



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
SOLID AND HAZARDOUS WASTE MANAGEMENT SECTION

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DOVER, DELAWARE 19901

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March 9, 2018

Certified Mail
Return Receipt Requested
7015 3430 0000 3952 2039

Mr. David Bacher
Regional Manager
Indian River Operations Inc.
29416 Power Plant Road
Dagsboro, Delaware 19939

Subject: Major Modification to NRG's Industrial Solid Waste Landfill Permit (SW-12/01) for the Indian River Generating Station
Reference: Permit SW-12/01
18 0309 02-B Major Permit Mod (WWTP sludge et al) SW-12-01

Dear Mr. Bacher:

The Department of Natural Resources and Environmental Control (DNREC), Solid & Hazardous Waste Management Section (SHWMS) completed its review of NRG's Operations Plan replacement package, dated June 2017. The SHWMS has also completed its review of NRG's July 11, 2017 request, and September 29, 2017 request addendum, for the addition of on-site generated wastewater treatment sludge to the list of acceptable wastes.

Based upon these reviews, the SHWMS made major modifications to Permit SW-12/01 in accordance with Section 4.1.7.4 of Delaware's *Regulations Governing Solid Waste (DRGSW)*.

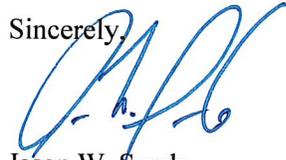
The major modifications incorporate the revised Operations Plan replacement package consisting of the following documents: *Operations Manual for Indian River Landfill*; *Environmental Monitoring Plan (EMP) for Indian River Landfill*; *Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) for Indian River Landfill*; *Storm Water Plan (SWP) for Indian River Landfill*; and *CCR Compliance Fugitive Dust Control Plan*. The SHWMS has also incorporated the sludge from the on-site industrial wastewater treatment plant into the list of acceptable wastes.

The SHWMS has made other changes and/or corrections to the permit that include: updating the permittee information, adding clarification on the accumulation/storage of waste within the landfill footprint, reserving Permit Condition II - Construction, incorporating federally mandated requirements, incorporating leachate head exceedance reporting requirements, removing monitoring requirements associated with background constituent level determinations, and the correction of typographical and/or grammatical errors.

Delaware's good nature depends on you!

Please begin using the attached modified permit upon receipt. If you have any questions concerning this letter or the permit, please feel free to contact Alison Kiliszek at (302) 739-9403, option 8.

Sincerely,



Jason W. Sunde
Environmental Program Manager I
Solid & Hazardous Waste Management Section

JWS: AKK: srh
Waste Facilities\Indian River Power Plant\Permit\AKK18003

Attachment: Permit SW-12/01 (last modified March 9, 2018)

cc: Alison Kiliszek, Engineer, SHWMS (w/o attachment)
Frank Gavas, Hydrologist, SHWMS (w/o attachment)
Brad Richardson, Environmental Scientist, SHWMS (w/o attachment)



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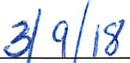
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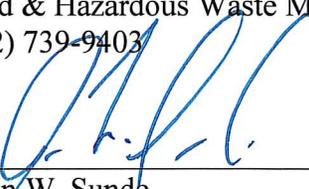
Permit SW-12/01
Permit Type: Industrial Landfill

Effective Date: February 10, 2012
 Last Modified: March 9, 2018
 Expiration Date: February 27, 2022
 Permittee: NRG Energy, Inc.
 29416 Power Plant Road
 Dagsboro, Delaware 19939
 Indian River Power LLC
 211 Carnegie Center
 Princeton, New Jersey 08540
 Indian River Operations, Inc.
 29416 Power Plant Road
 Dagsboro, Delaware 19939

Pursuant to 7 Del.C., §6003 and Delaware's *Regulations Governing Solid Waste*, approval of the Department of Natural Resources and Environmental Control (Department) is hereby granted to operate the solid waste facility at the Indian River Generating Station located in Dagsboro, Delaware, subject to the terms and conditions of this permit. All terms and conditions of this permit are enforceable by the Department.


 Alison Kiliszek
 Engineer
 Solid & Hazardous Waste Management Section
 (302) 739-9403


 3/9/18
 Date


 Jason W. Sunde
 Environmental Program Manager
 Solid & Hazardous Waste Management Section
 (302) 739-9403


 3-9-18
 Date

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I. GENERAL CONDITIONS

A. Permit Replaced

Pursuant to 7 Del.C., §6003, and Sections 4.1.1.1 and 6.0 of Delaware's *Regulations Governing Solid Waste* (DRGSW), the Department of Natural Resources and Environmental Control (Department) hereby modifies Permit SW-12/01 to NRG Energy, Inc., 29416 Power Plant Road, Dagsboro, Delaware 19939; Indian River Power LLC, 211 Carnegie Center, Princeton, New Jersey 08540; and Indian River Operations, Inc., 29416 Power Plant Road, Dagsboro, Delaware 19939 for the continued operation and construction of the industrial landfill located at the Indian River Generating Station (IRGS), Dagsboro, Delaware (The three permittees are designated as NRG in this permit.).

B. Applicability

This permit applies to:

1. Construction of Phase II and all ancillary features outlined in NRG's application package for construction and operation of the Phase II landfill, *Phase II Coal Ash Landfill Permit Documents, NRG Energy Inc., Indian River Generating Station, Sussex County, Delaware*, prepared by Golder Associates Inc. dated May 2005 and last revised April 2008.
2. Operation and maintenance of the industrial landfill, including Phases I and II.
3. Environmental monitoring, recordkeeping, and reporting for the landfill.
4. Closure and final cover requirements.

