

US EPA ARCHIVE DOCUMENT

Proposed VGP: EPA's Response to Public Comments

U.S. Environmental Protection Agency

Water Permits Division
Office of Wastewater Management

Office of Water
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

December 19, 2008

Commenter Name: Barry M. Hartman
Commenter Affiliation: Counsel for Lake Michigan Carferry, Inc .SS/Badger
Commenter Type: Commercial Shipping
Document Control Number: EPA-HQ-OW-2008-0055-0432.1
Comment Excerpt Number: 1
Late Comment? Yes

Comment: These comments are submitted on behalf of Lake Michigan Carferry, Inc., (LMC) of Ludington, Michigan. LMC is the owner and operator of the s.s./_1 the prefix "S.S." is a short form for steamship. /_1 badger, a large commercial car ferry operating on Lake Michigan and the Great Lakes that will be subject to the proposed national pollutant discharge elimination system (NPDES) vessel general permit (VGP) for most if not all of its discharges. These comments address the discharge of boiler effluent /_2 effluent is defined as waste mixed with water. See 33 U.S.C. § 1362(11) (2006). Boiler effluent is waste, in this case ash, from the boiler mixed with water. /_2 from the vessel. The badger is a coal-fired vessel that for decades has discharged boiler effluent comprised largely of water containing relatively small amounts of coal ash as part of its normal operations. Since 1973, those discharges, and the discharges of countless other coal-fired vessels in the U.S., have not been required to have an NPDES permit based on the longstanding exemption from the NPDES requirements for effluent from properly functioning marine engines and for incidental discharges from normal vessel operations. The purpose of this comment is to provide the agency with information that (a) specifically supports a determination that boiler effluent from coal-fired marine engines on steamships is included in the currently proposed VGP; (b) alternatively supports an amendment to the VGP to expressly include boiler effluent as a separate stream to the extent necessary; and (c) provides the appropriate effluent standard for boiler effluent from coal-fired marine engines.

Response: EPA notes that this comment was submitted after the August 1, 2008 deadline. EPA is not legally obligated to respond to late comments. EPA will, however, respond, and notes that, though coal ash slurry from coal powered ferries was not included in the proposed permit, based on comments submitted by this commenter, Coal Ash slurry has been included as an authorized discharge from large ferries until 2012.

Commenter Name: Barry M. Hartman
Commenter Affiliation: Counsel for Lake Michigan Carferry, Inc .SS/Badger
Commenter Type: Commercial Shipping
Document Control Number: EPA-HQ-OW-2008-0055-0432.1
Comment Excerpt Number: 3
Late Comment? Yes

Comment: Coal is stored aboard the vessel in coal bins and moved to the vessel's four boilers via a closed conveyor belt system within the infrastructure of the ship. The process of adding coal to the boilers to maintain steam pressure is a relatively continuous process. During the season the vessel must continuously operate its boilers, both in port and while underway. As the boilers consume coal, they necessarily generate a non-hazardous ash that is discharged from the vessel's boilers by means of a six inch pipe system that moves the ash in continuously running lake water into an effluent that is conveyed overboard. The conveyance system relies on a combination of gravity and vacuum pressure. As it is ejected from the ship, the effluent strikes a

metal barrier at 150 pounds per square inch of pressure that ensures that the ash is converted into sand-like particles before entering the water. While the water flows continuously through the vessel at all times, ash discharges take place only during a limited period, and only after each boiler's ash pit fills up. Thus the ash is discharged gradually over a 15 minute period from each boiler sequentially. Over the course of a four-hour voyage, actual discharges of boiler effluent containing ash occur for about 60 minutes during a single trip across Lake Michigan. Photos and additional information regarding the vessel's operations are available, but since some of this information is confidential business information, LMC would prefer to submit it separately if it is needed. There are several locations where ash gathers as a result of coal being burned in the boilers. The vast majority falls to the bottom of the furnace and is sometimes called "bottom ash." other small amounts are accumulated in the economizer and in the cyclones leading to the stack.

Response: EPA notes that this comment was submitted after the August 1, 2008 deadline. EPA is not legally obligated to respond to late comments. EPA will, however, respond, and EPA acknowledges the commenter's description of activities onboard the vessel. EPA notes that the discharge of Coal Ash slurry is not a continuous process, but can instead be discharged intermittently.

