ATTACHMENT 6

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Skills USA/VICA WWTP Permit No.: VA0061280

Receiving Stream: Clark's Run

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	50	mg/L
90% Temperature (Annual) =	22.1	deg C
90% Temperature (Wet season) =	15	deg C
90% Maximum pH =	7.8	SU
10% Maximum pH =		SU
Tier Designation (1 or 2) =	1	
Public Water Supply (PWS) Y/N? =	n	
Trout Present Y/N? =	n	
Early Life Stages Present Y/N? =	y	

Stream Flows

1Q10 (Annual) =	0	MGD
7Q10 (Annual) =	0	MGD
30Q10 (Annual) =	0	MGD
1Q10 (Wet season) =	0.081	MGD
30Q10 (Wet season)	0.199	MGD
30Q5 =	0.046	MGD
Harmonic Mean =	0.182	MGD

Mixing Information

Annual - 1Q10 Mix =	100	%
- 7Q10 Mix =	100	%
- 30Q10 Mix =	100	%
Wet Season - 1Q10 Mix =	100	%
- 30Q10 Mix =	100	%

Effluent Information

Mean Hardness (as CaCO3) =	50	mg/L
90% Temp (Annual) =	23.34	deg C
90% Temp (Wet season) =	16.41	deg C
90% Maximum pH =	7.8	SU
10% Maximum pH =	7.16	SU
Discharge Flow =	0.0042	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	9.9E+02	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Acrolein	0	--	--	na	9.3E+00	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Acrylonitrile[C]	0	--	--	na	2.5E+00	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Aldrin[C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	2.2E-02	--	--	--	--	--	--	--	--	3.0E+00	--	na	2.2E-02
Ammonia-N (mg/l) (Yearly)	0	1.21E+01	1.80E+00	na	--	1.21E+01	1.80E+00	na	--	--	--	--	--	--	--	--	--	1.21E+01	1.80E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.21E+01	3.08E+00	na	--	2.46E+02	1.49E+02	na	--	--	--	--	--	--	--	--	--	2.46E+02	1.49E+02	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.8E+05	--	--	--	--	--	--	--	--	--	--	na	4.8E+05
Antimony	0	--	--	na	6.4E+02	--	--	na	7.6E+03	--	--	--	--	--	--	--	--	--	--	na	7.6E+03
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene[C]	0	--	--	na	5.1E+02	--	--	na	2.3E+04	--	--	--	--	--	--	--	--	--	--	na	2.3E+04
Benzidine[C]	0	--	--	na	2.0E-03	--	--	na	8.9E-02	--	--	--	--	--	--	--	--	--	--	na	8.9E-02
Benzo (a) anthracene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Benzo (b) fluoranthene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Benzo (k) fluoranthene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Benzo (a) pyrene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Bis2-Chloroethyl Ether[C]	0	--	--	na	5.3E+00	--	--	na	2.3E+02	--	--	--	--	--	--	--	--	--	--	na	2.3E+02
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	7.8E+05	--	--	--	--	--	--	--	--	--	--	na	7.8E+05
Bis 2-Ethylhexyl Phthalate[C]	0	--	--	na	2.2E+01	--	--	na	9.8E+02	--	--	--	--	--	--	--	--	--	--	na	9.8E+02
Bromoform[C]	0	--	--	na	1.4E+03	--	--	na	6.2E+04	--	--	--	--	--	--	--	--	--	--	na	6.2E+04
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	2.3E+04	--	--	--	--	--	--	--	--	--	--	na	2.3E+04
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride[C]	0	--	--	na	1.6E+01	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Chlordane[C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	3.6E-01	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	3.6E-01
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.9E+04	--	--	--	--	--	--	--	--	--	--	na	1.9E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	5.8E+03	--	--	--	--	--	--	--	--	--	--	na	5.8E+03
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.3E+05	--	--	--	--	--	--	--	--	--	--	na	1.3E+05
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.9E+04	--	--	--	--	--	--	--	--	--	--	na	1.9E+04
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	--	--	na	1.8E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene[C]	0	--	--	na	1.8E-02	--	--	na	8.0E-01	--	--	--	--	--	--	--	--	--	--	na	8.0E-01
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.9E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.9E+05
DDD[C]	0	--	--	na	3.1E-03	--	--	na	1.4E-01	--	--	--	--	--	--	--	--	--	--	na	1.4E-01
DDE[C]	0	--	--	na	2.2E-03	--	--	na	9.8E-02	--	--	--	--	--	--	--	--	--	--	na	9.8E-02
DDT[C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	9.8E-02	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	9.8E-02
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	1.2E+01	--	--	--	--	--	--	--	--	--	--	na	1.2E+01
Dichlorobromomethane[C]	0	--	--	na	1.7E+02	--	--	na	7.5E+03	--	--	--	--	--	--	--	--	--	--	na	7.5E+03
1,2-Dichloroethane[C]	0	--	--	na	3.7E+02	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	8.5E+04	--	--	--	--	--	--	--	--	--	--	na	8.5E+04
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	3.5E+03	--	--	--	--	--	--	--	--	--	--	na	3.5E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	6.7E+03	--	--	--	--	--	--	--	--	--	--	na	6.7E+03
1,3-Dichloropropene[C]	0	--	--	na	2.1E+02	--	--	na	9.3E+03	--	--	--	--	--	--	--	--	--	--	na	9.3E+03
Dieldrin[C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	2.4E-02	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	2.4E-02
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	5.3E+05	--	--	--	--	--	--	--	--	--	--	na	5.3E+05
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.3E+07	--	--	--	--	--	--	--	--	--	--	na	1.3E+07
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	5.4E+04	--	--	--	--	--	--	--	--	--	--	na	5.4E+04
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	6.3E+04	--	--	--	--	--	--	--	--	--	--	na	6.3E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	3.3E+03	--	--	--	--	--	--	--	--	--	--	na	3.3E+03
2,4-Dinitrotoluene[C]	0	--	--	na	3.4E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	6.1E-07	--	--	--	--	--	--	--	--	--	--	na	6.1E-07
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	1.1E+03	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	1.1E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	1.1E+03	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	1.1E+03
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	7.2E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	7.2E-01
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.6E+00	--	--	--	--	--	--	--	--	--	--	na	3.6E+00

