

**APPENDIX F ATCO LETTER RE VERMILION 710S SUBSTATION**

May 24, 2016

Ed Mayer  
Alberta Electric System Operator (AESO)  
2500, 330 5 Ave SW  
Calgary, AB T2P 0L4

Cc: Ramaiah Divi, AESO  
Sami Abdulsalam, AESO

**RE: Vermilion 710S: Inability to Route Additional Transmission Lines through the Town of Vermilion into 710S**

Dear Mr. Mayer,

On May 5, 2016, the AESO informed ATCO Electric (AET) that the NID class estimate directions would be sent to AET in June 2016. To exclude Vermilion 710S from consideration in the NID estimate request, the AESO informed AET that a signed letter with technical reasoning for the exclusion would need to be officially transmitted from AET to the AESO prior to May 26, 2016.

This letter is intended to provide sufficient technical evidence to exclude Vermilion 710S from consideration in the AESO long term plan (LTP) and following NID estimate requests.

**Description of Additional Transmission Line Constraints into Vermilion 710S**

As previously provided to the AESO under P1473 Vermilion-Red Deer and Edgerton – Provost 240 kV Transmission Development (VREPTD) NID Land Impact Assessment (LIA), the termination of an additional transmission line into Vermilion 710S was rejected due to Right of Way (ROW) constraints. From the VREPTD LIA the following quotes are extracted:

From Section 3.2.2 Residences

“...a significant high density pocket on lands in proximity to the Town of Vermilion and adjacent to the Vermilion Substation.”

From Section 4.2.1:

“The Vermilion substation is constrained by the Vermilion Provincial Park, the Town of Vermilion residential development and a Town road, the Vermilion River and the Vermilion airstrip to the northeast of the substation. Substation expansion is further constrained by Highway 41 to the west, a Town road to the south, existing transmission

lines and the topographical features in proximity to the substation. The substation fenced area currently encroaches on the Highway road plan for Highway 41.”

Please refer to Attachment A.

“All new line terminations would require utilizing existing transmission right-of-ways and termination bays.”

The reuse of existing transmission right of ways would require prolonged outages even if AET could manage to add a new 144 kV breaker bay into Vermilion 710S.

- Please refer to Attachment B. Existing 7L65 and 7L129 exit Vermilion substation to the west and are already double circuit structures outside of the substation excluding the use of this ROW from consideration for a future new line addition within existing corridors.
- Please refer to Attachment C and Attachment D. Existing 7L117 and 7L130 have 6.1 m right of ways (ROW) to distances outside of the town of Vermilion which exclude them from being able to accommodate double circuit structures. Even with possible innovate line design considerations; the proximity of the airport causes height restrictions that would eliminate the 7L130 ROW from consideration. Exiting north would require subsequent routing to the east to avoid the Vermilion Provincial Park again bringing in the height restriction considerations as well as additional line lengths if this was to be avoided.

ATCO does not have a double circuit structure that presently could fit within a 6.1 m ROW as the typically double circuit ROW is 18 m.

### **Conclusion**

ATCO Electric concludes that Vermilion 710S cannot accommodate the termination of another transmission line due to ROW restrictions to gain access through the town of Vermilion.

I trust the information presented here meets your requirements to provide sufficient technical reasoning why additional line terminations into the Vermilion 710S should be eliminated from future consideration.

If you have any questions, please feel free to contact me at (780) 508-4761, or by email at [Guillaume.Vachon@atco.com](mailto:Guillaume.Vachon@atco.com).

