pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

North East Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Application Type	**Renewal**	Application No.	**PA0065307**
Facility Type	**Industrial**	APS ID	**739609**
Major / Minor	**Minor with ELG**	Authorization ID	**1138452**

Applicant and Facility Information

Applicant Name	**Comm Environmental Systems, LP**	Facility Name	**Comm Environmental System Landfill**
Applicant Address	PO Box 322	Facility Address	99 Commonwealth Road
	Hegins, PA 17938		Hegins, PA 17938
Applicant Contact	Brett Dexter	Facility Contact	Brett Dexter
Applicant Phone	(570) 695-3590	Facility Phone	(570) 695-3590
Client ID	92580	Site ID	518936
SIC Code	4953	Municipality	Foster Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Schuylkill
Date Application Received	May 23, 2016	EPA Waived?	Yes
Date Application Accepted		If No, Reason	
Purpose of Application	NPDES Renewal		

Summary of Review

The application is for the renewal of a NPDES industrial discharge of treated municipal solid waste landfill leachate. The effluent limits for Outfall 001 are based on a design flow of .09 MGD. The receiving stream an unnamed tributary to Middle Creek, is located in State Water Plan watershed 7-D and is classified for Cold Water Fishes, aquatic life, water supply and recreation. Middle Creek is Acid Mining Drainage (AMD) impaired. The discharge is not expected to affect public water supplies. This facility is a Minor IW Facility with an ELG.

Commonwealth Environmental Systems, L.P. (CES) is a privately owned 235 acre municipal solid waste landfill located in Foster Township, Schuylkill County, Pennsylvania. CES is permitted by the Pennsylvania Department of Environmental Protection under Waste Management Permit No. 101615 to receive municipal, commercial, residual, construction/demolition, and special handling wastes. The majority of the waste accepted at the landfill is classified as municipal waste. No hazardous wastes are disposed at CES.

Leachate generated by the landfill is conveyed to two 1.5-million gallon aerated storage tanks located by the leachate treatment plant building. Leachate from the storage tanks is pumped to the 90,000 gallons per day (gpd) leachate treatment plant (LTP) for treatment. Treatment consists of the following processes:

1) Equalization in aerated storage tanks;

2) Primary clarification and pH adjustment;

3) Filtration through multimedia filters;

4) Two-stage reverse osmosis (RO) treatment process;

5) High pressure reverse osmosis (RO) treatment for concentrate volume reduction;

Approve	Deny	Signatures	Date
X		Bernard Feist, P.E. / Environmental Engineer /s/	November 7, 2016
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager /s/	November 8, 2016

Summary of Review

6) Carbon dioxide removal using an air stripping column;

7) Ion exchange for copper removal (if needed);

8) Zeolite treatment for ammonia reduction (if needed); and

9) Effluent storage, followed by beneficial reuse, discharge to POTW, or stream discharge.

Currently, treated effluent is stored in a 1.0 million gallon storage tank prior to discharge or reuse. Discharge to Middle Creek under NPDES Permit No. PA0065307 is approved. CES uses treated effluent onsite for dust control, leachate treatment plant water, and foam make-up water.

CES has beneficially reused treated effluent with no stream discharge for over two (2) years. Discharge to the Schuylkill County Municipal Authority Gordon sewage treatment plant is an option but it is rarely used.

The treatment plant has been in operation since January 2012 and produces effluent quality suitable for beneficial reuse (make up water, dust control, foam make up) or stream discharge.

The treatment process generates RO concentrate that requires management by recirculation onto the landfill or offsite disposal. A third-stage high pressure reverse osmosis unit was recently installed to reduce the concentrate volume requiring management. Solids from the pretreatment process continue to be landfilled as currently practiced.

The applicant is classified under SIC Code 4953 Non-hazardous disposal facility. ELG part 445 – Landfills Point Source Category, Subpart B – RCRA Subtitle D Non-Hazardous Waste Landfill, Section 445.21. The pretreated leachate is currently utilizing reverse osmosis.

Terpineol, Benzoic Acid, p-Cresol and Phenol are ELG based technology limits. The BOD_5, TSS and Ammonia are Best Engineering Judgment and will continue from the previous amended permit. They were determined through pilot testing and actual production. The Total Zinc, Total Copper and Boron are water quality based and will be continued from the previous permit. The Total Iron, Total Dissolve Iron, Aluminum, and Manganese are TMDL based limits, set at criteria so as to insure this discharge does not contribute to AMD impairment. The Fecal Coliform limit is from the Reclaimed Water Guidance Manual 362-0300-009 (2012) for Class C. The current Chesapeake Bay Tributary Strategy requires Total Net Nitrogen and Total Net Phosphorus limits set at zero pounds per year. The existing Permits limits will continue.

