

Comments Received May 21, 2009	Included in this Submittal	Previously Submitted	Pending
1-G-1 Stakeholder-Water Flow Model Concerns - ext from the Citizens for Alternatives to Radioactive Dumping (CARD) news release on March 25, 2009, raises questions...	✓		
1-G-2 Shielded Containers - The shielded container planned change request has been an ongoing activity that was not completed before the CRA-2009 was received by EPA.	✓		
1-G-3 Inventory - As outlined in the Executive Summary of DOE/TRU-2008-3379, Rev. 1 (ATWIR 2007), DOE has proposed that ATWIR 2008 be used as the inventory source...	✓		
1-23-1 New Compliant Performance Assessment - EPA believes it is necessary to perform a new performance assessment to capture changes since the last recertification...		✓	
1-23-2 Chemistry PA - References from Appendix SOTERM-2009: Borkowski...; Lucchini...; Reed...; Richmann...	✓		
1-23-3 Chemistry PA - DOE summarizes thermodynamic data for the +111, +IV, and +V actinides that have become available since the CRA-2004 PABC in Appendix SOTERM...			✓
1-23-4 Chemistry PA - AP-137 (Clayton 2008), includes the statement on pages 17 and 18 that the ligand concentrations were expected to increase from the 2004 to 2007 inventories.		✓	
1-23-5 Chemistry PA -In Appendix SOTERM-2009, Section 3.3.2 and SOTERM-2009, Section 3.6.2, DOE states that the pCH of the WIPP brines is expected to be approximately 8.7...			✓
1-23-6 Chemistry PA - DOE reports uranium (VI) solubility experiments in the absence of carbonate and ligands (Appendix SOTERM-2009, Section 3.3.2).			✓
1-23-6 a. If the experimental results in GWB are extrapolated to pCH 9.64, the Nd (III) solubility could be approximately two orders of magnitude greater ($\sim 4 \times 10^{-5}$ M) than the value...			✓
1-23-6 b. Given the evidence that borate complexation appears to affect the +111 and +VI actinide solubilities, DOE should address whether the +IV actinide solubilities...			✓
1-23-6 c. The current actinide solubility conceptual model includes the assumption that "The important ions in WIPP brines are H^+ , Na^+ , K^+ , Mg^{2+} , OH^- , Cl^- , CO_3^{2-} , SO_4^{2-} and Ca^{2+} .			✓
1-C-1 Chemistry Issues - DOE states that the characterization data for the Martin Marietta MgO has been obtained from a single lot (SL2980076) of this material (Appendix MgO-2009...			✓
1-C-2 Chemistry Issues -The reactivity test used for MgO material acceptance was developed in 1997. At that time, the MgO used as backfill had a lower reactivity, but was...			✓
1-C-3 Chemistry Issues - Appendix PA-2009, Section 7.1.1 attributes slower changes in repository pressure after 2,000 years to cessation of room closure, slowing of brine inflow...		✓	
1-C-4 Chemistry Issues - Appendix MASS-2009 and Appendix SOTERM-2009 do not address the current assumption that plastic and rubber degradation (if occurring)...		✓	
1-C-5 Chemistry Issues - It is stated in Appendix PA-2009, Section 2.3.1, that water is neither created nor consumed by microbial reactions.		✓	

1-C-6 Chemistry Issues - DOE should provide justification for the statement in Appendix SOTERM-2009, Section 3.7 that "Of the four organic chelating agents considered, only citrate..."			✓
1-C-7 Chemistry Issues - Appendix SOTERM-2009, Table SOTERM-I, provides an incomplete list of the current chemistry model assumptions.	✓		
1-C-8 Chemistry Issues - The fourth paragraph of Appendix SOTERM-2009, Section 2.3.2 states: "the expected pH, when little or no carbonate is present, is 8.69 in GWB brine and..."			✓
1-C-9 Chemistry Issues - DOE states that carbonate complexation of Nd(III) is unimportant at conditions expected in WIPP brines (Appendix SOTERM-2009, Section 3.6.2).			✓
1-C-10 Chemistry Issues In Appendix SOTERM-2009, Section 4.4, DOE states that the chemical potential (μ^0/RT) for $\text{Th}(\text{OH})_4(\text{s})$ was changed in the FMT database since the...	✓		
1-C-11 Chemistry Issues - In Appendix SOTERM-2009, Section 4.4, DOE should explain what is meant by their statement that, "The effects of hydromagnesite and calcite..."	✓		
1-C-12 Chemistry Issues - In the caption for Appendix SOTERM-2009, Figure SOTERM-11, DOE states that the Eh-pH diagram demonstrates that Pu(IV) species would be...			✓
1-C-13 Chemistry Issues - DOE should provide the carbonate concentration, total americium concentration, and assumed ionic strength for generation of Appendix SOTERM-2009...			✓
1-C-14 Chemistry Issues - DOE states in Appendix SOTERM-2009, Section 4.6 that organic ligands do not significantly affect actinide solubilities, despite data presented in Appendix...			✓
1-C-15 Chemistry Issues - In Appendix SOTERM-2009, Table SOTERM-21, the parameter descriptions for PHUMCIM and PHUMSIM indicate "actinide solubilities are inorganic only..."		✓	
1-C-16 Chemistry Issues - In Appendix SOTERM-2009, Section 2.4.1.1, DOE cites "degradation of solubilizing organic ligands, leading to lower actinide solubility" as a possible...			✓
1-C-17 Chemistry Issues - In Appendix SOTERM-2009, Section 2.3.2, Brush et al. (2006) is cited as part of the documentation for the CRA-2004 PABC, but this report was...	✓		
1-C-18 Chemistry Issues - In Appendix MgO-2009, Section 4.2.2, DOE claims that hydromagnesite will completely convert to magnesite during the 10,000 year WIPP regulatory time...		✓	
1-C-19 Chemistry Issues - In Appendix MgO-2009, Section 5.1, DOE states that the actinide solubilities in WIPP brines calculated for the CRA-2004 PA and CRA-2004 PABC...		✓	
1-C-20 Chemistry Issues - In the discussion of MgO uncertainties (Appendix MgO-2009, Section 6.2.4.4), DOE does not include the uncertainties associated with the...		✓	
1-C-21 Chemistry Issues - Appendix PA-2009, Table PA-10 does not include units for the concentrations, which should be moles/L.		✓	
1-C-22 Chemistry Issues - Appendix PA-2009, Section 4.9 includes a statement that releases are controlled almost entirely by direct releases to the surface as cuttings, cavings...		✓	
1-C-23 Chemistry Issues - To facilitate EPA's technical review, DOE should provide EPA with copies of all FMT input and output files used to update the actinide solubility uncertainty...		✓	

