



Horizontal Drilling Workshop

Oklahoma Geological Survey
Moore Norman Technology Center
Norman, Oklahoma
Wednesday, June 18, 2008

Bob Westermarck



Instructor

Name: Bob Westermarck
Companies: Grand Directions LLC
Grand Resources, Inc.
OGCI-PetroSkills

Experience: 37 years

Current Positions: Engineer
Part-time instructor

First Directional Well: 1971
First Horizontal Well: 1984
First Horizontal Oil Well: 1988
Most Recent Hz Well: TODAY!





Resume

Grand Resources / Tulsa 5 years

- President - Grand Directions LLC

OGCI / Tulsa 13 years

- DOE Project Manager
- Manager of the Amoco Drilling Test Facility in Catoosa (Contractor)
- PetroSkills Instructor

Independents 4 years

Majors 20 years





Why are we here today?

To answer the questions:

Should I drill a horizontal well?



**How do I choose which
horizontal drilling
system is appropriate
for my reservoir?**



Do I need to drill a new well or can I use an existing wellbore?



**Will an open hole
provide a satisfactory
completion technique?**



**How can your drilling
and completion
operation minimize
formation damage?**



**If you choose to drill
underbalanced, can you
safely drill with air?**



**What kind of rig is
necessary to drill
horizontal wells?**



**How do you determine
and control the actual
direction and location
of the wellbore?**



**Can you run open and
cased hole logs in
horizontal wells?**



**If necessary, how do
you stimulate
horizontal wells?**



Planning

Form a multi-disciplined team and
MEET as a TEAM

Reservoir Engineer

Geologist

Completions Engineer

Drilling Engineer

Drilling Related Contractors

Completion Related Contractors

Field Supervisors