IADC WELLSHARP

WellSharp® Definitions Reference Document

The definitions provided below are for terms typically used in well control operations, and are the official term meanings used in the IADC WellSharp® Knowledge Test.

Abnormal Pressure	Reservoir pore fluid pressure that is greater than the hydrostatic pressure of a full column of water or brine with salinity; normally found in the local formation.
Active Pits	A component of the mud storage system that is an active part of the circulation system. These pits are monitored for downhole losses and gains. The suction pit feeds the mud pumps, and the returns from the well go to the return pit. In small systems, both suction and return can be the same pit.
American Petroleum Institute (API)	The American Petroleum Institute (API) is a trade association sponsored by the oil and gas industry and recognized worldwide for setting industry standards and recommended practices.
Annular Pressure Loss (APL)	Pressure loss caused by the flow of fluid up the annulus (also referred to as annular friction loss).
Autoshear	A safety system that is designed to automatically shut in the wellbore in the event of a “disconnect” of the LMRP. When the Autoshear is engaged, disconnecting the LMRP closes the shear rams.
Backpressure Valve (BPV)	A valve that only allows flow in one direction. Commonly installed as a barrier to pressure from downhole.
Balance/Underbalance/ Overbalance	A state of pressure differential between static or circulating mud pressure on the formation and the formation fluid pressure. Balance occurs when pressure exerted on the formation is equal to the formation fluid pressure. Underbalance occurs when the pressure exerted on the formation is less than the formation fluid pressure. Overbalance occurs when the pressure exerted on the formation is greater than the formation fluid pressure.
Ballooning (Formation)	Well ballooning is caused by the loss of drilling fluid into the formation when the equivalent circulating density (ECD) exerted on the wellbore is nearly equal to the formation equivalent fracture pressure. When the pumps are turned off, ECD is lost and the fluid returns to the wellbore from the formation. The rate of return will vary with the formation, and the returning fluid may be contaminated with formation fluids. At the surface, this process appears as losses while drilling and gains while making connections or tripping (also referred to as wellbore breathing, supercharging, or micro-fracturing).

Ballooning (Tubular)	The tendency of tubulars to expand to an increased diameter at some point when subjected to excessive compressional stress and/or internal pressure.
Barrier	Barriers are used to manage flow from the formation and reduce the risk associated with drilling, completion, production, and intervention activities.
Barrier Element (Well Barrier Element-WBE)	A single, dependent component or practice that contributes to the total system reliability.
Barrier Envelope (Well Barrier)	One or several well barrier elements that control fluids within a well, acting in a series to prevent uncontrolled flow.
Bit Balling	Term used to describe soft, sticky clay formations that stick to the bit (and stabilizers) and impede drilling. The balling effect can also increase swab and surge pressures.
Bottomhole Assembly (BHA)	Lower portion of the workstring consisting of tools and/or equipment, such as mills, reamers, drill collars, jars, necessary for the ongoing/forward operation.
Bottomhole Pressure (BHP)	The sum of all the pressures acting on the wellbore at total depth.
Bottoms-Up	The circulation of the mud column, measured from the bottom of the well to surface. Often referred to when collecting samples or cleaning the wellbore before drilling ahead.
Blowout	An uncontrolled exit of formation fluids at the surface or mud line.
Blowout Preventer (BOP)	A casing head assembly equipped with special gates or rams or other pack-offs that can be closed around the drill pipe, tubing, casing, or tools, and can completely close the top of the casing to contain well pressure.
Blow Through	A situation that can occur in an atmospheric mud-gas separator (MGS) when the pressure generated inside the separator and associated vent line exceeds the hydrostatic pressure created by fluid in the separator U-tube (dip tube). This can result in well fluids in the gaseous state being “blown through” the MGS to the shale shaker area in a gaseous state. This affects fluid properties and can be hazardous if the shale shaker area is enclosed.
Bridging Document	Document that aligns and coordinates the requirements and responses of various parties in relation to a specific aspect of a project. Commonly used to align and coordinate the emergency response procedures for owner and contractors.
Broaching	The venting of fluids to the surface or to the seabed through channels external to the casing.
Bumping Float	An operation to determine shut-in drillpipe pressure that cannot be determined until a “float” in the drillstring is opened.