C. Application Documents

This permit was issued in accordance with the following documents:

1. Secretary's Order No. 2008-A-0037, issued by the Department on September 4, 2008.
2. Permit application package for construction and operation of the Phase II landfill, *Phase II Coal Ash Landfill Permit Documents, NRG Energy Inc., Indian River Generating Station, Sussex County, Delaware*, prepared by Golder Associates Inc. dated May 2011 and last revised December 2011.
3. The June 2017 replacement *Operations Manual* package for the Indian River Landfill.
4. The July 11, 2017 request, and September 29, 2017 request addendum, for the addition of on-site generated industrial wastewater treatment sludge to the list of acceptable wastes and monitoring program.

5. Other plans, letters, procedures, and policies specifically referenced in this permit.
6. All previously approved and applicable documents, applications, or correspondence.

D. General Conditions

This permit is issued subject to the following general conditions:

1. Construction and operations at the Indian River Generating Station shall be conducted in compliance with all federal, state, county, and municipal environmental statutes, ordinances, and regulations, including, but not limited to: Delaware's *Regulations Governing Solid Waste*, Delaware's *Regulations Governing Hazardous Waste*, Delaware's *Regulations Governing the Control of Water Pollution*, the *Delaware Surface Water Quality Standards*, and Delaware's *Regulations Governing the Control of Air Pollution*.
2. Access to the landfill facility by unauthorized persons shall be prevented by barriers, fences, and gates, or other suitable means. Access for the purpose of disposal of solid waste shall be limited to those times when an attendant is on duty and to those persons authorized to use the facility for the disposal of solid waste specified in this permit. The Department may, at any reasonable time, enter the facility to verify compliance with the permit (7 Del.C., §6024).
3. This permit may be revoked upon violation of any condition of the permit or any requirement of DRGSW after notice and opportunity for hearing in accordance with 7 Del.C., Chapter 60. The Department has the authority to modify this permit at any time.
4. Permit SW-12/01 shall expire no later than February 10, 2022.
5. A copy of the most current version of this permit shall be maintained in both the weigh station and the on-site administrative office.
6. Other than the approved wastes identified in Section III.E, NRG shall not accumulate and/or store waste within the landfill footprint prior to confirmation that the waste is acceptable (1) per the permit and (2) after a review of characterization analysis OR without prior written approval from the Department.

II. CONSTRUCTION - RESERVED

III. OPERATIONS

A. General Operations

Operations at the facility shall be conducted in accordance with this permit, the *Operations Manual for the Indian River Landfill* (dated June 2017), the *Environmental Monitoring*

Plan (EMP) for the Indian River Landfill (dated June 2017), and all documents referenced within the aforementioned documents. Operations shall be conducted in a manner protective of human health and the environment.

B. Protection for Surrounding Environment and Environment Protection Systems

The landfill shall be operated in a manner that will preclude degradation of adjacent land, air, surface water, or groundwater. NRG shall operate the landfill in a manner that will protect the landfill liner system, the leachate collection and disposal system, the landfill capping system, and the stormwater management systems. NRG shall take special precautions while placing the first lift of waste to ensure that the liner system is not damaged by operations or by waste placement.

C. Staffing

Sufficient numbers and types of personnel shall be available at the facility to ensure capability for operation in accordance with DRGSW and the *Operations Manual*.

D. Equipment

Equipment necessary to ensure the operations of the landfill in accordance with the *Operations Manual* and the requirements of DRGSW shall be maintained at the facility by NRG.

E. Acceptable Wastes

The landfill is permitted to accept the following wastes only from the Indian River Generating Station for disposal at the facility in accordance with this permit and DRGSW:

1. Non-hazardous coal fly ash.
2. Non-hazardous coal bottom ash.
3. Non-hazardous air emission control flue gas wastes (byproduct) generated from a dry flue gas desulfurization (FGD) process.
4. Non-hazardous industrial wastes (special wastes) generated during equipment cleaning and site cleanup operations performed to remove ash and other non-hazardous special wastes approved by the Department. These wastes include and are limited to;
 - a. Grit blasting media used to remove ash and paint from equipment. TCLP and total metals analysis shall be performed on grit blasting media and reported to the Department prior to disposal. The test results shall be retained per the recordkeeping requirements of Permit Condition VI.A.9.
 - b. Soils and sediment contaminated with ash removed during cleanup of stormwater channels, structures, and stormwater ponds.
 - c. Non-hazardous sludge from the on-site industrial wastewater treatment plant.

TCLP metal analysis, pH, and percent solids shall be performed annually. The test results shall be retained per the recordkeeping requirements of Permit Condition VI.A.9.

F. Prohibited Wastes

No wastes other than those specified in the permit may be disposed of at the facility.

G. Excavation

Ash excavation operation shall be conducted in accordance with the *Operations Manual*, and shall be organized so that they will not interfere with the proper ash disposal operations. No excavation shall be allowed which creates unsightliness, instability, nuisances, health hazards, or potential safety hazards.

