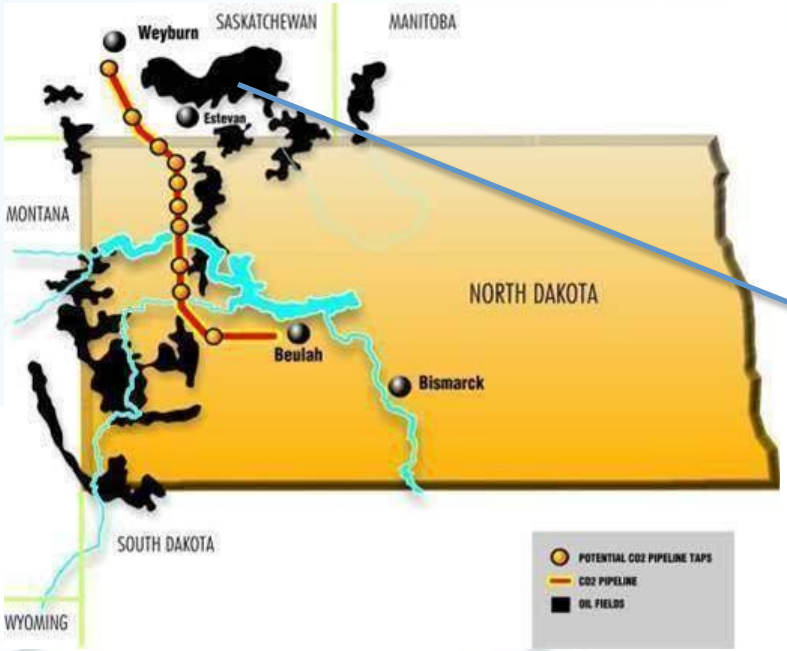
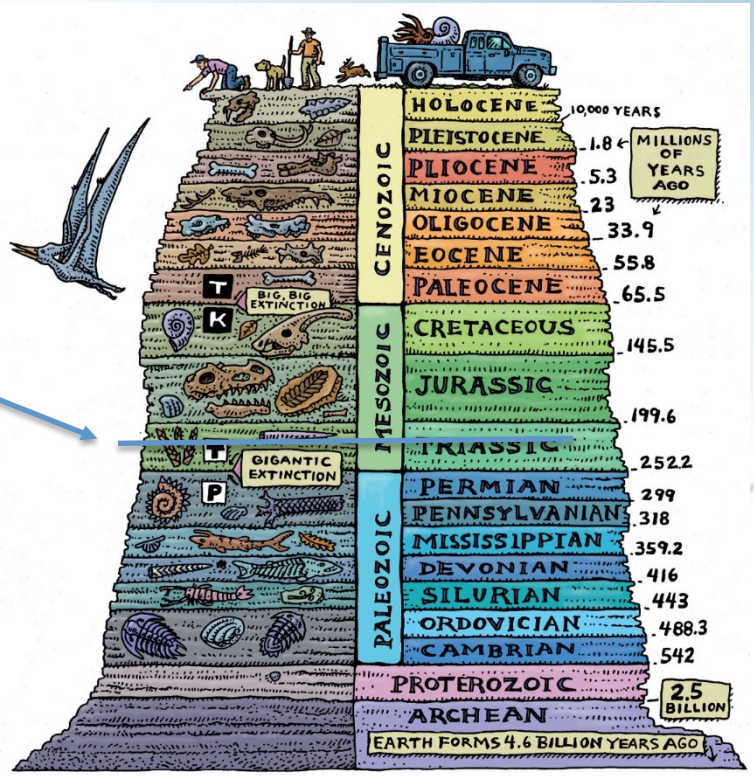
Weyburn-Midale 2016, first installation of autonomous inflow (AICV) in CO2-EOR

inflow control

Getting more out of oil

Canada, Saskatchewan (Weyburn-Midale)





