pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	New	Application No.	PA0254771
Facility Type		APS ID	823684
Major / Minor	Major	Authorization ID	1031529

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	Tenaska PA Partners LLC	Facility Name	Tenaska Westmoreland Generating Station
Applicant Address	1044 N 115 Street	Facility Address	418 Nichols Road
	Omaha, NE 68154		Mendon, PA 15679
Applicant Contact	Bryan McConnell	Facility Contact	Bryan McConnell
Applicant Phone	724.743.3800	Facility Phone	Cell 412.973.8253
Client ID	270882	Site ID	718112
SIC Code	4911	Municipality	South Huntingdon Township
SIC Description	Trans. & Utilities - Electric Services	County	Westmoreland
Date Published in PA Bulletin	July 12, 2014	EPA Waived?	No
Comment Period End Date	February 23, 2015	If No, Reason	Proposed major facility
Purpose of Application	New steam electric generation station.		

Internal Review and Recommendations

The Tenaska draft NPDES permit was republished in the PA Bulletin on July 12, 2014 because of changes to the March 8, 2014 published draft NPDES permit. During the public comment period, pursuant to 25 Pa. Code § 92a.82(d), a request for a public hearing was submitted within the 30 day comment period. DEP determined, based on significant public interest, that a public hearing was warranted. In accordance with 25 Pa. Code § 92a.83, DEP published notice of a public hearing in the PA Bulletin on January 17, 2015. Prior to the public hearing, a public meeting was held on January 21, 2015 at the South Huntingdon Township Turkeytown Volunteer Fire Department where DEP personnel were available to answer questions regarding the draft NPDES permit. On February 11, 2015 the DEP held an additional public meeting followed by the public hearing at the South Huntingdon Township Turkeytown Volunteer Fire Department. The DEP accepted written testimony on the draft NPDES permit until February 23, 2015.

Following is a list of the individuals or groups that submitted comments on the draft NDPES permit with a number assigned to each commenter. Similar comments were grouped together and the number of each commenter who provided any given comment is stated before the comment. The comments are stated in italics and a response from the DEP immediately follows each comment. EPA did a limited review of the permit because this is a proposed major facility; EPA did not have any comments.

A significant number of the comments received were not within the scope of the NPDES permit for the discharge of industrial wastewater and are not addressed below. The NPDES permit provides the requirements that must be met to ensure compliance with the Federal Clean Water Act, Pennsylvania Clean Streams Law and all applicable regulations promulgated pursuant to these laws. These requirements protect the existing and designated uses of the stream which include aquatic life, water supply, and recreation. The DEP does not, as part of its review of an application for an NPDES permit, review an applicant's selection of a particular site for a project. In Pennsylvania the propriety of the location of projects is a question consigned to the jurisdiction of local municipalities by the Municipality Planning Code (zoning). Municipalities are also trustees under Article I, Section 27 of the Pennsylvania Code.

Approve	Return	Deny	Signatures	Date
X			Elizabeth A. Farley / Environmental Engineering Specialist	4-6-15
X			Dana M. Drake, P.E. / Environmental Engineer Manager	4-6-15
X			Christopher Kriley, P.E. / Program Manager	4-6-15

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Many comments were submitted regarding the proposed Air Quality Plan Approval for the Tenaska facility. All comments related to the proposed Air Quality Plan Approval will be addressed in the comment and response document prepared by the DEP's Air Quality Program.

There were questions regarding the requirement in Part A of the draft permit to monitor and report concentrations of certain parameters in the discharge. If the permit has "Report" as the effluent limitation then Tenaska is required to sample for that parameter and report the results on its discharge monitoring reports. This does not mean that the information is contained in another report. There was also a typographical error on page 4 of the NPDES permit. The monitoring frequency for zinc at Outfall 101 should have been once per week not once per month. This has been corrected.

Any questions related to the siting of the project, property values, taxes and the adequacy of local emergency crews should be directed to the local municipal officials. Any questions related to natural gas pipeline safety should be directed to the Pipeline and Hazardous Materials Safety Administration at 609-989-2171. Any questions related to public health should be directed to the Department of Health at 1-877-PA-HEALTH. Any questions related to plant safety and operation other than the storage of liquid materials at the facility, solid materials exposed to stormwater at the facility, wastewater discharges and environmental best management practices utilized at the facility should be directed to Public Utility Commission at 1-800-692-7380. Any questions related to the NPDES permit for the discharge of stormwater and groundwater encountered during construction should be directed to the Westmoreland County Conservation District at 724-837-5271.

Many of the comments received indicated concern over the sampling data submitted by Tenaska. As provided for in the NPDES permit application, new dischargers should, wherever possible, report projected effluent concentrations based on pilot studies or effluent from similar facilities. When this is not possible, new dischargers should use literature values, engineering studies and best professional judgment to estimate effluent concentrations. Tenaska appropriately provided estimated effluent values based on the quality of the source water. In order to confirm the level of pollutants in the discharge and address the comments, a Part C condition has been added to the permit requiring Tenaska to conduct sampling of the discharge consistent with the NPDES permit application requirements not before 90 days or after 180 days of commencement of the discharge and to submit the data to DEP for review within 240 days upon commencement of the discharge. In accordance with 25 Pa. Code §92a.61(b), the DEP may impose reasonable monitoring requirements on any discharge and require submission of data related to the monitoring. Upon receipt of the data, the DEP will conduct a water quality analysis. If it is determined that water quality based effluent limitations are necessary to protect the existing and designated uses of the stream, then DEP will initiate a permit amendment to incorporate the necessary water quality based effluent limitations. This is the Part C condition as it appears in the permit:

Part C.I.J

Not before 90 days or later than 180 days of commencement of the Outfall 001 discharge, Tenaska shall sample and analyze one influent sample and three effluent samples at Outfall 001 for those pollutants listed in pollutant groups 1-5 of the NPDES Application for Individual Permit to Discharge Industrial Wastewater. The sample results shall be submitted within 240 days upon commencement of the Outfall 001 discharge. The data shall be submitted on the application tables found on pages 11-18 of the application. The data shall be submitted to:

PADEP- SWRO
Clean Water- ATTN IW Permits Chief
400 Waterfront Dr.
Pgh, PA 15222

PADEP- New Stanton Regional Office
Clean Water- Water Quality Specialist South Huntingdon Twp
131 Broadview Road
New Stanton, PA 15672In order to provide clarity, Part C

Condition, Part C.III. A, was updated. The description of the stormwater outfalls listed will be changed from "The permittee is authorized to discharge non-polluting stormwater from its site, alone or in combination with other wastewaters through the following outfalls," to "The permittee is authorized to discharge only non-polluting stormwater from its site through the Outfalls 002-009. Stormwater discharged at Outfall 001 will be comingled with industrial wastewater prior to discharge."

It came to the attention of the DEP during the draft permit period that the discharge was modeled to determine if water quality based effluent limitations are necessary using the long-term average flow in PENTOXSD. Previous DEP policy was to use the long-term average flow for PENTOXSD modeling but this has been changed and now the maximum design flow is used to model discharges using PENTOXSD. The discharge was modeled again for lead, chromium, zinc, TDS, sulfate and chloride using the maximum design flow. Tenaska submitted estimates of expected effluent quality for zinc but did not analyze the source water for chromium. Therefore, the ELG effluent limitation of 0.2 mg/L of total chromium was modeled as being comprised of 0.1 mg/L of chromium (III) and 0.1 mg/L of chromium (VI). There is an effluent limitation for chromium in 40 CFR 423.15(j)(1) because it is often present in chemical additives used in cooling towers. When chromium is in these chemical additives it is typically present as chromium (VI). Tenaska does not propose to use any cooling tower chemical additives containing chromium. Therefore, the only chromium anticipated to be present in the discharge would be naturally

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occurring. Chromium that is naturally occurring is typically present as mostly as chromium (III). Therefore, modeling the discharge as being half chromium (VI) is very conservative. No water quality based effluent limitations are necessary based on this analysis but monitoring will be imposed for lead and chromium (VI) at Outfall 001.

The following comment was received from most commenters and pertains to all interested parties.

Comment:

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

Article 1 Section 27 of the Pennsylvania Constitution states:

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

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

Government agencies like DEP have an obligation to assess whether its actions would cause an unreasonable "actual or likely degradation" of air or water quality, or of the natural or scenic values of the environment. They cannot act in a way that infringes on the public's right to clean air, pure water or the preservation of natural, scenic, historic or aesthetic values. As trustees of those natural resources owned by the public, local governments have a duty to ensure their proposed actions will "prevent and remedy the degradation, diminution or depletion" of the resources not for the current generation and in the future for future generations. Trustees like DEP must "deal impartially with all beneficiaries" of the trust, and must "balance the interest of present and future beneficiaries."

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

Response:

DEP's issuance of this permit is consistent with applicable statutory and regulatory requirements. These requirements, as well as other considerations undertaken by DEP including its consideration of the public comments described in this document (below), and the terms and conditions of the permit, satisfy Article I, Section 27 of the Pennsylvania Constitution.

Some citizens expressed concern over the discharge of bromide as it relates to Article I, Section 27. The DEP has considered the issue of bromide and has concluded that any bromide in the discharge that would be authorized by this Permit would not pose a threat to the values protected by Article 1, Section 27. The volume of the discharge itself is very small in comparison to the stream flow (0.5% of the stream flow). Nonetheless, and in response to this expressed concern, the DEP has imposed a requirement to conduct monitoring for bromide.

Some have suggested that an effluent limitation for bromide should be imposed. While the DEP has acknowledged that bromide is a pollutant of concern in many watersheds in the region, there is currently no water quality criterion for bromide. A water quality criterion is necessary before an effluent limitation could be calculated.
Through this permit DEP was as conservative as possible in order to develop a permit that is as protective as possible. This permit will be protective of all of the uses of the stream and will not infringe on citizens' rights to clean air, pure water and natural beauty, now or in the future.

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LIST OF COMMENTERS

1 Steve Hvozdovich, Clean Water Action- Pennsylvania
2 Sam Koplinka-Loehr, Shale Gas Organizer Clean Air Council
3 Ken W. Dufalla, President, Isaac Walton League of America Greene County
4 Oday Salim, Esq, Fair Shake Environmental Legal Services
5 Janice and Jack Milburn, Westmoreland Marcellus Citizens Group
6 Nick Kennedy, Esq., Community Advocate, Mountain Watershed Association
7 Dr. Harvey and Diane Bendix

8	John Dulik	55	Eric Durante	102	Leona Dunnett
9	Kelly Tatone	56	Jackie Bonomo	103	Amy Arendas
10	April Jackman	57	Mary Ann Leitch	104	Sherry McNeil
11	Melissa Strobel	58	Russell Zerbo	105	Rosalyn Robitaille
12	Elizabeth Nordstrom	59	John Luikart	106	Michael Gerhart
13	Ron Slabe	60	Michael Heller	107	Joanne Garing
14	John Atherton	61	Nancy Novak	108	Dale Adams
15	Christy Milburn	62	Will Fraser	109	William Martz
16	Edward Chute	63	Fran Harkins	110	Jamie Dubinsky
17	Marc Levine	64	Stephen Draper	111	Daniel Mamrose
18	William Hufford	65	Michael Mance	112	William Catalina
19	Barbara Grover	66	Joseph Kalinowski	113	Ethel Buley
20	Gwen Chute	67	Sarah Caspar	114	Edwin Hiley
21	Mary Houseman	68	Anette Szafraniec	115	Jane Kirk
22	Rachel Chaput	69	Catherine Greer	116	Sandi Covell
23	Madelyn Ferez	70	Deborah Hauck	117	Lynn Benson
24	Anne MacDougall	71	George E. Wicker	118	Colleen Hamilton
25	Jan Milburn	72	Nicholas Diamond	119	Bob Vaughan
26	Gregory Pais	73	Renae Daniels-Simmons	120	Joseph Wenzel
27	Jonathan Zaikowski	74	Sabrina Wojnaroski	121	Doug Rawling
28	Carolin Schellhorn	75	Douglas Mason	122	Richard Jacobel
29	Vera Scroggins	76	Julie Edgar	123	Chad Hayes
30	Robert C Damon	77	Marian Szmyd	124	Linda Myers
31	Daniel Piser	78	Kathleen Borres	125	Elaine Becker
32	David Kagan	79	Marigrace Butela	126	Robert Manchester
33	Cheryl Dzubak	80	J.T. Smith	127	Samantha Turestsky
34	John Comella	81	Judith Max	128	Ginger Hill
35	Pamela Fitzpatrick	82	Charles Price	129	Richard Kite
36	Louise de Simone	83	Maggie Henry	130	Katherine Comini-Sherrod
37	Julia Rolf	84	Jessica Gaffron	131	Robert Backstrom
38	Julia Rolf	85	Susan McCune	132	Sandra Bernstein
39	Chara Armon	86	Karen Poels	133	Nina Bernstein
40	Jill Wiener	87	Jenny Graybill	134	Albert Bernstein
41	Paul Roden	88	Patrick Vogelsong	135	Lori Keslar
42	Thomas Nelson	89	Alyson Holt	136	Ronald Nordstrom
43	Susan Shaak	90	Bill Ferullo	137	Phyllis Blumberg Kosherick
44	Noreen McCarthy	91	Marliese Bonk	138	Margaret Wood
45	Karen Granche	92	Ron Lane	139	Richard Gosser
46	Allan Post	93	Elizabeth Donohoe	140	Carol Cutler
47	Amanda Buchko	94	Crystal Yost	141	Michele Bertini
48	Elizabeth Engleman	95	Lori Shermer	142	Deron Gabriel
49	Christine Hendryx	96	Joyce Clohessy	143	Marcia Lehman
50	Peter Zibinski	97	Dylan Weiss	144	Jeff and Joanne Hall
51	Faith Zerbe	98	Dylan Weiss	145	Linda Irwin
52	Ron Cehelsky	99	Michael Miller Jr	146	Bernard Survil
53	Jeanette Elbattah	100	Jerry Sopko	147	Peg Russell

