STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
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Office of the
Secretary

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Secretary's Order No. 2008-A-0037

Re: Application of Indian River Power LLC for a Solid Waste Management Facility Permit to Construct and Operate an Industrial Landfill (Phase II) at the Indian River Generating Station near Millsboro, Sussex County

Date of Issuance: September 4, 2008
Effective Date: September 4, 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 Indian River Power LLC's ("Applicant") permit application submitted to the Division of Air and Waste Management ("DAWM"), Solid and Hazardous Waste Management Branch ("SHWMB"). Applicant seeks a solid waste management facility permit in order to construct and operate an industrial landfill, known as Phase II, at Applicant's Indian River Generating Station ("IRGS"), located at 29416 Power Plant Road, Millsboro, Sussex County. The proposed industrial landfill would replace the Applicant's existing Phase I landfill, which would be closed.

On June 26, 2008, the Department held a public hearing on the application, and the Department's presiding Hearing Officer, Robert P. Haynes, issued a Hearing Officer's Report dated August 8, 2008 ("Report"), a copy of which is appended to this Order and incorporated herein. The Report considers the public comments, which opposed any on-site disposal of IRGS' solid waste, particularly since it would be coal ash

from IRGS' coal-fired boilers used to generate electricity. The Report recommends approval of the application, and that SHWMB issue the permit, subject to the Department's reasonable conditions.

I agree with the Report that the permit should be issued, subject to the reasonable permit conditions recommended by the Department's technical experts in SHWMB. The Department previously approved the on-site disposal of coal ash at IRGS beginning with the use of Burton Island and the 1980 approval of Phase I.[1] The Phase II industrial landfill will be an expansion of the existing landfill, albeit one designed and built subject to the Department's more stringent regulatory requirements than existed when the Phase I industrial landfill was designed and built in the late 1970s.

The public comments seek to require IRGS' coal ash be disposed off-site, presumably far away from IRGS. In addition, the comments want the Department to determine that IRGS' coal ash be classified as a hazardous waste. The Report recommends rejecting these positions, and I concur. The Department previously approved on-site disposal of IRGS' coal ash, including at the Phase II location. The proposed landfill will replace the existing landfill, Phase I, which has been used for coal ash disposal since 1980. The Department acknowledges that coal ash contains certain hazardous contaminants, such as arsenic and mercury. The presence of these contaminants alone will not prevent on-site disposal of coal ash. Instead, under Delaware law and regulations, these contaminants must exceed the limits established in order for such wastes to be considered as hazardous waste. These substances are present in coal

[1] Before the Department's creation, IRGS' prior owner, Delmarva Power and Light Company, disposed of coal ash on an on-site area known as Burton Island, which is the subject of an ongoing Department's Hazardous Substance Cleanup Act investigation to determine a complete remedial action. The Department approved a partial remedial action in Secretary's Order No. 2008-A-0032.

and hence in coal ash. The federal government and other states have extensively studied the issue of contaminants in coal ash and the proper disposal of coal ash. The consensus is that coal ash disposal in a properly designed, built and operated industrial landfill is safe for the environment and public health. The Department's experts agree with the consensus in the scientific community. Nevertheless, the Department will monitor the levels of contaminants in the coal ash to ensure that they do not exceed the Department's allowed limits for such contaminants.

All landfills receive some form of solid waste, including waste that may include contaminants that may be classified as hazardous substances if the contaminants exceed certain limits. The proposed landfill has been designed to exceed the Department's requirements in the thickness of the geomembrane liner, and Applicant's voluntary action to go beyond the regulations' safety requirements is appreciated as an added measure of safety. Indeed, the proposed landfill also will have seven layers of protection, including the geomembrane liner and a leachate collection system. The Department will require ground and surface water monitoring to ensure the proposed landfill does not pose an undue threat to the environment or public health. Together, these measures are designed to protect the environment and the public from exposure to any hazardous or harmful substances.

The Department's technical experts recommend that the permit be issued and have proposed permit conditions to ensure the environment and public health are protected from any undue risk of harm. I agree that the application should be approved and that a permit be issued, but subject to the Department's permit conditions and its ongoing regulation, which includes groundwater and surface water monitoring, testing,

inspections, and reporting requirements. These permit conditions will allow the Department to undertake enforcement for any permit violations. Thus, I find that the proposed industrial landfill is needed, the site is appropriate and has been previously approved for use as an industrial landfill, the proposed design and operation is consistent with the Department's regulations and should provide for an environmentally safe method for on-site disposal of IRGS' coal ash for the anticipated 8 to 10 years that the proposed landfill will be in use.

