pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0096989**
Facility Type	**Non-Municipal**	APS ID	**1058667**
Major / Minor	**Minor**	Authorization ID	**1388222**

Applicant and Facility Information

Applicant Name	**Kuntz Assoc Inc.**	Facility Name	**Sylvan Acres MHP**
Applicant Address	4036 Route 217 Highway N	Facility Address	Hemlock Road
	Blairsville, PA 15717-5608		Indiana, PA 15701
Applicant Contact	Gregory Kuntz	Facility Contact	
Applicant Phone	(724) 349-5500	Facility Phone	
Applicant E Mail	kuntzrentals@gmail.com	Facility E Mail	
Client ID	209868	Site ID	248896
Municipality	Armstrong Township	County	Indiana
Ch 94 Load Status	Not Overloaded	Connection Status	
SIC Description	**Fin Ins & Real Est - Dwell Op Expt Apt**	SIC code	6514
SIC Description	**Trans. & Utilities - Sewerage Systems**	SIC code	4952
Date Application Received	March 4, 2022	EPA Waived?	Yes
Date Application Accepted	March 22, 2022	If No, Reason	

Purpose of Application: NPDES Renewal

Summary of Review

No listed inspections, violations, or enforcement actions. Effluent violations for ammonia-nitrogen in July 2022 and fecal coliform in September have been reported. *There is one open violation in WMS as of 4/17/2023 for failure to use a certified laboratory. OK to draft per operations 4/18/2023 CWY*

The applicant has request relaxation of their water quality based TRC limitations. Additional in-stream data has been requested to verify basic modelling assumptions. No additional information has been submitted.

Previous year sludge production 0.75-dry tons. Conveyed by J+D Septic to Eastern Armstrong County Municipal Authority.

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.

Approve	Deny	Signatures	Date
X		*William H. Mentzer* William H. Mentzer, P.E. Environmental Engineering Specialist	March 8, 2023
X		Chad W. Yurisic Chad W. Yurisic, P.E. Environmental Engineer Manager	4/18/2023

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.025
Latitude DP	40º 36' 32.00"	Longitude DP	-79º 14' 0.00"
Latitude NHD	40º 36' 32.34"	Longitude NHD	-79º 13' 59.54"
Quad Name	Indiana	Quad Code	1412
Wastewater Description:	Treated mobile home park domestic wastes		
Receiving Waters	Unnamed Tributary to Curry Run	Stream Code	46731
NHD Com ID	123860165	RMI	0.8100
Drainage Area	0.1	Yield (cfs/mi^2)	0
Q_{7-10} Flow (cfs)	0	Q_{7-10} Basis	Dry stream
Elevation (ft)	1280	Slope (ft/ft)	
Watershed No.	17-E	Chapter 93 Class.	CWF
Existing Use	**statewide**	Existing Use Qualifier	none
Exceptions to Use	none	Exceptions to Criteria	none
Comments			

Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Crooked Creek Watershed

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

Nearest Downstream Public Water Supply Intake	Buffalo Township Municipal Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	NA
PWS RMI	30.1	Distance from Outfall (mi)	49.57

Changes Since Last Permit Issuance: none

Other Comments: none

Treatment Facility Summary				
Treatment Facility Name: Sylvan Acres MHP STP				
WQM Permit No.	**Issuance Date**			
3274410	November 18, 1974			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	chlorination	0.025
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.025		Not Overloaded		landfill

Changes Since Last Permit Issuance: none

Other Comments: extended aeration, clarification, chlorination, and de-chlorination. Final sludge treatment before disposal is at the Eastern Armstrong County Municipal Authority.

	Month	Year	MGD	PPD				
Annual Average Design Flow			**0.02500**					
Organic Design Capacity								
Annual Average Flow		**2019**	**0.00349**					
		2020	**0.00383**					
		2021	**0.00412**					
Highest Monthly Average Flow	**September**		**0.00456**					
pH					**6.0**		**9.0**	**1/day**
TRC					**0.12**	**0.2**	**0,51**	**1/day**
Fecal Coliform					**372**		**8664**	**2/month**
CBOD5					**2.1**	**4**	**10**	**2/month**
TSS					**5**	**12.5**	**38**	**2/month**
NH3					**0.8**	**1.12**	**8.0**	**2/month**
N					**16.2**	**21.1**	**26**	**1/year**
P					**0.82**	**2,01**	**3.2**	**1/year**

