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GASLAND

Directed by Josh Fox
USA | 2010 | 107 min

TEACHER'S GUIDE

This guide has been designed to help teachers and students enrich their experience of documentary film by providing support in the form of questions and activities. There are a range of questions that will help teachers frame discussions with their classes, activities for before, during and after viewing the film, and some web links that provide starting points for further research or discussion. In separate packages, there will also be support materials available with information regarding general viewing and teaching principles for documentary film and the fundamental aspects of making documentary films.

The Film

Move over crude oil. Natural gas is the new player in the energy game and an unprecedented drilling boom is sweeping America. The Halliburton-developed technology of "fracking" or hydraulic fracturing has unlocked a "Saudi Arabia of natural gas" across the United States. So when filmmaker Josh Fox is approached to lease his Pennsylvania farmland for drilling, he almost takes the money. But after asking a few questions, he unwittingly stumbles into an environmental disaster. Residents from north to south report contaminated wells, mysterious ailments and even combustible water straight from the tap. Fox blends terrifying facts of corporate cover-ups and governmental atrophy with a personal and refreshingly absurd take on the whole rotten mess. The Sundance Grand Jury Prize winner, *Gasland* is an astonishing exposé of America's new energy race. (Synopsis by Myrocia Watamaniuk)

The Filmmaker

Gasland is the first documentary feature film by celebrated filmmaker and theatre artist Josh Fox. It is his second feature film in two years, following the narrative feature *Memorial Day*, released in 2009. Fox grew up in Milanville, Pennsylvania, and New York City and his work is known for its mix of gripping narrative, heightened imagery and its commitment to socially conscious themes and subjects. He is the founder and artistic director of International WOW Company, a film and theatre company that works closely with actors and non-actors from diverse cultural backgrounds, including members of the U.S. military, activist communities in sustainable energy and design and actors, dancers, designers and filmmakers from around the

world to create new work that addresses current national and global social and political crises. The company has premiered new work in eight countries with a rotating network over 100 actors, dancers, musicians, technical and visual artists spanning 35 countries on five continents. With International WOW Company, Fox has received a Drama Desk Nomination, an Otto Award, five grants from the National Endowment for the Arts and five prestigious MAP Fund grants, a Ford Foundation grant and an Asian Cultural Council Fellowship, among many other awards and honours. In 2008, Fox completed his first feature film, *Memorial Day*, produced by Artists Public Domain, Journeyman Pictures and C-Hundred Film Corp. *Memorial Day* is a genre-bending examination of American culture and the atrocities of Abu Ghraib, where war is a party and partying is a war. The film premiered at CineVegas Film festival in 2008 and was hailed as "unforgettable" by *Variety* and "uniquely fascinating" by *Indiewire*, garnering a reputation as "the most controversial film at the festival," according to Spoutblog. As the artistic director of International WOW, Fox has established himself as a significant force in New York theatre. Fox has conceived, written, directed and/or produced more than 30 productions in Thailand, Indonesia, Philippines, Japan, Germany, France and New York City, which have included *Surrender* (2009 Drama Desk Nomination), *You Belong to Me*, *Death of Nations*, *The Comfort and Safety of Your Own Home* (Top Ten of 2004, *NY Theatre Wire*), *Limitless Joy*, *The Expense of Spirit* and *American Interference* (Best in the Fringe Festival, *Village Voice*).

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BACKGROUND INFORMATION

Facts on Natural Gas Drilling

The largest domestic natural gas drilling boom in history has swept across the United States. A new method of drilling known as "hydraulic fracturing" has opened up new territory in 34 states to extensive drilling, including the Marcellus Shale, a vast formation that underlies most of Pennsylvania and New York, including the New York watershed and the Catskills/Poconos.

