K&L GATES

Kirkpatrick & Lockhart Preston Gates Ellis LLP 1601 K Street NW Washington, DG 20006-1600

1 202.778.9000 www.klgates.com

Barry M. Hartman 202.778.9338 202.778.9100 fax barry.hartman@kloates.com

VIA EMAIL

October 10, 2008

Water Docket U.S. Environmental Protection Agency Mailcode 4101T 1200 Pennsylvania Avenue, N.W. Washington, D.C. 20460 Submitted by email at <u>ow-docket@epa.gov</u>

Attention: Docket ID No. EPA-HQ-OW-2008-0055

Regarding the U.S. Environmental Protection Agency's 2008 Proposed Issuance of a National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (VGP) for Discharges Incidental to the Normal Operation of Commercial and Large Recreational Vessels

To Whom It May Concern:

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 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 effluent² 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. As always, LMC is committed to assuring compliance with the law and being an

The prefix "S.S." is a short form for steamship.

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.

excellent steward of the environment, and stands ready to work with the Agency to develop appropriate limits/best practices for this discharge.

While we recognize that the formal comment period has closed, the Agency said in the proposed VGP that it was seeking information about the scope and extent of its proposed permit, and particularly whether particular streams were or should be included that may not have been expressly addressed in the draft permit. As a result of circumstances that have recently changed, we are submitting these comments to assist the Agency in assuring that the final rule is as comprehensive, accurate, and complete as possible. The Agency has the authority to consider comments submitted after the comment period formally closes. See, e.g., In re Dominion Energy Brayton Point, LLC, NPDES Appeal No. 03-12, 2006 WL 3361084 (EAB Feb. 1, 2006); see also, In re BP Cherry Point, PSD Appeal No. 05-01, slip op. at 15 n.27 (EAB June 21, 2005). Moreover, since the final rule is not expected to be issued for another 10 weeks, we believe the Agency will have sufficient time to consider this comment, without jeopardizing its time frames. If, after reviewing this submission, the Agency has questions, we would be pleased to address them in the record, as the Agency determines is appropriate.

LMC seeks this clarification of the proposed VGP expeditiously. The Badger only operates between May 1 and October 12 each year. It must incur millions of dollars in debt beginning in late November each year, to prepare for operating the following May. That debt is repaid through vessel revenues. The Badger cannot eliminate the boiler effluent containing ash by next May, and it will not operate in violation of the Clean Water Act (CWA). Unless it can gain clarification soon that it will be permitted to operate next year under the VGP or otherwise, it will shut down permanently this fall, rather than incur debt that it may not be able to repay. Making it clear that the boiler effluent from coal-fired marine engines is within the VGP and subject to best management practices outlined in the proposed VGP and this comment, will provide the certainty needed for the Badger to plan on operating next season.

I. About Steamships and the Badger

Before the development of steam power, ships were primarily propelled by sails and wind. Steamships represented the first mechanized means of propulsion, and as a result enjoy a rich place in American history. At their most basic level, steamboats have used a variety of fuels like coal to create steam pressure that turns paddles or propellers to propel ships. Robert Fulton famously began the first steamboat service in the U.S. in 1807 and a new wave of cargo and passenger transportation was born. River steamboats often propelled by towering paddle wheels became the subject of lore in the U.S. during the 19th Century as described by Mark Twain in his *Life on the Mississippi*. Of shallow draft and powered by coal, the vessels made an important contribution to the development of North America. Later came ocean-going steamships, including perhaps the most famous of all, the RMS Titanic, which was the largest steamship in the world when it sank in 1912. The Queen Elizabeth, the Queen Elizabeth II (QE II), Queen Mary, and many other vessels of lesser fame have plied the waters of America and the world as steamboats.

As other forms of propulsion developed, steamships no longer ruled the maritime industry. Today, the S.S. Badger has taken on iconic status on the Great Lakes by virtue of its place as the last coal-fired steamship operating in regular service in the U.S. Built in 1953, its original mission was the transportation of railroad cars and freight across Lake Michigan, one of a fleet of rail car ferries that once operated on the Great Lakes. After ceasing operations as a rail car ferry in 1990, the Badger sat idle for several years before service was restored in 1992 in its current incarnation as a vessel transporting passengers, their vehicles, and commercial vehicles between Ludington, Michigan and Manitowoc, Wisconsin. Today the Badger has a capacity of 620 passengers plus 180 trucks, cars, tour buses, recreational vehicles, motorcycles, and other vehicles. The Badger is 410 feet in length and more than 50 feet in width. Its height is 106 feet or seven stories, and its weight is 6650 tons displaced. There is no other operating ship like it, an important reason why it has become a major tourist destination in the Midwest.

The Badger operates between May and October, with two round trip crossings during the heart of the shipping season and one round trip crossing on the "shoulder" parts of its shipping season. In the course of the season, it makes about 500 crossings. A ride across Lake Michigan takes approximately four hours.

The Badger has operated on the Great Lakes for more than five decades. Analyses indicate it has a \$40 million annual economic impact on its port cities of Ludington and Manitowoc. It employs 279 people, including a crew of seafarers from the American Maritime Officers labor union, and has an estimated indirect impact of more than 1,000 jobs. The entire Great Lakes and the states of Michigan and Wisconsin also benefit from the impact of the Badger as a transportation link for tourism as well as commerce associated with commercial truck transportation. The Badger transports tens of thousands of automobiles, RV's, motorcycles, and commercial trucks annually resulting in the saving of 1.1 million gallons of gasoline and diesel fuel.

The Badger's age and propulsion system have given it a celebrity status on the Lakes:

- Its propulsion system was designated a mechanical engineering landmark by the American Society of Mechanical Engineers. (1996)
- It was officially named a registered Michigan historic site by the Michigan Historical Commission. (1997)
- It was officially named a registered Wisconsin historic site by the Wisconsin Historical Commission. (1997)
- It was designated a Michigan Centennial Business by the Historical Society of Michigan. (1997)
- It was named Ship of the Year by the Steamship Historical Society of America. (2002)

II. The Propulsion System on the Badger

The propulsion system on the Badger is similar to that of other coal-fired vessels. In the case of the Badger, the steam turns two caste steel, four blade propellers that are nearly 14 feet in diameter and weigh 13,800 pounds each. The Badger travels at an average speed of approximately 18 miles per hour or, in nautical terms, about 15 knots.

The Badger is equipped with the original Foster-Wheeler "D"-type marine steam generators or boilers with side, back, and roof tubes to protect the furnace refractory, interdeck super heaters, and economizers. The Badger is also equipped with forced draft, induced draft, high-velocity fans, and Pratt-Daniels cyclone separators. The boilers are fitted with Hoffman Combustion stoker fronts employing over feed stokers and dump grates. The normal evaporation rate is 29,500 lbs/hr with 44,000 lbs/hr maximum at 500 lbs/sq in gauge (a/k/a, psig) and 750 degrees Fahrenheit outlet.

The Badger currently uses a blend of Westridge Coal (1.12 percent sulfur) and stoker coal (.97 percent sulfur) in a 2 to 1 ratio to produce a coal mixture that has a 1.023 percent sulfur content:³

- Coals used ranged from 2" x 0" Crushed Run of Mine to 1 1/2" x 1/4" Stoker coal.
- Coals used were typically from the East Kentucky Region.
- Heat content ranged from 12,500 to 13,400/btu.
- Ash content ranged from 6.0 percent to 9.5 percent.
- Moisture content ranged from 4.0 percent to 7.0 percent.

Coal is stored aboard the vessel in coal bins and moved to the vessel's four boilers via a closed conveyer 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

³ Because of the historical nature of the vessel, the Badger is legislatively exempted from the Wisconsin and Michigan state Clean Air Act programs. Wis. Stat. § 285.27(3) (2008); Mich. Comp. Laws § 324.5513 (2008).

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.

III. The Badger's Environmental Footprint

The Badger takes great pride in its history, and undertakes continuous efforts to operate as efficiently as possible and with as little impact on the environment as possible. Protecting the environment has always been directly related to operating the vessel as efficiently as possible. For example, the more efficient the engines are, the less coal is used. This saves significant fuel costs. At the same time, the less coal that is used, the less ash is generated.

The Badger continually works to ensure that its engines are operated as efficiently as possible, and its environmental footprint is as benign as possible. Examples of these efforts include:

1. The original Wager smoke-eyes allow the Badger's crew to monitor individual boiler emissions from the boiler room, and a video monitor system installed in 2000 allows the engineer to observe overall stock gas opacity and feed rate from the engine room. This information is used to help the fireman adjust the combustion air in order to burn fuel more efficiently and minimize emissions.

2. In 1992, LMC designed and installed solid state circuitry to replace obsolete vacuum tube balance circuits in the plant master steam pressure control. LMC also designed and installed solid state circuitry to replace obsolete vacuum tube circuits in coal stoker drive controls. This was LMC's first attempt to automate, rather than to manually control, the system to produce more efficient fuel burn, which in turn reduces emissions.

3. In 1993, LMC replaced the solid state circuitry that LMC previously designed and installed a Johnson Yokogawa PID microprocessor controller to replace the plant master control. LMC also installed a Johnson Yokogawa steam pressure transducer to send steam pressure signals to the new plant master. These reforms allowed LMC to better control its fuel input, fuel combustion, and smoke emissions.

4. LMC installed Honeywell drive motors to interface the plant master signal to coal stoker drives. This was done in an effort to modernize the system and automate, rather than to manually control, the system to burn fuel more efficiently and to minimize emissions.

5. In 1993, LMC bired a consulting firm to evaluate the Badger's boiler operations and make recommendations.

> 6. In 1994, LMC installed four new Beck drive motors on coal stokers and four API process control isolators to interface with the Johnson Yokogawa plant master to Beck drive motors. This installation completed the replacement of the previous circuit system that began in 1992, and in 1994, LMC installed Wechsler digital bar graph gauges to indicate the percentage of coal feed. This provides the operator with a visual indication of the amount of fuel being fed into the boiler and immediately alerts the operator when the vessel has a high rate of fuel feed, which can lead to a smokier and less efficient fuel combustion boiler operation.

> 7. LMC installed Dwyer differential pressure switch gauges to monitor combustion chamber pressure and to operate flue dampers to maintain constant pressure. LMC also installed Duff-Norton actuators on flue ID inlet dampers, which are operated either manually or automatically by the Dwyer pressure switch gauges to allow the vessel to maintain the most appropriate air-fuel ratio, which is crucial for running a cleaner stack and more efficient fire.

> 8. In 1995, LMC obtained a spare Johnson Yokogawa PID controller and a spare Johnson Yokogawa master pressure transducer for use in the event of microprocessor failure.

9. In 1997-1998, LMC replaced all wall and floor boiler tubes in all four boilers. This repair increased the efficiency of the boiler operation, thus minimizing emissions.

10. In 1999, LMC installed four additional Beck motor drives to operate forced draft dampers under direct manual operation by the ship's crew. This conversion allowed the vessel to better control its air-fuel ratio consumption and to minimize smoke.

11. In 1999, LMC installed four Wechsler digital bar graph instruments to indicate the percentage of forced draft primary combustion air, which allowed the crew to monitor the positioning of the forced air damper feed back.

12. In 1999, LMC again retained Maurice L. Kelsey & Associates, Inc. to review some of the recent additions and installations and offer more recommendations for achieving a more efficient fuel combustion and cleaner stack.

13. In 2000, LMC added a stack carn video carnera, which focuses on the top of the stack and allows the engineer on duty below to monitor the stack smoke and ensure that the vessel's smoke emissions are as low as possible.

14. In approximately 2000, LMC replaced generating, screen, and superheater tubes, as well as related brick work for the forward and after starboard boilers. These replacements allowed the boilers to operate more efficiently.

15. Stokers are overhauled during every off season, and all force draft fans, induced draft fan turbines, and over fire air fans have been overhauled in the last five years.

16. In 2004, LMC replaced the superheater tubes in the afterport and forward port boilers, some of which were plugged and operating inefficiently. This replacement increased the efficiency of the boiler operation, thus minimizing emissions.

17. In 2008, the stoker secondary air supply was ducted so that it is fed from the forced draft, which allows greater flexibility and results in more burn efficiency and better smoke control.

18. The dump grates on all four boilers have been replaced with a redesigned pattern to allow improved forced draft, which has decreased gas velocity through the furnace to allow more air into the boiler so that the boilers burn cleaner.

19. Tachometers have been installed to allow remote monitoring of the induced draft fan turbine speeds to better control the fuel combustion and minimize smoke.

20. The Pratt-Daniels cyclones have been renewed to more efficiently remove ash from emissions.

21. In 2007/2008, LMC replaced all the condenser tubes on the port and starboard side. A number of these tubes were plugged and were causing the vessel to operate less efficiently. Because of the added cooling capacity, the Badger has a better vacuum, which allows the vessel to have more torque and use less fuel when maneuvering. This also helps the Badger to reduce its smoke.

22. The Badger has reduced fuel consumption and smoke emissions by approximately 20 percent by taking one of the four boilers off-line and using it as a standby boiler.

Apart from efforts to reduce generation of ash through engine efficiency, the ash that is discharged from the Badger in the boiler effluent has minimal impact on the environment. As a threshold matter, the ash itself is non-hazardous. Tests done in 2006 and again in 2008 demonstrate this. See Attachment 1 to this submission. As described above, boiler effluent containing this ash is almost always discharged more than 5 miles from shore unless safety indicates otherwise. The amount of water that carries the ash far exceeds the ash itself.

Other governmental studies suggest that the boiler effluent containing non-hazardous ash is relatively benign. For example, the United States Coast Guard has recently completed an extended rulemaking related to discharges of non-hazardous bulk dry cargo residue (DCR), including fresh coal, from commercial ships into the Great Lakes.⁴ Based on research, testing and a Final

⁴ 73 Fed. Reg. 56492 (Sept. 29, 2008).

Environmental Impact Statement, the Coast Guard concluded that continued discharges of DCR would have an insignificant impact on the environment of the Great Lakes, including its sediment quality, water quality, or biological resources. Further, the Final Environmental Impact Statement noted that "the effects of over a century of DCR sweeping on sediment quality or biological resources are barely detectable."⁵

Given the nature of the boiler effluent, it is almost certainly the case that it is sufficiently benign especially if managed appropriately, and the continuing discharge for the next few years is almost certain to have no adverse impact on the Great Lakes as LMC moves toward an engineering solution that will allow it to cease the discharge in its entirety.