Compliance History

DMR Data for Outfall 001 (from February 1, 2021 to January 31, 2022)

Parameter	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21
Flow (MGD) Average Monthly	0.0043	0.0040	0.00432	0.00378	0.00456	0.00414	0.0043	0.0041	0.0043	0.00396	0.004	0.00384
pH (S.U.) Minimum	6.0	6.0	6.0	6.0	6.0	6.0	6.1	6.0	6.0	6.2	6.2	6.1
pH (S.U.) Maximum	6.7	6.4	6.4	6.4	6.4	6.6	7.0	6.6	6.8	6.7	6.7	7.0
DO (mg/L) Minimum	6.0	6.0	7.0	6.9	6.9	6.8	6.9	6.7	6.1	6.0	6.5	7.0
TRC (mg/L) Average Monthly	0.12	0.25	0.12	0.13	0.16	0.12	0.16	0.11	0.08	0.09	0.09	0.08
TRC (mg/L) Instantaneous Max	0.40	0.40	0.30	0.51	0.40	0.40	0.30	0.26	0.20	0.20	0.19	0.20
CBOD5 (mg/L) Average Monthly	< 2.9	< 10.0	< 2.7	< 3.9	< 7.0	< 2.4	< 3.7	< 8.9	2.9	8.6	2.1	4.8
CBOD5 (mg/L) Instantaneous Max	3.7	18.0	3.7	5.8	< 12.0	2.8	5.4	11.8	3.1	12.0	2.2	5.1
TSS (mg/L) Average Monthly	< 5.0	< 19.5	< 5.0	< 11.5	< 5.0	< 5.0	< 18.5	< 11.5	14.5	16.5	< 12.0	< 18.5
TSS (mg/L) Instant Maximum	< 5.0	34.0	< 5.0	18.0	< 5.0	5.0	32.0	18.0	16.0	18.0	19.0	32.0
Fecal Coliform (#./100 ml) Geo Mean	< 5.0	> 561	141	< 5	< 15	23	133	98	**372**	121	160	67
Fecal Coliform (#/100 ml) Inst Max	< 5.0	**> 12100**	152	5	48	26	244	130	**8664**	200	594	68
Total Nitrogen (mg/L) Daily Maximum		26.0										
Ammonia (mg/L) Average Monthly	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 1.1	< 1.1	< 1.0	< 1.5	< 0.8	< 0.8
Ammonia (mg/L) Instantaneous Max	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	1.4	1.4	1.3	2.2	< 0.8	< 0.8
Total Phosphorus (mg/L) Daily Maximum		0.82										

DMR Data for Outfall 001 (from February 1, 2022 to January 31, 2023)

Parameter	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22
Flow (MGD) Average Monthly	0.0034	0.0023	0.0036	0.0032	0.0043	0.0043	0.0040	0.0045	0.0036	0.00468	0.0045	0.00450
pH (S.U.) Minimum	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
pH (S.U.) Maximum	6.6	6.3	6.7	6.8	6.7	6.3	6.3	6.2	6.2	6.3	6.3	6.4
DO (mg/L) Minimum	5.0	5.1	5.0	4.9	5.0	5.0	5.0	5.0	6.9	7.0	6.7	6.7
TRC (mg/L) Average Monthly	0.05	0.07	0.06	0.06	0.08	0.09	0.11	0.10	0.12	0.09	0.10	0.11
TRC (mg/L) Instant Maximum	0.11	0.19	0.19	0.16	0.19	0.20	0.40	0.20	0.27	0.20	0.20	0.30
CBOD5 (mg/L) Average Monthly	7.1	< 2.00	< 2.0	< 2.0	2.0	< 2.0	< 7.0	< 2.0	3.0	< 2.0	< 3.2	< 5.9
CBOD5 (mg/L) Instant Maximum	12.2	< 2.00	2.4	< 2.0	2.0	< 2.0	< 12.0	< 2.0	3.0	< 2.0	4.3	9.7
TSS (mg/L) Average Monthly	< 5.0	6.5	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 6.0
TSS (mg/L) Instant Maximum	< 5.0	8.0	8.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	7.0
Fecal Coliform (#100 ml) Geo Mean	411	228	< 5	< 26	107	138	< 90	88	5	< 8	< 6	< 5
Fecal Coliform (#/100 ml) Instant Max	6498	508	5	131	2306	517	1628	159	5	14	8	5
Total Nitrogen (mg/L) Daily Maximum		6.51										
Ammonia (mg/L) Average Monthly	< 0.8	< 0.8	< 0.8	< 0.80	< 3.16	2.2	10.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Ammonia (mg/L) Instant Maximum	< 0.8	< 0.8	< 0.8	< 0.80	5.52	2.32	19.6	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Phosphorus (mg/L) Daily Maximum		7.4										