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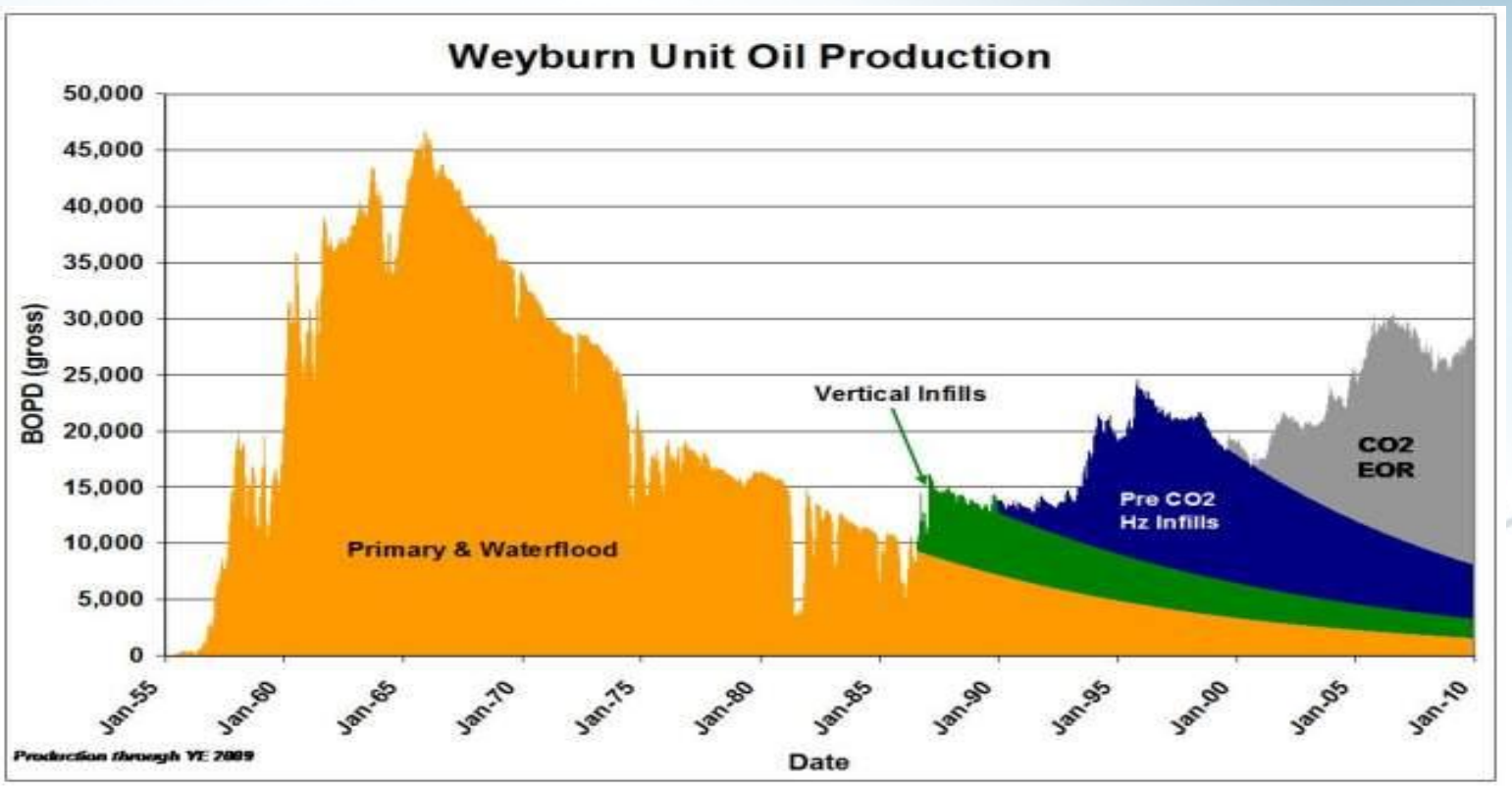
Weyburn-Midale CO2-EOR Project



