

# How smart PIGs keep pipelines safe

Smart PIGs are probes that clean and inspect pipelines to prevent leaks and environmental damage. In a natural gas line, PIGs are powered by natural gas pressure pushing them onward. Outfitted with computers, GPS, sensors and magnets that transmit data to engineers, smart PIGs can pinpoint any signs of trouble.

**WHAT THEY LOOK FOR:** Stress, corrosion, gouges, dents and cracks.

**WHY ARE THEY CALLED PIGS?** In addition to being an acronym for **P**ipeline **I**nspection **G**auges, they also make a squealing noise when running through a pipe.

**HOW BIG ARE THEY?** When PIGs are used to inspect Duke Energy natural gas lines, they can be up to 18 feet long and can inspect pipes that are up to 30 inches in diameter.



**PIPE WALL THICKNESS SENSORS**  
are powerful magnets.

**CALIPER SENSORS**  
measures any dents on the pipe.

**BATTERY AND DATA STORAGE CONTAINER**



**DRIVE CUPS**  
for propulsion  
through the pipe.

**ODOMETER WHEELS**  
keep the PIG centered in the pipe and  
measure speed and distance traveled.

# Smart Clean Pigs

**Camilla Rothe**



## Smart Clean Pigs:

**Smart, Clean Pigs , Smart, Clean Pigs** Allan Fowler,1993 Briefly describes where pigs live what they look like and how they behave Natural Gas Pipelines United States. General Accounting Office,1992 Great Smoky Mountains National Park Amy Graham,2008-10-01 Learn about the Great Smoky Mountains National Park s history and varied attractions as well as its resident wildlife **14(1D)** ,2004 **Low pressure liquid pipelines in the North Slope, Greater Prudhoe Bay, Alaska : hearing , Low Pressure Liquid Pipelines in the North Slope, Greater Prudhoe Bay, Alaska** United States. Congress. House. Committee on Transportation and Infrastructure,2007

**The Safety of Hazardous Liquid Pipelines: Regulated Vs. Unregulated, ... (111-124), June 29, 2010, 111-2**

**Hearing, \***,2011 **Pipeline Planning and Construction Field Manual** E. Shashi Menon,1978-06-26 Pipeline Planning and Construction Field Manual aims to guide engineers and technicians in the processes of planning designing and construction of a pipeline system as well as to provide the necessary tools for cost estimations specifications and field maintenance The text includes understandable pipeline schematics tables and DIY checklists This source is a collaborative work of a team of experts with over 180 years of combined experience throughout the United States and other countries in pipeline planning and construction Comprised of 21 chapters the book walks readers through the steps of pipeline construction and management The comprehensive guide that this source provides enables engineers and technicians to manage routine auditing of technical work output relative to technical input and established expectations and standards and to assess and estimate the work including design integrity and product requirements from its research to completion Design piping civil mechanical petroleum chemical project production and project reservoir engineers including novices and students will find this book invaluable for their engineering practices Back of the envelope calculations Checklists for maintenance operations Checklists for environmental compliance Simulations modeling tools and equipment design Guide for pump and pumping station placement *Rust* Jonathan Waldman,2015-03-10 Finalist for the Los Angeles Times Book Prize A Wall Street Journal Best Book of the Year Rust has been called the great destroyer the pervasive menace and the evil This look at corrosion its causes its consequences and especially the people devoted to combating it is wide ranging and consistently engrossing The New York Times It is the hidden enemy the one that challenges the very basis of civilization This entropic menace destroys cars fells bridges sinks ships sparks house fires and nearly brought down the Statue of Liberty s torch It is rust and this book full of wit and insight disasters and triumphs is its story Jonathan Waldman s first book is as obsessive as it is informative he takes us deep into places and situations that are too often ignored or unknown The Washington Post In Rust Waldman travels from Key West to Prudhoe Bay meeting people concerned with corrosion He sneaks into an abandoned steelworks and nearly gets kicked out of Can School He follows a high tech robot through an arctic winter hunting for rust in the Alaska pipeline In Texas he finds a corrosion engineer named Rusty and in Colorado he learns

of the animosity between the galvanizing industry and the paint army Along the way Waldman recounts stories of flying pigs Trekkies rust boogers and unlikely superheroes The result is a man versus nature tale that s as fascinating as it is grand illuminating a hidden phenomenon that shapes the modern world Rust affects everything from the design of our currency to the composition of our tap water and it will determine the legacy we leave on this planet This exploration of corrosion and the incredible lengths we go to fight it is engrossing brilliant Waldman s gift for narrative nonfiction shines in every chapter Watching things rust who would have thought it could be so exciting Natural History

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