Effluent Limit Development Details

1) AMD TMDL

The Upper Swatara Creek Watershed TMDL (completed March 1, 1999) identifies Aluminum, Iron and Manganese as pollutants contributing to the impairment of the Middle Creek and set TMDLs for the metals. The TMDL identified abandoned mine drainage as the primary cause of stream impairment. PentoxSD modeled the discharge for the TMDL parameters using input concentration values set at water quality criteria. The PentoxSD model showed the WQBEL's for Iron and Manganese to be nearly twice the criterion for each parameter. Imposing limits in the permit for each TMDL parameter at criteria should cause no potential to contribute to the impairment and are consistent with the results of the TMDL.

2) Current Federal ELG's for Landfills Point Source Category 40 CFR Part 445 For RCRA Subtitle D Non-Hazardous Waste Landfill

Regulated Parameter (mg/L, ppm)	Maximum daily	Maximum Monthly Average
BOD_5	140	37
TSS	88	27

Summary of Review

Ammonia (as N)	10	4.9
a-Terpineol	0.033	0.016
Benzoic acid	0.12	0.071
p-Cresol	0.025	0.014
Phenol	0.026	0.015
Zinc	0.20	0.11
pH (S.U.)	6.0 to 9.0	6.0 to 9.0
*Iron	3.75	1.5
*Dissolved Iron	0.75	0.3
*Manganese	2.5	1.0
*Aluminum	1.88	0.75

(* added from the AMD TMDL)

3) Water Quality Limits

2016 modeling with WQM 7.0 was done to verify that the existing water quality limits are adequate. The 2016 toxics modelling produced no additional limits. The Toxic Screening Analysis, WQM 7.0 and Pentoxsd modeling results are attached below:

CES Water Quality Models.pdf

4) Summary of permit limits for Outfall 001

Parameter	30 Day Average	Maximum Day	Inst. Max	Type
	(mg/l)	(mg/l)	(mg/l)	
BOD5	20.0	40.0	50.0	BEJ
TSS	10.0	20.0	25.0	BEJ
Ammonia	3.0	6.0	7.5	BEJ
pH		6 to 9 at all times.		ELG
DO		Minimum 7.0 at all times.		WQBEL
Total Iron	1.5	2.34	3.75	TMDL (Criteria)
Dissolved Iron	0.3	0.46	0.75	TMDL (Criteria)
Aluminum Total	0.75	1.17	1.87	TMDL (Criteria)
Manganese Total	1.0	1.56	2.5	TMDL (Criteria)
Terpineol	0.016	0.033	0.04	ELG
Benzoic Acid	0.071	0.12	0.17	ELG
p-Cresol	0.014	0.025	0.038	ELG
Phenol	0.015	0.026	0.037	ELG
Boron	3.32	5.17	8.3	WQBEL
Zinc, T.	0.022	0.035	0.055	WQBEL
Copper, T	0.0021	0.0033	0.052	WQBEL
Temperature	Monitor			WQBEL
Fecal Coliform	200/100ml geoAvg	800/100ml geoAvg	1,000/100ml	WQBEL
Net Total Nitrogen	zero lbs/year			Chesapeake Bay
Net Total Phosphorus	zero lbs/year			Chesapeake Bay

Summary of Review

** Monitoring for dissolved oxygen and temperature not required when treated wastewater is used for dust control or other reuse measures

Based upon previous test results TDS values are not anticipated to challenge the TDS concentrations in Chapter 95.10 (c).

The mass limits in the permit are calculated using a flow of 0.090 MGD.

The following special condition will be added to Part C

> The Permit allows complete discharge for beneficial uses on the existing waste management covered permitted areas. Before any discharges extend beyond the area monitored by the PADEP Waste Management Permit a concise site plan and surface/groundwater monitoring plan that receives the discharge/spray must be completed and approved. That monitoring data must be submitted semi-annually to the:
>
> Regional Geologist
> Clean Water Program
> Pennsylvania Department of Environmental Protection
> Northeast Regional Office
> 2 Public Square
> Wilkes-Barre, PA 18701

The applicant's concern that this special condition is redundant to the Part 2 permit 5411403 is noted.

The WMS Report query "Water Management System Inspections" was run. On 09/25/2014 a Compliance Evaluation was done with No Violations noted.

The WMS "Open Violations by Client Report" was run and there are No Open Violations.

