

# Drilling Inside Municipal Boundaries What are the Issues?

SACPA – October 3, 2013

Goldenkey – Penny Project Reference



# Presenters

- ◆ David Hill
- ◆ Tim Robillard
- ◆ Representatives of Goldenkey's Penny Project
- ◆ Role is to facilitate a public consultation process
- ◆ Not all information might be ready or available here today as we are still in the midst of early consultation activities and project development



# Outline

- ◆ Minerals sold by the Alberta Government
- ◆ Common, Local & Private Issues
- ◆ Goldenkey Penny Project
- ◆ Information, Issues, Questions, Discussion



# Mineral Leases In Alberta

- ◆ Publically auctioned off in private bids by the Alberta Government
- ◆ Leased with a time limitation for lease holders to drill
- ◆ Conditions include – minimum amount of required acreage to be drilled to earn the mineral lease or portions of it
- ◆ Royalty Structure Formula
- ◆ Rights Reversion



# Common, Local & Private Issues

- ◆ **Common Issues** – themed concerns raised in similar, but different projects
- ◆ **Local Issues** – localized and specific issues relating to a proposed activity in a certain geographical area
- ◆ **Private Issues** – those raised by a landowner who is negotiating to have facilities on his/her property



# Common Issues

- ◆ **Common Issues** – themed concerns raised in similar, but different projects
- ◆ **Health & Safety**
- ◆ **Consultation**
- ◆ **Environmental Protection**



# Local Issues

- ◆ **Local Issues** – localized and specific issues relating to a proposed activity in a certain geographical area
- ◆ **Future Land Use – Potential Development Restrictions**
- ◆ **Environmental Protection – Noise, Dust, Traffic**
- ◆ **Health & Safety**
- ◆ **Proliferation of development**





# Private Issues

- ◆ **Private Issues** – those raised by a landowner who is negotiating to have facilities on his/her property
- ◆ Location on property – minimize surface disturbance
- ◆ Compensation
- ◆ Access and Security
- ◆ Environmental – Noise, Dust, Traffic
- ◆ Impact to lifestyle and/or operations i.e. agricultural





# Goldenkey Oil Inc.

- ◆ Small, private, Canadian funded company incorporated in 2007
- ◆ Focus on oil & gas exploration
- ◆ License Liability Rating of 3.09
- ◆ 17 wells in Alberta (mostly oil)
- ◆ 2 wells in Saskatchewan
- ◆ Current total production is 60 boepd in AB & 50 boepd in SK



# Goldenkey Land Holdings

- ◆ 131 sections of crown land in both Alberta & Saskatchewan
- ◆ 47 sections held in Alberta
  - ◆ Viking, Retlaw, Matziwin, Penny, Willesden Green, Manir
- ◆ 84 sections held in Saskatchewan around Weyburn area



# The Penny Project

- ◆ Potential for oil exists in the Penny field (within Lethbridge city limits)
  - ◆ based on seismic data interpretation and investigation
- ◆ Minerals leased in 2011
- ◆ Three exploratory wells (two surface locations) targeting the Big Valley formation of the Wabamun Group
- ◆ Approx 2km of 3" pipeline to connect to existing Bonavista infrastructure in the area to collect the solution gas
- ◆ Exploratory means that there are no existing wells in this reservoir
- ◆ Oil production is anticipated



[illegible]

# Big Valley Formation





# Drilling Plan Overview

- ◆ Seek and obtain regulatory approvals
- ◆ Site preparation (soil conservation, site leveling...)
- ◆ Rig drills surface hole to 391m – Covers base of groundwater protection
- ◆ Install and cement steel surface casing
- ◆ Continue to drill main hole
- ◆ Evaluate and run production casing or plugs



# Drilling Plan Overview

- ◆ Clean and prepare site for completion and potential production
- ◆ Perforate and stimulate zone of interest
- ◆ Assemble the production facilities on site and construct pipeline to tie-in points with Bonavista
- ◆ Place on production and monitor well production regularly