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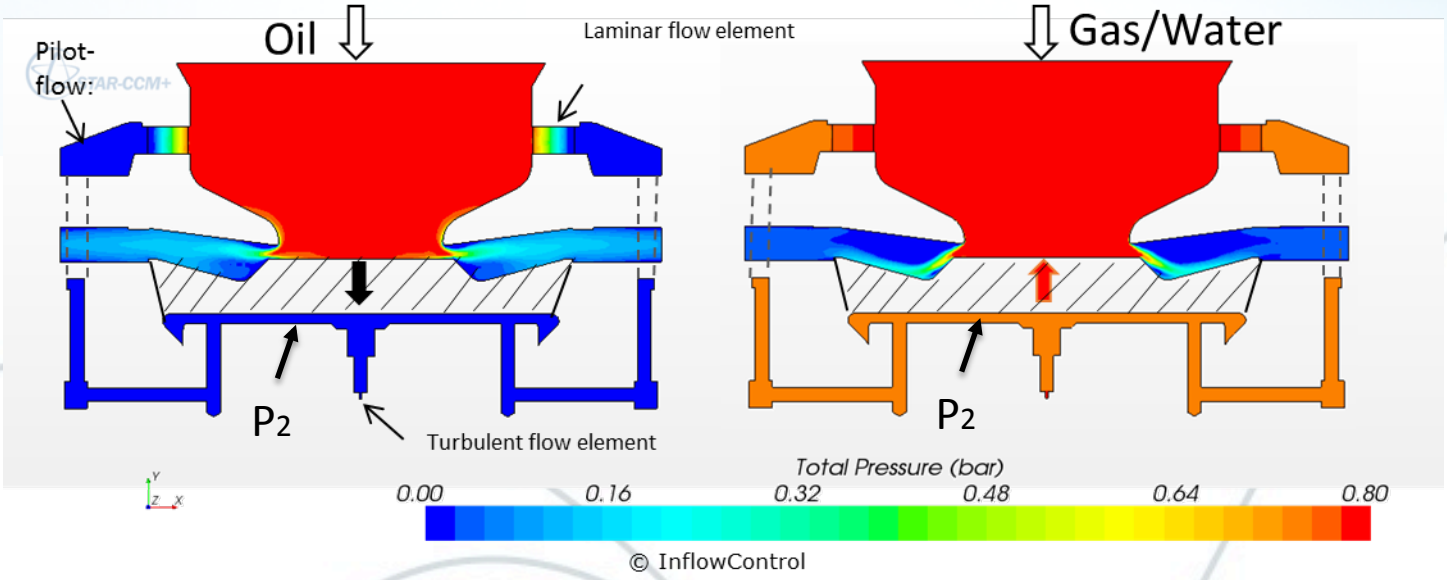
Design of the technology

- A pilot flow through the laminar and turbulent flow-restrictor
- Difference in P2 pressure for oil gas and water
- P2 pressure used to actuate the main flow



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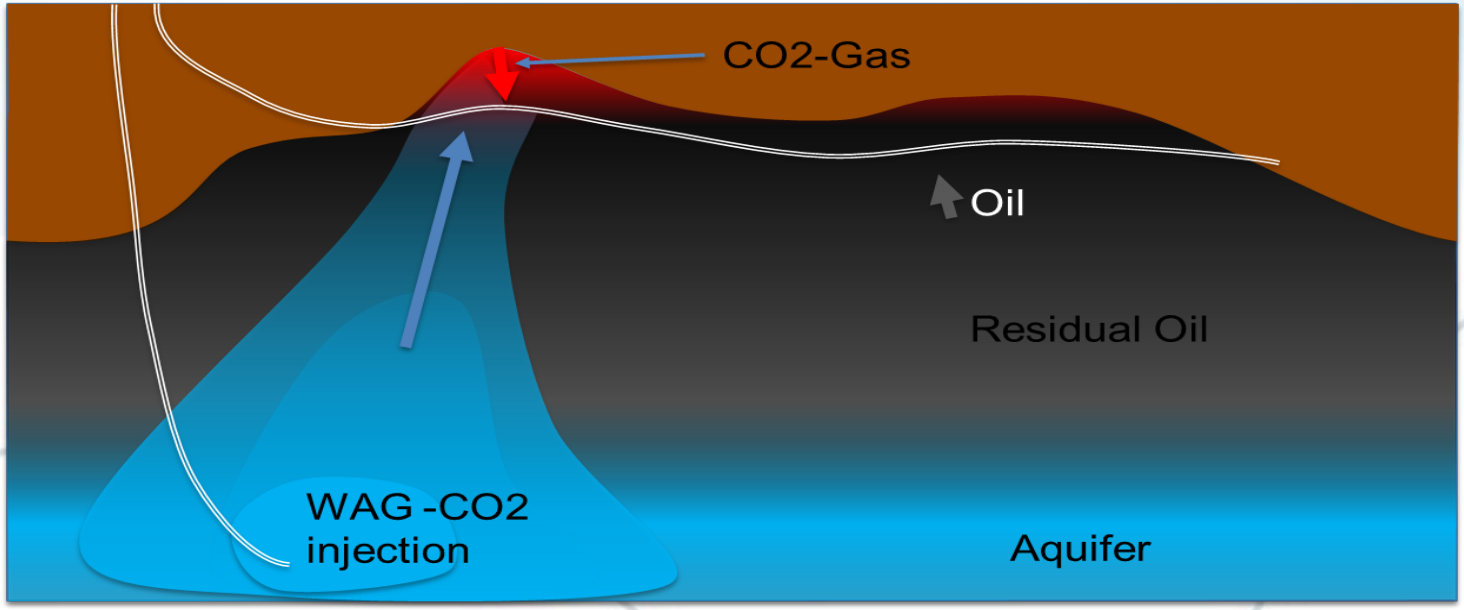
Conventional WAG EOR

