

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
ENERGY FACILITY SITING BOARD**

**IN RE: INVENERGY THERMAL DEVELOPMENT LLC's  
APPLICATION TO CONSTRUCT THE  
CLEAR RIVER ENERGY CENTER IN  
BURRILLVILLE, RHODE ISLAND**

**DOCKET No. SB-2015-06**

**PRE-FILED DIRECT TESTIMONY OF  
JEFFREY HERSHBERGER**

**(JUNE 30, 2017)**

## **SUMMARY**

Jeffrey Hershberger is a professional geologist for ESS Group, Inc. and testifies regarding the existing geology, soils and groundwater and surface water conditions. Mr. Hershberger also testifies regarding Clear River Energy Center's ("CREC's") environmental impact to topography and geology and describe impacts of the construction and operation of CREC as relates to ground and surface water resources in the vicinity of CREC. Mr. Hershberger, relying on his experience and expertise, the materials provided in support of the application as supplemented, the materials prepared by ESS and HDR, Inc. relating to the design and infrastructure of CREC and his own analysis, opines that CREC will not cause unacceptable harm to the geology and ground and surface water resources in the vicinity of CREC.

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TESTIMONY OF JEFFREY G. HERSHBERGER, ESS GROUP, INC**

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**I. INTRODUCTION**

**Q. PLEASE STATE YOUR NAME, BUSINESS TITLE AND BUSINESS ADDRESS.**

**A.** My name is Jeffrey G. Hershberger. I am a Professional Geologist for Environmental Geosciences and Engineering at ESS Group, Inc. ("ESS"), located at 10 Hemingway Drive, Riverside, RI 02915.

**Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

**A.** My testimony is on behalf of the applicant, Invenergy Thermal Development LLC ("Invenergy"), in support of its application (the "Application") for a license from the Rhode Island Energy Facility Siting Board ("EFSB" or "Board") to construct the Clear River Energy Center project in Burrillville, Rhode Island ("Clear River" or "CREC" or "the Project").

**Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.**

**A.** I received my bachelors in science in geology from Juniata College and my masters in science in geology from the University of Massachusetts. I have more than twenty-six (26) years of experience regarding environmental consulting focusing on the assessment of impacts to soil and groundwater resources, hydrogeologic investigations and water supply feasibility evaluations, permitting and development. A detailed description of my educational background and professional experience is included in my CV, filed with the Board on September 12, 2016.

1 **Q. PLEASE DESCRIBE YOUR EXPERIENCE BEFORE REGULATORY**  
2 **COMMISSIONS, BOARDS, AGENCIES OR AS AN EXPERT WITNESS.**

3  
4 **A.** I have provided expert testimony for a proposed electrical generation facility in Ramapo,  
5 New York on the subjects of geology, groundwater and surface water.

6 As an environmental consultant, I routinely represent clients before municipal, state,  
7 regional and federal regulatory authorities. These assignments frequently include reviews of  
8 proposed development plans.

9 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

10  
11 **A.** The purpose is to explain CREC’s environmental impact, including groundwater and  
12 surface water analysis. I will testify regarding the topics described in Sections 6.2.1 (Ground  
13 Water) and 6.2.2 (Surface Water) in the Application, as supplemented.

14 **Q. PLEASE DESCRIBE YOUR FAMILIARITY WITH CREC.**

15 **A.** I have supported CREC in the development of the Application on the subjects of geology,  
16 groundwater and surface water. I have also supported CREC during the evaluation of potential  
17 water supply sources (both process and potable), including assessing potential impacts on water  
18 resources, including groundwater and surface water. During these efforts, I have become familiar  
19 with the proposed development of CREC.

20 **Q. WHAT MATERIALS DID YOU REVIEW AND RELY ON WHEN ANALYZING**  
21 **CREC’S ENVIRONMENTAL IMPACTS?**

22  
23 **A.** I have relied on materials provided by the developer and their design engineers, HDR, Inc.  
24 (“HDR”), related to the proposed design of CREC and supporting infrastructure and operation of  
25 CREC. These materials include stormwater design plans, facility layout plans, process water  
26 balances and associated treatment plans, facility staffing plans and plans for the storage of oil and  
27 hazardous materials.

28

1 **II. WATER ANALYSIS**

2  
3 **Q. PLEASE DESCRIBE THE RELEVANT STANDARDS AND REGULATIONS**  
4 **THAT YOU REVIEWED WHEN ANALYZING CREC'S GROUND AND**  
5 **SURFACE WATER.**

6  
7 **A.** I relied on the Rhode Island Department of Environmental Management (“RIDEM”) Rules  
8 and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act,  
9 RIDEM Groundwater Quality Regulations, RIDEM Water Quality Regulations, RIDEM Oil  
10 Pollution Control Regulations and Rhode Island Department of Health (“RIDOH”) Rules and  
11 Regulations Pertaining to Public Drinking Water and Rules and Regulations Pertaining to Private  
12 Drinking Water Systems.