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, and held the public hearing in a manner required by the law and its regulations;

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

4. The record supports the issuance of a permit based upon the application, and such minor modifications and reasonable conditions that the Department official delegated to prepare the permit determines are necessary to protect the environment and public health;

5. The duly authorized Department official shall timely prepare and issue a permit consistent with this Order; and

6. The Department shall provide notice of this Order to the persons affected by this Order, as determined by the Department, including those who participated in the hearing process, and shall publish notice of its decision in a manner provided by the Department's regulations.

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: Application of Indian River Power LLC for a Solid Waste Management Facility Permit to Construct and Operate an Industrial Landfill at the Indian River Generating Station near Millsboro, Sussex County

DATE: August 8, 2008

I. BACKGROUND AND PROCEDURAL HISTORY

This Report considers the administrative record, including the public comments in the public hearing record, and makes recommendations to the Secretary of the Department of Natural Resources and Environmental Control ("DNREC" or "Department") concerning Indian River Power LLC's[1] ("Applicant") March 19, 2007 permit application submitted to the Department's Division of Air and Waste Management ("DAWM"), Solid and Hazardous Waste Management Branch ("SHWMB"). The application seeks a solid waste management facility permit to allow the construction and operation of an industrial landfill located at the Indian River Generating Station[2] ("IRGS") near Millsboro, Sussex County. SHWMB determined the application was complete upon receipt of all information required by the Department's *Delaware Regulations Governing Solid Waste, 7 DE Admin. Code §§1300 et seq.* ("DRGSW").

The proposed industrial landfill, identified as Phase II, cells 1 and 2 ("proposed landfill"), is needed to replace IRGS' existing industrial landfill, identified as Phase I, which began operation in 1980 and is expected to reach its current maximum capacity within a year. The

[1] Applicant is a subsidiary of NRG Energy, Inc.
[2] NRG purchased the Indian River Generating Station ("IRGS") in 2001 from Delmarva Power & Light Company ("DP&L") DP&L built unit 1 IRGS in 1957, unit 2 in 1959, unit 3 in 1970 and unit 4 in 1980 and IRGS has a total capacity of 767 megawatts. Unit 2 will cease operation May, 2010 and unit 1 will cease operations May, 2011 under a settlement agreement, which will decrease the production of ash solid waste by approximately 36%.

proposed landfill is within an area identified as Phase II, as shown on the current plans. Phase II may contain as many as eight cells, but this application seeks approval for only cells 1 and 2. The proposed landfill would be within the 175 acres that the Department and the county approved for landfill use in the mid 1970s.[3] The proposed landfill would be located immediately west of Phase I on approximately thirty acres.

The proposed landfill's eastern side would overlap with Phase I's western side slope and the proposed landfill's bottom liner would be built over the slope of Phase I landfill, which would provide added cover to Phase I and reduce the amount of land space used by Phase II.

The proposed landfill would receive up to 2,000 wet tons per day of solid waste and would operate five days a week. The permit application limits the disposal of solid waste from NRG's two facilities, IRGS and NRG Energy Dover, LLC, but almost all of the solid waste would be from IRGS. The proposed landfill's capacity would be 2,015,900 cubic yards, which is expected to meet IRGS's ash disposal requirements for 8 to 10 years, depending on the amount of coal burned.

The proposed landfill will use a composite liner system consisting of the following layers, beginning at the bottom: 1) prepared subgrade, 2) geosynthetic clay liner, 3) sixty millimeter ("mill.") HDPE geomembrane, 4) geocomposite drainage net, 5) twelve inch leachate collection layer, 6) a filter geotextile, and 7) a four foot protective cover layer. The leachate collection system will have two storage tanks and the water will be recycled for use in the IRGS' bottom ash system. There are thirty-one wells at eighteen locations encircling the existing and proposed landfills in order to allow groundwater testing to determine if any harmful substances are present.

