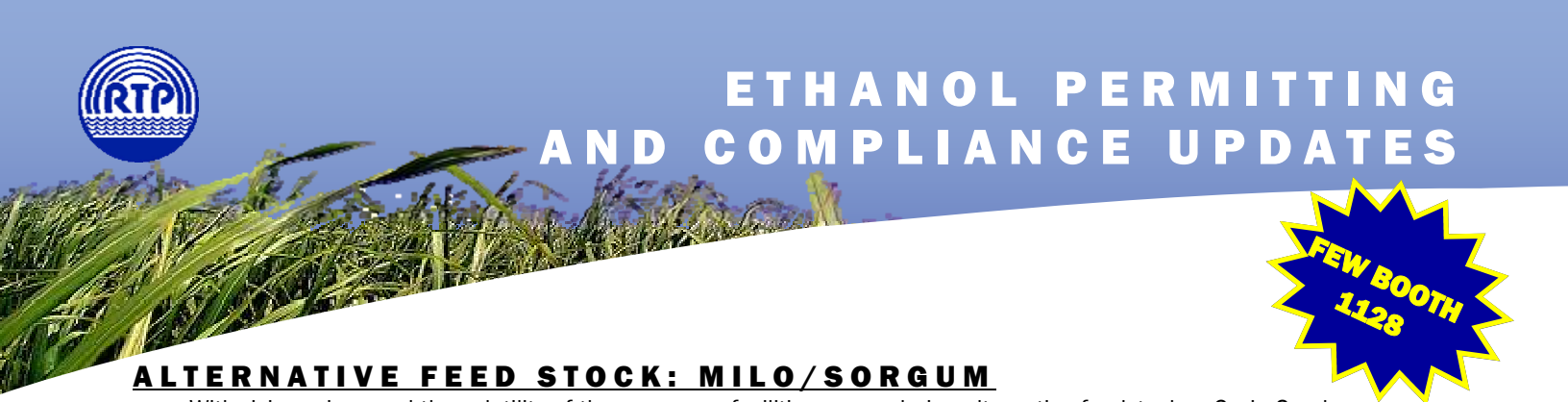

ETHANOL PERMITTING AND COMPLIANCE UPDATES

FEW BOOTH 1128

ALTERNATIVE FEED STOCK: MILO/SORGUM

With rising prices and the volatility of the corn crop, facilities are exploring alternative feedstocks. Grain Sorghum or Milo is a very hardy grain crop and is gaining popularity as an alternative feedstock because of its draught tolerance. Milo can be grown in areas that are too hot or too dry for other crops to be grown successfully, making it widely popular as a feedstock internationally. It is well-suited to various types of ethanol production, including cellulosic. The Environmental Protection Agency announced it had approved grain sorghum as an eligible feedstock under the Renewable Fuels Standard (RFS), not just as conventional ethanol, but as advanced biofuel. The ethanol is no different, but it is produced with less of a carbon footprint. EPA's analysis showed making ethanol with grain sorghum has a GHG reduction of roughly 32%, qualifying plants as producing "advanced biofuels". According to available information, it produces the same amount of ethanol per bushel and has been known to reduce water usage. Additionally, milo DDGS tend to be lower in fat and higher in protein. However, not all States are keen on the alternative feedstock and many are requiring major air permit amendments for its use. There is also a concern that this feedstock will result in increases to volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions. Various other alternative feedstocks gaining momentum include off-spec sugar or molasses, corn kernel fiber, and broken rice. It is important to note that some state requirements may be specific to corn-based ethanol. As such, it is prudent to check with the agency before switching feedstocks to avoid compliance violations. Contact RTP to determine how your facility can implement alternative feedstocks.

Alternative Products

In a response to some of the criticisms associated with ethanol as a fuel additive, many industry stakeholders are seeking to convert processes to produce butanol. Butanol, with two additional carbons, is more similar to gasoline than it is to ethanol and has about 30% higher energy content than ethanol. Additionally, Butanol doesn't separate from gasoline in the presence of water and it can be blended right at the refinery. Several recent scientific advancements could make conversion a real possibility for many ethanol facilities. However, a conversion to butanol will likely result in many permitting modifications including possible PSD applicability with regard to air permitting. RTP can assist you with your evaluation.

RFS2 Challenges and E15

The Renewable Fuel Standard (RFS) program was created under the Energy Policy Act of 2005, and established the first renewable fuel volume mandate in the United States. Under the RFS2 program, fuel producers and importers must blend renewable fuels into gasoline and diesel fuels at volumes that increase every year. The EPA has proposed modifications to the RFS program, E15 misfueling mitigation regulations, ultra-low sulfur diesel survey requirements as well as other technical amendments. EPA is also proposing to allow butanol that meets the 50% GHG emission reduction threshold to qualify as advanced biofuel. The rulemaking also proposes a clarification regarding the definition of crop residue to include corn kernel fiber and proposes an approach for determining the volume of cellulosic renewable identification numbers (RINs) produced from various cellulosic feedstocks. The main mechanism to comply with the RFS2 has been through blending 10% of ethanol into gasoline (E10 blend). Recently allowed by US EPA for model year 2001 and newer vehicles is E15; however, this blend has been met with much opposition by various industries and organizations, including the fuel industry, car manufacturers, and environmental organizations. Two bills recently introduced into Congress seek to delay or ban altogether the sale of E15 gasoline.

