pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0081264**
Facility Type	**Non-Municipal**	APS ID	**830052**
Major / Minor	**Minor**	Authorization ID	**1438197**

Applicant and Facility Information

Applicant Name	**GLP Capital LP**	Facility Name	**Penn National Horse Race Track And Hollywood Casino**
Applicant Address	777 Hollywood Boulevard PO Box 32	Facility Address	777 Hollywood Boulevard
	Grantville, PA 17028-9237		Grantville, PA 17028-9237
Applicant Contact	Alexander Zulli	Facility Contact	Alexander Zulli
Applicant Phone	(717) 943-2991	Facility Phone	(717) 943-2991
Client ID	308852	Site ID	240675
Ch 94 Load Status	Not Overloaded	Municipality	East Hanover Township
Connection Status	No Limitations	County	Dauphin
Date Application Received	April 28, 2023	EPA Waived?	No
Date Application Accepted		If No, Reason	DEP Discretion

Purpose of Application: NPDES permit renewal

Summary of Review

1.0 General Discussion

This fact sheet supports the renewal of an existing NPDES permit for discharge of treated wastewater from Penn National Horse Race Track and Hollywood Casino wastewater treatment plant (WWTP). GLP Capital LP owns, operates, and maintains the WWTP. The facility is located in Grantville, Dauphin County. The WWTP serves Penn National Horse Race Track and Hollywood Casino, Holiday Inn and a property at the intersection of Firehouse Road and Route 443 currently occupied by Lentini's Pizza. The treatment plant is a Sequential Batch Reactor (SBR) with an annual average design capacity of 0.23 MGD and Hydraulic design capacity of 0.331MGD. The organic design capacity of the facility is 993 lbs/day- BOD5. Some of the effluent is diverted to the re-use system to water tracks and for flushing toilet in the casino and the rest is discharge to an unnamed tributary of Swatara Creek classified for warm water fishes (WWF). The existing NPDES permit was issued on October 22, 2018 with an effective date of November 1, 2018 and expiration date of October 31, 2023. The applicant submitted a timely NPDES renewal application to the Department and is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application.

A topographic map showing discharge location is presented in attachment A. and process flow diagram is presented in attachment E.

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	December 11, 2024
		Daniel W. Martin, P.E. / Environmental Engineer Manager	December 13, 2024
		Maria D. Bebenek, P.E. / Program Manager	December 13, 2024

Summary of Review

1.1 Sludge use and disposal description and location(s):

Sludge is digested and thickened in an aerobic tank and hauled out periodically by certified hauler to either Annville Township STP or Derry Township STP or Lemoyne STP for further processing and disposal.

1.2 Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

1.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.23
Latitude	40º 23' 59.36"	Longitude	-76º 39' 5.56"
Quad Name	Grantville	Quad Code	1532
Wastewater Description:	Sewage Effluent, WLA Assigned in EPA-Approved TMDL		
Receiving Waters	Unnamed Tributary to Swatara Creek (WWF)	Stream Code	09756
NHD Com ID	56397199	RMI	2.4
Drainage Area	0.72	Yield (cfs/mi^2)	0.11
Q_{7-10} Flow (cfs)	0.079	Q_{7-10} Basis	USGS Gage Station
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Alterations, Pathogens		
Source(s) of Impairment	Agriculture, Crop Related Agric		
TMDL Status	Final	Name	Unnamed Tributary Swatara Creek

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	PA American Water Company		
PWS Waters	Swatara Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	10

Changes Since Last Permit Issuance: None

1.3.1 Water Supply Intake

The nearest downstream water supply intake is approximately 10 miles downstream by PA American Water Co. on Swatara Creek in South Hanover Twp., Dauphin Co. No impact is expected from this discharge.

2.0 Treatment Facility Summary

Treatment Facility Name: Penn National Horse Race Track And Hollywood Casino - WWTP

WQM Permit No.	Issuance Date
2205403	11/05/2005
2205403 (07-1)	11/26/2007

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Sequencing Batch Reactor W/Sol Removal	Chlorine With Dechlorination	0.23

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.31	993	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

2.1 The treatment system

The treatment system consists of Influent pump station, comminutor, bar screen, 2 SBR tanks, post equalization tank, cloth media filter, 2 chlorine contacts, De-chlorination chamber, cascade aeration, sludge digester and water re-use system. The water reuse system consists of two storage tanks: one at the treatment plant and the other near the racetrack. Alum is added to SBR tanks during react cycle for phosphorus removal. Filtered effluent is disinfected and directed to the reuse tank first and the remaining effluent is dechlorinated and discharged. A chlorine analyzer is used to trigger de-chlor feed system. There is a turbidity meter to check turbidity of the reuse water.

