

Block 4 and FLR 20.2

Leveling the playing field, Providing tools for regulators and Ensuring the consumer gets what they paid for

January 26, 2020

Issues for the consumer and the market

- EPA created several additional requirements to allow E15 to take advantage of the 1-psi waiver but Handbook 130 does not cover the other key changes
- An unlevel playing field for E15 retailers
 - Retailers selling E15 made with uncertified hydrocarbons could give them an economic advantage over their competitors
- Customers could be buying E15 products that are different but are told they're the same
- A lack of tools to enforce the unlevel playing field and consumer product quality

Ground setting - Fuel Requirements

- **Ethanol flex fuel (EFF)**

- EFF can have significant variations in vapor pressure and ethanol content depending on season and geography.
- EFF has different compositional/regulatory requirements than gasoline-ethanol blends (E1-E15) since it is offered for use in flex fuel vehicles.
- EFF may or MAY NOT contain components certified to meet the requirements of D4806 and D4814

- **Gasoline-ethanol blends (E1-E15)** require the use of certified components

- **Ethanol manufacturers** must certify denatured ethanol to ASTM D4806
- **Refiners/Importers** must certify gasoline or gasoline-ethanol blends to ASTM D4814
- Containing certified components is one of the requirements to receive the EPA 1 psi ethanol waiver for E9-E15.

- **EFF blending to make E1-E15** still requires certified components

- E1-E15 blending using EFF containing components NOT certified to D4806 and D4814 requires certification at the point of blending.

NCWM

Block 4 – MOS-20.2 and FLR-20.3

2.20.2. Documentation for Dispenser Labeling Purposes.

3.2.5. Documentation for Dispenser Labeling Purposes.

a.k.a. -- Product Transfer Document requirements – know what is being provided by the supplier

Know what is being supplied

HB 130 includes requirements for Product Transfer Documents (PTD) by citing 40 CFR 1503

- 40 CFR 1503 has requirements for a PTD for ethanol content of gasoline with less than 9% ethanol, and gasoline containing more than 9% ethanol

Gap: There are no PTD requirements for EFF in HB 130 or federal code

Why it matters:

- Retail gasoline stations need to know the volume of ethanol in the EFF to accurately blend it with E0/E10 to manufacture E15

Fix: Add a PTD requirement for EFF

Wisconsin E85 Retail Blending

- Wisconsin Bureau of Weights and Measures on E15
 - “E85, or flex fuel, is a term that refers to high-level ethanol-gasoline blends containing 51%-83% ethanol, depending on geography and season
 - Because of the range in possible ethanol content of E85, retailers must ensure the blend ratio on all dispensers are set to properly blend for E15 at all times”¹
 - “There are two ways to ensure proper blend ratio:
 - Program the dispensers for the maximum ethanol content of the E85/Flex Fuel
 - Have a service company adjust the blend ratios every time the ethanol content in the E85/Flex Fuel changes
 - This requires regular monitoring of the ethanol content of the E85/Flex Fuel you are receiving and prompt action when the ethanol content changes”²

¹ E15: What Retailers and Service Companies Need to Know, Wisconsin Bureau of Weights and Measures, https://www.wpmca.org/assets/ethanol/E15_What_Retailers_Need_to_Know.pdf, slide 24.

²IBID, slide 25.

NCWM – FLR-20.2

1.23. Ethanol Flex Fuel and

2.1. Gasoline and Gasoline-Oxygenate
Blends

1-psi E15 waiver comes with new fuel rules

1.23 Definition

Gap: HB 130 definition of EFF is only applicable to alternative fuels. Fed regs do not allow EFF made with uncertified Natural Gas Liquids (NGL) to be used as a blendstock for E15.

Why it matters:

- EFF can be blended for ultimate sale to FFVs with uncertified components
- EFF as a blendstock for making E15 at the pump **MUST** have certified components
- EFF made without certified components can impact fuel quality for the customer and could create economic disadvantages (assuming historical differentials remain in place)
 - **High RVP, low octane**, different distillation curve (T10, T50) and impurities (Sulfur, high benzene)

Fix: Expand the definition to indicate that EFF must have certified components when intended for use with E15

1-psi E15 waiver comes with new fuel rules

2.1.2(b)

Gap: Feds do not allow E15 to be made with EFF that is made with uncertified NGLs. This requirement is not covered in HB 130.

