STATE OF VERMONT
PUBLIC SERVICE BOARD

Petition of Champlain VT, LLC d/b/a TDI New England for a Certificate of Public Good, pursuant to 30 V.S.A. §248, authorizing the installation and operation of a high voltage direct current (HVDC) underwater and underground electric transmission line with a capacity of 1,000 MW, a converter station, and other associated facilities, to be located in Lake Champlain and in the Counties of Grand Isle, Chittenden, Addison, Rutland, and Windsor, Vermont, and to be known as the New England Clean Power Link Project ("NECPL")	)	Docket No. _____

PREFILED DIRECT TESTIMONY OF KRISTEN HEITERT

ON BEHALF OF CHAMPLAIN VT, LLC

December 8, 2014

Summary:

Ms. Heitert provides testimony regarding potential impacts to historic sites (archaeological resources) along the NECPL's overland route, under 30 V.S.A. § 248(b)(5) and 10 V.S.A. § 6086(a)(8) (Historic Sites).

Exhibit Number	Name of Exhibit
TDI-KBH-1	Resume
TDI-KBH-2	NECPL Phase 1 Archeological Report – Overland Route (PAL)

Q1. Please state your name and position relative to this Project.

A1. Response**:** Kristen B. Heitert, senior archaeologist/principal investigator, The Public Archaeology Laboratory, Inc. ("PAL"), 26 Main Street, Pawtucket, Rhode Island. I directed the Phase IA archaeological reconnaissance survey for the proposed New England Clean Power Link Project ("NECPL" or "Project").

Q2. Please describe your qualifications and expertise.

A2. Response**:** I hold a Bachelor's Degree in Anthropology and History from the University of Connecticut (Storrs, Connecticut), and a Master's Degree in historical archaeology from the College of William and Mary (Williamsburg, Virginia). I have worked as a cultural resource management consultant for 15 years. At PAL, I supervise and coordinate research, excavation, analyses, and report preparation at all levels of archaeological investigation in the eastern United States. I specialize in cultural resource sensitivity assessments, pre- and post-contact period archaeological context development, and archaeological investigations at rural and urban historic sites.

Q3. Have you previously testified before the Public Service Board or in other judicial or administrative proceedings?

A3. Response**:** No.

Q4. What is the purpose of your testimony?

A4. Response: I testify regarding potential impacts to historic sites (archaeological resources) along the NECPL's overland route, under 30 V.S.A. § 248(b)(5) and 10 V.S.A. § 6086(a)(8) (Historic Sites).

Q5. What work have you performed concerning the effects of TDI-NE's proposed Project archaeological resources?

A5. Response: I developed and implemented the scope of work to conduct a Phase IA archaeological reconnaissance survey for the approximately 56-mile long overland portion of the Project. The survey methods consisted of background research, including the development of a preliminary "desktop" archaeological sensitivity model, and field investigations consisting of a walkover assessment.

The research consisted of a review of state archaeological site files, environmental studies, cultural resource management reports, and secondary historical literature and maps. The desktop sensitivity assessment was performed using ArcGIS Explorer and consisted of geo-referenced Project maps overlaid with data layers consisting of USGS topographic quadrangles, aerial imagery, wetlands data, USDA soils, topographic contours, surficial and bedrock geology maps, VDHP-inventoried archaeological site locations, and historical maps. Pre-contact sensitivity was assessed using VDHP's Environmental Predictive Model (EPM). This model assigns positive or negative scores to environmental variables (e.g. degree of ground slope; proximity to rivers, streams, and wetlands; proximity of previously identified sites) within a defined area, and then compares the total score to a predetermined valuation scale; a score of less than 32 is assessed as archaeologically non-sensitive and a score of 32 or

greater is considered archaeologically sensitive. The EPM does not consider the potential for post-contact sites. This potential was preliminarily assessed using historical maps, general environmental conditions, and landscape disturbances as observed or inferred through recent aerial imagery. This information was then synthesized to develop color-coded field maps identifying segments of the Project as archaeologically sensitive or non-sensitive for pre- and post-contact resources.

PAL staff conducted the walkover assessment of the Project from June 9–27, 2014. The purpose of the walkover was to ground truth and refine the results of the desktop archaeological sensitivity assessment, and to collect information about existing conditions within the Project. To maintain consistency with the overall Project mapping conventions, the length of the survey segments was delineated by mileposts and varied according to topography. The present physical condition of the Project was recorded on field maps with a particular emphasis on those locations at variance with the preliminary desktop sensitivity assessment. Archaeological sites identified within the Project were recorded on the field maps and using a handheld GPS unit with sub-meter accuracy. The locations of previously identified sites within the Project were re-visited as part of the field survey to document current conditions and to identify, to the extent possible, natural or man-made threats to the resources. Digital photographs were taken of all identified sites and of each surveyed segment of the corridor. To supplement the inspection of existing conditions, 23-inch Hoffer auger cores were used to test soil integrity, especially in those areas where previous ground disturbance was suspected or in those locations with questionable archaeological sensitivity.

PAL's Phase IA survey methodology for the NECPL overland route is memorialized in the technical report entitled *Phase IA Archaeological Reconnaissance Survey -- Overland Portion*, ***Exhibit (Exh.) TDI-KBH-2***., pp. 9–16.