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 permits 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 Guard⁶ 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 streamships 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 vessel 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:

⁵ U.S. Coast Guard Environmental Impact Statement for Dry Cargo Residue Discharges in the Great Lakes, U.S. Coast Guard, USCG-2004-19261(May 23, 2008).

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).

"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 non-hazardous. 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 bad 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

(NPDES) Vessel General Permit (VGP) for Discharges Incidental to the Normal Operation of <u>Commercial and Large Recreational Vessels</u> (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. <u>Boiler Effluent from Steamships Shares Many Characteristics of Boiler Blowdown</u> <u>Described in the VGP, Except That Boiler Effluent Does Not Contain the Hazardous</u> <u>Constituents Potentially Present in Boiler Blowdown</u>.

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 The constituents of boiler blowdown discharge will be dependent on the type(s) of antiscaling 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: antimony, 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 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 concern⁹ and none are at levels that approach any danger to human health or the environment.

⁷ <u>Technical Support for EPA Development of a Permitting Framework to Address the Vacatur of the NPDES Vessel</u> <u>Exclusion (Battelle Report)</u> at 43.

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.

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.

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. <u>Boiler Effluent Also Shares Characteristics with "Seawater Cooling Overboard</u> <u>Discharge" (Including Non-Contact Engine Cooling Water, Hydraulic System Cooling</u> <u>Water, Refrigeration Cooling Water).</u>

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 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.

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.

Owners of the Badger are aggressively pursuing a range of options for developing and constructing an ash containment system on board the vessel.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 on-shore 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.

¹¹ Among its options LMC considered a conversion of the vessel to diesel fuel. However, such a conversion is complex, expensive and sometimes unsuccessful.

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.

VII. Conclusion

This has been an unusual and challenging rulemaking for the Agency. It has been compelled by court order to develop the largest single NPDES program in the history of the CWA in the space of just two years. It has been asked to do this for vessels that have never been regulated before. Given these extraordinary circumstances, accepting this comment after the close of the comment period but well before the deadline for issuing the final regulation would be an appropriate exercise of the Agency's discretion.

At the same time the Badger faces an unusual time constraint. It only operates six months a year, and between November and April it incurs substantial costs preparing for the upcoming

season. The Badger cannot begin to incur costs this November for next year's season without a reasonable prospect that it will be able to operate when the 2009 season starts next May. Given that the VGP was proposed to cover vessels heretofore subject to Section 122.3, and the boiler effluent from steamships was covered by that provision, the Agency should make it clear that this effluent is covered either as part of the boiler blowdown stream, as part of the seawater cooling overboard discharge stream, or as a 29th stream, and subject to the effluent limits set forth above.

Respectfully submitted,

Barry MHantma

Barry M. Hartman

Counsel for Lake Michigan Carferry, Inc. SS/Badger

ATTACHMENT D-1

.

.

1126 N. Front St. ~ New Ulm, MN 56073 - 800-782-3557 - Fax 507-359-2890 1411 S. 12th St. ~ Bismarck, ND 58502 - 800-279-6885 - Fax 701-258-9724 35 W. Lincoln Way - Nevada, IA 50201 ~ 800-362-0855 - Fax 515-382-3885 www.mvtl.com



FINAL ANALYSIS REPORT

Report Date: 1 Dec 2006

Lab Number: 06-H493 Work Order #: 81-1272

James Anderson Lake Michigan Carferry PO Box 708 Ludington MI 49431

Date Received: 31 Oct 2006 Time Received: 10:00

TCLP Date Ext: 11/ 9/06

SW846 Method 1311

1

Sample Description: Bottom Ash

Result Action Level Date Analyzed Analyte ------------------****** 11/ 9/06 11/ 9/06 100 wt t N/A Solids (dry) 100 WE . N/A * Solids (wet) 11/27/06 < 0.04 mg/l 5.0 mg/1 Arsenic TCLP 0.50 11/28/06 100 Barium TCLP mg/1mg/l mg/1 mg/1 11/28/06 < 0.01 1.0 Cadmium TCLP 11/28/06 < 0.05 mg/15.0 mg/l Chromium TCLP 11/28/06 < 0.5 mg/l5.0 mg/1 Lead TCLP < 0.01 0.2 11/16/06 mg/l mg/1Mercury TCLP 11/10/06 < 0.5 mg/kg mg/l Reactive Cyanides mg/1 11/10/06 mg/kg Reactive Sulfides 336.0 mg/1 1.0 mg/1 11/27/06 < 0.04 Selenium TCLP 5.0 11/27/06 Silver TCLP < 0.2 mg/1 mg/l 11/ 9/06 12/ 1/06 12/ 1/06 N/A units TCLP pH 5.21 TCLP Semi-Volatiles See Attached Report N/A See Attached Report N/A TCLP VOC

Approved By: C. Canitop

b/VTL prainations the accountry of the many is done on the Existing and for certains. It is not possible for MVTL to gravitable that a text result obtained on a particular anople will be the state no any other sample will be the state no any other sample will be challen on any other sample will be challen on any other sample will be the state no any other sample will be challen on any other sample will be challen on any other sample will be the state no any other sample will be challen on any

MVTL

1126 N. Front St. - New Ulm, MN 56073 - 800-782-3557 - Fax 507-359-2890 1411 S. 12th St. - Bismarck, ND 58502 - 800-279-6885 - Fax 701-258-9724 35 W. Lincoln Way - Nevada, IA 50201 - 800-362-0855 - Fax 515-382-3885 www.mvtl.com



FINAL ANALYSIS REPORT

Report Date: 1 Dec 2006

Lab Number: 06-H494 Work Order #: 81-1272

James Anderson Lake Michigan Carferry PO Box 708 Ludington MI 49431

Date Received: 31 Oct 2006 Time Received: 10:00

TCLP Date Ext: 11/ 9/06

SW846 Method 1311

1

i

Sample Description: Fly Ash

Analyte	Result	Actio	n Level	Date Analyzed
* Solids (dry)	100 wt	N/A		11/ 9/06
* Solids (wet)	100 wt	* N/A		11/ 9/05
Arsenic TCLP	< 0.04 mg/	1 5.0	mg/l	11/27/06
Barium TCLP	0.52 mg/	1 100	mg/1	11/28/06
Cadmium TCLP	< 0.01 mg/	1 1.0	mg/1	11/28/06
Chlorine	555 ug/	g	mg/l	11/29/06
Chromium TCLP	< 0.05 mg/	1 5.0	mg/1	11/28/06
Copper TCLP	0.07 mg/	1	mg/l	11/28/06
Density	0.364 9/0	m3	mg/1	11/29/06
Lead TCLP	< 0.5 mg/	1 5.0	mg/1	11/28/06
Mercury TCLP	< 0.01 mg/	1 0.2	mg/l	11/16/06
Nickel TCLP	0.21 mg/	1	mg/l	11/28/06
Paint Filt. Ligds Test	No Free Liqu	ids N/A		11/29/06
pH-Environmental	8.6 uni	ts N/A		11/29/06
Selenium TCLP	0.041 mg/	1 1.0	mg/l	11/27/06
Setaflash Flashpoint	> 400 deg	rees F	mg/l	11/ 9/06
Silver TCLP	< 0.2 mg/	1 5.0	mg/l	11/27/06
TCLP pH	5.01 uni	ts N/A		11/ 9/06
TCLP Semi-Volatiles	See Attached	Report N/A		12/ 1/06
TCLP VOC	See Attached	Report N/A		12/ 1/06
Total Solids	976000 ug/	g N/A		11/16/06
Zinc TCLP	0.73 mg/	ĩ	mg/l	11/28/06

Approved By: C Canto

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including templang by MVTL. As a mean presention to clients, the public and ourselves, aff reports are submitted as the confidential property of clients, and submitted for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

1 of 2

١

Page:

1126 N. Front St. - New Ulm, MN 56073 - 800-782-3557 - Fax 507-359-2890 1411 S. 12th St. - Bismarck, ND 58502 - 800-279-6885 - Fax 701-258-9724 35 W. Lincoln Way - Nevada, IA 50201 - 800-362-0855 - Fax 515-382-3885 www.mvtl.com



		CAS	A Re	s Received esult	Method RL	Matbod Reference	Date Analyzed	Analyst
Sample	Description:	BOTTOM H493	ASH		Temp	at Receipt: 4	4.0 C	
					Sam <u>i</u> Date	pled By: Received: 10	Nov 06	
	LUDINGTON MI	49431			Sam	ole Matrix: TC	LP	
	JAMES ANDERSO	N LAKE	MICHIGAN	CARPERRY	Repo Lab Worl Acco	Number: 1 De Number: 06-T14 Corder: 81-12 Dunt #:	ec 05 44 72	

MITROBENZENS (SURROGATE) RECOVERY: 85 \$ 2-FLOOROBIPHENYL (SURROGATE) RECOVERY: 77 * TERPHENYL-d14 (SURROGATE) RECOVERY: 62 +

MVTL

2-FLUOROPHENOL (SURROGATE) RECOVERY: 62 \$ PHENOL-d5 (SURROGATE) RECOVERY: 41 * 2,4,6-TRIBROMOPHENOL (SURROGATE) RECOVERY: 87 1

DIBRONOFLUOROMETHANE (SURROGATE) RECOVERY: 99 * TOLUENE-de (SURROGATE) RECOVERY: 97 1 4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 95 *

Í

{

Reporting Limit

1

Mievated "Loss Than Result" («): • • Due to sample matrix ! - Due to sample quantity

= Due to sample concentration
* = Due to extract volume

CRATTPICATION - ME LAS 8 027-015-125 WI LAS 8 999467680 HD HIGRO # 1013-F NO WH/DW # 8-040 TA LAS 8: 132 TA LAS 8: 022

MVTL granuates the accuracy of the analysis done on the mempie membrained for residing. It is not possible for MVTL to guarantee that have been reading on a particular sample will be the same on net other sample unless all conditions affecting the sample are the same including tamphing by MVTL. As a mered protection to clients, the publics and annual way, all reports are submitted as the conditionsial property of clients, and authorization (or publication of statements, coordination or estimate from or regarding our reports is reserved possible or written approval.)

MVTL

1

1126 N. Front St. - New Ulm, MN 56073 - 800-782-3557 - Fax 507-359-2890 1411 S. 12th St. - Bismarck, ND 58502 - 800-279-6885 - Fax 701-258-9724 35 W. Lincoln Way - Nevada, IA 50201 - 800-362-0855 - Fax 515-382-3885 www.mvtl.com



Page: 2 of 2

JAMES ANDERSON LAKE MICHIGAN CARFERRY PO BOX 708 LUDINGTON MI 49431

Sample Description: BOTTOM ASH H493

SW846 Method 1311 SW846 - 8260 SW846 - 8270 Work Order #:81-1272 Account #: Sample Matrix: TCLP Date Sampled: Date Received: 10 Nov 06

Report Date: 1 Dec 06 Lab Number: 06-T144

TCLP Ext: 9 Nov 2006 ZHE Ext: 14 Nov 2006 SVol Ext: 16 Nov 2006

Analyte	Result		Action Level - mg/L	Date Analyzed

Benzene	< 0.0800	mg/L	0.500	11/27/06
Carbon Tetrachloride	< 0.0800	mg/L	0.500	11/27/06
Chlorobenzene	< 0.0800	mg/L	100	11/27/06
Chloroform	< 0.100	mg/L	6.00	11/27/06
1,2-Dichloroethane	< 0.100	mg/L	0.500	11/27/06
1,1-Dichloroethylene	< 0.100	mg/L	0.700	11/27/06
Methyl Ethyl Ketone	< 0.800	mg/L	200	11/27/06
1,1,2,2-Tetrachloroethylene	< 0.0800	mg/L	0.700	11/27/06
1,1,2-Trichloroethylene	< 0.120	mg/L	0.500	11/27/06
Vinyl Chloride	< 0.120	mg/L	0.200	11/27/06
resol	< 0.0540	mg/L	200	11/28/06
entachlorophenol	< 0.0550	mg/L	100	11/28/06
1,4-Dichlorobenzene	< 0.0130	ag/L	7.5	11/28/06
2,4-Dinitrotoluene	< 0.0380	mg/L	0.13 *	11/28/05
Hexachlorobenzene	< 0.0180	mg/L	0.13 *	11/28/06
Hexachloro-1, 3-Butadiene	< 0.0150	mg/L	0.5	11/28/06
Hexachloroethane	< 0.0130	mg/L	3	11/28/06
Nitrobenzene	< 0.0150	mg/L	2	11/28/06
Pyridine	< 0.0550	mg/L	5 *	11/28/06
2,4,5-Trichlorophenol	< 0.0150	mg/L	400	11/28/06
2,4,6-Trichlorophenol	< 0.0150	mg/L	2	11/28/05

 If the quantitation limit is greater than the calculated regulatory level, the quantitation limit therefore becomes the regulatory level.