[3] IRGS is on a 1,170 acre site

The Department published public notice of the permit application, and received a timely meritorious request for a public hearing from John Austin. The Department held a duly noticed public hearing on June 26, 2008 at the Millsboro Civic Center, Millsboro, Sussex County. Several persons attended the public hearing and provided written and oral comments. At the request of members of the public, the public comment period was kept open for written comments until July 3, 2008. I requested additional technical assistance from SHWMB, which was provided in a memorandum attached hereto as Appendix A.

This Report considers the permit application, relevant information in the Department's files, and the public comments, and applies the applicable laws and regulations in order to make a recommendation to the Secretary on whether to issue a permit or any permit conditions.

II. SUMMARY OF THE PUBLIC HEARING RECORD

The public hearing record contains an eighty-eight page verbatim transcript of the public hearing and the documents introduced as exhibits at the public hearing. The hearing record[4] contains the application and related correspondence, the public notices, and the written public comments the Department received prior to the hearing, and those received after the public hearing during the extended public comment period.

The public comments all opposed the permit. The opposition was based upon the perceived environmental and public health risk from any on-site disposal of coal ash. The public comments advocated that the ash waste be transported away from the site, or that IRGS should be closed. The comments also requested that the coal ash be classified as a hazardous waste because it contains certain levels of hazardous materials, such as arsenic and mercury. The comments also requested that the ash waste be covered to prevent the ash from blowing away if

[4] The Department does not have an obligation to develop the public hearing record and remains neutral on the merits of a pending permit application until after the public hearing, but the Department, nevertheless, develops a basic public hearing record for the public's benefit.

the landfill is approved. Some of the comments addressed issues of environmental problems and public health concerns with the IRGS's operation since 1957 as a coal-fired power plant and the largest source of air pollutants emitted in Delaware based upon the Department's Toxic Release Inventory. The comment also addressed the Phase I landfill, which the Department approved when other solid waste regulations were in effect and does not have certain features now required for all industrial landfills, such as a geomembrane liner and leachate collection system.

III. DISCUSSION AND REASONS

This discussion will address certain issues raised by the public comments and the permit application, although not all issues may be discussed. Nevertheless, I have considered all the public comments even if not specifically mentioned in this Report. The fundamental issue is whether there should be a new industrial landfill allowed to provide on-site solid waste disposal for IRGS' coal ash. A secondary issue is whether a new landfill should have certain environmental safeguards beyond those required by the DRGSW. The treatment of coal ash as solid waste has been the subject of several Department public hearings for the IRGS's Burton Island old coal ash disposal area, the use of coal ash in the stabilized sludge used as landfill cover at the Pigeon Point Landfill in New Castle, New Castle County and the Invista landfill permit renewal for the coal-fired generating unit at the Seaford manufacturing facility. The Department also regulates the coal ash industrial landfill for DP&L's Edge Moor generating station

The Department is required to follow its own regulations and the DRGSW regulates industrial landfills as a separate category. The regulations allow for the disposal of ash as solid waste and do not require any special treatment of coal ash as a special subset of industrial solid waste. Some of the public comments essentially seek to have the Department not follow the DRGSW and establish a policy that coal ash should be treated differently from other solid waste

disposed at an industrial landfill. The public comments seek to create a policy that would prohibit any disposal of coal ash in an industrial landfill at IRGS or elsewhere.

Based upon this record, I find that there is no support to overturn the Department's existing policy, or even to recommend that a rulemaking be opened to consider amending the DRGSW to implement such a policy. Instead, I find that the disposal of coal ash waste in an industrial landfill that otherwise meets all of the Department's regulatory requirements for an industrial landfill can be approved consistent with the Department's duties to protect the environment and public health. The technical response memorandum addresses the federal regulation of coal ash in considerable detail and this issue has been extensively studied.