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54	Jeffrey Shralow	101	Cindy Arblaster	148	Annette Phillips
149	Oliver J and Louis U Drumheller	206	Marcus Tonini	263	Michael Weber
150	Judith Irwin	207	Gary Allen	264	David Weber
151	Dr. Ralph and Billie Ann Miranda	208	Rodney Logan	265	Jimmy Ameris
152	Timothy Slonecki	209	Brian Griffith	266	Jeannine Dean
153	NB Downes	210	Gary Wetzler	267	William Dean Jr.
154	Stephanie Ulmer	211	Joseph Medved	268	Denise Neal
155	Janet & Phillip Irwin	212	Timothy Jones	269	Justin Tessler
156	Don Dixon	213	Sean Nave	270	Nathaniel Porterfield
157	Jeff Shaw	214	Rita McConnell	271	Terry Porterfield
158	Jack Milburn	215	Danielle Boston	272	Robert Williamson
159	Renny Sherrow	216	Denis Mazzoni	273	Marlene Tessler
160	Jan Kiefer	217	Joy Ruff	274	Chelsie Tessler
161	Dr. Edward Oles	218	John Peters	275	Justin Tessler
162	Louis F. Pochet	219	Paul Kanouff	276	Kevin Baligush
163	Cynthia Walter	220	Connie Barlow	277	Larry Ruffner
164	Jim and Carol Darr	221	Gregory Lang	278	Shawn Kennedy
165	Anita Grillo	222	George Knack	279	Mark Campbell
166	Susan Krotec	223	Alex Cerreti	280	Nathan Harr
167	Bruno Petruccelli, MD	224	Len Negvesky	281	Dana Dolfi
168	Rachel Lario	225	Timothy Eriksen	282	Ray Schindley
169	Stephen R. Pavlik	226	Dan Tomley	283	Joseph Permuko
170	Stephanie Novak	227	Arthur Bush	284	Justin McCallen
171	John Lash	228	Del Dosch	285	Julie Adams
172	Karen & William Hoak	229	Tammy Koshar	286	William E. Glenn
173	Kristin Poerschke	230	Steven Koshar	287	Hillary Leachman
174	Tom Nizzel	231	Christy Boyd	288	Josh Berklovich
175	Ed and Vickie Oles	232	Alex Richardville	289	Terri Koricich
176	Thomas Sevin	233	Jim Boyd	290	Jon Koricich
177	Roger Loughney	234	Joe Brahosky	291	Lee Kontis
178	Dorothy Pochet	235	David Kubicek	292	William Silvis
179	Sandra Saccani	236	Timothy White	293	Patricia Carson
180	Andy and Paula Pollak	237	James Day	294	Robert Carson
181	Bob Mason	238	Keith Ruff	295	Dwight Joffer
182	L. Ray Roberts	239	Mark Joseph	296	Matthew Gargan
183	Harriet Ellenberger	240	Angela Joseph	297	Carolyn Broome
184	Patricia Watkins	241	Richard Komondor II	298	Janet Ritenour
185	Lorraine Petrosky	242	Larry Deal		
186	Gerald R Farzati	243	John Blackburn		
187	Billie Miranda	244	Darlene Blackburn		
188	Janet L. Erhard	245	Frank Mazzoni		
189	Phyllis Friend	246	Diana Nightman		
190	Diana Wydareny	247	Jan Koricich		
191	Edward J. Wydareny	248	Charles Bates		
192	Madeliene Manning	249	Tom Tunney		
193	Carol Francese	250	Tim Custer		
194	Mary Beth Kuznik	251	Frank E. Bovalino		
195	John Friend	252	Craig Ainsley		
196	Jessi Shoemaker	253	Dylan Munshower		
197	E. Roy and Judy Ward	254	Mark Steves		
198	Robert Patrick	255	Carl Cancro		
199	Complainant 1	256	John Hennen		
200	Complainant 2	257	Marc Ferrari		
201	Complainant 3	258	Chad Morrison		
202	Complainant 4	259	Robert Lovis Jr		
203	Complainant 5	260	Nick Zizan Jr.		
204	Walt Vinoski	261	Sean McManus		
205	Michael Kucinic	262	Robert Kramm		

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Comment 1 received by commenters 2, 3, 4, 6, 8, 9, 10, 11,12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 149, 150, 152, 155, 163, 164, 166, 168, 170, 178, 179, 196, 198, 199, 200, 201, 202 and 203 :

The Westmoreland plant is estimated to need 5 million gallons per day in order to meet its operating capacity. During its use, pollutants and heat accumulate in the water. Tenaska Energy plans to discharge any wastewater from the power plant into the Youghiogheny River, a major source of drinking water and recreational activities, as well as a tributary of the Monongahela River.

Response 1:

The Tenaska Westmoreland Generating Facility ("Tenaska") will discharge a maximum of 1.2 million gallons of water per day into the Youghiogheny River. Water quality based effluent limitations dictate the concentration of pollutants that can be discharged to the receiving stream in order to protect the existing and designated uses of the stream. In this case the stream is protected for aquatic life, recreation and as a water supply. The effluent limitations are developed in accordance with federal and state regulations for the purpose of protecting these uses of the receiving stream. The permit is protective of the existing and designated uses of the stream.

Comment 2 received by commenters 1, 3, 4, 6, 10, 14, 19, 25, 66, 77, 89, 93, 105, 112, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 155, 156, 157158, 159, 160, 161, 162, 163, 164, 166, 168, 170, 173, 178, 179, 196, 198, 199, 200, 201, 202, 203 :

The permit application is incomplete. Details on the proposed industrial water and storm water discharges were not sufficient for independent experts to check Tenaska's application and the DEP review of that application. Citizens have a right to know all aspects of the permit and DEP analysis of the permit.

Response 2:

The only information that was not explicitly submitted on NPDES permit application forms was the estimate of pollutants in the stormwater that does not come into contact with industrial activity. Tenaska simply stated that it was not expected that pollutants would be present in the stormwater from areas of the facility where no industrial activity takes place. Those areas include parking areas for facility employees and grassy areas surrounding the facility. The application submitted by Tenaska was complete.

Comment 3 received by commenters 1, 2, 3, 4, 6, 14, 19, 25, 66, 77, 89, 93, 105, 107, 112, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 173, 174, 176, 177, 178, 179, 180, 182, 183, 184, 185, 186, 187, 188, 189, 190, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202 and 203. The comment was also received at the public hearing from commenter 205:

DEP lacks essential biological data on the Youghiogheny River and tributaries impacted by discharges. DEP used only general guidelines to approve Tenaska's plans to discharge daily 1.2 million gallons of industrial waste water, but local fishermen know the outfall area is a spawning bed. Also, DEP does not have relevant information on tributaries designated to receive stormwater, impacts on drinking water aquifers, road flooding, etc. An October 15, 2014 article in the Pittsburgh Post-Gazette highlights the pristine water in the river and the fishing that is available. This could be put into jeopardy.

Response 3:

The federal and state regulations that apply to this kind of permit were developed for the express purpose of protecting streams from adverse effect from discharges into them. This permit was drafted in accordance with those state and federal regulations and thus protects the uses of the receiving streams. Water quality based effluent limitations are developed in accordance with 40 CFR 122.44(1)(d) and 25 Pa. Code Chapter 96. The Department's regulations in 25 Pa. Code Chapter 93 contain the specific water quality criteria for pollutants that are to be achieved instream and the associated critical use. Water quality criteria may vary based on the protected water use, as defined in 25 Pa. Code § 93.9, of the receiving stream. In this case, the Youghiogheny River is designated as a warm water fishery at the point of discharge. In accordance with

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Chapter 96, effluent limitations were developed for Outfall 001 so that the instream criteria for a warm water fishery would be achieved during design flow conditions.

The stormwater outfalls that discharge to tributaries of the Youghiogheny River are discharge points authorized under the NPDES permit for discharges of stormwater associated with construction activity. They were incorporated into the NPDES permit for the discharge of industrial wastewater simply because they are outfalls associated with the facility, however, those discharge points will not be impacted by the industrial activity at the facility. All stormwater impacted by industrial activity will be discharged via Outfall 001 with the other industrial wastewaters.

The Outfall 001 discharge location was reviewed by DEP staff and was determined to be an acceptable location. The outfall will be immediately upstream of where Barren Run enters the Youghiogheny River and of the I-70 bridge that crosses the river. This is a preferable location because Barren Run entering the river will provide mixing, the bridge piers create riffles in the stream which provide mixing and there is a natural riffle immediately downstream of the bridge which also provides mixing. Based on discussions with residents, DEP believes that the area that is popular with fishermen is upstream of the discharge location.

The additional water discharged to the Youghiogheny River via Outfall 001 is not a significant enough volume to increase flooding concerns and the river flow is also regulated by the Youghiogheny Dam. The stormwater discharges to local tributaries were discharge points established under the construction permit. As part of that authorization, Tenaska was required to develop a post construction stormwater management plan to control pre to post development rate and volume in accordance with 25 Pa. Code Chapter 102. Because of this requirement, infiltrative technologies were employed for the stormwater that is not impacted by industrial activity. Please review the NPDES permit for discharges of stormwater associated with construction activities for more information on the stormwater best management practices (BMPs) that will be implemented. It is not anticipated that the uncontaminated stormwater discharges will have any impact on the groundwater aquifers.

Comment 4 was received from commenters 1, 2, 4, 6, 10, 14, 19, 25, 66, 77, 89, 93, 105, 112, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 166, 168, 170, 178, 179, 196, 198, 199, 200, 201, 202 and 203:

Tenaska underestimated toxic chemicals in the discharges. Tenaska did not submit a complete, properly conducted analysis of input water, and thus their pollution estimates of output water chemistry are inadequate. A representative from Tenaska at the public meeting could not answer our questions about how often the discharge water would be tested for pH and chemical pollutants.

Response 4:

As it is allowed under the regulations, the discharge concentrations were estimated by analyzing the water that Tenaska will be purchasing for cooling (municipal drinking water) and multiplying the concentrations of pollutants in that water by the number of times the water is proposed to be recirculated through the cooling system. The concentrations are multiplied because some of the water will evaporate and the pollutants will be more concentrated due to that evaporation. At this point Tenaska recognizes that chemical additives will likely be required to reduce algae growth and corrosion in the cooling towers but the specific chemical additives that will be employed have not been selected. Any pH adjustment chemicals have also not been selected. There is a possibility that pH adjustment may not be necessary. Based on this information, there is no reason to expect any pollutants, other than those in the influent, to be present in the discharge and therefore the expected quality provided with the application is accurate at this time.

There is a regulatory procedure for approving any necessary chemical additives in Part C of the permit and that condition requires that the uses of the stream be protected, including aquatic life. Prior to usage of any chemical additive, Tenaska will have to submit a chemical additive request form to the DEP for review and development of the water quality criterion for the chemical additive. The permittee then submits a chemical additive notification form to the DEP regional office for review and approval. If the usage rate proposed by the permittee will not cause an excursion about the water quality criterion for the additive then the notification form is approved and the permittee can use the chemical additive at the approved rate. For more information on the chemical additive approval process please visit the PADEP Chemical Additive website found here:

http://www.depweb.state.pa.us/portal/server.pt/community/wastewater_management/10582/chemical_additives/1305674

As stated previously, Tenaska will be required to submit sample results after the plant begins operating and the discharge

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will be reevaluated for water quality impacts at that time. If it is determined at that point that water quality based effluent limitations are necessary to protect the uses of the receiving stream then DEP will initiate a permit amendment. Additionally, the permit must be renewed every five years and during the permit renewal process the discharge is evaluated to determine if water quality based effluent limitations are necessary. When the permit is amended or renewed the public can comment on the permit during the public comment period. The flow and pH of the discharge will be monitored daily and all other chemical constituents will be monitored once per week.

Comment 5 was received from commenters 1, 2, 4, 6, 14, 25, 77, 89, 93, 105, 112, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 166, 168, 171, 178, 179, 196, 197, 198, 199, 200, 201, 202 and 203. The comment was also received at the public hearing from commenters 66 and 170:

The Department should lower the instantaneous maximum limit for temperature.

DEP is allowing temperatures that are much too high. DEP analysis assumes a criteria water temp of 87 deg F in mid-summer and discharge maximum of 110 deg F are acceptable. Both temperatures are much too high for the Youghiogheny River. Tenaska has stated that the wastewater temperature will be around ambient temperature. The discharge location is a fish spawning habitat. Tenaska is not required to sample the temperature at the point where the discharge enters the Yough.

The Department states in the March Fact Sheet that the temperature limit at Outfall 001 is based on "effluent limits given to similar facilities." The Department does not inform the public in the Fact Sheet what limits have been given to similar facilities or what facilities it considered as similar. However, in the attached discharge permit for a Tenaska facility in Texas, a temperature limit of 95 degrees was applied as a daily maximum. Due to the similarity in the two Tenaska facilities, we respectfully request that DEP adjust the temperature limit to at least 95 degrees as a daily maximum.

Response 5:

The instream temperature criteria that cannot be exceeded for the protection of aquatic life are contained in 25 Pa. Code §93.7. These state criteria are developed by the DEP's Water Quality Standards group for the entire state of Pennsylvania and are published for public comment every three years. For more information on how criteria are developed please visit the Water Quality Standards website here:

http://www.portal.state.pa.us/portal/server.pt/community/water_quality_standards/10556.

The instream criterion that cannot be exceeded for warm water fisheries is 87°F for a period of time in the summer (July-Aug). DEP biologists have recorded similar temperatures on the Youghiogheny River in the summer. The need for a water quality based effluent limitation is evaluated using a mixing model. It is a fairly straightforward mass balance equation utilizing the discharge flow rate, receiving stream design flow condition, ambient background temperature and the applicable temperature criterion from Chapter 93 as inputs to determine the allowable discharge temperature. Please refer to the DEP's *Implementation Guidance For Temperature Criteria* (Document No. 391-2000-017) for a detailed discussion on the determination of temperature effluent limitations. This model determined that no water quality based effluent limitation was necessary in any of the 19 distinct monthly and semi-monthly time periods.