Commenter Name:	Barry M. Hartman
Commenter Affiliation:	Counsel for Lake Michigan Carferry, Inc .SS/Badger
Commenter Type:	Commercial Shipping
Document Control Number:	EPA-HQ-OW-2008-0055-0432.1
Comment Excerpt Number:	5
Late Comment?	Yes

Comment: IV historical reliance on 40 C.F.R. § 122.3 steam-powered vessels like the badger have always discharged their boiler effluent -the ash is discharged from the boiler overboard via a system that includes vacuum and water pressure. Since 1972, when the CWA was enacted into law, the badger has discharged this boiler effluent in reliance on 40 C.F.R. § 122.3, which permit vessel discharges of "... Effluent from properly functioning marine engines ..." the plain wording in Section 122.3 accurately describes the discharge of boiler effluent from the badger. In addition, 40 C.F.R. § 122.3 also exempts "any other discharges incidental to the normal operations of a vessel" from the NPDES permitting requirements; in fact, the badger's effluent discharge is both incidental and directly related to its normal operation. While Federal agencies like the U.S. Coast Guard / _6 EPA has historically recognized the Coast Guard as lead agency for discharges from vessels, with the exception of industrial processes on vessels. 72 fed. Reg. 34241, 34243 (June 21, 2007). / _6 have sometimes referenced the "effluent" portion of the exemption and other times referenced the "incidental discharges" section, the ultimate reliance on Section 122.3 has not changed. Similarly, other coal-fired steamships have relied on Section 122.3 since it was promulgated. According to the Lake Carriers' Association, in 1972, on the Great Lakes alone, there were 84 registered coal-fired commercial vessels. Many of those vessels -and probably hundreds if not thousands more operating on the inland waters and coasts of the United States that discharged ash under authority of Section 122.3 continued to operate for many years until the development of new propulsion systems led to conversions to other fuels like diesel fuel. The official United States Coast Guard vessel file on the badger has noted the applicability of both the "effluent" exemption and the "incidental discharge" exemption. The

badger's vessel critical profile, which is the vessel's official government file, has included a note from the Coast Guard: "per 40 CFR 122.3 vessels is permitted to discharge ash into the waters of the Great Lakes." attachment 2 at 3. On June 22, 2007, another Coast Guard entry in the vessel profile said, "under current regulations, vessel may discharge ash in the waters of the Great Lakes under title 40, code of Federal regulations part 122.3." id. At 7. A third Coast Guard entry on June 12, 2006 said: "s/s badger discharges flyash during each transit. Occasionally this is reported as pollution. The flyash is the byproduct of burning coal and has been deemed nonhazardous. Per 40 CFR 122.3, no EPA permit is required to dump effluent from a properly running engine." id. At 8. At least one of these evaluations and determinations was done at the request of a Wisconsin state environmental official. Id. At 3. Section 122.3 has been interpreted consistently to exclude virtually all operational discharges from vessels, including discharges from coal-fired vessels like the badger, from the NPDES permitting requirements. As noted above, the vessel discharge exemption in Section 122.3 will expire later this year. V. Coverage of boiler effluent under the EPA's proposed new general permit as explained above, boiler effluent has been allowed to be discharged under the provisions of Section 122.3, without an NPDES permit. The Coast Guard has expressly confirmed this with respect to the badger. The EPA has made clear its "interpretation" that virtually all discharges from vessels were historically subject to regulation by the Coast Guard. 72 fed. Reg. At 34243. That has changed now, however, due to a series of well-documented events, including two court decisions that have led to the expiration of Section 122.3 on December 19, 2008. EPA has now proposed to regulate most of the discharges that were previously covered by Section 122.3 under a new general permit program called the VGP, which is the subject of this docket. Given the fact that the boiler effluent has been consistently and universally considered to be within the scope of Section 122.3, and the proposed VGP is intended to cover all vessel discharges that had been within the scope of Section 122.3, there should be no question that the boiler effluent is covered by the proposed VGP. The VGP was proposed by EPA on June 17, 2008 to address those discharges that had been exempt from the NPDES permit program under 40 C.F.R. § 122.3(a). 73 fed. Reg. 34296 (June 17, 2008). The VGP specifically applies to "discharges incidental to the normal operation of a vessel identified in part 1.2.2 into waters subject to this permit." proposed VGP, § 1.2.1. "discharge incidental to the normal operation of a vessel" means those discharges that were excluded from the NPDES permitting program by operation of 40 C.F.R. § 122.3(a) as in effect on September 29, 2008. VGP at 55, Appendix A. Having determined that the VGP should include all discharges that had been subject to the soon-to-be-expired exemption, the agency then had to determine what effluent limits applied. LMC believes that the agency's ultimate determination and conclusion that it was most appropriate to require effluent limits in the form of best management practices for 28 discharge streams that it determined were most common in the vessels was appropriate. Boiler effluent that contained non-hazardous ash was not one of the particularly specified streams; however, the agency suggested that its proposed list was not exclusive, and said that it "is seeking input on any additional streams or discharge types that should be considered for coverage." U.S. Environmental Protection Agency 2008 proposed issuance of national pollutant discharge elimination system water docket o (NPDES) vessel general permit (VGP) for discharges incidental to the normal operation of commercial and large recreational vessels (fact sheet) at 26. We believe that at least two of the streams identified by the agency can fairly be read to include boiler effluent, and should be amended to specifically do so. Alternatively, boiler effluent from steam engines could be added as a 29th stream. A. Boiler effluent from steamships shares many characteristics of boiler blowdown described in the VGP, except that boiler effluent does not contain the hazardous constituents potentially present in boiler blowdown. In the VGP proposal, EPA identified "boiler/economizer blowdown" as a

