Advisory

This document contains forward-looking information prepared and submitted pursuant to the Alberta Energy Regulator’s requirements and is not intended to be relied upon for the purpose of making investment decisions, including without limitation, to purchase, hold or sell any securities of Cenovus Energy Inc. Additional information regarding Cenovus Energy Inc. is available at cenovus.com.
Cenovus EnCAID* introduction and overview

This presentation was prepared in accordance with AER Directive 054 - Performance Presentations, Auditing, and Surveillance of In Situ Oil Sands Schemes

Subsurface Issues Related to Resource Evaluation and Recovery

• Directive 054, Section 3.1.1

Surface Operations, Compliance, and Issues Not Related to Resource Evaluation and Recovery

• Directive 054, Section 3.1.2

* Canadian patent CA2594413
AER Dir 054 Section 3.1.1

Subsurface issues related to resource evaluation and recovery
Subsurface issues: Table of contents

1. Scheme background
2. Geology / geoscience
3. Drilling and completions
4. Instrumentation
5. Scheme performance
6. Future plans
Scheme background

Subsurface section 1

EnCAID
Approval #10440J
2014 annual performance presentation
Background

- The EnCAID project is an enhanced recovery scheme which displaces natural gas with combustion gases that are the result of combustion of residual bitumen in gas cap.
Location map
Project overview

- Combustion of residual bitumen in gas cap
- Allows for displacement and re-pressurization of gas zone
- 100% Cenovus Energy Inc.
Geological / geoscience

Subsurface section 2

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# Summary of reservoir properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth</td>
<td>465 TVD</td>
</tr>
<tr>
<td>Thickness</td>
<td>5 m</td>
</tr>
<tr>
<td>Average Porosity</td>
<td>~36%</td>
</tr>
<tr>
<td>Average Gas Saturation</td>
<td>~50%</td>
</tr>
<tr>
<td>Average Water Saturation</td>
<td>~30%</td>
</tr>
<tr>
<td>Average Bitumen Saturation</td>
<td>~20%</td>
</tr>
</tbody>
</table>
Drilling and completion

Subsurface section 3

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Well layout
Drilling and completion

- No new wells were drilled
- No recompletions
- No workovers

Requirements under subsection 3.1.1 3c – wellbore schematics are included in the Appendix
Instrumentation

Subsurface section 4

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Instrumentation in wells

**Observation Well: 102/05-10-73-6W4**
- Equipped with 3 piezometers
- Equipped with 10 thermocouples

**Observation Well: 100/6-10-73-6W4**
- Equipped with 1 piezometer
- Equipped with 10 thermocouples

Requirements under subsection 3.1.1 5a – wellbore schematics 5c and 5d are included in the Appendix
Observation wells bitumen pressure
Scheme performance

Subsurface section 5

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Radius of combustion front

- Exact radius unknown
  - No baseline seismic
  - Single observation well
  - Simulated based on
    - 102/5-10 and 104/5-10
    - Actual daily air injection rates
  - Combustion front
    - Simulation estimates 90-100m
    - Analytical model estimates radius 120-130m
<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>June - Ignition and start-up</td>
</tr>
</tbody>
</table>
| 2007 | Q1 – Nitrogen response at 00/14-9-73-6W4/00  
    Q2 – Nitrogen response at 00/2-16-73-6W4/00, 00/11-15-73-6W4/00, Shut-in 00/14-9-73-6W4/00 |
| 2008 | May – Nitrogen response at 00/1-17-73-6W4/00 |
| 2009 | Jan – Gas production shut-in due to 00/6-18-73-6W4/00 segregation repair  
    Jun – Nitrogen response at 00/7-8-73-6W4/00  
    Oct – Injectivity decrease observed, bailed out 57% clay/gelatious crude, 23% carbonates, 20% iron compounds |
| 2010 | Q1– 00/5-10-73-6W4/00 injector solvent squeeze treatment 12 liter/m  
    Q4 – Shut-in 00/1-17-73-6W4/00, 00/2-16-73-6W4/00, 00/11-15-73-6W4/00. Removal of 00/5-10-73-6W4/00 thermocouple string and perform pressure fall off tests |
| 2011 | Q1 - 00/5-10-73-6W4/00 injector solvent squeeze treatment ~145 liter/m, successfully removed near plugging issue  
    Mar/Apr – 00/11-15-73-6W4/00 flowed N₂ 85% |
| 2012 | Jul – Startup of 00/6-7-76-6W4/00  
    Oct – Primrose sales volumes flowing to Caribou gas facility |
| 2013 | Feb - Startup of 00/6-6-73-6W4/00  
    Mar- Shut-in 00/7-8-73-6W4/00 |
| 2014 | Dec – Startup 00/10-12-73-7W4/00 |
# Production / Injection Summary