Facility is operating at less than 1/5 (20%) of design.
Relatively high TSS/CBOD5 ratio and relatively low pH caused by low flow and long aeration time.
Daily pre-dechlorination TRC/fecal coliform correlation recommended.

Compliance History

Effluent Violations for Outfall 001, from: March 1, 2021 To: January 31, 2022

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	12/31/21	Avg Mo	0.25	mg/L	.17	mg/L
Fecal Coliform	12/31/21	Geo Mean	> 561	No./100 ml	2000	No./100 ml
Fecal Coliform	05/31/21	Geo Mean	372	No./100 ml	200	No./100 ml
Fecal Coliform	05/31/21	IMAX	8664	No./100 ml	400	No./100 ml
Fecal Coliform	12/31/21	IMAX	> 12100	No./100 ml	10000	No./100 ml

S **Effluent Violations for Outfall 001, from: March 1, 2022 To: January 31, 2023**

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	07/31/22	IMAX	1628	No./100 ml	400	No./100 ml
Fecal Coliform	08/31/22	IMAX	517	No./100 ml	400	No./100 ml
Fecal Coliform	09/30/22	IMAX	2306	No./100 ml	400	No./100 ml
Ammonia	07/31/22	Avg Mo	10.8	mg/L	5.0	mg/L
Ammonia	07/31/22	IMAX	19.6	mg/L	10.0	mg/L

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .025
Latitude 40º 36' 32.00" **Longitude** -79º 14' 0.00"
Wastewater Description: Sewage Effluent

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)
DO	4.0	Daily Minimum		BPJ
E Coli	monitoring			BPJ

Comments: E Coli is a new listed parameter.

Water Quality-Based Limitations

A Sewerage Program "Reasonable Potential Analysis" determined the following parameters were candidates for limitations: CBOD5, TSS, Ammonia-nitrogen, nitrogen, phosphorus, DO, TRC and pH.

The following limitations were determined through water quality modeling (output files below):

Parameter	Period	Limit (mg/l)			SBC	Model		
CBOD			25.0	50.0			25.0	50.0
TSS			30.0	60.0				
Ammonia Nitrogen	Summer		5.0	10.0			4.6	9.2
	Winter		14.0	28.0			13.8	27.6
Nitrogen			Monitor					
Phosphorus			Monitor					
DO		4.0				4.0		
TRC			0.17	0.56			0.17	0.56
pH		6.0		9/0		6.0		9.0

Comments:

CBOD5, ammonia-nitrogen and DO are from WQM7.1 DOSAG model and TRC is from the TRC spreadsheet. E. Coli, nitrogen and phosphorus are being monitored *in accordance with the Department's SOP* for later evaluation.

Best Professional Judgment (BPJ) Limitations

Comments: applies to DO only

Anti-Backsliding

No changes needed for compliance.

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
17E	46216	CROOKED CREEK	**34.572**	1113.91	1.50	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	0.029	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
silvan	PA000096989A	0.0250	0.0250	0.0250	0.000	20.00	6.50

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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.10	0.00	0.70

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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
17E	46216	CROOKED CREEK	**0.000**	980.16	292.00	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	0.029	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	20.00	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	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
17E	46216	CROOKED 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												
34.572	0.04	0.00	0.04	.0387	0.00073	.365	5.57	15.26	0.04	52.366	20.00	6.69
Q1-10 Flow												
34.572	0.03	0.00	0.03	.0387	0.00073	NA	NA	NA	0.04	58.922	20.00	6.65
Q30-10 Flow												
34.572	0.06	0.00	0.06	.0387	0.00073	NA	NA	NA	0.04	47.507	20.00	6.73

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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	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	95.00%	Use Balanced Technology	☑
D.O. Goal	5		

