GEOSCIENCES AND ENGINEERING DIVISION
NONCONFORMANCE REPORT

Project No. 14002.01.171 **NCR No.** 2008-01

PART 1: DESCRIPTION OF NONCONFORMANCE

The volume of testing solution during the electrochemical corrosion test should be maintained at a constant level to ensure a constant solution concentration. However, during the unattended testing period (1/4/2008 to 1/7/2008), the testing solution dried out by evaporation, resulting in changing of solution concentration and temperature, which is deviated from the experimental procedures.

Initiated by: Hundal Jung **Date:** 1/10/2008

Action Required by: Hundal Jung **Response Due Date:** 1/24/2008

PART 2: PROPOSED DISPOSITION AND CORRECTIVE ACTION

Disposition: Discard the data from this corrosion test performed from 1/4/2008 to 1/7/2008 (Scientific Notebook #900, page 85).

Basis of Disposition: The corrosion test [ID: PS_C22_0.5M HCl (pH 0.2)_90oC(3^{rd})] on page 84 in Scientific Notebook #900 was not properly conducted due to evaporation of testing solution in the test cell during the unattended testing period. The solution was overheated and dried out by evaporation due to a large deviation of the solution temperature from the setting temperature. Without maintaining a constant level of solution volume during the test, any measured current data are invalid. This type of nonconformance does not affect the previous six tests (two potentiodynamic tests and four potentiostatic tests conducted in either acidic 5M NaCl or 0.5M HCl solutions at 90 ± 2 °C, recorded on pages 72 to 83 in the same Scientific Notebook), and the corresponding data are valid. In these tests the volume of testing solution was monitored during the tests, and a constant level of testing solution was confirmed by comparing the reference line labeled on the outer surface of a glass test cell before the corrosion tests.

Action to Correct Nonconformance: The affected data (Scientific Notebook #900, page 85) were discarded. If any further test is needed, the experimental set up will be improved and modified by using a heating reservoir controlled by a temperature controller, water-cooled condenser to minimize solution loss at elevated temperatures and a secondary container for the glass thermometer. If any unattended testing is needed, the operation will commence only after careful staff review of experimental set up to assure best practices are taken and will be monitored more frequently.

Target date for completion: Completed

Proposed by: Hundal Jung **Date:** 1/10/2008

PART 3: APPROVAL

Manager: K Axler Date: 1-14-08

Director of QA: [signature] Date: 1/14/2008

Comments/Instructions:

PART 4: CLOSE OUT

Comments: ~~None~~ Data had not yet been entered on Pg. 85 of Notebook 900. It will be now with appropriate notation and reference to this NCR.

Verified by: M. Simpson Date: 1/14/08

Distribution:
Original–QA Records
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