Buoyancy	The effect of the mud density on the immersed weight of the drillstring.
Carbon Dioxide (CO_2)	A hazardous, odorless, and corrosive gas with a chemical composition of Carbon and Oxygen, which is highly soluble in water and oil especially under pressure.
Cased Hole	The wellbore intervals in a well that are cased with casing and/or liner pipe. The diameter of these hole sections is the inside diameter of the pipe contained therein.
Cavings (Heaving or Spalling Shale)	A large, sometimes splinter-shaped piece of formation (usually shales) that has "caved-in" or fallen from the hole wall due to increasing formation pressure or reduced wellbore stability. Often referred to as large splinter-shaped cuttings, but not technically a cutting from the bit action. May also be referred to as heaving or spalling shales.
Choke	A device with either a fixed or variable orifice installed in a line to restrict and control the flow of fluids and gas.
Choke Exercise	Choke exercise used in snubbing operations to demonstrate choke operator proficiency in flow control.
Choke Line Friction	Friction generated by circulating mud along the choke line. Same effect applies to the kill line.
Choke Pressure	The pressure resulting from the restriction of flow downstream. It occurs when fluid is forced through a small opening or orifice (choke). Under dynamic conditions, the choke pressure creates a surface pressure that is imposed on all points in the circulating system, including the bottom of the hole (also called backpressure).
Christmas Tree	An assembly of valves, spools, and fittings used for an oil well, gas well, water injection well, etc. The primary function of the tree is to control the flow, usually oil or gas, out of the well.
Completion	Activities that prepare a well for the initial production of oil and gas; the process of establishing a flow path for hydrocarbons between the reservoir and the surface. Examples of completions include openhole, cased-hole perforated, single-string, dual-string, and gravel-packed completions, or other processes, such as injection.
Completion Fluids	Any fluid—used during completion or workover operations—of sufficient density to control formation pressure. Generally, it is low-solids or solids-free fluid used to minimize formation damage.
Compressibility	The relative change in fluid volume related to a unit change in pressure and temperature. Gas has a higher compressibility than liquid.

Compressible Fluid	General term applied to non-aqueous fluids (oil or synthetic) that exhibit a mud density increase with increasing pressure. The result can be a greater hydrostatic pressure on bottomhole than expected based on measurements of surface mud density.
Constant	A term used to describe a number that is inserted into an equation to convert elements of the equation to a common unit. For example, 0.052 allows the different units of ppg and feet to be used to calculate a pressure in psi.
Converting the Casing Float Collar	An operation to close a float collar that has been held open during the running of casing in the hole. Flow rate and pressure are increased to the manufacturer's recommendation to release the auto-fill device and allow the casing float valve(s) to close.
Cuttings	Formation pieces that break away due to the action of the bit teeth. Cuttings are screened out of the liquid mud system at the shale shakers and monitored for composition, size, shape, color, texture, hydrocarbon content, and other properties by the mud engineer, the mud logger, or other on-site personnel.
Dart Valve	A spring-loaded device that serves as a type of inside BOP. The dart valve is dropped into the drillpipe and becomes seated at the bottom. Fluid can be pumped through the device, but it is designed to prevent a kick from flowing back up the drillpipe. (It is also called a drop-in check valve.)
Deadman	A buried anchor or holding device installed in the ground to which guy wires are attached to steady the derrick, mast, stacks. The "Deadman anchor" is a common term to define the fixed end of the drilling line.
Dead well	Well that is(will) not flowing when open to atmosphere at the surface.
Displacement	The volume of steel or fluids in the tubulars and devices inserted and/or withdrawn from the well bore.
Diverter	A device attached to the wellhead or marine riser used to direct flow away from the rig. A diverter, often used to control shallow flows, closes the vertical flow path and allows the well to flow through a side outlet and diverter line.
Driller's Method	Kill method that involves first circulation out the influx and secondly circulation kill mud around the well.
Drilling Break	A significant increase or decrease in the rate of penetration that is sustained for an agreed number of feet. The "break" will represent a change in formation downhole that may result in losses or gains. Commonly used criteria are a 50% change in rate of penetration sustained over five feet.