A major upswing in production took place in 2005 when U.S. Congress and the administration of former president George W. Bush exempted the industry and hydraulic fracturing from the Safe Drinking Water Act and many primary environmental protection laws. While the public relations campaign for the natural gas industry promotes its product as clean burning, the claim hides the fact that the new form of drilling, pioneered by Halliburton, is incredibly harmful to our environment and threatens to permanently contaminate a huge amount of the country's water supply, create drastic air pollution conditions and despoil huge areas. Despite overwhelming evidence of contamination, mismanagement and corruption, the general public remains unaware of the extreme effect the drilling may have on their lives.

Source: <http://www.gaslandthemovie.com/wp/>

Facts on Hydraulic Fracturing

Often an oil- or gas-bearing formation may contain large quantities of oil or gas, but have a poor flow rate due to low permeability, or from damage or clogging of the formation during drilling. This is particularly true for tight sands, oil shales and coalbed methane. Hydraulic fracturing (also known as fracking, which rhymes with cracking) is a technique used to create fractures that extend from the well bore into rock or coal formations. These fractures allow the oil or gas to travel more easily from the rock pores, where the oil or gas is trapped, to the production well. Typically, in order to create fractures a mixture of water, proppants (sand or ceramic beads) and chemicals is pumped into the rock or coal formation.

Eventually, the formation will not be able to absorb the fluid as quickly as it is being injected. At this point, the pressure created causes the formation to crack or fracture. The fractures are held open by the proppants and the oil or gas is then able to flow through the fractures to the well. Some of the fracturing fluids are pumped out of the well and into surface pits or tanks during the process of extracting oil, gas and any produced water, but studies have shown that anywhere from 20 to 40 per cent of fracking fluids may remain underground.

Acidizing involves pumping acid (usually hydrochloric acid), into the formation. The acid dissolves some of the rock material so that the rock pores open and fluid flows more quickly into the well. Fracking and acidizing are sometimes performed simultaneously in an acid fracture treatment.

Source: <http://www.earthworksaction.org/FracingDetails.cfm>

Facts on Environmental Justice

The concept of environmental justice has surfaced and taken shape over the last 30 years. The first time environmental justice hit the radar screen was in 1976 at a conference entitled, "Working for Environmental and Economic Justice and Jobs," sponsored by the United Automobile Workers of America (UAW) and several other organizations. This conference was held at the Walter May Reuther Family Education Center, located at Black Lake near Onaway, Michigan. Over the years, people of colour and low-income groups, through struggle to protect their communities from environmental insults, have brought meaning to the concept of environmental justice. Although Love Canal, New York, was not the first or the worst of contaminated sites, the struggle that took place there did raise the nation's consciousness of health impacts of chemical and industrial waste long-buried in a mostly white neighbourhood near Niagara Falls, New York. The Warren County, North Carolina, struggle to prevent the burial of PCBs in a landfill in predominantly black area was the first time the connection was made between civil rights and environmental protection. As people struggled in communities across the country for safer and cleaner environments, the Environmental Protection Agency (EPA) was propelled to define environmental justice as follows:

The fair treatment and meaningful involvement of people of all races, cultures, incomes and educational levels with respect to the development and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies. Meaningful involvement means that: (1) people have an opportunity to participate in decisions about activities that may affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) their concerns will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

Source: http://www.eoearth.org/article/Environmental_justice

VIEWING THE FILM WITH STUDENTS

There are important themes in this film that have broad implications for students and their futures. Take time to activate your students' background understanding of these themes before viewing. This will help them as they come to their own understanding and develop their critical abilities.

The following three subsections, on this page, are intended to provide you with a range of pre-viewing, viewing and post-viewing activities. They are followed by a set of questions based upon the film's larger thematic domains, some follow-up questions and quotations, sample curricular outcomes, and a page of web links for further investigation.

Pre-Viewing Activities

Show students the trailer and/or poster for the film (<http://www.gaslandthemovie.com>). Have students work in small groups to try and identify themes or ideas conveyed by the trailer and/or poster.

Discuss with students how effective/affective the trailer and the poster are as media pieces.

Have students use a graphic organizer to summarize the film as they watch it. There are two major themes that are intertwined in the film: hydraulic fracturing and environmental justice.

To explain how hydraulic fracturing works, project a diagram onto a screen. This website (<http://vimeo.com/6886216>) helps explain hydro fracking.