The 110°F effluent limitation is not a water quality based effluent limitation that is explicitly outlined in the regulations, but a safety standard that is employed to protect members of the public who might come into contact with the discharge directly before any mixing occurs. The critical season for thermal effluent limitations is usually in the winter when a low instream temperature must be maintained. However, the flow of the receiving stream is so great in comparison to that of the discharge (more than 100 times greater than the discharge flow) that there is sufficient assimilative capacity so that no effluent limitations are necessary, even in the winter.

Please note that Tenaska has estimated that the water will be discharged at 60-75 °F. As explained above, 110 °F limit was implemented to protect public safety, not on the need for a water quality based effluent limitation to protect the aquatic life in the stream. The temperature must be monitored before the wastewater enters the river. Because the discharge point is approximately 2 miles from the plant, Tenaska has requested to monitor the temperature closer to the facility. There will be no thermal sources following the monitoring location so the water temperature will be the same temperature or more likely lower when entering the river as compared to the monitoring location.

Internal Review and Recommendations

The March Fact Sheet states that "Temperature limits are based on effluent limits given to similar facilities, 25 PA Code Chapters 92a, 93 and 95 and The Implementation Guidance for Temperature Criteria." This statement is in reference to the fact that the effluent limitation imposed, 110°F, is not a regulatory requirement. However, at other facilities with thermal discharges the effluent limitation has been imposed to protect public safety and, therefore, the protected use of recreation. This effluent limitation has been upheld in an appeal which is why similar facilities are mentioned. The sentence is meant to assure the permittee that effluent limitations are being applied consistently and the DEP is not placing their facility at a competitive disadvantage by applying effluent limitations inconsistently. Similar facilities would be other facilities with thermal discharges for which water quality based effluent limitations are not necessary to protect aquatic life.

The temperature criteria are state water quality criteria from 25 PA Code § 93.7. The DEP has no regulatory authority to impose water quality criteria from other states. The fact sheet for the permit facility in Texas was not provided so the basis of the effluent limitation is unknown. The permit is protective of the uses of the stream.

Comment 6 was received from commenters 1, 2, 4, 5, 6, 14, 25, 66, 77, 89, 93, 105, 112, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 166, 167, 168, 169, 170, 178, 179, 196, 198, 199, 200, 201, 202 and 203:

DEP should require testing of the combined effects of the pollutants on aquatic life before granting a permit. DEP should include additional permit conditions that other permitting authorities have imposed for a similar facility operated by the Applicants parent/sister company.

On December 29, 2011, the Texas Commission on Environmental Quality issued a state NPDES permit to Tenaska Gateway Partners, Ltd for the Tenaska Gateway Generating Station which is the same kind of facility at issue here. The Texas permit requires whole effluent toxicity testing in order to protect aquatic life.

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

Response 6:

As provided for under 25 Pa Code §93.8a(g), the DEP may consider synergistic, antagonistic and additive toxic impacts from toxic substances. DEP has determined that the discharge does not meet the criteria to require WET testing under 25 PA Code § 92a.27. The federal regulation found at 40 CFR 122.44 (d)(1)(ii) states that, "When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water." Based on the expected consistent pollutant profile of the discharge, the high assimilative capacity of the receiving stream and the determination that the discharge will not exceed any narrative or numeric state criteria, WET testing is not necessary. If the samples provided after the plant begins operating indicate that the state narrative or numeric criteria are being exceeded then WET testing will be required at that time. This will be evaluated both when the samples are submitted after Tenaska begins operating and again when the permit is renewed.

Although the applicant provided a number of MSDS sheets with its application, at this time, no chemical additives are being approved for use at the facility. This further supports the determination that WET testing is not necessary considering no pollutants, other than heat, will be added to the discharge under this authorization. It should also be pointed out that chromium and zinc effluent limitations are imposed in accordance with the federal ELG. The source of these toxics, as explained in the development document, is the additives used to prevent corrosion and algae growth in the cooling towers. At this time, none of the chemical additives being considered for use at the facility contain chromium or zinc.

Internal Review and Recommendations

Comment 7 was received from commenters 67, 107, 150, 155, 169, 170, 172, 174, 175, 176, 180, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194 and 195:

The Department doesn't attempt to protect public interest when a big corporation applies for an NPDES permit. Is it not your duty to ensure that public health is protected and that the information submitted by Tenaska is correct?

Response 7:

The Clean Streams Law, the Clean Water Act and the federal and state regulations that govern the review of applications for an issuance of NPDES Permit are written specifically to protect the public interest. The DEP applies those laws and regulations consistently to all permittees to ensure protection of the public interest. The size of the company which is an applicant has no bearing on the development of appropriate effluent limitations that are imposed in an NPDES permit. Any samples taken in support of an NPDES permit must be analyzed by an accredited laboratory, certified by the Commonwealth. Those analytical results must be submitted, along with the summary tables. DEP ensure that all of the information is accurate and complete before it issues a Permit.

Further, it is important to note that the NPDES permit for the discharge of industrial wastewater alone does not address all public safety issues. There are many regulatory authorities involved at any given facility. Information is provided previously in this document regarding the appropriate organizations to contact regarding a number of public safety issues. It is a requirement for facilities obtaining an NPDES permit to develop a Preparedness, Prevention, and Contingency (PPC) plan which outlines measures employed by the facility to prevent accidental pollution including employee training, preventive maintenance, housekeeping, security, backup equipment, spill containment, drainage controls, and inspections. The PPC plan also provides for emergency procedures and contacts in the event of a spill.

Comment 8 was received from commenters 154 and 170 :

According to the Maryland Department of Natural Resources' Power Plant Research program "high water temperatures [in the Yough occurring in the river mainstem during summer may significantly limit trout habitat."

Response 8:

As described in Response 5, above, the instream temperature criteria are found at 25 Pa. Code §93.7. These state criteria are developed by staff in the DEP's Water Quality Standards group for the entire state of Pennsylvania to be protective of aquatic life for a waterbody's protected use. The segment of the Youghiogheny River to which Outfall 001 discharges is designated as a warm water fishery. The temperature effluent limitations for Outfall 001 are protective of the existing and designated uses. It is important to note that warm water fisheries are not preferred trout habitat. .

Comment 9 was received from commenter 10:

The Yough River is having issues with algae growth called "river snot" which is clogging water ways. The Tenaska plant will increase this water temperature even more, upsetting the temperature balance needed for a healthy aquatic fish habitat. The following was published in 2013, "If you go fishing or boating in the Youghiogheny River, Pennsylvania officials want to make sure you scrub down your gear to prevent the spread of an invasive algae blood with the highly descriptive name of rock snot"

Response 9:

The DEP has investigated the diatom Didymosphenia geminate colonies referred to as "didymo" or "rock snot", throughout the Youghiogheny River. These colonies are prevalent in the segments of the river designated as cold water fishes (CWF), which is the preferred habitat of these organisms. There have been only a few colonies identified in the river below the Connellsville Dam, which is where the designated use of the Youghiogheny River changes to warm water fishes (WWF) and these few instances are located where a significant cold water tributary enters the stream. This discharge will be heated so it should not increase the presence of the diatom in the river. Please also see responses 5 and 8, above regarding the temperature effluent limitation.

Internal Review and Recommendations

Comment 10 was received from commenters 150, 155, 169, 170, 172, 175 and 180. The comment was also received from commenter 145 at the public hearing:

Please do not give into everything big industry wants. Will you do your part to protect nature?

Response 10:

The permit is consistent with all applicable federal and state rules and regulation and is protective of the existing and designated uses of the receiving stream.

Comment 11 was received from commenters 3, 67, 145, 154, 169, 174, 176 and 180:

As a resident of Westmoreland County I am appalled by the devastation which is a direct result of the DEP's inability to cope with the huge demands of the oil and gas industry. You have far too many job sites to properly regulate and enforce now, let alone plan for more. The degradation of PA's air and water, due to accident and infractions by the oil and gas industry are so numerous it is unbelievable. Potter, Bradford, Tioga, Green, Fayette and Washington counties are the reason the state of New York has banned fracking. The plant will be fueled mainly by gas produced by fracking. You want to pollute my county and despoil the beautiful Youghiogheny River in the process. Denying the permits is the only reasonable course of action, due to incomplete permit applications and your inadequate studies examining the effects of VOCs and hazardous substances on people and aquatic life. The Mountain Watershed Association and Fair Shake have given expert testimony and are knowledgeable in these matters. Perhaps you should hire them to help you do your work?

Response 11:

The DEP does not have any knowledge as to where the natural gas to fuel the plant will be purchased, traditional or unconventionally drilled gas wells. Neither could it dictate the source of the natural gas from which Tenaska purchases the natural gas to fuel this plant. The source of the natural gas does not have any bearing on the pollutants in the discharge because cooling tower blowdown, low volume wastes and stormwater will not come into contact with the gas or the air emissions. This authorization does not approve any natural gas extraction.

The NPDES permit applies state and federal regulations to ensure compliance with the Clean Water Act and Clean Streams Law as they relate to the discharge of industrial waste, stormwater associated with industrial activity and uncontaminated stormwater. Tenaska does not propose to discharge VOCs but there will be additional sampling submitted after the plant is constructed and operating as described in the narrative portion of this document before the comment and responses began.

Comment 12 was received from commenter 66. The comment was also received from commenter 170 at the public hearing:

The temperature effluent limitation focuses only on the far field effects where the outfall discharge and the river flow are thoroughly mixed. This totally ignores the river temperature field in the vicinity of Outfall 001 where the near field river temperature will be the same as the outfall discharge temperature. The attached figure (CR Thermal Plume.ppt) shows the thermal effect of an outfall discharging into a flowing river at a lower temperature. The high temperature water (yellow) hugs the shoreline, an area where the river is shallow and the flow is slow. This is a region of little mixing. The region of increased flow mixing occurs toward the middle of the river where flow is faster.

According to the Encyclopedia of the Earth, raising the river water temperature will alter the metabolism of the species present. Original species will migrate away and alien species may enter the local aquatic system. The most readily observable phenomenon will be mass fish kills along the shoreline, particularly juveniles or fish fry that are vulnerable to small changes in temperature. West Newton sportsmen and others have worked hard over the years to bring sport fishing and recreational activities back to the Youghiogheny River and make this area aesthetically appealing for visitors to the River. It is unconscionable that a state body whose mission is to protect the environment would approve an action that will degrade the Youghiogheny River.

Furthermore, according to the Pennsylvania Code on Water Quality Standards, design alternatives to direct discharge should be considered. This might include holdup of the high temperature effluent in a cooling pond on the project site before discharge. The amount of effluent involved is small enough to be accommodated in an unused area on-site.

Internal Review and Recommendations

Response 12:

In addition to the temperature effluent limit applied, which was based on public safety, there is also a Part C condition in the permit that addresses near field effects. Part C.1.E of the NPDES permit states that," This discharge shall not cause a change in the stream temperature of more than 2°F during any one hour." Additionally, the location of the discharge pipe is in an area of the stream where high mixing is expected. The water will be discharged into the river directly upstream of where Barren Run discharges into the river. Barren Run entering the river will create mixing. This is also directly upstream of the 1-70 bridge that passes over the river. The piers of the bridge create a riffle resulting in more mixing. Finally, the water will pass over another natural rock riffle immediately downstream of the bridge. These three points will allow the water to become thoroughly mixed quickly.

The criteria established in 25 PA Code §93.7 dictate the stream assimilative capacities for temperature based solely on the difference between the ambient temperature and the criterion temperature at the design stream flow. The temperature criteria are based on current scientific literature and on extensive review of Water Quality Network (WQN) data from throughout the state. Near field thermal impacts are intended to be addressed by the regulatory requirement that the stream temperature cannot be changed more than 2°F during any one hour. At one time the main purpose of this requirement was to prevent cold shock impacts due to sudden shutdowns of heat-producing facilities. This requirement also serves to limit the magnitudes of excursions which can occur above allowable temperatures at the outfall pipe.

The following is taken from the DEP's *Implementation Guidance For Temperature Criteria* (Document No. 391-2000-017), "Chapter 96 requires that the 7-day, 10-year low flow (Q7-10) of the receiving water be used as the design stream flow condition, and that steady-state modeling be applied in these water quality analyses. Historically, instantaneous complete mix of the discharge with the receiving stream has been assumed in water quality analyses designed to produce thermal effluent limits. Under normal conditions, the Department considers this assumption to be appropriate. However, in some adverse scenarios, the Department may base thermal effluent limits on receiving water flows of less than the full design flow (referred to as the portioned flow). These adverse factors and scenarios include:

- The discharge is to a lake, pond, impoundment or other low-gradient receiving water, resulting in restricted dispersion of the plume, and horizontal and vertical stratification of the plume.
- The discharge is to a receiving water that is very wide, resulting in restricted dispersion of the plume, and horizontal stratification of the plume.
- The discharge is to a receiving water channel that is braided, effectively limiting dispersion of the plume.
- There is the potential for overlapping thermal plumes from two or more sources.
- Field observations indicate excessive instream temperatures, which may indicate strong solar heating effects, excessive error in estimated ambient temperatures, or inadequate facility monitoring.
- The Department's biological staff have observed adverse impacts that may threaten the protected uses of the receiving water, and are potentially attributable to the heated wastewater discharge."

When considering these factors with the characteristics of the Outfall 001 discharge location as described above, it is reasonable to assume complete mixing of the discharge with the receiving stream. The discharge does not require a water quality based effluent limitation for temperature and the effluent limitation based on safety will be protective of aquatic life and public safety. 25 PA Code § 93.4c does require that design alternatives to direct discharges be considered when the discharge is to a special protection watershed, either high quality or exceptional value. There is no requirement that Tenaska consider design alternatives because the Youghiogheny River is a warm water fishery, not a special protection watershed. However, Tenaska is using a buried pipe to discharge the water to the river. There will be thermal loses in the pipeline and it is unlikely that the discharge temperature will ever approach the 110°F effluent limitation.

