



Updated Core & Drill Cutting Material Sampling Procedure

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Agenda

- 》 Background
- 》 Location of data on AER website
- 》 Test categories
- 》 Overview of procedure document
- 》 Material sampling forms
- 》 Examples of core in storage

Reasons for New Procedure

- 》 Preservation of core/cuttings
- 》 Improved capture of test data
- 》 Improved dissemination

Background

- Internal and external users of the Core Research Centre (CRC) have expressed concern about the deteriorating condition of the core and drill cuttings stored there. In particular, the current practice of allowing sampling of core without requiring that all test results be submitted means that there is a risk to the ongoing preservation and integrity of the material.

Background

Continued

The sampling of materials has historically been broadly grouped in three types of testing:

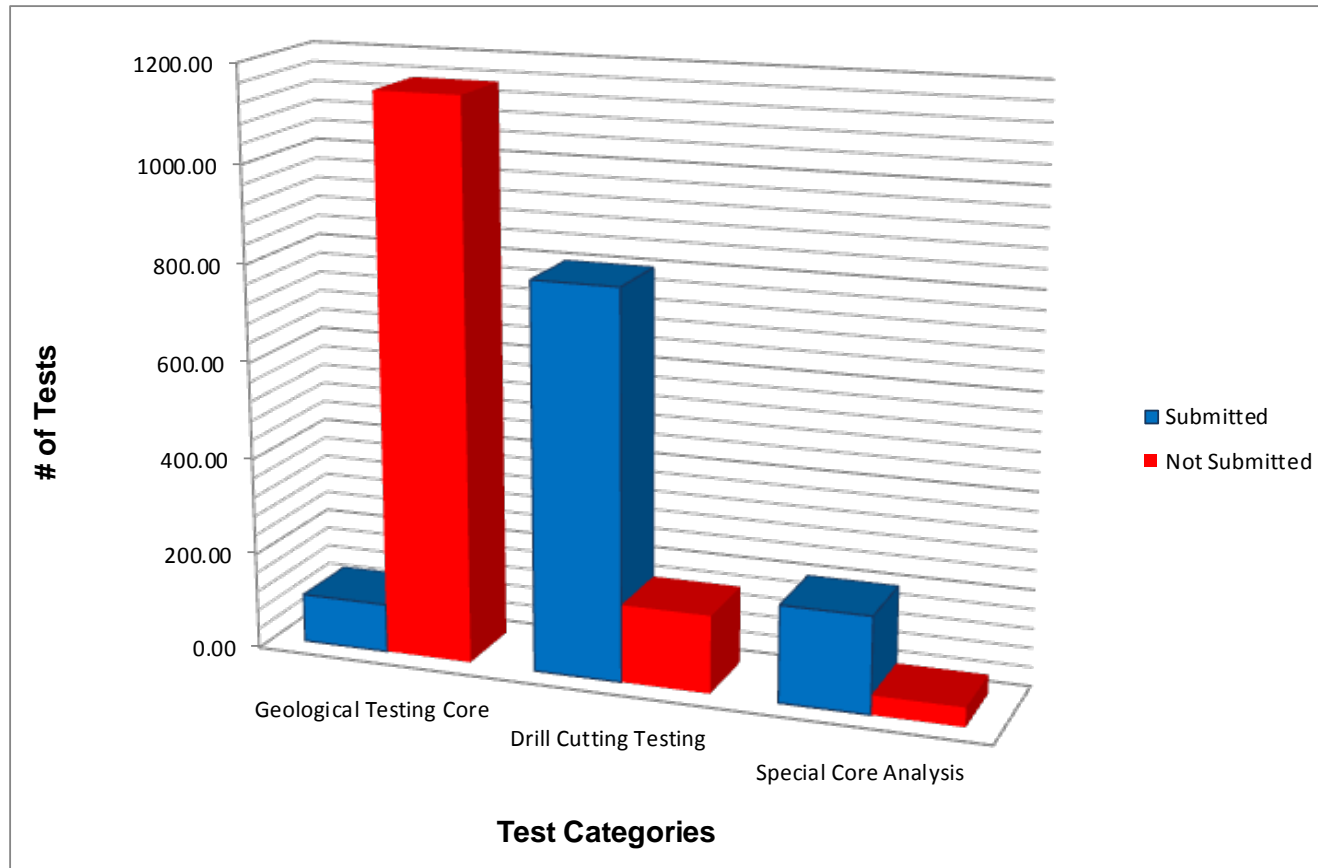
- 1) sampling of core for reservoir evaluation or productivity studies, commonly known as special core analysis (*ST105*);
- 2) sampling of core for geological testing (e.g., thin sections, XRD, geochemical, rock evaluation, etc.); and

Background

Continued

- 3) sampling of drill cuttings for geological and reservoir testing (e.g., thin sections, XRD, petrography, rock evaluation, etc.).