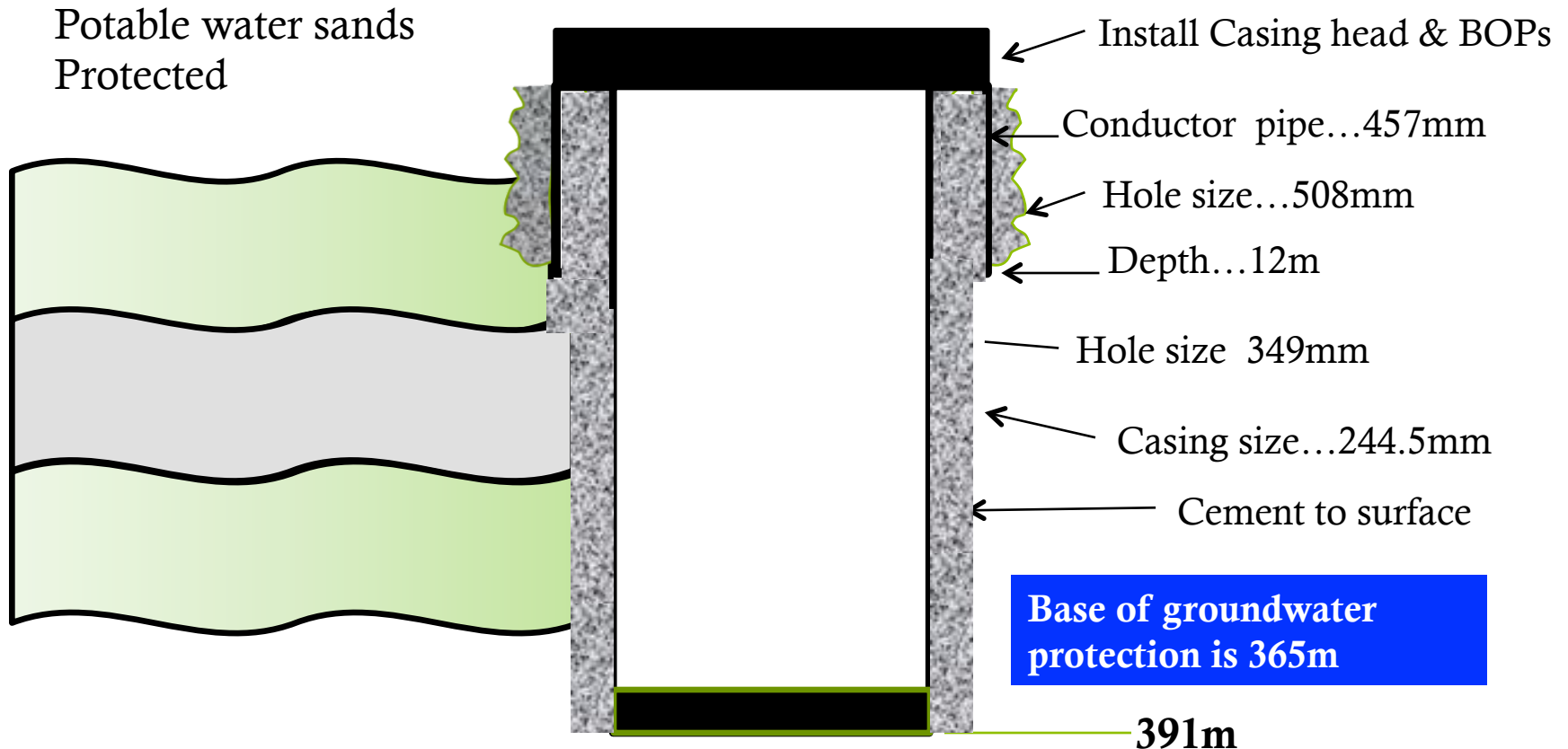


# Groundwater Protection

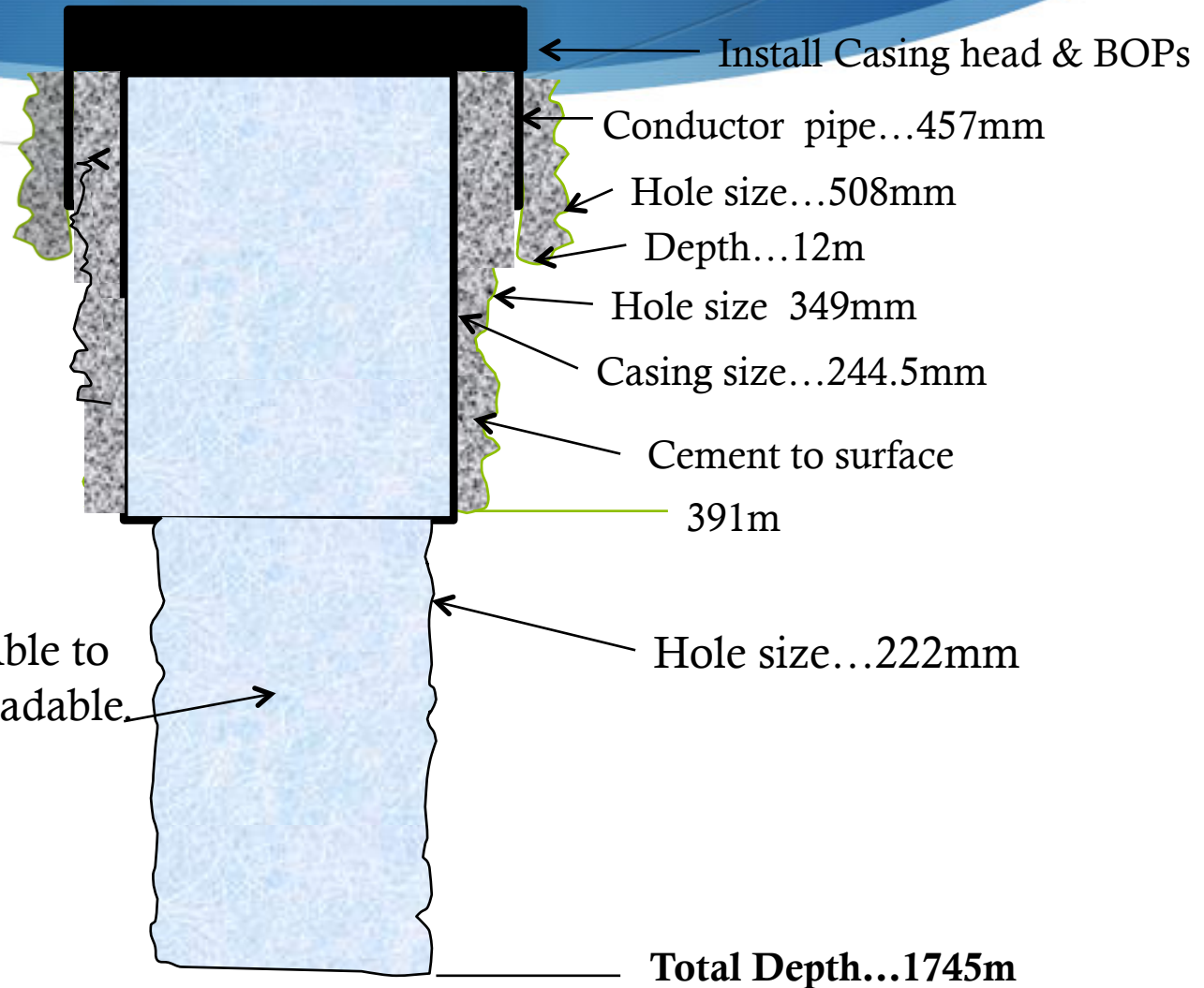
- ◆ Base of groundwater protection determined by ESRD
  - ◆ Alberta Geological Survey (ERCB ST-55)
- ◆ The base has been established at 365.5m – Goldenkey will add an extra 25m to exceed regulatory requirements
- ◆ Cementing 244.5mm of surface casing annulus from the 391m base all the way to the surface
- ◆ This isolates the well bore from any established groundwater



