

The water depth and sea conditions are such that mooring lines can be used or the rig can be dynamically positioned properly.

Vertical intervention requires that there is some mechanical competence to the well at the sea floor. This technique may not be possible if the blowout has breached around the structural pipe and the well has cratered. This creates a situation that may preclude stabbing into the blowing well for a "surface" kill due to the inability to locate the wellhead. If, however, tools can enter the blowing well a kill may be possible by running a tool string to bottom and circulating the wellbore with kill fluid. If not, relief well drilling is probably the only alternative.

The assumptions listed above describe a situation expected in a deepwater drilling operation where a floating vessel is used. It may be appropriate to consider this type of scenario in a discussion of vertical intervention techniques. The situation described by these assumptions is depicted by Figure 7.3.1.

7.3.2 Intervention Rig. The intervention rig is likely to be a semisubmersible drilling vessel that can be positioned over the blowout. The vessel should be equipped comparably to the original drilling vessel. The vessel's mooring lines should be set to allow the vessel to be pitched over the blowout without. If the vessel is equipped with a dynamic positioning (DP)

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equipment. A crane, derrick and manipulator arm should be installed along with appropriate lighting for work sea floor.

Qualified operators should be available to handle the ROV during vertical intervention work. The operators will be required to work in shifts, so at least two operators are required for the duration of the job. It will be their responsibility to provide the "eyes" for most of the operations. They will require the experience necessary to interpret video output continuously on location.

The ROV should have multi-functional capability. Debris clearance, manipulation of hydro-jet cutting equipment, explosives placement and side-scan sonar capability may be required. Manipulator arm(s) will probably be required. These requirements may be satisfied by multiple ROVs working from a central control point.