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.5E+04	--	--	--	--	--	--	--	--	--	--	na	2.5E+04
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Fluorene	0	--	--	na	5.3E+03	--	--	na	6.3E+04	--	--	--	--	--	--	--	--	--	--	na	6.3E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor[C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	3.5E-02	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.5E-02
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	1.7E-02	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.7E-02
Hexachlorobenzene[C]	0	--	--	na	2.9E-03	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorobutadiene[C]	0	--	--	na	1.8E+02	--	--	na	8.0E+03	--	--	--	--	--	--	--	--	--	--	na	8.0E+03
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	4.9E-02	--	--	na	2.2E+00	--	--	--	--	--	--	--	--	--	--	na	2.2E+00
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	1.7E-01	--	--	na	7.5E+00	--	--	--	--	--	--	--	--	--	--	na	7.5E+00
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	8.0E+01	--	--	--	--	--	--	--	--	9.5E-01	--	na	8.0E+01
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	na	1.3E+04
Hexachloroethane[C]	0	--	--	na	3.3E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[C]	0	--	--	na	9.6E+03	--	--	na	4.3E+05	--	--	--	--	--	--	--	--	--	--	na	4.3E+05
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	- -	- -	1.4E+00	7.7E-01	- -	- -	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	- -	- -
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.8E+04	--	--	--	--	--	--	--	--	--	--	na	1.8E+04
Methylene Chloride[C]	0	--	--	na	5.9E+03	--	--	na	2.6E+05	--	--	--	--	--	--	--	--	--	--	na	2.6E+05
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	5.5E+04	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	5.5E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	8.2E+03	--	--	--	--	--	--	--	--	--	--	na	8.2E+03
N-Nitrosodimethylamine[C]	0	--	--	na	3.0E+01	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
N-Nitrosodiphenylamine[C]	0	--	--	na	6.0E+01	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
N-Nitrosodi-n-propylamine[C]	0	--	--	na	5.1E+00	--	--	na	2.3E+02	--	--	--	--	--	--	--	--	--	--	na	2.3E+02
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	2.8E-02	--	--	--	--	--	--	--	--	--	1.4E-02	na	2.8E-02
Pentachlorophenol[C]	0	1.0E+01	7.9E+00	na	3.0E+01	1.0E+01	7.9E+00	na	1.3E+03	--	--	--	--	--	--	--	--	1.0E+01	7.9E+00	na	1.3E+03
Phenol	0	--	--	na	8.6E+05	--	--	na	1.0E+07	--	--	--	--	--	--	--	--	--	--	na	1.0E+07
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.8E+04	--	--	--	--	--	--	--	--	--	--	na	4.8E+04
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
(mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	5.0E+04	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**5.0E+04**
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.8E+03**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.5E+03**
Thallium	0	--	--	na	4.7E-01	--	--	na	5.6E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.6E+00**
Toluene	0	--	--	na	6.0E+03	--	--	na	7.2E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.2E+04**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene[C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	1.2E-01	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**1.2E-01**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	8.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.4E+02**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.1E+03**
Trichloroethylene[C]	0	--	--	na	3.0E+02	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.3E+04**
2,4,6-Trichlorophenol[C]	0	--	--	na	2.4E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+03**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+03**
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	3.1E+05	--	--	--	--	--	--	--	--	**6.5E+01**	**6.6E+01**	**na**	**3.1E+05**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	7.6E+03
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Annual