Test Submissions by Category



Two Test Categories

- 1) Reservoir Evaluation/Productivity Studies (REPS)
- 2) Geological/Other Studies (GOS)

Reservoir Evaluation/ Productivity Studies

- 》 Includes any testing pertaining to the estimation or recovery of oil and gas reserves that does not involve routine measurements of porosity, permeability, or fluid saturation. This includes conventional PVT analysis, special PVT studies, special core analysis, and coalbed analysis.

Effective April 1, 2014

» The *ST105: Pressure, Volume, Temperature (PVT) and Reservoir Evaluation/Productivity Studies Index* will no longer be listed or referred to as one of the AER's ST publications but will instead be referred to only as the *Reservoir Evaluation/Productivity Studies Index*.

Geological/Other Studies (GOS)

- 》 Includes testing of material for geological or other purposes. These studies are laboratory tests conducted for use in formation evaluation of geological characteristics and pore types when measured data is unavailable.

The AER Website

» www.aer.ca

Before Obtaining Approval

- 1) Check the list of approved material sampling test types to confirm that the test is an approved type.
- 2) Check the appropriate index to ensure that tests have not been previously done.

When Licensee Approval is Required

- 1) For confidential wells, an Information Release & Liability Waiver must be completed by licensee.
- 2) For reservoir analysis sampling, a letter from the licensee is required regardless of the confidentiality of the well.

Information Release & Liability Waiver

AER Core Research Centre Information Release and Liability Waiver for Sampling and Viewing of Confidential Material



The authorized representative of the licensee must submit this form to the CRC Service Desk by e-mail to crc.servicedesk@aer.ca.

As a duly authorized representative of the licensee, I hereby authorize Alberta Energy Regulator (AER) and Core Research Centre (CRC) staff to allow the person requesting sampling to access, view, handle, and take samples of the following confidential materials:

License number	Unique well Identifier (UWI)	Description (core, drill cuttings, tours, artefacts)

I acknowledge that the wells listed above are currently considered confidential under section 12.150 of the *Oil and Gas Conservation Rules* (OGCR). I further acknowledge that by giving this authorization, I am directing the AER to permit third parties access to information that is considered confidential under the OGCR.

I confirm that the AER bears no responsibility or liability for any information once it has been released to the representative requesting access. This includes any damage or injury from unauthorized use or disclosure of the information by the authorized representative or any third party to whom this authorized representative has authorized to access the confidential materials.

I hereby release the AER and the CRC from any and all claims of any nature and kind in connection with or resulting from the release by the AER of the accessed materials to the authorized persons and any subsequent use and disclosure of that information by the authorized persons.

Requested by:	
Name:	Company:
E-mail address:	Phone number:
Authorized by:	
Name of licensee:	Authorized representative:
E-mail address:	Phone number:
Signature:	Date:

Sampling Approval Forms

- » To obtain approval to sample material, you must complete the following forms:
 - » Material Sampling Approval Form Part A
 - » Material Sampling Approval Form Part B
- » Submit your request by taking the forms to the CRC service desk.


Sampling Approval Forms

Continued

- » A member of CRC Compliance will review the forms with you to approve the request. CRC Compliance will not approve requests for sampling if the integrity of the remaining material is put at risk.

Sampling Approval Forms

Continued

AER Core Research Centre Material Sampling Approval Form—Part A		
<p>All sampling must be approved before a sample can be removed, subject to the conditions listed on this form. Complete both Part A and Part B, then notify the CRC Service Desk to request sampling approval.</p>		
Sampling Request		
Type of sampling: <input type="checkbox"/> Core <input type="checkbox"/> Drill cutting	Type of analyses: <input type="checkbox"/> Reservoir/productivity studies <input type="checkbox"/> Geological/other studies	
Sampling requested by:		
Company name:	Company contact name:	
Phone number:	E-mail address:	
Sampling performed by (if different from the person or company making the request):		
Company name:	Company contact name:	
Phone number:	E-mail address:	
Export of Samples		
Will the material sample be leaving the Province of Alberta? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
If "yes," include the following information:		
Name of facility:	Province:	
City:		
Conditions		
In accordance with the AER's material sampling procedures, I confirm that		
<ul style="list-style-type: none">the required analyses are not already available from the AER;I will return all test results, physical artefacts, unaltered residual core material, and unused drill cuttings to the CRC;if I fail to submit test results, physical artefacts, or residual material as agreed upon, our CRC privileges may be suspended.		
Name:		
Signature:	Date:	
CRC Approval		
Name:		
Signature:	Date:	

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Sampling Approval Forms

Continued

**AER Core Research Centre
Material Sampling Approval Form—Part B**

Complete a separate form (Part B only) for each UWI. Complete multiple pages if necessary.
All sampling must be approved before a sample can be removed, subject to the conditions in Part A.
Complete both Part A and Part B, then notify the CRC Service Desk to request sampling approval.