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
17E	46216	CROOKED 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
34.572	silvan	21.29	36.43	21.29	36.43	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
34.572	silvan	2.04	5	2.04	5	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)		
34.57	silvan	25	25	5	5	4	4	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
17E	46216	CROOKED CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
34.572	0.025	20.000	6.694
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.565	0.365	15.263	0.040
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
12.87	0.036	2.41	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.239	16.329	Owens	5
Reach Travel Time (days)			
52.366			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
5.237	10.68	0.10	8.24
10.473	8.87	0.10	8.24
15.710	7.36	0.10	8.24
20.946	6.11	0.10	8.24
26.183	5.07	0.10	8.24
31.420	4.21	0.10	8.24
36.656	3.50	0.10	8.24
41.893	2.90	0.10	8.24
47.129	2.41	0.10	8.24
52.366	2.00	0.10	8.24

Permit No. PA0096989

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
17E	46216	CROOKED 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)
34.572	silvan	PA000096989A	0.025	CBOD5	25		
				NH3-N	4.6	9.2	
				Dissolved Oxygen			4

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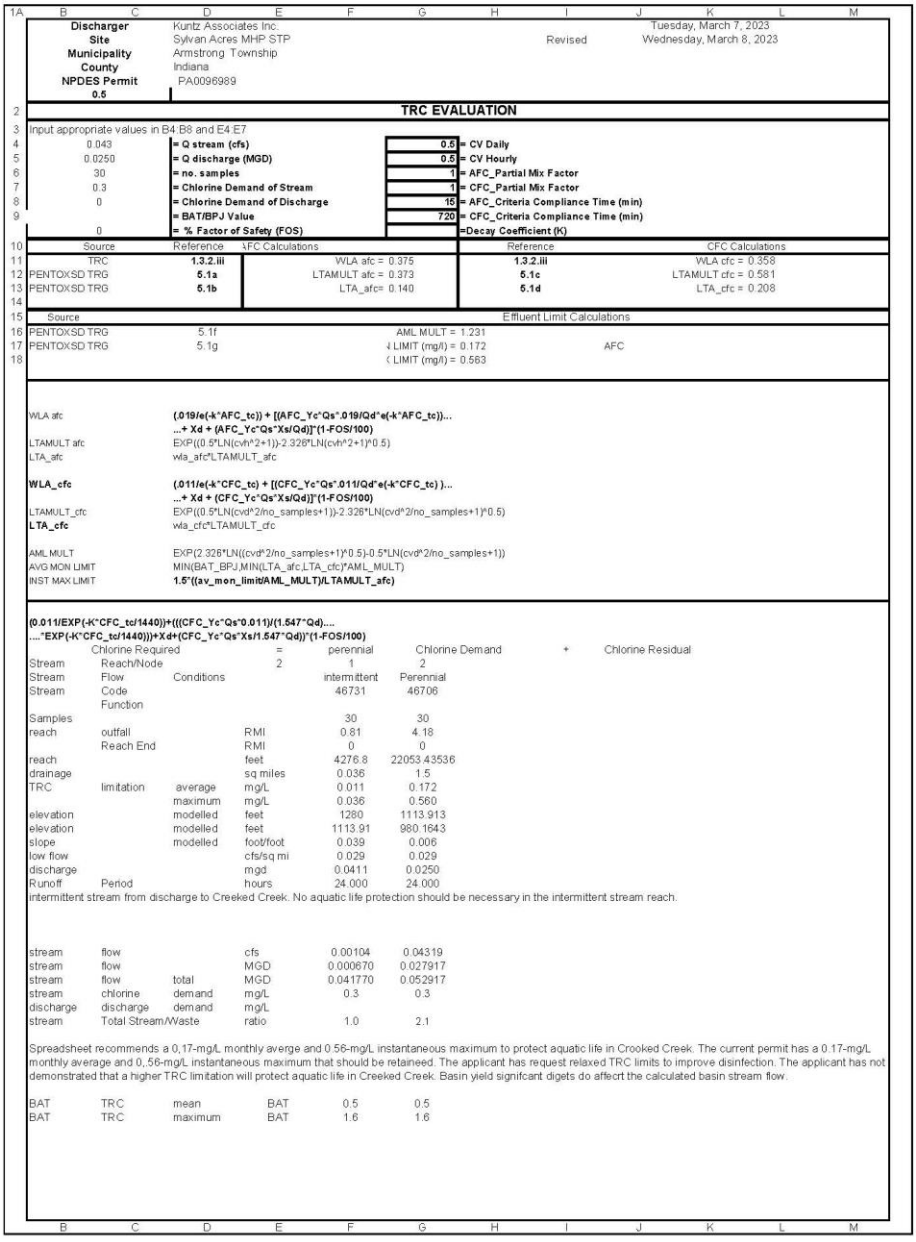