Comment 13 was received from commenters 7, 66 and 145:

What tanks will be onsite at the facility? What is the function of those tanks? Will there be an emergency plan in place?

Internal Review and Recommendations

Response 13:

There will be some storage of liquid materials at the facility including fuel oil (vehicle fuel, fire pump fuel), insulating mineral oil (lubricant within plant), lube oil (lubricant within plant), ethylene glycol (boiler- not to be discharged), sodium hydroxide (boiler- not to be discharged), carbonic dihydrazide (boiler- not to be discharged), condensate amine (boiler- not to be discharged), sodium hypochlorite (cooling water treatment), sulfuric acid (cooling water treatment), tetrapotassium pyrophosphate (cooling tower corrosion inhibitor), sodium molybdate (cooling water bio-dispersant), sodium hypochlorite (raw water treatment- pH adjustment), alum (raw water treatment- coagulant), isoparaffinic petrolum distillate (raw water treatment polymer). There will also be demineralized acid and caustic to treat the boiler water which will not be discharged and sodium bisulfite for wastewater treatment prior to discharge, if needed. Any chemical additive that will be discharged must be approved through a process, described previously in Comment 4, which includes concurrence from DEP that the proposed discharge concentration will be protective of the existing and designated uses of the receiving stream. At this time, because the plant design is not final, the specific volumes and locations where the chemicals will be stored and what chemicals will be necessary has not been determined.

A requirement for facilities obtaining an NDPES permit for the discharge of industrial waste is having a Preparedness, Prevention and Contingency Plan (PPC Plan). This plan outlines all of the best management practices the facility will employ to minimize the risk that there would be a spill or emergency release of material at the site. All liquids stored at the facility will be within secondary containment. This means that the tank or vessel containing the substance is within a containment structure that can hold the entire volume of the largest tank in the containment structure plus an extra 10% of the largest volume for stormwater storage. Stormwater must be removed from the containment as soon as possible. The greatest spill risk is when liquids are being transferred into or out of the storage vessels and there is a procedure in the PPC Plan to minimize that risk. Employees will be trained to follow that procedure. The plan states that there will be spill kits available in all areas where liquids are being stored to mitigate any spills. The plan also contains a list of emergency contacts for both the facility, community (Westmoreland County Emergency Management Services Department, Smithton Fire Department, Rostraver West Newton Emergency Services Ambulance, Monongahela Valley Hospital, Westmoreland Count Local Emergency Planning Committee) and the regulating environmental agencies (PADEP, PA Emergency Management Agency, US EPA Region III, US Coast Guard, PA Fish and Boat Commission, Chemical Transport Emergency Center). If there was a spill both the DEP and U.S. Coast Guard are required to be notified within 24 hours. This plan also includes a site map and list of materials present at the facility. It can be given to emergency crews if they were needed on site so that they are aware of what chemicals are being stored at the facility and their location.

Comment 14 was received from commenter 154:

It will release 1.2 million gallons of industrial waste into the Youghiogheny River, which will adversely affect the natural properties of this stream and millions of residents downstream. Please do not allow Tenaska to kill the river with their discharge.

Response 14:

There will be a maximum of 1.2 million gallons of industrial wastewater discharged per day. A water quality analysis was done to ensure that the uses of the receiving stream are protected. These uses include aquatic life, recreation, and water supply. Water quality criteria are developed by DEP for a number of parameters that are protective of the existing and designated uses of the stream. These criteria cannot be exceeded instream. A steady state mixing model is used to evaluate the discharge at the design flow condition as defined in 25 Pa. Code Chapter 96. Based on the expected pollutant concentrations provided in the application, the model indicates that there is no reasonable potential for the discharge to cause an instream excursion of the applicable water quality criteria. This analysis was based on the preliminary estimates submitted by Tenaska. As stated previously, Tenaska will be required to do additional sampling once the plant is operating and the water quality analysis will be performed again with this data. If water quality based effluent limitations are needed based on that analysis then the DEP will initiate an amendment to the permit implementing those limits. In addition, the permit is renewed every five years and this analysis is done with each renewal. Please see the responses to comments 3 and 4, above, for more information.

Internal Review and Recommendations

Comment 15 was received from commenters 1, 2, 7, 14, 162, 163, 168, 178, 179 and 196:

There should be biological studies done on the impacts of such a huge power plant to the local wildlife.

Response 15:

The NPDES permit for the discharge of industrial wastewater and stormwater is protective of the existing and designated uses of the receiving stream. This permit approval is limited to the industrial wastewater and stormwater to be discharged. It does not approve the proposed facility layout or footprint. If there are environmental concerns related to the proposed layout (for example, a tank is sited in a location where it is likely to be damaged by passing vehicles) then the DEP can request changes. Also, if treatment technologies are necessary for Tenaska to meet the effluent limitations then design of the treatment units will also be reviewed and approved by the DEP through a Water Quality Management Permit. This permit does not include any analysis as to the impact of the actual physical structure of the facility on local wildlife as this is out of the scope of this authorization. Please see the responses to comments 3, 4 and 14 in regards to how water quality based effluent limitations are developed.

It should be noted that there is an analysis of the potential impacts of the project to threatened, endangered, special concern species and special concern resources in the Commonwealth of Pennsylvania through the Pennsylvania Natural Diversity Inventory (PNDI) requirement that is reviewed as part of the NPDES permit for discharges associated with construction activities. All potential impacts have to be resolved prior to permit issuance. The PNDI coordination effort facilitates the avoidance and minimization of impacts to threatened and endangered species, and special concern species where applicable, in the Commonwealth of Pennsylvania. PNDI coordination has the benefit of supporting biodiversity conservation and sustainability, when implemented in a manner consistent with the requirements of the laws and regulations implemented by DEP. Please refer to DEP's *Policy for Pennsylvania Natural Diversity Inventory (PNDI) Coordination During Permit Review and Evaluation* (Document No. 021-0200-001) for more information.

Comment 16 was received commenter 168:

It has been brought to my attention that DEP does not have relevant information about the impacts on drinking water aquifers.

Response 16:

The DEP develops water quality based effluent limitations that protect the uses of the receiving stream. One of the protected uses that applies to all surface waters includes potable water supply (PWS). Please see the responses to comments 3, 4 and 14 for further discussion on the development of water quality based effluent limitations. The permit is protective of the potable water supply use of the stream.

Comment 17 was received from commenter 152:

Has the DEP conducted any studies on the Yough river daily flow in the event of a drought or shortage of water? What is the maximum and minimum daily flow of the Yough river at the discharge points?

Response 17:

Where this discharge would occur the flow of the Youghiogheny River is controlled by the Youghiogheny Dam. There is a minimum release value at the dam, meaning that the lowest possible flow of the river is 460 cubic feet per second. Data from a USGS gage near the discharge was used to calculate a low flow value (Q 7-10) from the post regulation period of 1943-1996 of 393 cubic feet per second, which is lower than the minimum release value at the dam. It is unclear why the gage data value is less than the minimum flow release at the dam, however, DEP suspects that the minimum release was different at that time. DEP used the low flow from the gage data in the water quality analysis, which is conservative given the minimum flow release value is higher. Because the flow of the river is controlled by the dam and the discharge is so small (2 cubic feet per second or 0.5% of Q 7-10), even compared to the low flow values, the discharge does not present a flooding risk.

Internal Review and Recommendations

Comment 18 was received from commenter 145 at the public hearing:

Will Tenaska and DEP support a human health study of children within a two or five mile radius of the plant?

Response 18:

The water quality analysis, described in comment 14 above, is sufficient to protect the existing and designated uses of the receiving stream. If the protected uses of the receiving stream are being impacted by the discharge then the permit can be amended to include more stringent effluent limitations. Please see the responses to comments 3, 4 and 14 for more information.

Comment 19 was received from commenter 112 at the public hearing:

I'd also like to say that from the DEP mission statement to, I believe---I'm not a scientist, I'm allowed to be wrong, but I'll get to see. 8.4 million tons of particulate matter---1.2 million gallons. What if the DEP is wrong? What if the people from the DEP---? Like I was saying before. It looks like maybe they ran their models. I've been working with computers for 30 years. Computers are wrong. What if you're wrong, DEP?

Response 19:

The models used to evaluate the need for water quality based effluent limitations are well established and peer reviewed.

The model used to evaluate the need for water quality based effluent limitations for chemical constituents is PENTOXSD v2.0d and the model can be found here under models and tools:

http://www.depweb.state.pa.us/portal/server.pt/community/wastewater_management/10582/npdes_and_wqm_electronic_permits_and_permit_application_forms/554182

The technical reference guide for the basis of the model can be found here:

http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-47523/391-2000-011.pdf

The actual mathematical basis for the statistical analysis used to derive effluent limitations is found in Chapter 5 of the Technical Support Document for Water Quality-based Toxics Control published by EPA which can be found here:

http://water.epa.gov/scitech/datait/models/upload/2002_10_25_npdes_pubs_owm0264.pdf

A mass balance calculation is used to evaluate the need for thermal effluent limitations. The guidance on implementing temperature criteria can be found here:

http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-74339/391-2000-017.pdf

The mission statement of the DEP is, "To protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment. We will work as partners with individuals, organizations, governments and businesses to prevent pollution and restore our natural resources." This permit implements the applicable state and federal regulations and will protect all uses of the receiving streams.

Comment 20 was received from commenter 14 at the public hearing:

In order to fulfill the mission statement of the DEP every permit must protect the air, land and water from pollution and provide health and the safety of citizens through a cleaner environment. The DEP must use due diligence and best practices to protect the citizens and fulfill this mission. Due diligence is not to accept whatever Tenaska or any company submits. Due diligence involve energetically interrogating claims by Tenaska that they will not pollute. Best practice requires the data and relevant permitting material to be available to the public and challenged.

Internal Review and Recommendations

Response 20:

Tenaska was required to submit a full and complete permit application. A company representative signs the application stating that the application is complete and correct. It is unlawful for any applicant to falsify information on a permit application. This is also to the detriment to the applicant because the facilities are routinely inspected by DEP staff and the effluent can be sampled on inspections. Any information that had been falsified would, in all likelihood, be discovered quickly. However, the NPDES program is self-reporting so there is some amount of confidence placed in permittees that they will report information accurately to the DEP. In regards to the sampling data submitted, any samples taken by Tenaska must be analyzed by a state certified laboratory. For a laboratory to be certified by the DEP the lab must demonstrate to DEP that it has the knowledge and equipment necessary to analyze samples accurately. Certifications are done for each method of analysis and labs can only offer an analysis to clients to be reported on forms associated with the NPDES process if it has been certified to do so by the DEP. A lab certification form is submitted with both Discharge Monitoring Reports and permit applications so the DEP can be assured that the data submitted are accurate. The permit application is rigorously examined to ensure that all information is known and a complete and a comprehensive permit can be drafted. The DEP concurs that we must do our due diligence and thoroughly examine all documents and data submitted and require any information that is absent to be submitted before a permit be issued. All information provided by Tenaska is available for public review through the file review process.

Comment 21 was received from commenter 3 and also commenter 14 at the public hearing:

PACT uses a series of simple questions to determine what permits and other information applicants should consider. Why simple questions? Shouldn't the questions be up to date, revealing, tough, demanding or fully complete? Why should those sworn to protect us ask for simple questions when they should be asking challenging questions that reveal weak thinking, self-serving logic, unsubstantiated claims and false and misleading projections?

Response 21:

The PACT form is used only preliminarily by potential permittees for them to get a broad understanding of what permitting will be required for their project. It gives a general outline and then suggests that any companies planning projects in the area should meet with DEP staff for a pre-application meeting to ensure all permitting requirements are being met. Tenaska had several pre-application meetings with the DEP to determine permitting requirements at its facility. The actual permit application forms are very demanding and require an up-to-date account of all actions being proposed at the facility including data about the discharge analyzed at an accredited laboratory as described in the response to comment 20, above.

Comment 22 was received from commenter 14 at the public hearing:

Best practices require that the DEP slow down permitting and devote the time necessary to protect citizens. Why is the DEP in such a hurry to accommodate an industry for speed? Quoted in the DEP record Executive Order 2011-12 charged DEP with developing and implementing a policy that results in timelier permit decisions. Notice we hear about timeliness. We do not hear about safety. They don't claim more rigor. The certainly don't require reporting all things to the public. All we hear about is timeliness and nothing more. Who does DEP service, the citizens or the industry? You can't do both.

Response 22:

In Executive Order 2012-11 a new policy called the Permit Decision Guarantee was created giving a timeline and process under which permit applications were to be reviewed and decisions about them made if the applications submitted were compete and technically sound. There was already a system in place that dictated processing times for permits but it included almost all permit applications. The Executive Order to which the commenter refers also added the criteria that, unless permit applications were determined to be technically complete and adequate, they did not have to be processed in the prescribed timeframe. The previous permitting policy also did not allow for applications to be returned if they were not technically adequate. Under the new policy, if applications are determined to be grossly deficient they can be denied. A technical deficiency letter was sent to Tenaska relating to the sampling results originally submitted with the application and, therefore, this application was not processed in the prescribed timeframe. This technical deficiency was resolved before the permit was drafted for the second time. DEP enforces all applicable regulations to protect the uses of the stream.

Internal Review and Recommendations

Comment 23 was received both in writing and at the public meeting by commenter 7. It was received in writing by commenters 169, 170 and 197. It was also received by commenter 206 at the public meeting:

Residents in the community will have to worry if the crops they are growing on their farms and in their gardens are safe. Is the feed the farmers are giving to their livestock safe? How safe is the water the residents are drinking and bathing in? Residents near the plant will have an increased risk of health issues because they will constantly be exposed to the contaminants in the water.