UWI: _____



Drill plugs
☐ removed
☐ cut

Sample point depth/unit (m/ft)	Formation	Length	Type of analysis	Core No.	Box No.	Diameter	Quantity

Submission or Return Dates

☐ Test results to be submitted by:
☐ Core samples to be returned by:
☐ Residual material to be returned by:

☐ Physical artefacts to be submitted by:
☐ Drill plugs to be returned by:

Requested by

Name:	Signature:	Date:
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CRC Approval

Name:	Signature:	Date:
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Page ____ of ____

Submission Requirements

- 》 Reservoir evaluation/productivity studies:
 - 》 Test results are to be submitted within six months of the test being completed.
- 》 Geological/other studies:
 - 》 It is expected that test results will be submitted within one month of the test being completed.
 - 》 All test results must be submitted on a CD or DVD.

Test Results Naming Convention

- 》 The CD or DVD being submitted must be labelled with the following information: “AER-CRC Compliance,” your company name, contact name, contact phone number, and e-mail address.

Test Results Naming Convention

Continued

- 》 All test results on the CD or DVD must follow the following file naming convention:
 - 》 Separate blocks of information with an underscore (e.g., RS_0123456_00-13-20-045-12W4-02_MP.pdf).
 - 》 Identify the sampling category of the data by either using “RS” for reservoir evaluation/productivity studies or “GS” for geological/other studies.

Test Results Naming Convention

Continued

- › Submit each individual analysis as a separate file on a CD or DVD.
- › When multiple UWIs are being studied, identify one UWI that was sampled.
- › Each file name should be unique.

Example:

Data type	Licence No.	UWI (maximum 20 alphanumeric characters, including hyphens)*	Other	File extension
GS	0123456	00-13-20-045-12W4-02	ASEN	.xls

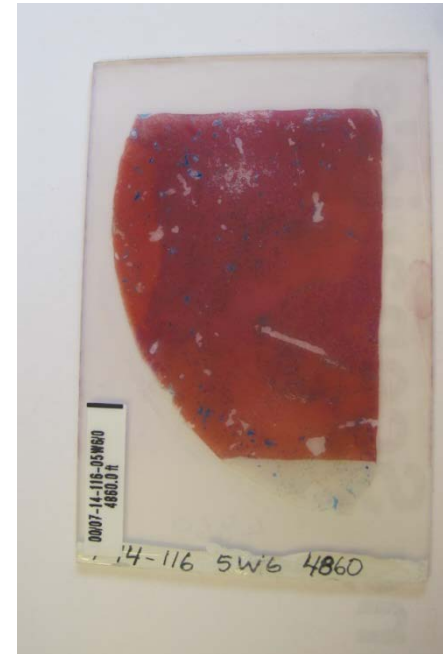
*Location exception code-legal subdivision-section-township-range-west meridian-event sequence

Thin Section Submission

- 》 The new procedure only requires that the thin section be submitted.
- 》 No reports or interpretation of the thin section is required.

Thin Section Label Requirements

- 1) Complete UWI including the location exception and the event sequence.
- 2) Depth with unit (m/ft.).
- 3) Orientation of the slide and dye used if possible.
- 4) Ensure that the label is permanent and clearly marked.



Extensions

- 》 If an extension is required, customers must get approval from CRC Compliance before the submission due date.

Extensions

Continued

- 》 If CRC Compliance does not receive test results by the agreed upon due date, corrective action will be taken. Corrective action may include the suspension of all CRC privileges for the company and person responsible for submitting the test results until test results are received.


Dissemination of Test Results

- 》 Test results for reservoir evaluation and productivity studies will be held confidential for one year from the date of the test.

Dissemination of Test Results Continued

- Confidentiality of the test results for geological or other studies will be the same as the confidentiality status of the well or wells within the study. Where multiple UWIs are contained within the study, the confidentiality of the study will be based on the latest UWI confidential release date.
- Artifacts such as thin section slides are available for viewing at CRC.

Notice of Noncompliance



Alberta
Energy
Regulator

Month Day, Year

BY E-MAIL ONLY

Name of Addressee, Title
Company Name
Street Address
Calgary, AB Postal Code

E-Mail: Adam.Smith@ab00company.ca

Core Research Centre
3545 Research Way NW
Calgary, Alberta T2L 1Y7
Canada

tel 403-297-6400

www.aer.ca

Request for Submission of Geological/Other Studies Test Results

Dear Name of Addressee,

On Month Day, Year the Alberta Energy Regulator (AER) approved Company/Person's request to perform material sampling analysis. A condition of the Material Sampling Approval is that all test results/artefacts must be submitted to the Core Research Centre (CRC) no later than Month Day, Year.