2-FLUOROPHENOL (SURROGATE) RECOVERY: 62 * PHENOL-d5 (SURROGATE) RECOVERY: 41 * 2,4,6-TRIBROMOPHENOL (SURROGATE) RECOVERY: 87 * NITROBENZENE (SURROGATE) RECOVERY: 85 * 2-FLUOROBIPHENYL (SURROGATE) RECOVERY: 77 * TERPHENYL-d14 (SURROGATE) RECOVERY: 62 * DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 99 * TOLUENE-d8 (SURROGATE) RECOVERY: 97 * 4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 95 *

Approved by:

i

Dan O'Connell, Organic Laboratory Manager New Ulm, MN

NINNESOTA LAB # 027-015-125 WISCONSTH LAS TO B 999447600 NORTH DAROTA LAB TO B 1013-H JOHA CENTIFICATION 8: 132

MVTL guarantees the accurscy of the analysis does on the rample submitted for instant. It is not possible for MVTL to guarantee that a text result obtained on a particular sample will be the same on any other sample unless sill conditions affecting the tample are the rample actualing is any other sample are postention to channel protection to channel, the public and ourselves, all reports are submitted as the confidential property of chemist, and authorization (ar publication of sustained on submitted as the confidential property of chemist, and authorization (ar publication of sustained on submitted as the confidential property of chemist, and authorization (ar publication of sustained on submitted as the confidential property of chemist, and authorization (ar publication of sustained on submitted as the confidential property of chemist, and authorization (ar publication of sustained on a submitted as the confidential property of chemist, and authorization (ar publication of sustained on a submitted as the confidential property of chemistry of a submitted as the confidential property of chemistry of sustained as the confidential property of chemistry of submitted as the confidential property of chemistry of chemistry of submitted as the confidential property of chemistry of c



1126 N. Front St. - New Ulm, MN 56073 - 800-782-3557 - Fax 507-359-2890 1411 S. 12th St. - Bismarck, ND 58502 - 800-279-6885 - Fax 701-258-9724 35 W. Lincoln Way - Nevada, IA 50201 - 800-362-0855 - Fax 515-382-3885 www.mvtl.com



Page: 1 of 2

Report Date: 1 Dec 06 Lab Number: 06-T145 Work Order: 81-1272 Account #: Sample Matrix: TCLP Date Sampled: Sampled By: Date Received: 10 Nov 06

Sample Description: FLY ASH

LUDINGTON MI 49431

PO BOX 708

H494

JAMES ANDERSON LAKE MICHIGAN CARFERRY

Temp at Receipt: 4.0 C

	As Received	Method	Mechod	Date	
CAS #	Result	RL	Reference	Analyzed	Analyst

NITROBENZENE (SURROGATE) RECOVERY: 92 1 2-FLUGROBIPHENYL (SURROGATE) RECOVERY: 87 % TERPHENYL-dl4 (SURROGATE) RECOVERY: 80 %

2-FLUOROPHENOL (SURROGATE) RECOVERY: 53 . PHENOL-dS (SURROGATE) RECOVERY: 37 1 2.4.5-TRIBROMOPHENOL (SURROGATE) RECOVERY: 111 1

DIBROMOFLOROMETHANE (SURROGATE) RECOVERY: 99 % TOLUENE-ds (SURROGATE) RECOVERY: 98 % 4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 94 *

1

. Reporting Limit

1

Elevated "Less Than Result" (<), e - Due to sample matrix : - Due to sample quantity

= Due to sample concentration * = Due to extract volume

CERTIFICATION: NO LAS # 027-015-125 WI LAB # 995447680 ND HICRD # 1011-N HD HW/DM # R-040 IA LAB #: 137 TA LAE #: 023

MVTL presentees the accuracy of the analysis done on the stample submitted for serings. It is not possible for MVTL to guarantee that a text result obtained on a particular stample will be the same on any other sample submitted for sering a submitted f ------



1126 N. Front St. - New Ulm, MN 56073 - 800-782-3557 - Fax 507-359-2890 1411 S. 12th St. - Bismarck, ND 58502 - 800-279-6885 - Fax 701-258-9724 35 W. Lincoln Way - Nevada, IA 50201 - 800-362-0855 - Fax 515-382-3885 www.mvtl.com



Page: 2 of 2

	Lab Number: 06-T145
JAMES ANDERSON LAKE MICHIGAN CARFERRY	Work Order #:81-1272
PO BOX 708	Account #:
LUDINGTON MI 49431	Sample Matrix: TCLP
	Date Sampled:
	Date Received: 10 Nov 06

Sample Description: FLY ASH H494

SW846 Method 1311 SW846 - 8260 SW846 - 8270 TCLP Ext: 9 Nov 2006 ZHE Ext: 14 Nov 2006 SVol Ext: 16 Nov 2006

Report Date: 1 Dec 06

Analyte	Result		Action Level - mg/L	Date Analyzed
Benzene	< 0.0800	mg/L	0.500	11/27/06
Carbon Tetrachloride	< 0.0800	mg/L	0.500	11/27/06
Chlorobenzene	< 0.0800	mg/L	100	11/27/06
Chloroform	< 0.100	mg/L	6.00	11/27/06
1.2-Dichloroethane	< 0.100	mg/L	0.500	11/27/06
1.1-Dichloroethylene	< 0.100	mg/L	0.700	11/27/06
Methyl Ethyl Ketone	< 0.800	mg/L	200	11/27/06
1.1.2.2-Tetrachloroethvlene	< 0.0800	mg/L	0.700	11/27/06
1.1.2-Trichloroethylene	< 0.120	mg/L	0.500	11/27/06
Vinvl Chloride	< 0.120	mg/L	0.200	11/27/06
resol	< 0.0540	mg/L	200	11/28/06
entachlorophenol	< 0.0550	mg/L	100	11/28/06
1.4-Dichlorobenzene	< 0.0130	mg/L	7.5	11/28/06
2.4-Dinitrotoluene	< 0.0380	mg/L	0.13 *	11/28/06
Hexachlorobenzene	< 0.0180	mg/L	0.13 *	11/28/06
Hexachloro-1.3-Butadiene	< 0.0150	mg/L	0.5	11/28/06
Hexachloroethane	< 0.0130	mg/L	3	11/28/06
Nitrobenzene	< 0.0150	mg/L	2	11/28/06
Pyridine	< 0.0550	mg/L	5 *	11/28/06
2.4.5-Trichlerophenol	< 0.0150	mg/L	400	11/28/06
2,4,6-Trichlorophenol	< 0.0150	mg/L	2	11/28/06

 If the quantitation limit is greater than the calculated regulatory level, the quantitation limit therefore becomes the regulatory level.

2-FLUOROPHENOL (SURROGATE) RECOVERY: 53 * PHENOL-d5 (SURROGATE) RECOVERY: 37 * 2,4,6-TRIBROMOPHENOL (SURROGATE) RECOVERY: 111 * NITROBENZENE (SURROGATE) RECOVERY: 92 * 2-FLUOROBIPHENYL (SURROGATE) RECOVERY: 87 * TERPHENYL-d14 (SURROGATE) RECOVERY: 80 * DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 99 * TOLUENE-d8 (SURROGATE) RECOVERY: 98 * 4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 94 *

R

Approved by:

(

Dan O'Connell, Organic Laboratory Manager New Ulm, MN

MINNESOTA LAB & 027-015-125 MISCHNEIN LAB ID # 995447680 NORTH DAKOTA LAB ID # 1013-H YOWA CERTIFICATION #: 132

MVTL guaranters the scattery of the analysis done on the rample submitted for saving. It is not possible for MVTL to guarantee the stars result obvided on a particular sample will be the same on any other rample unless all conditions affecting the sample are the sample, including compling by MVTL. As a mutual protection to electric, the public and versiones, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or statents from or regarding out reports is reserved pending our written approval.



Report ID: \$37981.01(01) Generated on 09/04/2008

Report to

Attention: Dave Warner ASI Environmental Tech. 410 East Dowland Street Ludington, MI 48431

Phone: 231-845-0371 FAX: 231-845-0428 Email: devewamer@asienvironmental.com

Analytical Laboratory Report

Report produced by

Merit Laboratories 2680 East Lansing Drive East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-8333 -

Report Summary

Leb Semple ID(s): S37981.01-S37981.02 Project: Lake MI Carterry Collected Date: 08/13/2008 Submitted Date/Time: 09/02/2008 10:15 Sampled by: Bob Manglitz P.O. #:

Report Notes

Results relate only to itsuns tested as received by the taboratory. Methods may be modified for improved performance. Results reported on a dry weight basis where applicable. "Not detected" indicates that parameter was not found at a level equal to or greater than the RDL. Report shall not be reproduced except in full, without the written approval of Marit Laboratories.

Violetta F. Murshak

Violetta F. Murshak Laboratory Director

Report to ASI Environmental Tech. Project: Lake MI Carferry



Sample Summery (2 samples)						
Sample ID	Sample Tag	Matrix	Collected Date/Time			
\$37981.01	LMC Bottom Ash	Satid	08/13/2008			
837981.02	LMC Fly Ash	Solid	08/13/2008			

.



-

Lab Semple IO: S37981.01 Sample Tag: LMC Bottom Ash Collected Date/Time: 08/13/2008 Matrix: Solid COC Reference: 043094

Sample Containers

#	Туре	Preservative(s)	Rolligerated?	Arrivel T	'emp. (C) T	hermometer#			
1	Plastic Bag	None	Yes	n/a	N	/a			
Ane	ityais	Results	Unite	RDL	Method	Run Date/Time	Anah	rst Limits	Flags
En	raction / Prep.								
Me	Cury Digestion	Completed			7470A	09/04/08 11:00	JRT		
Mø	al Digestion	Completed			3015A	09/04/08 12:00	SLS		
TCI	P Zero Headspace Ext.	Completed			1311	09/02/08 14:44	WAR		н
TC	P/SPLP BNA Extraction	Completed			3510C	09/03/08 23:44	EMR		н
TC	P Extraction								
Inita	al Sample pH	9.89			1311	09/02/08 18:00	WAR		н
рH	enfler 3.5 ml HCf	1.70			1311	09/02/08 16:00	WAR		н
% 5	ichids	100			1311	09/02/08 16:00	WAR		н
San	nple Used g	40			1311	09/02/08 16:00	WAR		н
Flm	al Valume mL	800			1311	09/02/08 18:00	WAR		н
TCI	P Extraction Fluid	1			1311	09/02/08 15:00	WAR		н
Fina	al Extract pH	5.13			1311	09/02/08 18:00	WAR		н
ina	ryanics								
Rea	otive Cyanide	Not detecte	d mg/kg	1.5	90108	09/03/08 11:10	JDP		н
Rea	ctive Sulfide	Not detecte	d mg/kg	5	9030B	09/03/08 09:40	JDP		н
Tot	s i Solida	100	%	1	SId M 254	0 B 09/02/08 11:45	8 LO		
Ma	ala internetiente de la constante de								
Arse	enic, TCLP	Not detects	d mg/L	0.01	6020	09/04/08 13:19	SLS	5.0	
Bari	um, TCLP	0.17	mg/L	0.05	6020	09/04/08 13:19	SLS	100.0	
Cad	mium, TCLP	Not detected	d mg/L	0.005	6020	09/04/08 13:19	SLS	1.0	
Chr	omium, TCLP	Not delected	d mg/L	0.05	6020	09/04/08 13:19	SLS	8.0	
Lea	d, TCLP	Not detected	d mg/L	0.03	6020	09/04/08 13:19	SLS	5.0	
Mer	CUTY, TOLP	Not detected	d mg/L	0.0002	7471A	09/04/08 14:31	JRT	0.2	
Sele	mlum, TCLP	Not detected	í mg/L	0.05	6020	09/04/08 13:19	SLS	1.0	
Silv	ar. TCLP	Not detected	d mg/L	0.005	6020	09/04/08 13:19	5L\$	5.0	
Org	anics - Semi-Volatilus								
TCL	P Semi Volstilea								
0-01	loser	Not detected	s ug/L	1,000	8270C	09/04/08 12:25	ARH	200,000	R
p,m-	-Cresol	Not detected	s ug/L	1.000	8270C	09/04/08 12:25	ARH	200,000	R
Pen	lachlorophenol	Not detected	ug/L	1,000	8270C	09/04/08 12:25	ARH	100,000	R
2,4.	5-Trichlorophenol	Not detected	lug/L	1,000	8270C	09/04/08 12:25	ARH	400,000	R
2,4,1	ô-Trichlorophenol	Not detected	յ ոնչլ	1,000	8270C	09/04/08 12:25	ARH	2,000	R
2,4-	Dinitrolalusne	Not detected	l ug/L	90	8270C	09/04/08 12:25	ARH	130	R
Hex	achlorobenzene	Not detected	ւ ոնչլը	90	8270C	09/04/08 12:25	ARH	130	R
Hex	schlorobutadiene	Not delected	tug/L	100	8270C	09/04/08 12:25	ARH	500	R
Hex	achlorcethane	Not delected	մ աց/Ն	100	8270C	09/04/08 12:25	ARH	3,000	R
Nitro	benzene	Not detected	lug/L	100	8270C	09/04/08 12:25	ARH	2,000	R

H-Sample submitted and run outside of holding time R-Pretiminary result

Report to ASI Environmental Tech. Project: Lake MI Carterry Report 10: \$37981.01(01) Generated on 09/04/2008

•



Leb Sample ID: S37981.01 (continued) Sample Tag: LMC Bottom Ash

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst Limits	Flags
Organics - Semi-Volatiles (continued)							
TCLP Bami Volatiles (continued)							
Pyridine	Not detected	ug/L	100	8270C	09/04/08 12:26	ARH 5,000	R
Organics - Volatiles							
TCLP Volatiles							
Benzene	Not detacted	ug/L	100	82608	09/03/08 19:49	JGH 500	н
Carbon tetrachloride	Not delected	ug/L	100	8260B	09/03/08 19:49	JGH 500	н
Chlorobenzene	Not detected	ug/L	100	8260B	09/03/08 19:49	JGH 100,000	н
Chlaroform	Not detected	ug/L	100	82608	06/03/08 19:49	JGH 6,000	н
1,4-Dichlorobenzene	Not detected	ug/L	100	\$2 60B	09/03/08 19:49	JGH 7,500	н
1,2-Dichloroethane	Not detected	ug/L	100	8260B	09/03/08 19:49	JGH 500	н
1,1-Dichloroethene	Not detected	ug/L	100	8260B	09/03/08 19:49	JGH 700	н
2-Butanone (MEK)	Not detected	ug/L	1,000	82608	09/03/08 19:49	KGH 200,000	н
Tetrachicrosthena	Not detected	ugh	100	8260B	09/03/08 19:49	JGH 700	н
Trichloroethene	Not detected	ug/L	100	8260B	09/08/08 19:49	JGH 500	н
Vinyi chloride	Not detected	ug/L	100	8260B	09/03/08 19:49	JGH 200	н

R-Preliminary result

H-Sample submitted and run outside of holding time



Lab Sample ID: \$37981.02 Sample Tag: LMC Fly Ash Collected Date/Time: 08/13/2008 Matrix: Solid COC Reference: 043094