Day	pH Effluent IN SITU		
	Time	Temp (C)	pH (SU)
1/7/2014	1224	4.7	7.8
1/8/2014	1117	4.5	7.5
1/16/2014	1425	5.6	7.9
1/24/2014	1418	4.2	7.8
2/4/2014	1530	4.3	7.6
2/12/2014	939	3.3	7.6
2/14/2014	837	3.6	7.6
2/20/2014	1052	4.3	7.7
3/5/2014	1135	3.7	7.6
3/12/2014	1219	6.2	7.5
3/19/2014	1243	5.9	7.6
3/26/2014	1202	6	7.5
4/4/2014	1139	8.3	7.4
4/9/2014	1206	9.3	7.5
4/24/2014	1354	11.4	7.6
5/7/2014	1605	13.3	7.5
5/15/2014	1159	16.6	7.4
5/21/2014	1540	16.7	7.8
5/29/2014	1631	18.2	7.7
6/11/2014	1225	19.9	7.7
6/19/2014	1811	22.4	7.5
7/9/2014	1519	23.3	7.6
7/18/2014	1148	22.4	7.5
7/29/2014	1445	22.8	7.8
8/6/2014	1236	23	7.9
8/13/2014	1308	22.7	7.9
8/26/2014	1609	23.7	7.6
9/3/2014	1453	23.9	7.9
9/10/2014	1200	23.2	7.8
9/18/2014	1023	20.6	7.6
9/19/2014	800	20.2	7.7
9/24/2014	1456	19.9	7.7
10/2/2014	1525	20.1	7.7
10/8/2014	1303	18.4	7.5
10/17/2014	1235	18.6	7.5
10/23/2014	1512	16.5	7.5
10/31/2014	1250	15.4	7.5
11/5/2014	1548	14.2	7.5
11/13/2014	1525	12.8	7.6
11/20/2014	1329	9	8
11/25/2014	1137	9.9	7.7
12/5/2014	1450	9.3	7.5
12/10/2014	1140	8.3	7.5

7.8	90th percentile pH (annual)
23.34	90th percentile temperature (annual)
7.16	10th percentile pH (annual)

12/16/2014	1206	8	7.5
1/9/2013	1214	6	7.6
1/17/2013	1215	7.5	7.5
1/31/2013	712	6.2	7.6
2/6/2013	1055	5	6.6
2/14/2013	1214	5.5	7.2
3/5/2013	1222	6.1	7.6
3/14/2013	1125	6.2	7.4
3/20/2013	1255	6.4	7.7
3/27/2013	1425	6.4	7.4
4/4/2013	1346	7	7.5
4/11/2013	1106	10.1	7.2
4/17/2013	1021	11.8	7.3
4/26/2013	1014	12.4	7.3
5/2/2013	1353	13.6	7.5
5/15/2013	101	14.1	7.3
5/23/2013	813	16.5	7.3
6/5/2013	1145	17.1	7.6
6/12/2013	1021	19.7	7.5
6/21/2013	1152	20.9	7.6
7/10/2013	1017	23.5	7.6
7/22/2013	1233	24.8	7.4
8/2/2013	1332	23.9	7.4
8/7/2013	1012	22.5	7.5
8/22/2013	1423	23.1	7.4
9/6/2013	1019	22.1	7.6
9/11/2013	1109	22.3	7.4
9/20/2013	1439	19.8	7.6
9/23/2013	1245	19	7.69
9/27/2013	1441	18.7	7.2
10/9/2013	1306	18.7	6.8
10/18/2013	1228	17.8	7.5
10/30/2013	1208	13.7	7.3
11/6/2013	1112	13.5	7.5
11/15/2013	1353	10.5	7.7
11/21/2013	952	10.4	7.8
12/4/2013	1229	7.9	7.8
12/13/2013	1522	6	7.9
12/19/2013	1332	6.2	7.8
1/11/2012	1348	6.2	6.8
1/18/2012	948	5.5	7
1/26/2012	1244	5.8	7.4
2/2/2012	1158	6.7	7.1
2/8/2012	1040	6	7.2
2/16/2012	1520	5.7	6.8
2/29/2012	1509	6.8	7.2
3/7/2012	1118	6.7	7.6

3/14/2012	1043	8.8	7.2
3/21/2012	1134	11	6.9
3/27/2012	1107	11.2	6.9
4/4/2012	1004	11.6	7.1
4/11/2012	922	11.4	7.3
4/18/2012	1247	12.7	7.2
4/25/2012	1217	12.5	7.1
5/2/2012	1213	13.5	7.4
5/9/2012	1444	16.2	7.2
5/16/2012	1332	16.9	7.2
5/23/2012	1337	18.1	7.2
5/30/2012	916	19.6	7
6/6/2012	928	18.8	7.2
6/13/2012	1125	20	7
6/26/2012	1342	21.4	7
7/11/2012	1609	23.8	7.5
7/20/2012	1342	24	7.4
7/26/2012	854	23.4	7.6
8/2/2012	1454	24.2	7.5
8/8/2012	1158	24.6	7.5
8/13/2012	1205	24	7.3
8/21/2012	1348	23.9	7.7
8/30/2012	920	23.2	7.8
9/5/2012	945	23.9	7.7
9/17/2012	1413	21.6	7.5
9/25/2012	1352	20	7.7
10/3/2012	1209	19.6	7.6
10/5/2012	1350	19.9	7.5
10/10/2012	1121	18.2	7.8
10/22/2012	1334	15.5	7.9
11/2/2012	1028	14.3	7.8
11/9/2012	936	11.5	7.7
11/14/2012	1110	11	7.9
11/29/2012	1215	9.8	7.8
12/5/2012	1111	10.3	7.7
12/13/2012	720	9.2	8.3
12/20/2012	1601	9.7	7.4