The real issue raised by the public comment is to have the Department decide that coal ash is a hazardous waste. I agree that if the Department decides to make such a finding, then that would dramatically change how the Department currently regulates coal ash. The Department may regulate coal ash as hazardous waste, but such an action should be done by regulation and not in the context of a permit proceeding. Based upon the record developed, I do not recommend that the Department determine that coal ash, or even the specific coal ash from IRGS, should be classified as a hazardous waste for two reasons. The technical response memorandum sets forth the reasons why the Department's experts do not agree that coal ash should be classified as a hazardous waste absent test results that may indicate excessive levels of contaminants. The technical memorandum highlights the scientific research and regulatory actions undertaken in recent years on the issue of the contaminants that may be in coal ash. In Delaware the coal ash is tested and the test results shown that the coal ash disposed at IRGS is not hazardous waste. The constituents of concern include arsenic and mercury, which are elements naturally present in coal. Hence, the combustion of coal may cause these substances to be released into the air, where it may be captured by pollution control equipment as fly ash, or

remain in the boiler as bottom ash. The levels of concentration of these elements is a concern of the Department's, but that concern will be addressed by the monitoring and reporting requirements that SHWMB recommends if a permit is issued. I agree that these safeguards are the appropriate way to regulate coal ash as opposed to the blanket classification of IRGS' coal ash as hazardous waste.

The proposed landfill is not intended to accept hazardous waste, although its design and construction requirement are not that different from a hazardous waste landfill. The application sets forth in considerable detail the numerous environmental controls that are required and the Applicant exceeded the Department's regulations for the thickness of the geomembrane liner. I find that the application sets forth a proposed industrial landfill that complies with the Department's DRGSW in its design and operations.

I find and recommend that the coal ash from IRGS is not hazardous waste unless it contains sufficient levels of hazardous substances that would cause the solid waste to be classified as 'hazardous waste.' The Department will monitor the materials to ensure that they do not contain any hazardous waste. Simply because coal is burned at IRGS does not mean that the coal ash should be considered as hazardous waste. Instead, the Department must follow its own regulations that have determined what may be classified as hazardous waste. Consequently, the Department should not regulate coal ash as hazardous waste unless it has sufficient level of hazardous substances.

I also find that the record supports approving the proposed landfill. The application is to expand an area already approved for use as a landfill, although the land to be used for Phase II will be cleared. The Phase I landfill is nearing its capacity in the next twelve months. I find that the public's suggestion of an alternative to on-site disposal is not required when the area has been approved for use as a landfill and the proposed landfill meets the Department's

requirements. Based upon the recommendation of the Department's experts, I find that the proposed landfill, as set forth in the comprehensive plans submitted and as subject to the Department's permit conditions, will comply with the Department's regulations and provide an environmentally safe method for the permanent disposal of coal ash. The application sets forth the plans that the Department's experts have reviewed and recommend approval to operate the proposed landfill, which will be subject to ongoing Department inspections, monitoring and subject to the operating permit being renewed periodically. These findings and recommendations are consistent with the public comments, which request that if coal ash is allowed to be disposed on-site then it should be done an environmentally safe manner in accordance with the Department's permit and ongoing regulation of the solid waste management facility. The ongoing regulation will include the exercise of the Department's enforcement powers if needed. Together, these measures will ensure that the proposed landfill be built and operated in a manner that will protect the environment and public health from any undue risk of harm.

I agree with the public comment that an industrial landfill or an electric generating station is not an ideal land use for most people who reside nearby. Nevertheless, IRGS has been in operation since 1957 and the Department is to regulate its operations to ensure that it complies with the Department's regulations and permits. Some of the public comments sought to have the Department close IRGS, but the Department has no authority to close IRGS as long as it complies with the Department's laws, regulations and permits. Two of the four generating units are scheduled to close by 2011, which will reduce the use of coal and the creation of coal ash as solid waste. Thus, IRGS is entitled to continue to operate and use its land for purposes already approved for use by the Department and the county, including the use as a landfill, so long as the landfill complies with the Department's regulations in its design and operation.

The Department encourages the Applicant to re-use coal ash though the Department's beneficial use authorization, but the Department also recognizes that the re-use of coal ash is based upon market conditions. The on-site disposal is used based on its economics and this disposal method may need to be reviewed to determine if economic incentives should be included to encourage more recycling of the coal ash. Nevertheless, the Applicant should continue to seek to re-use coal ash as much as possible, so long as it is safe to the environment and public health.

