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MODELING TREATED LAW FEED EVAPORATION

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LIST OF ACRONYMS

HLW	High Level Waste
IX	Ion Exchange
LAW	Low Activity Waste
NASGEL	Sodium Aluminosilicate gelatin
OLH	Orthogonal Latin Hypercube
OLI/ESP	OLI Environmental Simulation Package Software
RPP	River Protection Project
SBS	Submerged Bed Scrubber
Sr/TRU	Strontium/Transuranic
TFE	Hanford RPP-WTP Treated Feed Evaporator
TF-COUP	Tank Farm - Contractor Operation and Utilization Plan
UF	Ultra-Filtration

1.0 SUMMARY OF TESTING

Previous Hanford-RPP evaporator modeling has focused on the treated LAW feed and eluate evaporation systems without the inclusion of secondary waste recycles.[1-4] This task investigates the potential impact that secondary-waste recycle streams may have on the operation of the treated LAW evaporator. The treated LAW evaporator will concentrate the treated waste effluent streams from the Cs ion exchange blended with the LAW melter offgas scrubbing recycle stream. The Tc ion exchange system (originally part of the test specification) has since been eliminated from the flowsheet. The LAW melter offgas scrubbing recycle stream is the major contributor to the overall recycle volume that is to be mixed with the treated waste feed prior to evaporation. Based on experience at Savannah River Site, the introduction of silica from melter offgas recycle into high sodium/aluminum feeds can produce sodium-aluminum-silicate precipitates upon concentration. These sodium-aluminum-silicates can cause operational shutdowns due to plugging of lines and fouling of heat transfer surfaces.

This task examines the potential of the treated waste feed blends to form sodium-aluminum-silicate precipitates when evaporated using the zeolite database. To investigate the behavior of the blended pretreated waste feed, an OLI ESP model of the treated LAW evaporator was built. A range of waste feed compositions representative of Envelope A, B, and C were then fed into the OLI model to predict various physical and chemical properties of the evaporator concentrates. Additional runs with treated LAW evaporator were performed to compare chemical and physical property model predictions and experimental results for small scale radioactive tests (S-69) of the treated feed (AW 101) evaporation process.

1.1 OBJECTIVES

The objectives of this task were to develop physical property correlations of the concentrated treated feed evaporator bottoms as stated in the Treated LAW Feed: Simulant Evaporation and Physical Properties Modeling test specification from RPP.[5] The model was to simulate the treated LAW evaporator operating at 50°C at the bubble point vacuum with Envelope A, B, or C wastes blended with LAW melter offgas scrubbing recycle (SBS) as feed and the evaporator concentrate or bottoms stream being varied between 15°C and 66°C. The physical property correlations were to be expressed in terms of the waste feed compositions, LAW SBS to waste feed volumetric flow ratio, and the evaporator bottoms temperature and sodium concentration. Simulation results would then be regressed to generate predictive equations for density, heat capacity, thermal conductivity, viscosity, and solubility of the Treated LAW evaporator bottoms concentrate. Simulation results were to be validated with experimental results which had already been completed.

Development of these equations was successful based on the goal of developing physical property correlations for each waste envelope with an error no greater than ±15% between calculated and modeled physical properties. The equation to predict solubility or the amount of total solids in the Treated LAW evaporator bottoms concentrate could not be developed to satisfy this goal. There was not enough information captured by the chosen model inputs to adequately describe the complicated nature of solids precipitation occurring in bottoms concentrate. However, general trends in solids formation were identified with respect to the bottoms Na molarity and temperature, which will be discussed later.

