OIL WELLHEAD EQUIPMENT

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Regardless of the extracted resource, the mouth is an extremely important functional element of the system. The productivity and efficiency of production, as well as convenience during the drilling process, depend on it. When arranging oil production points, special attention is paid to the mouth.

Regardless of whether an oil well or not, according to the generalized definition, the mouth is the intersection of the surface of the upper soil by the mine, i.e. the most loose and unstable reservoir.

In oil production, a wellhead device is a whole complex of pipes located at the very top of the well. There is also equipment that adjusts the pressure indicators inside the mine during drilling. This allows you to adjust the entire production process, adjusting the equipment to specific current requirements.

In fact, an oil well performs several functions:

- protective - prevents the collapse of loose soils;
- collecting - is the exit point of all important components of the well;
- regulating - due to the equipment it is possible to control the pressure inside the system.

It is important to note that all parts of this element undergo specialized processing in order to ensure the tightest possible fit even during intensive drilling. This close fit guarantees extremely tight connections, which is important in the case of petroleum products: they significantly reduce or completely eliminate the formation of leaks.

All elements are designed for different pressures and are selected based on the requirements of a particular design and operating conditions.

The very mouth of an oil well is a combination of several functional units: the head of the casing string; tubing head; fountain fixture.

All of them are important components.

The casing head is the connecting link between casing structures and various oil wellheads. In addition, it: creates a sealing space; holds the mass of the technical column; holds the production string.

As drilling proceeds, sooner or later it becomes necessary to attach the next section of the casing string. Special heavy fittings are designed for this. They are put on with the use of narrowly focused equipment, which is mounted on the head of the casing string, which is equipped with the wellhead.

This element includes grippers to hold the string, and also performs the function of sealing the casing structure, which allows both increasing its strength and eliminating unpleasant phenomena such as leaks or breakthroughs, the elimination of which can take a lot of time.

This equipment is used not only when the drilling process takes place, but also

during complex restoration measures. In this case, the head is used as a pressure control device.