The public comments raised an issue of whether the industrial landfill should be approved with conditions that otherwise would not be required for other industrial landfills, such as requiring that the coal ash be covered daily. The permit will control fugitive dust and require the placement of operational and intermediate covers.[5] The application includes a closure plan that will install a final capping system when the landfill is closed. The proposed landfill does not need a daily cover because the coal ash solid waste will not cause odor and other problems associated with municipal waste disposed at municipal waste landfills. The Department's experts have recommended certain general and specific permit conditions, which I find will protect the environment and public health from any undue risks associated with coal ash disposal in an industrial landfill such as the Applicant has proposed. In conclusion, I find that no special conditions for the cover should be reflected in the conditions other than those recommended by SHWMB that reflect the normal operation of the industrial landfill consistent with the application and the DRGSW. The Department will include the reasonable conditions appropriate to allow the Department to monitor the landfill's operations and otherwise to exercise authority

[5] Operational cover is the placement of fill when portion of the landfill is not used for one month and an intermediate cover is the placement of fill when the landfill reaches its design height but before the final capping system is installed.

to ensure that the landfill will comply with the DRGSW. The permit conditions are to regulate within the current regulations.

IV. RECOMMENDED FINDINGS AND CONCLUSIONS

Based on the record developed, I find and conclude that the record supports approval of issuing a permit to construct and operate the Phase II industrial landfill's two cells as proposed in the application, subject to the reasonable general and specific permit conditions the Department's experts have recommended. 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 all timely and relevant public comments in making its determination;

5. The Department shall issue Applicants a permit subject to the reasonable general and specific permit conditions recommended by SHWMB; and

6. The Department shall serve either by mail or email a copy of this Order on each person who participated in the public hearing.

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

MEMORANDUM

TO: Robert Haynes, Hearing Officer

THRU: Nancy Marker, Environmental Program Manager II, SHWMB
Bryan Ashby, Environmental Program Manager I, SHWMB

FROM: Jae-Soo Chang, Engineer, SHWMB

DATE: August 1, 2008

SUBJECT: NRG Indian River Generating Station Phase II Landfill Permit Application

REFERENCE: Hearing Officer's Memorandum Dated 7/14/08

In your memo of July 14, 2008, you asked for technical assistance to address issues raised at the public hearing concerning the NRG Indian River Generating Station (NRG) Phase II landfill permit application. We have repeated (in *italics*) the three requests made in your memo and have provided our comments below.

This is to request technical assistance for preparing a hearing officer's report and recommendation to the Secretary based upon issues raised at the public hearing.

1. *First, please describe any possible impacts to the public health and the environment from the proposed landfill and what protective measures you would recommend as permit conditions in order to protect the environment and public health from the possible impacts.*

SHWMB Response:

Possible impacts which the proposed landfill would pose to public health and the environment would include ground water deterioration by leachate generated, surface water contamination by ash run-off, dust release, and noise. Other risks such as odors, landfill gas, and vectors which are also great concerns with the municipal solid waste landfills are not considered in the proposed industrial landfill due to the nature of the ash waste. Measures to mitigate the possible impacts to public health and the environment are described in the permit application. The Phase II landfill has a water-proof liner system

which is designed to prevent any leachate from escape into groundwater. With proper operational controls, monitoring and permitting oversight, the impacts of the proposed landfill to the environment would be minimal.

Should the Secretary decide to require a permit to construct and operate the Phase II landfill, we recommend that the Order require that the landfill permit implement the construction, operations, monitoring, and eventual closure requirements of the Delaware Regulations Governing Solid Waste and include specific permit conditions that will require the permittee to:

a. Construct the landfill and all supporting systems in accordance with the approved design specifications, permit drawings, technical specifications, and construction quality assurance plan.
b. Operate the facility in a manner that will preclude degradation of adjacent land, air, surface water, or groundwater.
c. Conduct site operations and inspections in accordance with the operations plan contained within the permit application package.
d. Monitor surface water, ground water and wastes disposed of.
e. Provide annual and other periodical environmental monitoring reports to the Department.
f. Provide an annual operations report summarizing all activity at the landfill over the previous year.
g. Report any anomalous events to the Department which involve site operations, environmental monitoring, and other impacts to the landfill in accordance with emergency reporting criteria established by the Department.
h. Maintain and provide to the Department financial assurance for closure and post-closure care on an annual basis.
i. Upon conclusion of landfilling operations, close the landfill using the closure plan provided in the permit application and updated as required by the Department.

