



STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES  
AND ENVIRONMENTAL CONTROL  
89 KINGS HIGHWAY  
DOVER, DELAWARE 19901

Office of the  
Secretary

Phone: (302) 739-9000  
Fax: (302) 739-6242

**Secretary's Order No. 2008-A-0032**

**Re: Approval of Final Plan of Remedial Action for Burton Island Ash Disposal Area (Operable Units 1 & 3)**

**Date of Issuance: July 30, 2008**

**Effective Date: July 30, 2008**

Under the authority granted the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") under *7 Del C. §6003*, the following findings, reasons and conclusions are entered as an Order of the Secretary. This Order considers the Proposed Plan of Remedial Action dated April 30, 2008 ("Plan"), which the Department's Division of Air and Waste Management's ("DAWM") Site Investigation and Restoration Branch ("SIRB") prepared.

SIRB prepared the Plan pursuant to the *Delaware Hazardous Substance Cleanup Act, 7 Del. C. Chapter 91* and the Department's Voluntary Cleanup Agreement process. The intent of the Plan is to allow environmental remediation to take place for areas the Plan identifies as Operable Units 1 and 3 of the Burton Island Old Ash Landfill Site ("Burton Island"). Operable Unit 1 is Burton Island's shoreline and intertidal zone areas and Operable Unit 3 is the subtidal sediments and nearby surface waters. Operable Unit 2 is the ash pile located on Burton Island and this area remains the subject of the Department's investigation and a possible future proposed plan of remedial action.

The Department held a public hearing on the Plan before the Department's assigned presiding Hearing Officer, Robert P. Haynes, who prepared a remedial decision record and a Hearing Officer's Report dated July 2, 2008 ("Report"). The Report recommends approval of the Plan as a Final Plan. The Report indicates that the Plan proposes to restore the entire shoreline of Burton Island by installing armor stone and large concrete blocks, which would be placed over a geotextile cover barrier. The Plan also proposes to create tidal marshes in suitable locations, namely, where wave energies are sufficiently low to support such tidal marshes. Together these steps are designed to reduce erosion and contain the ash from entering the surface waters.

The Report reviews the public comments, which largely approved the Plan's erosion control purpose as a necessary temporary or interim effort at remediation. Some comments objected to the lack of a proposed remedial action to remove the ash located at Burton Island. The Report recommends that the Plan be adopted as a Final Plan of Remedial Action in order to commence the shoreline erosion control and stabilization project as soon as possible. The Department already issued a subaqueous lands permit to allow the Plan's work in the subaqueous lands.

Based upon the Report, a copy of which is appended to this Order and incorporated herein, and the record of remedial decision I approve the Plan and adopt it as a Final Plan of Remedial Action pursuant to 7 Del C. § 9107(e). This approval will not be the final environmental remedy for Burton Island because the Department still has to prepare a proposed plan of remedial action for Operable Unit 2, which is the old ash pile. Nevertheless, the erosion control and shoreline stabilization, which the Department first discovered in 2005, will be the subject of the first environmental remediation while the Department addresses the environmental remediation for the ash pile itself.

In sum, as more fully described in the reasons and findings above and in the Report, I adopt and direct the following as a final order of the Department:

1. The Department has jurisdiction under its statutory authority to make a determination in this proceeding;

2. The Department provided adequate public notice of the proceeding and the public hearing in a manner required by the law and regulations;

3. The Department held a public hearing in a manner required by the law and regulations;

4. The Department considered all timely and relevant public comments in making its determination;

5. The Department shall issue the Final Plan of Remedial Action based upon the Proposed Plan of Remedial Action in order to allow the construction of the shoreline restoration to go forward without delay while the Department studies the remaining areas of Burton Island for environmental remediation; and

7. The Department shall provide notice of this action by mail or email on each person who requested to receive such notice, as shown on the public hearing sign in sheet or in written correspondence to the Department.