Another objective of this task was to verify the derived physical property equations with experimental tests with simulated blended LAW feed solutions[6]. The predicted physical properties were compared with experimental results documented in the report *Treated LAW Feed Evaporation: Physical Properties and Solubility Determination*[7] and with radioactive experiments for AW-101 documented in the report *Evaporation of Pretreated Hanford Tank AW-101 Sample Mixed with Recycle*[8]. The predicted densities and heat capacities were within +/-15% of the measured values for Envelopes A, B, and C. The Na molarity predictions for Envelope A and B were also within +/-15%. The other predicted physical properties were outside +/-15% of the measured values. This mismatch with measured values was due in part to being outside the range of the predictions, comparing a measured slurry property with a predicted supernate property, and the exclusion of solids in the predictions. More details about this comparison are given in section 2.5.2.

1.2 CONDUCT OF TESTING

The treated feed evaporator process was simulated using the OLI Environmental Simulation Program (OLI/ESP) version 6.6 using the CARBONAT, HNO3DB, SILICA, and ZEOLITE private databases, along with the public database. These databases were developed and validated in prior work.[9] A schematic of the OLI treated feed evaporator model is shown in Figure 1. The model fits were done using JMP® version 5.0.1[10] using linear and nonlinear least squares fit routines.

Distinct physical property models were developed for each waste of the envelopes, A, B, and C. The model variables were the waste feed compositions, the evaporator bottoms temperature (15 – 66°C) and sodium concentration (6, 8, and 10M), and the volumetric flow ratio of LAW SBS recycle relative to the treated waste feed (0 – 2). The test matrices were generated assuming that the physical properties are linear functions in composition, and up to second order with respect to the process variables (i.e., temperature, flow ratio, etc.). Additional simulation points not included in the model fits were used to validate these assumptions.

Since this task was to be validated using results of prior experimental work,[7] the waste envelope definitions from this prior work were used for this task. Envelope A waste formulations came from a matrix developed by R. Eibling and T. Edwards for the Waste Feed Evaporation R&T Task S-90 based upon a review of TFCOUP 3A.[11] For Envelope B a best basis mass inventory of 10/1/1998 was used to develop a composition for an AZ101 simulant.[12] This composition was used in the experimental work as well as this modeling work.

A recipe for AZ102 that was based on the analysis of a radioactive sample was used in the experimental work and this modeling work as well.[13] For envelope, C an AN-102 simulant was prepared using a Sr/TRU precipitation procedure outlined in a separate document.[14] This simulant was then filtered and used to represent AN-102 in the earlier experimental work[7] and this modeling study. The AN-107 simulant was the product of a pilot-scale filtration study by Duignan[14] at SRTC's Thermal Fluids Laboratory. This simulant underwent Sr/TRU removal and cross-flow filtration. The filtered supernate of this simulant was then used for the earlier experimental work as well as this modeling work.[7]

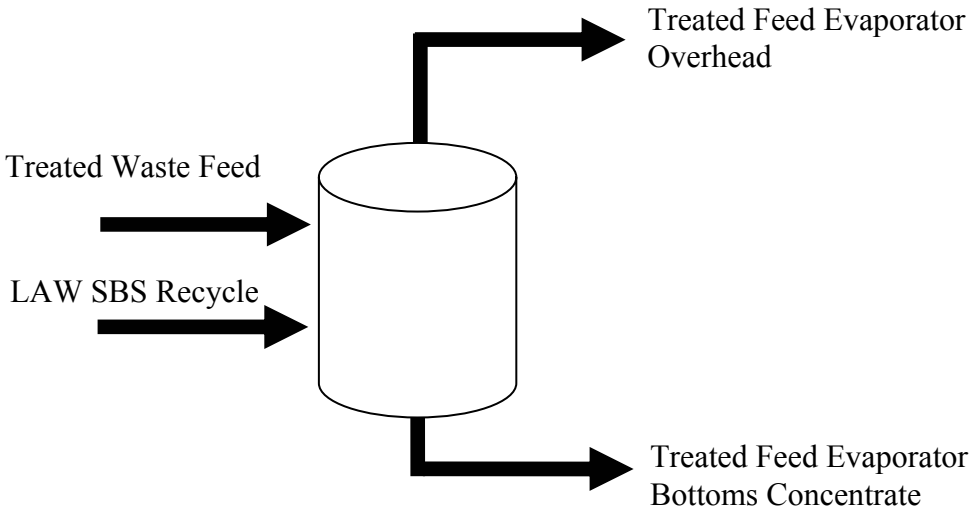

Figure 1. OLI Treated Feed Evaporator Model

Validation of the models was done in two parts; the physical property model predictions were compared to those of the simulation software using design points not included in the model fit, and the chemistry and physical properties predicted by the simulation software were compared to experimental results for selected simulation design points.

