

Pre-Industrial Field Demonstration of High Fines Sand Tailings Technology

Pre-Industrial Field Demonstration of High Fines Sand Tailings Technology (HSFT) involves treating 10,000 m³ of combined oil sands tailings to create a large-scale deposit. HFST technology creates a path to transform large fluid tailings ponds into dry landforms that can be reclaimed using conventional land reclamation techniques within 10 years of completing tailings deposition in a dedicated disposal area. The direct treatment of recombined oil sands waste achieved by HFST significantly reduces GHG emissions associated with material rehandling and does not require a water cover post closure.



RECIPIENT:
BASF Canada Inc.



PARTNERS:
Tangent Design, DCM Group, FMGOC, NAIT, Thurber, CNRL, Suncor, Hatfield, Nautilus, U of A, Canada



TOTAL BUDGET:
\$11,500,000



AI FUNDING:
\$1,000,000
TIER

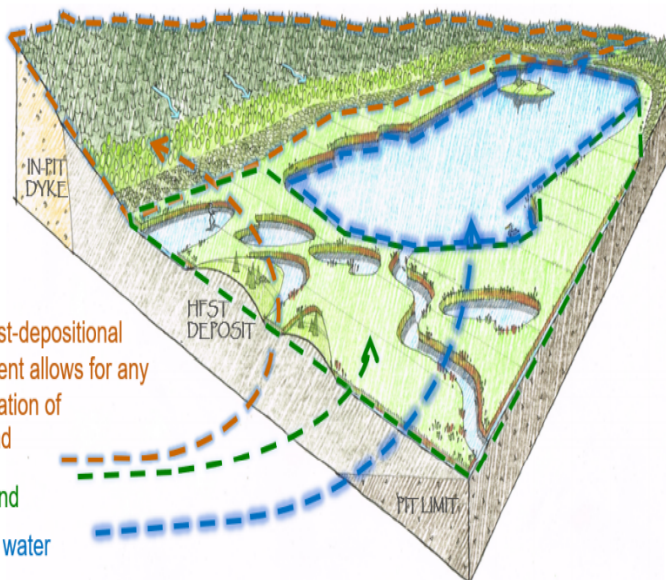


PROJECT DATES:
NOV 2020 –
NOV 2022



PROJECT TRL:
Start: 4-6
End: 7

HFST's Future Forecast – Greater Flexibility in End Land Use Design



APPLICATION

Operators of Oil Sands surface mines (OSSMs) in Alberta are the target customers for initial commercial deployment of HFST tailings treatment. The technology has been developed to treat fluid fine tailings (FFT) that are currently stored in tailings ponds. In addition to treatment of legacy FFT, the technology has been designed to directly treat fresh FFT discharged from the extraction plant to reduce accumulation of FFT and avoid the need for material rehandling.



PROJECT GOALS

The project goals are to:

- Investigate the performance of HFST treatment technology at a treatment throughput rate of 200 m³/hr
- Confirm the robustness of HFST treatment technology
- Identify key scale up and implementation considerations for commercial scale deployment of HFST treatment technology
- Demonstrate the ability of HFST treatment protocol to create dry landforms at accelerated rates

BENEFITS TO ALBERTA

Successful implementation of HFST technology could result in:

- Creation of dry landforms that can be reclaimed in under a decade
- Increase the amount of water released from tailings for reuse in the bitumen extraction process
- Reduction in the amount of land disturbed to store and manage OS tailings
- Reduction in existing inventories of mature fine tailings (MFT)
- Reduce GHG emissions associated with tailings ponds and material (re-)handling



1 New Product/Service



4 Project Jobs



29 Future Jobs



TBD T/yr Project GHGs Reduced



45,000 T/yr Future GHGs Reduced

CURRENT STATUS

SEP 2021

The project is in early stages and is completing bench / lab-scale performance verification studies in advance of moving to a larger field trial / demonstration (200 m³/hour).