Sample Containers

#	Туре	Preservative(5)	Refrigerated?	T levinA	Гелтф. (С) Т	hermometer #			
1	Plastic Bag	None	Yes	n/a	n	/a			
An	aNsis	Results	Unita	RDL	Method	Run Date/Time	Anal	vst Limita	Flaca
Ex	traction / Pren.			1			/ • • • •		
Me	rcury Digestion	Completed			7470A	09/04/08 11:00	JRT		
Me	tal Didastion	Completed			3016A	09/04/08 12:00	51.5		
TC	LP Zero Headspace Ext.	Completed			1311	09/02/08 14:44	WAR	ł	н
TC	LP/SPLP BNA Extraction	Completed			3510C	09/03/08 23:44	EMR		н
TC	LP Extraction								
Init	al Sample pH	9,17			1311	09/02/08 16:00	WAR	1	н
øН	after 3.5 ml HCl	2.23			1311	09/02/08 16:00	WAR		н
%	Solida	100			1311	09/02/08 16:00	WAR		н
Sa	mple Used a	40			1311	09/02/08 16:00	WAR		н
Fin	al Volume mL	800			1911	09/02/08 16:00	WAR		н
TC	LP Extraction Fluid	1			1311	09/02/08 18:00	WAR		н
Fin	al Extract pH	5.27			1311	09/02/08 16:00	WAR		н
Ino	rganics								
Chi	enne	Not detected	mg/kg	35	330.6	09/03/08 13:20	JKB		
Der	naity	2.85	g/oc		2710 Std M	09/02/08 15:12	DJS		н
Fla	shpoint for Solids	Not detected	mm/sec	2.2	1030	09/03/08 13:17	DJS		
Pai	nt Filter Test	FAILED			9095	09/04/08 12:50	WAR		
pH		8.77	STD Units	0.1	9045D	09/02/08 15:15	DJS	12.5	
Tot	al Solids	98	%	1	Std M 254	0 B 09/02/08 11:45	DJS		
Me	tels								
Arə	enic, TCLP	Not detected	mg/L	0.01	8020	09/04/08 13:22	SL8	5.0	
Ber	ium, TCLP	0.78	mg/L	0.05	6020	09/04/08 13:22	SLS	100.0	
Cac	Imium, TCLP	0.006	mg/L	0.005	6020	09/04/08 13:22	SLS	1.0	
Chr	omlum, TCLP	Not detected	mg/L	0.06	6020	09/04/08 13:22	SLS	5.0	
Cop	sper, TCLP	0.04	mg/L	0.01	6020	09/04/08 13:22	SLS		
Loe	d, TCLP	Not detected	mg/L	0.03	6020	09/04/08 13:22	SLS	5.0	
Me	cury, TCLP	Not detected	mg/L	0.0002	7471A	09/04/08 14:53	JRY	0.2	
Nic	kel, TCLP	0.19	mg/L	0.05	6020	09/04/08 13:22	SLS		
Sak	enlum, TCLP	0.08	mg/L	0.05	6020	09/04/08 13:22	SLS	1.0	
Silv	er, TCLP	Not detected	mg/L	0.005	6020	09/04/08 13:22	SLS	5.0	
Zino	, TCLP	0.81	mg/L	0.05	8020	09/04/08 13:22	SLS		
Org	anics - Semi-Volalites								
TCL	P Semi Volatiles								
0-0	loeen	Not detected	ug/L	1,000	8270C	09/04/08 12:44	ARH	200,000	R
p.m	-Cresol	Not detected	vg/L	1,000	8270C	09/04/08 12:44	ARH	200,000	R
Pan	tachlorophenol	Not detected	ug/L	1,000	8270C	09/04/08 12:44	ARH	100,000	R
2,4,	5-Trichlorophenol	Not detected	ug/L	1,000	8270C	09/04/08 12:44	ARH	400,000	R

H-Sample submitted and run outside of holding time

R-Preliminary result

Report to ASI Environmental Tech. Project Lake MI Carllerry Report ID: S37981.01(01) Generated on 09/04/2008



Lab Sample ID: S37981.02 (continued) Sample Tag: LMC Fly Ash

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst Limits	Flags
Organics - Semi-Volatiles (continued)							
TCLP Berni Volatiles (continued)							
2,4,6-Trichlorophenal	Not detected	ug/L	1,000	8270C	09/04/08 12:44	ARH 2,000	R
2,4-Dinitrotoluene	Not detected	ug/L	90	82700	09/04/08 12:44	ARH 130	R
Hexachlorobenzenø	Not detected	ug/L	90	8270C	09/04/08 12:44	ARH 130	R
Hexechlorobutadiene	Not detected	ug/L	100	8270C	09/04/08 12:44	ARH 600	R
Hexachloroethane	Not detected	ug/L	100	8270C	09/04/08 12:44	ARH 3,000	R
Nitrobenzene	Not detected	ug/L	100	8270C	09/04/08 12:44	ARH 2,000	R
Pyridine	Not detected	ug/L	100	6270C	09/04/08 12:44	ARH 5,000	R
Organios - Volatiles							
TCLP Volatiles							
Benzene	Not detected	ug/L	100	8260B	09/03/08 20:07	JGH 500	н
Carbon letrachloride	Not delected	ugЛL	100	82608	09/03/08 20:07	JGH 500	н
Chlorobenzene	Not detected	ug/L	100	8260B	09/03/08 20:07	JGH 100,000	н
Chieroform	Not detected	ug/L	100	82608	09/03/08 20:07	000,8 HOL	н
1,4-Dichlorobenzene	Not detected	ug/L	100	8260B	09/03/08 20:07	JGH 7,500	н
1,2-Dichloroethane	Not detected	ug/L	100	8280B	09/03/08 20:07	JGH 500	н
1,1-Dichtoroethene	Not delected	ugAL	100	8260B	09/03/08 20:07	JGH 700	н
2-Butenone (MEK)	Not detected	ug/L	1,000	8260B	09/03/08 20:07	JGH 200,000	н
Tetrachloroethene	Not detected	ug/L	100	8260B	09/03/08 20:07	JGH 700	н
Trichloroethene	Not detected	ugAL	100	82608	09/03/08 20:07	JGH 500	н
Vinyl chloride	Not detected	ug/L	100	82608	09/03/08 20:07	JGH 200	н

R-Preliminary result

H-Sample submitted and run outside of holding time

	2680 East Lansing Dr., East I Phone (617) 332-0167 Fax www.medtlabs.com	.ensing, M1 48823 (517) 832-8333	C.O.C. PAGE 4	<u> </u>
REPORT TO	CHAIN OF CUS	STODY RECORD	•	INVOICE TO
OSHIRGINAME C - 1 1 C - D B.C		CONSACT NAME		SAME.
COMPANY DCT 5		COMPANY		
ADDREBS		ADDRESS		
				8 1/07. [21P 0206.
PRIME NO.	- 200 MD	LPHONE NO.	FROLINO,	
231-845-0371 0426				
			ANALYSIS UTTACH LIST IF W	ORE SPACE FIEQUIFED)
PREJICT NO ANNE NOT CALLASIN	SHAPERNS PERSEPRETASCHAN		END BA	SPECIAL INSTRUCTIONS MOTES
TURNAROLIND TIME REQUIRED 24 HR	TZ HR STANDARO		1-193-13 <u>5</u> 1	シー IFF 24 Hour
	C'LENELIN OTHER		いいかついてい	H TAT ANT 1
MATTEX GW-GROUNDWATER WW-WARTEWATTER S- STO			1128143	Possible Wy
CODE: SL-BLUDG5 C-OIL AAAR	WWWASTE MEMISC	A Comprons & Preservatives	- NOV - NY	Teer HSAP
MERST YEAR SAMPLET	AB SCRUPTION XI	HDU HDU HARO, NALOH NALOH NALOH		The Dw
37701.01 8.130 LMC Both	om Ash 501	X	XXXX	
	SOM			
0281208 1.MC E/V	Ach cou			
		┝┶┿╼┽╶┽╶┊╴╉╶╉	╶┦╶┼╼┼╶┼╾╽	
		┝╌╁╌┥┈╽╼┥╌╆╌┤╌╋╌	╶╁╼╋╺┼╶┼╶╂╍┟╌┦	,
		┝┶┽┾┼╞┼╋	╶╋┅╍╋╾╵┼┈╵┥╍╾╂╌╼╉╴╊	
		┝┧┯┽┽┾╂╅┨	┶┽┼┾┼┽╢	
		┍╼╪╾┢╶╞╼┥╸┤┅╂╺╋╴		
HELMOULENED BY: SUGATURED ALLANZARCON BOD NIGARIITZ LM	C 8 2878 15:0	BILLING ISLAND BY	<u> </u>	DATE THAT
SOMATREOPRANIZATON BUCK SAME	8 2948 150	ARCEMED IN:	" Yaula	Cen Fra int
SCINOUENCO BY: SCINUTURE CRIGANIZABON Dave Dam	8-19-08 15-30	BERLINO.	SEAL INTRCY METIALS	NOTES: VENP ON ARRIVAL
STATINUMENORGANDATION UPS Ground	SATE THE	NEAL NO.	YES: NO.	



Report ID: \$38297.01(01) Generated on 09/30/2008

Report to

Attention: Dave Warner ASI Environmental Tech. 410 East Dowland Street Ludington, MI 49431

Phone: 231-845-0371 FAX: 231-845-0428 Emeil: davewarner@astenvironmental.com Report produced by

Merit Laboratorias 2680 East Lansing Driva East Lansing, MI 48823

Phone: (517) 332-0187 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): 938297.01 Project: LMC Coal Ash Collected Date; 09/18/2008 Submitted Date/Time; 09/24/2008 08:00 Sampled by: Charles Cart P.O. #:

Report Notes

Results relats only to items tested as received by the laboratory. Methods may be modified for improved performance. Results reported on a dry weight basis where applicable. "Not detected" Indicates that parameter was not found at a level equal to or greater than the ROL. Report shall not be reproduced except in full, without the written approval of Ment Laboratories.

Violetta F. Mushah

Violetta F. Murshak Laboratory Director

Report to ASI Environmental Tech. Project: LMC Cost Ash Page 1 of 3

Analytical Laboratory Report

Report ID: 538297.01(01) Generated on 09/30/2008



 Sample Summary (1 samples)
 Matrix
 Collected Date/Time

 Sample ID
 Sample Teg
 Matrix
 Collected Date/Time

 S38297.01
 LMC Coal Ash
 Ash
 09/18/2008 21:30

×



Leb Sample ID: \$38297.01 Sample Tag: LMC Coal Ash Collected Date/Time: 09/18/2008 21:30 Matrix: Ash COC Reference: \$0811

Sample Containers

#	Туре	Preservative(s)		Reingerated?	Amval	[emp. (C)	Thermometar #			
2	3202 Glass	None		Yes	4.5		R			
Ana	alysis		Results	Units	RDL	Method	Run Date/Time	Analy	st CA5 #	Flaga
Ext	raction / Prep.									
Me	cury Digestion		Completed			7471A	09/26/08 12:00	JRT		
Mel	al Digestion		Completed			3050B	09/29/08 12:00	SLS		
PN	A Extraction		Completed			3660B	09/25/08 19:38	EMR		
Ino	rganics									
ρH			8-62	STD Units	0.1	9045D	09/29/08 18:53	WAR		
Me	lats									
Ane	enic		4.42	mg/kg	0.10	6020	09/29/08 14:38	SLS	7440-38-2	
Bar	ium		58.3	mg/kg	1.0	6020	09/29/08 14:38	SLS	7440-38-3	
Cad	Imlum .		Not detected	mg/kg	0,20	6020	09/29/08 14:38	SLS	7440-43-9	
Chr	omium		Not detected	mg/kg	1.0	6020	09/29/08 14:38	SLS	7440-47-3	
Lea	đ		0.56	mg/kg	0.50	6020	09/29/08 14:38	SLS	7439-92-1	
Mer	cury		Not detected	mg/kg	0.050	7471A	09/28/08 15:58	JRT	7439-97-6	
Sela	muine		0.27	mg/kg	0.20	6020	09/29/08 14:38	SLS	7782-49-2	
Silv	67		Not detected	mg/kg	0.10	6020	09/29/08 14:38	SLS	7440-22-4	
Org	anios - Semi-Volatiles									
Pol)	nuclear Aromatics									
Ace	naphthene		Not detected	ug/kg	300	8270C	09/28/08 15:54	ARH	83-32-0	T
Ace	naphthylene		Not detected	ug/kg	300	8270C	08/26/08 15:54	ARH	208-98-8	т
Ant	hacane		Not detected	ug/kg	300	8270C	09/28/08 15:54	ARH	120-12-7	T
Ben	zo(a)entivacene		Not detected	ug/kg	300	8270C	09/28/08 15:54	ARH	56-55-3	т
Ben	zo(a)pyrene		Not detected	ug/kg	300	8270C	09/26/08 15:54	ARH	50-32-8	т
Ben	zo(b)duoranthene		Not detected	ngykg	300	8270C	09/28/08 15:54	ARH	206-99-2	т
Веп	zo(k)≣uoranthene		Not detected	UgAcg	300	8270C	09/26/08 15:54	ARH	207-08-9	T
Ben	zo(ghi)parylena		Not detected	vg/kg	300	8270C	09/26/08 15:54	ARH	191-24-2	т
Chry	/sene	1	Not detected	navka	300	8270C	09/26/08 15:54	ARH	218-01-9	т
Dibe	inzo(eh)anthracene	1	Not detected	ug/kg	300	8270C	09/26/08 15:54	ARH	53-70-3	т
Fillo	ranthene	1	Not detected	ug/kg	300	8270C	09/26/08 15:54	ARH	208-44-0	τ
Fluo	RUG	1	Not datacted	nðykð	300	8270C	09/26/08 15:54	ARH	86-73-7	Ť
Inde	mo(1,2,3-cd)pyrane	1	Not detected	ug/kg	300	8270C	09/26/08 15:54	ARH	193-38-5	т
Nap	hinalene		Not detected	ug/kg	300	8270C	09/28/08 18:54	ARH	91-20-9	٢
Phe	กลกมีหลาง	1	Not detected	ug/kg	300	8270C	09/26/08 15:54	ARH	85-01-8	T
Pyre	il e	I	Not detected	ug/kg	300	8270C	09/28/08 15:54	ARH	129-00-0	T
2-M	ethyinaphihalene	3	300	ug/kg	300	8270C	09/28/08 15:54	ARH	91-57-6	т
1-M	ethylnephihelene	1	Vot detected	ug/kg	300	8270C	09/26/08 15:54	ARH	90-12-0	۲