*s/John A. Hughes*  
John A. Hughes  
Secretary

## HEARING OFFICER'S REPORT

TO: The Honorable John A. Hughes  
Secretary, Department of Natural Resources and Environmental Control

FROM: Robert P. Haynes, Esquire  
Senior Hearing Officer, Office of the Secretary  
Department of Natural Resources and Environmental Control

RE: Proposed Plan of Remedial Action for Burton Island Ash Disposal Area  
(Operable Units 1 & 3)

DATE: July 2, 2008

### I. BACKGROUND AND PROCEDURAL HISTORY

This Report is submitted to the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") in order to make recommendations for the Department's final decision on whether to approve the Department's April 30, 2008 proposed plan of remedial action ("Plan"). The Department's Division of Air and Waste Management ("DAWM"), Site Investigation and Restoration Branch ("SIRB"), prepared the Plan pursuant to the *Delaware Hazardous Substance Cleanup Act, 7 Del. C. Chapter 91* ("HSCA") and the Department's regulations "*Delaware Regulations Governing Hazardous Substance Cleanup.*" The Plan is for the environmental remediation of a portion of Burton Island<sup>1</sup> near Millsboro, Sussex County.

The environmental remediation was required when a 2005 Department field inspection noticed severe erosion along much of Burton Island's shoreline. The erosion threatened to have coal ash disposed on Burton Island enter the surface waters. The Department reviewed tests of samples taken from Burton Island, which showed nine hazardous substances that exceeded the levels allowed by the Department's regulations. Consequently, these levels triggered the Department's procedure under HSCA.

---

<sup>1</sup> Burton Island is a 244 acre parcel and a peninsula formed between the Indian River to the north and Island Creek to the south, which converge at the eastern shore into the Indian River Bay.

SIRB required the owner of Burton Island, Indian River Power, LLC,<sup>2</sup> (“IRP”), to conduct a Facility Evaluation. The Facility Evaluation was completed in 2007 by Shaw Environmental (“Shaw”), which is a Department approved consulting firm. The Department developed the Plan based upon the Facility Evaluation and its own independent analysis, including experts within SIRB and in SIRB’s independent ecological consulting firm, Louis Berger Group.

Burton Island was owned by Delmarva Power and Light Company (“DP&L”), which used Burton Island to dispose of coal ash waste from DP&L’s coal-fired Indian River Generating Station’s (“IRGS”) from 1957 through 1979. In 1979 DP&L began disposing the coal ash into an on-site industrial landfill that the Department approved.<sup>3</sup> In 2001, DP&L sold Burton Island, along with its environmental liability and the IRGS, to IRP. When the Department notified IRP of its status of a potential responsible party under HAS, IRP elected to participate in the Department’s Voluntary Cleanup Program (“VCP”). IRP and the Department signed a VCP agreement in 2007 pursuant to the VCP procedures and policies.

The Plan considers the environmental remediation of two areas, or operable units,<sup>4</sup> of Burton Island. The Plan identifies Operable Unit 1 (“OU1”) as Burton Island’s 10,410 feet of shoreline and identifies Operable Unit 3 (“OU3”) as Burton Island’s subtidal sediments and the surrounding surface waters. The Plan does not address Operable Unit 2 (“OU2”), which is the area where DP&L disposed of the coal ash. OU2 was not considered in the Plan because this area is still the subject of an ongoing Department environmental remediation investigation, including all storm water and groundwater issues. This portion of the Burton Island HSCA investigation is anticipated to be completed in 2008.

---

<sup>2</sup> IRP is a subsidiary of NRG Energy Inc.

<sup>3</sup> The Department was not created until 1970 and there was no authority to regulate solid waste until 1974.

<sup>4</sup> HSCA defines an operable unit as “any subdivision of a facility in terms of area or environmental media or any other manner approved by the Secretary.” 7 *Del C.* § 9103 (13).

The Plan was based upon samples taken from the sediment at twenty six shoreline, or intertidal, sites in OU1. Samples were taken from the sediment at twenty six offshore sites and eight surface water sites in OU3. The tests found no organic chemical hazardous substances, but did find three “constituents of concern” in the heavy metals arsenic, barium, and selenium in OU1 and six additional metals in OU3.