Why it matters:

- E15 made with uncertified EFF can impact the consumer
 - **High RVP, low octane**, different distillation curve (T10, T50) and impurities (Sulfur, high benzene)
- Consumers are unable to price compare when one E15 is made with uncertified components and the other is not
- Unlevel playing field at retail station selling E15
 - NGLs historically cost less than gasoline or BOBs which could create an economic disadvantage to those using EFF in conformance with the rules
- Lack of tools in HB 130 for regulators to address noncompliant fuels

Fix: Include requirements that specify EFF must have certified components

1-psi E15 waiver comes with new fuel rules

2.1.2.(c)

Gap: HB 130 references 40 CFR 80.27(d) without the range. The Feds specify the range of the ethanol content

Why it matters:

- HB 130 previously specified the range as “containing 9 to 10 volume percent ethanol”
- Inspectors do not have a definitive range in Handbook 130

Fix: Specify the range as “containing at least 9 and not more than 15 volume percent ethanol”

Background

Block 4 -- MOS-20.2 Proposed Language

2.20.2. Documentation for Dispenser Labeling Purposes. – The retailer shall be provided, at the time of delivery of the fuel, on product transfer documents such as an invoice, bill of lading, shipping paper, or other documentation:

- (a) Information ~~that complies with 40 CFR 80.1503~~ when the fuel contains ethanol as described below.

(Added 2014, Amended 20XX)

(1) Per 40 CFR 80.1503, For gasoline containing less than 9 volume percent ethanol, the following statement: “EX - Contains up to X% ethanol. The RVP does not exceed [fill in appropriate value] psi.” The term X refers to the maximum volume percent ethanol present in the gasoline.

(2) Per 40 CFR 80.1503, For gasoline containing 9 or more volume percent ethanol, a conspicuous statement that the gasoline being shipped contains ethanol and the percentage concentration of ethanol as described in 40 CFR 80.27(d)(3).

(3) **In order** to meet the requirements of 40 CFR 80.28(g)(8), for ethanol flex fuel intended for blending with gasoline or gasoline-ethanol blends, to make gasoline containing not more than 15 volume percent ethanol, the following statement: “EXX contains XX% ethanol.” The term XX refers to the volume percent ethanol present.

(Added 20XX)

(b) For fuels that do not contain ethanol, information that complies with 40 CFR 80.1503 and a declaration of the predominant oxygenate or combination of oxygenates present in concentrations sufficient to yield an oxygen content of at least 1.5 mass percent in the fuel. Where mixtures of only ethers are present, the fuel supplier may identify either the predominant oxygenate in the fuel (i.e., the oxygenate contributing the largest mass percent oxygen) or alternatively, use the phrase “contains MTBE or other ethers.”

(c) Gasoline containing more than 0.15 mass percent oxygen from methanol shall be identified as “with” or “containing” methanol.

(Added 1984) (Amended 1985, 1986, 1991, 1996, **and** 2014, and 20XX)

Block 4 -- FLR-20.3 Proposed Language

3.2.5. Documentation for Dispenser Labeling Purposes. – For automotive gasoline, automotive gasoline oxygenate blends, ethanol flex fuel for blending or racing gasoline, the retailer shall be provided, at the time of delivery of the fuel, on product transfer documents such as an invoice, bill of lading, shipping paper, or other documentation:

(a) Information ~~that complies with 40 CFR 80.1503~~ when the fuel contains ethanol as described below.

(Added 2014, Amended 20XX)

(1) Per 40 CFR 80.1503, For gasoline containing less than 9 volume percent ethanol, the following statement: “EX - Contains up to X% ethanol. The RVP does not exceed [fill in appropriate value] psi.” The term X refers to the maximum volume percent ethanol present in the gasoline.

(2) Per 40 CFR 80.1503, For gasoline containing 9 or more volume percent ethanol, a conspicuous statement that the gasoline being shipped contains ethanol and the percentage concentration of ethanol as described in 40 CFR 80.27(d)(3).

(3) **In order** to meet the requirements of 40 CFR 80.28(g)(8), for ethanol flex fuel intended for blending with gasoline or gasoline-ethanol blends, to make gasoline containing not more than 15 volume percent ethanol, the following statement: “EXX contains XX% ethanol.” The term XX refers to the volume percent ethanol present.

(Added 20XX)

(b) For fuels that do not contain ethanol, information that complies with 40 CFR 80.1503 and a declaration of the predominant oxygenate or combination of oxygenates present in concentrations sufficient to yield an oxygenate content of at least 1.0 % by volume in the fuel. Where mixtures of only ethers are present, the fuel supplier may identify either the predominant oxygenate in the fuel (i.e., the oxygenate contributing the largest mass percent oxygen) or alternatively, use the phrase “contains MTBE or other ethers.”

(Added 2014)

(c) Gasoline containing more than 0.3 % by volume methanol shall be identified as “with” or “containing” methanol.