Comments Received July 16, 2009	Included in this Submittal	Previously Submitted	Pending
2-G-4 Inventory - Quality Assurance Sign-offs - While reviewing some of the quality assurance documents used by the LANL-CO inventory team to develop, manipulate and...			✓
CARD 2009 Recertification Comments (as noted in the 1st completeness letter) The group, Citizens Against Radioactive Dumping (CARD), has submitted a report entitled, "Proof of Rapid Rainwater Recharge at the WIPP Site,			✓
2-15-CARD-1 page 1, last line- CARD states, "This is why the proponents of WIPP deny the existence of karst at the WIPP site. They argue, in effect, that WIPP is a karst-free island...			✓
2-15-CARD-2 page 2, page 2, first line- CARD states, "The supposed reliability of the Rustler Formation as a barrier to the migration of contaminated water hangs upon a postulated...			✓
2-15-CARD-3 page 2, third paragraph- CARD states, "Proof of rainwater recharge at the WIPP site would constitute proof that WIPP is part of the regional karstland of the Pecos River...			✓
2-15-CARD-4 page 3, third paragraph- CARD states, "This is the very definition of karst. Simply stated, if rainwater recharge does reach the Culebra dolomite, the Culebra is not a...			✓
2-15-CARD-5 page 4, paragraph 2-CARD states, "But the point to remember is this: none of this rainwater recharge is supposed to be happening. This invalidates the groundwater...			✓
2-15-CARD-6 page 14 last line-CARD states, "This strongly suggests that the water table will continue to rise at the WIPP site. Thus the Culebra is not in hydraulic steady state, as...			✓
2-15-CARD-7 page 30, first paragraph-CARD states, "If groundwater is supposed to be flowing from north to south, as DOE contends, how then did dissolved halite appear in these...			✓
2-15-CARD-8 page 36, 6th paragraph-CARD states in conclusion, "Proof of rapid rainwater recharge at the WIPP site renders invalid the hydrologic model of the Culebra by which...			✓
2-C-24 Inventory-Chemistry -he PA team requested data on the cement inventory as documented in PAIR 2008 (Crawford et al 2009, Section 3.1). The scaled mass of cement was...			✓
2-23-7 Adequacy of Minimum Brine Calculations for Actinide Solubility Determinations - The minimum brine volume is the volume of brine needed for a direct brine release (DBR) to...			✓
2-33-1 Please provide the following reference, or indicate where the reference is located in the data sets provided: RL. Resources, Monthly Injection & Saltwater Report for...	✓		
2-33-2 R 194.33(c)(2) states: (c) Performance assessments shall document that in analyzing the consequences of drilling events, the Department assumed that. ..(2) Natural...			✓
2-33-3 Dakota Salts, LLC, is a Denver based company that has proposed the use of Deep Salt Caverns for storage of compressed air generated by wind farms. Dakota Salts...			✓
2-33-4 Carbon sequestration is being assessed on a nationwide basis, including the Permian Basin (http://www.southwestcarbonpartnership.org). The Southwest...			✓

2-33-5 In CRA-2009, DOE changed the maximum time a DBR can occur from 11 days to 4.5 days. The maximum DBR duration is represented in PA by the parameter MAXFLOW...			✓
2-33-5 a. The South Culebra Bluff Blowout is cited as an inappropriate analogy for a WIPP brine release based on the formation encountered, downhole pressures anticipated...			✓
2-33-5 b. Review of drillers' comments (Memorandum, Document Number 545844) indicates that many drillers have never encountered a situation that would require mitigation of...			✓
2-33-5 c. Several drillers (reference 545844) indicated that they may never detect a brine release from the repository given the hypothetical release conditions posed by Kirkes (2007).			✓
2-33-5 d. One driller interviewed in reference 545844 indicated that if a brine kick was encountered, he would probably let brine flow to surface without any attempt at mitigation.			✓
2-33-5 e. Additionally, it is unclear what effect brine shut-in would have with respect to duration of flow and downhole conditions. Please provide references that address the effects..			✓