13 **Q. PLEASE EXPLAIN YOUR METHODOLOGY.**

14  
15 **A.** I reviewed the design plans and details, including the stormwater management plans for  
16 the Facility, the Facility layout, water balances and process diagrams for process water treatment  
17 and use, and proposed oil and hazardous material storage facilities for the Project, as provided by  
18 the developer and its design engineers, to assess potential impacts to groundwater and surface  
19 water quality and quantity, including groundwater recharge and surface water flow. I also assessed  
20 the requirements related to the on-site use of groundwater for potable water during the operation  
21 of the facility.

22 I reviewed the revised water balance diagrams under the redesigned Facility plan and also  
23 assessed the proposed demand relative to the capacity and safe yield of various potential water  
24 sources.

25 In support of the development of the January 11, 2017 Water Supply Plan to obtain process  
26 water for the Facility from the Town of Johnston, I reviewed the revised water balance diagrams

1 under the redesigned facility plan and also assessed the proposed demand relative to the capacity  
2 and safe yield of various potential water sources.

3 **Q. DID YOU MAKE ANY FINDINGS REGARDING CREC’S ENVIRONMENTAL**  
4 **IMPACT ON THE GROUNDWATER AND SURFACE WATER? IF SO, PLEASE**  
5 **DESCRIBE.**

6  
7 **A.** Yes, I concluded that the construction and operation of CREC will not adversely impact  
8 groundwater and surface water resources in the vicinity of the Facility. The Facility stormwater  
9 plans have been developed to meet, at a minimum, the local and state requirements. As a result,  
10 the Facility will have minimal impact on surface water and groundwater conditions on the  
11 property. The proposed potable water use (using an on-Site private water supply well) is minimal  
12 (less than 1,000 gpd) and will not have a significant impact on groundwater conditions on the  
13 property or surrounding areas. On-site storage of oil and hazardous materials will also be  
14 performed in accordance with all federal, state and local requirements and, as a result, will have  
15 no measurable impact on surface water or groundwater quality in the area.

16 Additionally, the revised Water Supply Plan has identified a source of process water for  
17 the Facility (Providence Water system through a connection in the Town of Johnston) that has the  
18 capacity to meet the water demands projected for the re-designed Facility, based on water use  
19 projections developed by the Providence Water Supply Board (“PWSB”).

20 **Q. HAVE YOU REVIEWED THE RHODE ISLAND DEPARTMENT OF**  
21 **ENVIRONMENTAL MANAGEMENT’S (“RIDEM”) INITIAL ADVISORY**  
22 **OPINION (SEPTEMBER 12, 2016)?**

23  
24 **A.** Yes.

25  
26 **Q. DO YOU HAVE AN OPINION REGARDING ITS ANALYSIS OF**  
27 **GROUNDWATER AND SURFACE WATER IMPACT?**

28  
29 **A.** I do not have any issues with RIDEM’s analysis of groundwater and surface water impact  
30 in their advisory opinion.

1 I will review and comment as necessary when we receive RIDEM’s supplemental advisory  
2 opinion.

3 **Q. HAVE YOU REVIEWED THE RHODE ISLAND DEPARTMENT OF HEALTH’S**  
4 **(“RIDOH”) ADVISORY OPINION?**

5  
6 **A.** Yes.

7  
8 **Q. DO YOU HAVE AN OPINION REGARDING ITS ANALYSIS OF**  
9 **GROUNDWATER AND SURFACE WATER IMPACT?**

10  
11 **A.** The RIDOH Advisory Opinion only provides a limited opinion on groundwater and surface  
12 water quality and quantity under the topic of Drinking Water Quality (Issue 4). They make a  
13 statement that “the construction may impact the quantity and quality of the water of wells in the  
14 vicinity of the plant and its construction activities”, but do not provide any supporting  
15 documentation. In their summary and conclusions, RIDOH also states that “effort should be made  
16 to protect these and all other sourcewaters from contamination through each phase of the project,  
17 including construction and operation.” Invenergy will undertake such efforts, and it is therefore  
18 my professional opinion that the potential for adverse impacts to groundwater and/or surface water  
19 quality or quantity is minimal. The following provides some detail on the efforts to be undertaken  
20 during the construction and operation of CREC to protect groundwater and surface water quality  
21 and quantity in the vicinity of the Project site.

