

RULES AND REGULATIONS FOR GAS-OIL RATIO SURVEYS
IN NEW MEXICO

INTRODUCTION

All operating gas-oil ratio tests shall be taken under the supervision of the Oil Conservation Commission of New Mexico.

DUTIES OF THE OIL CONSERVATION COMMISSION:

(1) Assemble the information supplied by the operators as recommended in Section 3 herein, and arrange test schedule; (2) to assign engineers to supervise tests except that such engineer shall not be in charge of the test on his employers property; (3) to properly instruct all engineers in the proper operation of measuring equipment and procedure in conducting the tests; (4) to calibrate and maintain all metering equipment in first-class condition; (5) to furnish, calculate, record and file all gas measurement charts and records; (6) compute all gas-oil ratios; (7) determine whether the test was properly conducted, and if necessary schedule retests.

DUTIES OF THE ENGINEER IN CHARGE OF TESTS:

The duties of the engineer are restricted to: (1) The supervision of the installation of the gas measuring equipment; (2) the proper operation of the equipment; (3) the proper gauging of the lease tanks to accurately determine the production of oil and water; (4) the proper recording of the pertinent data required; (5) the supervision of the placing of seals or locking devices.

DUTIES OF THE OPERATOR:

The operator shall: (1) in accordance with existing rules and regulations of the Conservation Commission, each well shall be equipped to conveniently make a gas-oil ratio test; (2) furnish the Oil Conservation Commission a complete list of his wells showing the type of metering equipment best adaptable for accurate gas measurement in accordance with rules contained herein; such infor-

mation shall include the size of vent line, size of orifice flange or connection available, and if possible, the desirable size of orifice in the orifice plate;

(3) furnish sufficient and qualified lease labor to install and manipulate all lease equipment, including the installation and/or changing orifice, raising or lowering vent lines, etc.

MANNER OF TESTING:

1. For the purpose of stabilization, each well shall be produced for a period of 24 hours at a rate as nearly as possible to the normal manner of operation but not less than the daily allowable.
2. Lease tanks shall be gauged by the supervisor at the beginning and end of this stabilization period.
3. No change shall be made which affects the rate of production during the last 18 hours of the stabilization period.
4. The test period shall consist of 24 hours. Oil shall be gauged for the full period and gas shall be measured for a period of at least six hours.
5. In case of a heading or stop-cocked well the gas shall be measured for the full 24 hour period.
6. If for any reason should gas be withdrawn from the casing, this volume of gas shall be added to that produced through tubing in computing the gas-oil ratio and such gas shall be measured for the full 48 hours of stabilization and test periods, and the largest volume whether the first or second 24 hour period, shall be used in computing the gas-oil ratio.
7. For gas-lift or jetted wells the total volume of gas to be used in computing the operating gas-oil ratio is the total output volume minus the total input volume.

LIQUID MEASUREMENTS:

1. All tanks shall be gauged to the nearest $1/8$ inch. Care should be exercised to keep the gauge line taut and in case there are ripples or foam on the oil surface the tank should be allowed to stand until the fluid reaches equilibrium and the foam can be brushed aside.
2. Tanks shall be thieved immediately before and after the test and water percentage determined in accordance with the A.P.I. specifications.
3. The total volume of liquid produced shall be calculated in accordance with the latest pipeline strapping tables of the tanks.
4. The net volume of oil shall be the total volume of fluid less the volume of P.S. and W. as determined by Paragraph 2 above.
5. Fluid level must be maintained relatively constant, such that the oil dump valve is covered at all times by at least 12 inches of liquid.
6. If it is necessary to use a flow tank for the separation of water the water-oil level must be the same at the beginning and end of the test and the water removed from the flow tank must be measured or metered.
7. All liquid measurements shall be in barrels of 42 gallons and shall be carried to the second decimal.

GAS MEASUREMENT:

1. A calibrated pressure gauge shall be installed on each separator and readings taken periodically. In the event the operator chooses to conduct the test at abnormally high pressures, a recording pressure gauge will be installed on the separator and the measured gas-oil ratio may be increased by the measured or estimated volume of gas going to the tanks. Estimated volume shall be based on the gas-solubility vs. pressure curves for the field or area in which the well is located.
2. For computing the volume of all gas produced the standard of pressure shall be 10 oz. above an atmospheric pressure of 14.4 lbs/sq. in., the standard

temperature shall be 60° F. and the ~~st~~andard of specific gravity shall be 0.85 as compared to air. All measurements of gas shall be adjusted by computation to these standards. In case the gas measurement is made at an abnormally high pressure the measurement may be adjusted in accordance to deviation from Boyles Law. Gas volumes will be computed in cubic feet and gas-oil ratios in cubic feet per barrel of oil.

3. Only recording type gas measuring devices may be used.
4. Orifice well testers, orifice meters and side pressure test ~~sn~~ipples are approved as measuring devices and the side pressure test snipples are approved only when it is necessary to measure volumes larger than can conveniently be measured by orifice meter.

ANY WELL THAT CANNOT BE TESTED UNDER THE PRECEDING RULES SHALL BE REFERRED TO THE OIL CONSERVATION COMMISSION FOR SPECIAL CONSIDERATION AND RULES.

ALL WELLS NOT SO TESTED.