T-No correction for total solids

		Merit	2680 East I Phone (\$17	Lansing Dr., Ea 1) 332-0167 F	ist Lan Faox (5	nsing, 171 33	MI 4882 12-6333	3		£.0	.C. PAGE	a	_0		<u> </u>	500	
		Isfremiturics, Inc.	Watw.mesid	Ebs.com											-	508	11
REPOR	<u>т тој</u>		0	HAIN OF C	USI	TOD	REC	ORD								NVOIC	<u>e 70</u>
CONTACT NAME	ave was	ner				CORTAC	THNAC	_							C SHORE		;
COMPANY A	ST Enui	monestal	Treh.			CUMPAN	er										
ADDRESS GIR	E. Daul	and st				ADDINES	2							-			
CITY / LA	the true		WT-	2º 200112	7	c	-			•		• •			STAT	20 CODE	
PHONE NOL O	45-0271	TAX ND.	PO NO.	- 7774		PHONE	NO.			FAN	<u>a</u>			P	O ND		
Cave Ma	mer Casie	n u kon menta	lion 080	909-01		<u> </u>	<u> </u>		WALY	SIS (ATT	ACHLIS		HE SP	ACIE	required)		
MALESTNO	· Cont A	sh	CA APPL	PLEASE MAIL INEXUN	Nat	and	- Ca								SPECIAL :	NET FLUCI I L'INÉ	ANOTES
TURMARDUNE	TIME RECIURED	-7124HR. [*48	MR "'72 MR	XSTANDAT	Б) "	TOTH	ER .			obyk		·					
DELIVERABLE	S REQUIRED	ANDIARD (TEN		(*: OTHER				$\neg \alpha$	-0-	LA	I			Į			
MAJRIX CODE	W-GROUNDWATER	HEML-HARTENATER O-OIL	S-SOL L-LIOUE Analp W-VEASP	SONEDLID		t Cor	leiners &	٦ď	No Co	a al	<u>P</u> P	40					
MERT	YEAR		PLE TAG	T =].	B w			5			~~~	·	i				·
LAB NO.	DATE TIME	IDENTIFICATI	IN-DESCRIPTION			ŦĬ		EC.									
35297.04	918-08 2130	LMCC	oal Ash	M.	ର୍ଣ୍ଣ			X	X	×	. *	¥					
							$\left \right $	┼┨╌	\downarrow			Ł		_			
				╶──╊╼┼	-+	++	+++	┼╊╌	╇╋	+		s T					
	<u> </u>			· · · · · · · ·		+1	+·	┼╊╾	┥╌┥			<u>}</u>	+				•••
			a la Baal anna scruter an anna	··	• •	$\left\{ \right\}$	{-} { {	1 F	.		{ {				-		····
						11			1-1-								
													1				
									++				\uparrow		·		
		· · · · · · · · · · · · · · · · · · ·		- []	+	'f' ~	1 						1				
	+	1		╶──╂╌┼	-+	┿┟╴	╉╂┿	┤┨╌	╉╌╁╴	+			+		<u> </u>		
				انا الاست. انا المستر								L	1	l	L		1
SIGN/GURS/ORG	ANEZAMON Char	en Car L	MC	9-40 01	4	PELU	NURSHED S	ANICA LINE			~					DATE	TINE
SIGNADURE ORG	madarch	Jamer As:	<u> </u>	cres 7	5	RECZ BLAN	NUR OR	ANZATION	Ba	have.	Kito					h.投稿	8-00
	ANIZATION DA	en an 1	ST C	-2350 9	5n	Stat	NO.		SEAL BIT	151 Com	INSTRACT		NOTE	ŝ.	9£169. C	A ARTING	15
RECEIVED BY BIOKANLALACHO		Allent		9-21-08 9	00	STAL	CM		GEAL INE	ND ND	Puttal	a					

ľ

١

FLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE



Supplemental Report

Report ID: \$38249.01(02) Generated on 09/29/2008 Replaces report 538249.01(01) generated on 09/26/2008

Report to

Attention: Dave Warner ASI Environmental Tech. 410 East Dowland Street Ludington, MI 49431

Phone: 231-845-0371 FAX: 231-845-0428 Email: davewarner@asiervironmental.com

Report Summary

Lab Sample (D(s); S38249.01-S38249.02 Project: LMC Ash & Surface H2O Collected Date: 09/17/2008 - 09/18/2008 Submitted Date/Time: 09/19/2008 10:00 Sampled by: Jonethan Mauchnair P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory. Methods may be modified for improved performance. Results reported on a dry weight basis where applicable. "Not detected" indicates that parameter was not found at a level equal to or greater than the RDL. Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Violetta F. Murshak

Violetta F. Murshak Laboratory Director

Report to ASI Environmental Tech. Project LMC Ash & Surface H2O Page 1 of 4

Report (D: 838249.01(02) Generated on 09/29/2008

Report produced by

Merit Laboratories 2680 East Lansing Drive East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333



.

.

Supplemental Report

Sample Summary (2 samples) Sample ID Sample Tag 538248.01 LMC-L5WS-1 538248.02 LMC-L5WS-2
 Matrix
 Collected Date/Time

 Surfece Water
 09/17/2008 08:07

 Surface Water
 09/18/2008 08:15



Lab Sample ID: \$38249.01 Sample Tag: LMC-LSWS-1 Collected Dete/Time: 09/17/2008 08:07 Matrix: Surface Water COC Reference: 50813

Sample Containers

#	Туре	Preservativ	6 (8)	Refrigerated?	Arrival T	emp. (C)	Thermometer #			
2	1L Amber	None		Yes	4.1		IR			
1	1L Plastic	None		Yas	4.1	e.	IR.			
1	126ml Plastic	HNO3		Yes	4.1		IR			
Ana	alysis		Results	Unita	RDL	Method	Run Date/Time	Anat	yat CAS#	Flags
Ext	traction / Prep.			A						
Me	rcury Digestion		Completed			7470A	09/23/08 10:30	JRT		
Me	tal Digestion		Completed			3015A	09/26/06 12:00	SL9		
PN	A Extraction		Completed			35100	09/22/08 21.02	EMR	l I	
Ino	rganics									
Tot	al Suspended Solids		1	mg/L	1	2540 D	09/19/08 17:00	DJS		
Me	lais									
Are	enic		Not detected	mg/L	0.001	200.8	09/26/08 13:55	SLS	7440-38-2	
885	íum.		0.032	mg/L	0.005	200.8	09/20/08 13:55	SLS	7440-38-3	
Cac	mulant		Not detected	mg/L	0.0006	200.8	09/26/08 13:55	SLS	7440-43-0	
Chr	onium		Not detected	mg/L	0.005	200.8	09/26/08 13:65	SLS	7440-47-3	
Les	d		Not detected	mg/L	0.003	200.8	09/26/08 13:55	SLS	7439-92-1	
Me	cury		Not detected	mg/L	0.0002	245.1	09/23/06 15:00	JRT	7439-97-6	
Sel	กามกา		Not detected	mg/L	0.005	200.8	00/28/08 13:55	SLS	7782-49-2	
SHV	67		Not detected	mg/L	0.0005	200.8	09/26/08 13:55	SLS	7440-22-4	
Org	anica - Semi-Volatile:	5								
Poly	ynuclear Aromatic Hy	drocarbon								
Ace	naphinena		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	83-32-9	
Ace	naphthytene		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	208-96-8	
Anti	1nacan a		No! detected	ug/L	5	8270C	09/23/08 21:23	ARH	120-12-7	
Ben	zo(a)anthracana		Not detected	ug/L	5	82700	08/23/08 21:23	ARH	56-55-3	
Ben	zo(a)pyrene		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	50-32-8	
Ben	zo(b)fluoranthene		Not detected	ug/L	5	8270C	09/23/08 21:29	ARH	20 5-89-2	
Ben	zo(k)fluoranthene		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	207-08-9	
Ben	zo(ghi)perylene		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	191-24-2	
Chr	/5816		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	218-01-8	
Olbe	enzo(ah)an(tuacena		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	53-70-3	
Filic	ranthene		Not detected	ug/L	5	6270C	09/23/08 21:23	ARH	208-44-0	
Fluo	Tene		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	86-73-7	
Inde	no(1,2,3-cd)pyrene		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	193-39-5	
Nap	hthalene		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	91-20-3	
Pha	nanthrane		Not detected	ugh	5	8270C	09/23/08 21:23	ARH	85-01-8	
Руте	500		Not detected	ug/L	6	8270C	09/23/08 21:23	ARH	129-00-0	
2-M	athyinaphinalene		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	91-57-6	
1-14	sthyinaphthatana		Not detected	ug/L	5	8270C	09/23/08 21:23	ARH	90-12-0	



Lab Sample ID: \$38249.02 Sample Tag: LMC-LSWS-2 Collected Date/Time: 09/18/2008 08:15 Metric: Surface Water COC Reference: 50813

Sa	mple Containers									
#	Туре	Preservativ	e(s)	Refrigerated?	Arrival To	emp. (C)	Thermometer #			
2	1L Amber	None		Yes	4.1		IR			
1	1L Plastio	Norte		Yes	4.1		IR			
1	125ml Plastic	HNOS		Yes	4,1		IR			
An	alysis		Results	Units	RDL	Method	Run Date/Time	Anal	yst CAS #	Flags
Ex	traction / Prep.			-						
Me	rcury Digestion		Completed			7470A	09/23/08 10:30	JRT		
Me	tal Digestion		Completed			3015A	09/26/08 12:00	SLS		
PN	A Extraction		Completed			3510C	09/22/08 21:02	EMR	1	
Inc	Hganics									
TO	al Suspended Solids		6	mg/L	1	2540 D	08/19/08 17:00	DJS		
Me	tals									
Are	ienic		Not detected	mg/L	0.001	200.8	09/26/08 14:15	SLS	7440-38-2	
Bau	nium		0.032	mg/L	0.005	200.8	09/26/08 14:15	SL8	7440-39-3	
Ca	dmium		Not detected	mg/)_	0.0005	200.8	09/26/08 14:15	sls	7440-43-9	
Ch	romium		Not detected	mg/L	0.005	200.8	09/26/08 14:15	SLS	7440-47-3	
Lee	ad l		Not detected	mg/L	0.003	200.8	09/26/08 14:15	SLS	7439-92-1	
Me	rcury		Not detected	നു/L	0.0002	245.1	08/23/08 15:02	JRT	7439-97-8	
Sel	enium		Not detected	mg/L	0.005	200.8	09/26/08 14:15	SLS	7782-49-2	
Sik	rer'		Not detected	mg/L	0.0005	200.8	09/26/08 14:15	SLS	7440-22-4	
Org	janice - Semi-Volatiles									
Pol	ynuclear Aromatic Hy	drocarbon								
Ace	enaphthene		Not detected	ugAL	5	8270C	09/23/08 21:44	ARH	83-32-9	
Ace	naphthylene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	208-96-5	
Ant	hracena		Not detected	vg/L	5	82700	09/23/08 21:44	ARH	120-12-7	
Ber	nzo(a)anthracene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	56-55-3	
Ber	rzo(a)pyrene		Not detected	ug/L	6	8270C	09/23/08 21:44	ARH	50-32-8	
Ber	vzo(b)fillonanthene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	205-99-2	
Ber	rzo(k) fluoranthene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	207-08-9	
Ber	zo(ghi)perytene		Not detected	ųg/L	6	8270¢	09/23/05 21:44	ARH	191-24-2	
Chr	ysene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	218-01-9	
Oib	enzo(an)enthracene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	53-70-3	
Flu	onanthene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	208-14-0	
Flu	anene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	86-79-7	
Inde	ano(1,2,3-cd)pyrene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	193-39-5	
Nap	hthalene		Not detected	ug/L	5	6270C	09/23/08 21:44	ARH	91-20-3	
Phy	manthrene		Not detected	ug/L	5	8270C	09/23/08 21:44	ARH	85-01-B	
Pyn	ene		Not detected	ug/L	6	8270C	09/23/08 21:44	ARH	129-00-0	
2-14	ethyinaphthalene		Not detected	սց/Ն	5	8270C	08/23/08 21:44	ARH	91-57-6	
1-M	effyinaphihaiene		Not detected	ug/L	б	8270C	09/23/08 21:44	ARH	90-12-0	

Merit 2680 East L Phone (617	ensing Di 332-016 Ibs.com	r., £25 17 F	et Lan enc (5	nsing, i(7) 30	M1 464 32-633))				C.O.C	, Pa gi	E#.	1	OF	1		508	313	3
BEPORT TO	HAIN O	FC	US'	TOD'	YRE	COF	Ð									IN	VOIC)E .	то
CONTACT NIME DOWN LIDE CO	• -	-	1	100.00	; MANE					_		_			X	THAN		_	
CONTRACT S 1/4 ALL THE				COMPN	NY								•				- /	— .	1
POTENDES / ALL C DE VILLE				ADDATE	55		,					· —			-				-
910 Z. UQU 1910	ALL BOOM	50		CTTY .											31125	- 12	A 200E		
Indiana Indiana Indiana	1749	31		PHOISE	INCL.					FIXNO	6	_		<u> </u>	P.C. NC.				
6131-845-0371			Ì	<u> </u>								-							
Carewarne- Casion wromention 0804	07-0	<u>)</u>		1.1.4			A (NAL	1818		CH LIS		MORI	SPACE	PRECIUM	RED)			
MC Ash & Surface H20 Jonatha	Make	CERTA	T	A										÷	SPEC	ial WS?	THUCTION	152VOT	ES
TURNAROUND TIME REQUIRED LIZE KR LIALHR 172 HR	XSTA	NDAR	0	OTH	EA	-		C	<u>হ</u> া	TIO				;					
DELIMERABLES REQUERED XSTANDARD CLEVEL I CLEVEL II	์ เกม	RB					Q	9	1	-	H		S	:					
MATROX GIN-CROLINGWATER WWW.WASTEWATER S.SOL L-LICENE	50-5	OUD	Ĵ	# Co	states	8	5	9	শু	5	06		S						
	i Mada	196C	-	Press	arvetive	n	A	0	4	<u></u>			~		ļ				
MERIT YEAR SAMPLE TAG LAB NOL DATE TIME DENTIFICATION-DESCRIPTION		NAT THE REAL PLANE	NOME	¥ ¥	Nuclear A	Ne offer								•					-
3524901742-08 8:07 LMC-LSWS-1		51/4	∕₿	1			X	X	x	X :	X		X						
047-18-08 8:15 LMC-LSWS-2]	54 4	13	1.			X	X	X	X	X		×	÷			_		
		- 1		:	ſ		-												
					11		ľ	î Î	1	1.				;					
	1		1	11	11				1	-					1				
			╋	\square	++										1			_	
			┢		++	\square				-;-	+			:					
			• -	╉╌╋╶	┥╌┥╌			┟╺┤				†			1				
		-		╆╋	++	┟┼╸					+	<u> </u>							
		+	+	┼╉	┼┼╴	$\left \cdot \right $	-	\vdash				<u></u>	$\left \right $		+	-	·		
		\vdash	+	┽╄	┿╋	H	1				+-	-		+					
				4.4	<i>.</i>		L	1_	L			. ,					, -		
										;									
RELANDASHED ST	ante	U	5.	AELA		D BY	A1 10-			_						1	DICTE	Ţ	ME
NASETINED BY:	DATE	12	20	PILC	BAREDE			_	4	2		2		m			DATE		ME
RELINGUISHED IN:	DAIL	TAN	UT /A LE	SEAL	NCL	Man Mill	1	EAL H	THET		DAT N	8		NOTES	10	NP. ON A	FIAME	5.1	
: Received by				1				TES		\$0 .									