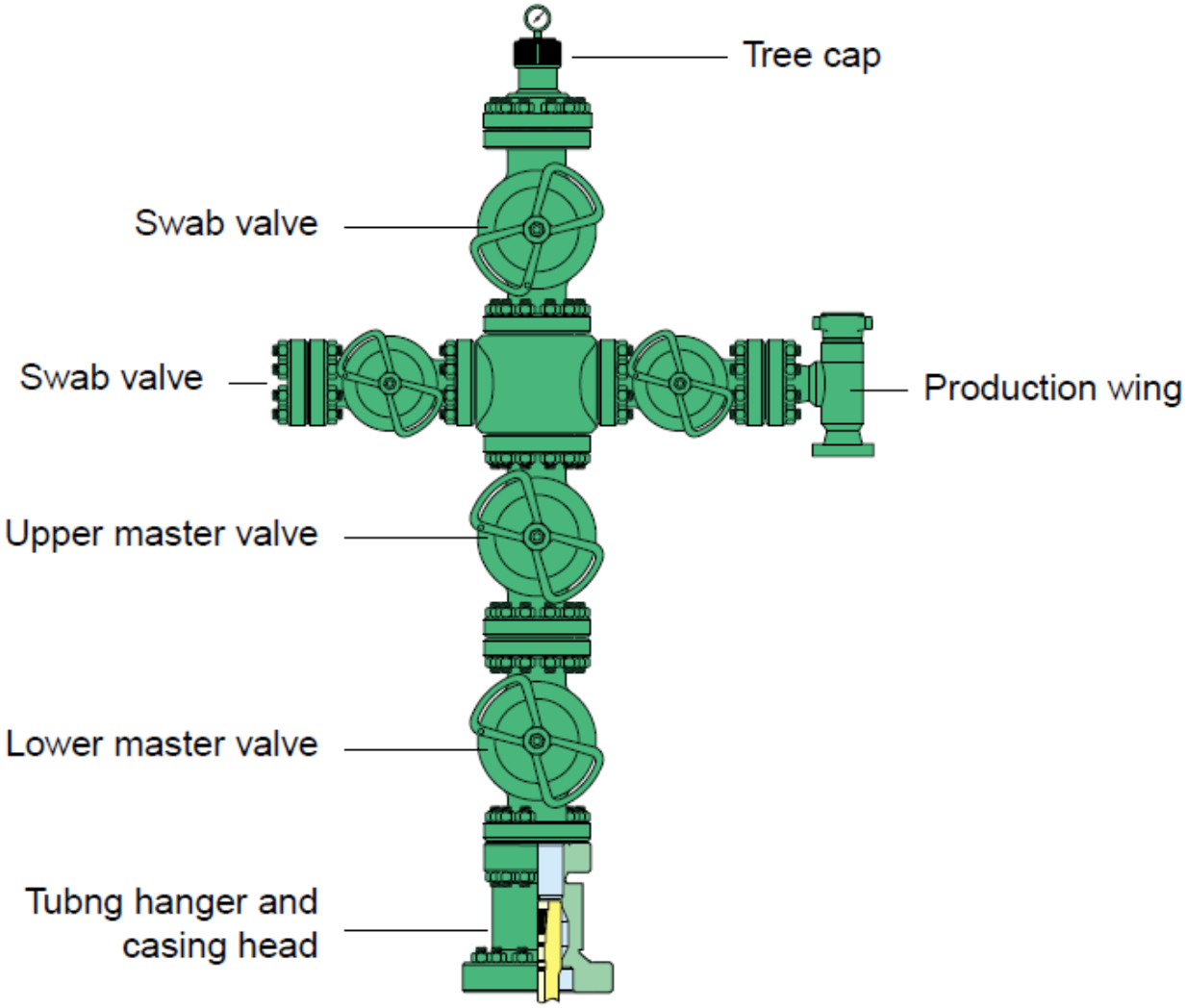

Fig. 1 Well Head

Gradual installation of thin casing is performed using a variety of adapters and regulators, which means that the blowout preventer must be removed and reinstalled each time a new section is required to be installed in the well. Already fixed flanges and bushings become one with the oil well equipment.

Compressor string in the field Well servicing is provided by a whole complex of structures, equipment and elements to which it belongs, and the head of the tubing - or work - string. It rests on the head of the casing and performs a number of the following functions:

Support and fixation. The head holds the tubing in a stable position, and also slightly reduces the load on it

Hermetic seal. The development of oil wells imposes certain requirements, including the absence of leaks or breakthroughs. Reliable sealing reduces the risk of breakdowns.

Output of control equipment. Pipes for regulating liquid or gas flows come to the surface through it.

The tubing head itself is identical to double flanged casing designs. In order to

ensure proper sealing, the head may have a socket or a special bore for high-quality sealing. The design of the wellhead should allow conflict-free placement of equipment, so its placement should be thought out in advance. Drilling should also not affect the operation of the equipment, otherwise, emergency or, in the case of oil deposits, unsafe situations may occur.

Christmas tree fittings are a whole system of mechanisms and devices that perform a number of regulatory and control functions. Nearly every wellhead design for oil production includes a Christmas tree. It is a set of devices designed for sealing the mouth of a flowing well, suspension of lift columns, as well as for flow control and management. The element includes:

- casing head – connected to the casing string;
- tubing head - connected with the tubing columns;
- fountain tree - distribution and adjustment of products.

Due to its specificity, a number of requirements are put forward for this equipment:

- ability to withstand high pressure;
- possibility of pressure measurements;
- ensure the release or injection of gas.

The casing head, located at the bottom of the X-mas tree, is necessary for hanging the casing strings, as well as sealing.

X-mas tree is an important element in the case of oil development, therefore it has its own DSTU. It lists all types of key circuits, including: gauge; valve; tee; throttle.

When choosing a type, it is necessary to focus on the conditions of future operation.

The interaction of all valve components is provided by a variety of flanges and clamps, and the connection to the pipeline is carried out through a manifold. The connection must be carried out in accordance with all the rules, otherwise an emergency may occur.

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