H. Landfill Inspections

NRG shall have a qualified person inspect the landfill at least weekly for, at a minimum, any appearance of actual or potential structural weakness and other conditions that can disrupt the operation or safety of the landfill. NRG shall complete an inspection form for each inspection and include that form in the facility log. A weekly inspection of the landfill shall be conducted at intervals not to exceed seven (7) calendar days.

I. Storm Water Management, Erosion, and Sediment Control

NRG shall provide for storm water management, erosion and sediment control at the facility including those controls cited in the *Operations Manual*. NRG shall implement the following minimum controls:

1. NRG shall take all necessary steps to identify and prevent the discharge of pollutants from the waste and/or cover into surface water, and initiate corrective actions to confirm, quantify, and remediate such discharges.
2. NRG shall maintain a surface water management system on the landfill to prevent erosion of the waste and cover, the collection of standing water, run-off from the waste, and minimize run-on into the waste. Run-off from active areas of Phase II where waste is exposed shall be directed to the leachate collection system.
3. Each operating day, NRG shall daily inspect the landfill for any erosion of the waste and cover, collection of standing water, run-off from the waste, and run-on into the waste according to the *Operations Manual*, and immediately after any rainfall capable of causing erosion or surface run-off or on the next operating day if rainfall occurs while the facility is not operating. NRG shall complete an inspection/maintenance form for each inspection and include that in the facility log. NRG shall provide the correction of problems identified as well as the inspection.
4. NRG shall properly operate, manage, and maintain all devices, structures and ponds

designed to monitor or manage storm water, and shall take all reasonable steps to minimize or prevent any discharge of pollutants into surface water.

5. The storm water conveyance and discharge system (SCDS) shall be kept free of debris, waste, and sediment buildup. NRG shall inspect the SCDS at a minimum frequency of once per month, and immediately after severe rainfall (e.g. rainfall capable of destroying SCDS components or causing significant erosion or sediment run-off) or on the next operating day if rainfall occurs while the facility is not operating. SCDS inspection/maintenance forms shall be completed for each inspection and included in the facility log. NRG shall provide for the inspection of the SCDS as well as the correction of problems identified and inspections shall include:
 - a. Berms and swales shall be inspected for erosion, sediment, and debris.
 - b. Silt fences shall be inspected for damage, accumulated debris and to ensure that fencing is firmly anchored.
 - c. Culverts and pipes shall be inspected for siltation, blockage, and debris.
 - d. Control structures shall be inspected for siltation, debris, and damage.
6. Corrective measures to prevent further erosion and repair any damage will be initiated as soon as possible, but no later than 24 hours after discovery.
7. NRG shall implement proper operating techniques during all three (active, inactive, and closed) landfill construction sequences to prevent erosion according to the *Operations Manual*.
8. Vegetative cover shall be established and maintained on the containment berm to prevent erosion.

J. Operational Cover

NRG shall cover areas that have not received additional waste within thirty (30) calendar days according to the *Operations Manual*. Cover shall consist of a minimum of six (6) inches of compacted soil.

K. Intermediate Cover

NRG shall place intermediate cover on areas that are completed to the interim design height according to the *Operations Manual*. The intermediate cover shall consist of a minimum of twelve (12) inches of compacted soil.

L. Dust Control

NRG shall operate the landfill in a manner to prevent dust emissions from causing a condition of air pollution (injurious to human, plant, or animal life or unreasonably interfering with the enjoyment of life and property).

1. NRG shall provide for dust controls at the facility to include dust controls cited in the *Operations Manual*.
2. NRG shall operate the landfill to minimize waste and soil from being tracked off-site. NRG shall inspect facility egress points at least daily to identify if the materials are being tracked off-site, and in the event that the materials are tracked off-site, at a minimum, NRG shall provide for street cleaning of that area on the day the problem is identified.

M. Leachate Collection, Transmission, and Storage System in Phase II

1. NRG shall operate and maintain the leachate collection, transmission, and storage system, including the alarm system in accordance with this permit and the *Operations Manual*. NRG shall clean-up all leachate spills immediately or within a time frame approved by the Department on a case-by-case basis.
2. NRG shall inspect the leachate collection system, leachate force main, and leachate storage facility components each operating day to verify proper functioning. NRG shall inspect all flowmeters, pumps, controls, and recording devices each operating day to ensure proper functioning. NRG shall also inspect for leakage from valves, flowmeters, connections at riser locations, and storage tanks each operating day. The results of the inspections shall be recorded in the facility log.
3. NRG shall ensure that all accessible collection pipes are cleaned at least annually with a self-propelled, high pressure jetting system. NRG shall be responsible for the identification, assessment, and reporting of all blockages encountered as well as identification of any areas found to be inaccessible during the annual cleanings. The Department may, at its discretion, waive the annual cleaning event for any particular year if, after demonstration by NRG, it determines that cleaning is not required.
4. NRG shall measure and record the depth of leachate and the quantity of leachate pumped from each leachate sump each operating day. The system shall be operated and maintained so that there is no more than one (1) foot of head on the liner outside of the sump. In the event more than one (1) foot of head on the liner, outside of the sump, is discovered:
 - a. Within fourteen (14) calendar days upon discovery of each occurrence of an exceedance, NRG must notify the SHWMS in writing.
 - b. NRG must take all appropriate actions to reduce the head on the liner to no more than one (1) foot.
 - c. NRG must report these exceedances as part of the Annual Report (Permit Condition V.B). For each exceedance, documentation must include, but is not limited to, the date of the exceedance, the cell in which the exceedance occurred, the sump meter reading, the reason for the exceedance, and how the exceedance was corrected.
5. NRG shall prevent leachate seeps from side slopes.

