

# In Situ Best Practices Checklist

## Large improvements possible with best practices

Simply meeting industry best practices could dramatically improve environmental performance

### GENERAL ENVIRONMENTAL MANAGEMENT

- An environmental policy that commits to continuous improvement in environmental performance
- An environmental management system that has been accredited by an independent third party, such as ISO 14001 or equivalent
- Publicly reported, project-specific environmental data
- A strong legal compliance record

### LAND

- Land use intensity below 0.5 hectares per million barrels of bitumen, measured by total expected disturbance over the life of the project divided by total expected production
- Compensation for the terrestrial impacts of the in situ project by establishing biodiversity/conservation offsets equivalent to the area affected by the in situ oil sands project
- In the absence of a land use plan that shows how woodland caribou will be conserved in northeastern Alberta, no projects operating in threatened woodland caribou habitat
- Public policy support for establishing large conservation areas free of industrial development to provide habitat for wildlife affected by in situ oil sands development
- Financial support for the Alberta Biodiversity Monitoring Institute in order to provide meaningful, long-term information about changes in biodiversity in the oil sands region

### AIR EMISSIONS

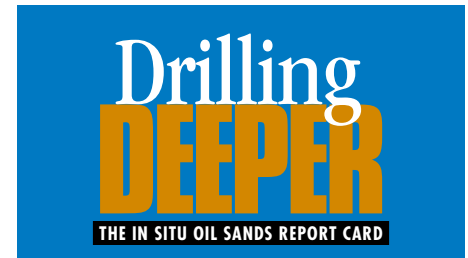
- NO<sub>x</sub> intensity below 0.08 kg/bbl bitumen (including off-site electricity and natural gas production)
- SO<sub>2</sub> intensity below 0.08 kg/bbl bitumen (including off-site electricity and natural gas production)
- Publicly reported targets to reduce absolute NO<sub>x</sub> or SO<sub>2</sub> emissions beyond government regulations

### WATER

- Total saline water use intensity below 0.5 bbl/bbl bitumen
- No freshwater consumption except for domestic use
- Publicly reported absolute water reduction targets beyond government regulations

### CLIMATE CHANGE

- Greenhouse gas emissions intensity below 78 kg/bbl bitumen
- Public, absolute greenhouse gas reduction targets beyond government regulations



Five of the nine projects surveyed in *Drilling Deeper* received a failing grade, but there are many steps in situ oil sands operations could take today to improve their environmental performance.

The analysis shows that while the average score of all projects was low, by simply incorporating best practices — the best elements of each oil sands project — a project would receive a score of 85% in this assessment.

By incorporating two best practices from other industries (establishing biodiversity offsets and publicly setting targets to reduce absolute water use and air and greenhouse gas emissions) a project would raise its score to 100%.

### Want More Information?

This checklist is part of the Pembina Institute's report *Drilling Deeper: The In Situ Oil Sands Report Card*. Visit [www.oilsandswatch.org](http://www.oilsandswatch.org) to download the report and find more information about oil sands.



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