# Potable Water Protection & Surface Casing Cemented

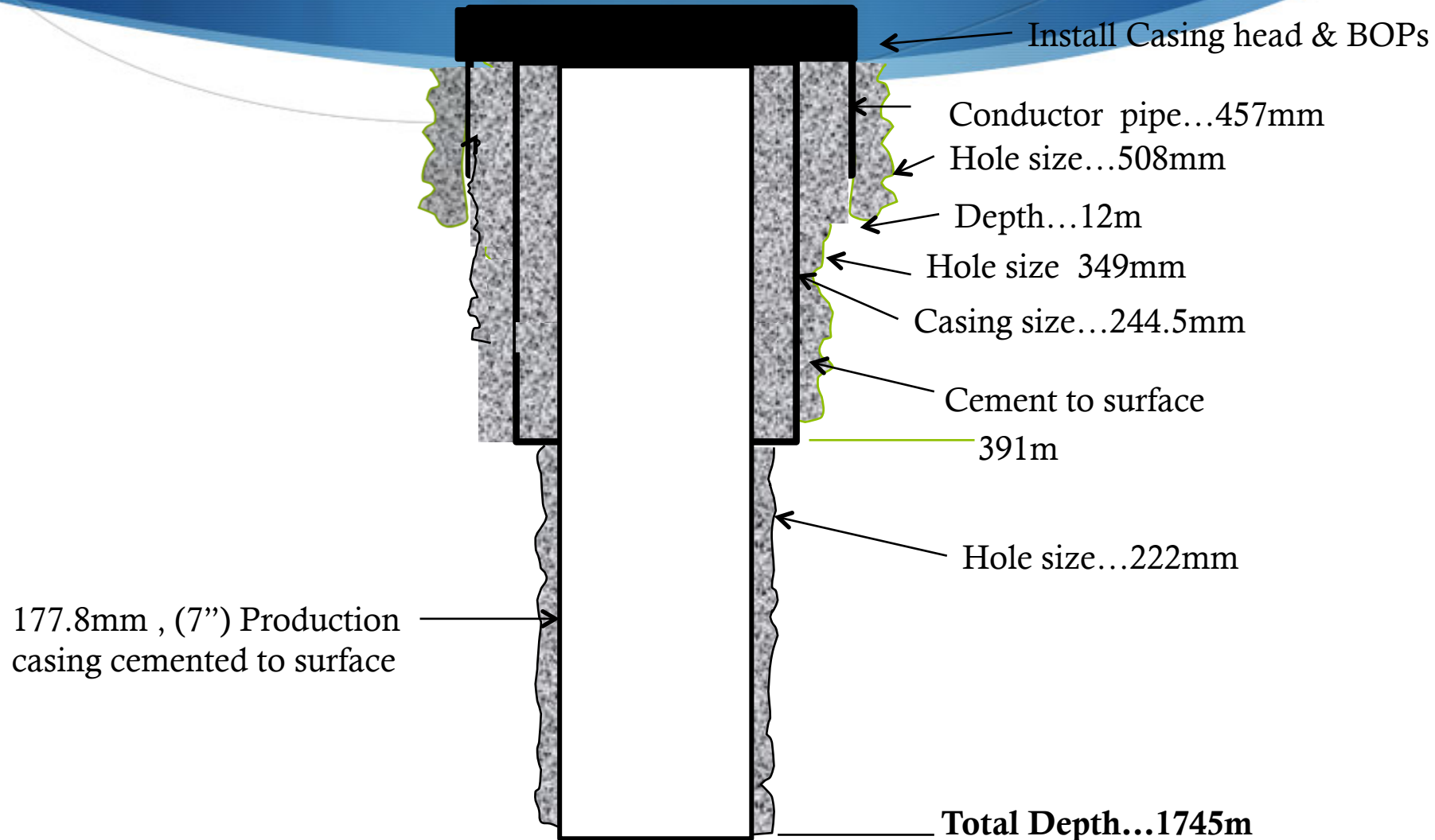


# Drill Ahead to TD