For homework, have students read one of the articles referenced in the web links on pages eight and nine.

Print several of the questions or quotations from page five on individual sheets of paper. Have students work in small groups or with partners to discuss if they agree with the ideas. Have them share the statement and what they think or believe about it with the class.

Set a purpose for viewing by having a discussion about one or more of the questions or quotations on page five.

Viewing Activities

Have students take notes on, or jot down connections to, one of the thematic domains on page five of this guide. Ask students to find proof from the film that supports their connections.

Have students jot down five ideas for discussion, or questions that the film raised in their minds.

Post-Viewing Activities

Show the students their quotations from the pre-viewing activity and see if their minds were changed or opinions altered or enhanced by the film.

Have students research another region or city that has been affected by gas drilling. Have students share their findings in a class discussion the next day.

Have students create a one-page newsletter discussing the implications of hydraulic fracturing in the Marcellus Shale regions of the U.S. Also include Canadian regions that are potential/current sites for gas exploration. Many research links can be found on the Earthworks website listed on page eight.

Have student complete an exit note (single small sheet of paper with one phrase or idea written on it) that demonstrates one thing they have learned, felt or decided as a result of watching the film.

Have students write a letter to Chesapeake Energy to discuss their concern about the gas drilling development expansion into the Pennsylvania region.

Discuss with students their initial reactions to the various characters and situations confronted in the film. Did it change by the end of the film? Why?

For further ideas around how to explore this documentary, use the guiding questions on page four.

THE BIG QUESTIONS/IDEAS/THEMES

Multiple Perspectives

What is the subject of this film? Can you determine the filmmakers' perspective on this subject? What evidence can you find in the film to support your view?

How does this film help you analyze and interpret points of view about issues that concern people?

Does the filmmakers' perspective foster respect for diversity and an inclusive society? If so, how?

Identity

Whose story is told in this documentary? Whose story is not told? How does this story, and the way it is told, help you understand your own community/life?

How do the people in this film identify with their community? What are the common bonds among the people in this film? What challenges do they face in expressing their identity?

What film techniques do the filmmakers use to convey the identity of the people in this film?

Citizenship

What insights does this documentary offer about the ideals of good citizenship in the community depicted in this film?

How does the film deal with issues of freedom, equality, human dignity, and individual and collective rights and responsibilities?

Change and Continuity

How does this film help you understand a community's values and its attitudes towards an issue at a particular time?

What changes do the people in the film experience? What causes those changes? What are the consequences of those changes for the people in the documentary?

Culture and Community

Which aspects of a people's culture does this film focus on? Why do you think the filmmakers focused on those aspects?

How do the images, themes and message of this film help you understand the filmmakers' attitude towards the subject? What do you think might have been the intended audience's attitude towards the documentary subject?

Individuals, Societies and Economic Decisions

What economic systems are at work in this film? What are some of the causes and effects of the economic decisions made by the people in the film's community?

Does money play a part in the decisions being made in the film and what does it tell you about their local culture?

Power and Governance

What system of government control do we see in this documentary? How is power distributed within this society? What are the implications of that distribution on issues affecting the people's well-being and freedom?

Global Connections

What global issues are addressed in this film? What is the filmmakers' point of view on the opportunities and challenges of those issues?

Adapted from NFB Documentary Lens: <http://www.nfb.ca>

EXTENSION ACTIVITIES

Additional Questions for Pre- or Post-Viewing Activities

Why is there a disconnect between what science is telling us and what the corporations and politicians are doing about gas drilling?

Do you believe the gas drillers are proud of what they are doing? Why are they telling the residents to drink their water? Are they liable? What is corporate responsibility?

Analogies can be useful to explain an issue. How is a gas well like a car built in the 1890s? Explain. Use your own analogy to describe the same issue.

The gas energy industry is very central to many aspects of America. Using a T-chart, discuss the positive and negative economic and environmental features regarding the harnessing of gas power.