1.3 RESULTS AND PERFORMANCE AGAINST OBJECTIVES

Figure 2 is an example of the type of plot used to validate the physical property models against the simulation results. This figure shows the simulated viscosity from OLI versus the fitted model prediction of viscosity. The figure shows the predicted viscosity as a dotted black line, the predicted viscosity plus 15% as a red solid line, and the predicted viscosity minus 15% as the solid green line. The blue circles represent the simulated data points used to fit the model and the red asterisks represent the simulated points used as validation of the model. The complete set of results can be found in section 2.5.

As shown in Figure 2, all the validation points (red asterisks) fall between the ±15% prediction curves, exceeding the 80% confidence acceptance criteria, indicating that the fitted model is able to predict the simulation results within the acceptable error. The equation for the fitted viscosity model is shown immediately following the figure.

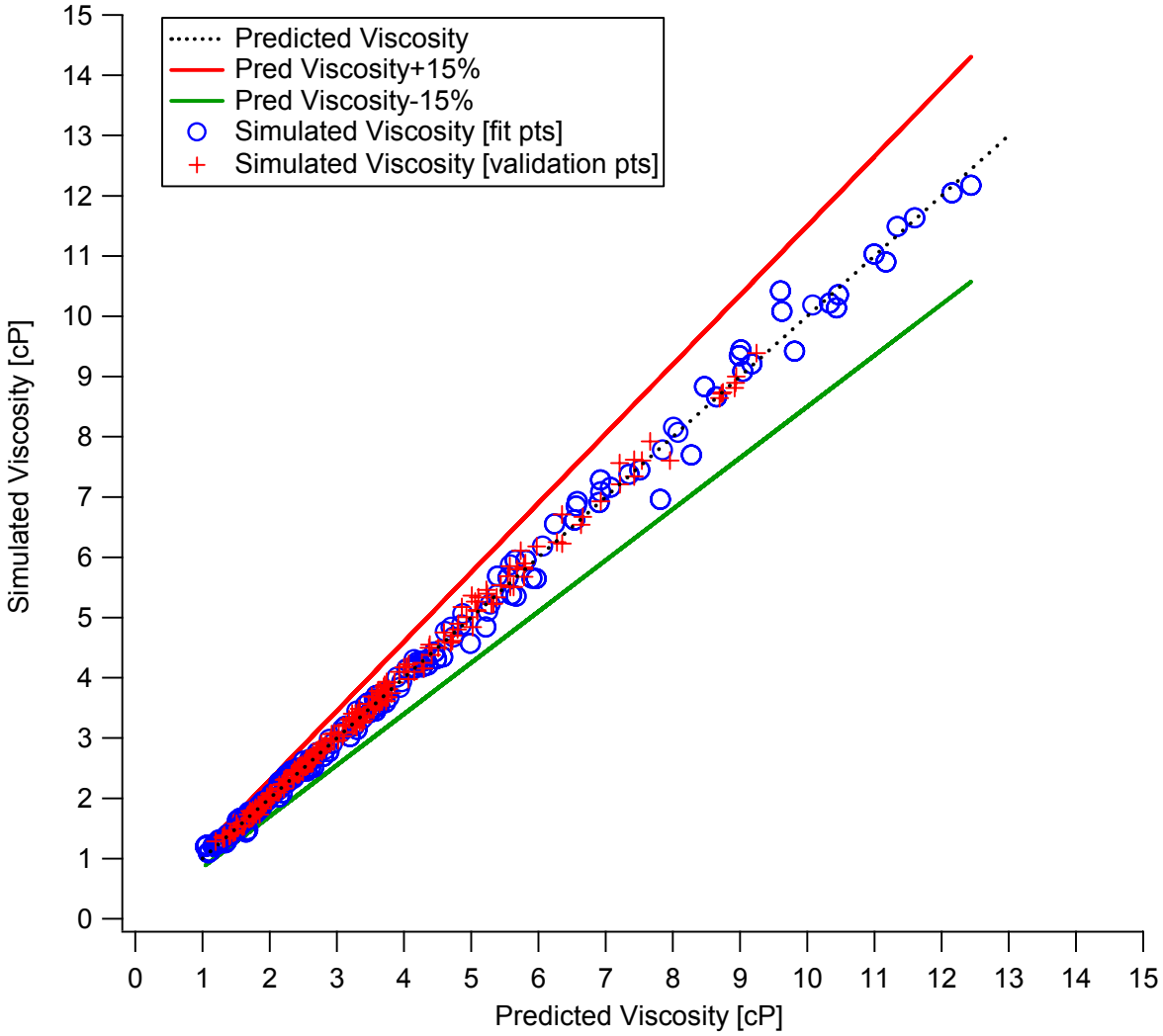

Figure 2. Simulated vs. Predicted Viscosity for Envelope A

Equation 1

$$\begin{aligned}\text{viscosity}_{\text{EnvA}}[\text{cP}] = {} & 0.3118\cdot[Na]+0.4547\cdot x_{OH}+1.148\cdot x_{AlO2}+2.117\cdot x_{CO3}+0.7458\cdot x_{NO2}+\\ & 0.02692\cdot SBS/Feed-2.437\text{E-}3\cdot Temp\cdot[Na]-\\ & 4.213\text{E-}4\cdot Temp\cdot SBS/Feed-0.3334+\\ & \exp\left(\begin{array}{l}\dfrac{530.9}{73.43+Temp}+0.3041\cdot[Na]+2.080\cdot x_{OH}+0.4869\cdot x_{AlO2}+0.6207\cdot x_{CO3}\\ -0.8173\cdot x_{NO2}-0.0479\cdot SBS/Feed-7.266\end{array}\right)\end{aligned}$$

Where