Drilling Fluids	A liquid or slurry pumped down the drillstring and up the annulus primarily during the drilling operation. One function is to provide sufficient differential pressure against exposed permeable formations. Drilling fluid can be air, gas, water, oil, synthetic fluid, or a combination of these. Drilling fluid is also referred to simply as “mud.”
Drilling Window	The difference between the maximum pore pressure and the minimum effective fracture pressure. It can be determined for any point within an openhole interval. Drilling margin is usually expressed in terms of equivalent mud weight.
Drills (Pit, Trip, Strip, Choke, Abandon, Diverter)	Well control drills carried out by crewmembers to ensure positive and effective reaction to a well control situation. Pit drill involves recognizing and reacting to a change in pit level. Trip drill involves recognizing and reacting to a kick while tripping. Strip drills allow the crew to practice stripping in or out of the hole. Choke drills allow crewmembers to practice choke operations with the well under pressure. Abandon drills are generally a part of regular rig drill that involves evacuation to a safe position (especially in the case of H_2S) or to the lifeboat stations (offshore). Diverter drills allow the rig floor crew to practice diverting procedures and immediately following actions.
Dynamic Kill	A term that is used for a number of well control techniques that involve circulating friction losses to maintain a backpressure on the well to overcome an “underbalanced” condition.
Equivalent Circulating Density (ECD)	The effective density of the circulating fluid in the wellbore resulting from the sum of the hydrostatic pressure imposed by the static fluid column and the circulating friction pressure.
Emergency Closure	Activation of the barrier of last resort.
Emergency Disconnect System (EDS)	The operation of securing the well and then unlatching of the riser connector to separate the riser and LMRP from the BOP stack.
Emergency Shut Down (ESD)	Controlled sequence of events that ensures that the well is secured against accidental release of hydrocarbons into the environment, i.e. closing of barrier elements.
Equivalent Mud Weight (EMW)	A pressure exerted at a specific depth and expressed as density of a static column of fluid that would create the same pressure at that depth.
Final Circulating Pressure	The calculated pumping pressure to achieve when circulated kill mud reaches the bit. Used in the Wait and Weight method.

Fingerprinting	A technique used to establish “normal” circulating conditions and compare with current conditions to see if the well has any stability issues (flowing or losses). For example, measuring flowback at connections to determine if well is ballooning or kicking.
Flow Check	An observation performed on a static well to 1) verify stable well conditions; 2) assess the integrity of a plug, valve, or flow-control device; or 3) identify possible/suspected loss of hydrostatic overbalance during well operations.
Formation Integrity Test (FIT)	The application of pressure on the formation by superimposing a surface pressure on a fluid column to verify the ability of a subsurface zone to withstand a certain hydrostatic pressure.
Formation Fluid Pressure (Pore Pressure)	The pressure exerted by fluids in the rock pore spaces. Knowledge of formation pressure helps determine the hydrostatic pressure and mud weight required to drill the well. If the formation pressure is greater than the hydrostatic pressure, formation fluids may flow into the well from permeable formations (also called pore pressure, reservoir pressure, or shut-in bottomhole pressure).
Fracture Pressure and Fracture Gradient	The pressure exerted on a formation that causes the formation to fracture and take fluid. The fracture may be permanent or may close once pressure is released. The fracture gradient is the fracture pressure expressed in a gradient form, for example psi/ft.
Fluid Barrier	Hydrostatic column of fluid capable of isolating flow from the exposed formations under static conditions.
Gas-Cut Mud	Drilling fluid that is contaminated with gas, causing a reduction in the effective mud weight.
Gas Migration	The upward movement of gas in the drilling fluid. Movement occurs due to gas being lighter than the drilling fluid.
Geological Seal	Geological feature with low permeability that impedes the movement of hydrocarbons from the reservoir.
Hang-Off	Following shut in on a subsea well, the pipe tool joint is suspended on a closed ram.
Heaving Shale	See Cavings.
Hydrate	A solid, crystalline compound of water and a low-boiling-point gas (e.g., methane and propane), in which the water combines with the gas molecule to form a solid. They are formed under reduced temperature and pressure conditions, can impede fluid flow, and resemble snow or ice.
Hydraulic Workover Unit (HWO)	A workover rig that uses a hydraulic jack instead of a draw works to convey the pipe. Utilized only on dead wells.