The Existing Permit expires on November 30, 2015 and the renewal was submitted in a timely fashion.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.09
Latitude	40º 39' 55.03"	Longitude	-76º 23' 7.98"
Wastewater Description:	IW Process Effluent with ELG		
Receiving Waters	Middle Creek	Stream Code	10078
NHD Com ID	133783947	RMI	3.7
Drainage Area	1 mi^2	Yield (cfs/mi^2)	0.166
Q_{7-10} Flow (cfs)	0.166	Q_{7-10} Basis	Dflow gage 01469500
Elevation (ft)	1410	Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	CWF
Assessment Status	Impaired		
Cause(s) of Impairment	Metals		
Source(s) of Impairment	Abandoned Mine Drainage		
TMDL Status	Final, Final	Name	Upper Swatara Creek Watershed,Upper Swatara Creek Watershed

Nearest Downstream Public Water Supply Intake: Pa American Water Co. @ 30 miles Swatara Creek

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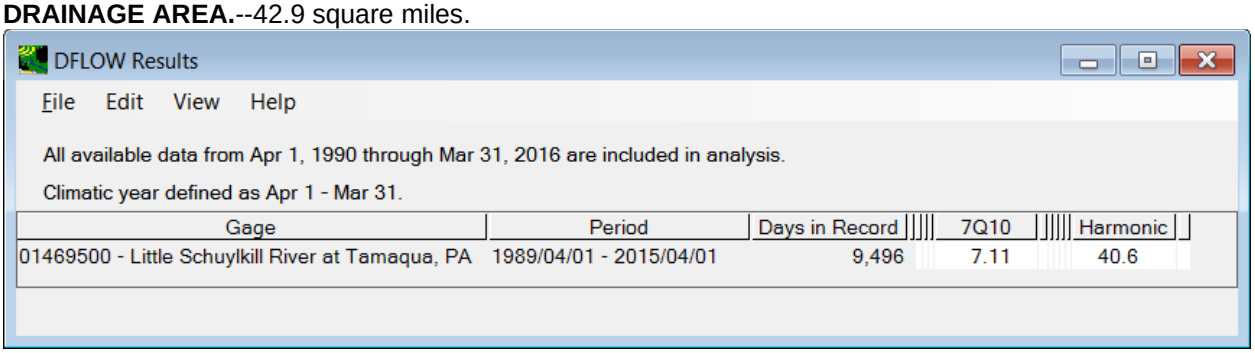
STATION.--01469500 LITTLE SCHUYLKILL RIVER AT TAMAQUA, PA
LOCATION.--Lat 40`48'25", long 75`58'20", Schuylkill County, Hydrologic Unit 02040203, on left bank at pumping plant of Panther Valley Water Co., 0.6 mi upstream from Tamaqua, and 0.8 mi upstream from Panther Creek.
DRAINAGE AREA.--42.9 square miles.

