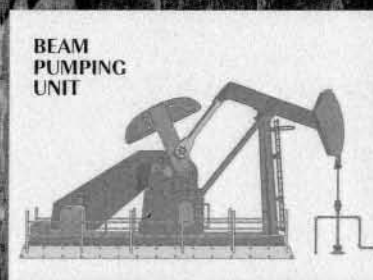
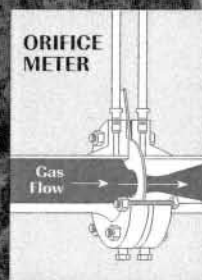
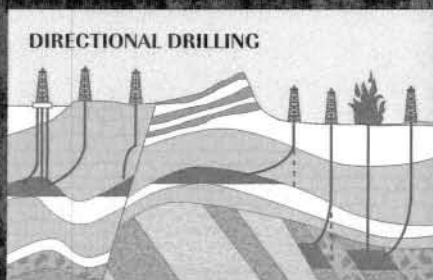




A Dictionary for the Oil and Gas Industry

First Edition



THE UNIVERSITY OF TEXAS AT AUSTIN
PETROLEUM EXTENSION SERVICE

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drilling control *n*: a device that controls the rate of penetration by maintaining a predetermined constant weight on the bit. Also called an automatic driller or automatic drilling control unit.

drilling crew *n*: a driller, a derrickhand, and two or more helpers who operate a drilling or workover rig for one tour each day.

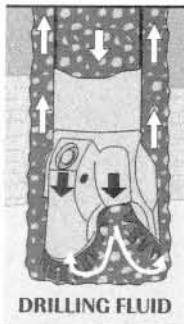
drilling deployment valve *n*: a downhole valve that closes off the wellbore at a point in the casing. Once the valve is closed, the bottom of the hole opposite the reservoir comes into balance, or equilibrium. Above the valve, no excess pressure occurs; thus, the drill string can be run without stripping or snubbing. During completions, the pipe can be tripped without having to kill the well with mud.

drilling draft *n*: the depth to which the pontoons on a semisubmersible rig are submerged below the water's surface when the rig is drilling. Compare *survival draft*.

drilling engine *n*: an internal-combustion engine used to power a drilling rig. From two to six engines are used on a rotary rig and are usually fueled by diesel fuel, although liquefied petroleum gas, natural gas, and, very rarely, gasoline can also be used.

drilling engineer *n*: an engineer who specializes in the technical aspects of drilling.

drilling fluid *n*: circulating fluid, one function of which is to lift cuttings out of the wellbore and to the surface. It also serves to cool the bit and to counteract downhole formation pressure. Although a mixture of barite, clay, water, and other chemical additives is the most common drilling fluid, wells can also be drilled by using air, gas, water, or oil-base mud as the drilling mud. Also called circulating fluid, drilling mud. See *mud*.



drilling fluid analysis *n*: see *mud analysis*.

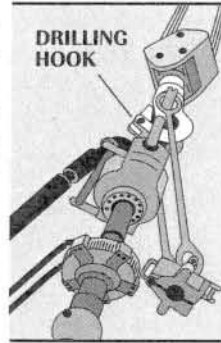
drilling-fluid cycle time *n*: the time required for the pump to move drilling fluid down the hole and back to the surface. The cycle in minutes equals the barrels of mud in the hole divided by barrels per minute.

drilling foreman *n*: the supervisor of drilling or workover operations on a rig. Also called a rig manager, rig supervisor, rig superintendent, or toolpusher.

drilling guide base *n*: see *temporary guide base*.

drilling head *n*: a special rotating head that has a gear-and-pinion drive arrangement to allow turning of the kelly and simultaneous sealing of the kelly against well pressure.

drilling hook *n*: the large hook mounted on the bottom of the traveling block and from which the swivel is suspended. When drilling, the entire weight of the drill stem is suspended from the hook.



drilling in *n*: the operation during the drilling procedure at the point of drilling into the pay formation.

drilling jar *n*: a special device on top of the drill stem which allows the driller to strike very heavy upward or downward blows on stuck pipe.

drilling line *n*: a wire rope used to support the drilling tools. Also called the rotary line.

drilling mode *n*: the state a drilling rig, especially an offshore drilling rig, is in when it is drilling a well.

drilling motor *n*: see *downhole motor*.