Hydrogen Sulfide (H_2S)	A toxic poisonous gas with a chemical composition of Hydrogen and Sulfur which is sometimes found mixed with and produced with fluids from oil and gas wells; industry recognized concentration levels above 0.00033 ppm
Hydrostatic Pressure	Pressure exerted by a column of fluid at rest. It increases directly with the density and the depth of the fluid and is expressed in pounds per square inch.
Initial Circulating Pressure (ICP)	Drillpipe pressure required to circulate initially at the selected kill rate; numerically equal to kill-rate circulating pressure plus closed-in drillpipe pressure. Minimum pressure needed to maintain a constant BHP during well kill operations.
Inside Blowout Preventer	A device installed in the drillstring that acts as a check valve allowing drilling fluid to be circulated down the string but prevents backflow (also called an internal blowout preventer).
Kick	An unplanned and unintended flow of formation fluids from the reservoir into the wellbore. It occurs when the pressure exerted by a column of fluid is less than the pressure exerted by the formation fluids.
Kick Intensity	The difference between the maximum anticipated pore pressure and current/planned mud weight.
Kick Tolerance	A calculation used during well planning to determine the maximum kick volume that can be taken into the well and circulated out without causing formation damage. Dependent upon depth (usually the casing shoe) and kick intensity.
Kill Log	Data that is recorded at regular intervals during the kill procedure that creates a log of events. Recordings are commonly made at stroke intervals, and the data includes, but is not limited to, surface pressures, pit levels, choke opening size, strokes per minute, and comments, etc. Also referred to as “Recorded Kill Data.”
Kill Weight Mud	Drilling fluid with sufficient density to provide hydrostatic overbalance and regain primary well control.
Lag Time	The time lapse that occurs between a surface pressure change on one side of a wellbore (U-tube) and the resulting pressure change on the other side.
Leakoff Test (LOT)	Application of incremental surface pressure on a fluid column to determine the pressure at which the exposed formation accepts fluid. Pressure is applied to a closed system and used to determine the fracture strength of an open/exposed formation.
Live Well	Well will flow if open to the atmosphere. (BHP is hydrostatically underbalanced with wellbore fluids.)

Lube and Bleed	A well control technique that replaces an influx, located immediately below the BOP, with drilling fluid. It involves repeatedly pumping in small quantities of kill mud into the wellbore and then bleeding off excess pressure. It works on the principle that the heavier kill mud will sink below the lighter wellbore fluids and so bleeding off the pressure will remove the latter leaving an increasing quantity of kill mud in the wellbore with successive steps.
Managed Pressure Drilling	An adaptive drilling process used to more precisely control the annular pressure profile throughout the wellbore.
Maximum Allowable Annular Surface Pressure (MAASP)	A calculated value for casing pressure that, if exceeded, may result in fluid loss to the formation at the casing shoe (formation fracture) or casing burst (also called maximum allowable casing pressure (MACP).
Maximum Allowable Mud Weight (MAMW)	A calculation to determine the maximum allowable mud weight based on the leakoff test data.
Maximum Allowable Working Pressure (MAWP)	Maximum allowable working pressure rating for a wellhead, tree, tubular, barrier, or other pressure equipment.
Maximum Anticipated Surface Pressure (MASP)	The highest pressure predicted to be encountered at the surface of the well. In a “worst case” condition, this pressure prediction is based upon formation pressure minus a wellbore filled with dry gas. It is used to determine casing design and BOP equipment working pressure requirements.
Measurement While Drilling	Downhole tools that take specific measurements of formation properties and relay the data to surface for analysis.
Mechanical Barrier	Installed mechanical equipment, verified by testing, and capable of containing a formation influx.
Mud Balance	A device to measure the density of the drilling fluid. There are two main types: atmospheric and pressurized.
Negative Test	A test on a barrier element in which the hydrostatic pressure is reduced such that the net differential pressure direction is from the formation into the wellbore.
Necking	The tendency of tubulars to taper to a reduced diameter at some point when subjected to excessive tensional stress and/or external pressure.
Non-Aqueous Fluid (NAF)	An emulsion in which the continuous phase is a water-immiscible fluid (i.e., synthetic or mineral oil) and in which water (commonly brine) is the discontinuous, dispersed internal phase.
Non-shearable	Tool or tubular that is used in the well that cannot be sheared by the Shear Ram installed in the Blowout Preventer.