discharge stream that "can originate from any vessel with steam propulsion or a steam generator., /_7 technical support for EPA development of a permitting framework to address the vacatur of the NPDES vessel exclusion (battelle report) at 43./_7 the constituents of boiler blowdown discharge will be dependent on the type(s) of anti scaling and anticorrosion treatment originally added to the feed water. Numerous constituents found in boiler blowdown discharges from armed forces vessels were defined as priority pollutants by the EPA: arsimony, arsenic, cadmium, copper, chromium, lead, nickel, selenium, thallium, zinc, and bis (2-ethylhexyl) phthalate. Battelle report at 43. There are both similarities and differences between boiler blowdown described by the agency and the effluent discharged from a coal-fired steam boiler such as the badger. To the extent blowdown represents a discharge of an effluent at high pressure from a steam propulsion engine, fact sheet at 28, there may be some similarities to boiler effluent from a coal-fired steam boiler. While the volume of effluent containing ash is likely to be larger than blowdown effluent, the effluent discharge from a coal-fired steam boiler is not heated, nor does it contain steam, sludge or other hazardous constituents. Moreover, as the agency noted, there are as many as 12 constituents of concern in boiler blowdown, which are largely determined by the feed water. /_8 the battelle report noted that for steam-powered vessels, onboard boiler systems must be supplied with feedwater to maintain the water level. It is this water that must be periodically removed and that contains pollutants that increase in concentration as the water is boiled. In the case of a coal-fired steam boiler like the badger, the water provides a different function within the engine system -it removes the potentially dangerous accumulation of non-hazardous ash from the engine system. In both cases, the discharges are to the ambient water and occur as necessary to maintain the system. Batelle report at 42. This report notes that this category of discharges includes a variety of effluent discharges from steam-powered boilers. /_8 the boiler effluent from the badger is Lake Michigan water that is discharged exactly as it enters the vessel, except for the ash that it occasionally carries out. At most there are four constituents of concern /_9 pH is probably the constituent of greatest concern in ash, but given the manner in which the boiler effluent is discharged, it is unlikely that the effluent itself would present a problem, and dispersal -the same practice approved for boiler blowdown - would provide additional protection. /_9 and none are at levels that approach any danger to human health or the environment. Because of the basic similarities of these streams for purposes of the CWA -they all involve boiler effluent from a steamship -it would be appropriate to clarify the scope of this stream by describing it as "boiler/economizer blowdown and other steam boiler effluent." b. Boiler effluent also shares characteristics with "seawater cooling overboard discharge" (including non-contact engine cooling water, hydraulic system cooling water, refrigeration cooling water). In the VGP, the agency identified the general category of "seawater cooling overboard discharge" as a discharge stream covered by the VGP. In the battelle report, this is described in part as follows: seawater cooling systems onboard vessels use ambient water pumped in directly or through the firemain to absorb the heat from the propulsion system and auxiliary heat exchangers. This water is then discharged back overboard. Cooling water demand is continuous, particularly for larger vessels, and seawater spends approximately one minute in the cooling system before being discharged. * * * in their comments on EPA's ANPRM, LMC, WSC and CMC all cited seawater cooling overboard discharge as relevant discharges from the vessels they represent. PSPA's comments also listed cooling activities as producing discharge, but, along with engine cooling water, they also listed (without further comment) hydraulic system cooling water, refrigeration cooling water, and processing factory cooling water as relevant discharges. * * * the potential constituents of seawater cooling overboard discharge include entrained or dissolved materials from the system itself. Although the specific constituents will vary depending on the vessel and the type of cooling system, EPA