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE BIDE



Report (D: \$38298.01(01) Generated on 10/02/2008

Report to

Attention: Jon Mauchmar ASI Environmental Tech. 410 East Dowland Street Ludington, MI 49431

Phone: 231-845-0371 FAX: 231-845-0426 Email: jonathanmauchman@asienvironmental.com Report produced by

Merit Laboratories 2680 East Lansing Drive East Lansing, MI 48823

Phone: (617) 332-0187 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): 538286.01 Project: LMC Ash & Surface H2O Collected Date: 08/19/2008 Submitted Date/Time: 09/24/2008 08:00 Sampled by: Jonathan Mauchmar P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory. Methode may be modified for improved performance. Results reported on a dry weight basis where applicable. "Not detected" indicates that peremeter was not found at a level equal to or greater than the RL. Report shall not be reproduced except in full, without the written approval of Marit Laboratories.

Violetta F. Murchak

Violetta F. Murshak Laboratory Director

Report to ASI Environmental Tech. Project: LMC Ash & Surface H2O **Analytical Laboratory Report**



Sample Summ	aary (1 saam pias)		
Sample ID	Sample Tag	Matrix	Collected Date/Time
S38298.01	LMC-LSWS-3	Storm Water	09/19/2008 08:12

x



Lab Sample ID: S38288.01 Sample Tag: LMC-LSWS-3 Collected Date/Time: 09/19/2008 08:12 Matrix: Storm Water COC Reference: 50812

Sample Containers

#	Туре	Preservative(s)	Refrigerated?	Arrival T	emp. (C)	Themometer #			
2	1L Amber	None		Yes	4.5		IR			
1	1L Plastic	Nona		Yes	4.5	÷	IR			
1	125m) Plastic	HNO3		Yes	4.5		R			
Ana	haia		Results	Units	RL.	Method	Run Date/Time	Anal	vslCAS#	Flags
En	reation / Prea	12 0								
Mer	curv Digestion		Completed			7470A	09/24/08 11:30	JRT		
Met	al Digestion		Completed			3015A	09/26/08 12:00	SLS		
PN/	Extraction		Completed			3610C	09/26/08 23:15	EMR		
Inci	<i>``anics</i>									
Tot	al Suspended Solids		2	mg/L	1	2540 D	09/24/08 16:00	DJS		
Met	als									
Ars	enio		Not detected	mg/L	0.001	200.8	09/26/08 14:43	SLS	7440-38-2	
Berl	นตา		0.030	mg/L	0.005	200.8	09/26/08 14:43	SLS	7440-39-3	
Cad	mlum		Not detected	mg/L	0.0005	200.8	09/26/08 14:43	SLS	7440-43-9	
Chin	omium		Not detected	mg/L	0.005	200.8	09/26/08 14:43	SLS	7440-47-3	
Lee	đ		Not detected	mg/L	0.003	200.8	09/26/08 14:43	SLS	7439-92-1	
Mer	cury		Not detected	mg/L	0.0002	245.1	09/24/08 15:03	JRT	7439-97-0	
Sele	-		Not detected	mg/L	0.005	200.8	09/26/08 14:43	SLS	7782-49-2	
Silv	br'		Not detected	mg/L	0.0005	200.8	09/26/08 14:43	SLS	7440-22-4	
Org	anics - Semi-Volatile:	5								
Poh	muclear Aromatic Hy	drocarbon								
Ace	naphanana		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	83-32-9	
Ace	haphthylene		Not delected	ug/L	5	8270C	09/30/08 13:20	ARH	208-96-8	
Ant	Inacena		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	120-12-7	
Ben	zo(a)anthracene		Not detected	ug/L	б	82700	09/30/08 13:20	ARH	58-55-3	
Ban	zo(a)pyrene		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	50-32-8	
Ben	zo(b)fluoranthene		Not detected	ug/L	5	8270C	08/30/08 12:20	ARH	205-99-2	
Ben	zo(k)iliuoranthene		Not detected	սց/Լ	5	827DC	09/30/08 13:20	ARH	207-08-9	
Ben	zo(ghi)perylene		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	191-24-2	
Chin	sene		Not delected	ug/L	5	8270C	09/30/08 13:20	ARH	218-01-9	
DHbe	nzo(ah)enthracene		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	53-70-3	
Flug	ranthene		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	208-44-0	
Fluo	rene		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	86-79-7	
Inde	no(1,2,3-od)pyrene		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	193-39-5	
Nap	hthalene		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	91-20-3	
Phe	nanthrane		Not detected	ug/L	6	8270C	09/30/08 13:20	ARH	85-01-8	
Руте	ne		Not detected.	ug/L	5	82700	09/30/08 13:20	ARH	129-00-0	
2-M	<i>Cryinaphinalene</i>	••	Not detected	vg/L	5	8270C	09/30/08 13:20	ARH	91-67-6	
1-M	sthylnaphenalena		Not detected	ug/L	5	8270C	09/30/08 13:20	ARH	90-12-0	

BEPORT TO	Langing Dr. 7) 30,22-0167 Jabs-coura HAIN O	, Easti 7 Fax F CLE	Lansin (517) STDI	9, Mi 44 382-63	33 33 50 50	20		c	20	PAGE	.	1)#		IIN	508	12 E TO	ภ
CUTUET HAVE THE ALANDA MART			- TORN	VACI KANS					-			-		.,*	SAME			1
COMPANY ASI FULLIONMANTAL Technology			1000	PRAY			-	<i>.</i>		-	,			-				í
NOT CHINACTING CHINAL CHARACT	83		ACUI	¥88 "									_	_ ,			v	
CONV / I'M LOW	, 29 CODE		105-4										-	SIATE	21	> CIMPE		1
PHONE HO. 231-845-04826 100.102	i yqt	131	PHEN	NE NO.		• • • •		14	NO.		-		Ī	P.Q. MO.				
in attranthouchanas @ a sienviron mentor ion			1	1	u	A	NALY	SIS (A	TACI	HUST	IP Mac	HE S	PACE	REQUIR	180)			1
PROFET HOMAN I AN A CLA & Sund and H DISNIPHIS	ALAS PRO	SOH WW	ure L	·· .·: ·		1' '		1	ľ I	Ĩ		1	1.1	SPF-0	AL THET	RUCTION	SNOTES	
TURNARCING THE RECLINEED 1 24 HR 48 HR 172 HR	STAN	EDÁ PID	·:0	- INIER														
DELIVERAGLES NEOLINEO KSTANDARU LEVEL ILLEVEL I	H I OTHE	EA.		-		20	Ū:	t a		-								
MATHIK GAY-GIRONHIMATER WW-MAASTENATER 8-801. L-J.OUH	0 .90=90	NID		Socializati	R.	5	~	a' d'		A	ů.)	Ì					
		sc ;	Pi	250720	445	4	Q	r's		<u>م</u>	1							_
MERIT YEAR SAMPLE TAS LAB NO. DATE TIME DENTIFICATION DESCRIPTION		MATORIX BOTT PE	ş t		RACH OTHER							2						
38796-01 9-190 8:12 LMC-LSWS-3	9	w 4		X		×	X	××		×	>	د .						
					i			:				<u> </u>						
												1						
								;									-	
								1				1						
			·]]					1				1						
												i						
					Ĩ			1										
					Π	Γ		-					T					
				1		Ĩ		:	-			1		-	••			
RELNOUSSED BY Arobe March	12 5435 1		. 8	LINCLESK	HD DY									<u>.</u>	1	DATE	TONE	-
PECEVED BC	LARTE	TML	2 61 RS	Gaua) Inhiba Derved In	p home r:	ATION	ጉ		2	ha	d						TIME	_
Pits many the Br.	UKTE	THE	্য ১০	AL NOL	REANU	ATRON	EAL INT	ACT	1	MITIALS	~	NÚ	58	154	1 CH 48	ANAL Y	A.40	
STURARURSDREZANDZINNON FRISZENICO BY: BIGHARURGORSANZZIRIQII	HADE	TIME	52	AL NO.			YEB	CHF YEA	<u>ן כ</u> ז		I	-					.2	

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE

ATTACHMENT D-2

-

č

ĺ

Vessel Critical Profile

Name/ BADGER	Primary VIN/ 265156	Call/ WBD	4889	Flag/ US
	Alt VIN's	Туре		
	265156	Official Number (U	.S.)	
ļ	5033583	IMO Number		
ī	5300348	ABS Number		
	Involved	Parties		
Role	Name	Pa	urty Id	
Flag State	UNITED STATES	83	3031	
Owner,	LAKE MICHIGAN	TRANS LAKE 4	6233	and the states
	SHOKICUI	CADECDDV	111	
Operator (managing)	LAKE MICHIGAN	LAKPERKI 40	0404	
Managing Owner	TAKEMICHIGAN	TRANSLAKE 44	7158	N AL REAL
	SHORTCUT			Carlos States
Operator (managing)	JAMES ANDERSO)N 10	36680	· · · ·
Operator (managing)	ALLAN PETER CE	RENKA	87520	
perator (managing)	DEAN GLENN HO	BBS 10	91864	
lanaging Owner (Irustee)	SHORTCUT	TRANS-LAKE 44	/158	
	Vessel Sp	ecifics		
Service/ Passenger (Inspected)	Gross Tons(GT ITC)	/ Ha	ailing Port/ LUND	INGTON, MI,
Propulsion/ Steam Reciprocating	Gross Tops(GRT)/ 42	244 Da	ate Keel Laid/	
Route/GG: Great Lakes	Deadweight Ton/ 665	50 Da	ate Delivered/15D	ec1953
Ahead HorsePower/ 7000	Length/ 393.7 (ITC),	Hu Hu	Ill Material/ Steel	
Astern HorsePower/	Super Structure Colo	r/ Ht	LI COLOT/ Black	long Then 6
Class/ Passenger Smp	Type/ Perry	Gr	oss Tonnage < 10	0)
	VDS Doct	iments		
Document Activity #	Agency Port	Issued	Expires	Status
CERTIFICATE OF DOCUMENTATION	USCG CLEV	7D 17Jan2007	29Feb2008	VALID
	Certificate/Docu	iment Status		
l Scument Activity# As	Port	Issued	Expires	Status
			- An parto	
			LMCF	00182

