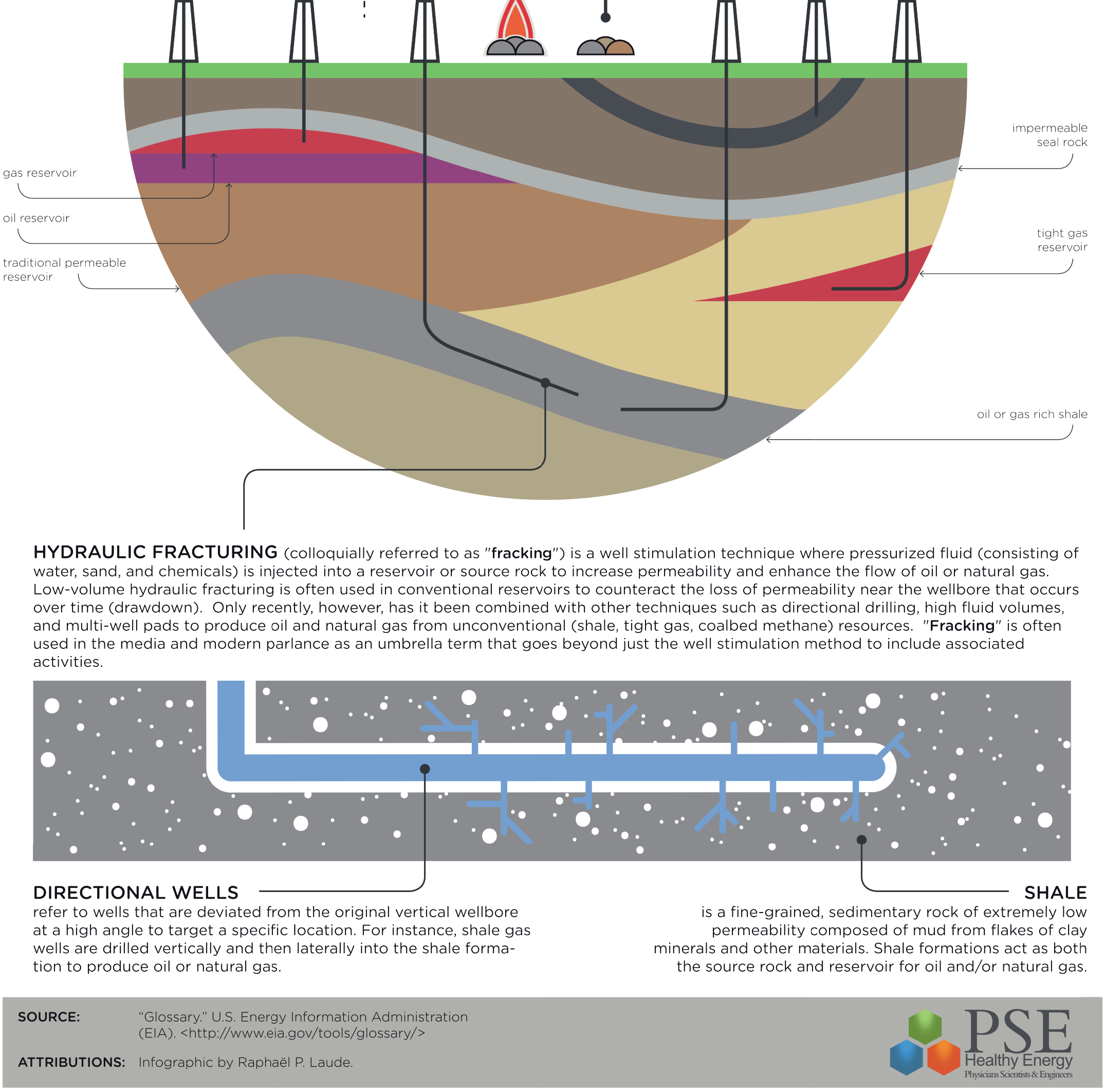
UNCONVENTIONAL OIL AND GAS

A GUIDE TO TERMINOLOGY

UNCONVENTIONAL OIL AND GAS REFERS TO OIL AND NATURAL GAS PRODUCED FROM ATYPICAL RESERVOIR TYPES THAT REQUIRE TECHNIQUES THAT ARE DIFFERENT THAN THOSE REQUIRED FOR CONVENTIONAL OIL AND GAS PRODUCTION. UNCONVENTIONAL IS A BROAD AND COMPLEX TERM THAT INEVITABLY CHANGES OVER TIME DEPENDING ON THE RESOURCE, TECHNOLOGIES, AND SCALE OF PRODUCTION. HERE WE CONSIDER THE SIX MOST COMMON TYPES OF OIL AND GAS PRODUCED ONSHORE USING UNCONVENTIONAL METHODS.

	CONVENTIONAL OIL AND GAS	UNCONVENTIONAL OIL			UNCONVENTIONAL GAS		
		Shale / Tight	Oil Shale	Oil Sands / Tar Sands	Shale	Coalbed Methane	Tight Gas
defined	Low viscosity oil and gas produced from a reservoir of sufficient permeability to allow for production using natural pressure and pumping operations.	Oil produced from shale and other tight formations.	Oil produced from heating sedimentary rock containing kerogen.	Oil refined from bitumen-impregnated sands.	Natural gas produced from gas-bearing shale formations.	Natural gas produced from coal seams.	Natural gas produced from low permeability reservoirs.
found in (example)	*Various areas (e.g. Permian Basin, Appalachian Basin, Denver Basin)*	*Bakken (ND, MT) and Eagle Ford (TX) Formations.*	*Green River, Piceance and Uinta Basins (WY, CO, UT).*	*Athabasca (Alberta, Canada) and Uinta Basin (UT).*	*Marcellus (PA, WV, OH) and Barnett (TX) Formations.*	*San Juan (CO, NM) and Powder River (WY) Basins.*	*Denver Basin (CO) and other parts of the Western U.S..*



HYDRAULIC FRACTURING (colloquially referred to as "**fracking**") is a well stimulation technique where pressurized fluid (consisting of water, sand, and chemicals) is injected into a reservoir or source rock to increase permeability and enhance the flow of oil or natural gas. Low-volume hydraulic fracturing is often used in conventional reservoirs to counteract the loss of permeability near the wellbore that occurs over time (drawdown). Only recently, however, has it been combined with other techniques such as directional drilling, high fluid volumes, and multi-well pads to produce oil and natural gas from unconventional (shale, tight gas, coalbed methane) resources. "**Fracking**" is often used in the media and modern parlance as an umbrella term that goes beyond just the well stimulation method to include associated activities.

DIRECTIONAL WELLS refer to wells that are deviated from the original vertical wellbore at a high angle to target a specific location. For instance, shale gas wells are drilled vertically and then laterally into the shale formation to produce oil or natural gas.

SHALE is a fine-grained, sedimentary rock of extremely low permeability composed of mud from flakes of clay minerals and other materials. Shale formations act as both the source rock and reservoir for oil and/or natural gas.

SOURCE: "Glossary." U.S. Energy Information Administration (EIA). <http://www.eia.gov/tools/glossary/>

ATTRIBUTIONS: Infographic by Raphaël P. Laude.

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