



**PREMIER
COREX**

**ENERGY TRANSITION
CAPABILITIES & HIGHLIGHTS**

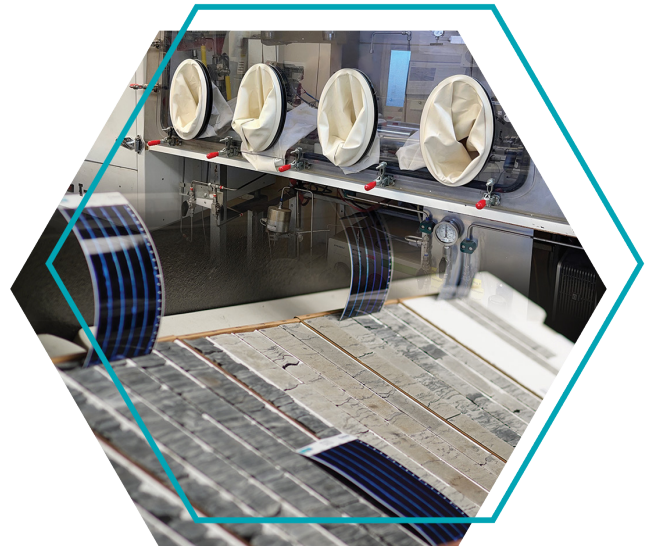
CARBON CAPTURE, UTILIZATION & STORAGE

Premier Corex is at the leading edge of Carbon Capture & Storage (CCS)

Use our extensive experience and lab capabilities to identify and de-risk subsurface locations for CO₂ sequestration.

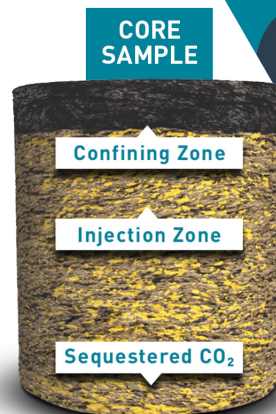
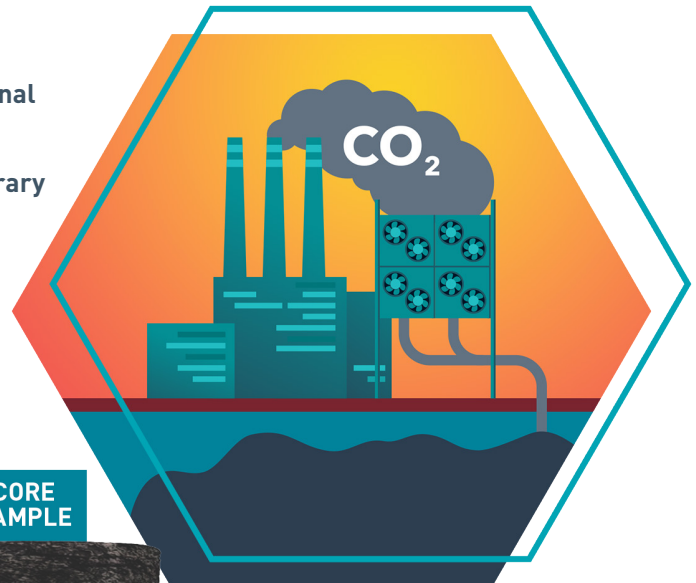
Our Areas of Focus and Advantage:

- **Refine site characterization to collect data required by EPA Class VI UIC well guidelines**
- **Characterization of injection zone:**
 - Establish stratigraphy and facies to understand injection zone architecture
 - Quantify mineralogy, CO₂-reactive mineralogy, porosity, and permeability
 - Determine appropriate injection pressure calibrated to rock strength data
 - Compatibility of injectate with formation fluids and lithologies
 - Evaluate potential for liberation of trace metals due to induced decreased pH
- **Verify confining zone integrity:**
 - Determine mechanical rock strength for seal capacity & geomechanics models
 - Understand flow properties & effectiveness of seal in inhibiting migration of CO₂
 - Describe & quantify transmissibility of faults & fractures
 - Establish empirical fluid-CO₂-rock reactivity effects on seal integrity
- **Delineate area of review using geologic sequestration computational modeling informed by laboratory measurements**
- **Utilize cuttings and core housed at the Premier Sample Corex Library & partner repositories to establish a baseline characterization of prospective CCS formations**



Our Experience:

- CarbonSAFE Program Phase II participant
- Extensive experience in geological characterization of all injection zone lithologies
- Recognized leader in assessing formation damage from injection into oil & gas reservoirs
- Proprietary rock mechanics workflow optimized for testing seal units
- Recognized for core analysis advisory & consulting in CCS subsurface industry



GEOTHERMAL EXPERTISE

Leverage State-of-the-Art Laboratories to Generate Crucial Information

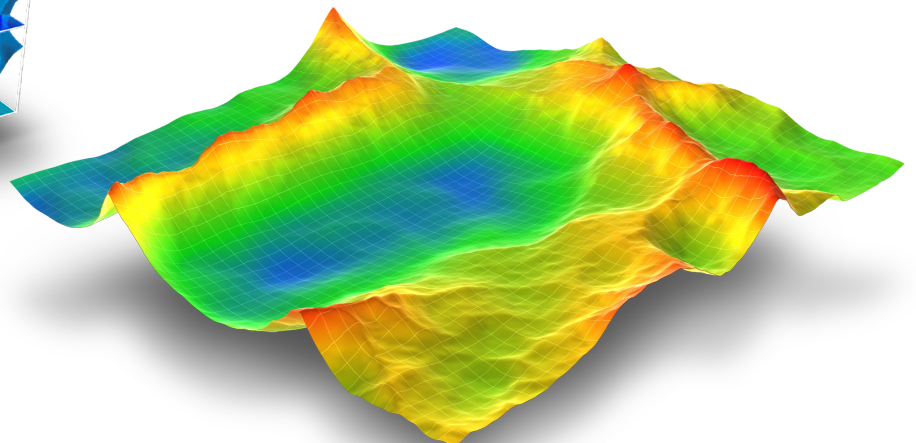
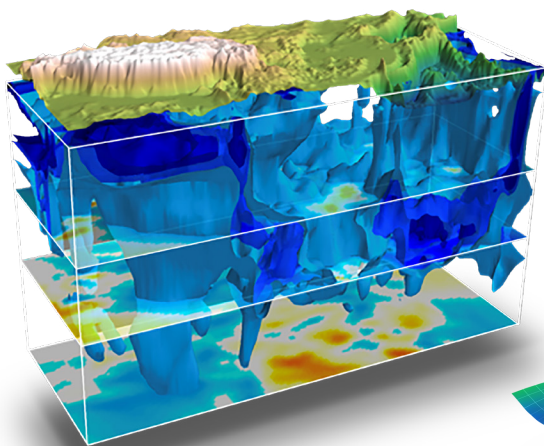
Premier Corex Geothermal Offering

- Comprehensive Rock Mechanics Testing
- Proppant Conductivity
- Proppant Embedment
- Core Flood Testing
- Completions Fluids
- Fluids Compatibility
- Rock Solubility



Strategic Partnership with Teverra – Discover the Power of Collaboration

- Teaming up to bring cutting-edge services and expert consulting for the geothermal energy industry.
- Our partnership combines the strengths of two industry leaders to deliver exceptional rock and fluids testing, engineering, and geoscience consulting.
- Our stronger subsurface solutions improve your subsurface understanding and project planning.
- Premier Corex will leverage its state-of-the-art laboratories to generate crucial information for Teverra.
- Teverra specializes in sustainable subsurface solutions and large-scale geothermal projects.
- Together, we will deliver comprehensive thermo-hydro-mechanical modeling and design to benefit geothermal development companies.