3.0 Existing Effluent Limitations and Monitoring Requirements

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.22	XXX	0.73	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	1/week	24-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	1/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	5.1	XXX	10.2	1/week	24-Hr Composite

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.7	XXX	3.4	1/week	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/week	Calculation
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Sulfate	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Chloride	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Total Nitrogen (lbs) Effluent Net	XXX	5601 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs) Effluent Net	XXX	700 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

3.1 Existing Effluent Limitations and Monitoring Requirements

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD) Prior to Reuse	Report	Report Daily Max	XXX	XXX	XXX	XXX	See Permit	Measured
Flow (MGD) Beneficial Reuse	Report	Report Daily Max	XXX	XXX	XXX	XXX	See Permit	Measured
TRC Prior to Reuse	XXX	XXX	Report Inst Min	Report	Report	XXX	Continuous	Metered
TRC Beneficial Reuse	XXX	XXX	0.02 Inst Min	Report	Report	XXX	Continuous	Metered
CBOD5 Prior to Reuse	XXX	XXX	XXX	10.0	20.0	XXX	1/week	8-Hr Composite
Turbidity (NTU) Prior to Reuse	XXX	XXX	XXX	10	XXX	15	Continuous	Metered
Fecal Coliform (No./100 ml) Beneficial Reuse	XXX	XXX	XXX	2.2 Geo Mean	XXX	23	2/week	Grab

3.2 Compliance History

3.2.1 DMR Data for Outfall 001 (from October 1, 2023 to September 30, 2024)

Parameter	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23
Flow (MGD) Average Monthly	0.053	0.035	0.024	0.021	0.049	0.057	0.077	0.072	0.087	0.085	0.053	0.039
Flow (MGD) Daily Maximum	0.134	0.102	0.1	0.067	0.108	0.144	0.157	0.124	0.142	0.170	0.113	0.074
pH (S.U.) Minimum	6.8	6.9	6.7	6.4	6.0	6.2	6.1	6.1	6.7	6.9	6.8	6.3
pH (S.U.) Maximum	7.9	8.5	8.3	8.4	7.8	8.1	7.6	7.8	7.6	7.8	7.7	8.0
DO (mg/L) Minimum	5.2	5.4	6.3	5.2	5.4	5.6	7.3	7.4	7.3	6.3	6.1	5.2
TRC (mg/L) Average Monthly	0.09	0.14	0.06	0.04	0.03	0.03	0.05	0.02	0.03	0.04	0.03	0.06
TRC (mg/L) Instantaneous Maximum	0.75	0.58	0.39	0.23	0.18	0.12	0.45	0.11	0.09	0.27	0.12	0.60
CBOD5 (mg/L) Average Monthly	< 7	< 2	< 2	< 3	< 4	< 3	< 2	< 3	< 2	< 2.4	< 2.4	< 2
TSS (mg/L) Average Monthly	1	2	2	1	2	1	2	2	1	2	1	1
Total Dissolved Solids (mg/L) Daily Maximum	896	710	684	692	676	570	696	892	526	476	676	966
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 3	< 1	< 1	< 1	< 1	< 1	< 1.0	< 1.0	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	2	1414	4	< 1	2	1	1	2	1	1	< 1
Nitrate-Nitrite (mg/L) Average Monthly	< 8.1	< 10.5	< 10.6	< 9.1	< 12.4	< 10.1	< 12.8	< 18.7	< 13.2	< 11.3	< 17.2	< 24.7
Nitrate-Nitrite (lbs) Total Monthly	< 97	< 107	< 106	< 28	< 119	< 130	< 185	< 340	< 277	< 219	< 138	< 171
Total Nitrogen (mg/L) Average Monthly	< 8.58	< 11.53	< 12.6	< 9.6	< 12.94	< 10.6	< 13.3	< 19.2	< 13.7	< 11.8	< 17.7	< 25.2

Total Nitrogen (lbs) Effluent Net Total Monthly	< 103	< 126	< 126	< 29	< 124	< 138	< 194	< 349	< 288	< 229	< 142	< 174
Total Nitrogen (lbs) Total Monthly	< 103	< 126	< 126	< 29	< 124	< 138	< 194	< 349	< 288	< 229	< 142	< 174
Ammonia (mg/L) Average Monthly	< 0.10	< 0.24	< 1.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (lbs) Total Monthly	< 1	< 5	< 15	< 0.3	< 1	< 2	< 2	< 2	< 2	< 2	< 0.9	< 0.7
TKN (mg/L) Average Monthly	< 0.53	< 1.03	< 2	< 0.5	< 0.52	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TKN (lbs) Total Monthly	6	< 20	< 20	< 1	< 5	< 8	< 8	< 9	< 10	< 10	< 4	< 3
Total Phosphorus (mg/L) Average Monthly	0.4	0.5	0.6	0.6	0.6	0.3	0.3	0.2	0.3	< 0.3	0.4	0.4
Total Phosphorus (lbs) Effluent Net Total Monthly	4	6	4	2	6	5	5	4	6	6	3	3
Total Phosphorus (lbs) Total Monthly	4	6	4	2	6	5	5	4	6	6	3	3
Sulfate (mg/L) Daily Maximum	390	60	70	73	90	80	55	120	50	45	60	120
Chloride (mg/L) Daily Maximum	180	220	168	200	280	130	220	230	170	170	250	270