22 Stormwater will be managed in accordance with the requirements of RIDEM’s Rhode  
23 Island Stormwater Design and Installation Standards Manual. Invenergy’s Stormwater  
24 Management Plan For Clear River Energy Center, which includes the Soil Erosion and Sediment  
25 Control Plan, was filed with the Board on May 16, 2017 and included as Appendix J in the  
26 Application to Alter Freshwater Wetlands (dated March 2017) submitted to the RIDEM and the  
27 U.S. Army Corps of Engineers (“ACOE”). The potential for any illicit discharges from the Facility

1 will be controlled through the Rhode Island Pollutant Discharge Elimination System (“RIPDES”).  
2 As noted in the Stormwater Management Plan, the Project is not discharging to any municipal  
3 separate storm sewer systems (“MS4s”) and plans to provide source control best management  
4 practices (“BMPs”) to prevent or minimize the use or exposure of pollutants into stormwater runoff  
5 at the site to prevent or minimize the release of these pollutants into stormwater runoff.

6 A Spill Prevention Control and Countermeasures (“SPCC”) Plan will be developed for  
7 CREC that will address the on-site storage of hazardous materials, associated training and  
8 emergency response procedures. As noted in the responses to RIDEM’s First Set of Data Requests,  
9 the fuel oil storage tanks and associated appurtenances will be designed to meet state and local  
10 regulations and codes, including the RIDEM Oil Pollution Control regulations.

11 As noted in the Application and the responses to RIDEM’s Third Set of Data Requests,  
12 dewatering may be necessary to control surface or subsurface water to allow the necessary  
13 construction activities to be performed. The requirements for any dewatering would be specified  
14 under the RIPDES General Permit. Water generated under any dewatering would be treated, as  
15 required under the permit, prior to discharge to the hydrologic system as close as possible to the  
16 dewatering location.

17 The Facility will utilize a private water supply well that will be approved through the  
18 RIDOH Rules and Regulations Pertaining to Private Drinking Water Systems and through the  
19 Town of Burrillville as part of the occupancy permit approval process. The quantity of  
20 groundwater proposed to be used at the CREC site post construction will be very small (projected  
21 at less than 1,000 gallons per day assuming approximately 23 workers combined for all shifts per  
22 weekday). This will not have a significant impact on nearby water users.

23 **Q. HAVE YOU REVIEWED THE PASCOAG UTILITY DISTRICT’S ADVISORY**  
24 **OPINION?**



1 A. Yes.

2

3 **Q. DO YOU HAVE AN OPINION REGARDING ITS ANALYSIS OF**  
4 **GROUNDWATER AND SURFACE WATER IMPACT?**

5

6 A. The Pascoag Utility District (“PUD”) focuses on the use of PUD Well #3A to supply  
7 process water for the Facility, which is no longer planned for the CREC facility. PUD’s analysis  
8 and conclusions are no longer relevant to this proceeding.

9 **Q. HAVE YOU REVIEWED THE REVISED WATER SUPPLY PLAN, FILED WITH**  
10 **THE BOARD ON JANUARY 11, 2017?**

11

12 A. Yes.

13 **Q. DOES THE REVISED WATER SUPPLY PLAN IMPACT YOUR ANALYSIS? IF**  
14 **YES, PLEASE EXPLAIN.**

15

16 A. Yes, the revised Water Supply Plan does impact my analysis. The revised Water Supply  
17 Plan details a plan to provide process water from the Providence Water Supply Board (PWSB; i.e.,  
18 Scituate Reservoir) through a connection in the Town of Johnston. The process water demand for  
19 CREC, under the re-designed facility plan, is reasonable and within the safe yield of the Scituate  
20 Reservoir given current and reasonably foreseeable future demands, based on projections by the  
21 PWSB. I understand George Bacon will provide further details on this subject.

22 **Q. DO YOU HAVE AN OPINION, TO A REASONABLE DEGREE OF SCIENTIFIC**  
23 **CERTAINTY, WHETHER CREC WILL NEGATIVELY IMPACT THE GROUND**  
24 **AND SURFACE WATER SURROUNDING CREC?**

25

26 A. I do. In my opinion the construction and operation of the CREC will not adversely impact  
27 groundwater and surface water resources in the vicinity of the Facility.

28 The proposed potable water demand for the Facility is minimal and will have no significant  
29 impact on groundwater conditions in the vicinity of the Facility.

30 Additionally, the proposed approach for providing process water to the Facility, as outlined  
31 in the revised Water Supply Plan, is reasonable and the projected water demand is within the

1 calculated safe yield for the water source (Scituate Reservoir), based on projections prepared by  
2 the PWSB. Implementation of the revised Water Supply Plan will not significantly impact  
3 groundwater and surface water resources in the vicinity of the facility.

4 **Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?**

5

6 **A.** Yes.