Renewable Identification Number (RIN)

RINs are a mechanism for insuring that the prescribed levels of blending biofuels in motor fuel are reached. Each gallon of ethanol produced has a RIN. The RINs can be traded among refiners once they've blended ethanol with petroleum or they can keep them to submit to the government. RINs from advanced biofuel plants, such as plants using sorghum (milo) as feedstock, are more valuable than RINs from conventional plants. The only advanced biofuels commonly available now in the United States are biodiesel and sugar cane ethanol imported from Brazil. With the limited sales of ethanol blends higher than E10, the fuels industry is now increasingly meeting the RFS2 mandates by purchasing RINs on the market. This has put an upward pressure on the price of RINs. This spring, RIN prices skyrocketed; prices that had been 2 or 3 cents per RIN increased to more than $1 for a few days in March before it slowly settled into the 60-to-70-cent range as the month progressed. Despite claims from the oil-industry, two separate analyses came out that conclude increases in RINs prices are having little impact on gas prices. Ethanol producers are also contemplating proposed rules from the U.S. EPA to create a voluntary quality assurance program (QAP). The new system would provide options to reduce the liability for parties who are tasked with demonstrating RINs compliance and replacing invalid RINs. The proposed voluntary QAP system has two tracks. Option A is more rigorous, but eases the obligation to replace invalid RINs. The system includes continuous monitoring of production data to prove the total gallons produced match the RINs generated. Option B is less stringent and requires quarterly site audits where a P.E. must sign off on mass balances.

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EPA Enforcement and Compliance Assurance Priority

EPA periodically issues national enforcement priorities. For fiscal years (FY) 2011 through 2013, the National Compliance and Enforcement Strategy has focused on several areas, including toxic emissions, that include leak detection and repair (LDAR) requirements and facility startup, shutdown and malfunction periods. Hazardous air pollutants (HAPs) are pollutants known or suspected to cause adverse environmental or human health impacts. National Emissions Standards for Hazardous Air Pollutants (NESHAPs) have become a focus of legislation. NESHAPs define two (2) types of HAP sources: major (greater than 25 tpy total HAPs/10 tpy single HAP) and area (less than 25 tpy/10 tpy). Most ethanol plants are considered HAP area sources under NESHAPs. Although not all of the legislation affects new or existing ethanol facilities, NESHAPS are no longer only applicable to major sources, as demonstrated by the promulgation of updates to NESHAP Subpart ZZZZ (4Z) for internal combustion engines, NESHAP Subpart VVVVVV (6V), and NESHAP Subpart JJJJJJ (6J) the new Boiler MACT. Contact RTP for assistance determining NESHAP applicability at your site.

Boiler MACT/GACT and NESHAP Subpart 6J

On December 20, 2012, EPA finalized the ruling regarding industrial boilers. These standards have been separated into two (2) categories; the first is associated with major HAP sources and the second is associated with Area HAP sources. The regulations associated with Area sources are typically referred to as the Boiler MACT (Maximum Achievable Control Technology). After much back and forth subsequent to its proposal in 2003, the EPA finalized a number of adjustments to the Boiler MACT. First, the final rule extended by two years the initial compliance date for existing area source boilers subject to the tune-up requirement. It also revised the deadline for initial notification for existing area source boilers to no later than January 20, 2014. Provisions for existing dual-fuel fired units that fuel switch from gas to coal, biomass or oil have also been revised so that they are still considered to be existing sources. Seasonally-operated units, limited-use units, small oil-fired units and units with oxygen trim systems are now required to conduct tune-ups every five years, instead of every two. The revised rule also clarifies that temporary boilers and residential boilers are not part of the source categories being regulated. Please contact RTP to see if the Boiler MACT and any of the newly promulgated amendments affect your facility.

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT (EPCRA)/TIER II

On July 13, 2012, EPA published a final rule to revise Tier I and Tier II reporting forms, as well as the Confidential Location Information Sheet. The revisions add some new data elements and revise some existing data elements. The rule becomes effective on January 1, 2014, and facilities must comply with the new requirements on the Tier II inventory form starting reporting year 2013, which is due by March 1, 2014. Some states may have other specific requirements for reporting and submission of the Tier II inventory. Contact RTP for reporting requirements in your state.

TOXIC RELEASE INVENTORY (TRI)

TRI is a publicly available EPA database that contains information on toxic chemicals that are being released into the environment. A TRI must be submitted annually by certain industries as well as federal facilities by July 1. On October 17, 2011, EPA lifted the administrative stay of hydrogen sulfide which had been originally implemented in 1994. H_2S is known to be found in various processes and as a byproduct in the ethanol production process. Reporting for hydrogen sulfide is required for the reporting year beginning January 1, 2012 and ending December 31, 2012, with reporting due July 1, 2013. Please contact RTP with any TRI needs you may have.

NRDC CHALLENGE TO THE 250 RULE

The National Resources Defense Council (NRDC) has been challenging the 250 Rule at ethanol plants. Specifically, the group targeted Indiana Department of Environmental Management (IDEM) after the regulator granted Title V permits to ethanol facilities in accordance with the 250 Rule. NRDC alleged that "Indiana was obliged to seek approval of an amendment to its [SIP]". According to the Court of Appeals of Indiana, despite a change in state law adopting the 250 Rule, IDEM could not issue less stringent emission permits unless the change was also approved by U.S. EPA, which it was not. IDEM's Office of Environmental Adjudication ruled that the ethanol facilities were still classed as chemical plants under the SIP, keeping them to the 28-source categories that are limited to emissions of 100 ton per year for criteria pollutants. A trial court overturned that decision, finding that the EPA rule and Indiana law were "clarifications" of the chemical process plant definition that didn't warrant an SIP change. However, the appellate court panel recently ruled that the EPA rule change was more than just a clarification, and the rule document had specifically suggested to states that they make changes to their SIPs to incorporate the change. IDEM has yet to formally respond to the affected facilities. Contact RTP for any questions you may have on Indiana's 250 Rule.