## Production Operations

<table>
<thead>
<tr>
<th>Operating For</th>
<th>Air Injected</th>
<th>Bulk Gas Recovered</th>
<th>Formation Gas Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;7 years</td>
<td>~ 207 e6m³</td>
<td>~ 143 e6m³</td>
<td>~ 123 e6m³</td>
</tr>
</tbody>
</table>

## Approved Producers

<table>
<thead>
<tr>
<th>UWI</th>
<th>Status</th>
<th>UWI</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>00/06-05-073-06W4/0</td>
<td>Flowing ~ 32% N₂</td>
<td>00/02-16-073-06W4/0</td>
<td>Shut-in ~ 84% N₂</td>
</tr>
<tr>
<td>00/06-06-073-06W4/2</td>
<td>Flowing &lt;1% N₂</td>
<td>00/01-17-073-06W4/0</td>
<td>Shut-in ~ 85% N₂</td>
</tr>
<tr>
<td>00/06-07-073-06W4/2</td>
<td>Flowing &lt;1% N₂</td>
<td>00/10-11-073-07W4/0</td>
<td>Shut-in &lt;1% N₂</td>
</tr>
<tr>
<td>00/07-08-073-06W4/0</td>
<td>Shut-in ~ 92% N₂</td>
<td>00/10-12-073-07W4/0</td>
<td>Shut-in until Dec 19th, 2014</td>
</tr>
<tr>
<td>00/11-15-073-06W4/0</td>
<td>Shut-in ~ 82% N₂</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EnCAID estimated project life

Estimated EnCAID life +/- years

• >2 years
• Or until uneconomical to blend

Dependent on N2 blending primarily

• Remaining 5 EnCAID producers will eventually have increasing nitrogen content
• Blend EnCAID produced volumes with production from North Primrose Plant
• At North Primrose Plant, natural gas declines ~15%/year
• TCPL specs has to be met with heat value of minimum 36MJ/m³
  • Blend ratio of EnCAID gas: North Primrose gas ~ 1:4.5
K3 pool production

10-12 Rate ~16 e3m3/d

6-7 Rate ~13 e3m3/d

6-6 Rate ~5 e3m3/d  Producing March 2013

6-5 Rate ~13 e3m3/d
History production

Cumulative Gas Produced during EnCAID in e3m3

Total Production Rate in e3m3/d

- Red: Net Formation Gas Produced
- Blue: Bulk Gas Removed
- Green: Linear (Net Formation Gas Produced)
Voidage replacement ratio (VRR) - 2014

January and mid-July
- Steady air injection rates
- Minor downtime due to weather related events

Mid-July to late-September
- Reduce air injection - experiment to understand the min air flux rate
- Estimated air flux rate between 1.5 – 3.0 MMscf/D
- Air compressors have no turn down ability

Late September to December
- Minor downtime due to weather
- Resume steady air injection rate
# Voidage replacement ratio (VRR)