2. *Second, please address the public comments that seek to have the coal ash to be disposed in the proposed landfill be regulated as if it was a hazardous substance.*

SHWMB Response:

EPA was directed by the 1980 Bevill Amendment to the Resource Conservation and Recovery Act (RCRA) to "conduct a detailed and comprehensive study and submit a report to Congress on the adverse effects of Human Health and the Environment, if any, of the disposal and utilization of fly ash waste, bottom ash waste, slag waste, flue gas emission control waste, and other byproduct materials generated primarily from the combustion of coal or other fossil fuels" (RCRA §8002(n), 42 U.S.C §6982(n)). EPA conducted that study and reported its findings in Reports to Congress on March 8, 1988 and on March 31, 1999. In both reports, EPA recommended that coal combustion wastes (CCWs) not be regulated as hazardous waste under RCRA Subtitle C.

On August 9, 1993, EPA published a regulatory determination as required by the Bevill Amendment that "regulation of the four large volume fossil-fuel combustion wastes [i.e., CCWs] as hazardous waste under RCRA Subtitle C is unwarranted" (58 Fed. Reg. 42466, 42472). On May 22, 2000, EPA published a final regulatory determination that fossil fuel combustion wastes, including CCWs, "do not warrant regulation [as hazardous waste] under subtitle C of RCRA" (65 Fed. Reg. 32214).

Coal combustion wastes are categorized by EPA as a "special waste" and have been exempted from federal hazardous waste regulations under Subtitle C of the Resource Conservation and Recovery Act (RCRA). In two separate regulatory determinations, EPA determined that coal combustion wastes do not warrant regulation as a hazardous waste under Subtitle C of RCRA and therefore remain excluded under 40 CFR §261.4(b)(4). EPA did determine, however, that coal combustion wastes that are disposed in landfills and surface impoundments are subject to the requirements of Subtitle D of RCRA (i.e., the solid waste regulations).

Delaware agrees with EPA's findings on this matter. As such, according to Section 261.4 of the Delaware Regulations Governing Hazardous Waste, coal fly ash and bottom ash are excluded from the hazardous waste. Coal ash landfills classified as an industrial landfill in the state are regulated under the Delaware Regulations Governing Solid Waste (DRGSW).

Although EPA's studies looked into varied sources of ash, of most particular concern to this memo is the ash present at the Indian River Generating Station. This ash has been tested on a regular basis since 1980 when the Phase I landfill began operation. In all those years the ash characteristic analyses have never failed the hazardous waste characteristic tests.

3. *Third, please address the public comments on whether the application's compliance with the Department's regulations, specifically, in regard to the liner and the location's elevation above sea level and possible dust and air quality issues.*

The proposed landfill was designed to adopt a composite liner system. The DRGSW, Section 6.3.2.1 specifies that a composite liner must have, as a minimum, at least 45 mil thick primary liner consisting of synthetic materials, and a secondary liner composed of compacted clay or an equivalent material acceptable to the Department. The composite liner system in the proposed landfill consists of 60 mil high density polyethylene geomembrane and geosynthetic clay liner (GCL) having a maximum hydraulic conductivity of 5×10^{-10} cm/sec. The liner system design in the Phase II landfill provides more protective measures than the regulatory requirements.

The DRGSW, Section 6.3.1.3 requires the bottom of the liner to be at least 5 ft above the seasonal high water table. The section also states that the 5 ft requirement may be reduced by the Department if a more stringent liner system is used. Two leachate sump areas in the Phase II expansion have been identified as being less than 5 ft from the estimated high groundwater table. The total area within 5 ft of the estimated high

groundwater table is approximately 2 acres out of around 30 acres of the base grade. The design submitted by the applicant indicates that additional layers of geomembrane and GCL will be installed where the vertical separation from the liner system to the underlying groundwater is less than 5 ft. The branch determined that installing additional layers of geomembrane and GCL on 2 acres within 5 ft from the high groundwater level is acceptable.

The DRGSW, Section 6.1.3.1 prohibits any industrial landfill from being located within the 100 year flood plain. The siting assessment provided in Volume II, Section 7 of the application package demonstrates that the Phase II landfill site is not in the 100 year flood plain.

The regulations cited by the public regarding possible dust and air quality issues are from the Air Regulations. The Air Quality Management Section informed that these regulations are not required to be addressed at this time for the Phase II landfill application. And that all applicable regulations would be addressed at a later date under their permitting processes.

BAA: JSC: dtd
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cc: Susan Baker, Paralegal, SHWMB
Frank Gavas, Hydrologist, SHWMB