THE COALBED METHANE INDUSTRY:
PRODUCED WATER AND TOXICS ISSUES
TWO PRIMARY WASTEWATER DISPOSAL METHODS

- INJECTION/RE-INJECTION
- SURFACE DISPOSAL
SURFACE DISCHARGE:

UNCERTAINTY and VARIATION

- **QUANTITY**
  20-200 gpm/well

- **QUALITY**
  Metals
  Ions
  Hydrocarbons
THE CROWN of the CONTINENT

- BRITISH COLUMBIA
- U.S. – CANADA BORDER
- MONTANA
THE EAST KOOTENAY COALFIELDS, British Columbia

EnCana Inc. CBM Pilot Project

East Kootenay Coalfields

Montana
NEARBY COMMUNITIES:

FERNIE, ELKFORD and SPARWOOD, B.C.
FLATHEAD VALLEY, MT
PROJECT OVERVIEW

- **FIRST CBM PILOT IN PROVINCE OF B.C.**
- **17 WELLS OPERATING OVER A THREE-YEAR PERIOD**
- **SURFACE DISPOSAL**
WASTEWATER TREATMENT

- CARBON FILTER SYSTEM
- AERATION IN SETTLING PONDS
- DIRECT DISCHARGE TO ELK and FORDING RIVERS
CBM WASTEWATER COMPOSITION

- ELEVATED HYDROCARBONS
- HIGH AMMONIUM
- HIGH BARIUM, IRON, CALCIUM, MAGNESIUM and COPPER
TOXIC LEVELS OF AMMONIUM, FATAL TO RAINBOW TROUT

100% FISH MORTALITY WITHIN 48 HOURS OF TESTING
ADDITIONAL CONCERNS

- FLARING
- UN-LINED WASTE PITS
- FRAC’ING
REGULATORY NEGLIGENCE

- Project launched with no Provincial regs. in place for CBM
- Discharge permitted with no wastewater regs. in place
- Communities unaware of discharge into local watersheds
Wastewater data proprietary, not available for public review
No policies on waste pits, frac’ing or flaring
EnCana never penalized for failure of toxicity tests, wastewater discharge continues, pilot project expanding
BASELINE DATA

WITHOUT BASELINE DATA, IT IS DIFFICULT TO DETERMINE THE IMPACTS OF DEVELOPMENT

INSUFFICIENT LONG-TERM DATA ON THE IMPACTS OF CBM DEVELOPMENT ON HUMAN HEALTH and the ENVIRONMENT
CBM IS AN UNPRECEDEDENT EXPERIMENT on HUMANS and the ENVIRONMENT

- AIR QUALITY: VOC’S, PAC’S, H2S
- WATER QUALITY: GROUND AND SURFACE
- AMMONIUM TOXICITY: ESCALATING FOOD WEB EFFECTS

Therefore. . .

PRECAUTIONARY PRINCIPLE