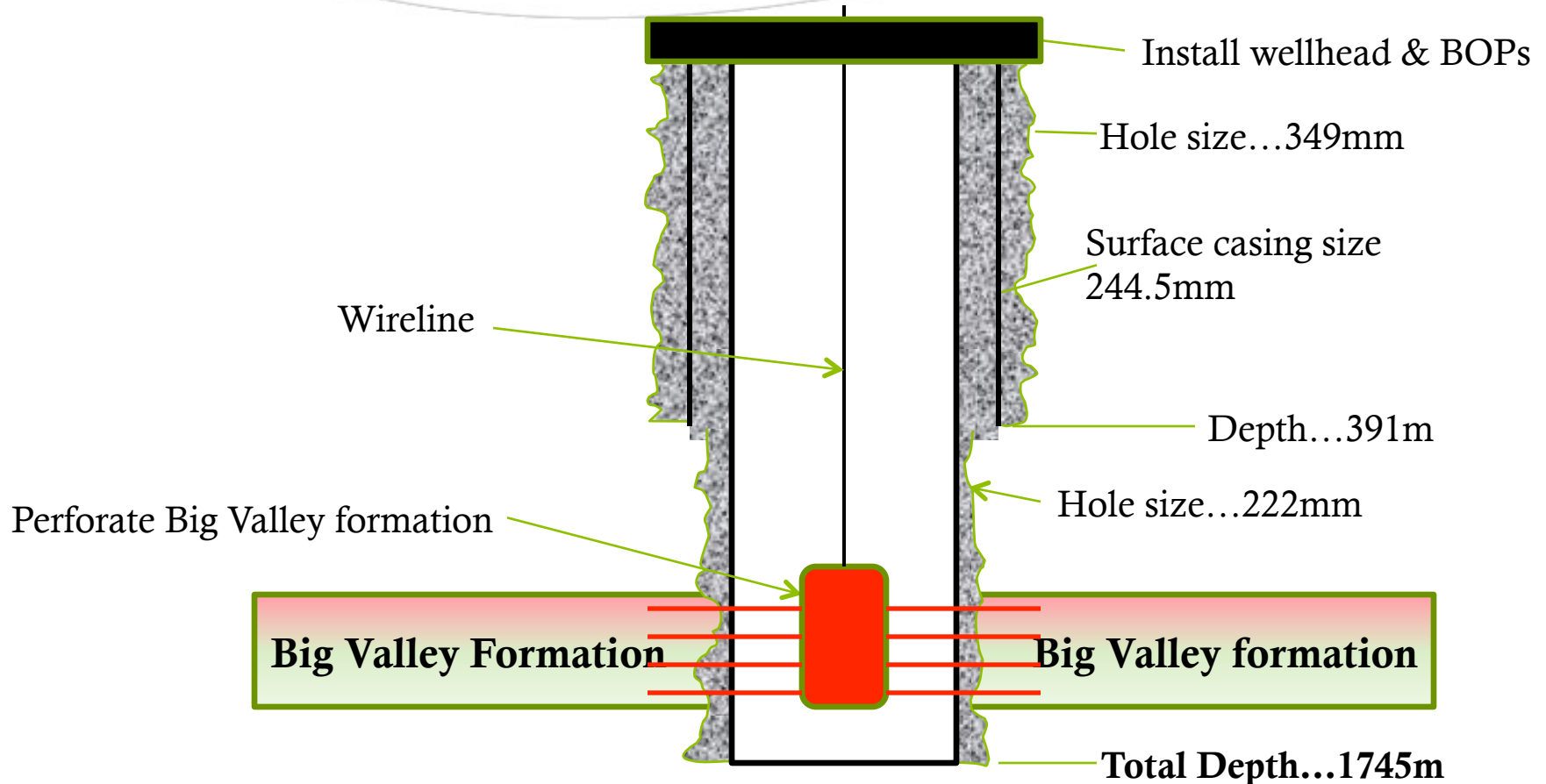


Drilling fluid: water with polymers and additives. Able to be landspread and biodegradable. AER compliant