To date the CRC has not received the required submissions from this approval.

Required Test Results

Well ID	Test Type/Artefact
_____	_____
_____	_____
_____	_____

Failure to submit the required information within 30 calendar days from the date of this letter may result in Company/Person being suspended of CRC privileges.

If you require assistance contact CRC Compliance by email crccomplianceadmin@er.ca or phone (403) 297-6412.

Regards,

Name of Sender, Title

Corrective Action

- 》 If CRC Compliance does not receive test results by the agreed upon due date, corrective action will be taken. Corrective action may include the suspension of all CRC privileges for the company and person responsible for submitting the test results until test results are received.

Return of Residual Material

- Return residual core material to the CRC as required (see the list of test types approved for material sampling). All core and drill cutting samples must be returned in an unaltered state if the test was not completed.
- Returned core samples must be labelled with the complete UWI and depth.

Return of Residual Material

Continued

- 》 Do not combine drill cuttings taken for composite testing unless you are certain the test can be completed. The drill cutting sample must be returned in the sample vials provided by the CRC and labelled with the complete UWI and depth.

Examples of Core/Cuttings Sampling Scenarios



Rubble



Whole Core (2-inch)



Whole/Slabbed Core (3-inch)



Whole/Slabbed Core (4-inch)



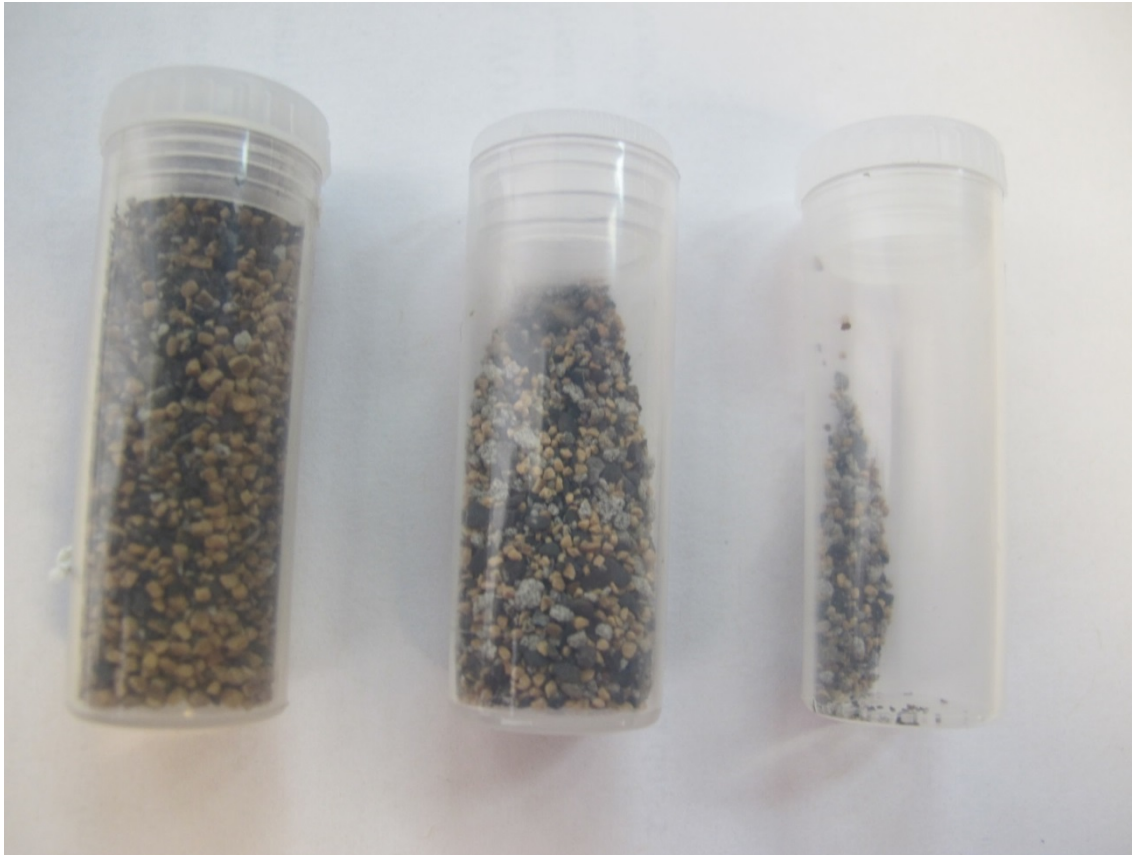
Previously Sampled Whole Core



Oversampled Core



Cuttings



Oil Sands Core