3.2.2 DMR Data for Outfall 002 (from October 1, 2023 to September 30, 2024)

Parameter	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23
Flow (MGD) Beneficial Reuse Average Monthly	0.009	0.01	0.011	0.005	0.014	0.007	0.008	0.008	0.007	0.008	0.008	0.009
Flow (MGD) Prior to Reuse Average Monthly	0.0485	0.0511	0.0654	0.0615	0.043	0.041	0.023	0.0124	0.013	0.018	0.31	0.035
Flow (MGD) Beneficial Reuse Daily Maximum	0.019	0.022	0.09	0.016	0.18	0.014	0.013	0.017	0.016	0.02	0.014	0.015
Flow (MGD) Prior to Reuse Daily Maximum	0.182	0.1085	0.2119	0.111	0.125	0.107	0.074	0.08	0.043	0.059	0.059	0.085

TRC (mg/L) Beneficial Reuse Instantaneous Minimum	0.17	0.08	0.20	0.30	< 0.01	0.20	0.36	1.20	1.37	1.54	1.12	0.23
TRC (mg/L) Prior to Reuse Instantaneous Minimum	0.67	0.12	0.20	0.25	0.21	0.37	0.7	1.46	0.84	0.97	1.05	0.96
TRC (mg/L) Beneficial Reuse Average Monthly	1.17	0.87	1.22	1.29	< 0.93	1	1.51	1.97	3.58	2.05	2.12	0.78
TRC (mg/L) Prior to Reuse Average Monthly	1.78	0.96	1.19	0.97	0.98	1.0	1.38	2.74	1.99	1.78	1.94	1.65
TRC (mg/L) Beneficial Reuse Daily Maximum	2.2	3.01	4.81	5.05	4.86	2.31	5.00	2.20	5.10	2.66	3.55	1.63
TRC (mg/L) Prior to Reuse Daily Maximum	2.2	2.11	2.20	2.20	2.20	2.19	2.20	5.0	2.20	2.20	2.2	2.2
CBOD5 (mg/L) Prior to Reuse Average Monthly	< 7.00	< 2.0	< 2.0	< 3.0	< 4.0	< 3.0	< 2.0	< 3.0	< 2.0	< 2.4	< 2.0	< 2.0
CBOD5 (mg/L) Prior to Reuse Daily Maximum	19.8	2.7	2.6	3.7	7.5	4.0	< 2.4	4.3	< 2.4	< 2.4	2.4	< 2.4
Turbidity (NTU) Prior to Reuse Average Monthly	1.27	1.20	1.67	4.54	3.66	7.03	1.59	1.36	2.13	1.47	2.07	1.52
Turbidity (NTU) Prior to Reuse Instantaneous Maximum	1.54	1.73	3.98	9.06	8.03	25.8	2.81	2.63	3.92	1.91	2.87	3.09
Fecal Coliform (No./100 ml) Beneficial Reuse Geometric Mean	< 1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fecal Coliform (No./100 ml) Beneficial Reuse Instantaneous Maximum	< 1.00	1	19	< 1.0	< 1.0	1	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

3.2.3 Effluent Violations for Outfall 001, from: November 1, 2023 To: September 30, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	09/30/24	IMAX	0.75	mg/L	.73	mg/L
Fecal Coliform	07/31/24	IMAX	1414	No./100 ml	1000	No./100 ml

3.2.4 Effluent Violations for Outfall 002, from: November 1, 2023 To: September 30, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	05/31/24	Inst Min	< 0.01	mg/L	.02	mg/L
Turbidity	04/30/24	IMAX	25.8	NTU	15	NTU

3.2.5 Summary of DMRs:

DMRs review for the facility for the last 12 months of operation, presented on the table above in section 3.2.1 indicates permit limits have been met consistently. Two effluent violations for TRC, and one each for Fecal Coliform and Turbidity were reported for the past 12-month of operation presented is sections 3.23 and 3.2.4 above. The violations appear to be operation related.