Discuss the NIMBY (Not In My Backyard) attitude of the American public in regards to their need for local energy sources.

How was the Environmental Protection Agency exposed in this film? Did it change how you felt about environmental organizations? Why or why not?

The Bureau of Land Management's (BLM) goal is "to sustain the health, diversity and productivity of the public lands for the use and enjoyment of present and future generations." Is the practice of gas drilling on their lands fulfilling their mandate? Does it put sustainability into practice?

Knowing the interconnectedness of the source of our drinking water, do you feel that our drinking source is safe? Explain.

In the case of the "Gasland tragedy" going on in the Marcellus Shale regions of the U.S., the environment was neglected for economic benefit. Try to think of or research two other examples where this has occurred around the world.

Do you think there is enough citizen representation in North America? In the world? What needs to be changed in the system to ensure more gasland tragedies don't happen again in the future?

What advice would you give New York City politicians? What do you hope happens to Fox's property?

Quotations From the Film to Explore

"I'm not a pessimist, I've always had a great deal of faith in people, that we wouldn't succumb to frenzy or rage or greed. That we'd figure out a solution, without destroying the things we love."

"Water, water, everywhere and not a drop to drink."

"I guess the law is for certain people."

"An atmosphere of secrecy."

"It's amazing that what took Mother Nature millions of years to build, could be destroyed in just a few hours."

Other Quotations to Explore

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Brundtland Commission, 1983

"The question is... whether we shall, by whatever means, succeed in reconstituting the natural world as the true terrain of politics, rehabilitating the personal experience of human beings as the initial measure of things, placing morality above politics and responsibility above our desires, in making human community meaningful, in returning content to human speech, in reconstituting, as the focus of all social action, the autonomous, integral and dignified human 'I.'" Vaclav Havel

"Let every individual and institution now think and act as a responsible trustee of Earth, seeking choices in ecology, economics and ethics that will provide a sustainable future, eliminate pollution, poverty and violence, awaken the wonder of life and foster peaceful progress in the human adventure." John McConnell, founder of International Earth Day

"You must be the change you wish to see in the world." Mahatma Gandhi

"All that is necessary for evil to triumph is for good men to do nothing." Edmund Burke

"As crude a weapon as a cave man's club, the chemical barrage has been hurled against the fabric of life." Rachel Carson, on the effect of chemical insecticides and fertilizers

EXAMPLES OF CURRICULUM EXPECTATIONS

COURSE	OVERALL EXPECTATIONS
Grade 9 Geography	<ul style="list-style-type: none"> • explain the relationship of Canada’s renewable and non-renewable resources to the Canadian economy. • predict how current or anticipated changes in the geography of Canada will affect the country’s future economic, social and environmental well-being. • analyze the ways in which natural systems interact with human systems and make predictions about the outcomes of these interactions.
Grade 10 Civics	<ul style="list-style-type: none"> • explain what it means to be a “global citizen” and why it is important to be one. • analyze responses, at the local, national and international levels, to civic issues that involve multiple perspectives and differing civic purposes.
Grade 11 Physical Geography	<ul style="list-style-type: none"> • explain how the earth provides both a habitat for life and a resource for society. • evaluate the impact of natural systems on people and their activities. • evaluate the impact of human life on the environment. • explain the importance of stewardship and sustainability as guiding principles for human use of the physical environment. • explain the importance of water to global systems. • explain how human uses of the earth, especially uses involving technology, cause changes over time in natural systems.
Grade 12 Canadian World Issues	<ul style="list-style-type: none"> • explain how the earth’s natural and human systems are interconnected in multiple, complex ways. • analyze the impact of selected global trends on people and environments at the local, national and global level. • analyze geographic issues that arise from the impact of human activities on the environment in different regions of the world. • evaluate approaches, policies and principles relating to the protection and sustainability of the planet’s life-support systems. • evaluate the social, economic and environmental impact of the strategies for sustainable development implemented by a variety of individuals, organizations and institutions. • analyze trends and predict changes in the human use of the earth and its resources. • evaluate the cultural, economic and environmental impact of changing technology. • evaluate the effectiveness of short-term and long-term solutions to geographic problems and issues at the local, national and global level.
Grade 12 Media	<ul style="list-style-type: none"> • demonstrate understanding of a variety of media texts. • deconstruct a variety of types of media texts, identifying the codes, conventions and techniques used and explaining how they create meaning. • analyze and critique media representations of people, issues, values and behaviours.

