Topic ID	**OEA59T**
Title	**Oil and Gas Industry Economics-101**
Category	**M-Manage Infrastructure**
eLearning Level	**Basic**

Introduction

Significant practice in various blending methods is measuring properties and analyzing stock qualities and product qualities. Samples are extracted for analysis and to verify the blend quality. Any adjustments may be done using the results obtained from the analysis. Sampling systems may be automatic or manual.

This topic will discuss points of sampling; online measurement in a fuel blending system; matrices of blend specs versus required stock, final blend qualities for gasoline, diesel, and fuel oils; challenges in analysis and/or online measurement of required qualities; tank-to-tank blending; rundown blending; gasoline quality analysis matrix; diesel quality analysis matrix; fuel oil quality analysis matrix, quality measurement/analysis challenges; etc.

Sampling and Measurement Points

1. Lab sampling or analysis point at tank inlet and inside the tank

2. Points to be used for modeling on entry into the product tank and inside the product tank

Tank-to-Tank Blending

For tank-to-tank blending, the procedures at different locations can be classified as follows:

For stock tanks and lab samples, online measurements are taken at the tank inlet. Then, model-based prediction is carried out using lab samples taken from the tank interior. When the product is exiting the tank, lab samples and online measurements are used for model-based predictions. In the case of the blend header, lab samples and online measurements are taken at the exit point of the header. They are also used for the same purpose.

Finally, the same task has to be carried out at the inlet and the tank's interior at the product tank.

Rundown Blending

For process streams, at the exit point of the unit stream, lab samples and online measurements are taken. This data is used for model-based predictions. These three processes are repeated at the blend header as well as at the product tank inlet.

Quality Analysis

Some of the qualities measured and monitored for gasoline are Reid vapor pressure, motor octane number, research octane number, sulfur content, oxygen content, benzene, etc. Some of the qualities tested and analyzed for diesel are API gravity, pour/flashpoint, freeze/cloud point, and cetane number.

Challenges Faced During Quality Analysis

Blend qualities may be affected by the qualities of other stock. Another issue is that some blend qualities cannot be measured/analyzed, and calculated using models.

Summary

It is important to design sampling points for the measurement of required blend/stock qualities. All qualities of stock must be adequately analyzed to meet the blend spec,

Options for eLearning This Topic

Mode of eLearning	Available?
Free Course	No
Refresher Course	Yes
Pick N Choose (Custom Curriculum)	Yes
Advanced Level Course	Yes
Structured MCOR Curriculum	Yes