(1999w) identified copper, iron, aluminum, zinc, nickel, tin, titanium, arsenic, manganese, chromium, lead, and oil and grease as possible contents of the discharge. Mud, biota, and other debris that were stuck to the strainer plates may also be discharged. The seawater is also being discharged at a higher temperature than when it was taken up and constitutes a thermal discharge into the receiving water. EPA (1999w) estimates that the thermal difference between seawater intake and discharge can range from 5 to 25°C, with a maximum discharge temperature of 140°C. Seawater cooling discharge flow rates vary by vessel size and operation type. EPA (1999w) estimated rates ranging from 1,500 GPM for a pierside destroyer to over 170,000 GPM for an in-transit aircraft carrier. These rates are not entirely applicable to the vessels that will be covered under the vacatur, but the rate variability is instructive. Constituent concentrations will also be variable, depending on the residence time, the quality of the intake water, and the erosion and corrosion of cooling system components. However, EPA studies indicated that copper, nickel, and silver concentrations exceeded the most stringent state water quality standards. Battelle report at 59-60. Boiler effluent shares some of the characteristics of seawater overboard cooling water discharges in that the volume of effluent is high, the discharges are present in the vessel for only seconds as they carry out the ash, and they carry out a non-toxic pollutant -ash instead of thermal constituents. On the other hand, the boiler effluent discharges at a much lower rate - under 700 GPM instead of 1,500 -and remains at virtually the same temperature going out as it was coming in. Further, while ash does contain trace amounts of barium, it does not contain any of the dozens of constituents that are present in seawater overboard discharges. Since these discharges were not limited and included an apparently wide variety of streams, /_10 "...comments also listed cooling activities as producing discharge, but, along with engine cooling water, they also listed (without further comment) hydraulic system cooling water, refrigeration cooling water, and processing factory cooling water as relevant discharges." battelle report at 59. /_10 it would be appropriate to consider boiler effluent within this category as well. Vi effluent limits applicable to boiler effluent the EPA noted in the proposed VGP that it is required to set effluent limits for all point sources subject to NPDES permits at the best practical control technology currently available (BPT), best conventional pollutant control technology (BCT), and best available technology economically achievable (BAT). Fact sheet at 44-45. The agency determined that "because of the nature of vessel discharges, it is not practicable to rely on numeric effluent limits to achieve these levels of control for the large majority discharge types until greater information is available," and that it is appropriate for the VGP to include non-numeric effluent limits that required permittees to engage in specific behaviors or best management practices (BMPS). Id. For purposes of determining BPT, BCT, and BAT, currently there is no feasible, available or economically achievable and practicable means of eliminating the effluent discharge by the time the general permit comes into effect. Id. LMC believes that the agency's analysis in this regard is sound, and has equal applicability to boiler effluent. A. Best management practices are appropriate for boiler effluent. The badger like other coal-fired vessels was built to discharge its boiler effluent. Therefore there currently exists no available off-the-shelf plan, system, or process that would allow the vessel to operate but contain its ash. LMC will literally need to invent such a system, design it with all the constraints of a vessel that was built for a different purpose, and then build it. The challenges involved in such a reconstruction are considerable, and it is not possible for the process to be complete before Section 122.3 expires on December 19, 2008 or before the badger hopes to begin service in may of 2009. Owners of the badger are aggressively pursuing a range of options for developing and constructing an ash containment system on board the vessel. /_11 among its options LMC considered a conversion of the vessel to diesel fuel. However, such a conversion is complex, expensive and sometimes unsuccessful./_11 such a system will require design approvals by the