3.2.6 Summary of Inspections:

Th facility was inspected a couple of times during the previous permit cycle. No effluent violations noted during inspections. The treatment facility is operated and maintained well. There is an opened violation since 06/21/2022 due to effluent limit violations. The facility's inability to resolve the violations in a timely manner delayed the renewal of the permit. The permittee has taken steps towards resoving the violations.

4.0 Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .23
Latitude 40º 23' 59.19" **Longitude** -76º 39' 5.51"
Wastewater Description: Sewage Effluent

4.1 Basis for Effluent Limitations

In general, the Clean Water Act (CWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

4.2 Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments: Average weekly limitations are not applicable to this discharge

4.3 Water Quality-Based Limitations

4.3.1 WQM 7.0 Stream Model

WQM 7.0 is a steady state model that simplifies many natural processes into a reach-by-reach simulation is used for water quality analysis. DEP utilizes the model to establish appropriate effluent limits for $CBOD_5$, NH_3-N and DO in permits. The model simulates mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria and also simulates mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits.

4.3.2 Receiving Stream

The receiving stream is UNT UNT Swatara Creek. According to 25 PA § 93.9o, this stream is protected for Warm Water Fishes (WWF). It is located in Drainage List O and State Watershed 7-D. It is assigned a stream code 09756. The secondary receiving stream is UNT Swatara Creek which is also protected for WWF. According to the Department's Integrated Water Quality Monitoring and Assessment Report, this stream is impaired and

not attaining some of its designated uses. A TMDL was finalized in 2003 which is discussed further under 303d listed stream section of this report.

4.3.3 Streamflows

Streamflows for the water quality analysis were taken from the nearby USGS gauging station No 01573500 on Manada Creek. The drainage area of the gage is 14.2 sq.mi. The yield at the gage are:

- $Q_{7\text{-}10}$ =(1.51)/(14.2) = 0.106 cfs/sq.mi.
- $Q_{30\text{-}10}$ / $Q_{7\text{-}10}$ = 1.23
- $Q_{1\text{-}10}$ / $Q_{7\text{-}10}$ = 0.89

The drainage area at the discharge taken from previous protection report = 0.72 mi^2

The Q7-10 at the discharge = 0.72 mi^2x .0.11 $ft^3/s/ mi^2$ = 0.079ft^3/s.

4.3.4 NH_3N Calculations

NH_3N calculations will be based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the instream NH_3N criteria used in modelling the stream:

- STP pH = 6.8 (DMR mean)
- STP Temperature = 25 ° C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20 ° C (Default)
- Background NH_3-N = 0.0 (Default)

4.3.5 $CBOD_5$

The attached results of the WQM 7.0 stream model presented in attachment B indicates a limitation of 25 mg/L CBOD5 as a monthly average limit (AML) and 50 mg/L as instantaneous maximum (IMAX) is adequate to protect the water quality of the stream. These limits are consistent with the existing permit and the STP has been complying with the limitations. Therefore, a limit of 25mg/L AML, and 50 mg/L IMAX is again recommended for this permit cycle.

4.3.6 NH_3-N

The attached results of the WQM 7.0 stream model (attachment B) indicates also that a summer limit of 1.9 mg/L NH_3-N as a monthly average is necessary to protect the aquatic life from toxicity effects. This limit is not significantly different from the existing limit of 1.7mg/L, therefore the existing limit will remain the permit. DMR indicate facility is meeting this limit. The winter month limitation is 3 times the summer limit 5.1mg/L.

4.3.7 Dissolved Oxygen

The existing permit contains a limit of 5 mg/L for Dissolved Oxygen (DO). DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001, 10/97) suggests that either the adopted minimum stream D.O. criteria for the receiving stream or the effluent level determined through water quality modeling be used for the limit. Since the WQM 7.0 model was run using a minimum D.O. of 5.0 mg/L, this limit will be continued in the renewed permit with a daily monitoring requirement.

4.3.8 Total Phosphorus

The existing permit has an average monthly limit of 1mg/L and 700lbs/year based on TMDL and Chesapeake Bay requirements and will be continued in the current permit renewal.

4.3.9 Chesapeake Bay Strategy

The facility is non-significant discharger in the Chesapeake Bay watershed and was one of the few facilities that voluntarily agreed to receive an annual cap load based on 2010 flows at 8 mg/L Total Nitrogen (TN) and 1 mg/L Total Phosphorus (TP). The facility's 2010 flow was 0.23MGD which resulted in annual TN load of 5,601lbs/year and annual TP load 700 lbs/year. The annual loads will be continued in the current permit. The annual TP load of 700 lbs/year is also the WLA for the facility in the 2003 EPA approved TMDL for sub basin1 of UNT(09749).See section 5.5 for further information on TMDL. The facility is not allowed to trade credits to comply with the annual load requirement. The facility is in compliance with the load requirements.