Oil-Based Mud (OBM)	A fluid in which the continuous phase is a product obtained from petroleum distillation (e.g., diesel oil or mineral oil).
Open Hole	Uncased part of the wellbore.
Operating Pressure	The well site test pressure minus the PCE safety margin. This is the maximum pressure permitted during the well intervention operation. *Note: this definition applies to the lowest pressure rated component of the barrier envelope.*
Packer	The major component of most downhole completion designs. The major function of a packer is to provide a pressure-tight seal between the tubing and casing so fluid flow will be diverted up the tubing rather than up the tubing-casing annulus. This protects the casing from pressure and corrosive fluids.
Permeability	The ability of fluid to flow from one pore space to another. Unit of measurement is the millidarcy or 0.001 Darcy.
Pill(s)	A small quantity of a specific fluid that is pumped into the well to perform a specific function. For example, a “stuck-pipe releasing” pill.
Pilot Hole	A small hole drilled into the formation before opening it up to a larger diameter. Often used when drilling tophole formations where there is a risk of shallow gas.
Pipe Light/Pipe Heavy	Used to define the relationship between the weight of the drillstring and the force required to strip the string into the well. Pipe light occurs when the force required to lower the string is greater than the weight of the string. In this case, the string has to be “snubbed” into the well. Pipe heavy occurs when the weight of the string is greater than the upward force acting on the string. In this case, the string can be “stripped” into the well.
Pit Volume Totalizer (PVT)	A series of devices that continuously monitor the level of the drilling mud in the mud tanks. The PVT displays for the Driller fluid volume, gains, and losses contained in a selected combination of fluid tanks or pits.
Porosity	The spaces within a rock. The ratio of the volume of empty space to the volume of solid rock in a formation, indicating how much fluid a rock can hold.
Positive Test	A test on a barrier element in which the pressure is increased such that the net differential pressure direction is from the wellbore to the formation.
Pressure Control Equipment (PCE)	Equipment designed to safely manage the pressure and flow from a well contributing to total system reliability
Pressure Control Equipment (PCE) Safety Margin	Additional pressure required to perform a well kill (a best industry practice is 20% of rated working pressure). *Note: this definition applies to the lowest pressure rated component of the barrier envelope.*