Response 23:

Please refer to responses 3, 4 and 14, above. To reiterate, the permit was drafted in accordance with state and federal regulations. Water quality based effluent limitations are developed in accordance with 40 CFR 122.44 (1)(d) and 25 Pa. Code Chapter 96. The Pennsylvania Regulations found in 25 Pa. Code Chapter 93 contains the specific water quality criteria for pollutants that are to be achieved instream and the associated critical use. Water quality criteria may vary based on the protected water use, as defined in 25 Pa. Code § 93.9, of the receiving stream. In this case, the Youghiogheny River is designated as a warm water fishery at the point of discharge. In accordance with Chapter 96, effluent limitations were developed for Outfall 001 so that the instream criteria for a warm water fishery would be achieved during design flow conditions.
There was water quality analysis done to ensure that the existing and designated uses of the receiving stream are protected. These uses include aquatic life, recreation, and water supply.

Comment 24 was received both in writing and at the public meeting by commenter 7. It was received in writing by commenters 1, 2, 10, 66, 67, 105, 144, 162, 168, 169, 170, 171, 177, 178, 179, 181, 196. It was also received by commenter 207 at the public meeting :

Fishing, hunting, boating and other recreational activities will be adversely affected. The area's enriched with a wide variety of fish and wildlife. Their natural environment will be destroyed and polluted. Fish and wildlife will be tainted with toxins or they will be completely vanished from the environment. Swimming, fishing, boating and kayaking in the Yough will be a thing of the past due to water pollution. The area currently supports a rich hunting and fishing and sporting environment and businesses that depend on these recreational activities will suffer an economic loss. The West Newton's Sportsmen's Club, along with the Stock the Yough Program have invested over $10,000 in the past year to purchase variety of trout for stocking the Youghiogheny River. This year we're proposing $15,000.

Birds and wildlife that depend on our waterways would be swimming and drinking toxins from the contaminated waterway and being on contaminated fields. This will result in the death of wildlife and/or decreased breeding and reproduction from the wild animal population.

Response 24:

As stated in responses 3, 4 and 14 above, this permit is protective of the existing and designated uses of the stream which includes both recreation and aquatic life. If at any point the DEP determines that the discharge is having an impact on these uses then the Department can initiate an amendment of the permit. Additionally, the water quality analysis will be redone once the plant begins operating and required data is provided as well as every five years after permit issuance to ensure that aquatic life is protected throughout the life of the permit.

The segment of the Youghiogheny River to which Outfall 001 discharges is designated as a warm water fishery. The temperature effluent limitations for Outfall 001 are protective of the existing and designated uses. It is important to note that warm water fisheries are not preferred trout habitat.

Comment 25 was received both in writing and at the public meeting by commenter 7:

The plant will have several chemicals and gasses on site that are at risk to create fire and/or explosion.

Response 25:

The NPDES permit to discharge industrial wastewater requires that the facility have a PPC Plan in place. Please see response 13, above, for a description of the plan.

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Comment 26 was received from commenter 260 at the public hearing:

Self-monitoring is ludicrous.

Response 26:

The NDPES program is a self-monitoring program nationwide. This does not mean that the company is able to analyze its own samples. As described in the response to comment 20, above, there are labs that are accredited by the state to analyze industrial wastewater. The company is required to submit their water samples to an accredited lab and then submit the results from the lab to the DEP within a certain amount of time. This is done based on the monitoring requirements in Part A of the permit. At this facility Tenaska will be taking samples weekly, with the exception of flow and pH, which will be monitored daily. It is important to note that DEP staff maintains oversight of the facility by inspecting the facility, a minimum of once per year, to ensure compliance with the requirements of the permit. When the facility is inspected each year, often samples are taken by the DEP and analyzed by the DEP lab to ensure that the data submitted by the permittee are accurate.

Comment 27 was received from commenter 207 at the public meeting:

How many retaining ponds will it take to remove the chemicals, the sludge and the minerals from the water before it is allowed to be piped into our river? What condition will the discharge water be in? What kind of toxins will it contain? How will this affect the river's plant and animal life? What will the water temperature be as it enters the river or will it depend on the ambient air temperature? Will it depend on the ground temperature as the water moves through the pipeline?

Response 27:

The NPDES permit outlines the concentrations of pollutants that must be achieved in order to protect the existing and designated uses of the receiving stream. There is a separate permit, a Water Quality Management Permit ("WQM Permit") that gives authorization for a company to build any necessary treatment units. A licensed professional engineer will consider the quality of the effluent Tenaska will generate and design a treatment facility to meet the effluent limitations in the NPDES permit. A licensed professional engineer at the DEP will review the proposed design. If the DEP determines the treatment facility will be able to meet the effluent limitations contained in the NPDES permit, then a WQM permit will be issued. The WQM permit authorizes the applicant to construct and operate the necessary treatment units. A certification signed by the licensed professional engineer has to be submitted to the DEP after the facility is constructed to verify that the treatment facility was constructed as approved by the DEP. There are requirements in the WQM permit that the facility be maintained and operated as proposed by the designing engineer and approved by the DEP. There is also a condition in the WQM permit that the treatment facility cannot cause a nuisance condition.

At this time there is a pending WQM permit application for Tenaska but it was determined to be incomplete. Tenaska is required to complete the application after the NPDES permit is issued (so the effluent limitations are known and final) and cannot build the proposed treatment facilities until the WQM permit is issued. The preliminary WQM application included an oil and water separator and pH adjustment system. There were no retaining ponds proposed. The discharge must comply with the effluent limitations in Part A of the NPDES permit. Additionally, Tenaska will be required to take additional samples once the plant is operating and DEP will do another water quality analysis. If at that time it is determined that additional water quality based effluent limitations are necessary then the DEP will initiate an amendment of the permit and Tenaska will also have to comply with those effluent limitations. Please see responses 3, 4 and 14, above, for more information on the water quality analysis.

There will be retention and infiltration galleries that have been approved by the construction permit but those will only receive stormwater that is not impacted by industrial activity. They will discharge to Barren Run and unnamed tributaries of the Youghiogheny River. All stormwater associated with industrial activity will be discharged with the other industrial waste via Outfall 001 to the Youghiogheny River.

This permit is protective of the existing and designated uses of the receiving stream. As suggested in the comment, the water temperature will vary based on the ground temperature. It has been determined that even if the water is discharged at 110 °F, the uses of the stream will be protected. Tenaska has estimated that the water will be discharged at 60-75 °F. The 110 °F was implemented based on public safety, not on the need for a water quality based effluent limitation.

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Comment 28 was received from commenters 7 and 169, :

The plant operation will drain 5 million gallons of water per day from the Yough River and return 2.5 million gallons of contaminated water back to the Yough River and nearby streams and ponds.

Response 28:

The facility will purchase water from the Westmoreland Municipal Authority and will discharge a maximum 1.2 million gallons per day of industrial wastewater to the Youghiogheny River. The discharge will be required to meet the effluent limitations in Part A of the NPDES permit which are protective of the existing and designated uses of the stream

Comment 29 was received from commenters 3, 5, 7, 107, 182, 183, 184, 185, 186, 187, 188 189, 190, 191, 192, 193, 194 and 195:

One of the biggest fears our residents have is the contamination and destruction of our water supply. The development of this plant poses a serious threat to our excellent sources of water for drinking, bathing and recreational activity. Pollutants dumped into the Yough River will include Chromium, Zinc, Oil and Grease, Chlorine and Bromine. Many other chemicals will be utilized at the plant and risk contamination of the environment if they spill into the soil or waterways.

Response 29:

The NPDES permit is protective of the existing and designated uses of the receiving stream. Please see the responses 3, 4, 14 and 24 for further discussion about the water quality analysis.

Comment 30 was received from commenters 1, 2, 5, 14, 66, 162, 163, 170, 171, 178, 179, and 196:

Copper and zinc limitations for Outfall 001 should not be removed from the permit, but instead, be re-evaluated (See comment 3A regarding evaluation of all metals).

Background summary of Tenaska Comment #11 and DEP Response in NPDES permit addendum:

The original permit included limitation on the concentration of copper and zinc in outfall(s). Tenaska's comment stated that in the original permit application, the concentrations of copper and zinc for input water from MAWC were elevated because they were "likely obtained from taps". Tenaska requested permission to analyze samples of Indian Creek Station water beginning in March 2014 for eight weeks, "unless data suggests a shorter timeframe will suffice". Based on DEP response statements, Tenaska submitted their own values for copper and zinc input water data in May 2014. The results Tenaska submitted indicated copper and zinc concentrations were much lower than those in the earlier Tenaska application. Consequently, DEP removed copper and zinc from the outfall requirements.

Supporting Information for my comment:

The new, lower values of copper and zinc submitted by Tenaska should not have been used by DEP to remove these elements from a permit because the entire process and data are questionable on several grounds as noted below..

A. *Tenaska should not have been allowed to conduct its own sampling and analysis of water chemistry- Tenaska is not an independent third party water testing organization. Tenaska has a financial interest in obtaining low values for chemicals of concern. For example, Tenaska indicated they would collect 24 hr and "grab samples" for "eight consecutive weeks unless" {Tenaska determined} "the data suggests a shorter time would suffice".*
B. *There was no evidence to justify rejecting the initial water chemistry data. In the original copper and zinc data, Tenaska submitted no evidence that the measures were elevated because the samples were from taps. Tenaska simply stated that the measures were "likely" from taps, and they assumed the taps were in homes with copper and lead solder pipes. In any case, water at neutral pH is not likely to leach from copper and lead solder piping in the "likely" taps of these unknown homes.*
C. *The Tenaska comment and DEP response did not provide evidence that their methods were superior to previous methods for sample collection, storage and analysis. The new values Tenaska reported could be low because of faulty methods. These metals are easily underestimated in water such as the Indian Creek system because of their ability to precipitate out of solution and/or form complexes with other substances in this water system.*

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D. *The time frame for analysis (March-May) was inadequate and improper, regardless of method used. Throughout this region, especially in higher elevation watershed such as Indian Creek, water scientists have thoroughly established that samples collected in spring are not representative of the whole year. These are the months of the year with the highest snow melt and rain and consequently the lowest concentrations of metals that typically come from weathering of sediments, leaching of older industrial sites known to be in the area and drainages from coal mining.*

E. *Tenaska values were substantially lower than annual averages reported by MAWC for Indian Creek and all other local water supplies. The MAWC web site reports copper at .12 mg/L in the Indian Creek Water System in its 2013 annual report. Similarly, the other three water systems operated by MAWC report values of 0.14, 0.15 and 0.16 mg/L. The Tenaska reported copper values of 0.038 with a maximum concentration of 0.047 mg/L are much lower. Values for zinc were not available on the MAWC website.*

Response 30:

The original sampling results submitted by Tenaska were data compiled from MAWC's routine sampling. MAWC staff told Tenaska that the original sampling results Tenaska submitted were samples taken in MAWC's distribution system, not as the water enters the distribution system. The concentrations listed in point E, above, are from within the distribution system.

In the revised application data Tenaska took its samples at the point where it will be withdrawing from the MAWC distribution system. Therefore, the revised samples and applications submitted by Tenaska more accurately depict the influent to the plant. The NPDES program is a self-reporting program so it is not atypical for a company to submit its own sample analysis as described in the response to comments 20 and 26. This only means that the company collects the samples or hires a consultant to collect the samples which are then processed by an accredited lab. The sampling methods that can be used for compliance with the NDPES program can be found in 40 CFR 136. As described previously, it is unlawful to intentionally submit inaccurate or misleading information on an NPDES permit application. DEP agrees that metals concentrations may vary based on season in natural waterbodies. However, the water Tenaska will be utilizing is treated drinking water. Therefore, concentrations of metals will remain consistent throughout the seasons.

Additionally, as described at the beginning of this addendum, Tenaska will be required in Part C of the permit to sample the effluent within 90-180 days of beginning operation and submit those sample results within 240 days operation. DEP will then conduct another water quality analysis and, if water quality based effluent limitations are necessary to protect the uses of the stream, will draft a DEP initiated amendment.

Comment 31 was received from commenters 5 and 163:

Temperature limits for Outfall 001 should be re-evaluated.

The permit allows the release of 1.2 MGD of water at 110 deg. F into the Youghiogheny River. This volume at this temperature year-round is likely to harm the receiving waters for their designated use as noted in the DEP permit as "state water plan watershed 19-D and is classified for warm water fishes, aquatic life, water supply and recreation." The high volume of high temperature water will cause harm as described below.

A. *Warm Temperatures Harm a Warm Water Fishery in Winter. In various parts of the permit and Addendum, the DEP statements regarding Outfall 001 use the argument that a temperature limit of 110 deg is acceptable for this 1.2 MGD discharge because the receiving stream is a "warm water fishery". A warm water fishery in this region normally experiences extremely cold temperatures for many winter months. This temperature drop is essential to maintain a sufficient capacity of dissolve oxygen necessary for fish and all other aquatic life, especially in winter when low light levels diminish oxygen production from phytoplankton. In addition, cold temperatures slow microbial activities in winter and limit the proliferation of disease organisms and other undesirable species. The release of a substantial amount of very warm water throughout the year will create a chronically warm habitat for a substantial section of the stream downstream from Outfall 001. The river has a flow dynamic at this section that will limit mixing of Outfall 001 with river water due to laminar flow. This long section of excessively warm water along the river will disrupt normal aquatic life and the habitat will serve as a reservoir of undesirable chemical and biological processes for several months of the year.*

B. *Warm Temperatures Stress a Warm Water Fishery in Summer Drought. The discharge proposed for Outfall 001 is large enough to impact a substantial amount of the stream in summer, especially during periods of low flow. The Q7-10 flow listed for the Youghiogheny River at mile 23 and 24 in the DEP Addendum was 350 cfs. This is equal to 22 MGD. The input of Outfall 001 is 1.2 MGD, therefore, an addition of 5.5% of the river in this average flow condition.*

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The percent from Outfall 001 will be higher in low flow conditions. Stream volume may be lowered by at least four different "Surface Water Withdrawal" stations present along the Youghiogheny just upstream from Outfall 001. Low flow is also caused by drought, a condition that frequently occurs in this region in late summer. Consequently, the ambient temperature of the river will be at its annual maximum when it would be receiving more than 5.5% of its volume at 110 deg. Dissolved oxygen can become critically low in such times for two reasons. First, the chemical capacity for water to hold oxygen is not a linear relationship and can drop precipitously with increasing temperature. Second, increasing temperatures above an organism's thermal neutral zone dramatically increases the metabolism of aquatic organisms, thus increasing the consumption of oxygen by microbes and increasing the demand by fish, turtles, etc. This situation can easily spiral into a fish kill, with increased oxygen consumption by bacteria decomposing dead fish. Putrefaction of the dead fish harms the drinking water quality and recreation of the region. Such fish kill scenarios are well documented in the scientific literature. In a river the size of the Youghiogheny, the fish population is large enough to cause serious harm for the downstream reach of the Youghiogheny.