4.3.10 Total Residual Chlorine

The attached TRC calculation results (attachment C) utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92a, Section 92a.48 (b) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The permittee conducted site specific chlorine demand study in 2012 which used to revise the permit in 2013. The study conducted by the permittee established stream chlorine demand of 0.55 and a discharge chlorine demand of 0.34. The results were used as input to recalculate TRC. The attached results indicate a water quality limit of 0.22 mg/L and 0.73 mg/L IMAX would be needed to prevent toxicity concerns. The limit is consistent with the existing permit and the facility has the capability to meet the limit.

4.3.11 Toxics

A reasonable potential (RP) analysis was done for pollutant submitted with the application. All pollutants that were presented in the application sampling data were entered into the Toxics Management Spreadsheet (TMS) to calculate WQBELs. WQBELs recommended by the TMS are presented in attachment D. The discharge levels for all parameters analyzed were well below DEP's target quantitation limits (TQL) and calculated WQBELs, therefore no limitation or monitoring is required in the permit.

The recommended limits follow the logic presented in DEPs SOP, to establish limits in the permit where the maximum reported concentration exceeds 50% of the WQBEL, or for non-conservative pollutants to establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL, or to establish monitoring requirements for conservative pollutants where the maximum reported concentration is between 10% - 50% of the WQBEL.

4.3.12 TDS, Chloride and Sulfate

The existing monitoring requirement for Total Dissolved Solids (TDS), Chloride and Sulfate, has been discontinued in the permit. Adequate data has been collected for this facility and does not appear they are pollutants of concern that needed further analysis. The rational for monitoring TDS, Chloride and Sulfate presented below has been discontinued and reasonable potential for these pollutants are conducted using the Toxics Management Spreadsheet presented in section 4.3.11.

Rational for monitoring TDS, Chloride and Sulfate: Total Dissolved Solids (TDS) and its major constituents including sulfate, chloride, and bromide have emerged as pollutants of concern in several major watersheds in the Commonwealth. The conservative nature of these solids allows them to accumulate in surface waters and

they may remain a concern even if the immediate downstream public water supply is not directly impacted. Bromide has been linked to formation of disinfection byproducts at increased levels in public water systems. In addition, as a consequence of actions associated with Triennial Review 13, the Environmental Quality Board has directed DEP to collect additional data related to sulfate, chloride, and 1,4-dioxane. Furthermore, in an August 2013 letter from Jon Capacasa of the Region III Water Protection Program to DEP, EPA has expressed concern related to bromide and the importance of monitoring all point sources for bromide when it may be present.

Based on these concerns and under the authority of §92a.61, DEP has determined it should implement increased monitoring in NPDES permits for these parameters: TDS, sulfate, chloride, bromide, and 1,4-dioxane.

This monitoring initiative applies to all programs within DEP that have been delegated the responsibilities of implementing the NPDES program. The increased monitoring applies to all point source discharges, except that DEP may determine that certain sources are too small to warrant routine monitoring. All other permit actions related to these pollutants, including any water quality-based effluent limits (WQBELs) or treatment requirements, are unaffected by this initiative.

Analytical costs for TDS, sulfate, chloride, and bromide are nominal. Higher analytical costs may apply for 1,4-dioxane, but relatively few point source discharges will be affected. NPDES permit application forms have been or will be revised to ensure that TDS, sulfate, chloride, bromide, and 1,4-dioxane are sampled and reported to DEP as part of the permit application process where appropriate.

For point source discharges and upon issuance or reissuance of an individual NPDES permit:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 MGD or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/L.

4.3.13 Fecal Coliform and E. Coli

The existing Fecal Coliform limit is consistent with the technology limits recommended in 92a.47(a)(4) and (a)(5) and will remain in the permit. In March of 2021, EPA approved DEP's Triennial Review of Water Quality Standards, which included a new swimming season criterion for E. coli. As a result, DEP is including monitoring requirements for E. Coli in new and renewed sewage permits above 2000gpd. Monitoring frequency is based on annual average flow as follows: 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD and 1/year for design flows of 0.002 and < 0.05 MGD. The facility discharges 0.23MGD and requires 1/quarter monitoring as included in the permit.