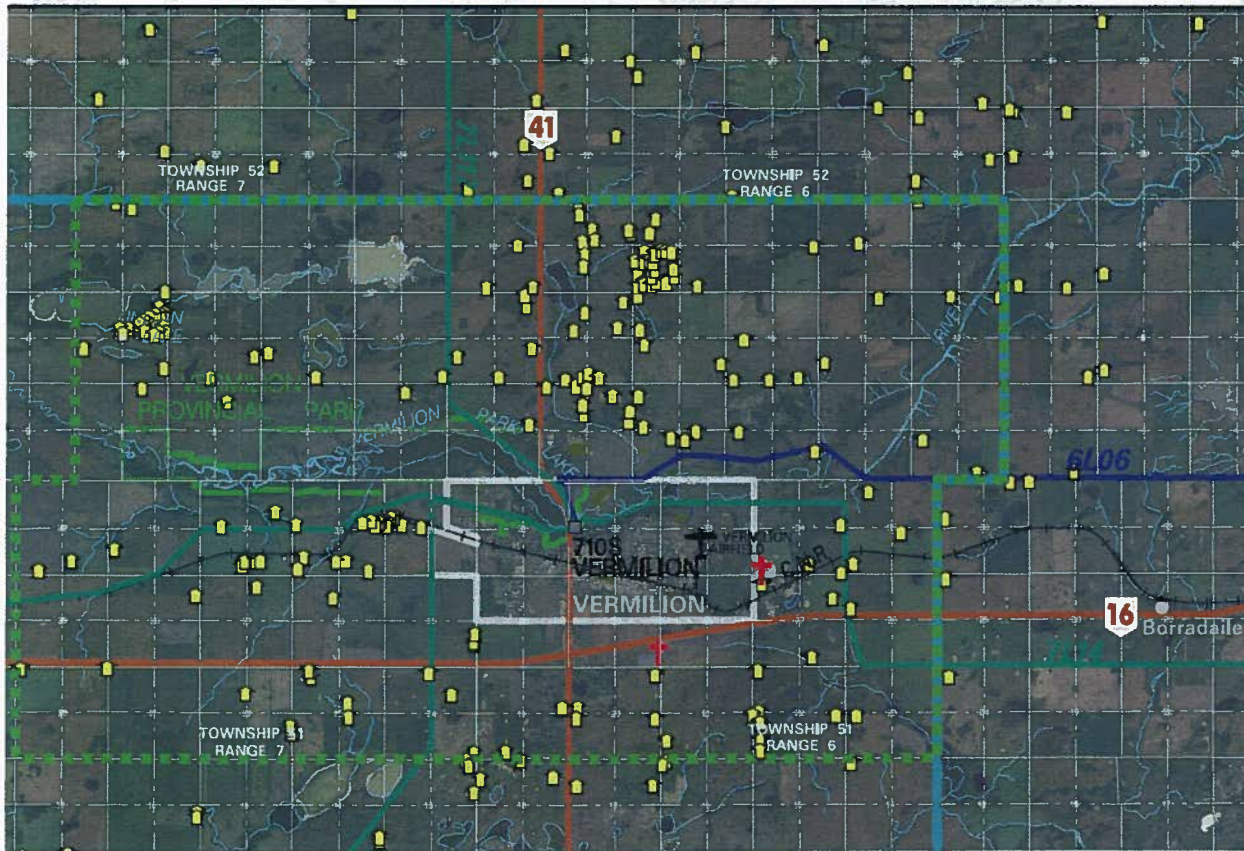
Regards,







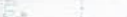







Guillaume Vachon, P.Eng.  
Director, Projects




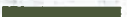


## Attachment A: Land Use Mosaic Map for Vermilion Substation Area



### LEGEND

-  Substation C to TFO Boundary Study Area Boundary
-  Substation C Study Area Boundary
-  TFO Boundary
-  Existing 240 kV Transmission Line
-  Existing 144 kV Transmission Line
-  Existing 72 kV Transmission Line
-  Approved 500 kV Transmission Line
-  Existing Substation
-  Secondary Highway
-  Primary Highway
-  Railway
-  Residence

### Land Use

-  Provincial Park
-  Commercial and Industrial Areas
-  Cemetery
-  Airfield







## Attachment C: 7L117 and 7L130 ROW width outside of Vermilion 710S substation

Figure C-1: 7L130 ROW width is 6.1m up to and including structure 20 outside of Vermilion 710S

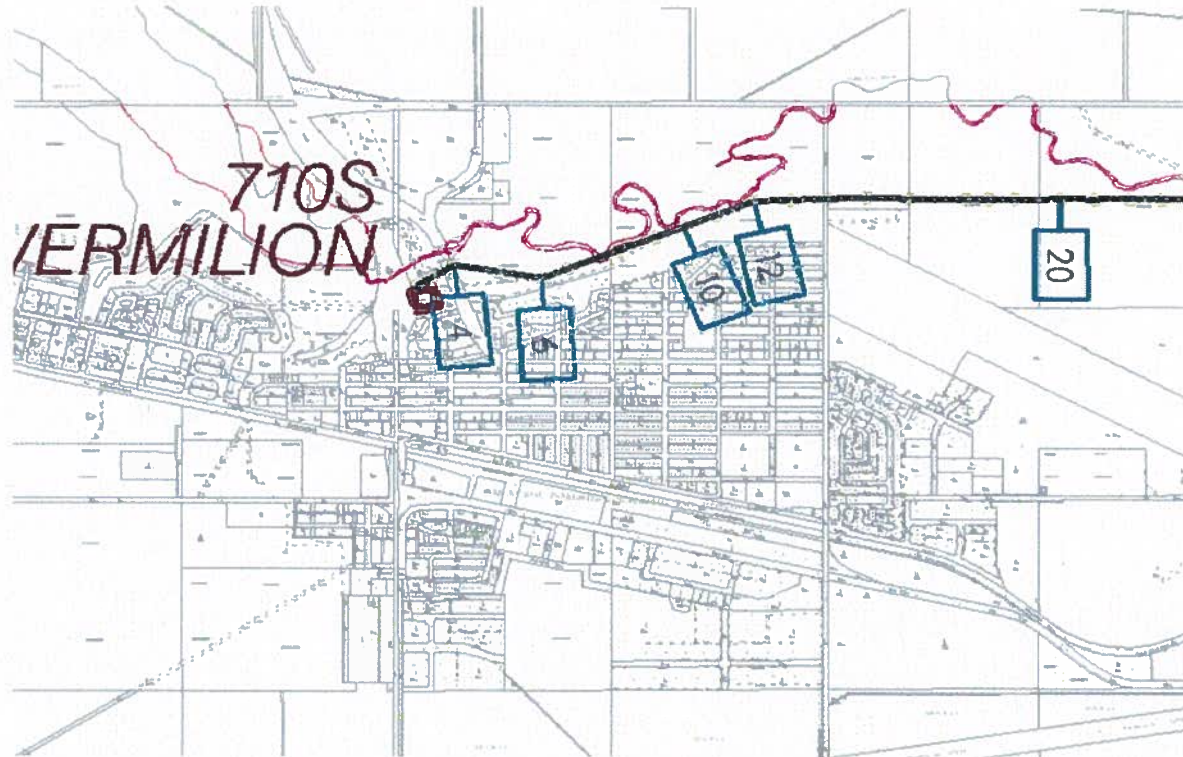


Figure C-2: 7L117 ROW width is 6.1m up to and including structure 4 outside of Vermilion 710S.