(Added 2014) (Amended 2018)

(Amended 1996, 2014, ~~and~~ 2018 and 20XX)

FLR-20.2 -- Proposed language

1.23. Ethanol Flex Fuel. – Blends of ethanol and hydrocarbons restricted for use as fuel in ground vehicles equipped with flexible-fuel spark-ignition engines. **Ethanol Flex Fuel intended for blending with gasoline and gasoline ethanol blends shall contain certified components e.g., blending of ethanol flex fuel containing natural gas liquids is prohibited unless certified consistent with 40 CFR 80.28(g)(8) requirements.**

(Amended 2014 and 20XX)

2.1.2. Gasoline-Ethanol Blends. – (revised 1/15/2020)

(a) When gasoline is blended with denatured fuel ethanol, the denatured fuel ethanol shall meet the latest version of ASTM D4806, “Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel,” and the shall meet the latest version of ASTM D4814, “Standard Specification for Automotive Spark-Ignition Engine Fuel,” with the ~~following~~ permissible exceptions **in (c).**

(b) When gasoline or gasoline-ethanol blends are blended with ethanol flex fuel to produce a gasoline-ethanol blend, the hydrocarbon portion of the gasoline, gasoline-ethanol blend, and ethanol flex fuel used to produce the new gasoline-ethanol blend shall not exceed the applicable maximum vapor pressure limits of the latest version of ASTM D4814, “Standard Specification for Automotive Spark-Ignition Engine Fuel.”

(Added 20XX)

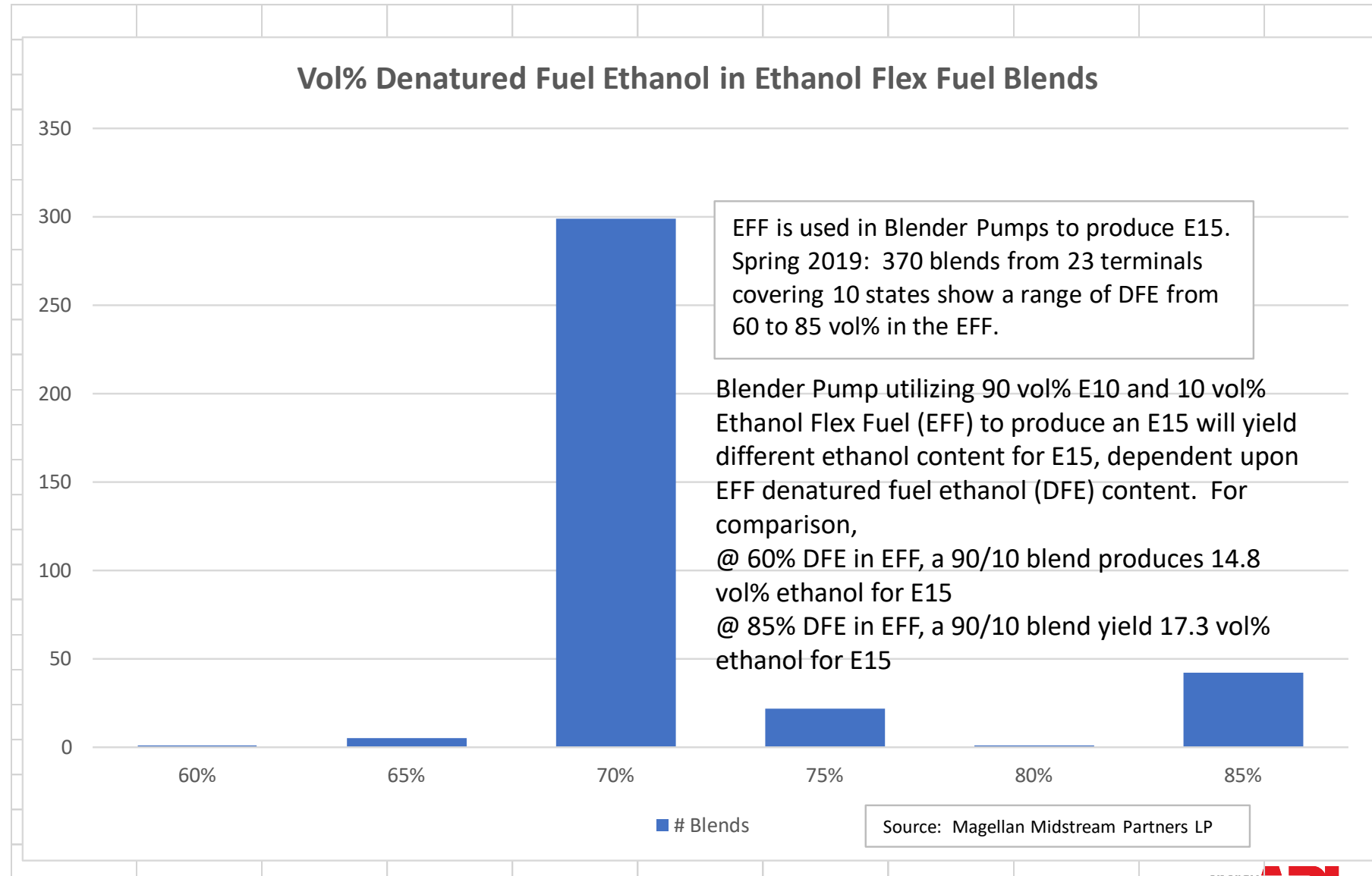
~~(a)~~ **(c)** The maximum vapor pressure shall not exceed the latest edition of ASTM D4814 limits by more than:

(1) 1.0 psi for blends **containing at least 9 and not more than 15 volume percent ethanol** from June 1 through September 15 as allowed by EPA per 40 CFR 80.27(d).