Wet Season (Dec-May)

Day	pH Effluent IN SITU		
	Time	Temp (C)	pH (SU)
1/7/2014	1224	4.7	7.8
1/8/2014	1117	4.5	7.5
1/16/2014	1425	5.6	7.9
1/24/2014	1418	4.2	7.8
2/4/2014	1530	4.3	7.6
2/12/2014	939	3.3	7.6
2/14/2014	837	3.6	7.6
2/20/2014	1052	4.3	7.7
3/5/2014	1135	3.7	7.6
3/12/2014	1219	6.2	7.5
3/19/2014	1243	5.9	7.6
3/26/2014	1202	6	7.5
4/4/2014	1139	8.3	7.4
4/9/2014	1206	9.3	7.5
4/24/2014	1354	11.4	7.6
5/7/2014	1605	13.3	7.5
5/15/2014	1159	16.6	7.4
5/21/2014	1540	16.7	7.8
5/29/2014	1631	18.2	7.7
12/5/2014	1450	9.3	7.5
12/10/2014	1140	8.3	7.5
12/16/2014	1206	8	7.5
1/9/2013	1214	6	7.6
1/17/2013	1215	7.5	7.5
1/31/2013	712	6.2	7.6
2/6/2013	1055	5	6.6
2/14/2013	1214	5.5	7.2
3/5/2013	1222	6.1	7.6
3/14/2013	1125	6.2	7.4
3/20/2013	1255	6.4	7.7
3/27/2013	1425	6.4	7.4
4/4/2013	1346	7	7.5
4/11/2013	1106	10.1	7.2
4/17/2013	1021	11.8	7.3
4/26/2013	1014	12.4	7.3
5/2/2013	1353	13.6	7.5
5/15/2013	101	14.1	7.3
5/23/2013	813	16.5	7.3
12/4/2013	1229	7.9	7.8
12/13/2013	1522	6	7.9
12/19/2013	1332	6.2	7.8
1/11/2012	1348	6.2	6.8
1/18/2012	948	5.5	7

7.8	90th percentile pH (Dec-May)
16.41	90th percentile temperature (Dec-May)

1/26/2012	1244	5.8	7.4
2/2/2012	1158	6.7	7.1
2/8/2012	1040	6	7.2
2/16/2012	1520	5.7	6.8
2/29/2012	1509	6.8	7.2
3/7/2012	1118	6.7	7.6
3/14/2012	1043	8.8	7.2
3/21/2012	1134	11	6.9
3/27/2012	1107	11.2	6.9
4/4/2012	1004	11.6	7.1
4/11/2012	922	11.4	7.3
4/18/2012	1247	12.7	7.2
4/25/2012	1217	12.5	7.1
5/2/2012	1213	13.5	7.4
5/9/2012	1444	16.2	7.2
5/16/2012	1332	16.9	7.2
5/23/2012	1337	18.1	7.2
5/30/2012	916	19.6	7
12/5/2012	1111	10.3	7.7
12/13/2012	720	9.2	8.3
12/20/2012	1601	9.7	7.4

Clark's Run data

Station_ID	Collection_	Field_pH	DO_Probe	Temp_Cels
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9

1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9

1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	1/28/08	8.1	14.9	1.4
1ACLK002	1/28/08	8.1	14.9	1.4
1ACLK002	1/28/08	8.1	14.9	1.4
1ACLK002	3/26/08	8	12.6	8.4
1ACLK002	3/26/08	8	12.6	8.4
1ACLK002	3/26/08	8	12.6	8.4
1ACLK002	5/8/08	7.7	9	16.7
1ACLK002	5/8/08	7.7	9	16.7
90th percentile		7.81		22.1

ATTACHMENT 7

3/13/2015 10:17:26 AM

Facility = SkillsUSA/VICA WWTP
Chemical = Ammonia as N (Jun - Nov)
Chronic averaging period = 30
WLAa = 12.1
WLAc =
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 12.1
Average Weekly limit = 12.1
Average Monthly LImit = 12.1

The data are:

9

3/13/2015 10:14:35 AM

Facility = SkillsUSA/VICA WWTP
Chemical = Ammonia as N (Dec-May)
Chronic averaging period = 30
WLAa = 246
WLAc =
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