Document	Activity #	Agency	Port	Issued	Expires	Status
Certificate of	2909379	USCG	Marine Safety	10May2007	10May2008	Issued/Effectiv
pection			Unit Chicago		2011	****
Jassification		American Durrent of S	Houston, Tx	U3NOV2003	29Nov2008	VALID
Load Line		American	Houston TY	151an2004	29Oct2008	VALID
Certificate		Bureau of S	Louson, LA		2204000	
(Coastwise)				4		
Stability Letter			Marine Safety	14May1964		VALID
Vernei			Center	1314	121/0	VALID
Security Plan		USCU	IVISC	13May2004	13141492009	V ALL
Approval						
Letter				N. 2011 NO 201 PL	. Ruthar an an an an an	
Vessel	1	USEG	MSC	13May2004	13May2009	VALD
VSPV. SSI	1					
CEMPT: MALL	್ ನಿರ್ದಿಟಿಸುವ		an galantaratika si ba	ى «ئورىلال لائىلىغۇر الىرى ^{تى} لىر كەركىلالاتىنى «ئ	an a	ا موريان ال ^{رو} المركز من معلق الروا الا تناع من العوار ا
		94.500 SZ				
		Hal	l and Re-inspe	ctions		
Internal Structur DryDock Next I Wood Keel Bolt	al Next Due Date Due Date/ 31Oct2 Next Due Date/	e/ 008				
			Open Cases-			
Total Cases/ 2						
1. Case #/ 3493	80 Orig Port/ S	SFO GrndHvn	Open Dt/ 15May2	007	1105	
Title/ M Equi	ipment Failure/B/	aDGER/ Ludingt	00 00 00.0 S 000 0 2937191	0.0 W/151418ZM	AYU7	
Status/ Open	- In Progress					
Case Descrip	tion/ M/V Badger	notified Station	Ludington of mach	inery failure. The	cause of the failu	are is believed to
be from the Con	tinues blows root	valve. The valve	released steam fro	om the boiler syste	m and injured the	second en (See
2. Case #/ 3484	03 Orig Port/ S	SEC LkMichen	Open Dt/ 09Mav	2007		
Title/ M Pollu	ution - Hazardous	Material/SS Bad	ger/ Pier Marquett	e Lake, Ludington	MI. /092000ZMA	4Y0 7
A		nd 2032001				
Activities Inv	olved/ 2926406 a					
Activities inv Status/ Open Case Descript	olved/ 2926406 a - In Progress tion/ During a Co	ast Guard inspect	ion, while activation	ng the sprinkler sy	stem the SS Bado	er spilled some
Activities inv Status/ Open Case Descript run off into the la	olved/ 2926406 a - In Progress tion/ During a Co ake which created	ast Guard inspect	ion, while activation ier Marquette Lake	ng the sprinkler system. The sheen consist	stem the SS Badg sted of painted asp	er spilled some bhalt from t (See
Activities inv Status/ Open Case Descript run off into the la Notification Inci	olved/ 2926406 a - In Progress tion/ During a Co ake which created dent Description)	ast Guard inspect a sheen on the pi	ion, while activation ier Marquette Lake	ng the sprinkler sys . The sheen consis	stem the SS Badg sted of painted asp	er spilled some bhalt from t (See
Activities inv Status/ Open Case Descript run off into the la Notification Inci-	olved/ 2926406 a - In Progress tion/ During a Co ake which created dent Description)	ast Guard inspect as sheen on the pi	ion, while activation ier Marquette Lake	ng the sprinkler sys . The sheen consis	stem the SS Badg sted of painted asp	er spilled some bhalt from t (See
Activities inv Status/ Open Case Descript run off into the la Notification Inci-	olved/ 2926406 a - In Progress tion/ During a Co ake which created dent Description)	ast Guard inspect a sheen on the pi A	ion, while activation ier Marquette Lake II Open Activit	ng the sprinkler sys The sheen consis ies	stem the SS Badg sted of painted asp	er spilled some shalt from t (See
Activities inv Status/ Open Case Descript run off into the la Notification Inci-	olved/ 2926406 a - In Progress tion/ During a Co ake which created dent Description) vities/ 7	ast Guard inspect a sheen on the pi A	ion, while activation ier Marquette Lake II Open Activit	ng the sprinkler sys The sheen consis ies	stem the SS Badg sted of painted asp	er spilled some bhalt from t (See
Activities inv Status/ Open Case Descrip run off into the la Notification Incia Total Open Activ 1. Activity #/ 29 Role Type/ St	olved/ 2926406 a - In Progress tion/ During a Co ake which created dent Description) vities/ 7 970215 Orig Po ubject to Marine I	ast Guard inspect a sheen on the pi A ort/ MSU Chicago nspection Acti	ion, while activation ier Marquette Lake II Open Activit Owner Port/ M ivity Type/ Vessel	ng the sprinkler sys The sheen consis ies ISU Chicago St Inspection/PSC	stem the SS Badg sted of painted asp tart Dt/ 22Jun200	er spilled some bhalt from t (See 7
Activities inv Status/ Open Case Descript run off into the la Notification Incid Total Open Activ 1. Activity #/ 29 Role Type/ Su Activity Subty Status/ Open	olved/ 2926406 a - In Progress tion/ During a Co ake which created dent Description) vities/ 7 170215 Orig Po ubject to Marine I ypes/ ADMIN - Returned for Re	ast Guard inspect a sheen on the pi A ort/ MSU Chicago nspection Acti vision Date Sta	ion, while activation ier Marquette Lake Il Open Activit O Owner Port/ M ivity Type/ Vessel atus Last Changed/	ies ISU Chicago Si Inspection/PSC	stem the SS Badg sted of painted asp tart Dt/ 22Jun200	er spilled some shalt from t (See 7
Activities inv Status/ Open Case Descrip: run off into the la Notification Incia Total Open Activ 1. Activity #/ 29 Role Type/ Su Activity Subty Status/ Open	olved/ 2926406 a - In Progress tion/ During a Co ake which created dent Description) vities/ 7 170215 Orig Po ubject to Marine I ypes/ ADMIN - Returned for Re	ast Guard inspect a sheen on the pi A ort/ MSU Chicago nspection Acti vision Date Sta	ion, while activatin ier Marquette Lake Il Open Activit Owner Port/ M ivity Type/ Vessel atus Last Changed/	ng the sprinkler sys The sheen consis ies ISU Chicago Si Inspection/PSC	stem the SS Badg sted of painted asp cart Dt/ 22Jun200	er spilled some ohalt from t (See 7

Notes (Truncated)/ Received inquiry into SS Badger Ash discharge into Lake Michigan from Mr. Stephan Fabian (Wisconsin DNR environmental crimes). Mr. Fabian was researching if the vessel was authorized to discharge.

ntacted Mr. Bob Manglitz CEO of Lake Michigan Car ferry (Badger). Also Contacted LCDR Firing D9 M. Fer 40 R 122.3 vessel is permitted to discharge ash in the waters of the Great Lakes. See

- 2. Activity #/ 2932991 Orig Port/ SFO GrndHvn Owner Port/ SFO GrndHvn Start Dt/ 17May2007 Role Type/ Acknowledged Pollution Source Activity Type/ Incident Investigation Status/ Open - In Progress Date Status Last Changed/ 17May2007 Notes (Truncated)/
- 3. Activity #/ 2937191 Orig Port/ SFO GrndHvn Owner Port/ MSU Chicago Start Dt/ 15May2007 Role Type/ Involved in a Marine Casualty Activity Type/ Incident Investigation Status/ Open - In Progress Date Status Last Changed/ 15May2007 Notes (Truncated)/
- 4. Activity #/ 2833663 Orig Port/ SEC LkMichgn Owner Port/ COMDT 3PCA Start Dt/ 22Sep2006 Role Type/ Involved in a Marine Casualty Activity Type/ Incident Investigation Status/ Open - Submitted for Review Date Status Last Changed/ 28Feb2007 Notes (Truncated)/
- 5. Activity #/ 2486622 Orig Port/ MSD GrndHvn Owner Port/ MSD GrndHvn Start Dt/ 07Sep2005 Role Type/ Involved in a Marine Investigation (non-casualty) Activity Type/ Enforcement Activity Subtypes/ S&R Status/ Open - Suspended Date Status Last Changed/ 20Dec2005 Notes (Truncated)/
- 6. Activity #/ 2486495 Orig Port/ MSD GrndHvn Owner Port/ COMDT 3PCA Start Dt/ 28Aug2005 Role Type/ Involved in a Marine Investigation (non-casualty) Activity Type/ Incident Investigation Status/ Open - Submitted for Review Date Status Last Changed/ 20Dec2005 Notes (Truncated)/
- 7. Activity #/ 1900125 Orig Port/ MSD GrndHvn Owner Port/ COMDT 3PCA Start Dt/ 18May2003 Role Type/ Transiting Vicinity of Primary Subject Activity Type/ Incident Investigation
- Status/ Open In Progress Date Status Last Changed/ 08Sep2003 Notes (Truncated)/

---All Closed Activities (W/in 18 months)---

Total Closed Activities/ 38

1. Activity #/ 2960236 Orig Port/ MSU Chicago Owner Port/ MSU Chicago Start Dt/ 13Jun2007 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ ADMIN

Status/ Closed - Approved Inspection Date Status Last Changed/ 13Jun2007

Notes (Truncated)/ Extended CG-835 requirements issued under COI activity per Chief Cart's written request. Items not extended are complete and pending CG attendance. CWO4 Jeff Carie

 Activity #/ 2931307 Orig Port/ SFO GrndHvn Owner Port/ SFO GrndHvn Start Dt/ 15May2007 Role Type/ Subject to Marine Inspection Activity Type/ Incident Management Status/ Closed - Agency Action Complete Date Status Last Changed/ 15May2007

Notes (Truncated)/ M/V Badger notified Station Ludington of machinery failure. The cause of the failure is believed to be from the Continues blows root valve. The valve released steam from the boiler system and injured the second engineer. The second engineer recieved medical treatment and back on the vessel. SFO vessel inspectors in rout to observe repairs to the boiler system.

3. Activity #/ 2937021 Orig Port/ MSU Chicago Owner Port/ MSU Chicago Start Dt/ 15May2007 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ DAMAGE SURVEY and REPAIRS Status/ Closed - Approved Inspection Date Status Last Changed/ 22May2007

Notes (Truncated)/ Attended SS Badger in her berth at Ludington, Michigan to conduct a Damage Survey after the Port After Boiler continuous blow down valve experienced a catastrophic failure causing personnel injury to the vessels cond assist engineer. This attendance was at the request of Sec LM and SFO Grand Haven. Interviews and written tements were conducted by LT Adams of SFO Grand Haven. Examined co Orig Port/ MSU Chicago Owner Port/ MSU Chicago Start Dt/ 09May2007 -, Activity #/ 2909379 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ CERTIFICATION and MTSA VER Date Status Last Changed/ 03Jul2007 Status/ Closed - Approved Inspection Notes (Truncated) 17APR2007- Drafted and routed temp. COI CWO4 Jeff Carie 02MAY2007- Attended vessel moored stern to, Ludington Michigan in company of Chief Chuck Cart and Captain Kevin Fitch to begin inspection for Deck - Initiated inspection, vessel was not in a ready condition as the crew had just come back. Full COI certification. was scheduled for the following week. Conducted a check of lifesavin 5. Activity #/ 2838331 Orig Port/ SEC LkMichgn Owner Port/ SEC LkMichgn Start Dt/ 11Dec2006 Role Type/ Involved in a Marine Casualty Activity Type/ Enforcement Activity Subtypes/ Status/ Closed - Agency Action Complete Date Status Last Changed/ 28Feb2007 Notes (Truncated)/ 6. Activity #/ 2838308 Orig Port/ SEC LkMichgn Owner Port/ SEC LkMichgn Start Dt/ 11Dec2006 Role Type/ Involved in a Marine Casualty Activity Type/ Enforcement Activity Subtypes/ Status/ Closed - Agency Action Complete Date Status Last Changed/ 28Feb2007 Notes (Truncated) 7. Activity #/ 2825387 Orig Port/ MSU Chicago Owner Port/ MSU Chicago Start Dt/ 20Nov2006 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ IN SERV INSP Status/ Closed - Approved Inspection Date Status Last Changed/ 14May2007 Notes (Truncated)/ 13 Nov 2006: Attended vessel in attendance of Chief Engineer Chuck Curt to conduct 10 year iller mounting and waterside inspection. Vessel has four coal fired marine boilers manufactured by Foster-Wheeler company. Inspected condition of all water wall headers, rear wall headers, inspection all seats and mounts, all sat. Inspected super heater (SH) headers, SH steam feed valves and gaske 8. Activity #/ 2786892 Orig Port/ SEC LkMichen Owner Port/ SEC LkMichgn Start Dt/ 25Sep2006 Role Type/ Involved in a Marine Casualty Activity Type/ Incident Management Status/ Closed - Agency Action Complete Date Status Last Changed/ 11Sep2006 Notes (Truncated)/ Manitowoc, WI Harbor Waterway Name: LAKE MICHIGAN S/S BADGER grounded in the Manitowoc, WI harbor. Orig Port/ SEC LkMichgn 9. Activity #/ 2786900 Owner Port/ COMDT 385 Start Dt/ 11Sep2006 Role Type/ Involved in a Marine Casualty Activity Type/ Incident Investigation Status/ Closed - Agency Action Complete Date Status Last Changed/ 10Jan2007 Notes (Truncated)/ 10. Activity #/ 2751880 Orig Port/ MSU Chicago Owner Port/ MSU Chicago Start Dt/ 04Aug2006 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Status/ Closed - Approved Inspection Date Status Last Changed/ 18Aug2006 Notes (Truncated)/ 03AUG2006- Attended vessel in company of Chief Engineer Chuck Cart at vessels berth, Ludington, Mi. Cleared 4 outstanding requirements, none issued or remain outstanding. This vessel is fit for route and service on the COI. CWO4 Jeff Carie 11. Activity #/ 2738766 Orig Port/ MSU Chicago Owner Port/ MSU Chicago Start Dt/03Aug2006 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ DEFICIENCY CK Status/ Closed - Approved Inspection Date Status Last Changed/ 21Aug2006 Notes (Truncated)/ 03AUG2006- Attended vessel in company of Chief Engineer Chuck Cart in Ludington Mi. leared (4) CG-835 requiements issued during quarterly exam dated 24 JUL2006. No requirements issued, and none main outstanding. CWO4 Jeff Carie 12. Activity #/ 2731765 Orig Port/ SEC LkMichgn Owner Port/ SEC LkMichgn Start Dt/ 31Jul2006 LMCF00185