<table>
<thead>
<tr>
<th>Month</th>
<th>Monthly VRR</th>
<th>Cumulative VRR</th>
<th>VRR Regulatory Approved Limits Min Monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1.92</td>
<td>1.45</td>
<td>0.90</td>
</tr>
<tr>
<td>February</td>
<td>1.92</td>
<td>1.45</td>
<td>0.90</td>
</tr>
<tr>
<td>March</td>
<td>1.92</td>
<td>1.46</td>
<td>0.90</td>
</tr>
<tr>
<td>April</td>
<td>1.92</td>
<td>1.47</td>
<td>0.90</td>
</tr>
<tr>
<td>May</td>
<td>1.92</td>
<td>1.47</td>
<td>0.90</td>
</tr>
<tr>
<td>June</td>
<td>1.92</td>
<td>1.48</td>
<td>0.90</td>
</tr>
<tr>
<td>July</td>
<td>1.92</td>
<td>1.48</td>
<td>0.90</td>
</tr>
<tr>
<td>August</td>
<td>1.92</td>
<td>1.48</td>
<td>0.90</td>
</tr>
<tr>
<td>September</td>
<td>1.92</td>
<td>1.48</td>
<td>0.90</td>
</tr>
<tr>
<td>October</td>
<td>1.92</td>
<td>1.48</td>
<td>0.90</td>
</tr>
<tr>
<td>November</td>
<td>1.92</td>
<td>1.48</td>
<td>0.90</td>
</tr>
<tr>
<td>December</td>
<td>1.92</td>
<td>1.49</td>
<td>0.90</td>
</tr>
<tr>
<td>2014 Average</td>
<td>1.92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VRR performance

Injection to Production Ratio

AER VRR Targets:
- Monthly Min: 0.9
- Annual Min: 1.0
- Cumulative: 1.1 to 2.0

2014 YTD Average VRR ≈ 1.92
2014 YTD Cumm VRR ≈ 1.49

Weather related reduction

Monthly VRR over due to Production shut-in

Nov 2013 Monthly VRR limit removed

Rate Reduction

00/5-10-73-6W4/0 treatment Mar 2011

Injectivity Problems

Compressor Mechanical issue
VRR history
K3 pool pressure

Average Pool Pressure History for EnCAID Wabiskaw K-3

- ERCB Approval Minimum Pressure 700 kPaa

Dates since Shut-in & Start-up:
- GOC Shut-in Sept 2003
- Start of EnCAID Air Injection June 2nd, 2006

Bottomhole Pressure in kPaa

[Graph showing pressure trends with specific dates and pressures marked]
Well was approved as
- Cemented & abandoned concept
- Cement inside tubing ~ 300mKB
- Monitoring downhole temperature real time
- Downhole schematic
- Appendix slide #72
Observation well temperature

5-10 Obs Well temperature with depth

Temperature (°C)

TVD depth (m)

Gas Cap

Bitumen
Observation well temperature

100/06-10-073-06W4 Observation well temperature
Composition of injected / produced fluids

- EnCAID does not currently sample air injected
- EnCAID captures gas samples for analysis on the schedule located to the right and monitors compositional changes for each well
- Cenovus samples selective wells on more frequent basis than required under Approval 10440J
  - Once to six times / annum, varies with lease accessibility

<table>
<thead>
<tr>
<th>Location</th>
<th>Min Approval Sampling Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>00/6-10-73-6W4/2</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/6-5-73-6W4/0</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/6-6-73-6W4/2</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/6-7-73-6W4/2</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/7-8-73-6W4/0</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/11-15-73-6W4/0</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/2-16-73-6W4/0</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/1-17-73-6W4/0</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/10-11-73-7W4/0</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/10-12-73-7W4/0</td>
<td>Semi- annual</td>
</tr>
<tr>
<td>00/6-18-73-6w4/0</td>
<td>Annual</td>
</tr>
<tr>
<td>00/10-36-72-7W4/2</td>
<td>Annual</td>
</tr>
<tr>
<td>00/11-17-73-6W4/0</td>
<td>Annual</td>
</tr>
<tr>
<td>00/14-9-73-6W4/0</td>
<td>Annual</td>
</tr>
</tbody>
</table>
Nitrogen response
Nitrogen response outside K3 pool

Nitrogen took more than 8 years to show sign of migration to K1 pool

- Prior to December 2014 N₂ < 1% on 6-18-73-6W4M
- Post December 2014 N₂ ~ 7% on 6-18-73-6W4M

Low lying structural zone along the north side of Section 18 & 17 creates a barrier to the rest of K1 pool.