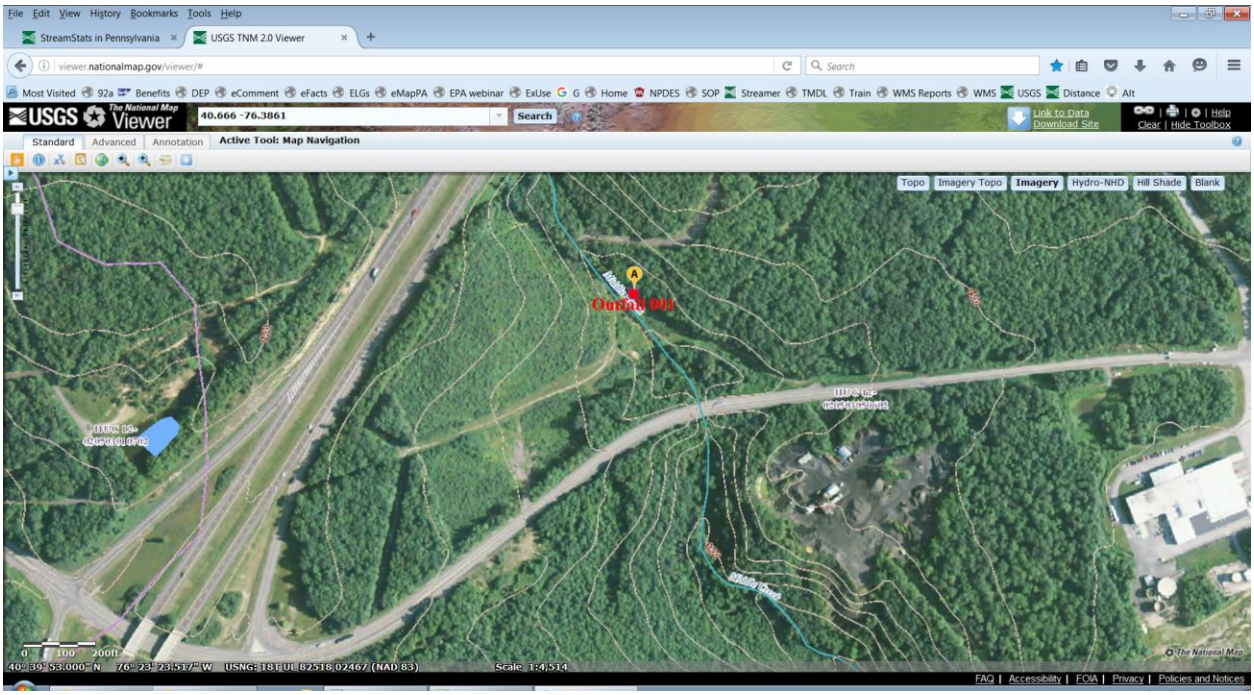


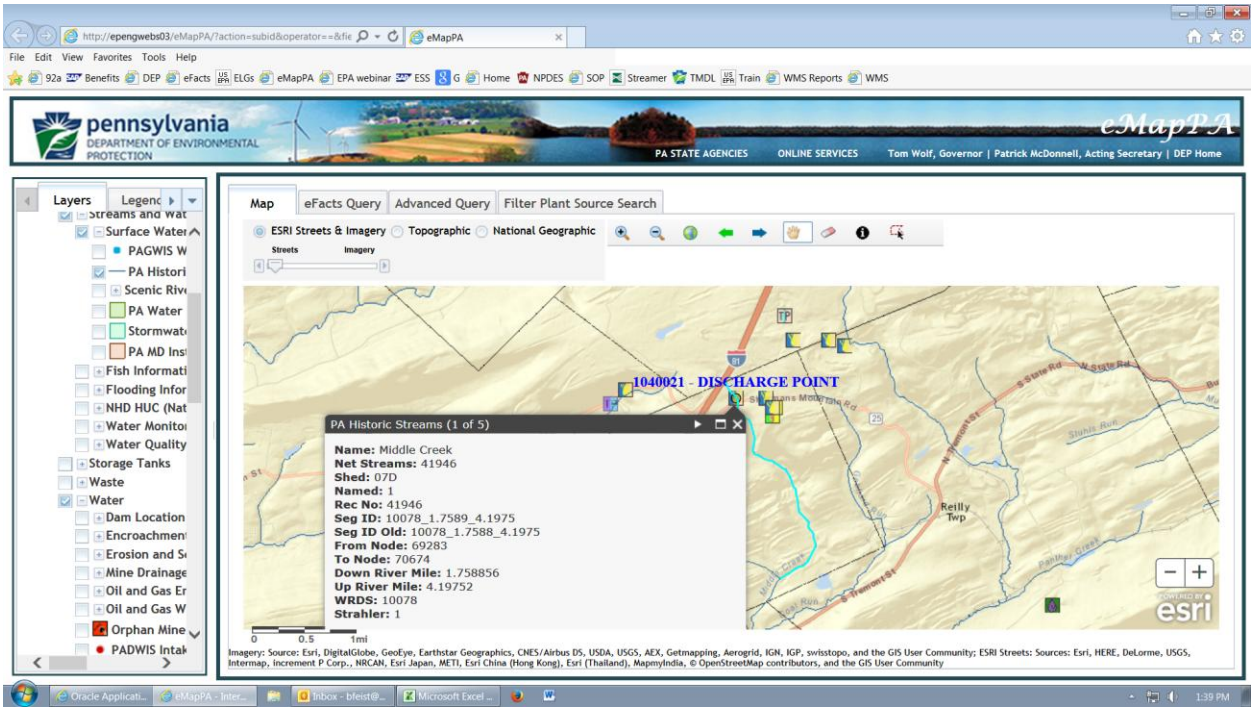
LowFlowYield (cfs/mi2) = 7.11/42.9 = 0.166

RMI 3.70 Outfall 001 Delineation Results
NAD 1983 Latitude: 40.6647 (40 39 53)
NAD 1983 Longitude: -76.3852 (-76 23 07)
Drainage Area: 640 Acres (1.0 mi^2) Elevation 1410 ft
Stream flow = 0.166 cfs (0.1073 MGD)
Dilution is 0.1073 / 0.09 = 1.2: 1

At RMI 3.60 is Keystone Potato NPDES PA0064351; Drainage Area: 1.46 mi^2; Elevation 1400 ft

RMI 0.0 NAD 1983 Latitude: 40.6276 (40 37 39) NAD 1983 Longitude: -76.3869 (-76 23 13) Drainage Area: 14 mi2 elevation 805





Other comments:
A permit amendment will be needed to accept fracking wastewater. The following additional limits will then apply:

Gross Alpha (pCi/L)	3 pCi/L
Beta, Total (pCi/L)	4 pCi/L
Radium 226/228, Tot (pCi/L)	1 pCi/L
Strontium, Total (µg/L)	10 µg/L
Uranium, Total (µg/L)	2 µg/L