EXAMPLES OF CURRICULUM EXPECTATIONS

COURSE	OVERALL EXPECTATIONS
Grade 12 Environment and Resource Management	<ul style="list-style-type: none"> • explain significant short-term and long-term effects of human activity on the natural environment. • analyze and evaluate interrelationships among the environment, the economy and society. • analyze environmental and resource management issues and explain their global implications. • explain how population growth affects the sustainability of global ecosystems. • evaluate the effectiveness of the efforts of the international community to deal with environmental and resource management issues. • evaluate the impact of economic, social, political and technological change on natural and human systems. • explain the purpose of environmental laws and regulations at the local, provincial and national levels and evaluate their effectiveness over time. • evaluate a variety of approaches to resolving environmental and resource management concerns on a local, regional and national scale.
Grade 12 International Law	<ul style="list-style-type: none"> • evaluate the effectiveness of governments, courts and individual and collective action in protecting the environment.
Grade 12 Politics	<ul style="list-style-type: none"> • explain the rights and responsibilities of individual citizens, groups and states in the international community. • analyze the factors that determine the power and influence of a country.

WEBSITES AND ONLINE RESOURCES

About the Film

The official website for *Gasland* includes the trailer, blogs and links to other sources of information about gas drilling.
<http://www.gaslandthemovie.com>

The Hot Docs Canadian International Documentary Festival website includes information about the film.
<http://www.hotdocs.ca/film/title/gasland>

About the Filmmakers

The International Wow Company is a film and theatre production company founded by Josh Fox.
<http://www.internationalwow.com/newsite/josh.html>

Gasland Blog is a web link to the movie, which includes a 25-minute PBS interview with Josh Fox. Also includes links to organizations that are fighting against drilling in the United States.
<http://www.gasland.us/wp/>

PowerPoint Presentations and Factsheets

A PowerPoint analysis called "Lifecycle Water Management Considerations and Challenges for Marcellus Shale Gas Development" was done by ALL Consulting in July 2009.

<http://www.all-llc.com/publicdownloads/Arthur%20IOGA%20LifecycleWtr%20070609.pdf>

A PowerPoint presentation called "Environmental Best Practices for Shale Gas Development" was delivered by ALL consulting in July 2009.

<http://www.all-llc.com/publicdownloads/Arthur%20IOGA%20BMP%20070609.pdf>

A 17-page document called "Hydraulic Fracturing Considerations for Natural Gas Wells of the Marcellus Shale" was completed by All Consulting in September 2008.

<http://www.all-llc.com/publicdownloads/GWPCMarcellusFinal.pdf>

Chesapeake Energy (featured in the film) created this three-page fact sheet about hydraulic fracturing in March 2010.
http://www.chk.com/Media/CorpMediaKits/Hydraulic_Fracturing_Fact_Sheet.pdf

Online Sources

Geology.com: The section on Marcellus Shale includes links to news, videos and maps, as well as lease and royalty information.
<http://geology.com/articles/marcellus-leases-royalties.shtml>

Illinois Environmental Protection Agency: This link offers proposed best management practices for oil exploration and extraction.