ATTACHMENT 8

4/21/2005 11:03:23 AM

Facility = Skills USA/VICA STP
Chemical = Total Residual Chlorine
Chronic averaging period = 4
WLAa = 0.019
WLAc = 0.011
Q.L. = .1
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = .2
Variance = .0144
C.V. = 0.6
97th percentile daily values = .486683
97th percentile 4 day average = .332758
97th percentile 30 day average= .241210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.60883226245855E-02
Average Weekly limit = 9.59676626920106E-03
Average Monthly LImit = 7.9737131838758E-03

The data are:

0.2

ATTACHMENT 9

MEMORANDUM

State Water Control Board

2111 North Hamilton Street | P.O. Box 11143 | Richmond, VA. 23230

SUBJECT: Loudoun County - LHS - 120 - Vocational Industrial Clubs of America - Site Inspection

TO: File

FROM: Gary N. Moore

DATE: February 5, 1974

COPIES:

decline act. man. 2-5-74

	POD	Rt. 15 at Intermittent Stream	Rt. 15 at Clark's Run
Width (ft.)	4-8	4-5	3-4
Depth (ft.)	1/2-3	.3-.8	.3-.8
Bottom	sandy	sandy	sandy
Water Temp (°F)	46	46	46
Air Temp (°F)	64	64	64
D.O. (mg/l)	11.4	11.8	12.2
Flow (ft/sec)	1	1	1

D.A. above point of discharge - 2.3 sq. mi.

Q of Clark's Run $= \frac{2.3 \times .007}{1.55} = .0103$ mgd

Quade used: Waterford, Point of Rocks, Poolesville

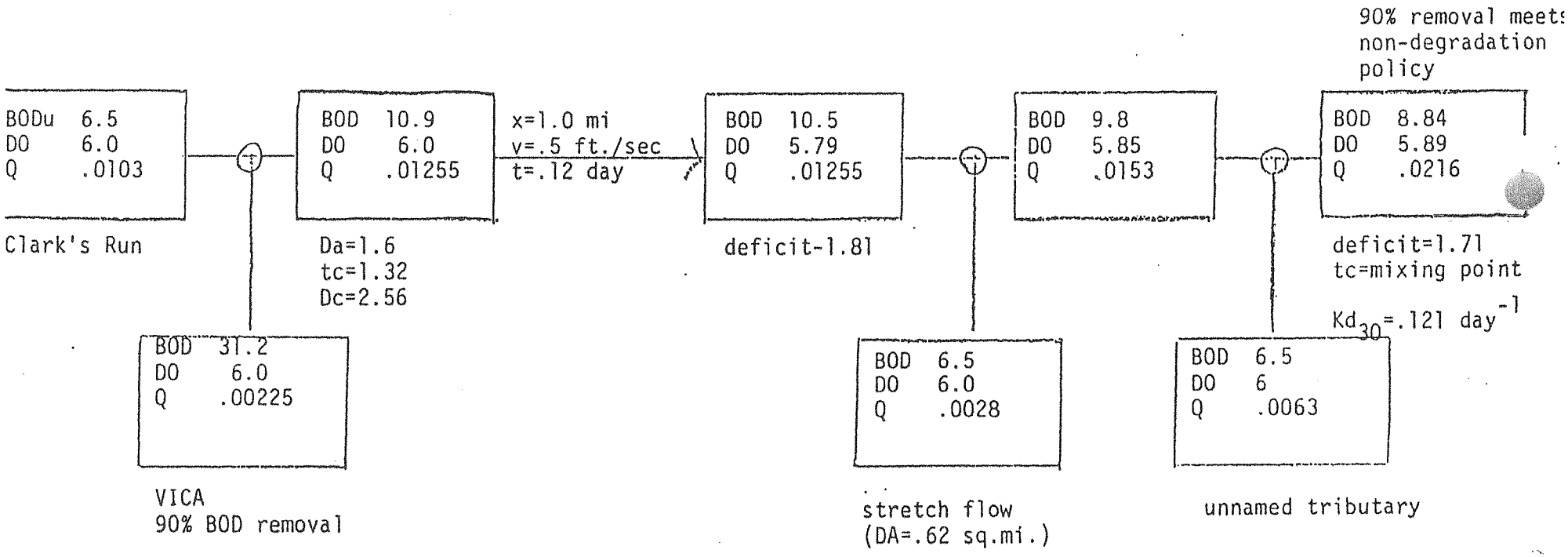
$Ka_{30} = .7 \times 1.22 = .854\ day^{-1}$

$Kd_{30} = .2 \times 1.48 = .296\ day^{-1}$

SAA will be run using 90% BOD removal (24 mg/l)