For OU1, the Plan proposes remedial action based upon the Department’s subaqueous permit issued in September 14, 2007 for Burton Island’s shoreline restoration and ongoing monitoring. The subaqueous permit approves differing methods in the shoreline restoration based on shoreline engineering expertise and the subaqueous regulations, which prefer natural shoreline restoration to hardened shoreline whenever possible. The Department identified those portions of the shoreline as having conditions that would support tidal marshes, namely, reduced wave energy. Consequently, the Plan will install tidal marches along the shoreline at all possible locations where tidal marshes are expected to survive. The remaining shoreline will be restored by the installation of hardened materials depending on the severity of the erosion. The proposed shoreline stabilization consists of 10,410 feet, of which 9,622 feet will be stone revetment, 181 feet of concrete block, 382 feet of marsh toe sill, and 225 feet of biologs. The installation of hardened materials will occur on top of a surface of synthetic, permeable fabric. The fabric is used to stabilize the hardened shoreline and prevent the hardened shoreline from sinking into the sediment. The Plan also requires IRP to conduct annual monitoring of OU1’s contaminant levels, performance standards, taking timely corrective action when appropriate, and the placement of the uniform environmental covenants on the deed to restrict future land use.

The Plan determined that no remedial action was needed for OU3 after conducting risk assessment that considered the possible pathways of human exposure. The risk assessment was developed based upon a pathway from recreational fishing and consuming the fish caught because Burton Island is private property with no public access. The risk assessment concluded

that the human health risk from the level of contamination present at Burton Island did not pose an undue health risk to an adult or child who may be exposed to the contaminants from eating fish from the local waters. The Department applied established risk assessment analysis recognized by the federal government, other states and the Department's regulations in reaching its conclusion.

Together, the remedial measures are designed to contain the ash where it is currently located and to reduce the risk of any ash falling into the surface waters directly or coming into contact with the surface waters as a result of storms. The Plan reserves the issues of storm water and groundwater controls until the Department completes its subsequent investigation of the ash storage area.

This Report is based upon a record of decision, which includes the public hearing record consisting of the 92 page hearing transcript, the written documents submitted as exhibits at the hearing, and the written comments received during the public comment period. In addition, the record of decision includes my review of the Department's files, my research and the technical advice and assistance provided by technical experts within the Department.

## **II. PUBLIC HEARING RECORD**

The Department held a public hearing on May 29, 2008 in the Millsboro Civic Center. The Department's representatives Greg DeCowsky, Project Manager, and Stephen Johnson, Environmental Engineer, made a presentation to explain the Plan. The presentation described the history of Burton Island, the Department's investigation of the ash disposal area, and the proposed remedial action. In addition, other Department representatives were present, namely, Timothy Ratsep, Robert Newsome, Christina Wirtz and Kathleen Stiller Banning. The Department submitted into the hearing record certain relevant documents, including the Plan, the legal notices and the presentation, and the written public comments that the Department received before the hearing.

Nine members of the public spoke at the public hearing. The public comments were on the proposed risk from the coal ash and the possible movement of contaminants by storm water and groundwater. The comments included concerns of the storm water runoff from the ash pile and questioned the proposed environmental remediation to the extent it did not remove the coal ash from Burton Island. One comment questioned the Plan's use of a porous fabric under the hardened shoreline in order to block groundwater movement of contaminants from the ash pile into the surface waters and even private wells. The public comments included questions about the public health from the coal fired power generation and the presence of arsenic, mercury and other heavy metals in the coal ash. The comments also questioned the Department's multiple hearings, which the public perceived as the Department proceeding in a piecemeal approach to the environmental issues raised by the IRGS.

### **III. DISCUSSION AND REASONS**

For this Report I will address the public comments that raised two major issues, namely, 1) whether the existing contaminants will come into contact with the surface waters as a result of the movement of groundwater through a permeable barrier and 2) the removal of the ash from Burton Island.

The first issue is the Plan's proposed use of a porous fabric to be placed under the armor stone along the portions of the shoreline that are to be hardened. I requested the technical assistance from the Department's experts and, based upon their advice, I am satisfied that the Plan is acceptable and reasonable in its proposed use of a porous fabric. Indeed, the use of an impermeable barrier would defeat the erosion control purpose. The barrier was selected to control soil movement and to keep the armor stone from sinking into unstable tidal areas. The armor stone is to protect Burton Island from the erosion, particularly during storms, by reducing the force of the waves on the rocks, as opposed to allowing the waves to hit the soil with its full force. The fabric to be used is specifically designed to control erosion and to impede the



movement of fine soils, which will keep the soil from being washed away. This method of shoreline protection and erosion control is recommended in the United States Army Corps. of Engineer's "Coastal Engineering Manual" and the Department reasonably selected this method for the Plan.