6. NRG shall maintain all necessary permits and approvals for leachate management. Disposal must be done in a manner which does not cause adverse environmental impact.

N. Protection of Capping System

1. NRG shall maintain the integrity and effectiveness of the capping system, including making repairs as necessary to correct the effects of settling, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the cap.
2. NRG shall reseed the cover if insufficient vegetation exists to stabilize the surface.
3. Standing water shall not be allowed on any capped portions of the landfill.
4. Open burning shall not be allowed on any capped portions of the landfill.
5. Unless approved in advance by the Department, no activity shall be conducted on any capped portions of the landfill which will disturb the integrity of the capping system.
6. NRG shall weekly inspect areas installed with cap components, complete an inspection/maintenance form for the inspection, and provide the correction of problems identified.

O. Health and Safety

1. Employees at the facility shall work under appropriate health and safety guidelines established by the Occupational Safety and Health Administration.
2. Use of personal protective equipment shall be in accordance with 29 CFR §1910.132 as a minimum.
3. First aid equipment shall be maintained and readily available in the weigh station, the administrative office, and the maintenance building.
4. Emergency telephone numbers of nearby ambulance, hospital, police, and fire services shall be prominently displayed by at least one telephone in each of the following on-site locations: the administrative office, the maintenance building, and the weigh station.
5. Any confined space entry done by employees or contractors shall be done in accordance with 29 CFR §1910.146.

P. Contingency

1. NRG shall maintain capability to react to emergencies in accordance with the *Landfill Contingency Plan/Emergency Action Plan (EAP)* of the *Operations Manual*. NRG shall react to spills, fires, accidents, and other emergencies so as to protect public health, safety, and the environment.
2. NRG shall appoint and maintain at least one Emergency Coordinator and at least one alternate Emergency Coordinator at the facility. The Emergency Coordinator shall be responsible for directing all emergency response measures necessary to protect human health and the environment, and NRG shall ensure that at least one Emergency Coordinator is available at all times.

Q. Training

All personnel assigned duties at the landfill shall receive, as a minimum, the training listed below. Unless otherwise specified by a nationally recognized training provider (for example, the American Red Cross as a training provider for First Aid), training shall be required initially and shall be kept current thereafter, as outlined below. Initial training shall be completed within 180 days of hiring:

1. Operational and contingency procedures (annually)
2. Health and safety procedure (annually)
3. Emergency first aid (biennially)
4. CPR training (biennially)

IV. MONITORING

A. General Requirements

1. NRG shall maintain and protect all monitoring wells in accordance with Delaware's *Regulations Governing the Construction and Use of Wells*.
2. NRG shall notify the Solid and Hazardous Waste Management Section at least fifteen (15) business days prior to installing, modifying, or abandoning any monitoring wells. The installation of new monitoring wells, or modification or abandonment of existing monitoring wells, shall be performed in accordance with Delaware's *Regulations Governing the Construction and Use of Wells* after receiving approval from the Solid and Hazardous Waste Management Section to proceed.
3. All water-quality samples shall be collected in a manner which minimizes sample turbidity. All groundwater-quality samples shall be collected using a low-flowrate method to minimize sample turbidity. Groundwater samples collected for metal analysis shall not be field filtered, so total recoverable metals (particulate and dissolved fraction) can be determined and reported.

4. Each well shall be sounded during each water-level measuring event and after the completion of sampling at each well.
5. All water-quality samples will be measured for the following field parameters at the time of sample collection:

Dissolved Oxygen	Specific Conductance
pH	Temperature
Oxidation-Reduction Potential	Turbidity

6. Water-quality samples will be laboratory-analyzed for the following indicator parameters:

a. Group I Parameters:

Alkalinity	Iron	Sulfate
Arsenic	Magnesium	Total Dissolved Solids
Boron	Manganese	Total Organic Carbon
Calcium	Potassium	
Chloride	Selenium	
Fluoride	Sodium	

b. Group II Parameters - RESERVED

c. Group III Parameters - RESERVED

7. Test methods used for acceptable wastes listed in Section III.E, leachate, and water-quality analyses shall be those described in the most current legal edition of EPA Publication *SW-846*. If *SW-846* does not contain a test method for a required parameter, that parameter shall be tested according to methods described in the most recent edition of EPA Publication, *Methods of Chemical Analysis for Water and Wastes* or *Standard Methods for Examination of Water and Wastewater*. All samples shall be collected and analyzed using approved QA/QC procedures.

B. Groundwater Quality Monitoring

1. Semi-annually in April and October, NRG shall monitor water levels within the shortest time period practicable, prior to the collection of any samples, in the following wells:

101A	102A	103A	104	106R	108	326B	327B	328C	1A
101B	102B	103B	105A	107A	109	326C	327C	P-1R	
101C	102C	103C	105BR	107B	319A	326D	328A	P2	1B
		103CR	105C	107C	325	327A	328B	P-3R	2B

2. Laboratory Analysis Schedule:

Semi-annually in April and October, NRG shall collect water-quality samples for laboratory analysis for Group I Parameters from the following groundwater monitoring and production wells:

102A	103A	103CR	105A	106R	326B	327A	328A	P-1R
102B	103B	104	105BR	319A	326C	327B	328B	P-3R
102C	103C		105C		326D	327C	328C	PW F

3. Pumping rates shall be recorded for production wells A, B, C, and F.

C. Surface Water Quality Monitoring

1. Semi-annually in April and October, NRG shall collect water-quality samples from surface water at stream gauge SG-2 at outgoing tide for laboratory analysis for Group I Parameters.
2. Any discharge from the northern sedimentation control basin (Outfall 037) shall be sampled and analyzed for those constituents included in the NPDES permit requirements.