GNM/by

Loudoun County - Vocational Industrial Clubs of America - SAA - Potomac Basin



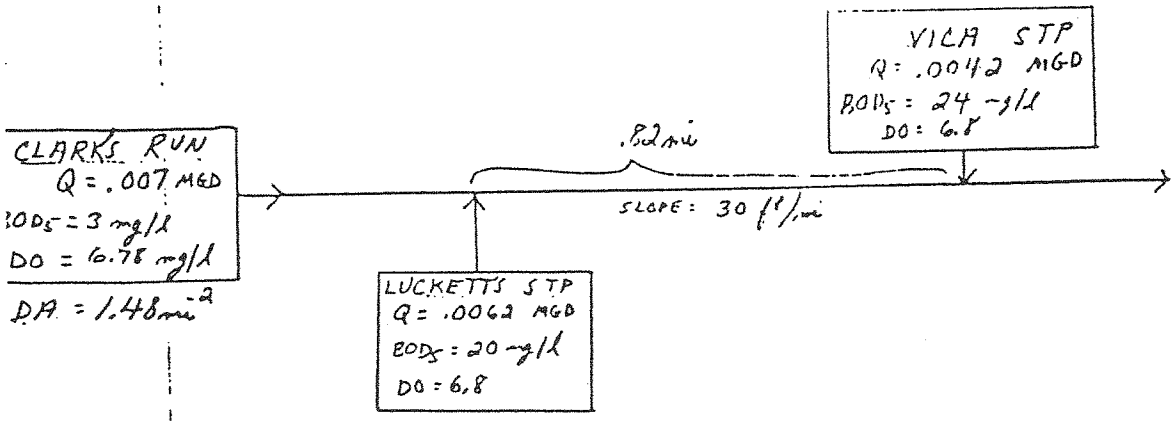
Dale,

Here is a preliminary model of Lucketts STP for your perusal. I've come up with a BOD_5 limit of 20 mg/l to maintain reasonable anti-degradation requirements below the VICA STP. The Lucketts STP won't be able to meet the 20 mg/l since it is an existing lagoon in extremely poor condition. (It can't meet much of any limit!) I've attached the only VICA model that I can find. As you will see, the VICA model indicates a flow of .00225 MGD, yet their current permit has a flow of 0.0042 MGD. Where the revised VICA model might be, I don't know. It's not on file.

If the model I've sent to you looks OK as is, please keep it as the official version. Otherwise, give me a call and I'll make the necessary changes. Thanks,

JC
NRO

Luckett's Travel Park STP / Loudoun County



Stream Gage Data : Goose Creek, near Leesburg VA

$Q_{7-10} = 2.3$ cfs

DA - 332 sq. mi.

$$\frac{.007 \text{ cfs}}{\text{mi}^2} \times 1.48 \text{ mi}^2 = \frac{.01036}{1.547} = .007 \text{ MGD}$$

Luckett Trailer Park

Assume STP : $BOD_5 = 20$ mg/l
$DO = 6.8$ mg/l
$Q = .0062$ MGD

Stream : $BOD_5 = 3$ mg/l
$Q = .007$ MGD
DO (calculated)

$$BOD_4 = \frac{50(.0062) + 7.5(.007)}{.0132} = \frac{.31 + .052}{.0132} = 27.4 \text{ mg/l}$$

K_1 based on $BOD_5 = 11.0 = .142\,(1.047)^{10} = .225$

elevation = 300 feet

$$DO_{SAT} = 7.6\,(1 - .00003\,(300 \text{ ft}))$$
$$= 7.53$$

90% $DO_{SAT} = 6.78$ mg/l

$$DO_f = \frac{6.8(.0062) + 6.78(.007)}{.0132} = \frac{.042 + .047}{.0132} = 6.79 \text{ mg/l}$$

$$D_a = 7.53 - 6.79 = .74$$

$K_n = 0$

K_2 : Using Tsivoglou / Wallace equation :