4.3.14 Stormwater:

The existing permit has three storm water outfalls identified as 003(Lat:40°24'02.6**"**, Long:76°39'21.6") located near the entrance to the horse barns at the intersection of Mountain Road and Firehouse Road and receives flow from the horse barn areas, 004(Lat:40°23'56.8**"**, Long:76°39'16.2") receives flow from the manure storage and waste sand storage area through the storm water basin located at the entrance of the access road to the wastewater treatment plant and 005(Lat:40°23'42.6**"**, Long:76°39'08.7") receives flow from the wetland near the tracks and the reuse water storage tank area and located on the access road to sand screening area. These outfalls receiving stormwater runoff from the site have been included in Part C of the permit with Best Management Practices (BMPs) requirements. Erosion at the site is visible with sediment/gravel washout and deposited in the stream. The facility installed silt fences and sediment filter socks at certain areas to curb sediment washout into the stream and to slow down runoff. These Erosion and sediment control measures should continue to be implemented and inspected routinely to ensure they are functioning well, repaired and replace if needed. The following site specific BMPs added to the general BMP requirements for the site will remain in the current current as follows:

In addition to general BMPs associated with sewage discharge, the permittee shall implement the following BMPs:

- Routine inspection of silt fences and filter socks to ensure continuous functionality and effectiveness in controlling erosion and sediment deposition at the site.
- Contain sand in the sand screening area, where appropriate to avoid sand washout into the stream.
- Minimize raw water usage for horse washing; recycle wash water to the maximum extent practicable.
- Limit use of pesticides, insecticides and rodenticides to the maximum extent possible; apply during dry conditions; investigate non (or least) hazardous alternatives.
- Wherever possible, enclose/cover animal holding areas; install run-on controls and collect and treat run-off, as appropriate.
- Practice good housekeeping by containing and promptly managing and directing horse wash water to the waste water treatment plant for treatment

4.4 Reuse System and Monitoring Requirement

The facility reuses portion of the effluent for toilet flushing (dyed blue) in the casino and grandstand and for watering of the racetrack and for field irrigation. The water reuse system monitoring requirements are outlined in the Water Quality Management (WQM) Permit No. 2205403 issued on 11/26/2007 and was transferred to GLP on 1/13/2014. A special condition in the NPDES permit requires the reuse conditions in the WQM permit to be reevaluated concurrently and changed during each NPDES permit renewal if necessary. A review of the conditions in the WQM and operations did not necessitate any change in conditions at this time. Outfall 002 is created and linked to the NPDES permit renewal authorization for reporting of the parameters required by the WQM permit for the reuse system using the Department's eDMR system. The monitoring requirements are shown on the table below:

Discharge Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)			Minimum Measurement Frequency	Required Sample Type
	Monthly Average	Weekly Average	Minimum	Monthly Average	Instantaneous Maximum		
Flow (mgd) (Flushing)	Report	Report Daily Max	XXX	XXX	XXX	Pump Rate/Time	Measured
Flow (mgd) (Watering)	Report	Report Daily Max	XXX	XXX	XXX	Pump Rate/Time	Measured

$CBOD_5$	XXX	XXX	XXX	<10	20	1/Week	24-hr comp
Turbidity	XXX	XXX	XXX	<10	20	continuous	24-hr comp
Fecal Coliform	XXX	XXX	XXX	<2.2	23	2/Week	Grab
TRC (From WWTP Cl Tank)	XXX	XXX	Report	Report	Report	continuous	Grab
TRC (Flushing System)	XXX	XXX	>0.02	Report	Report	continuous	24-hr comp

5.0 Other Requirements

5.1The permit contains the following special conditions:

Stormwater Prohibition, Approval Contingencies, Proper Waste/solids Management, Chlorine minimization and Batch discharge condition.

5.2 Anti-backsliding

The existing monitoring requirement for TDS, Chloride, and Sulfate, has been discontinued in the permit. This is consistent with provisions for permit relaxation under CWA section 303(d)(4)(B). The discharge is in a stream segment of UNT of Swatara Creek which is designated as impaired due to pathogens and agricultural activities. Eliminating the monitoring requirement for TDS, Chlorite and Sulfate is not expected to degrade receiving waters and is consistent with PA's antidegradation policy.

5.3 Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

5.4 Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

5.5 303d listed stream

The discharge is located on a 303d listed stream segment. A TMDL was finalized for sub basins 1 and 2 for UNT of Swatara Creek (09749) on March 1, 2003 and published in the PA bulletin on May 15, 2004. This facility is located in sub basin 1 and the TMDL allocated an annual load of 700lbs/year of Total Phosphorus to this facility. The facility has been complying with this requirement in the previous permits.