U.S. Coast Guard and the American Bureau Of Shipping. Because of design limitations imposed by the configuration of the vessel and the desirability of avoiding the breach of watertight compartments, the current working proposal is a system that would use vacuum pressure to transport the ash up a 38-foot vertical piping system to a new containment facility in what is now the vessel's coal storage area. In addition, a system must be developed to remove the ash from any containment facility on board the vessel and transport it to a landfill or other onshore disposal location. Owners of the badger believe the full process of developing, constructing and testing the containment system should be completed in time for the vessel to operate with no discharges by the opening of the badger's season in the spring of 2012. It is possible that unforeseen circumstances might require some additional time to achieve this goal, but LMC is hopeful that it can meet the spring 2012 target. There is substantial precedent for the EPA to consider the need for development of new technologies as components of BMPS. EPA's recently promulgated rule establishing new discharge standards for concentrated animal feeding operations (CAFOS) in the form of BMPS gave the regulated community additional time to phase these requirements in. 72 fed. Reg. 40245, 40248 (July 24, 2007) (extending deadline for CAFOS to develop and implement nutrient management plans); see also 64 fed. Reg. 36580, 36582 (July 7, 1999) (requiring pulp and paper mills to submit a "milestones plan" specifying research, construction, and other activities designed to lead to compliance with effluent limitations, as well as accompanying dates for those activities; milestones plans are intended both to "provide information to the permitting authority" as well as "sufficient flexibility" to the specific point source). B. The BMPS for boiler effluent can be modeled after the BMPS accepted for similar streams. The BMPS proposed by the EPA with respect to boiler/economizer blowdown are described as follows: minimize the discharge of boiler/economizer blowdown in port if chemicals or other additives are used to reduce impurities or prevent scale formation. For vessels greater than 400 gross registered tons which leave the territorial sea at least once per week, boiler/economizer blowdown may not be discharged in waters subject to this permit except for safety purposes, and should be discharged as far from shore as possible. For all vessels, boiler/economizer blowdown may not be discharged in or within 1 nm of waters referenced in part 12.1 except for safety purposes. Proposed VGP at § 2.2.6. W the fact sheet explains this as follows: BMPS to reduce impacts from boiler/economizer blowdown additives are based on minimization of their discharge to nearshore or port receiving waters, thus allowing for more mixing. To further mitigate potential impacts, EPA has specified that vessels greater than 400 gross registered tons that leave the territorial seas at least once per week cannot discharge within 3 nm of shore, except in emergencies. EPA selected once per week as the threshold because the necessary frequency of boiler blowdown can vary from approximately once in two weeks to once in a couple of months. It is therefore practical and achievable for these vessels to only discharge boiler blowdown further than 3 nm from shore. Fact sheet at 68. In the case of a coal-fired steam boiler, the effluent discharged from the boiler system does not contain any chemicals or other additives that are used to reduce impurities or scale formation. We understand that some questions exist as to the practicality of requiring boiler blowdown to be discharged more than 3 nm from shore, as this activity may require shutting down engines. However, the discharge of boiler effluent from coal-fired steamship engines can be conducted more than 3 nm from shore where, like the badger, the discharges are conducted sequentially from each boiler, and the boiler does not need to be shut down. This recognizes that there are sometimes safety and other operations concerns that require discharges closer to shore, but those instances are limited. This discharge should be conditioned on the following: (a) continuous efforts must be undertaken to ensure that the engine is operating as efficiently as possible; (b) coal used to power the boilers should have as low ash content as practicable; (c) the operators of

any such vessel should develop and implement a plan that, absent extraordinary circumstances, will result in the substantial reduction or cessation of discharge boiler effluent containing ash, no later than may 1, 2012, if appropriate.

Response: EPA notes that this comment was submitted after the August 1, 2008 deadline. EPA is not legally obligated to respond to late comments. EPA will, however, respond, and notes that this discharge type (coal ash slurry) appears to be incidental to the normal operation of the vessel operating in a capacity of transportation. Hence, it would have been subject to the 122.3(a) exemption discussed in Part 2 of the VGP fact sheet. EPA also notes that Coast Guard officials have interpreted EPA regulations to provide that the vessel previously did not need NPDES permit coverage under Section 402 of the Clean Water Act. However, the Agency also notes that most, if not all, other coal powered vessels have converted to other fuel uses or they have eliminated their Coal Ash slurry discharge. Hence, the Agency views it as appropriate to authorize the discharge of coal ash slurry, but to limit the duration of that authorized discharge. The Agency further notes that it has the discretion as to whether to authorize a discharge type within any permit it issues, provided that discharge meets appropriate technology and water quality based limits.