(Amended 20XX)

(Amended 2016, ~~and~~ 2018 and 20XX)

Supporting Data



Additional Supporting Data: 2019 CRC Study

- In July 2019, thirty-eight retail station samples of E15 were obtained from 14 major metropolitan areas across the United States, representing 18 brands, as part of a nationally recognized retail fuel survey and in conjunction with CRC. The following general observations were observed:
- Ethanol Content by Volume ranged from 9.2 to 16.8%. Two (5%) of the 38 samples had ethanol content >15.5.
- AKI ranged from 87.0 to 89.8 with all posted at 88. Four samples (10.5%) were below 88 with two at 87.0.
- Vapor Pressure ranged from 7.0 to 10.1 psi with all being within field compliance tolerance.
- CRC will be issuing a report with all of the data later in 2020 and is considering future surveys of this type.

Additional Supporting Data

- North Carolina Summer 2016 Retail Data from Blender Pumps
 - 20 Fuel blends tested
 - 25% (5 of 20) contain >15 vol% Ethanol (15.6 to 16.8%)
 - 50% (10 of 20) contain <15 vol% Ethanol (12 to 14%)
- CRC E95-2 Retail Fuel Survey Conducted by NREL
 - 73 samples from 20 blender pumps in Midwest taken in Feb 2013
 - E0 to E85 included in fuel set
 - Only 3 samples of E15; all >15 vol% Ethanol (15.8, 17.3, and 17.4 vol%)
- Latest CRC Survey is RW-115
 - Focuses on E15 from Blender Pumps
 - 40+ Samples
 - Results anticipated in late 4Q19

Natural Gasoline

Natural Gasoline, or condensates, are a mix of C1 to C5 hydrocarbons collected from crude oil and natural gas production. Natural Gasoline can have a widely varied range of physical and chemical properties, and blending Ethanol Flex Fuel (E51 to E83) made with Natural Gasoline (condensate) into gasoline to produce E10 or E15 can dramatically change:

- Vapor Pressure: addition of natural gasoline will increase the vapor pressure of the gasoline portion of the blend
- Octane rating: natural gasoline typically has a lower RON and MON.
- Distillation curve: natural gasoline will typically boil at lower temperatures impacting the distillation curve and T10 and T50 performance attributes.
- Impurities: natural gasoline may contain higher levels of sulfur and other impurities.

Without adequate blending controls and analysis, it may not be possible to meet the ASTM 4814 specification or EPA or state environmental regulations for the gasoline with 15% ethanol if Ethanol Flex Fuel made with Natural Gasoline (condensate) is used in the blend.

What is “Deemed to Comply?”

- **A Compliance Mechanism in Lieu of Batch Testing to certify gasoline**

- a compliance mechanism enacted by Congress in section 211(h)(4) of the Clean Air Act. It is referred to as the “deemed to comply” provision, or the alternative compliance mechanism for the 1-psi Reid vapor pressure (RVP) waiver.
- The defenses in 40 CFR 80.28(g) that are newly applicable to E15 are derived from 211(h)(4) . This shows the linkage between CAA 211 and 80.28(g)

40 CFR 80.28(g) Defenses.

(8) ...the ethanol blender, distributor, reseller, carrier, retailer or wholesale purchaser-consumer **shall not be deemed in violation if such person can demonstrate, by showing receipt of a certification from the facility from which the gasoline was received or other evidence acceptable to the Administrator, that:**

(i) The gasoline portion of the blend complies with the Reid vapor pressure limitations of § 80.27(a); and

(ii) The ethanol portion of the blend does not exceed 15 percent (by volume); and

(iii) No additional alcohol or other additive has been added to increase the Reid vapor pressure of the ethanol portion of the blend.

... Such certification shall be deemed sufficient evidence of compliance provided it is not contradicted by specific evidence, such as testing results, and provided that the party has no other reasonable basis to believe that the facts stated in the certification are inaccurate. **In the case of a violation alleged against a retail outlet or wholesale purchaser-consumer facility, such certification shall be deemed an adequate defense for the retailer or wholesale purchaser-consumer, provided that the retailer or wholesale purchaser-consumer is able to show certificates for all of the gasoline contained in the storage tank found in violation,** and, provided that the retailer or wholesale purchaser-consumer has no reasonable basis to believe that the facts stated in the certifications are inaccurate.