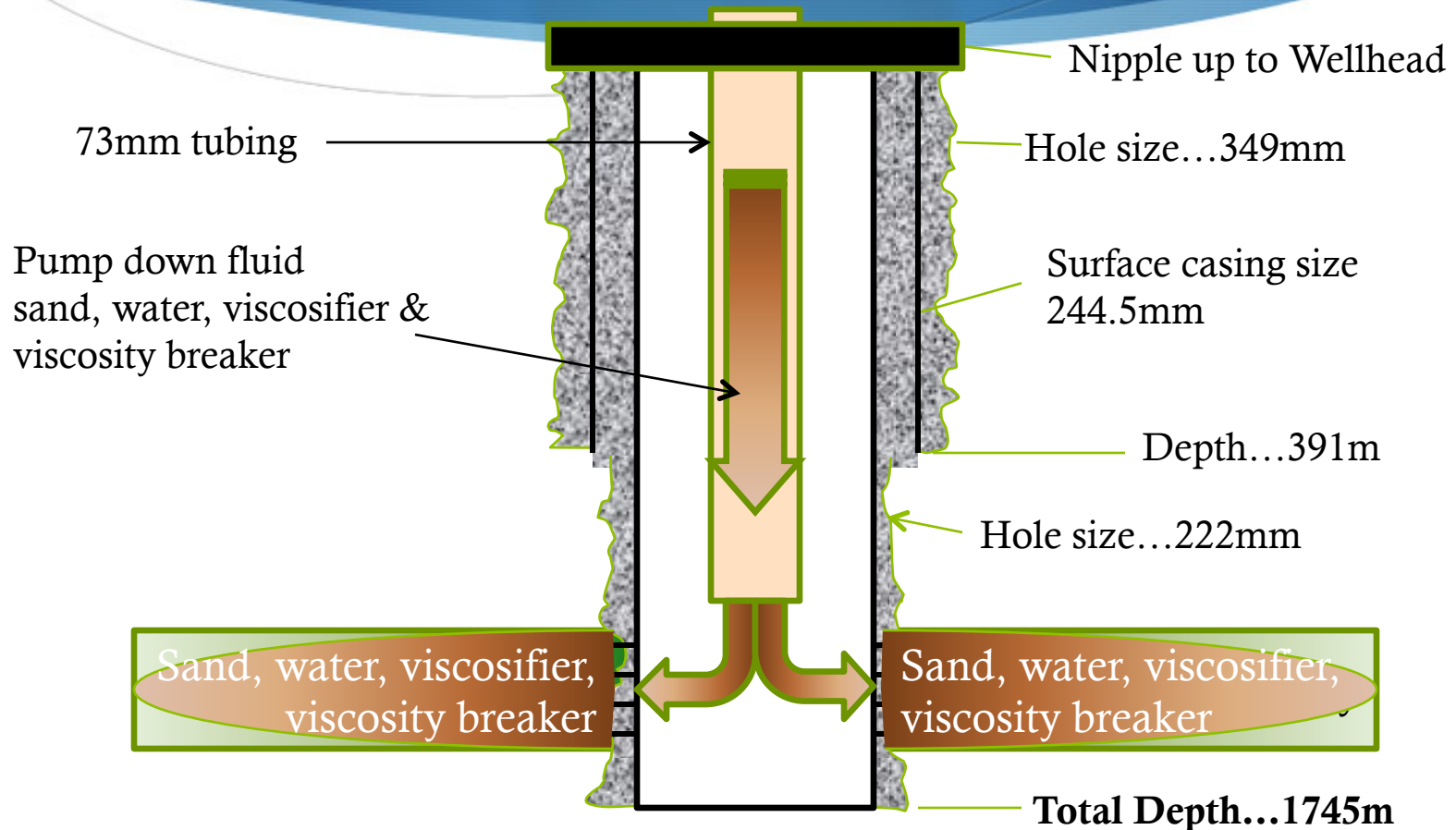
# Cement 177.8mm (7") Production Casing



# Perforate Zone of Interest

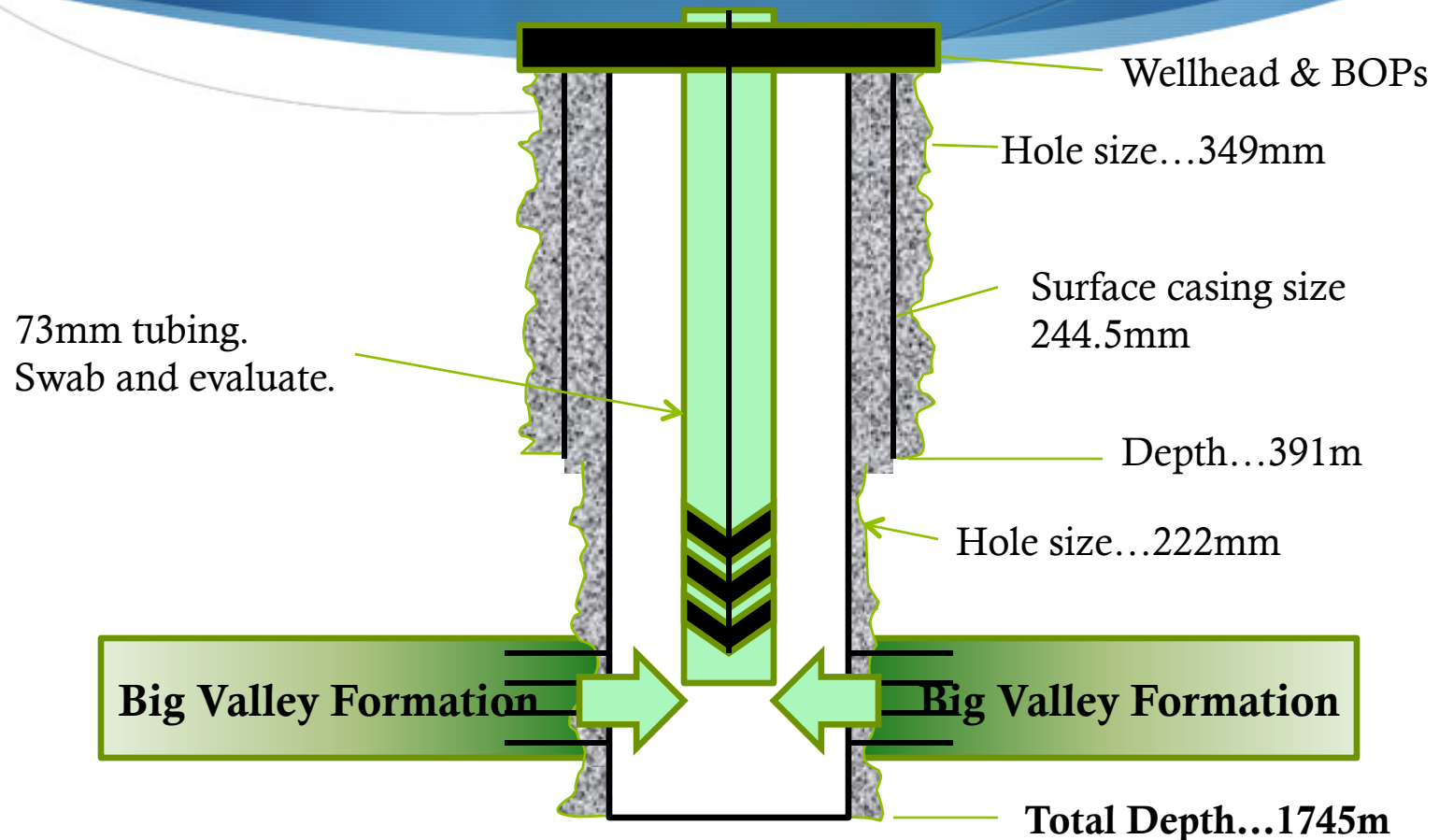


# Stimulate Zone of Interest





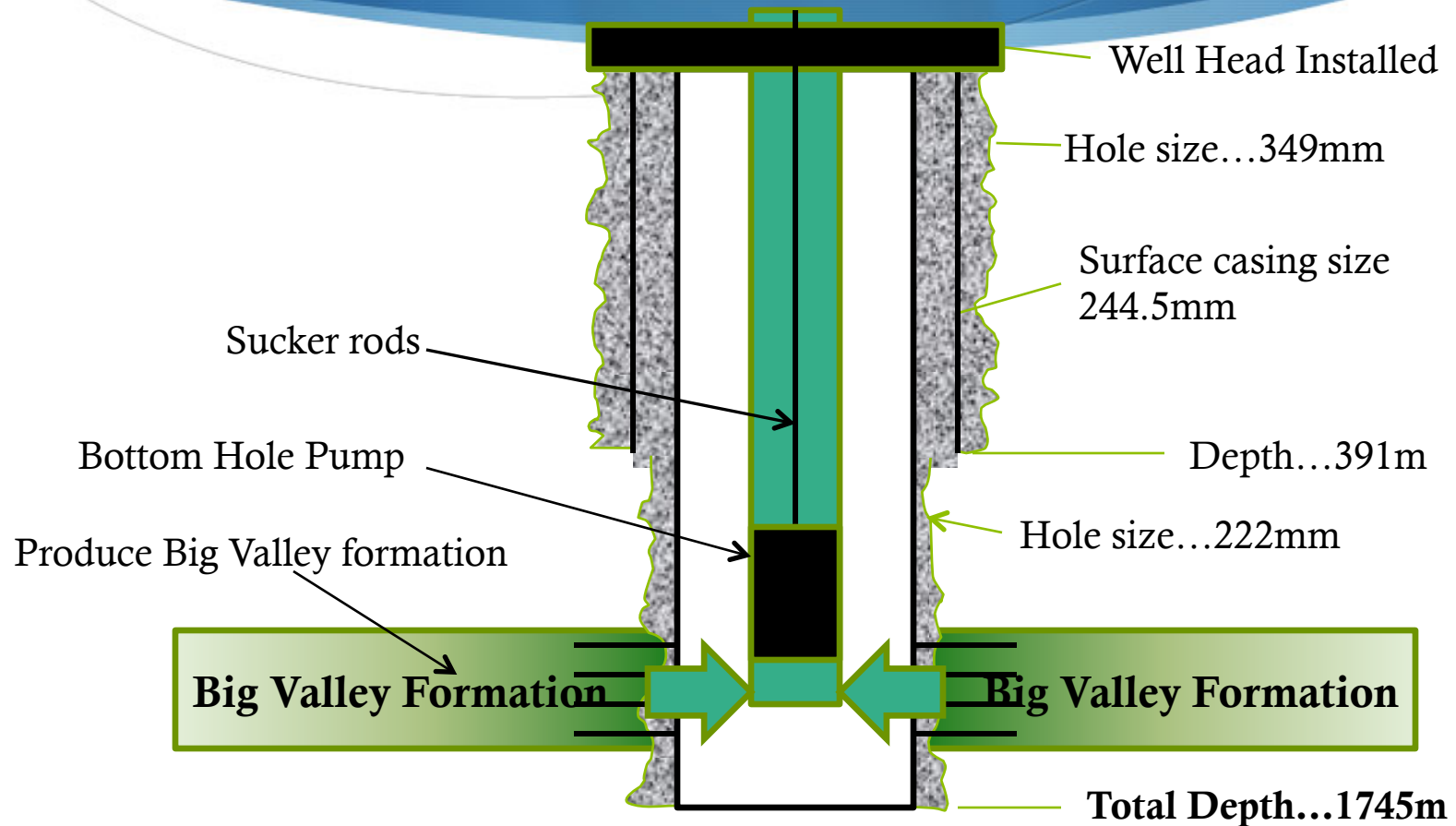
# Evaluate Zone of Interest



\* Testing may include flaring, but no longer than a 72hr period



# Production



# Typical Two Well Facility



# Production Equipment

- ◆ Lease is bermed and fenced
- ◆ Well Head
- ◆ Pump Jack with concrete base with sheltered electric motor
- ◆ Flow Line to a Separator – liquids to tank & gas to pipeline
- ◆ Flow Line to tank truck



# Production

- ◆ Oil will be accompanied by gas
- ◆ All gas produced will be sweet or sweetened
- ◆ Solution gas to be conserved by pipelining into Bonavista's existing system
- ◆ Very low volumes of solution gas expected with these wells
- ◆ Oil will be trucked out via an existing route used by industry





- Hydrogen Sulphide is not expected to be encountered in the Big Valley formation
- A chance some minor traces could be entrained in oil
- Production history of previous/existing area wells leads the AER to establish a maximum potential amount of 400ppm or 0.04%  $\text{H}_2\text{S}$