- Non-uniform well drainage creates Gas/water (CO_2-) breakthrough
  - Poor sweep efficiency
  - Gives reduced production



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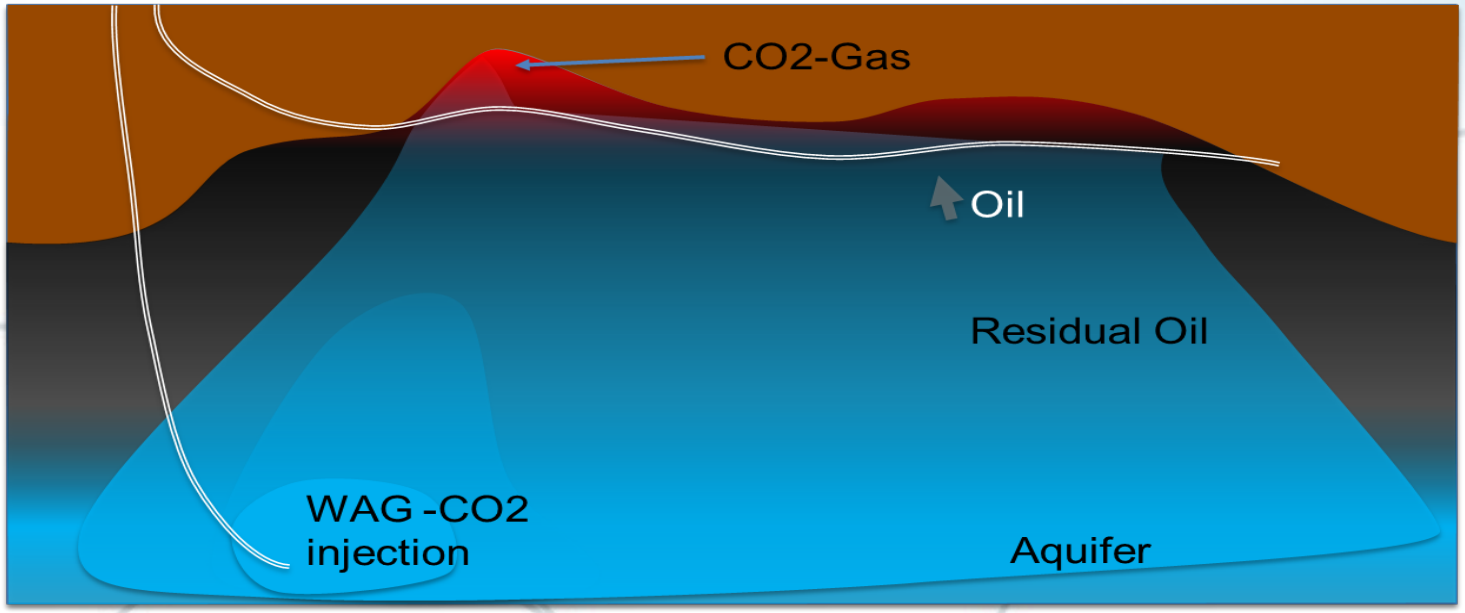
AICV® technology with WAG EOR