C. *Risk of harm causes economic harm. Just one event of an important fish disease due to non-natural warm habitats in winter or a fish kill in summer would certainly make the news, and the uncertainty of repeated harm will decrease property values along the river and discourage investment into businesses that use the river such as recreational companies or beverage production.*

Response 31:

The DEP concurs that warm water fisheries are not expected to be warm year round. 25 Pa. Code § 93.7 gives the instream criteria that must be maintained and the criterion for a warm water fishery in January and February is 40 °F. The criterion was used to model the discharge. Even though a much cooler instream criterion for temperature must be maintained in the winter months, the discharge still did not require a water quality based effluent limitation. DEP does not agree that mixing will be limited at the discharge location. As stated in the response to comment 3, above, DEP staff have observed the potential discharge location and determined it to be an optimal location. The discharge will enter the stream immediately prior to Barren Run. The addition of Barren Run to the river will provide mixing. In addition, there are two riffles immediately downstream of the discharge. The piers of the 1-70 bridge over the river cause a riffle and there is also a natural rock riffle immediately downstream of the bridge. All three of these allow for optimal mixing of the discharge as it enters the Youghiogheny River. In addition, the stream channel in the vicinity of the discharge and downstream is relatively straight and unbraided, which allows for better dispersion of the discharge plume.

The low flow used at the discharge point is 350 cubic feet per second. To convert this into millions of gallons per day the following calculation is performed:

350 ft^3/s x 60 s/min x 60 min/hr x 24 hr/day x 7.48 gal/ft^3 x 1 MGD/1,000,000 gal/day = 226 MGD

Therefore, the proposed discharge will comprise 0.5 % of the flow of the river at low flow conditions, Q 7-10. The value that was used for Q 7-10 was a conservative low flow value. It was the lowest Q 7-10 the DEP could identify in the pool where the discharge occurs. Because of the above concerns related to water withdrawals upstream of Tenaska's proposed discharge location the data from the gage upstream of the discharge at Connellsville and downstream of the discharge at Suttersville were analyzed to determine if the Q 7-10 value was appropriate. The value used by the DEP for Q 7-10 in the modeling, 350 cfs, is lower that the Q 7-10 at both Connellsvile and Suttersville over the entire period of record since the flow has been regulated by the Youghiogheny Dam. The value used by DEP for Q 7-10 in the modeling is also lower than the Q 7-10 for both the past 20 years and past 10 years. The more recent periods of record should be more heavily influenced by the presence of any water withdrawals upstream of the discharge. Therefore, the Q 7-10 flow used for modeling is conservative and protective. There is also a permit condition included in Part C that states that the temperature of the receiving stream cannot be changed more than 2°F in any given hour. Please see the response to comment 12, above, for a more detailed discussion of the near field effects of the discharge.

Comment 32 was received from commenter 163:

Many more substances of concern should be added for toxicological assessment alone and in combination. The NPDES permit and addendum appears to have evaluated only a few selected substances of concern for the designated uses of the Youghiogheny River and tributaries, including Barren Run. A much more complete assessment must be made of all substances of concern alone and in combination with other substances known to have synergistic, toxicological effects. This analysis should occur for each permitted outfall including stormwater. Below are a few examples of the kinds of item lacking in the permit and addendum.

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A. *Heavy metals from natural and anthropogenic sources are a concern when those substances would be discharged by Tenaska at the large volumes of 1.2 MGD and 1.0 MGD into a river system with heavy metal inputs. For example, based on the MAWC 2013 report, the Tenaska facility input water contains several heavy metals in addition to the chromium, copper, zinc, addressed in the original permit. All these heavy metals will be in the Tenaska discharges and the receiving stream along with many other heavy metal inputs. This scenario is common in this region and verified by water analysis by an independent lab and made available through the Youghiogheny River Keeper Alliance and Mountain Watershed Association. Well established science confirms that heavy metals can interact to have synergistic negative impacts on aquatic life and humans. Therefore, any permit must be based on the full toxicological assessment of the combined impacts of the metals in the receiving stream and all outfalls. This more complete toxicological assessment is important for the recreational use of the river immediately downstream from Tenaska outfalls and the river as a drinking water source at several points downstream.*

Response 32:

The DEP acknowledges the public's uncertainty with the estimated discharge data based upon the samples from the withdrawal point from the MAWC. DEP is requiring that Tenaska take samples of the influent and effluent in the range of 90-180 days after beginning operation. This is described in the narrative portion at the beginning of this document. The water quality analysis will be redone once this data is received and DEP will initiate a permit amendment, if necessary. The source of the influent is drinking water. It is not anticipated that there would be high concentrations of heavy metals in the drinking water. Chromium and zinc are sometimes present in cooling tower blowdown because they are in chemical additives used in cooling towers to prevent algae growth and corrosion. Tenaska is not proposing to use any chemical additives in its cooling tower that contain chromium and zinc. No other of the 126 priority pollutants designated by EPA are allowed to be present in detectable amounts in the chemical additives used for cooling tower maintenance as stipulated by the steam electric effluent limit guideline 40 CFR 423 found here:

http://www.ecfr.gov/cgi-bin/text-idx?SID=9385bbc483b91996dfe986fd632af476&node=se40.29.423_115&rgn=div8

Here you can find the list of the 126 priority pollutants as defined by the EPA:

http://www.epa.gov/region1/npdes/permits/generic/prioritypollutants.pdf

WET testing will not be required at this time as described in the response to comment 6, above. In summary, based on the expected consistent pollutant profile of the discharge, the high assimilative capacity of the receiving stream and the determination that the discharge will not exceed any narrative or numeric state criteria it was determined that WET testing is not necessary.

Comment 33 was received from commenter 163:

Limits for industry releases into Barren Run and the Youghiogheny must be updated to use more relevant, recent chemical and biological information.

The information used for PENTOXSD and other analyses may easily have been lacking important updated information specific to each receiving stream and recent models in the toxicology of aquatic life and drinking water. Below are just a few examples of important information gaps.

A. *Barren Run is designated as a "High Quality Stream" but recent chemical and biological information required for proper input limits is likely lacking. For example, a sample site notation on emap places it in the category, "Water Quality Inactive." Also, information in the "Stream Existing Use" is lacking for the relevant section of the Youghiogheny. This indicates important gaps in knowledge of the current stream chemistry and biology. If data on chemistry and/or biology for any of the receiving streams were out of date or insufficient, then the PENTOXSD results and other aspect of the DEP permitting analysis are not valid.*
B. *Stream data and the PENTOXSD software should be made available for independent scientific scrutiny of the permitting process. The DEP does not have the resources to review current relevant research or collect on-site knowledge of every stream impacted in a permit. Academic institutions and watershed groups can help with many qualified individuals available to collect and analyze data on streams, and potential impacts from industry and also non-point sources. This helps to engage citizens in the permitting process, increases trust in government and helps to make protecting streams a shared responsibility within the community.*

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Response 33:

As mentioned previously, a criterion is developed for each pollutant by DEP for each stream classification and is published in 25 Pa. Code § 93.7. There are several streams in Pennsylvania with the common name "Barren Run". 25 Pa. Code § 93.9 lists the water uses protected for every stream in Pennsylvania. Barren Run is not a stream name recognized by the state at this location so it is instead grouped with other unnamed tributaries to the Youghiogheny River. As listed under 25 Pa. Code § 93.9v, Unnamed tributaries to the Youghiogheny River in Westmoreland and Allegheny County are all designated as Warm Water Fishes. This information is also available in GIS form by viewing the stream designated use layer in emap.

The PENTOXSD software has been peer reviewed and is available publicly. As is described in the response to comment 16, above, PENTOXSD v2.0d and the model can be found here under models and tools:

http://www.depweb.state.pa.us/portal/server.pt/community/wastewater_management/10582/npdes_and_wqm_electronic_permits_and_permit_application_forms/554182

The technical reference guide for the basis of the model can be found here:

http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-47523/391-2000-011.pdf

The actual mathematical basis for the statistical analysis used to derived effluent limitations is found in Chapter 5 of the Technical Support Document for Water Quality-based Toxics Control published by EPA which can be found here:

http://water.epa.gov/scitech/datait/models/upload/2002_10_25_npdes_pubs_owm0264.pdf

Modeling was not done on Barren Run because industrial wastewater will not be discharged to Barren Run. Only stormwater that has not been impacted by industrial activity will be discharged to Barren Run. DEP biologists routinely sample the local waterways each year to assess if streams are attaining their designated uses. The Youghiogheny River is not impaired and is, therefore, attaining its designated uses. As mentioned above, it is easy for laboratories to underestimate pollutant values if laboratory staff is not properly trained. Therefore, DEP uses our own samplers and laboratory for sample analysis to ensure sample integrity when determining if streams are attaining their designated use.

Comment 34 was received from commenters 5, 66, 163 and 197 :

Several proposed outfalls (Outfalls S01-A, S01-B, S02-A, SO2-B, SO3-A, S03-B, SO4 and SO5) should be reevaluated because the permit and addendum are lacking many important protection for the receiving watershed of Barren Run.

A. *The receiving stream for these outfalls is Barren Run, a headwater stream designated as a High Quality stream that merits special analysis for several reasons as listed below.*
   (1) *High Quality headwater streams in this sub-watershed, this state, and this US region are critical resources for many functions necessary to the designated uses of water supply, aquatic life and recreation. Streams in this area such as Barren Run have hydrologic interactions with local well water supplies via several mechanisms such as the hypoheic zone, streamside wetlands and percolation into shallow aquifers. These aquifers are the drinking water supply for many homes, churches, farms and businesses that use wells in the Barren Run watershed. The independence and water quality provided by these wells in an important part of the land use and property value.*
   (2) *A recent visit to the area indicates local residents were not informed of the water permit application and posed activities of Tenaska. Their comments are an important aspect of the comment process. Streams such as Barren Run also provide many ecological functions essential to aquatic life and water quality in the Youghiogheny River. Citizens and business owners along Barren Run and the Youghiogheny have important knowledge of local water quality and impacts from current and proposed industries for their drinking water and business uses.*
B. *Oil and grease input limits must be part of a specifically model of chemical risks to Barren Run Watershed wells and drinking water supplies. So far, only one combined substance, oil and grease, was listed in a permit and this alone is cause for concern for well water contamination. A complete assessment should be conducted for specific substances likely to be present in the permitted "oil and grease" and their possible movement into well water supplies. These organic compounds present in oil and grease can be toxic in themselves and/or form toxic substances. For example, residents that use well water from aquifers near Barren Run are likely to chlorinate their*

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water. Organic compounds from the oil and grease can react with chlorine to form toxic trihalomethanes.

C. *Pollutants other than oil and grease should be considered for impact to drinking water for Barren Run Watershed wells because the permit allows combinations of stormwater and wastewater. There was no mention of substances other than oil and grease in the permit, but a full analysis of possible substances in the outfalls must be conducted. This analysis must specifically consider the impact of those substances alone and in combination on the stream and well water drinking water supply.*

D. *Volume limits for outfalls and/or a stormwater management plan must be specified for all stormwater impacting local streams such as Barren Run and Jacobs Creek. Flooding is a serious hazard in this region and the specific locality of the proposed plant. For example, on August 23, 2014 a local resident died when water suddenly washed out a road. In that rain even, stormwater caused flooding of 50 homes and closed roads near Jacobs Creek and the Youghiogheny River. Such rain events are not uncommon. The increased impermeable surface area and resulting stormwater from Tenaska will add to an already hazardous situation unless specific volume limits are in place.*

E. *Barren Run ecological function should be specifically considered in the re-evaluated of discharge volumes and chemistry. The permit does not appear to specifically consider important ecological status of Barren Run. High Quality streams are not a common resource in PA, the region and the world. Such streams and their biota perform several critical and unique functions within the watershed such as processing organic matter needed by the receiving stream and providing unique habitat for invertebrates and young fish that support the recreational use of the area. Storm water from impervious surfaces such as the proposed plant are well known as sources of pulses of high flow that cause long-term damage to the physical and biological function of small streams such as Barren Run. The lack of limits for maximum total volume discharged at the eight storm water outfalls leave the stream vulnerable to this damage.*

F. *Pre-testing and Monitoring Well Water and Barren Run should be required. The previous list of concerns regarding drinking water wells and stream ecology are compounded by the apparent lack of any requirements for pre-testing of water quantity and quality in wells and the lack of ecological measures of Barren Run. At the relevant location, Barren Run is a "Water Quality Inactive site not on the regular monitoring list of the stat and thus current, relevant information is lacking for both water chemistry, macro invertebrates and fish. Independent, third party testing of well water and the stream is essential for a proper permit evaluation. Also, the pre-testing and monitoring is essential to document any future impact of the facility construction, normal operations or accidents. Note that adequate pre-testing should include measurements of a wide range of inorganic and organic substances, such as Tier 3 testing recommended by the PADEP. All well water test results should be provided in full to land owners and stream assessment made public.*

G. *The ambiguity in working in the permit Addendum Part C. III must be clarified because sources and chemistry of water in the outfalls would allow the discharge of unspecified wastewater with storm water. In the Permit Addendum Part C. III. Requirements Applicable to Stormwater Outfalls. This statement is ambiguous. "The permittee is authorized to discharge non-polluting stormwater from its site, alone or in combination with other wastewaters through the following outfalls. The phrase, "in combination with other wastewaters" appears to allow Tenaska to combine unspecified wastewater with normal storm water and then discharged at any of the eight listed outfalls. Any waste combined with stormwater must be described fully in volume and chemistry for every permitted outfall.*

Response 34:

Responses will be given for each letter. The discharge points referred to in the comment are Outfalls 002-009 in the NPDES permit:

A. Barren Run is not designated as a high quality stream. It is a warm water fishery as is described in the response to comment 34, above. The designated use of warm water fishery is protected via this permit.