Typically significantly thinner ~1m thick gas cap in section 18 & 17
K-3 Pool Material Balance

Original Pressure – 2050 kPaa (300 psia)
Pressure Dec 03 = 662 kPaa (96 psia)
OGIP = 1129 $e^6 m^3$ (39.9 Bcf)
Gas prod = 877 $e^6 m^3$ (31.0 Bcf 77% RF)

Dec 31/2014
Cum Prod 36.0 (Bulk Gas) Bcf RF ~90%

Pre-EnCAID
EnCAID
Subsurface key learnings

• Maintaining continuous air injection is key to maintaining steady combustion front
• Nitrogen effects on produced gas must be monitored on an ongoing basis and forecasted for future impacts on plant operations and gas sales quality
• Recognize value of thermocouple data for predication and history matching simulations
• Generation of thermal conductive heating into the bitumen
• Provides a process for recovering gas that would otherwise not be recoverable due to GOB shut-in
Future plans

Subsurface section 6

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Future plans

- No changes in overall recovery strategy are planned at this time
- Amendment for horizontal air injection well
AER Dir 54 Section 3.1.2

Surface operations, compliance and issues not related to resource evaluation and recovery
Surface operations: Table of contents

1. Facility overview / modifications
2. Measurement and reporting
3. Environmental issues
4. Compliance statement
5. Future plans
Facility overview / modifications

Surface section 1

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Site Layout
Process flow schematic

- 2 Compressors
- Knock out tank
- Air Injector
- Lube oil / waste tank
Plant performance - 2014

January to July
• Steady air injections
• Some weather related reductions

July 16 to September 24, 2014
• Reduced air injection rate

August to year end
• Resumption of steady air injections

Facility is operating as expected
Gas usage

Gas Usage (e3m3/d)

- 2013
- 2014

Month:
- Jan
- Feb
- Mar
- Apr
- May
- Jun
- Jul
- Aug
- Sep
- Oct
- Nov
- Dec
## Gas usage

<table>
<thead>
<tr>
<th>Month</th>
<th>2014 (e³m³/D)</th>
<th>2013 e³m³/D</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>5.21</td>
<td>4.78</td>
</tr>
<tr>
<td>February</td>
<td>5.90</td>
<td>4.50</td>
</tr>
<tr>
<td>March</td>
<td>5.86</td>
<td>5.07</td>
</tr>
<tr>
<td>April</td>
<td>5.78</td>
<td>5.19</td>
</tr>
<tr>
<td>May</td>
<td>5.76</td>
<td>5.19</td>
</tr>
<tr>
<td>June</td>
<td>5.87</td>
<td>5.32</td>
</tr>
<tr>
<td>July</td>
<td>4.25</td>
<td>5.33</td>
</tr>
<tr>
<td>August</td>
<td>2.73</td>
<td>5.7</td>
</tr>
<tr>
<td>September</td>
<td>3.28</td>
<td>5.67</td>
</tr>
<tr>
<td>October</td>
<td>5.74</td>
<td>5.9</td>
</tr>
<tr>
<td>November</td>
<td>5.64</td>
<td>4.82</td>
</tr>
<tr>
<td>December</td>
<td>6.13</td>
<td>4.85</td>
</tr>
</tbody>
</table>
## Green house gas emissions

<table>
<thead>
<tr>
<th></th>
<th>2014 Tonnes</th>
<th>2013 Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>477</td>
<td>323</td>
</tr>
<tr>
<td>February</td>
<td>472</td>
<td>275</td>
</tr>
<tr>
<td>March</td>
<td>519</td>
<td>342</td>
</tr>
<tr>
<td>April</td>
<td>498</td>
<td>340</td>
</tr>
<tr>
<td>May</td>
<td>521</td>
<td>351</td>
</tr>
<tr>
<td>June</td>
<td>504</td>
<td>349</td>
</tr>
<tr>
<td>July</td>
<td>405</td>
<td>361</td>
</tr>
<tr>
<td>August</td>
<td>300</td>
<td>386</td>
</tr>
<tr>
<td>September</td>
<td>326</td>
<td>371</td>
</tr>
<tr>
<td>October</td>
<td>511</td>
<td>399</td>
</tr>
<tr>
<td>November</td>
<td>484</td>
<td>315</td>
</tr>
<tr>
<td>December</td>
<td>538</td>
<td>342</td>
</tr>
</tbody>
</table>
## Surface gas migration