D. Storm Water Quality Monitoring

During two storm events per year, at least four months apart, as soon after a storm run-off event as practicable; NRG shall collect a water-quality sample for laboratory analysis for Group I Parameters from the sedimentation control basin at SW-1 and SW-2.

E. Leachate Monitoring

1. Quarterly in January, April, July, and October, NRG shall collect water-quality samples from leachate collection sumps 1 and 2 for laboratory analysis for Group I Parameters.
2. Annually in October, both collected leachate samples must be analyzed for the following additional chemicals of concern:

Beryllium	Molybdenum
Cadmium	Thallium
Cobalt	Vanadium
Lead	

3. The Department may include any of the additional chemicals of concern in Permit Condition IV.E.2 to the other monitoring programs described in Section IV of this permit based upon concentration levels detected in the leachate.

F. Ash and FGD Characteristics Monitoring

1. NRG shall conduct all ash and FGD waste tests in accordance with the *Operations Manual* and *Environmental Monitoring Plan*, and record the results.
2. NRG shall collect fly ash, bottom ash, and FGD waste grab samples annually in October. NRG shall collect and characterize samples according to the procedures described in the *Operations Manual* and *Environmental Monitoring Plan*.

G. Special Wastes Monitoring

NRG shall conduct all test on the special wastes listed in III.E.4 in accordance with the *Operations Manual* and *Environmental Monitoring Plan*, and record the results.

V. REPORTING

A. Financial Assurance

1. No later than March 31st of each year, NRG must demonstrate adequate financial assurance for closure and post-closure care of the landfill in accordance with the requirements of DRGSW.
2. NRG shall submit with a proof of financial assurance, an updated and accurate cost estimate adjusted for inflation, facility expansions, and any other applicable requirements which impact the cost of closure and post-closure care.

B. Annual Report

No later than March 31st of each year, NRG shall submit a report summarizing facility operations for the preceding calendar year. The report shall describe and summarize all waste disposal, environmental monitoring, and construction activities conducted for that period. The report shall include the following information:

1. The weight of fly and bottom ash and all other acceptable wastes listed in III.E placed into the landfill during the past calendar year, listed on a monthly basis with the annual total.
2. Description and dates of major activities, such as excavation of ash at the landfill for a project.
3. The weight of ash removed from the landfill for the purpose of reuse, including ash sent directly to market and not landfilled, and identification of where the ash was utilized.
4. The estimated remaining landfill capacity in both tonnage and years.
5. Any intentional or accidental deviations from the approved *Operations Manual* or this

- permit. This includes, but is not limited to, any items reported under the "Notification and Emergency Reporting" section of this permit.
6. All construction or corrective work conducted at the facility in accordance with approved plans or to achieve compliance with DRGSW and this permit.
 7. A summary of any capping activities done during the year, including capping system installation and repair.
 8. Results of TCLP and total metals analyses as described in Permit Conditions IV.F and IV.G from sampling acceptable wastes listed in Permit Condition III.E.
 9. Inspection results on storm water management, erosion, and sediment control.
 10. A hydrogeological report including the following information:
 - a. Tabulation of all data listed below from the past and all preceding years. All data should be submitted on paper and electronically in a format that is acceptable to the Department. Data submitted shall include:
 - (1) Groundwater elevation and quality data, including field parameters.
 - (2) Surface water elevation and quality data, including field parameters.
 - (3) Rainfall data from the site weather station.
 - (4) Storm water and quality data including field parameters.
 - (5) Leachate quality data including field parameters.
 - b. Graphical presentations (quality versus time plots) of groundwater, surface water, storm water, and leachate quality monitoring data.
 - c. Potentiometric maps for each aquifer for each sampling event for the past year.
 - d. To determine the effects of water table fluctuations in the shallow Columbia Aquifer on contaminant concentrations in ground water immediately underlying the landfill, display dual y-axis time trend plots comparing individual contaminant concentrations for arsenic and selenium to water level for monitoring wells 103C, 105C, 319A, and 326B.
 - e. A discussion of any problems encountered during fieldwork, any deviations from the sampling procedures, and of any problems with QA/QC procedures. Copies of laboratory data sheets shall be maintained by NRG and made available to the DNREC within a reasonable time upon request.
 - f. A discussion of the ground, surface, and storm water and leachate quality monitoring results, including whether the results indicate a contaminant release from the landfill to groundwater or surface water.
 - g. Recommendations for future monitoring, maintenance or modifications needed in the current monitoring system.
 - h. The quantity of leachate generated, stored, and reused on a monthly basis.
 - i. A legible copy of all field notes (as applicable) and chain-of-custody forms.
 11. A copy of the most recent Annual Landfill Inspection Report required per Permit Condition V.C.5 and 40 CFR §257, Subpart D.