	10
Role Type/ Subject to Marine Inspection Activity Type/ Boarding Activity Subtypes/	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 31Jul2006	
Notes (Truncated)/ 30 July 06 Sector Lake Michigan conducted a security boarding	on the F/V Badger. While
underway from Milwaukee WI to Muskegon MI. Loading and unloading of passenger: discrepancies or deficiencies were noted.	s and vehicles where observed. No
 Activity #/ 2731683 Orig Port/ SEC LkMichgn Owner Port/ SEC LkMichgn Role Type/ Subject to Marine Inspection Activity Type/ Boarding Activity Subtypes/ 	Start Dt/ 30Jul2006
Status/ Closed - Agency Action Complete Date Status Last Changed/ 31Jul2006	
Notes (Truncated)/ 30 July 06 Sector Lake Michigan conducted a security boarding	on the F/V Badger. While
underway from Muskegon MI to Milwaukee WI. Loading and unloading of passengers	s and vehicles where observed. No
discrepancies or deficiencies were noted.	
14. Activity #/ 2727390 Orig Port/ SFO GrndHvn Owner Port/ SFO GrndHvn	Start Dt/ 28Jul2006
Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ DEFICIENCY CK	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 19Apr2007	^e a consist a si
Notes (Truncated)/ Conducted a deficiency check of the M/V BADGER. 01 deficie	ncy cleared, 00 deficiencies issued,
00 remain outstanding.	
15. Activity #/ 2732525 Orig Port/ MSU Chicago Owner Port/ MSU Chicago	Start Dt/ 24Jul2006
Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ REINSPECTION	
Status/ Closed - Approved Inspection Date Status Last Changed/ 01Aug2006	
Notes (Truncated)/ 24JUL2006-Attended vessel in company of Chief Engineer Chu	ck Cart and Capt. Dean Hobbs to
conduct 1st quarterly re-inspection for certification using applicable regulations and CC	3-840 books. Vessels initial COI
was done in April although of COI issue date is June. Vessel was moored in her berth	in Ludington, MI. Examined
ssel logs and training records. Did not conduct fire drill due to ti	an mar di statutu
. Activity #/ 2738743 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs	Start Dt/ 20Jul2006
Role Type/ Subject to Marine Inspection Activity Type/ Boarding	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 07Aug2006	
Notes (Truncated) no violations	
17. Activity #/ 2718916 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs	Start Dt/ 15Jul2006
Role Type/Subject to Marine Inspection Activity Type/Boarding Activity Subtypes/	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 20Jul2006 Notes (Truncated)/ NO VIOLATIONS	12000 a 1997
 Activity #/ 2718907 Ong Port/STA TwoRvrs Owner Port/STA TwoRvrs Role Type/ Subject to Marine Inspection Activity Type/ Boarding Activity Subtypes/ 	Start Dt/ 15Jul2006
Status/ Closed - Agency Action Complete Date Status Last Changed/ 20Jul2006 Notes (Truncated)/ NO VIOLATIONS	
19. Activity #/ 2710320 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs	Start Dt/ 11Jul2006
Status/ Closed - Agency Action Complete Date Status Last Changed/ 12Jul2006	
20 Activity #/ 2710310 Orig Port/ STA TwoPure Owner Port/ STA TwoPure	Start De/ 111:12006
Pole Tune/ Subject to Marine Inspection Activity Tune/ Boarding	Start by Thursdoo
Status/ Closed - Agency Action Complete Date Status Last Changed/ 12Jul2006	
21 Activity #/ 2738735 Aria Port/ STA Two Pure Anner Dart/ STA Two Dure	Start Dt/ 07Jul2005
Role Type/ Subject to Marine Inspection Activity Type/ Roarding	51411 DV 071412000
Status/ Closed - Agency Action Complete Date Status Last Changed/ 07Aug2006 Notes (Transsted) no violations	
Notes (Truncated)/ no violadons	LMCF00186
	A CONTRACT SACAR

22. Activity #/ 2724018 Orig Port/ SEC LkMichen Owner Port/ SEC LkMichen	Start Dt/ 20Jun2006
Rcle Type/ Subject to Marine Inspection Activity Type/ Boarding	
Activity Subtypes/ SIV	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 25Jul2006	
Notes (Truncated)/ On 08June06 1800 Sector Lake Michigan/Sta. Ludington conduc	cted a security boarding on the F/V
Badger. Boarding was conducted underway while the vessel was in route to Ludington	MI. During the boarding
passenger embarkation and dembarkation was observed. No suspicious activites were a	noted. No discrepincies.
23. Activity #/ 2/24001 Ong Port/ SEC LKMichgn Owner Port/ SEC LKMichgn	Start Dt/ 20Jun2006
Activity Subrunes/	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 25Jul2006	
Notes (Truncated)/ On 20June06 1230 Sector Lake Michigan/Sta Ludington conduc	ted a security boarding on the
F/VBager. Boarding was conducted underway while the vessel was in route to Manitov	voc. During the boarding
passenger embarkation and dembarkation was observed. No suspicious activites were n	noted. No discrepincies.
24. Activity #/ 2684726 Orig Port/ STA TwoRvts Owner Port/ STA TwoRvts	Start Dt/ 19Jun2006
Kole Type/ Subject to Marine Inspection Activity Type/ Boarding	
Status Closed - Agency Action Complete Date Status Last Changed 19Jun2008 Notes (Truncated)/	
25. Activity #/ 2684721 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs	Start Dt/ 19Jun2006
Role Type/ Subject to Marine Inspection Activity Type/ Boarding	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 19Jun2006	
Notes (Truncated)/	
26. Activity #/ 2684689 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs	Start Dt/ 17Jun2006
Role 1 ype/ Subject to Marine Inspection Activity 1 ype/ Boarding	
Notes (Truncated)/	
'. Activity #/ 2684672 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs	Start Dt/ 17Jun2006
Role Type/ Subject to Marine Inspection Activity Type/ Boarding	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 19Jun2006	
Notes (Truncated)/	
28. Activity #/ 2668256 Orig Port/ SEC LkMichgn Owner Port/ SEC LkMichgn	Start Dt/ 30May2006
Activity Subtres/	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 02Iun2006	
Notes (Truncated)/ 30 May 06 -Sector Lake Michigan Conducted a random security	boarding on the F/V Badger.
Boarding was conducted while the vessel was under way from Ludington MI to Manito	woc WI. Security of the vessel
was verified and no suspecious activites were identified. Loading and unloading of pass	sengers and cargo was observed.
Boarding complete.	
29. Activity #/ 2008/244 Ung Port/ SEC LKMichgn Uwner Port/ SEC LKMichgn	Start Dt/ 29May2000
Activity Subtypes/	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 02Jun2006	
Notes (Truncated)/ 29 May 06 -Sector Lake Michigan Conducted a random security	boarding on the F/V Badger.
Boarding was conducted while the vessel was under way from Manitowoc WI to Luding	ston MI. Security of the vessel
was verified and no suspecious activites were identified. Loading and unloading of pass	engers and cargo was observed.
Boarding complete.	Sheet Del 25Mar 2006
Bole Type/ Subject to Marine Inspection Activity Type/ Boarding	Start DV 23WLAY2000
Status/ Closed - Agency Action Complete Date Status Last Changed/ 25Mav2006	
Notes (Truncated)/ vsl had no violations	r
1. Activity #/ 2659028 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs	Start Dt/ 25May2006
Role Type/ Subject to Marine Inspection Activity Type/ Boarding	
Status/ Closed - Agency Action Complete Date Status Last Changed/ 25May2006	
	LMCF00187
1	

í,

(

.

Notes (Truncated)/ vsl had no violations 32. Activity #/ 2657958 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs Start Dt/ 15May2006 Role Type/ Subject to Marine Inspection Activity Type/ Boarding itatus/ Closed - Agency Action Complete Date Status Last Changed/ 24May2006				
Notes (Truncated)/ vsl had no violation 33. Activity #/ 2657966 Orig Port/ STA TwoRvrs Owner Port/ STA TwoRvrs Start Dt/ 14May2006 Role Type/ Subject to Marine Inspection Activity Type/ Boarding Status/ Closed - Agency Action Complete Date Status Last Changed/ 24May2006 Nusas (Truncated)/ vsl had no violations				
34. Activity #/ 2624223 Orig Port/ MSD GrndHvn Owner Port/ SFO GrndHvn Start Dt/ 09May2006 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ CERTIFICATION and MTSA VER				
Status/ Closed - Approved Inspection Date Status Last Changed/ 30May2006 Notes (Truncated)/ 13Apr: Met with vsl captain, Dean Hobbs, and first mate, Mike Martin to discuss upcoming COI. Set up dates in May to conduct deck side of the COI. CWO Jeff Carie (MSU Chicago) will lead engineering inspection and will coordinate with chief engineer, Chuck Cart. Vessel moored starboard side to at Lake Michigan Carferry facility in Ludington MI Began COI with fire hose check. Vsl's 27 fire				
35. Activity #/ 2583042 Orig Port/ MSU Chicago Owner Port/ MSU Chicago Start Dt/ 07Feb2006 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ REPAIRS				
 Status/ Closed - Approved Inspection Date Status Last Changed/ 10Feb2006 Notes (Truncated)/ 07FEB2006- Attended vessel layed up at her birth in Ludington, Michigan in company of Chief Engineer Chuck Cart. Examined ongoing repairs (retube of Gen tubes) of the port forward boiler. Examined 10' by 12" insert made in WTB 79 centerline at the bilge. Examined ongoing repairs to the starboard side frame gussets in the boilerroom. Examined ongoing repairs to the borizonal runs of the firemai 36. Activity #/ 2506554 Orig Port/ SEC LkMichgn Owner Port/ SEC LkMichgn Start Dt/ 23Sep2005 Role Type/ Subject to Marine Inspection Activity Type/ Boarding Activity Subtypes/ Status/ Closed - Agency Action Complete Date Status Last Changed/ 04Apr2006 Notes (Truncated)/ Members rode ferry across lake as a random PCM. 37. Activity #/ 1950215 Orig Port/ CG MSC Owner Port/ CG MSC Start Dt/ 24Oct2003 Role Type/ Subject to Marine Inspection Activity Type/ Vessel Inspection/PSC Activity Subtypes/ Status/ Closed - Security Plan Approved by MSC Date Status Last Changed/ 25Jan2006 Notes (Truncated)/ 38. Activity #/ 1690539 Orig Port/ MSD GrndHvn Owner Port/ COMDT 385 Start Dt/ 16Oct2002 Role Type/ Involved in a Marine Investigation (non-casualty) Activity Type/ Incident Investigation Status/ Closed - Agency Action Complete Date Status Last Changed/ 29Sep2006 				
Hazardous Cargo Authority				
Vessel is NOT Authorized to carry Hazardous Cargo				
Special Notes				
1. Activity #/ 2970215 Last Revised/ 22Jun2007 Unit/ MSU Chicago Description/ Under current regulations, Vessel may discharge ASH in the waters of the Great Lakes under Title 40, de of Federal Regulations part 122.3. ****SEE MISLE ACTIVITY 2970215 AND SUPPORTING DOCUMENTS				
2. Activity #/ 2936943 Last Revised/ 22May2007 Unit/ CG MSC LMCF00188	1			

Description/ BADGER has been added to the VSP Received security plan.				
3. Activity #/ Last Revised/04Dec2006 Unit/ MSU Chicago				
Description/ DUE TO DESIGN OF MAIN STEAM STOP VALVES, WHICH ARE STAMPED AS 400 POUND				
ALVES BUT RATED TO 500, BOILERS MAY NOT BE OPERATED ABOVE 700 DEG F. STEAM TEMP. See				
MISLE Activity number 2825387 for details.				
4. Activity #/ Last Revised/ 12Jun2006 Unit/ SEC LkMichgn				
Description/ 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 non-hazardous. Per 40CFR122.3, no EPA permit is required to				
dump effluent from a properly running engine.				
5. Activity #/ 2624223 Last Revised/ 04May2006 Unit/ MSU Chicago				
6 Activity #1/250/2454 Last Pervised/05/0ct/2005 Unit/MSULChicago				
Description/ Check all smoke detectors in passenger berths at each attendance for tampering and proper operation				
Detectors have been found inonerative on multiple visits. If problem presists, Require hard wiring of detectors to mitigate				
problem.				
7. Activity #/ Last Revised/23Jun2004 Unit/ MSD GrndHvn				
Description/ Vsl lifeboats shall contain each of the following equip (46 CFR 199.620(j)): 1 bailer, 1 boat hook, 1				
bucket, 6 handheld flares, 4 parachute flares, 1 flashlight, 2 hatchets, oars, 2 painters, 1 sea anchor, & 1 lifeline. The				
following exemption applies due to the construction design of the lifeboats (non-motorized): fire extinguisher, ladder,				
searchlight, survival instructions, & tool kit.				
~-Outstanding Deficiencies				
1 Activity #/ 2027021 Josus Data/ 15 May 2007 Josus Data/ MSU Chicago				
1. Activity #/ 295/021 Issue Date/ 15/04/2007 Issue Port/ MSU Chicago Resolution/ To the satisfaction of the attending Coast Guard Marine Inspector Due/ 04/01/2008				
System/ Engineering Subsystem/				
Condition/ Bursted				
Deficiency Cause/ Damaged By Earlier Event				
Deficiency Description/ Effect repairs to the continous blowdown valve on the after port boiler valve to the satisfaction				
of the attending marine inspector.				
2. Activity #/ 2909379 Issue Date/ 09May2007 Issue Port/ MSU Chicago				
Resolution/ To the satisfaction of the attending Coast Guard Marine Inspector Due/06/10/2007				
System/Engineering Subsystem/				
Condition/				
Deficiency Causes . Deficiency Description/ Renair or replace diesel line cut-off value in overhead for the emergency generator				
3. Activity #/ 2909379 Issue Date/ 09May2007 Issue Port/ MSU Chicago				
Resolution/ To the satisfaction of the attending Coast Guard Marine Inspector Due/ 06/10/2007				
System/ Fire Fighting Subsystem/				
Condition/				
Deficiency Cause/				
Deficiency Description/Replace The cover for Fire Station #2.				
4. Activity #/ 2909379 Issue Date/ 09May2007 Issue Port/ MSU Chicago				
Resolution/To the satisfaction of the attending Coast Guard Marine Inspector Due/06/10/2007				
System/Lifesaving Subsystem/				
Condition/				
Deficiency Description/ Repair #1 lifeboat nort handrail.				
5. Activity #/ 2909379 Issue Date/ 09May2007 Issue Port/ MSU Chicago				
Resolution/ To the satisfaction of the attending Coast Guard Marine Inspector Due/ 06/10/2007				
System/ Accommodation/Occupational Safety Subsystem/				
Condition/				
LMCF00189				

1000

(

Deficiency Cause/ Deficiency Description/ Replace stbd ladder ivo of lifeboat #5 platform. Activity #/ 2909379 Issue Date/ 09May2007 Issue Port/ MSU Chicago Resolution/ To the satisfaction of the attending Coast Guard Marine Inspector Due/ 06/10/2007 System/ Fire Fighting Subsystem/ Condition/ Deficiency Cause/ Unknown Deficiency Description/ Effect perminent repairs in way of the Starboard Boat deck Pipe Chase.

---Marine Violation Summary---

---Casualty Summary---

Since/ 1 /Jul2002		
1. Activity #/ 2937191	Port/ SFO GrndHvn	Start Date/ 15May2007
Location/		
2. Activity #/ 2833663	Port/ SEC LkMichgn	Start Date/ 22Sep2006
Location/		
3. Activity #/ 2786900	Port/ SEC LkMichgn	Start Date/ 11Sep2006
Location/	-	•

END

LMCF00190