<table>
<thead>
<tr>
<th>Year</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>No development yet at EnCAID site, set base line</td>
</tr>
<tr>
<td>2006</td>
<td>LEL disappeared when went to &quot;Methane elimination mode&quot; which is standard practice for these tests</td>
</tr>
<tr>
<td>2007</td>
<td>LEL detection in &quot;Full Gas Detection Mode&quot; disappeared in &quot;Methane Elimination Mode&quot; suggesting &quot;Swamp gas&quot; Report noted clay cap over most of the sites could be trapping methane from organic peat decomposition</td>
</tr>
<tr>
<td>2008</td>
<td>Collected low pressure gas samples for analysis at 5-10 &amp; 11-15. Most tests confirmed &quot;biogenic gas&quot;</td>
</tr>
<tr>
<td>2009</td>
<td>SDS concluded that in their opinion it is a biogenic gas/swamp gas problem. Single Sample showed above 100% LEL came from wet, sloppy &amp; drilling mud type of soil west of well center</td>
</tr>
<tr>
<td>2010</td>
<td>SDS opinion it is a biogenic gas/swamp gas problem. 2010 LEL readings less then 2009 LEL readings. No samples taken</td>
</tr>
<tr>
<td>2011</td>
<td>SDS opinion is that gas detected through field screening is swamp gas from the organic material beneath the well site. The gas sample collected contained insufficient hydrocarbons for carbon isotope analysis.</td>
</tr>
<tr>
<td>2012</td>
<td>No test undertaken</td>
</tr>
<tr>
<td>2013</td>
<td>SDS considered two samples to be inconclusive as soil around the well center were highly saturated &amp; swampy. No sample was submitted for isotope analysis</td>
</tr>
<tr>
<td>2014</td>
<td>SDS considered it was a biogenic gas/swamp gas problem.</td>
</tr>
</tbody>
</table>
Surface facility key learnings

- Safe operation of production and injection wells
- Geographical location provides challenges for instrumentation operations utilizing solar panels
- Purity of injection gases plays key role in maintaining injectivity
- Uneconomical to operate in today's pricing environment
Measurement and reporting

Surface section 2

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Measurement reporting

Field Operations record daily flow variable and volume for air injection and compressor fuel usage

EnCaid Daily Volume Report Spreadsheet

Production Accounting Activities
1) Pa updated gas analysis in PAS.
2) PA enter air volume and fuel usage volume from EnCaid Daily Volume Report into PAS EnCaid injection facility.
3) Well production PVR data upload to PAS.
4) PAS generates PRA submission.
5) PA manully updated the gas fuel usage into PRA.

Gas analysis - Maxxam

Gas well gas meters loaded to PVR via SCADA system

PVR
Environmental issues

Surface section 3

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Environmental compliance

- No environmental noncompliance events occurred since the last performance review
Compliance statement

Surface section 4

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Compliance confirmation

- No noncompliance events occurred since the last performance review
Future plans

Surface section 5

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Future plans

- No major initiatives or plans that may require submission of an application are being contemplated at this time
- No changes to overall plant design or amendments are anticipated at this time
- Tie in high pressure piping from new horizontal air injector to existing facility
Appendix
Gas composition 00/1-17-73-6W4/0
Gas composition 00/2-16-73-6W4/0
Gas composition 00/6-5-73-6W4/0
Gas composition 00/6-6-73-6W4/0
Gas composition 00/6-7-73-6W4/0
Gas composition 00/7-8-73-6W4/0
Gas composition 00/11-15-73-6W4/0

![Graph showing gas composition over time](image-url)
Gas composition 00/10-11-73-7W4/0

![Graph showing gas composition over time for different elements (Carbon Monoxide, Oxygen, Carbon Dioxide, Nitrogen). The y-axis represents the mole % in sample while the x-axis represents Jan-07 to Dec-15.](image-url)
Gas composition 00/10-12-73-7W4/0
Gas composition 00/14-9-73-6W4/0
Gas composition 00/6-18-73-6W4/0
100/05-10-073-06W4 wellbore schematic
102/05-10-073-06W4 wellbore schematic
103/05-10-073-06W4 wellbore schematic
QUESTIONS