Agricultural Pest Management on Upstream Oil and Gas Sites Alberta, Canada

Clubroot: A Case Study
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Introduction

• A little bit about me
• A little bit about Encana
• Clubroot Management
  – One Oil and Gas Perspective
  – Issue emergence
  – Issue review
  – Practice development
  – Practice execution
  – Verification
  – Practice refinement
• Closing
Encana Corporation

- Leading North American energy producer
- Focus on resource plays
  - Large scale, repeatable, innovative development programs
- Several resource plays across AB and BC
- Social license to operate is paramount
  - operator of choice
  - employer of choice
  - partner of choice
Encana Corporation
Clearwater BU

- Coal Bed Methane (CBM) resource play is major play in Clearwater BU
- Focus on Horseshoe Canyon (HSC) development
- HSC primarily found in agricultural areas
- More than 19,000 active/suspended CBM Wells
- More than 11,000 km pipeline
- Wellsites have small footprint
- Minimal disturbance
Pop-Quiz: How many wells are there?

8 wells in ½ Section

1-30

16-19

14-20
CBM Well and Pipeline Examples
Clubroot Management
One Oil and Gas Perspective

- Increasing concern surrounding farm Bio-Security
- Discovery of Clubroot in AB galvanized landowners
- Existing and potential landowners asking for mitigations
- Potential for objection to new development
- Rapid response to address landowner concerns, regulatory requirements and development team expectations
Clubroot Management
One Oil and Gas Perspective

• Change requires education, motivation and planning
• This is what we leaned:
  – Clubroot is a serious pest of canola which is a common crop in the areas within which we operate
  – It spreads through soil movement; vehicles/equipment are a significant vector of dispersion
  – Due to the nature of our developments we could potentially contribute to spread
  – By the end of 2007
    • More that 50% of landowners were asking what Clubroot mitigations we had in place
    • Up to 25% were demanding washing and disinfection
  – In other words … it was a crucial concern for our neighbours
Learnings continued:

- Encana's land base in Alberta covers parts of counties that account for approximately 3 million acres or 102 million bushels of Canola production
- This accounts for 75% of the Alberta total acreage
- Encana's land base in BC covers parts of counties that account for approximately 58,000 acres or 1.7 million bushels of Canola production
- This accounts for 90% of the BC total acreage.
- Based on this Encana is exposed to 25% of the National Canola production
- If Canola is selling for around $14 per bushel our exposure could impact over a billion dollars in canola production
Learnings continued:

- The cost of washing and disinfection of equipment for the construction of one CBM well was estimated at $43,000 per well and would use 112,000 L of water in 2008.
- Clearwater planned for 300 drills in 2008.
- Approximately $12 million and 33 million L of water.
- If Encana washed and disinfected from field to field during pipeline construction, cost was estimated at approximately $7 million and would have used 26 million L of water.
- Total of $19 million and 59 million L of water.
- Additional costs and water use would make the play unsustainable.
- But it didn’t make the issue any less important …
Clubroot Management
One Oil and Gas Perspective

• Solution: Build a Practice that was reasonable, achievable, and secure
• Worked with CAPP in the development of their practice
• Developed internal Clubroot Practice which has evolved to a Pest Practice
• Key conditions:
  – We clean by hand from field to field
  – Washing is part of regular maintenance (document)
  – Vehicles/equipment that arrive dirty are sent back at suppliers expense
  – We follow provincial and county/MD regulations and by-laws
  – If our operations occur on lands with Clubroot, we will work with and abide by site specific mitigation plans set out by Agricultural Fieldmen and the landowner
Closing

- Encana strives to be the neighbour of choice
- Pest management is a very complex issue
- We are continuously encountering new issues, learning and refining our practices
- We are very grateful for our collaboration with Alberta Agriculture and specifically Ron Howard!
Questions?