Q6. Have you relied on the work of any other experts concerning this Project?

A6. Response: I relied on GIS-based Project mapping provided by TRC Companies, Inc. and archaeological site information from the Vermont Division for Historic Preservation ("VDHP") and the Vermont Agency for Transportation ("VTrans"). Certain information about cultural resources within the Project was applicable to both archaeological sites and historic architectural resources. For such information, I consulted with Stephen Olausen, PAL Senior Architectural Historian.

Q7. Have you provided Project information to other experts in support of their section 248 testimony and if so, what?

A7. Response: No.

30 V.S.A. § 248 (b)(5) and 10 V.S.A. § 6086(a)(8) – Historic Sites

Q8. Did you review and consider impacts to historic structures and specifically archaeological resources?

A8. Response: Yes.

Q9. Please describe your review of potential archaeological sites.

A9. Response: My review of potential archaeological sites consisted of a Phase IA archaeological reconnaissance survey conducted in compliance with survey and research methods detailed in the VDHP/State Historic Preservation Office's (SHPO) *Guidelines for Conducting Archaeology in Vermont and Appendices (2007).* The survey consisted of: 1) delineating a recommended direct effect (Area of Potential Effect, or "APE") for the Project; 2) inventorying previously recorded archaeological sites within the recommended Project APE; and 3) identifying areas of archaeological sensitivity within the recommended Project APE that could contain pre- and post-contact sites potentially eligible for listing in the State or National Register of Historic Places. See our Phase IA Report, at pp. 9–16. PAL's scope of work for the Phase IA survey, including the recommended Project APE, was reviewed and approved by Scott Dillon (Survey Archaeologist, VDHP) via email on April 21, 2014.

The survey identified archaeologically sensitive areas along approximately 11.6 linear miles (21%) of the Project and in four of the five proposed work parcels in Alburgh, Benson, and Ludlow, Vermont. The survey also identified three previously recorded pre-contact sites, one previously recorded post-contact site, and four field-identified archaeological resources consisting of nineteenth-century residential and outbuilding foundation remains. See our Phase IA Report, at pp. 59–140.

To protect sensitive site location information as per the Vermont Historic Preservation Act, as amended, (22 VSA 14, section 761) that establishes that the location of archeological sites shall be kept confidential and Title 1 of Vermont Statutes Annotated, Chapter 5, Section 317 (20) that exempts archeological site locations from the "right-to-know" law, Project mapping contained in a confidential appendix to the Phase IA report

illustrates the locations of known archaeological sites and sensitivity locations and has been furnished only to the Vermont Division of Historic Preservation in a separate filing.

Q10. Please describe your assessment of potential impacts to any archaeological resources along the Project corridor.

A10. Response: The archaeologically sensitive areas, previously recorded sites, and field-identified archaeological resources within the recommended APE all have the potential to be impacted by the Project through activities including (but not limited to): subsurface excavations for transmission line installation; grading and filling activities; construction and use of staging and access areas; and clearing and excavation to accommodate directional drill entry and exit locations and Converter Station construction. See our Phase IA Report, at pp. 141–143.

Q11. Please describe your recommendations concerning archaeological resources along the Project corridor.

A11. Response: As a result of the Phase IA survey, a Phase IB archaeological survey is recommended for those locations within the recommended Project APE assessed with moderate–high archaeological sensitivity and subject to Project-related impacts. The purpose of the Phase IB survey will be to locate, identify and, to the extent possible, evaluate the potential National Register eligibility of previously recorded and unrecorded archaeological sites within the Project. The Phase IB survey will be scheduled so that any additional archaeological work that may be necessary can be satisfactorily planned and accomplished before Project construction. Any new or revised Project plans should be submitted to the VDHP for review as soon as they become available.

If archaeological sites are identified during the Phase IB survey, it is recommended that TDI-NE review Project plans to determine whether the identified resource(s) can be avoided. If avoidance is not feasible, Phase II (site evaluation) investigations are recommended to delineate site boundaries and evaluate the National Register eligibility of the resource(s). If the resource(s) is determined eligible for listing on the National Register and cannot be avoided during Project construction, measures should be prepared to mitigate the adverse effect of the Project to the site. These measures may include, but are not limited to, Phase III (data recovery) excavations.

All archaeological work in support of the Project will be carried out by a qualified consulting archeologist, and will be conducted in accordance Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; Section 106 of the National Historic Preservation Act of 1966, as amended, and related regulations (36 CFR 800); and the guidelines provided in the VDHP/SHPO's *Guidelines for Conducting Archaeology in Vermont and Appendices* (VDHP 2007).

Any proposed site evaluation and mitigation measures must be discussed with and approved by the VDHP before implementation. The results of the Phase IB archaeological survey and any additional archaeological investigations that may occur as a result of the Phase IB survey will be presented in one or more final reports, as appropriate, that meet state and federal reporting standards.

Q12. If TDI-NE adopts the recommendations contained in your prior answer, do you have an opinion about whether the Project can be constructed without causing any undue adverse impacts on historic archaeological resources?

A12. Response: Yes, it is my opinion that if the recommendations I previously described are adopted and followed by TDI-NE, the Project may be constructed without causing any undue adverse impacts to archaeological resources.

Q13. Does this conclude your testimony at this time?

A13. Response: Yes.