<http://www.epa.state.il.us/p2/fact-sheets/bmp-oil-exploration.html>

Earthworks: a non-profit organization dedicated to protecting communities and the environment from the destructive impacts of mineral development, in the U.S. and worldwide. They stand for clean water, healthy communities and corporate accountability. They work for solutions that protect the earth's resources and communities. The website includes many useful publications and factsheets, including, "Drinking Water Protected? Think Again—Hydraulic Fracturing."
<http://www.earthworksaction.org/pubs/Fracking.pdf>
<http://www.earthworksaction.org/FracingDetails.cfm>
<http://www.earthworksaction.org/Colohealth.cfm>

No Dirty Energy: An explanation about how tar sands oil affects the United States, with great links for maps, letters and facts sheets. Used in a post-viewing activity. There are other links, including to information about the impact of oil, gas, coal, tar sands, oil shale and uranium.

http://www.nodirtyenergy.org/index.php?option=com_content&task=view&id=103&Itemid=149

U.S. Department of the Interior, Bureau of Land Management: As mentioned in the film, a link on their website discusses "New energy for America" and how they are incorporating the park lands and harnessing energy.

<http://www.blm.gov/wo/st/en/prog/energy.html>

Encyclopedia of the Earth: A new electronic reference about the Earth, its natural environments and their interaction with society. The Encyclopedia is a free, fully searchable collection of articles written by scholars, professionals, educators and experts who collaborate and review each other's work. The articles are written in non-technical language and will be useful to students, educators, scholars and professionals, as well as to the general public.

<http://www.eoearth.org>

Online Articles

The article "Voices from the Gas Fields" was published in the November/December 2006 issue of *Orion Grassroots Network*. The article includes interviews from residents of Colorado's Garfield County.

<http://www.orionmagazine.org/index.php/articles/article/186/>

Environmental Justice: This quarterly peer-reviewed journal is the central forum for the research, debate and discussion of the equitable treatment and involvement of all people, especially minority and low-income populations, with respect to the development, implementation and enforcement of environmental laws, regulations and policies. The journal explores the adverse and disparate environmental burden impacting marginalized populations and communities all over the world. Subscription is necessary but can be done through the librarian. A free issue is offered for review.

<http://www.liebertpub.com/products/product.aspx?pid=259>

The article "Energy Bill Raises Fears about Pollution, Fraud," in the July 30, 2005, *Washington Post*, discusses how the Supreme Court decided to expand the power of local governments to seize private homes for drilling.

<http://www.washingtonpost.com/wp-dyn/content/article/2005/07/29/AR2005072901128.html>

Online Video Clips

A five-minute clip about "Why Hydrofracking in Shales is Different." Other clips include "Kill the Drill," "Toxic Frack Fluids," "Radiation in Hydrofracked Wells" and "Toxins in Hydrofracked Wells."

<http://vimeo.com/6886216>

Marcellus Shale in Pennsylvania: Tom Murphy and Dave Messersmith, extension educators at Penn State, discuss the Marcellus Shale, leases, pipelines and implications for natural gas development. (There's a 10-minute introductory video.)

<http://geology.com/articles/marcellus-leases-royalties.shtml>

Various Links for Lesson Plan Ideas, Media Awareness, Critical Literacy and Documentary Films

Think Literacy: Cross Curricular Approaches, Grades 7-12: This excellent online 33-page document produced by the Toronto District School Board contains literacy exercises for students involving reading, writing and interpreting.

An exercise "Reading Graphical Texts: Interpreting Photographs" can be found on pages 22 to 27.

<http://www.edu.gov.on.ca/eng/studentssuccess/.../files/ThinkLitCanWorld.pdf>

The Association for Media Literacy: This Canadian website examines how media impacts and influences culture.

<http://www.aml.ca/home>

Using Documentaries in the Classroom: This teacher librarian's personal website contains excellent resources for teaching with documentary films.

http://www.frankwbaker.com/using_docs_in_the_classroom.htm

Media Awareness: A Canadian non-profit media education and Internet-literacy resource library.

<http://www.media-awareness.ca>

Center for Media Literacy: A U.S. website which provides several resources for making, understanding and criticizing media.

<http://www.medialit.org>

The National Film Board of Canada website: On this site is an area with teaching resources and short documentary films that can be used as teaching aides.

<http://www.nfb.ca>

Hot Docs Looking at Documentaries: A teaching guide that sets out questions designed to help teachers include the study of documentary film in their curriculum.

http://www.hotdocs.ca/youth/docs_for_schools/2010_docs_for_schools_selections/