- Highest potential release rate established is 0.0013 m<sup>3</sup>/s – for drilling scenario and less for the production scenario
- Emergency Planning Radius is less than 10m
- No Emergency Response Plan is required



# Emergency Response Planning

- ◆ Based on AER drilling potential release rate of 0.0013 m<sup>3</sup>/sec
- ◆ For production purposes the RR is less than 0.0001 m<sup>3</sup>/sec
- ◆ AER assigned EPZ of less than 10m
- ◆ No Emergency Response Plan (ERP) formally required
- ◆ Site specific plan created in conjunction with City of Lethbridge
- ◆ Goldenkey's corporate plan is always available for review and updated regularly





# Safety Measures

- ◆ Drilling & Completions Plans
- ◆ Well sites will be bermed & fenced
- ◆ Flaring & Site-Specific ERP
- ◆ Regular and frequent safety meetings during drilling
- ◆ Continuous monitoring for pressure





# Safety Measures

- ◆ Vessel shut downs – high level and high pressure
- ◆ Call out system
- ◆ Wellhead spill prevention measures
  - ◆ Environmental Stuffing Box
- ◆ Fencing and signage with emergency phone number
- ◆ Sealed trucking units



# Safety Measures

- ◆ Compliance with the following key directives and other requirements:
  - ◆ D56 – Applications and Consultation
  - ◆ D60 – Flaring & Gas Conservation
  - ◆ D55 – Storage Tanks
  - ◆ D50 – Drilling Waste
  - ◆ D38 – Noise Control
  - ◆ D83 – Hydraulic Fracturing
- ◆ Site Specific ERP
- ◆ Others



# Participant Involvement

- ◆ AER Directive 56 – AER is regulatory body
- ◆ Early Consultation Activities
- ◆ Community Consultation Events and Project Documents
- ◆ Information Sharing – including website
- ◆ Issues Identification & Mitigation Measures
- ◆ Ongoing throughout project life cycle



# Contractor Selection Criteria

- ◆ Prior to engagement, contractors will have to provide safety record and ERCB compliance history
- ◆ Major contractors will have COR certification
- ◆ Seeking local contractors first



# Within Municipal Limits

- ◆ Engage Municipality Early
- ◆ Reach out to potentially interested stakeholders
  - ◆ Learn and grow the dialogue
- ◆ Identify and work to mitigate or resolve common, local and private issues and concerns
- ◆ Respectfully balance interests
- ◆ City of Lethbridge Policy/Resolution



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# Conclusion & Closure

## Next Steps

Determined by all of us...