B. Outfalls 002-009 do not discharge industrial wastewater. They are discharge points from the facility owned by Tenaska and are listed as discharge points in the permit. However, only stormwater that has not been impacted by industrial activity will be discharged from those outfalls to Barren Run and another unnamed tributary of the Youghiogheny River. Tenaska estimated that there would not be pollution present in these discharges because there is no industrial activity in the drainage areas contributing to the outfalls. Tenaska is required in Part C of the permit to take samples of these discharges within 2 years of operating as required in 40 CFR 122.26(c)(1)(i)(G). The samples will be for the parameters outlined in 40 CFR 122.26 (c)(1)(i)(E) and that list includes oil and grease. DEP does not anticipate that oil and grease will be detectable in the discharge. The water quality analysis of these outfalls will also be redone once the data is received and, if effluent limitations are necessary, DEP will initiate an amendment of the permit.

C. There will be no industrial wastewater discharged to Barren Run.

D. Stormwater volume and rate requirements are contained in 25 Pa. Code Chapter 102. These requirements are

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evaluated in the Post Construction Stormwater Management Plan which is reviewed and approved as part of the NPDES permit for stormwater associated with construction activity.

E. There will be no discharge of industrial wastewater to Barren Run. As stated previously, Barren Run is designated as a warm water fishery, not a high quality stream. This permit will be protective of existing and designated uses of the receiving stream.

F. There will be no discharge of industrial wastewater to Barren Run. It is not typical that applicants for NPDES Permits would be required to do well sampling. The use of Barren Run as a water supply will be protected through this authorization.

G. This statement, "The permittee is authorized to discharge non-polluting stormwater from its site, alone or in combination with other wastewaters through the following outfalls." is intended to mean that there is an outfall through which both stormwater and industrial wastewater will be discharged, Outfall 001. Because the commenter finds this language to be ambiguous the sentence will be changed to the following, "The permittee is authorized to discharge non-polluting stormwater from its site through the following Outfalls 002-009. At Outfall 001 the stormwater will be comingled with industrial wastewater prior to discharge."

Comment 35 was received from commenters 5 and 163:

Free available chlorine and residual chlorine should not be permitted in any discharges, and limits for all halogens (e.g., chlorides and bromides) should be re-evaluated for their potential to contribute to unacceptable levels of trihalomethanes in drinking water downstream.

Halogens in receiving waters have at least two negative impacts for the designated uses of receiving waters for drinking water, aquatic life and recreation.

A. Halogens react with organics in the receiving water and form trihalomethanes (THM), a substance of concern for downstream water supplies in the region. Many drinking water facilities in the region are approaching or have exceeded the limit for allowed THM concentrations. THM's are toxic, carcinogenic compounds that are formed when halogens (e.g. chlorine, chloride or bromide) react with organic compounds. In a 2013 peer-reviewed publication, Stanley States, director of the Pittsburgh Water Authority, demonstrated a clear relationship between elevated halogens in stream water and concentrations of THM in finished drinking water. Is study system as the Allegheny River, as system that is estimated to be less impacted with industrial halogen sources than the Youghiogheny and Monongahela. The THM concentrations he identified were often close to legal limits. (States et al.). Also, in a nearby water system along the Monongahela, the legal limit for THM has been exceeded throughout 2014. Given the problems with halogens in the Youghiogheny and Monongahela, this pattern indicates the release of halogens from the Tenaska outfalls will add to THM burden in water supplies for a substantial population.

B. Impacts of free available chlorine are not known for many organisms likely to be important in Youghiogheny River ecology. Disrupting this ecology may reverse the fishery recovery and growing fishing recreation businesses downstream from Tenaska.

C. Effective methods for chlorine removal are available for use by Tenaska. Many municipal waste water treatment plants easily remove chlorine before discharging large volumes of water. Tenaska should not be exempted from using this readily available technology.

Response 35:

Trihalomethanes are formed when chlorine or bromine react with organic matter in the water being treated. Free available chlorine is a technology based effluent limitation from the steam electric effluent limit guideline referenced above, 40 CFR 423. In 25 Pa. Code § 92a.48 standards are given for industrial wastewater discharges. 25 Pa. Code § 92a.48(b)(1) states that, "If the EPA adopts a National categorical ELG promulgating limits for Total Residual Chlorine (TRC) or free available chlorine for a specific industry or activity under section 301 or 304(b) of the Federal Act (33 U.S.C.A. § § 1311 and 1314(b)), that ELG constitutes BAT for the industry or activity." There are no other applicable state or federal standards.

Comment 36 was received from commenters 3, 5 and 163:

The composition of substances in Total Dissolved Solids (TDS) in Outfall 001 should be specified because of the large concentration (average 2,000 mg/L and daily maximum 4,000 mg/L) and large volume of this discharge (1.2 MGD). Dissolved solids, are, by definition, substances readily available for uptake by aquatic organisms and can contain substances of concern. Certain substances likely to be present in the TDS can result in a least four kinds of harmful outcomes: direct

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toxic effects, transformation to toxic substances, and bioaccumulation within individuals over their lifetime and/or bio magnification within the food chain. A large diversity of organisms occurs in the receiving stream. Predicting effects of a substantial daily TDS input is only possible if the TDS composition is known. Therefore, the permit is not complete if the TDS composition is not known and those analyses have not been performed.

Response 36:

The process that Tenaska is proposing will not add total dissolved solids to the discharge. A significant portion of the intake water is being lost to evaporation which concentrates the naturally occurring total dissolved solids. The DEP's *Policy and Procedure for NPDES Permitting of Discharges of Total Dissolved Solids (TDS)* (Document No. 385-2100-002) states that the requirements of §95.10 generally do not apply to non-contact cooling water. This is because the primary source of TDS in blowdown is natural, and the closed-cycle cooling system merely concentrates the natural concentrations of TDS, so it does not represent a net increase in TDS loading. This applies whether the source of makeup water is from public supply, groundwater or surface water. Although the guidance suggests that Chapter 95.10 generally does not apply to non-contact cooling, the DEP imposed the TDS requirement of 25 Pa. Code §95.10(c) at Outfall 001. In addition, the components of TDS that are a concern to aquatic life, bromide, chloride and sulfate, will be monitored through the permit.

Comment 37 was received from commenters 3, 5 and 163:

Full effects of the combination of outfalls and discharges on the electroconductivity stress on the Youghiogheny Rive river system must be evaluated.

A. *The permit must consider the impact of all Tenaska discharges in combination on electroconductivity stress immediately downstream of Tenaska. The large volumes and concentrations of substances in the proposed outfalls, discharges and stormwater inputs to Barren Run and the Youghiogheny will have a substantial combined effect of raising the electroconductivity of the river immediately downstream from Tenaska. It is not clear that the DEP analysis considered the combine effects of all Tenaska inputs.*
B. *Of course, Tenaska is not responsible for the many TDS discharges downstream from its proposed outfalls, but the PADEP is responsible to calculate how much the proposed Tenaska discharges will add to TDS associated stresses of the whole river system, not just individual input points. Electroconductivity levels will continue to rise from other inputs shortly downstream of the proposed Tenaska inputs. For example, there are at least two substantial, untreated abandoned mine drainage (AMD) discharges and an industrial treatment facility discharge that enter between Tenaska and the nearby town of West Newton. Even more inputs to the Youghiogheny continue as the river heads to confluence with the Monongahela, another river system with many TDS inputs. Many scientific studies show high electroconductivity stress and TDS levels are associated with stream degradation and numerous problems with drinking water quality.*

Response 37:

DEP agrees that high conductivity in water is stressful for aquatic life. DEP has a water quality criterion for osmotic pressure. Osmotic pressure is the minimum pressure which needs to be applied to a solution to prevent the inward flow of water across a semipermeable membrane. In this case the total dissolved solids are the solute within the solution. Therefore, a higher concentration of total dissolved solids correlates to a higher osmotic pressure. Specific conductance is a measure of the ability of water to conduct an electrical current. It is highly dependent on the amount of dissolved solids (such as salt) in the water. Therefore, a higher concentration of total dissolved solids correlates to a higher specific conductance. Because these three terms are a measurement of the same pollutant, the concentration of salts in the discharge, protecting aquatic life for osmotic pressure also protects the aquatic life for specific conductance. By knowing ionic concentrations, the corresponding osmotic pressures can be determined using the appropriate conversion factors for individual ions. The criteria for osmotic pressure is 50 mOs/Kg. EPA has determined that the TDS in acid mine drainage is typically 52% sulfate (AMD is one of the largest contributors of TDS to natural waterways in the region, as indicated in the comment). If the remainder of the salt in solution is assumed to be sodium, a conservative estimate, the osmotic pressure can be calculated from the concentration of total dissolved solids using the following equation:

Standard osm. = (% SO4 * TDS * SO4 osmolality) + (% Na * TDS * Na osmolality)

The osmolality of sulfate is 0.0104 mOS/mg/L and the osmolality of sodium is 0.434 mOs/mg/L. Using this equation the osmotic pressure of the maximum anticipated discharge concentration (2,000 mg/L) is equivalent to 48 mOs/Kg. This is below the water quality criterion for osmotic pressure. Therefore, the permit is protective of aquatic life.

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Comment 38 was received from commenters 5 and 163:

DEP analysis must include impacts of Tenaska discharges as they contribute to multiple stressors on Barren Run and Youghiogheny systems.

The multiple stressors proposed from Tenaska: extreme heat, toxic heavy metals, oil and grease, substantial TDS, stormwater flooding, are a recipe for substantial stress on the Youghiogheny, a system that already is stressed from multiple sources. Numerous scientific studies indicate that multiple stressors act synergistically to degrade river systems. This harm substantially diminishes river resources ecologically and economically, impacting fisheries and drinking water, two designated functions of the Youghiogheny River. Tenaska itself contributes multiple stressors and adds to a river system that has been impacted for decades from many anthropogenic stressors. Efforts by watershed groups, farmers, and government agencies have improved the Youghiogheny in recent years and stream life, water quality and recreational businesses have rebounded. The DEP analysis must predict how much the Tenaska discharges will reverse progress toward stream restoration.

Response 38:

The water quality analysis determined that no water quality based effluent limitations were necessary to protect the existing and designated uses of the receiving stream. Please see the responses to comments 3, 4 and 14 for a further description of how water quality based effluent limitations are calculated.

Comment 39 was received from commenter 163:

The design of two large volume of Outfall 001 and 101, rather than alternate design for waste management, pose an unacceptable risk for harm to the Youghiogheny River in cases of likely accidents.

By allowing large, single discharges of 1.2 MGD and 1 MGD in Outfalls 001 and 101, the DEP is allowing Tenaska to compile a high degree of risk by design. Two, large single discharges are probably less expensive to build and monitor than multiple discharges, but the public should not accept increased risk to provide lower corporate costs. Statements in the permit that Tenaska must make reasonable efforts to prevent accidents are not sufficient protection, given the complex nature of the facility and large volume of water in operations. If an accident occurs for even a short time period in one outfall, large amount of an unpermitted harmful substance will be delivered to the Youghiogheny. Any pollutants cannot be retrieved.

Response 39:

There will only be one discharge to the Youghiogheny River via Outfall 001 of 1.2 MGD. Outfall 101 is an internal monitoring point for the water before it is discharged via Outfall 001 to the river. The 1 MGD of water going through Outfall 101 is included in the total 1.2 MGD that is proposed to be discharged via Outfall 001. Federal effluent limit guidelines give technology based effluent limitations for many industrial categories. These limits are implemented to ensure that any given industrial discharger is operating their treatment technologies effectively as compared to other dischargers in their industrial category. Tenaska has to comply with limitations from the steam electric generating effluent limit guideline that was referenced previously, 40 CFR 423. Tenaska must meet new source performance standards for cooling tower blowdown and low volume wastes. These technology based effluent limitations must be achieved before the water comingles with any other sources. This is to prevent flow augmentation from being used for compliance in place of appropriate treatment technologies. At Outfall 101, a monitoring point internal to the plant, the cooling tower blowdown is sampled for compliance with the effluent limitation guideline. At Outfall 201, another monitoring point internal to the plant, the low volume wastes are sampled for compliance with the effluent limitation guideline. The water from both of these sources is comingled with stormwater and then discharged via Outfall 001 to the Youghiogheny River. Safety measures related to spills are outlined in the PPC Plan, described in the response to comment 13, above.

Comment 40 was received from commenters 3 and 163:

All forms of chromium and likely transformation to highly toxic forms must be re-evaluated for toxicology and monitoring must occur for all forms of chromium in all discharges and receiving waters.

The proposed release of large volumes (1 MGD) of chromium in Outfall 001, produces substantial amounts of a toxic element which is readily converted to very toxic, biologically available forms. Such conversions of chromium to highly toxic forms are likely when there are shifts in acidity. The discharge, Oufall 101, has a permitted pH range of 6-9, indicating

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changes in hydrogen ion concentration of 1,000 fold. This situation requires a more complete analysis of toxic effects of all forms of chromium and monitoring for all forms of the element in discharges and receiving waters.

Response 40:

The effluent limitation for chromium at Outfall 101 is a technology based effluent limitation. As described in the response to comment 40, above, it is implemented in accordance with the effluent limit guideline 40 CFR 423. Based on the modeling described in the narrative at the beginning of this document monitoring will also be imposed for chromium (VI) at Outfall 001.