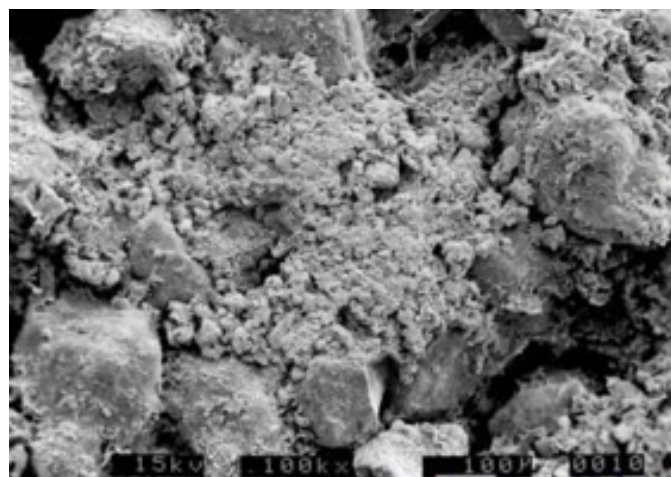
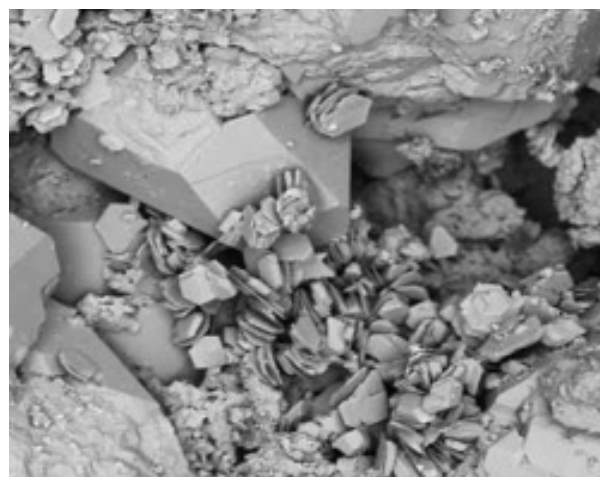
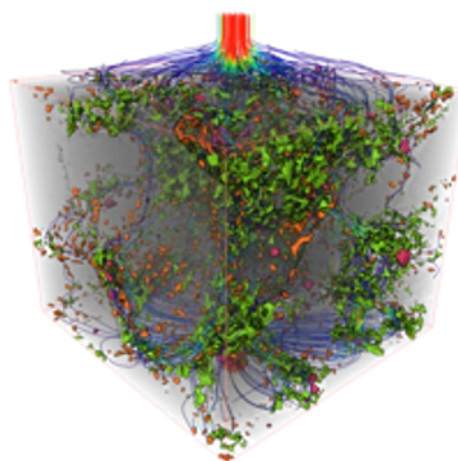
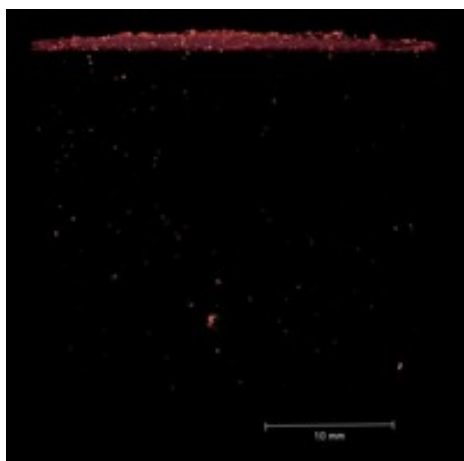
Premier Corex Experience CCS - International

National Grid: South North Sea Part I

- Pilot project looking at storage of carbon dioxide in offshore geological reservoirs
- Looked at issues around drilling wells, fines movement, and compatibility
- Results identified potential damage caused by drilling mud, as well as changes to the reservoir caused by injection rate and incompatibility with gas and injection fluids
- Second project carried out to examine some of these issues

National Grid: South North Sea Part II

- Built upon initial study to focus in on some key risks
- These included injection gas causing mobilization of fines (blocking pores), particles blocking pores at the wellbore during injection, and compatibility with the reservoir
- Utilized specialist reservoir-conditions coreflood simulator and allowed injection of dense phase (supercritical) carbon dioxide
- Results included showing that particles could harm injection, and that certain fluids that might be injected into the reservoirs (including seawater) had the potential to be highly damaging and impact upon injectability



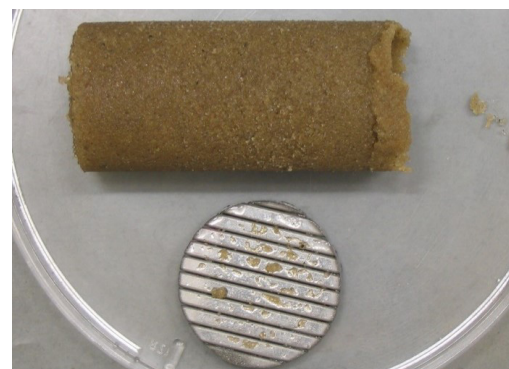
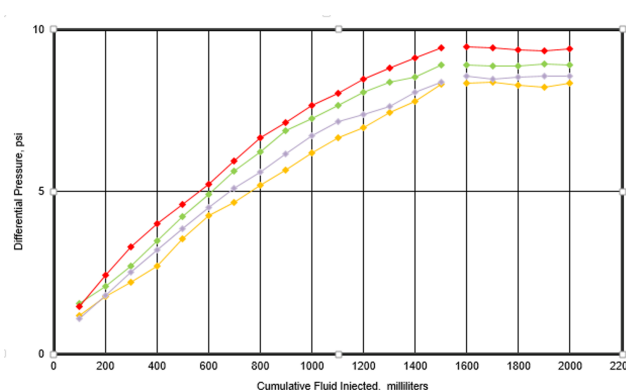
Premier Corex Experience – Recent CCS Studies