I find, based upon the technical advice provided by the Department's experts in DAWM and Division of Water Resources, that the use of a waterproof barrier in OU1 would not be appropriate. A waterproof barrier would not be well suited for the erosion control purpose that OU1 requires to protect the surface waters from an undue risk of contamination from erosion exposing the ash to the surface waters. The Department's shoreline experts already considered the erosion and issued IRP its subaqueous permit based upon their considerable knowledge of shoreline erosion. The permit approved the use of a porous fabric based upon engineering that was designed specifically to not impede the flow of groundwater within OU1. SIRB's experts note that the installation of an impermeable barrier, as suggested by the public comments, would actually result in more erosion occurring than otherwise because such a barrier would cause the subsurface water to build up on the landward side. This water would then try to find a way around the barrier. The result of the artificial barrier to the groundwater's movement would be new erosion that would harm the erosion control from the landward side. In conclusion on this issue, I find that the use of a permeable fabric barrier to impede the movement of fine soil material is reasonable. The Plan uses a proven method to control erosion and addresses the risk consistent with the HSCA protocols and risk assessment for human health and ecological risks. I recommend adoption of the Plan for OU1.

The public comments on the use of an impermeable barrier may be appropriate when the Department's experts consider a plan for OU2. At this time it is premature to decide what remedial action is warranted for OU2. The second issue discussed in more detail in this Report is the request to remove the ash from Burton Island. The Plan did not consider this option

because it will be addressed in the Plan for OU2 that has yet to be submitted for public comment. I find that the Plan should not be modified to recommend the removal of the ash at this time because it was not included in the scope of the Plan that is available for public comment. The pending OU2 investigation will be the appropriate time to review this option, although I agree with the public comments that the Department should try to consolidate hearings and public comment whenever possible. The decision to break Burton Island into three Operable Units is consistent with the investigation of the three physical components of the ash, the shoreline's tidal area and the offshore area. Nevertheless, the Department is aware of the public's concerns with piecemeal approaches and I recommend that the Department try to consolidate hearings in the future through improving internal procedures whenever possible. There was no request for a public hearing, but a public hearing was held based upon the past high public interest in the IRGS.

I find that the Department's Plan is a reasonable and sound method of environmental remediation of the subject areas. The need to control erosion as quickly as possible was the reason the Plan did not include OU2, which the Department is still investigating. The Department's technical experts on shoreline erosion, environmental remediation and risk assessment have provided sufficient support for the Plan. In sum, the Department's experts considered the public comments, but have indicated that no change is warranted to the Plan. I agree with their recommendation and recommend that the Plan be adopted as a final Plan by the Secretary. Of note, none of the public comments indicated any opposition to the purpose of the Plan, which was to control erosion and to stabilize the shoreline.

#### **IV. RECOMMENDED FINDINGS AND CONCLUSIONS**

Based on the record developed, I find and conclude that the record supports approval of the issuance of the Plan as a final Plan of Remedial Action. In conclusion, I recommend the Secretary adopt the following findings and conclusions:

- 1.) The Department has jurisdiction under its statutory authority to make a determination in this proceeding;
- 2.) The Department provided adequate public notice of the proceeding and the public hearing in a manner required by the law and regulations;
- 3.) The Department held a public hearing in a manner required by the law and regulations;
- 4.) The Department considered and responded to all timely and relevant public comments in making its determination;
- 5.) The Department's proposed plan of remedial action for Operable Units 1 and 3 at the site known as the old Burton Island ash landfill is consistent with the law, regulations, and the Department's policies and is hereby adopted as a final plan for remedial action; and that
- 6.) The Department shall provide adequate notice of the final action to those affected persons and public notice in a manner required by law or regulations, including the right to appeal the final decision.

*s/Robert P. Haynes*  
Robert P. Haynes, Esquire  
Senior Hearing Officer