPER	5	0	0	0	NA	NA	NA
	LEAD	0	0	0	0	NA	NA	NA
	MERCURY	0	0	0	0	NA	NA	NA
	NICKEL	8.1	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
79.08	Outfall 001	PA0253723-A1						
	SELENIUM	0	0	0	0	NA	NA	NA
	SILVER	0	0	0	0	NA	NA	NA
	ZINC	50	0	0	0	NA	NA	NA
	PHENOL	0	0	0	0	NA	NA	NA
	2,4,6-TRICHLOROPHENOL	0	0	0	0	1.4	1.4	3043.271
	BENZENE	0	0	0	0	1.2	1.2	2608.518
	ETHYLBENZENE	0	0	0	0	NA	NA	NA
	TOLUENE	222.7	0	0	0	NA	NA	NA
	FLUORANTHENE	0	0	0	0	NA	NA	NA
	ALUMINUM	159	0	0	0	NA	NA	NA
	TOTAL IRON	0	0	0	0	NA	NA	NA
	DISSOLVED IRON	0	0	0	0	NA	NA	NA
	MANGANESE	218.7	0	0	0	NA	NA	NA
	BARIUM	48	0	0	0	NA	NA	NA
	COBALT	0	0	0	0	NA	NA	NA
	VANADIUM	0	0	0	0	NA	NA	NA
	ACETONE	0	0	0	0	NA	NA	NA
	P-CRESOL	0	0	0	0	NA	NA	NA
	XYLENE	0	0	0	0	NA	NA	NA
	MBAS	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
79.08	Outfall 001	PA0253723-A1						
	OSMOTIC PRESSURE	0	0	0	0	NA	NA	NA
	STRONTIUM	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin: 19A **Stream Code:** 37185 **Stream Name:** MONONGAHELA RIVER

RMI Name Permit Number Disc Flow (mgd)
 79.08 Outfall 001 PA0253723-A1 0.5000

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent	
				WQBEL (µg/L)	WQBEL Criterion
2,4,6-TRICHLOROPHENOL	106	INPUT	165.377	3043.271	CRL
ACETONE	7970	INPUT	12434.48	1500000	THH
ALUMINIUM	1440	INPUT	2246.632	23862.87	AFC
ANTIMONY	31.2	INPUT	48.677	2400.431	THH
ARSENIC	24	INPUT	37.444	4286.484	THH
BARIUM	10000	INPUT	15601.61	842398.8	AFC
BENZENE	2.48	INPUT	3.869	2608.518	CRL
CADMIUM	10.2	INPUT	15.914	114.405	AFC
CHROMIUM, III	52.2	INPUT	81.44	46723.42	CFC
CHROMIUM, VI	52.2	INPUT	81.44	655.066	AFC
COBALT	70.3	INPUT	109.679	3819.442	AFC
COPPER	537.301	AFC	838.276	537.301	AFC
DISSOLVED IRON	7000	INPUT	10921.13	128594.5	THH
ETHYLBENZENE	100	INPUT	156.016	116593.5	AFC
FLUORANTHENE	26.8	INPUT	41.812	8040.932	AFC
LEAD	160	INPUT	249.626	1964.863	CFC
MANGANESE	2898	INPUT	4521.346	335121.7	THH
MBAS	322.4	INPUT	502.996	214324.2	THH
MERCURY	0.246	INPUT	0.384	21.432	THH
NICKEL	34	INPUT	53.045	23654.09	AFC
OSMOTIC PRESSURE	8900	INPUT	13885.43	21432.42	CFC
P-CRESOL	205	INPUT	319.833	32163.73	AFC
PHENOL	1080	INPUT	1684.974	9000000	THH
SELENIUM	69.8	INPUT	108.899	2138.593	CFC
SILVER	12.2	INPUT	19.034	247.744	AFC
STRONTIUM	10000	INPUT	15601.61	1800000	THH
TOLUENE	100	INPUT	156.016	46216.67	CFC
TOTAL IRON	3500	INPUT	5460.562	965300.9	CFC
VANADIUM	51.8	INPUT	80.816	20504.38	AFC
XYLENE	100	INPUT	156.016	44225.13	AFC
ZINC	1840	INPUT	2870.696	4146.628	AFC