slope ≈ 30 ft/mi.
$v = .25$ ft/sec

$$K_2 = 4235.36\ US$$
$$= (4235.36)(.25)(30)(5280^{-1}) = 6$$

or, $K_2 = (.025)(24)(30) = 18$

K_2 AVG = (6 + 18)/2 = 12

K_2 = 12 (1.024)^{10} = 15.2 corrected

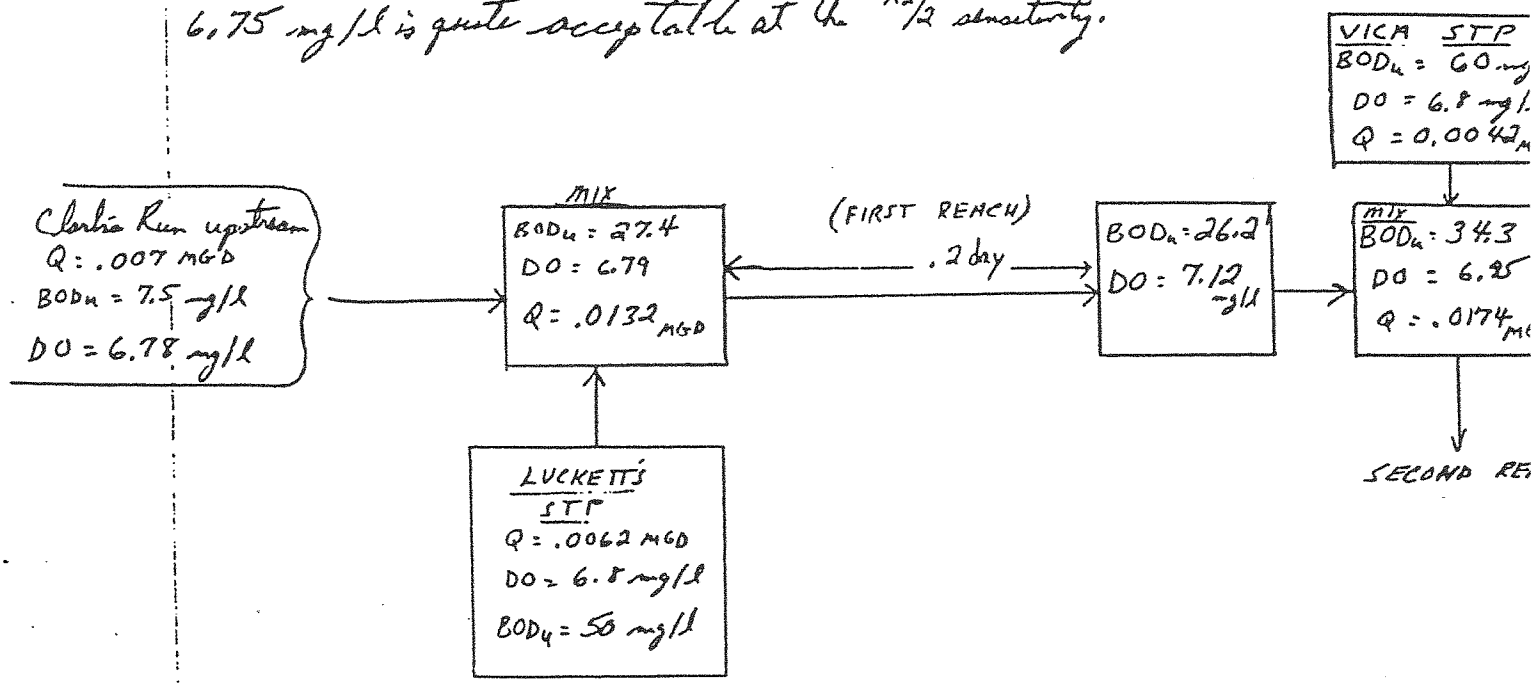
Time = 4329.6 ft / .25 ft/s = .200 day

FIRST REACH

SUME STP: DO = 6.8 BOD5 =	20	20	20	20
FTER MIX) ↳ BOD4	27.4	27.4	27.4	27.4
NOD4	0	0	0	0
Da	.74	.74	.74	.74
K1	.225	.450	.225	.450
Kn	0	0	0	0
K2	15.2	15.2	7.6	7.6
STEP	.04	.04	.04	.04
DO SAT	7.53	7.53	7.53	7.53
DO SAT 90 %	6.78	6.78	6.78	6.78
t (day)	.200	.200	.200	.200
DO SAG	6.94	6.75	6.75	—
DO END	7.12	6.77	* 6.75	6.16
Sensitivity	As calculated	Double K1	Halve K2	Double K1 and Halve K2
Acceptable	✓	✓	✓	X

* If the model is allowed to run past .20 day where the VICA STP is present it may be seen at 20 day and begins to increase at that point.

Running the second reach of the model with the VICA STP input — the VICA model (done in 1974) apparently required a DO in the upstream reach of at least 6.0 mg/l. At .2 day (the end of the 1st reach just prior to the VICA discharge) a DO value of 6.75 mg/l is quite acceptable at the $K_2/2$ sensitivity.