	Discharger	Kuntz Associates Inc.							Tuesday, March 7, 2023			
	Site	Sylvan Acres MHP STP						Revised	Wednesday, March 8, 2023			
	Municipality	Armstrong Township										
	County	Indiana										
	NPDES Permit	PA0096989										
	0.5											
					TRC EVALUATION							
	Input appropriate values in B4:B8 and E4:E7											
	0.043	**= Q stream (cfs)**			**0.5**	**= CV Daily**						
	0.0250	**= Q discharge (MGD)**			**0.5**	**= CV Hourly**						
	30	**= no. samples**			**1**	**= AFC_Partial Mix Factor**						
	0.3	**= Chlorine Demand of Stream**			**1**	**= CFC_Partial Mix Factor**						
	0	**= Chlorine Demand of Discharge**			**15**	**= AFC_Criteria Compliance Time (min)**						
		= BAT/BPJ Value			**720**	**= CFC_Criteria Compliance Time (min)**						
	0	**= % Factor of Safety (FOS)**				**=Decay Coefficient (K)**						
	Source	Reference	AFC Calculations			Reference	CFC Calculations					
	TRC	**1.3.2.iii**	WLA afc = 0.375			**1.3.2.iii**	WLA cfc = 0.358					
	PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373			**5.1c**	LTAMULT cfc = 0.581					
	PENTOXSD TRG	**5.1b**	LTA_afc= 0.140			**5.1d**	LTA_cfc = 0.208					
	Source		Effluent Limit Calculations									
	PENTOXSD TRG	5.1f	AML MULT = 1.231									
	PENTOXSD TRG	5.1g	↓ LIMIT (mg/l) = 0.172			AFC						
			(LIMIT (mg/l) = 0.563									
	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)**									
	(0.011/EXP(-k*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd))....											
	....*EXP(-k*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)											
	Chlorine Required			=	perennial	Chlorine Demand	+	Chlorine Residual				
	Stream	Reach/Node			2	1	2					
	Stream	Flow	Conditions			intermittent	Perennial					
	Stream	Code				46731	46706					
		Function										
	Samples					30	30					
	reach	outfall		RMI		0.81	4.18					
		Reach End		RMI		0	0					
	reach			feet		4276.8	22053.43536					
	drainage			sq miles		0.036	1.5					
	TRC	limitation	average	mg/L		0.011	0.172					
			maximum	mg/L		0.036	0.560					
	elevation		modelled	feet		1280	1113.913					
	elevation		modelled	feet		1113.91	980.1643					
	slope		modelled	foot/foot		0.039	0.006					
	low flow			cfs/sq mi		0.029	0.029					
	discharge			mgd		0.0411	0.0250					
	Runoff	Period		hours		24.000	24.000					
	intermittent stream from discharge to Creeked Creek. No aquatic life protection should be necessary in the intermittent stream reach.											
	stream	flow		cfs		0.00104	0.04319					
	stream	flow		MGD		0.000670	0.027917					
	stream	flow	total	MGD		0.041770	0.052917					
	stream	chlorine	demand	mg/L		0.3	0.3					
	discharge	discharge	demand	mg/L								
	stream	Total Stream/Waste		ratio		1.0	2.1					
	Spreadsheet recommends a 0,17-mg/L monthly averge and 0.56-mg/L instantaneous maximum to protect aquatic life in Crooked Creek. The current permit has a 0.17-mg/L monthly average and 0,.56-mg/L instantaneous maximum that should be retaineed. The applicant has request relaxed TRC limits to improve disinfection. The applicant has not demonstrated that a higher TRC limitation will protect aquatic life in Creeked Creek. Basin yield signifcant digets do affecrt the calculated basin stream flow.											
	BAT	TRC	mean	BAT		0.5	0.5					
	BAT	TRC	maximum	BAT		1.6	1.6					

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" (362-0400-001), 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	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.17	XXX	0.56	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	Grab
E Coli	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Fecal Coliform (No./100 ml) Nov 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	400	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	14.0	XXX	28.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	5.0	XXX	10.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001 after disinfection