drilling motor head assembly *n*: in coiled tubing operations, a device installed in the tubing string to which a drilling motor is attached. The motor head assembly is designed to withstand vibration and torsional loading associated with downhole motors and hammers.

drilling mud *n*: a specially compounded liquid circulated through the wellbore during rotary drilling operations. See *drilling fluid*, *mud*.

drilling out *n*: the operation during the drilling procedure when the cement is drilled out of the casing before further hole is made or completion is attempted.

drilling parameters *n pl*: factors that affect a drilling operation, such as the rate of penetration, pump rate, rotary revolutions per minute (rpm), and weight on bit.

drilling pattern *n*: see *well spacing*.

drilling platform rig *n*: see *platform rig*.

drilling rate *n*: the speed with which the bit drills the formation; usually called the rate of penetration (ROP).

drilling recorder *n*: an instrument that records hook load, rate of penetration, rotary speed and torque, pump rate and pressure, mud flow, and so forth during drilling.

drilling rig *n*: see *rig*.

drilling slot *n*: see *keyway*.

drilling spool *n*: a fitting placed in the blowout preventer stack to provide space between preventers for facilitating stripping operations, to permit attachment of choke and kill lines, and for localizing possible erosion by fluid flow to the spool instead of to the more expensive pieces of equipment.

drilling superintendent *n*: an employee, usually of a drilling contractor, who is in charge of all drilling operations that the contractor is engaged in. Also called a drilling foreman, rig manager, rig supervisor, or toolpusher.

drilling template *n*: see *temporary guide base*.

drilling tender *n*: a combination barge-and-platform design that can be towed to a new location after a well is drilled.

drilling time log *n*: a record of the time required for a hole to be drilled; it is a record of the rate of penetration of the bit through various formations encountered during the drilling of a well.

drilling under pressure *n*: the continuation of drilling operations while maintaining a seal at the top of the wellbore to prevent the well fluids from blowing out.

drilling unit *n*: the acreage allocated to a well when a regulatory agency grants a well permit.

drilling with casing (DWC) *n*: the drilling of a well using a special cutting tool on the bottom of a casing string, which, when rotated, drills the hole. By eliminating the need for drill pipe, drilling with casing speeds the drilling process because, once the desired depth is reached, it is not necessary to pull a drill string and run casing. The casing is already in place and can be cemented in place immediately.

drill-off test *n*: a method of determining optimum weight on bit and overall bit performance. A given amount of weight is put on the bit and the drawworks brake is tied off so that no more weight is applied to the bit as it drills. The time it takes for the bit to stop drilling ahead with the given amount of weight is measured. Different weights are applied and the times are compared to determine which amount is best.

drill out *v*: 1. to remove with the bit the residual cement that normally remains in the lower section of casing and the wellbore after the casing has been cemented. 2. to remove the settlements and cavings that are plugged inside a hollow fish (such as drill pipe) during a fishing operation.

weevil *n*: shortened form of boll weevil. See *boll weevil*.

weigh scale *n*: a device for determining either the mass or the weight of a body, depending on the apparatus and procedure employed.

weight *n*: 1. in mud terminology, refers to the density of a drilling fluid. 2. of a measurement, expresses degree of confidence in result of measurement of a certain quantity compared with result of another measurement of the same quantity. 3. the force with which a body is attracted to the earth or to another celestial body equal to the product of the object's mass and the acceleration of gravity.

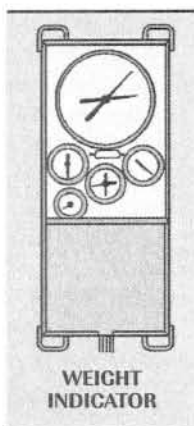
weigh tank *n*: a tank used with a weigh scale for measurement of the liquid contents of the tank.

weight bar *n*: see *sinker bar*. Also called stem.

weight cut *n*: the amount by which drilling fluid density is reduced by entrained formation fluids or air.

weighted average cost of gas (WACOG) *n*: cost calculated as the total cost of all gas purchased during a base period divided by either the total quantity purchased (unit of production) or the system throughput (unit of sales) during the same period. This rate, plus any application of any pending surcharge adjustments, serves as the basis on which system tariff rates are computed and made effective.

weight indicator *n*: an instrument near the driller's position on a drilling rig that shows both the weight of the drill stem that is hanging from the hook (hook load) and the weight that is placed on the bit by the drill collars (weight on bit).



