

WellCAP Cross-reference Tool*
WORKOVER OPERATIONS
WCT-2WS-X – SUPERVISORY LEVEL

WELLCAP WCT-2WS SUPERVISORY LEVEL		REFERENCE TO APPLICATION MATERIALS (Note Where Each Topic Can Be Found)			
WELLCAP OUTLINE NO.	TRAINING TOPIC	MANUAL (Cite Chapter and Page No.)	LECTURE (Note Day/Time of Course Outline)	SIMULATION (Identify Exercise)	OTHER RESOURCE (Identify Video, CBT Program, Handout, Etc.)
I.	REASONS FOR COMPLETION AND WO OPERATIONS				
A.	Definitions: completions operations				
B.	Definitions: workover operations				
C.	Reasons for completion and workover operations				
II.	DEFINITIONS AND CALCULATIONS				
A.	Pressure fundamentals				
B.	Capacities and displacements				
C.	Force				
III.	KICK FUNDAMENTALS				
A.	Definition of a kick				
B.	Causes of kicks				
C.	Kick detection				
D.	Timely response to kick indicators				

* To further facilitate cross-referencing, the proposed document may include a margin or parenthetical reference to the appropriate WellCAP outline number.

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IV.	GAS CHARACTERISTICS AND BEHAVIOR				
A.	Pressure, volume, relationship (Boyle's Law)				
B.	Gas expansion and migration relationships				
C.	Solubility of gases				
V.	COMPLETION AND WORKOVER FLUIDS				
A.	Pressure control function				
B.	Characteristics				
C.	Fluid types				
D.	Pressure losses and causes				
E.	Fluid density concerns and measuring techniques				
VI.	SURFACE EQUIPMENT				
A.	Christmas (Xmas) tree				
B.	Blowout preventer stack				
C.	Auxiliary well control equipment				
D.	Accumulators				
E.	Chokes and choke manifolds				
F.	Fluid measuring devices				
G.	Gas detection and handling systems				

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H.	Lubricator/Stripper assemblies				
VII.	SUBSURFACE EQUIPMENT				
A.	Workstring and production tubing				
B.	Completion equipment				
VIII.	PROCEDURES				
A.	Set/Check alarm limits				
B.	Pre-recorded well information				
C.	Flow check after cementing				
D.	Shut-in				
E.	Verify shut-in				
F.	Well monitoring during shut-in				
G.	Tripping				
H.	Stripping operations				
I.	Well control drills				
IX.	KILLING A PRODUCING / FLOWING WELL PRIOR TO / DURING COMPLETION / WORKOVER OPERATIONS				
A.	Objectives of well control techniques				

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B.	Techniques for controlling or killing a producing well				
C.	Preparing for well entry				
X.	WELL CONTROL TECHNIQUES				
A.	No returns pumping (e.g., bullheading)				
B.	Volumetric; lubricate and bleed				
C.	Constant bottomhole pressure (BHP) methods (forward and reverse circulation)				
D.	Well control kill worksheet				
E.	Well control procedures				
XI.	COMPLICATIONS AND SOLUTIONS				
A.	Trapped pressure				
B.	Pressure on casing				
C.	Underground flow				
D.	Cannot circulate well				
E.	Hydrates				
F.	Lost circulation				
XII.	ORGANIZING A WELL KILL OPERATION				
A.	Personnel assignments				
B.	Pre-recorded information				

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C.	Planning responses to well control scenarios				
D.	Communications responsibilities				
XIII.	TESTING				
A.	Testing completion pressure control equipment				
B.	Pressure and function tests				
C.	Installing rings, flanges and connections				
XIV.	GOVERNMENT, INDUSTRY AND COMPANY RULES, ORDERS AND POLICIES				
A.	Incorporate by reference				
XV.	OPTIONAL TOPICS				
A.	H ₂ S considerations				
B.	Subsea considerations				
C.	Coiled tubing operations				
D.	Snubbing and HWO operations				
E.	Small tubing unit				
F.	Wireline				
G.	Operations with specific well control concerns				