North Sea CCS Permeability vs Phase

- **Name of Project:**
North Sea CCS Permeability vs Phase
- **Geographic Location:**
UK, offshore Humber
- **Services provided:**
Core analysis
- **Brief Description of Project:**
Project to evaluate rock behaviour, including permeability measurements, using different CO₂ phases and different reservoir pressure conditions. The data will be used to predict reservoir behaviour and injectivity to help in the design of the CCS project.

North Sea CCS Sand Control

- **Name of Project:**
North Sea CCS Sand Control
- **Geographic Location:**
UK, offshore Humber
- **Services Provided:**
Sand Retention Testing (SRT)
- **Brief Description:**
Project to evaluate sand control hardware for application in Carbon Capture and Storage (CCS) Wells



PTTEP Malaysia CCS

- **Operator:**
PTTEP
- **Geographic Location:**
Malaysia
- **Services provided:**
Core analysis, special core analysis, rock mechanics
- **Brief Description of Project:**
Project to examine reservoir properties of storage units for CCS, rock strength including exposure to carbon dioxide, and relative permeability measurements and interpretation to define storage capacity.

Premier Corex Experience – Alternative Energy

Swiss Multi-Well Project

- The client is investigating the suitability of an underground geological repository for the storage of hazardous waste.
- Worked on the project both in-country (Switzerland) at the client facility and at our UK laboratory. The services provided included core slabbing, preparation, resination polishing and vacuum sealing.
- The first slabbing cut and resination stages were carried out in-country using technical staff, equipment and chemicals supplied from Premier Corex.
- The majority of the rock was very hard and sometimes brittle (claystone, limestone) and was a challenge to cut successfully.
- The client had exacting standards in the required finish and presentation of the core sections. We managed to meet those requirements. In total 4 boreholes with a combined core length of 873 m were completed successfully.



Premier Corex Experience – Hazardous Waste Storage

UK Hazardous Waste Storage

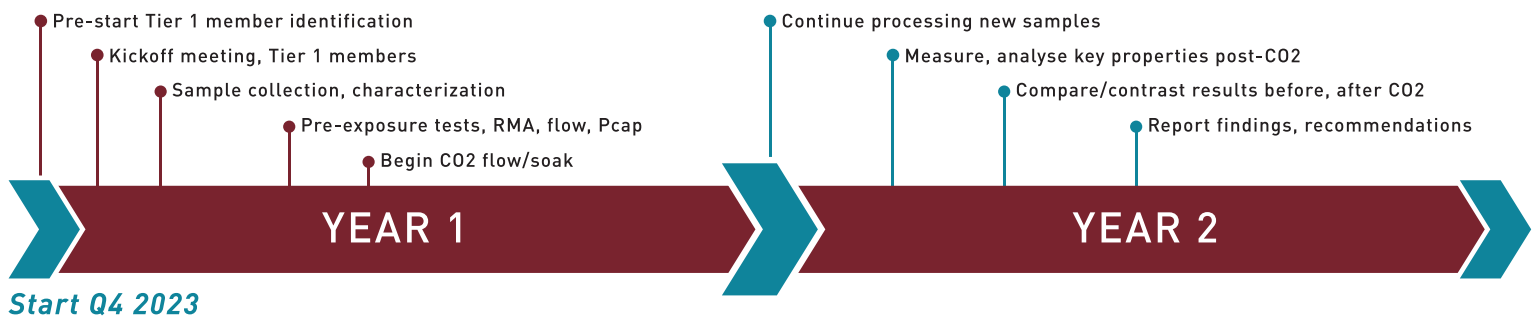
- Evaluation of various materials which would be used in the storage of waste material.
- Batches of material have been received since 2020. These included cast cements and geopolymers.
- Premier Corex services included machining of the material into right cylinders, applying adaptor sleeves as need and measuring gas permeability.
- Each batch turned around in a timely manner and the client was satisfied with the data. A total of 152 samples have been examined in last year.

