

Appendix B

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| NUCLEAR WASTE MANAGEMENT PROCEDURE Sandia National Laboratories | Parameter Problem Report (PPR) | Form Number: NP 9-2-2 Page 1 of 2 |
| Material Abbreviated Name: <u>SOLMOD3</u> Property Abbreviated Name: <u>SOLCOH3</u> Associated Analysis: (CCA, PAVT, AP-159, etc.) <u>CRA19</u> Effective Date: <u>4/16/2019</u> | | <i>ARN</i> <i>1-13-2020</i> |
| Description of Problem | | |
| <p>The alpha(1) terms for the binary Pitzer parameter for Ca²⁺ / EDTA⁴⁻, Mg²⁺ / MgEDTA²⁻, and the Ca²⁺ / MgEDTA²⁻ pairs were entered incorrectly in the EQ3/6 thermodynamic database DATA0.FM4. They were entered as 2.0 when the correct value is 1.4. While this value is NOT a direct input to PA, it did have an impact on the SOLMOD3/SOLCOH3 parameter value. This issue was uncovered during an extent of condition evaluation triggered by PPR 2019-003.</p> | | |
| <div style="display: flex; justify-content: space-between;"> <div data-bbox="183 1182 568 1251"> Paul Domski Requester (Print, Sign and Date) </div> <div data-bbox="365 1129 1193 1270" style="text-align: right;"> <i>Shelly R. Nielsen</i> <i>1-13-2020</i> </div> </div> <p style="text-align: center;">Condition Adverse to Quality? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Initiate NP 16 -1 if yes)</p> | | |
| Problem Resolution and Justification for no Condition Adverse to Quality | | |
| <p>Two analyses were performed, the first by Domski to determine if changes to the alpha(1) terms impacted any of the output PA parameters from the baseline solubility model. Domski determined that SOLMOD3/SOLCOH3 had been impacted which precipitated the need to evaluate downstream models which use the SOLMOD3/SOLCOH3 parameter. The second model was the PA model itself, Kim ran the model with the updated SOLMOD3/SOLCOH3 parameter and found there was no change in the mobilized An(III), brine pressure, hydrogen gas generation rate, and transport to the Culebra. The CCDFGF plots of total release of An(III) from the repository were not impacted by the change to the SOLMOD3/SOLCOH3 parameter, therefore, there is no condition adverse to quality, and the WIPP PA Parameter Database will not be updated. This problem resolution and justification for no condition adverse to quality is documented in memorandum "Correction of the α_1 terms of three Binary Pitzer Parameter blocks in DATA0.FM4, PPR 2019-004 through 2019-013" (Domski, 2020).</p> | | |
| Concurrence | | |
| <div style="display: flex; justify-content: space-between;"> <div data-bbox="183 1818 597 1887"> Paul E. Shoemaker PA Manager (Print, Sign and Date) </div> <div data-bbox="430 1753 1234 1858" style="text-align: right;"> <i>Paul E. Shoemaker</i> <i>01/13/2020</i> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div data-bbox="183 1929 391 1961"> Shelly R. Nielsen </div> <div data-bbox="397 1879 1071 2047" style="text-align: right;"> <i>Shelly R. Nielsen</i> <i>1-13-2020</i> </div> <div data-bbox="954 1929 1071 1961"> 2019-011 </div> </div> | | |

INFORMATION ONLY

QA Staff (Print, Sign and Date)

Parameter Problem Report No. (PPR)