EPA notes that the VGP is a permit and not a permitting program. If vessel owner/operators wish to seek permit coverage under an individual permit, they may do so as discussed in Part 1.9 of this proposed permit.

EPA agrees with the commenter that its proposed discharge list was not exclusive and the Agency specifically requested comment on whether it was appropriate to authorize additional discharge types. The commenter has provided EPA with information which it believes is sufficient to temporarily authorize the discharge of Coal Ash slurry.

EPA notes that the commenter supports the use of non-numeric effluent limits in the permit (specified as the commenter as requiring BMPS).

EPA acknowledges that the commenter summarizes boiler blowdown and seawater cooling discharges at length based on EPA documents including the VGP, the VGP fact sheet, and the UNDS technical development document. Though the commenter states they believe Coal Ash slurry is analogous to boiler blowdown effluent, the Agency does not believe that these discharge types are analogous. Though both coal ash slurry and boiler blowdown may both come from either boilers or economizers, the constituents in that discharge and the volume of that discharge are vastly different. Hence, the agency does not deem it appropriate to authorize the discharge of Coal Ash slurry as boiler blowdown. Additionally, the Agency does not believe it appropriate to consider Coal Ash slurry as seawater cooling overboard discharge. Seawater cooling discharges are typically non-contact discharges whose main pollutants or constituents of concern include sediment from water intake, traces of hydraulic or lubricating oils, trace metals leached or eroded from the pipes within the system, and potentially increased temperature. Nothing resembling coal ash is ever added to seawater cooling discharges.

Furthermore, the commenter notes that the coal ash is 'non hazardous.' Though EPA does not dispute that the ash is non-hazardous at this time, EPA does not believe we have enough information to affirmatively support or contradict this statement. The commenter states that while coal ash does not contain trace amounts of barium, it doesn't contain the dozens of

constituents present in seawater overboard discharges. However, EPA is not convinced that the tests the commenter has completed were appropriate for discharges into waters, nor that they had detection limits which were sufficiently sensitive. EPA further notes that it is likely the discharge contains a variety of pollutants, some of which in significant quantities (e.g. Suspended solids), and the Agency believes that it is appropriate to eliminate this discharge type (see discussion below about temporary authorization).

EPA acknowledges that the vessel owner/operator states that they will not be able to eliminate the discharge of Coal Ash slurry by December 18, 2008 or by May 2009. EPA agrees that there is currently not a feasible, available, or economically practicable and achievable means to eliminate the discharge by the time the permit comes into effect. However, the commenter states the owner/operator is pursuing a range of options and will eliminate the discharges by May 2012. EPA acknowledges the discussion regarding the current working proposal to store the coal ash effluent, and the discussion that the vessel may attempt to convert to diesel fuel. EPA also acknowledges that though the commenters state they plan on eliminating the discharge by May 2012, there may be additional complications which delay their ability to eliminate the discharge. Therefore, in addition to authorizing the discharge until May 2012, the Agency has authorized the discharge for 1 additional operating season beyond May 2012 which allows for some contingency time in case the owner/operator faces additional difficulties in eliminating the discharge type. Hence, based on this comment, EPA has authorized the discharge of Coal Ash slurry for large ferries until December 19, 2012. If the vessel owner/operator finds that they are unable to eliminate the discharge of coal ash slurry by this time, they may seek individual permit coverage pursuant to Part 1.9 of the permit. The Agency would then evaluate whether it is appropriate to use its discretion to reauthorize this discharge under an individual permit. Based on this discussion, EPA does not anticipate needing to reauthorize the discharge of Coal Ash Slurry in future permits.

EPA appreciates the commenter suggesting appropriate effluent limits for the discharge of Coal Ash slurry. Based on this and other comments provided by the commenter, the Agency developed effluent limits under Part 5.3.2 of the permit. For example, the Agency has accepted the commenter's recommendation to limit the discharge of coal ash slurry to a specific distance from shore based on this comment and other materials submitted by the commenter (See Part 5.3.2.3 of the Permit). The permit requires that discharges of coal ash slurry occurs more than 5 nm from any shore and in waters over 100 feet in depth. Furthermore, as suggested, EPA has imposed a coal ash content which requires the permittee to minimize the ash content of the coal used onboard, but in no event may the ash content exceed 9.5 % (by weight and as received) (EPA included the maximum ash content based on other information submitted by the commenter). As discussed above, EPA has also not authorized the discharge beyond December 19, 2012.