weighting material *n*: a material that has a high specific gravity and is used to increase the density of drilling fluids or cement slurries.

weight-loaded regulator *n*: in process control, a valve containing a weight that controls the valve's opening and closing to control (regulate) the pressure in a vessel.

weight on bit (WOB) *n*: the amount of downward force placed on the bit by the weight of the drill collars.

weight-set packer *n*: a packer whose packing elements are activated when weight from the tubing string is applied. To set

some packers, rotation as well as weight is required. See *packer*.

weight up *v*: to increase the weight or density of drilling fluid by adding weighting material.

weir *n*: a metal plate installed in a separator, treater, or mud tank and used to regulate liquid level or, in the case of a metering separator, to measure flow.

welded tuff *n*: a pyroclastic deposit hardened by the action of heat, pressure from overlying material, and hot gases.

well *n*: the hole made by the drilling bit, which can be open, cased, or both. Also called borehole, hole, or wellbore.

wellbore *n*: a borehole; the hole drilled by the bit. A wellbore may have casing in it or it may be open (uncased); or part of it may be cased, and part of it may be open. Also called a borehole or hole.

wellbore cleanup *n*: see *wellbore soak*.

wellbore pressure *n*: 1. bottomhole pressure. 2. casing pressure.

wellbore soak *n*: an acidizing treatment in which the acid is placed in the wellbore and allowed to react by merely soaking. It is a relatively slow process, because very little of the acid actually comes in contact with the formation. Also called wellbore cleanup. See *matrix acidizing*. Compare *acid fracture*.

well completion *n*: 1. the activities and methods of preparing a well for the production of oil and gas or for other purposes, such as injection; the method by which one or more flow paths for hydrocarbons are established between the reservoir and the surface. 2. the system of tubulars, packers, and other tools installed beneath the wellhead in the production casing; that is, the tool assembly that provides the hydrocarbon flow path or paths.

well control *n*: the methods used to control a kick and prevent a well from blowing out. Such techniques include, but are not limited to, keeping the borehole completely filled with drilling mud of the proper weight or density during all operations, exercising reasonable care when tripping pipe out of the hole to prevent swabbing, and keeping careful track of the amount of mud put into the hole to replace the volume of pipe removed from the hole during a trip.

well-control equipment *n*: an assembly of several components, such as ram preventers, annular preventers, a choke and kill system, trip tanks, and mud-gas separators. On offshore floating rigs, well-control equipment also includes a marine riser system and a diverter system.

well density *n*: the ratio between the number of wells drilled in a field and the acreage. Under a 40-acre spacing pattern, the well density is one well per 40 acres.

well fluid *n*: the fluid, usually a combination of gas, oil, water, and suspended sediment, that comes out of a reservoir. Also called well stream.

wellhead *n*: the equipment installed at the top of the wellbore. A wellhead includes such equipment as the casinghead and tubing head. *adj*: pertaining to the wellhead (e.g., wellhead pressure).

wellhead connector *n*: on a floating drilling rig using a subsea blowout preventer stack, a tool that attaches the blowout preventer (BOP) stack to the wellhead. It is hydraulically operated from the surface and, when actuated, connects the BOP to the wellhead.

wellhead housing *n*: in offshore drilling, a tool that seats in a housing at the top of the conductor casing to support subsea equipment and subsequent casing strings and tubing hangers.

wellhead price *n*: the price received by the producer for sales at the well. See *crude oil average domestic first purchase price*.

well kick *n*: see *kick*.

well log *n*: see *log*.

well logging *n*: the recording of information about subsurface geologic formations, including records kept by the driller and records of mud and cutting analyses, core analysis, drill stem tests, and electric, acoustic, and radioactivity procedures. See *acoustic log*, *core analysis*, *driller's log*, *drill stem test*, *electric well log*, *mud analysis*, and *radioactivity log*.

well log library *n*: a private, or sometimes public, organization that maintains collections of oilfield data, particularly well logs. Users gain access to the information by paying membership dues or a user's fee.

well permit *n*: authorization, usually granted by a governmental conservation agency, to drill a well. A permit is sometimes also required for deepening or remedial work.

well platform *n*: an offshore structure with a platform above the surface of the water that supports the producing well's surface controls and flow piping.

