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Section 12: Onshore Completion, Workover and Well Intervention Operations

12.1 Introduction
This section provides the onshore well completion, workover and intervention equipment and operations requirements. In addition to Volume 7, Sections 7, 10 and 11. Contractor(s) shall comply with the procedures in conducting onshore completion and workover activities.

12.2 Expectations and Aspiration
Contractor(s) shall design completion for onshore wells to withstand all expected loads throughout different phases of well life. Completion, workover and Well Intervention operations shall be executed in a safe and efficient manner. The activities shall be done under an approved work programme which shall be recorded and made available to PETRONAS.

12.3 Subsurface Safety Valve
Any onshore well that is located within a five (5) kilometre radius of a village, town or city and that is not on pump and is capable of producing gas in excess of 5 million cubic feet a day shall be installed with a SCSSV. This valve shall be installed in the tubing at least thirty (30) metres below the ground level and such well will have a sealed casing-tubing annulus.

12.4 Well Stimulation
In onshore wells where stimulation treatments employing maximum pressures in excess of 75% of the minimum internal yield pressure of the production casing shall be carried out only through the tubing and below a packer set as near to the production formation(s) as practicable.

12.5 Disposal of Produced Fluids
Oilfield brines or other mineralised produced waters shall not be stored or evaporated using salt water disposal pits.

Impervious collecting pits constructed of clay or other suitable impermeable materials may be used for produced fluid disposal provided approval has been obtained from PETRONAS. Such pits in use when abandoned shall be back-filled and compacted.
Discharge of oilfield brines and other mineralised water into a surface drainage water course whether it be a dry of flowing creek or a stream or a river is prohibited unless approved by relevant Authorities.

Such fluid may be disposed of upon approval by PETRONAS by injecting into porous formations or zones that by nature contain connate water compatible with the injecting fluid and that such zones are separated by impermeable beds that shall prevent polluting the fresh water sands.

Any waste or hazardous material generated during operations shall be disposed in accordance with Volume 7, Section 13 with reference to Volume 3.

12.6 Onshore Wellhead Valve Assembly

All completed wells onshore which are capable of natural flow shall be equipped with wellhead valve assembly having fittings and connections with a rated working pressure greater than the maximum anticipated shut-in surface pressure of the well. Wells with surface pressures in excess of 1500 psi shall have two (2) master valves.

When a well located near to the normal high water mark of a body of water or a stream or a river is in such a situation that the oil spill or leak may reach the water, Contractor(s) shall ensure that, when a well is not on pump, the wellhead valve assembly shall contain a SSV that shall automatically shut-off an uncontrolled flow of oil from the well in the event of a wellhead failure or leak. Such valve shall be the second valve from bottom to top arrangement.

12.7 Wells on Pump

Wells which are incapable of natural flow and require pumping by sucker rods or submersible downhole pumps or any other mechanical lifting methods to produce may be exempted from requirements under Volume 7, Sections 10.3.4, 10.4, 10.7.4 and 10.7.5.