Pressure Gradient	The hydrostatic pressure per vertical foot of a given fluid.
Primary Barrier	First set of well barrier elements that prevent flow from a source and is the well barrier closest to the well fluids.
Primary Well Control	The kind of well control that occurs when drilling fluid hydrostatic pressure is sufficient to control the formation fluid pressure.
Rate of Penetration (ROP)	The speed at which the drill bit can break the rock under it and thus deepen the wellbore. This speed is usually reported in units of feet per hour or meters per hour.
Rated Working Pressure	The maximum internal pressure that equipment is designed to contain and/or control. Working pressure is not to be confused with test pressure (Refer to latest version of API standard). *Note: this definition applies to the lowest pressure rated component of the barrier envelope.*
Remotely Operated Vehicle (ROV)	An unmanned submersible vehicle controlled from surface. In deepwater operations, remotely operated vehicles are used to inspect subsea structures and equipment and to control or manipulate valves.
Reservoir	A subsurface body of rock having sufficient porosity and permeability to store and permit extraction of fluids. Sedimentary rocks are the most common reservoir rocks because they have more porosity than most igneous and metamorphic rocks and form under temperature conditions at which hydrocarbons can be preserved.
Riser Gas	Gas in the drilling fluid that is above the subsea BOP and is therefore free to migrate upward and expand without any control from the well control equipment.
Risk Management	Systematic application of management policies, procedures, and practices to the activities of communicating, consulting, establishing the context of, identifying, analyzing, evaluating, treating, monitoring, and reviewing risk.
Rock Matrix	The solid part of the rock. Together with the pore spaces (porosity), the rock matrix makes up the total volume of the rock.
Safety Margin (Drilling)	A pressure, in excess of the minimum pressure, that is applied to the wellbore to create an overbalance during an operation, thus reducing the risk of an underbalance situation and potential kick.
Safety Margin (Intervention, PCE)	A factor of reduction applied for a planned well or test pressure to mitigate exceeding the maximum pressure ratings.

Safety Rams	In snubbing operations, safety rams are static, stand-alone, hydraulically operated pipe sealing mechanisms utilized to isolate formation annulus pressure during the repair and maintenance of snubbing stripper assemblies in live well conditions.
Sandstone	A clastic sedimentary rock whose grains are predominantly sand-sized. The term is commonly used to imply consolidated sand or a rock made of predominantly quartz sand, although sandstones often contain feldspar, rock fragments, mica, and numerous additional mineral grains held together with silica or another type of cement.
Secondary Barrier	Second well barrier elements that prevents flow from the source, and designed to withstand failure of primary barrier.
Secondary Well Control	The use of well control equipment to prevent a further influx following failure of primary well control.
Self-Fill (Auto-Fill) Float	Casing float equipment that allows the casing to fill when running in the hole. This can reduce surge pressure on the formation. In case of float failure, regular checks should be made to ensure casing is kept full.
Shale	A fine-grained, fissile, detrital sedimentary rock formed by consolidation of clay and silt-sized particles into thin, relatively impermeable layers. It is the most abundant sedimentary rock.
Shut-In Casing Pressure	Surface pressure measured at the Choke Manifold that represents the underbalance pressure in the annulus between the fluid hydrostatic pressure (mud and influx) and the formation fluid pressure.
Shut-In Drillpipe Pressure	Surface pressure measured at the Standpipe Manifold that represents the underbalance pressure in the drillstring between the mud hydrostatic pressure and the formation fluid pressure.
Shut-In Tubing Pressure	Surface pressure measured at the top of the tubing in a production well. It represents the underbalance pressure in the tubing between fluid hydrostatic pressure and the formation fluid pressure.
Slow Circulation Rate (SCR)	Pressure required to overcome friction at a slow pump rate.
Slug	A volume of mud pill that is denser than the mud in the drillpipe and wellbore annulus. A slug is used to displace mud out of the upper part of the drillpipe before pulling pipe out of the hole and is mixed in the pill pit by adding weighting material (barite) to a few barrels of mud from the surface pits. The pill is pumped into the top of the drillstring to U-tube mud downward, out of the pipe, thus keeping the upper stands of pipe empty during trips.

