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Standard Method of SAMPLING PETROLEUM AND PETROLEUM PRODUCTS¹

This Standard is issued under the fixed designation D 270; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. This is also a standard of the American Petroleum Institute issued under the fixed designation API 2546.

This method was adopted as a joint ASTM-API standard in 1965.

1. Scope

1.1 This method covers procedures for obtaining representative samples of stocks or shipments of crude petroleum and petroleum products, except electrical insulating oils, and butane, propane, and other petroleum products that are gases at atmospheric temperature and pressure.

NOTE 1—The procedures described in this method may also find application in sampling most noncorrosive liquid industrial chemicals.

NOTE 2—The procedure for sampling liquefied petroleum gases is described in ASTM Method D-1265, Sampling Liquefied Petroleum (LP) Gases;² the procedure for sampling electrical insulating oils in ASTM Method D 923, Sampling Electrical Insulating Liquids;³ and the procedure for sampling natural gas in ASTM Method D 1145, Sampling Natural Gas.⁴

NOTE 3—The values stated in U.S. customary units are to be regarded as the standard. Metric equivalents have been rationalized where tolerances are considered non-critical.

2. Summary of Method

2.1 Samples of petroleum and petroleum products are examined by various methods of test for the determination of physical and chemical characteristics. It is accordingly necessary that the samples be truly representative of the petroleum or petroleum products in question. The precautions required to ensure the representative character of the samples are numerous and depend upon the type of material being sampled, the tank, carrier, container or line from which the sample is being obtained, the type and cleanliness of the

sample container, and the sampling procedure that is to be used. A summary of the sampling procedures and their application is presented in Table 1. Each procedure is suitable for sampling a number of specific materials under definite storage, transportation, or container conditions. The basic principle of each procedure is to obtain a sample or a composite of several samples in such manner and from such locations in the tank or other container that the sample or composite will be truly representative of the petroleum or petroleum product.

3. Description of Terms

3.1 *Average Sample* is one that consists of proportionate parts from all sections of the container.

3.2 *All-Levels Sample* is one obtained by submerging a stoppered beaker or bottle to a point as near as possible to the draw-off level, then opening the sampler and raising it at a rate such that it is about three-fourths full (maximum 85 percent) as it emerges from the liquid. An all-levels sample is not necessarily an average sample because the tank volume

¹ This method is under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants and the API Central Committee on Petroleum Measurement.

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In 1965, this method was rewritten as a joint method with the American Petroleum Institute to take care of features on ASTM and API methods for sampling.

² *Annual Book of ASTM Standards*, Part 23.

³ *Annual Book of ASTM Standards*, Part 40.

⁴ *Annual Book of ASTM Standards*, Part 26.