5.7 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water

quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

5.8 Effluent Monitoring Frequency

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

6.0 Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs) Effluent Net	XXX	5601 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs) Effluent Net	XXX	700 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: At Outfall 001

6.1 Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.22	XXX	0.73	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	1/week	24-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	5.1	XXX	10.2	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.7	XXX	3.4	1/week	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/week	Calculation
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: At Outfall 001

6.2 Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

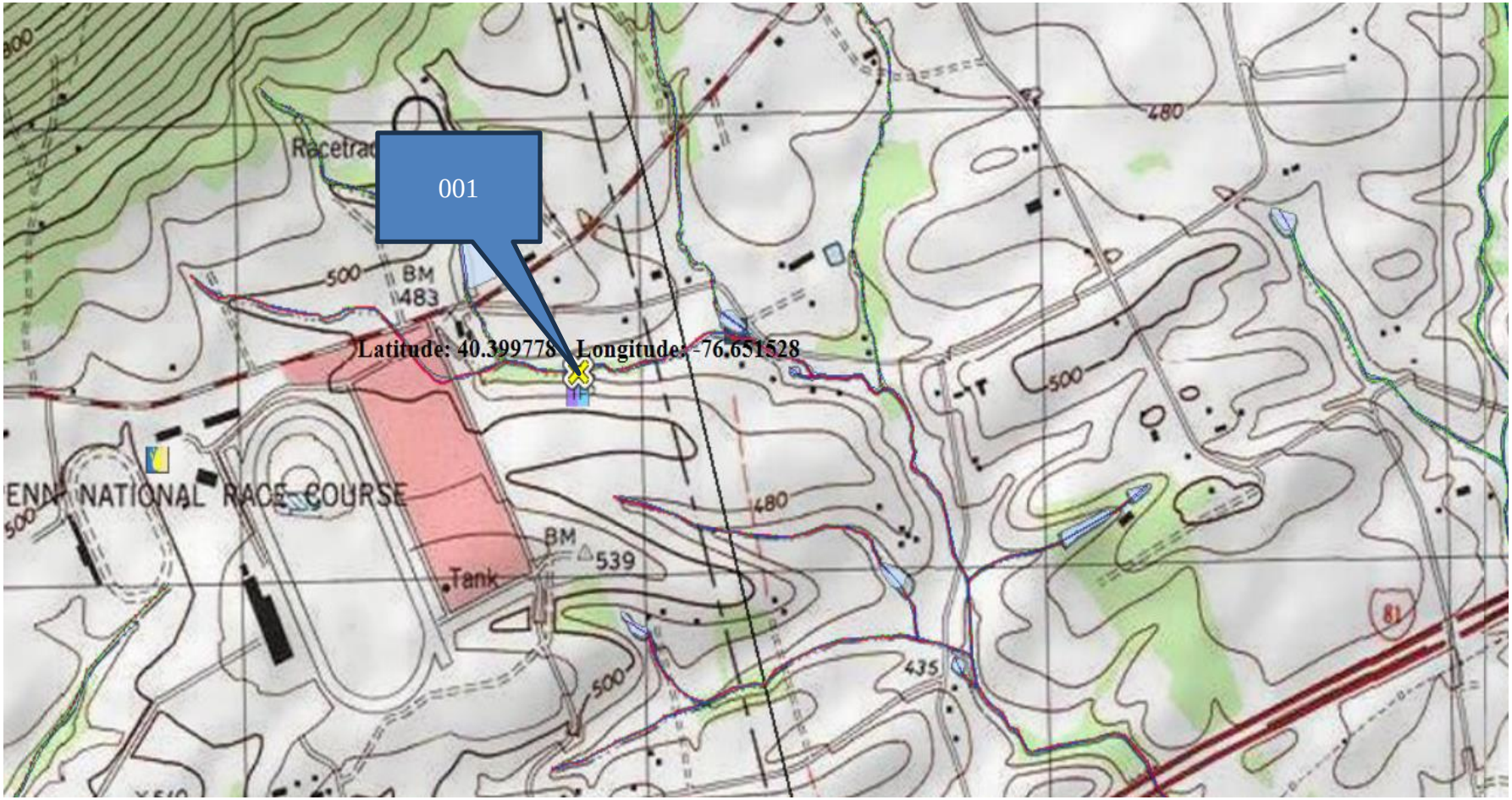
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD) Prior to Reuse	Report	Report Daily Max	XXX	XXX	XXX	XXX	See Permit	Measured
Flow (MGD) Beneficial Reuse	Report	Report Daily Max	XXX	XXX	XXX	XXX	See Permit	Measured
TRC Prior to Reuse	XXX	XXX	Report Inst Min	Report	Report	XXX	Continuous	Metered
TRC Beneficial Reuse	XXX	XXX	0.02 Inst Min	Report	Report	XXX	Continuous	Metered
CBOD5 Prior to Reuse	XXX	XXX	XXX	10.0	20.0	XXX	1/week	8-Hr Composite
Turbidity (NTU) Prior to Reuse	XXX	XXX	XXX	10	XXX	15	Continuous	Metered
Fecal Coliform (No./100 ml) Beneficial Reuse	XXX	XXX	XXX	2.2 Geo Mean	XXX	23	2/week	Grab