Snubbing	The process of running or pulling tubing under pressure in a live well when the forces of the well are greater than the weight of pipe (pipe light).
Snubbing Unit	A unit required to move jointed tubulars in or out of a well under pressure.
Solids Control Equipment	Equipment located on surface that cleans solids from the drilling fluid. For example: shale shakers, mud cleaners, desilters, and centrifuges.
Solubility	The property of a solid, liquid, or gaseous substance (called *solute*) in which the substance dissolves in a solid, liquid, or gaseous solvent to form a homogeneous solution. For example, formation gas into oil-based drilling fluid.
Stop Work Authority	A program that provides all operator and contractor/service personnel, directly or indirectly involved with the operation, the responsibility and authority to cease any work activities that may present a hazard. Work cannot resume until the activity is reviewed and found to be safe.
Strand (API Spec 9A)	An element of rope normally consisting of an assembly of wires of appropriate shape and dimensions laid helically in the same direction in one or more layers around a center.
Startup/Shutdown	Startup refers to the process of bringing the pumps up to speed at the start of a kill operation in order to maintain correct bottomhole pressure. Shutdown is the reverse, shutting down the pump.
Surface Pressure	Any pressure exerted at the top of a column of fluid.
Swab Pressure	The temporary reduction in the bottomhole pressure that results from the upward movement of pipe in the hole. The movement of the drillstring or casing through the wellbore is similar to the movement of a loosely fit piston through a vertical cylinder. A pressure reduction or suction pressure occurs below as the piston or the pipe is moved upward in the cylinder or wellbore, and a pressure increase occurs below as they move downward.
Subsurface Safety Valve	A safety valve installed in the production tubing. Maintained in the normally open position by surface pressure, the valve will close in the event of a well integrity problem above the valve.
Surge Pressure	The result of wellbore pressure being temporarily increased as pipe is run into the well.

Trapped Pressure and Trapped Gas	Fluid pressure trapped in the well or the piping system. Trapped gas is gas that is trapped under pressure on the downstream side of the well control equipment.
Tri-axial	Combination of applied stresses (torsional, tensional, and compressive) acting on tubulars.
Trip Margin	Additional weight added to the drilling fluid that compensates for predicted swabbing pressure when tripping out of the hole.
Trip Sheet	A form that documents pipe “tripped” from the well against fluid pumped into the well to replace pipe-displacement volume; used to detect swabbing. The trip sheet is also used when tripping in the hole to detect surging.
Trip Tank	A metal tank with a small capacity—about 20-40 bbl with 1 bbl divisions inside—used to monitor the well during trips and flow checks.
Tubing Displacement	See Displacement
Tubular Buckling	A permanent deformation of the tubular caused by excessive compression from upper loading (snub force from jack) or pressure applied upward force in insufficiently supported columns.
Underbalanced Drilling	A procedure used to drill oil and gas wells where the pressure in the wellbore is kept lower than the fluid pressure in the formation being drilled. As the well is being drilled, formation fluid flows into the wellbore and up to the surface.
Unsupported Length	Any interval above the tree where the tubular is insufficiently supported to prevent buckling.
U-Tube	A way to describe the well where the drillstring volume and annulus volume represent the two arms of a U-shaped tube. The pressures and/or mud levels in each arm balance each other.
Volumetric Method	To control bottom hole pressure and allow influx to migrate without causing any damage to the well.
Wait and Weight Method	Kill method where kill mud is circulated around the well at the same time as the influx is removed.
Wellbore	The hole drilled by the bit. The wellbore is defined by the dimensions and potential volume of the hole and can be openhole (bounded by rock or the geographical formation) or cased hole (bounded by casing).
Wellhead	The equipment installed at the surface of the wellbore. The wellhead incorporates a means of supporting the production tubing and installing the Christmas tree and surface flow-control facilities.

Well Integrity	Application of technical, operational and organizational solutions to reduce risk of uncontrolled release of formation fluids throughout the life cycle of a well.
Well Intervention	An operation in which a well is re-entered for a purpose other than to continue drilling or to maintain or repair it.
Wellsite Test Pressure	The pressure at which the component or system is tested. Shall not exceed rated working pressure. *Note: this definition applies to the lowest pressure rated component of the barrier envelope.*
Wireline	Operations involving the lowering of equipment or measurement tools into and out of a wellbore using wire mounted on a power reel on surface for the purposes of performing well intervention, reservoir evaluation, and pipe recovery.
Wireline Valve (WCV)	An enclosed device with one or more rams capable of closing and sealing over the wireline.
Wireline Shear Seal Valve	A full opening, hydraulically controlled, valve normally installed below the wireline valve and above the wellhead valves. It's primary function is to shear wireline and seal off through the bore
Workover	Process of performing major maintenance or remedial treatments on a producing oil or gas well. In many cases, workover implies the removal and replacement of the production tubing string after the well has been killed and a workover rig has been placed on location.