12. A copy of the most recent Dust Control Report required per Permit Condition V.C.5 and 40 CFR §257, Subpart D.

C. Additional Reports

1. The results of groundwater, surface water, storm water, leachate quality, and ash characteristics monitoring samples analyzed per Section IV of this permit shall be submitted to the Department within sixty (60) days of the sampling event. Reports shall include a legible copy of all field notes (as applicable) and chain of custody forms. Electronic files containing the results of all required analysis for groundwater and surface water shall accompany this submittal. The electronic files will be in a format amenable for use by both NRG and the Department.
2. The results of the potentiometric head elevations and the maps prepared for each aquifer per Section V of this permit shall be submitted to the Department within sixty (60) days of the date of sampling.
3. If NRG is unable to comply with any of the reporting requirements listed within the permit, NRG must provide written notice and justification to the Department two weeks prior to the reporting deadline.
4. Upon discovery, NRG shall report to the Department any intentional or accidental deviation from any approved plan.
5. EPA Coal Combustion Residual Rule Reports (40 CFR §257)
 - a. Annual Landfill Inspection Report. An annual landfill inspection must be conducted by a Professional Engineer registered in Delaware to evaluate whether the landfill design, construction, operation, and maintenance is consistent with recognized and generally accepted good engineering standards.
 - (1) At a minimum, the inspection must include a review of available information regarding the status and condition of the landfill (e.g., inspections within the operating records) and a visual inspection of the landfill to identify signs of distress or malfunction of the landfill.
 - (2) At a minimum, the inspection report must document any changes in geometry of the structure since the previous inspection, any appearances of an actual or potential structural weakness of the landfill, any conditions that are disrupting or have the potential to disrupt the operations and safety of the landfill, and any other changes which may have affected the stability or operation of the landfill since the last inspection.
 - (3) The Annual Landfill Inspection Report must be completed within one year of the previously completed report and submitted to the Department as part of the Annual Report (Permit Condition V.B).
 - b. Annual Dust Control Report. NRG must generate a Dust Control Report that summarizes measures utilized for dust control, dust complaints received from the past year, and corrective measures taken during the past year. The Dust Control

Report must be completed within one year of the previously completed report and submitted to the Department as part of the Annual Report (Permit Condition V.B).

D. Notifications and Emergency Reporting

1. NRG shall notify the Department immediately in the event of:
 - a. Fire or explosion involving the landfill or its control systems.
 - b. Structural damage to the dikes surrounding the landfill.
 - c. Any significant erosion of the waste or cover, or release of ash or waste run-off from the landfill.
 - d. Receipt or discovery of prohibited waste in the cell.
 - e. Leachate spills exceeding ten (10) gallons.
 - f. Any anomalous observations during monitoring events; this includes, but is not limited to, any damage to the monitoring wells or well casings, well obstructions, well-integrity concerns, and well depth.
 - g. Any damage to the landfill liner system.
 - h. Any damage to installed cap components.
2. If any event listed in Permit Condition V.D.1 occurs during business hours, NRG should report to the Department's Solid and Hazardous Management Section by calling to 302-739-9403. At all other times, reporting is to be made to the Department's Emergency Response Team TOLL-FREE 24-HOUR HOTLINE 1-800-662-8802.
3. NRG shall submit a written notification to the Department no later than five (5) business days following any event requiring "Notification or Emergency Reporting." The notification shall include the following:
 - a. Date and time of occurrence/discovery.
 - b. Date and time of reporting.
 - c. Agencies notified.
 - d. Materials and quantities involved.
 - e. Narrative describing how the incident occurred and the actions taken by NRG and other response personnel.
 - f. Report of injuries/damage.
 - g. Proposal for follow-up, repair, or remedial actions required and a schedule.

E. Assessment of Corrective Measures

1. NRG shall notify the Department (in writing) within seven (7) days after verified analytical data has confirmed that a release has taken place. Confirmation samples shall be collected from the appropriate monitoring points within fourteen (14) days of receipt of written approval by the Department. These samples shall be analyzed under a priority schedule for the indicator parameters and any other parameters deemed appropriate by NRG and the Department. NRG shall notify the Department of the results of the confirmation sampling within seven (7) days of receipt of the results.

2. If confirmation sampling does not indicate that a release has taken place, another round of sampling shall take place to determine whether the results of analysis from the first or second sampling events were anomalous. This re-sampling sampling event shall take place within two (2) weeks of NRG sending written notification to the Department of their intent to re-sample. The samples shall be analyzed under a priority schedule. NRG shall notify the Department of the results of the re-sampling within seven (7) days of receipt of the results.
3. If the re-sampling indicates that no release has taken place, no further action shall be taken by the Department, and monitoring of the sampling location(s) shall be returned to its/their normal monitoring schedule. If the confirmation or re-sampling round of sampling does indicate that a release has taken place, NRG shall perform an assessment of corrective measures within ninety (90) days of confirmation of the release. This assessment shall include:
 - a. Identification of the nature and extent of the release (which may require construction and sampling of additional wells, geophysical surveys or other measures).
 - b. Re-assessment of contaminant fate and potential contaminant receptors (wells and/or receiving streams).
 - c. Evaluation of feasible corrective measures to:
 - (1) Prevent exposure to potentially harmful levels of contaminants (exceeding performance standards).
 - (2) Reduce, minimize or prevent further contaminant releases.
 - (3) Reduce, minimize or prevent off-site migration of contaminants.