CO₂PE Consortium – CO₂ Permanent Emplacement

Mitigating risk in a rapidly evolving industry

Two-year laboratory deep dive into CCUS rock properties where the key goals are to:

- Establish industry best practices for injecting scCO₂ and preserving reservoir/seal integrity
- Assess, improve, and preserve storage capacity, while economically optimizing the injectivity and integrity of the geologic storage system.



Get in touch for more information regarding our international operations, capabilities and service portfolios

Premier Corex (USA)

Global Headquarters
11335 Clay Road,
Suite 180
Houston, TX 77041
+1 281 783 6130

Premier Corex (Midland)

2100 Carter Avenue
Midland, TX 79701
+1 432 218 7383

Premier Corex Sample Library – (Midland)

707 Connell St.
Midland, TX 79701
+1 432 682 2682

Premier Corex (Oklahoma City)

2014 S Nicklas Ave
Oklahoma City, OK 73128
+1 801 209 9272

Premier Corex NSI Technologies (US)

7146 S Braden Ave #102
Tulsa, OK 74136
+1 918 496 2071

Premier Corex (Egypt)

176, Sector No. 6th
Zahraa El Maadi,
Helwan, Egypt
+202 252 18446/7

Premier Corex (UK)

Airport Industrial Park
Howe Moss Drive,
Dyce Aberdeen AB21 0GL
+44 1224 770434

Premier Corex (Kuwait)

Block 9, Road 202,
Building No. 2,
East Ahmadi Area, Ahmadi,
Kuwait
+965 550 47918

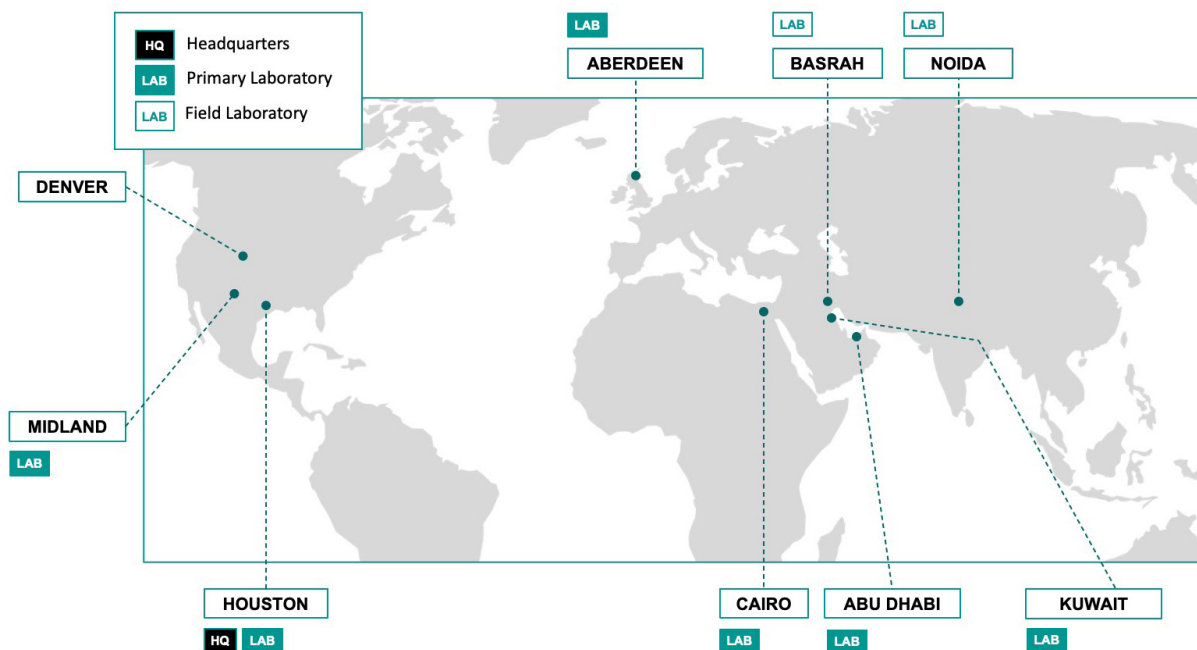
Premier Corex (Abu Dhabi)

Unit 4, Building 69, M33, Plot 12
Musaffah Industrial Area
Abu Dhabi, United Arab Emirates
+971 50 641 8779

Premier Corex (India)

A-144 Sector 63
Noida, Uttar Pradesh 201301
India
+919 58 2261 550

Global Locations



Further information is also available on our website. Scan QR Code above to visit:

www.PremierCorex.com

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