Comment 41 was received from commenters 5 and 163:

Agencies responsible to manage Youghiogheny River system resources such must be involved in the DEP permit analysis, and all results of required monitoring by Tenaska should be made readily available via the web.

A. *Agencies responsible to manage receiving waters must be part of the permitting processes. For example, the Fish and Boat Commission, Cedar Creek County Park, drinking Water Authorities and other relevant agencies have important data on fishing activities, recreation and drinking water uses of receiving waters. The contribution of data and interpretation of discharge impacts from such agencies and experts should be available to the public as part of the DEP permit decisions and their analysis should be noted in the permit report.*
B. *The permit should specify that all required reports will be readily available to the public via the web. Public access allows agencies that daily or frequently manage this section of the Youghiogheny respond to any problems with permitted discharges or accidental excess releases. Those agencies should not have to wait for one office in the DEP to provide information. Citizens who depend on Barren Run watershed drinking water wells or the Youghiogheny for current or planned business activity or personal recreation and fish harvest should be able to see all recorded data as soon as the data is sent to the DEP. Data will likely be in digital form and easily transferred to a public web site. Much more complicated data set are already available to the public, thus, this is not an unusual request.*

Response 41:

All of the data used to prepare the NDPES permit is a public record and can be viewed by the public at any time in an informal file review or right to know law request at a regional DEP office. File review requests can be made through this online form:

http://www.portal.state.pa.us/portal/server.pt/community/public_records/19207

A copy of the draft permit was provided to the Fish and Boat commission; no comments were received from that agency. NPDES permits can also be reviewed at a regional DEP office through an informal file review or right to know law request. Individual NPDES permits issued for the discharge of industrial waste, sewage and stormwater have been made available through the DEP website since 2012 and can be found here:

http://www.portal.state.pa.us/portal/server.pt/community/wastewater_management/10582/npdes_and_wqm_electronic_permits_and_permit_application_forms/554182

Permittees are required to submit their sample analysis for compliance with their NPDES permit on a discharge monitoring report (DMR). Because Tenaska is considered a major facility by EPA, they will be required to submit that information electronically through the eDMR system. The public can review all monitoring data submitted through eDMR here:

https://www.portal.state.pa.us/portal/server.pt/community/edmr/17879/search_edmr_data/1876949

The permit and compliance information is also available through EPA's Integrated Compliance Information System ("ICIS") database found here:

http://www.epa.gov/enviro/facts/pcs-icis/search.html

Stream quality information at gaging stations on rivers and streams throughout the state can be found through USGS Waterdata website found here:
http://waterdata.usgs.gov/pa/nwis/rt

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If there are any accidental releases of toxic substances of a reportable quantity the permittee must notify the PADEP, US Coast Guard and local municipal emergency crews within 24 hours of the incident.

Comment 42 was received from commenters 4, 6, 14, 77, 93, 105, 139, 140, 141, 142, 143, 144, 145, 146, 147, 149, 150, 152, 155, 163, 164, 166, 168 and 170:

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

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

The Department's Effluent Limitations Guidance echoes these requirements. To ensure that the most stringent effluent limit governs, permit writers may not simply skip directly to developing WQBELs, when there is no applicable ELG. Rather, "technology based effluent limitations for industrial dischargers are to be developed based upon either effluent limitation guidelines (ELGs) officially promulgated by EPA or (in the absence of a promulgated EPA ELG) through the use of "best professional judgment" (BPJ) of the Permit Writer". For COD, BOD, total dissolved solids, temperature, alkalinity, sulfate, chloride, phosphate, nitrate, silica, calcium, magnesium, total hardness, sodium, manganese and nitrate- pollutants not addressed by ELGs- the Department must demonstrate that it exercised BPJ to develop technology-based effluent limitations (or describe why each pollutant is not "of concern") and then compare those limitations with WQBELs or effluent standards, before selecting an effluent limitation for incorporation into the Permit.

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

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

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

Response 42:

DEP agrees that it is necessary to develop water quality and technology based effluent limitations for all pollutants of concern. However, when pollutants are considered during the development of the ELG and it is determined by EPA that technology based effluent limitations are not necessary for a given pollutant, then BPJ effluent limitations do not have to be developed for those specific parameters. However, as the commenter has pointed out above, there are parameters not taken into account by EPA when ELGs are developed. In the list above TDS, BOD, COD, sulfate, chloride, alkalinity, total phosphorus, total hardness and magnesium were considered when the ELG was promulgated. There are no water quality criteria for phosphate, silica, calcium, magnesium and sodium; therefore, water quality based effluent limitations were not

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developed. The source of these parameters is attributed to the source water and as stated previously, DEP imposed a TDS limitation, which will provide some level of control on the discharge of these pollutants. Regarding whether these pollutants are considered pollutants of concern, based on the expected effluent concentrations, DEP would not consider these pollutants of concern requiring development of BPJ effluent limitations beyond the control provided by the TDS effluent limitation. Nitrate is not expected to be present in the discharge at elevated concentrations because the water being discharged is local finished drinking water that has been used for non-contact cooling purposes. There is no source that would contribute elevated concentrations of nutrients to the discharge. Manganese was reported to be present in the discharge at a concentration below the water quality criterion and, thus, is not a pollutant of concern. This was determined using the Toxic Screening Spreadsheet attached to the Fact Sheet and previous Addendum.

TDS, chloride and sulfate all have water quality criteria that are effective at the next downstream potable water supply intake. The closest water supply intake to the discharge is 20 miles downstream from the discharge at the intake for the West County Municipal Authority. Because of the relatively low concentrations of TDS, chloride and sulfate in the discharge and the high stream volume in comparison to the discharge volume these are also not pollutants of concern. TDS, chloride and sulfate all have water quality criterion that are applied at the next downstream potable water supply intake and were modeled using PENTOXSD (results attached, modeling further discussed in the beginning narrative portion). Based on the high assimilative capacity available, as demonstrated by the modeling, they are not pollutants of concern. Therefore, there are no pollutants of concern for which technology based effluent limitations were not developed.

Comment 43 was received from commenters 4, 6, 14, 77, 93, 105, 139, 140, 141, 142, 143, 144, 145, 146, 147, 149, 150, 152, 155, 163, 164, 166, 168 and 170 :

For Outfall IMP 101, which receives cooling tower blowdown wastewater, DEP applies the New Source Performance Standards in 40 CFR Part 423. The effluent limitation guideline (ELG) for cooling tower blowdown includes effluent limitations for the following.

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

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

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

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

Response 43:

The ELG gives technology based effluent limitations for each distinct type of wastewater for an industrial category. 40 CFR 423.15(c) is applicable to low volume wastes. 40 CFR 423.15(d) is applicable to chemical metal cleaning wastes. The only type of wastewater that will be discharged via Outfall 101 is cooling tower blowdown. Therefore, 40 CFR 423.15(j) applies as it defines new source performance standards for cooling tower blowdown. The ELG effluent limitations for chemical metal cleaning wastes was not applied in this permit because chemical metal cleaning wastes will not be discharged from the facility and, therefore, the ELG for chemical metal cleaning wastes is not applicable.

Comment 44 was received from commenters 3, 4, 6, 14, 77, 93, 105, 139, 140, 141, 142, 143, 144, 145, 146, 147, 149, 150, 152, 155, 163, 164, 166, 168 and 170:

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

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

If there exists an effluent limit guideline for the relevant industrial sector, then the TBELs defined in the ELG should be applied. (As explained above, if there is no ELG, or if the ELG does not address a particular pollutant, DEP must first exercise its BPJ to develop a TBEL). DEP must then develop WQBELs for every pollutant of concern. DEP must then compare all applicable effluent limits and place the most stringent effluent limits (i.e. water quality based, technology-based, etc.) shall govern and be incorporated into the permit.

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

In the March Fact Sheet, DEP rightly states that TDS, chloride, bromide and sulfate are all pollutants of concern, which the permit must address. DEP conducted a water quality based analysis for TDS, chloride and bromide.

With regard to TDS, DEP failed to conduct a water quality based analysis to determine the necessity of WQBELs. In the March Fact Sheet, DEP discussed TDS in a section entitled, "Water Quality Based Effluent Limitations". However, DEP spent much of the time discussing 25 PA Code Chapter 95 and its application to TDS mass loadings. Chapter 95 does not contain water quality based effluent limitations. Chapter 95 contains treatment requirements for new and expanding mass loadings of TDS contained in a wastewater discharge. Where the waste was not generated from oil and gas exploration and production, the effluent limit of 2,000 mg/L TDS automatically applies. Because Chapter 95 does not require a water body-specific analysis, the Chapter 95 limits DEP has applied to TDS in the Draft Permits are not WQBELs and do not arise from a water quality based analysis. The only way to know whether the Chapter 95 TDS limits are sufficient, and where WQBELs are necessary to protect stream uses, is to conduct the water quality based analysis and apply the more stringent of the two kinds of limits. DEP has conducted water quality based analysis for TDS for other permits, so there is no reason for it to have skipped that step here.

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

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

In addition, though DEP acknowledges in the March Fact Sheet that bromides in streams are problematic because they can lead to the creation of carcinogenic total trihalomethanes (TTHMs) at public water suppliers who intake the bromide-laden water, DEP does no investigate whether a number limit for bromide is necessary. Again, to protect Pennsylvanians' constitutional rights, DEP is obligated to at least conduct a serious water quality based analysis to determine the necessity of numeric limits for bromide.

Response 44:

In the March fact sheet the following statement was made in regards to TDS, sulfate, bromide and chloride.

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"TDS and its major constituents including sulfate, chloride and bromide have emerged as pollutants of concern in several major Watersheds in the Commonwealth."

The fact sheet does not state that TDS, sulfate, chloride or bromide are pollutants of concern for this discharge. The effluent standards from Chapter 95 were implemented. However, water quality based effluent limitations and/or technology based effluent limitations were not developed for those parameters because they are not pollutants of concern. PENTOXSD was used to model the discharge, as described in the above response to comment 43, and the modeling clearly demonstrates that these are not pollutants of concern because of the assimilative capacity available. See, also, the detailed explanation as to bromide that appears in the response to the Article 1, Section 27 comment in the narrative portion at the beginning of this Comment Response Document.

Comment 45 was received from commenters 4, 6, 14, 77, 93, 105, 139, 140, 141, 142, 143, 144, 145, 146, 147, 149, 150, 152, 155, 163, 164, 166, 168 and 170:

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

Response 45:

The commenter is correct that the Toxics Screening Analysis spreadsheet was used for a reasonable potential analysis to determine if iron and manganese were pollutants of concern. The fourth column of the spreadsheet indicates whether a parameter is a candidate for PENTOXSD modeling. This is simply a comparison of the discharge concentration and the water quality criterion. If the discharge concentration is higher that the water quality criterion then the spreadsheet will recommend modeling regardless of the assimilative capacity available. This indicates the pollutant is of concern. If this column states that the parameter is not a candidate for PENTOXSD modeling, this indicates that the pollutant is not a pollutant of concern. Both iron and manganese were reported to be below the water quality criterion in the discharge. Therefore, this discharge cannot cause an excursion above the water quality criteria for those parameters and they are not parameters of concern. Please note that TBELs were also not imposed for iron or manganese either because these are not pollutants of concern.

Comment 46 was received from commenters 4, 6, 14, 77, 93, 105, 139, 140, 141, 142, 143, 144, 145, 146, 147, 149, 150, 152, 155, 163, 164, 166, 168 and 170:

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

Applicants seeking an individual NPDES permit for stormwater discharged associated with industrial activity must submit the information detailed in 40 CFR 122.21(g)(7) and 122.26(c)(1). Where the discharge is composed entirely of stormwater, certain requirements are waived. The proposed stormwater discharges from the Applicants facility clearly do not meet that standard. As a result in this instance there are no exceptions to the rule that the Applicant must submit estimates and sources for those estimates.

DEP is wrong when it states in the July Fact Sheet that, "Tenaska did not submit estimates as required by 40 CFR 122.26(c)(1)(i)(G) but the DEP agrees with Tenaska's assertion that it is unlikely that Outfalls 002-009 with discharge pollutants at levels of concern. Therefore, DEP is only requiring Tenaska to comply with the requirements under 40 CFR 122.26(c)(1)(i)(G) to provide samples within two years of the commencement of the discharge." First, Section 122.26(c)(1)(i)(G) says "must include" estimates and their sources; it does not leave any discretion to the permitting authority. Second, when erring at all, Section 27 of the Constitution requires that DEP err on the side of more environmental protection, not less. Again, in this instance there is simply no discretion and no need for erring, DEP must require the Applicant to provide estimates and their sources simply according to water quality laws.

Section 27 may very well require that DEP ask for more information on estimates, or for a shorter timeframe than 2 years for sample collection; it certainly does not allow DEP to create an exception that would increase the risk of public harm to public

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resources where no such exception exists.

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

Response 46:

The discharges from Outfalls 002 through 009 are storm water from areas of the facility that are not impacted by industrial activity. Therefore, the discharges are not of stormwater associated with industrial activity but solely uncontaminated stormwater. If the discharges were of stormwater associated with industrial activity then DEP would have certainly followed the prescribed direction above. However, since the outfalls do not discharge stormwater associated with industrial activity the DEP is comfortable accepting the general estimate given by Tenaska that pollutants would not be present at concentrations above what is typically contained in uncontaminated stormwater. There are no other sources of pollution contributing to the discharges once construction of the facility is completed (and before this permit comes into effect). However, to err on the side of caution as advised above, DEP is still requiring Tenaska to do the sampling outlined in 40 CFR 122.26(c)(1)(i)(G) even though the stormwater from these outfalls will not be impacted by industrial activity. All stormwater associated with industrial activity at the facility will be discharged via Outfall 001 to the Youghiogheny River.

Letters supporting the project were also received from commenters 204, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297 and 298.

After reviewing all of the information and comments permit issuance is recommended.