VI. RECORDKEEPING

A. General Recording and Maintenance

The following information must be recorded and maintained by NRG until the end of the post-closure care period. This information must be available for inspection, with reasonable notice, by representatives of the Department:

1. Monitoring, testing, and analytical data required by this permit and DRGSW.
2. Copies of field notes for each sample analyzed as well as laboratory data sheets for each sample analyzed.
3. The quantity and type of all acceptable wastes placed into the landfill.
4. The quantity and type of ash removed from the landfill for reuse.
5. Records of all inspections required by the *Operations Manual* and this permit.

6. Records of odor and dust complaints received by the facility manager concerning the landfill.
7. Records that document that required training has been provided to all staff.
8. Analytical test results for all coal sources used.
9. Analytical test results for all grit blasting media and industrial wastewater sludge disposed in the landfill.
10. Documentation demonstrating compliance with land clearing and Box Turtle requirements specified in Section II – Construction.

B. EPA Coal Combustion Residual Rule Compliance (40 CFR §257)

NRG must maintain a publically accessible internet site titled “CCR Rule Compliance Data and Information” meeting the requirements cited in 40 CFR §257.107. Required documentation must be posted to the website within thirty (30) days of being placed in the operating record and must be available to the public for a minimum of five (5) years from the day the information is posted to the website. At a minimum, the following information shall be posted as it becomes available:

1. Demonstration(s) that all lateral expansions meet the minimum location restrictions specified in DRGSW and 40 CFR §257.107.
2. Demonstration(s) that all lateral expansions meet the minimum design criteria specified in DRGSW and 40 CFR §257.107 for the liner system.
3. Demonstration(s) that Phase II and all lateral expansions meet the minimum operating criteria specified in DRGSW and 40 CFR §257.107 for fugitive dust control and reporting, initial and periodic run-on and run-off control system plans, and inspections.
4. Demonstration(s) that Phase II and all lateral expansions meet the minimum groundwater monitoring and corrective action criteria specified in DRGSW and 40 CFR §257.107 for the groundwater monitoring devices and wells, groundwater analysis criteria, results from groundwater analysis (including statistically significant levels above the groundwater protection standard), and corrective action measures under taken by the facility.
5. Demonstration(s) that Phase II and all lateral expansions meet the minimum closure and post-closure care criteria specified in DRGSW and 40 CFR §257.107.
6. Demonstration(s) the Phase II and all lateral expansions meet the minimum retrofit criteria specified in DRGSW and 40 CFR §257.107.

VII. LANDFILL CAPPING SYSTEM

A. Capping Requirements

1. Upon completion of a landfill phase or cell, a capping system shall be installed that will promote vegetative cover and minimize infiltration and percolation of water into, and prevent erosion of, the ash throughout the post-closure care period.
2. The capping system shall be in place 180 days following final waste disposal activity, unless otherwise approved in accordance with DRGSW.
3. All components of the capping system and final slopes shall be constructed in accordance with DRGSW, and must be approved by the Department prior to installation. All components of the cap shall be constructed in accordance with a Construction Quality Assurance (CQA) plan, construction and material specifications, design drawings, closure plan, and closure schedule approved by the Department.
4. When a phase of cap construction is completed, NRG shall submit a construction certification report (Report). The Report shall fully document the cap construction, and shall be certified correct by the CQA engineer, who must be a Professional Engineer registered in Delaware. The Report must be submitted to the Department within sixty (60) days of completion of the capping system construction. If NRG is not able to meet the Report submission deadline, NRG shall provide justification for that and be approved by the Department in advance. NRG shall also include a copy of the Report electronically in a format that is acceptable to the Department. The Department will review the Report, and will either:
 - a. Issue a letter of approval to certify that the phase of cap construction is in compliance with the solid waste permit, the closure plan, and all applicable regulations; or
 - b. Determine that the phase of cap construction has not been performed in compliance with the solid waste permit, or all applicable regulations; identify the areas of deficiency; and require NRG to take the necessary actions to bring the phase of cap construction into compliance.

After the phase of cap construction has been approved by the Department, the area of the landfill represented by the phase of cap construction shall be designated as a "capped portion" of the landfill.

VIII. CLOSURE AND POST-CLOSURE CARE

A. Closure Compliance

NRG shall close the completed landfill or landfill cell in accordance with DRGSW.

B. Notification

Notification of intent to close the landfill, a final closure plan, and a proposed schedule shall be submitted to the Department at least 180 days prior to projected date when waste will no longer be accepted in the landfill.

C. Permit Modification

NRG shall not commence closure activities before receiving Department approval and the necessary permit modification to this permit.

D. Closure Requirements

NRG shall close the landfill in accordance with the requirements of DRGSW in a manner that will minimize the need for further maintenance and that will minimize the post-closure escape of solid waste constituents and leachate. NRG shall close the facility in accordance with the approved closure plan and the approved closure schedule.

E. Final Lines and Grades

NRG shall close the landfill in accordance with the lines and grades shown on the Final Grading Plan, which limit the elevation of the landfill to 100 feet MSL.