Second Reach

$$BOD_u = \frac{(26.2)(.0132) + (60)(.0042)}{.0174} = 34.3 \text{ mg/l}$$

$$K_1 = .253$$

$$DO_f = \frac{(7.1)(.0132) + 6.8(.0042)}{.0174} = 6.95 \text{ mg/l}$$

D_a = 7.53 − 6.95 = .58

K_2 = 15.2 AVG

Time = .4 day

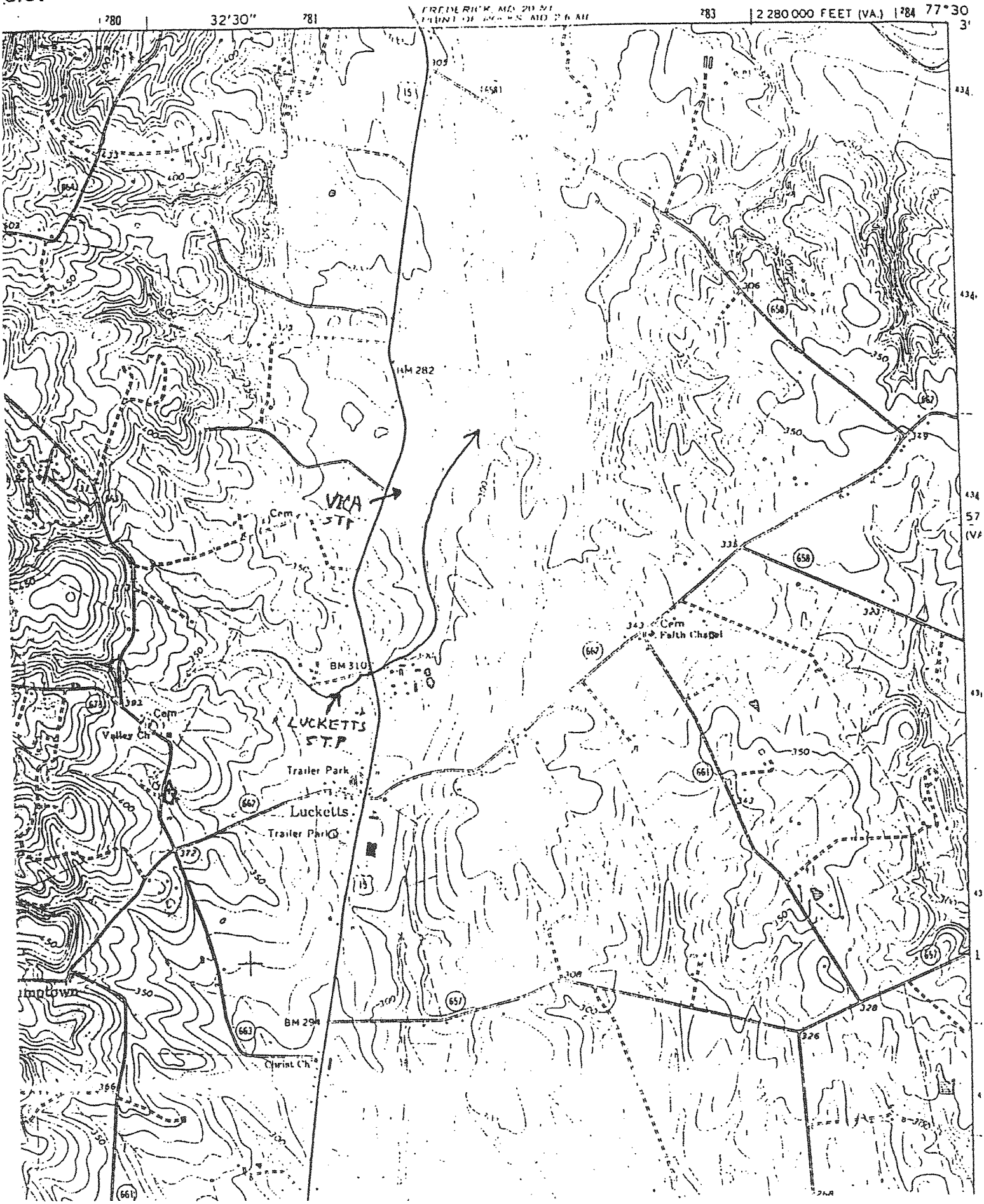
SECOND REACH

FTER MIX				
→ BOD_u	34.3	34.3	34.3	34.3
NOD_u	0	→		
D_a	.58	.58	.58	.58
K_1	.253	.506	.253	.506
K_m	0	→		
K_2	15.2	15.2	7.6	7.6
STEP	.04	→		
DO_{SAT}	7.53	→		
DO_{SAT} 90%	6.78	→		
t	.4	→		
DO_{SAG}	6.95	6.491	6.490	5.61
DO_{END}	7.0	6.56	6.491	5.62
Sensitivity	As calculated	Double K_1	Halve K_2	Double K_1 and Halve K_2
Acceptable	✓	✓	✓	X
D_f	−.2	.29	.29	1.17

Conclusion: Lucketts STP permit limits should include: BOD_5 = 20 mg/l
DO = 6.8

NIA
CES
GIST

TERFORD QUADRANGLE
RGINIA–MARYLAND
7.5 MINUTE SERIES (TOPOGRAPHIC)



ATTACHMENT 10

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2015 to XXX, 2015

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Loudoun Water, PO Box 4000, Ashburn, VA 20146 VA0061280

NAME AND ADDRESS OF FACILITY: SkillsUSA/VICA WWTP, 14001 James Monroe Hwy, Leesburg, VA 20176

PROJECT DESCRIPTION: Loudoun Water has applied for a reissuance of a permit for the public SkillsUSA/VICA WWTP. The applicant proposes to release treated sewage wastewaters from a vocational administration building at a rate of 0.0042 million gallons per day into a water body. The sludge will be disposed by pump and haul to the Broad Run WRF for further treatment. The facility proposes to release the treated sewage water in the Clark's Run in Loudoun County in the Potomac watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: Ammonia as N, BOD_5, TSS Total Residual Chlorine, *E. coli,* and Dissolved Oxygen. The permittee shall monitor without limitation the following parameters: Total Phosphorus, Total Kjeldahl Nitrogen, Nitrate+Nitrite, and Total Nitrogen.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Alison Thompson
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3834 E-mail: Alison.Thompson@deq.virginia.gov Fax: (703) 583-3821