- AICV choke back the breakthrough zone
  - Gas/CO_2 stays in the reservoir
  - Oil production from the other zones along the well
- The WAG sweep increases to the whole well
  - Maximum WAG sweep are ensured
  - When residual oil releases and flows in to the well, the AICV will open again
  - Increased storage and contact of Gas/CO_2 with the residual oil



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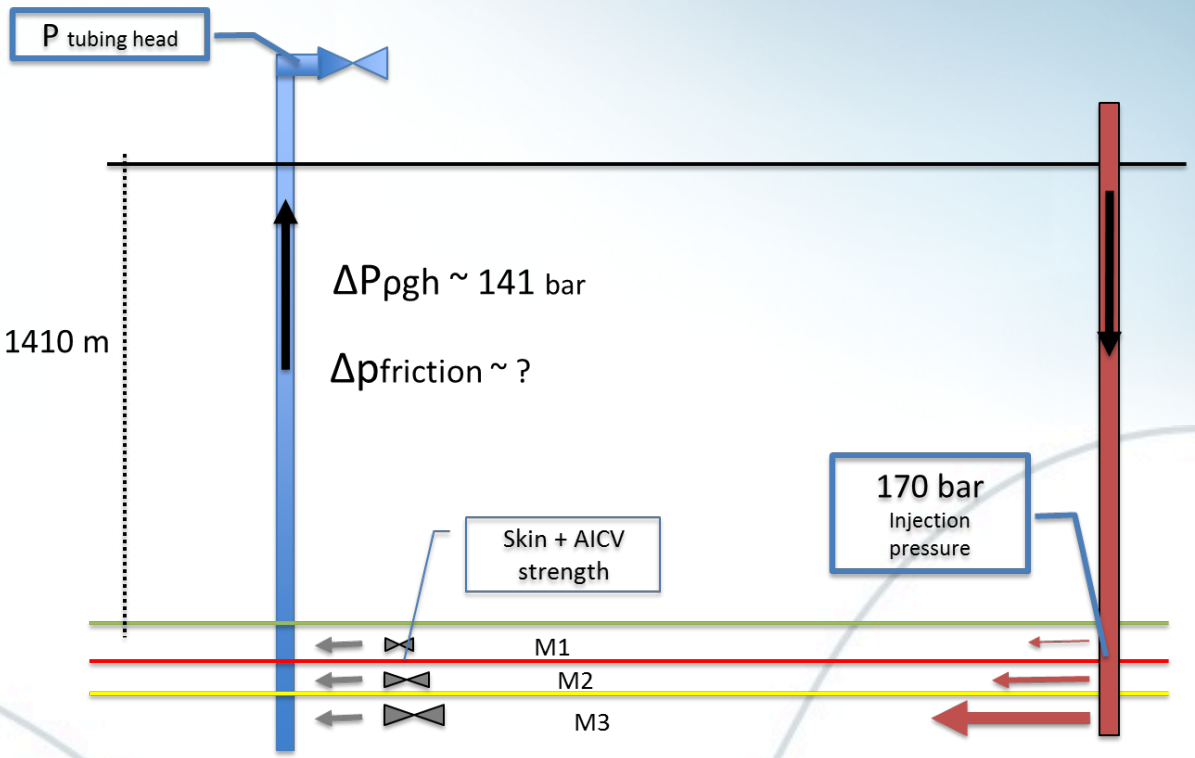
Production: Result so far..

- Installation February 2016
- AICV production
  - Open for oil/emulsion
  - Reduces water breakthrough (M3)
  - redistribution of injection profile
  - **Increases the oil production compered with ICD**
- Next step
  - Injection of CO2
  - AICV in horizontal well
  - Increase the choking for water.



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