

**STAFF SUMMARY**  
**Method 2A Application for Certification of**  
**Corn Ethanol Dry Mill with DGS Co-Product Credit LCFS Pathways**  
**Highwater Ethanol, LLC.**  
**Lamberton Minnesota**  
**(Fuel Pathway Code: ETHC115)**

Date Deemed Complete: October 29, 2015

Posted Date: November 20, 2015

Date Certified: December 1, 2015

**Pathway Summary**

Highwater Ethanol operates a corn ethanol plant in Lamberton, Minnesota. Highwater Ethanol has applied for a Method 2A pathway for this plant under the California Low Carbon Fuel Standard (LCFS). The plant is an ICM-designed, dry mill, natural gas-fired facility with a nameplate capacity of 50 million gallons per year of denatured ethanol. According to Air Emissions Permit Number 12700053-003, issued by the Minnesota Pollution Control Agency, the plant can currently produce up to 58 million gallons of undenatured ethanol per year. The plant obtains its feedstock from local farms within 50 miles of the plant. Highwater also produces dried distiller's grains with solubles (DDGS, approximately 10-15% moisture), modified distiller's grains with solubles (MGDS, approximately 35-40% moisture), and corn oil.

**Carbon Intensity (CI) of the Highwater Pathway**

The applicant has applied for a corn ethanol pathway. Staff has assigned ETHC115 as the fuel pathway code. The applicant provided two years of natural gas and electricity invoices covering the months of September 2012 through August 2014. Using average energy consumption values calculated from these invoices and other facility-specific CA-GREET inputs, the applicant calculated a CI of 85.90 gCO<sub>2</sub>e/MJ. The Highwater pathway improves upon its reference pathway CI by more than the requisite five gCO<sub>2</sub>e/MJ.

Proposed Method 2A pathways must be evaluated against reference pathways from the LCFS Lookup table. Although a Method 2A pathway must be very similar to its reference pathway, it must achieve at least a five gram CO<sub>2</sub>e/MJ CI improvement over the reference pathway.<sup>1</sup> The Highwater Ethanol, LLC pathway is a dry mill, natural gas-fired facility similar to reference pathway ETHC004 (CI of 98.40 gCO<sub>2</sub>e/MJ) - Midwest;

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<sup>1</sup> In the LCFS regulation, this 5 gCO<sub>2</sub>e/MJ threshold is referred to as the "substantiality requirement."

Dry Mill; Dry DGS, NG - however, energy use (natural gas and power) at the plant is less per gallon produced than in the reference pathway, and ethanol yield per bushel of corn is higher than the reference pathway.

### Proposed Lookup Table Entries

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO <sub>2</sub> e/MJ)		
			Direct Emissions	Land Use and Other Indirect Effects	Total
Ethanol from Corn	ETHC115	2A Application*: Midwest; Dry Mill; Dry DGS; NG	55.90	30	85.90

\*Specific Conditions Apply

### Operating Conditions

Operations at the plant will be subject to the following operating conditions designed to ensure that the CI of the corn ethanol produced at the Highwater plant will remain at or below the values appearing in table above.

- No conditions are placed on the amounts of electricity and natural gas consumed and the ethanol yield at the Highwater plant, so long as the CIs reported in the above table is not exceeded. For purposes of determining compliance with this operating condition, the plant's CI will be calculated based on data from the most recent 12 months of operation, excluding periods of abnormal operations, such as planned maintenance or unpredictable, unavoidable, and uncontrollable force majeure events. The plant's thermal and electrical energy use and ethanol yield values are classified by the applicant as confidential business information.
- As long as the pathway CI (85.90 gCO<sub>2</sub>e/MJ) is not exceeded, fuel pathway code (FPC) ETHC115 may be used to report transactions involving volumes from the Highwater plant, regardless of the amount of DDGS the plant produces.

### Staff Analysis and Recommendations

Staff has reviewed the Highwater Method 2A application and finds the following:

- Staff has replicated, using the CA-GREET1.8b spreadsheet, the carbon intensity value calculated by the applicant;

- Staff has concluded that the plant's actual thermal and electrical energy consumption are not likely to exceed the thermal and electrical energy consumption levels specified in Highwater Method 2A application; and
- Staff has concluded that Highwater is capable of operating its plant in a manner such that the ethanol yield is equal to or greater than the corresponding value specified in Highwater Method 2A application, and that compliance with the operating conditions above can be maintained.

On the basis of these findings, ARB staff recommends that Highwater application for the above Method 2A LCFS pathways be certified.