F. Final Report

1. When the final phase of cap construction is completed, NRG shall submit a final Report to the Department. The final Report must fully document the final portion of cap construction and summarize all previous capping system Reports. The final Report also should summarize the condition of the entire cap at the time and provide a conclusion whether or not the landfill is capped in accordance with the permit and DRGSW. Copies of all preceding Reports for previously capped portions of the landfill shall be included in the final Report on compact disc or other acceptable digital storage media.
2. The final report shall certify that the closure of the landfill was completed in accordance with the closure plan to include the Construction Quality Assurance plan, construction and material specifications, and design drawings. The final report shall be certified correct by the CQA engineer, who must be a Professional Engineer registered in Delaware.
3. The final Report must be submitted to the Department within sixty (60) days of completion of the cap construction. If NRG is not able to meet the Report submission deadline, NRG shall provide justification for that and be approved by the Department in advance. The landfill will not be considered closed until the Department has provided its written notification that the closure has met the requirements of the solid waste permit and DRGSW.

G. Post-Closure Care

Upon the written notification from the Department that the closure of the landfill has met the requirements of the solid waste permit, and all applicable regulations, and that the landfill is determined to be closed, NRG shall commence post-closure care activities in accordance with DRGSW, the post-closure care plan approved by the Department, and with the permit after appropriate modification.

H. Post-Closure Land Use

NRG shall implement the post-closure land use plan approved by the Department.

I. Post-Closure Care Reporting

All reporting, monitoring, testing, documentation requirements and Construction Quality Assurance procedures shall be conducted in accordance with the post-closure care plan approved by the Department.

J. Deed Notation

NRG shall record a notation on the deed to the facility property, or some other instrument that is normally examined during the title search, that will in perpetuity notify any potential purchaser of the property that the land has been used as a solid waste disposal facility, and the use of the land is restricted under Delaware's *Regulations Governing Solid Waste*.

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Waste Facilities\Indian River Power Plant\Permit\AKK18004

PERMIT MODIFICATION SYNOPSIS

SW-07/01

January 24, 2007: Permit SW-07/01 was issued to NRG Energy, Inc.'s Indian River Operations, Inc. for the continued operation of the Phase I industrial landfill. This permit incorporates the requirements of, and replaces permit SW-96/04.

October 16, 2008: The Permit was modified to permit NRG to construct and operate Phase II, Cells 1 and 2. The modification was considered a major modification in accordance with Section 4.1.7 of DRGSW.

July 12, 2011: The SHWMB modified the Permit to incorporate the revised Operations Plan which includes procedures for the disposal of non-hazardous air emissions control wastes. The modification also includes new groundwater-monitoring wells. The modification was considered a major modification in accordance with Section 4.1.7 of DRGSW.

November 29, 2011: The SHWMS modified the Permit to remove the financial assurance mechanisms specified formerly by permit condition V.A.3. NRG will need to meet the financial assurance requirements of the section 4.1.11 of DRGSW. The modification is considered minor in accordance with Section 4.1.7 of DRGSW.

January 20, 2012: The SHWMS modified the Permit to extend the expiration date by 120 days in order to maintain the continuity of the issued permit. The Permit is currently under a legal notice for the permit renewal. It is necessary to extend the time to prevent a lapse in permit coverage, and to allow the Department time to process administrative functions, in the events that the public requests a hearing for the permit renewal. The modification is considered minor in accordance with Section 4.1.7 of DRGSW.

SW-12/01

February 10, 2012: Permit SW-12/01 replaces SW-07/01 for NRG Energy, Inc.'s Indian River Operations, Inc. to cover the continued operation of the Phase II industrial landfill. The following permit conditions were revised and or added; II.A.8 was added to include limitations of land clearing in respect to bird nesting concerns from the Heritage Program, II.A.9 was added to include a survey for Box Turtles to be completed prior to land clearing, III.A was revised to remove a reference to an outdated operations plan, III.E.5 was added to include sand blast media and sediment from stormwater channels and structures as wastes acceptable disposal in the industrial landfill, VI.A.9 was added to require recordkeeping of the data from sand media analysis, and administrative changes necessary to revise the dates of documentation submitted for the renewal of Permit SW-07/01.

November 6, 2015: The SHWMS modified the Permit to incorporate groundwater-monitoring program requirements associated with EPA's Coal Combustion Residual (CCR) Rule published in April 2015 and effective October 2015. This modification incorporates the federal minimum detection criteria and assessment criteria for the determination of background levels into the current monitoring program. Upon completion of the background sampling regiment and a review of the background report submission, the monitoring program will be modified to return the facility to the semi-annual detection-monitoring schedule or other monitoring schedule deemed necessary by the Department. This modification also clarifies other aspects of the current monitoring program, removes and/or updates outdated information, and corrects typographical changes deemed minor to the Department. This modification is considered minor in accordance with Section 4.1.7 of DRGSW.

March 9, 2018: Permit SW-12/01 was modified to remove Well 2A from the water level monitoring list; Well 2A was abandoned without replacement. Wells 105B and 106 were abandoned; Wells 105BR and 106R were installed as replacements for the abandoned wells. The permit was also modified to include waste from the on-site industrial wastewater treatment plant to the list of acceptable wastes for the facility. This modification also includes the replacement of the approved November 2010 (last revised December 2011) *Operations Plan* with a newly created *Operations Manual* and its supporting documents. Other modifications include updating the permittee information, adding clarification on the accumulation/storage of waste within the landfill footprint, the reorganization of Permit Condition II - Construction, incorporating federally mandated requirements, incorporating leachate head exceedance reporting requirements, removing monitoring requirements associated with background constituent level determinations, aligning State and Federal documentation submission deadlines, and the correction of typographical/grammatical errors. This modification is considered major in accordance with Section 4.1.7 of DRGSW.