Compliance Sampling Location: At Outfall 001

7.0 Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment **C**)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☒	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☒	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Establishing Effluent limitations for individual sewage permit.
☐	Other:

Attachments

A. Topographical Map



B. WQM Model Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07D	9756	Trib 09756 of Swatara Creek

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
2.400	Hollywood Casin	PA0081264	0.230	CBOD5	25		
				NH3-N	1.97	3.94	
				Dissolved Oxygen			5

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07D	9756	Trib 09756 of Swatara Creek	2.400	450.00	0.72	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.110	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	20.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Hollywood Casin	PA0081264	0.2300	0.2300	0.2300	0.000	25.00	6.80

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07D	9756	Trib 09756 of Swatara Creek	1.400	405.00	0.75	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.110	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07D	9756	Trib 09756 of Swatara Creek

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
2.400	0.08	0.00	0.08	.3558	0.00852	.448	6.56	14.66	0.15	0.413	24.09	6.83
Q1-10 Flow												
2.400	0.07	0.00	0.07	.3558	0.00852	NA	NA	NA	0.15	0.417	24.17	6.83
Q30-10 Flow												
2.400	0.10	0.00	0.10	.3558	0.00852	NA	NA	NA	0.15	0.403	23.93	6.84

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.89	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.23	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07D	9756	Trib 09756 of Swatara Creek

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.400	Hollywood Casin	13.55	16.24	13.55	16.24	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.400	Hollywood Casin	1.55	1.97	1.55	1.97	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.40	Hollywood Casin	25	25	1.97	1.97	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07D	9756	Trib 09756 of Swatara Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.400	0.230	24.090	6.830
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
6.561	0.448	14.657	0.148
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
20.81	1.461	1.61	0.959
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.590	29.419	Owens	5
Reach Travel Time (days)			
0.413			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.041	19.35	1.55	6.22
0.083	17.99	1.49	6.50
0.124	16.73	1.43	6.67
0.165	15.56	1.37	6.80
0.206	14.47	1.32	6.92
0.248	13.45	1.27	7.03
0.289	12.51	1.22	7.12
0.330	11.63	1.17	7.22
0.371	10.81	1.13	7.30
0.413	10.05	1.08	7.38

C. TRC Calculations Results

1A	B	C	D	E	F	G
2	TRC EVALUATION			Enter Facility Name in E3		
3	Input appropriate values in B4:B8 and E4:E7					
4	0.079	= Q stream (cfs)		0.5	= CV Daily	
5	0.23	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.55	= Chlorine Demand of Strear		1	= CFC_Partial Mix Factor	
8	0.34	= Chlorine Demand of Discha		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
		= % Factor of Safety (FOS)			=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 0.485		1.3.2.iii	WLA cfc = 0.476
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 0.181		5.1d	LTA_cfc = 0.276
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.223		AFC	
18			INST MAX LIMIT (mg/l) = 0.728			

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)

D. Toxics Management Spreadsheet

Discharge Information

Instructions | Discharge | Stream

Facility: **Hollywood Casino** NPDES Permit No.: **PA0081264** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Sewage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.23	100	6.8						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		1292									
	Chloride (PWS)	mg/L		550									
	Bromide	mg/L		0.31									
	Sulfate (PWS)	mg/L		190									
	Fluoride (PWS)	mg/L	<										
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L	<										
	Total Barium	µg/L											
	Total Beryllium	µg/L	<										
	Total Boron	µg/L											
	Total Cadmium	µg/L	<										
	Total Chromium (III)	µg/L	<										
	Hexavalent Chromium	µg/L	<										
	Total Cobalt	µg/L	<										
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L	<										
	Total Manganese	µg/L											
	Total Mercury	µg/L	<										
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L	<										
	Total Selenium	µg/L	<										
	Total Silver	µg/L	<										
	Total Thallium	µg/L	<										
	Total Zinc	µg/L	<										
	Total Molybdenum	µg/L											

Stream / Surface Water Information

Hollywood Casino , NPDES Permit No. PA0081264, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **UNT to Swatara Creek** No. Reaches to Model: 1

(●) Statewide Criteria ( ) Great Lakes Criteria ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	009756	2.4	450	0.72			Yes
End of Reach 1	009756	1.4	405	0.75			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	2.4	0.11										100	7		
End of Reach 1	1.4	0.11													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	2.4														
End of Reach 1	1.4														

Model Results

Hollywood Casino , NPDES Permit No. PA0081264, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ ***AFC*** CCT (min): 0.071 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 6.83

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 0.071 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 6.83

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 0.071 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	

☑ ***CRL*** CCT (min): 0.537 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable

E. Process Flow Diagram