x_{OH}, x_{AlO2},x_{CO3}, x_{NO2} are the relative mass fractions of OH-, AlO2-,CO3--, and NO2- in the waste feed;
SBS/Feed is the volume ratio of SBS recycle to treated waste feed flow;
[*Na*] is the Na molarity
Temp is the temperature in degrees Celsius of the evaporator concentrate bottoms stream

Some of the predicted physical properties of treated feed evaporate bottoms stream matched with the experimental measurements completed in prior work[7] and some properties did not. Table 1 summarizes the comparison between measured and predicted physical properties.

The +/-55% discrepancy in the measured versus predicted Na M for Envelopes A and B is in part due to the fact that the prediction equation was derived from simulated data between 6 and 10 Na M only. It is not surprising that when the prediction is extrapolated down to 2 Na M the measured values do not match more than +/-55%. Another reason for the large discrepancy is that it is difficult to derive a predictive relationship relating treated feed waste composition (dry basis), SBS/Feed ratio, bottoms temperature, and bottoms density to bottoms Na molarity.

Four out of the 31 heat capacity measurements for Envelope A did not fall within +/-15% of the predictions. Part of the reason for this discrepancy is that the experimental heat capacities are for the supernate while those predicted are for the slurry (supernate plus solids). Analyses of the experimental samples show evidence of solids which in turn helps explain some of the deviation from predicted values.

The thermal conductivity predictions for envelopes A, B, and C were within +/-25% of most of the measured values for the bottoms concentrate with a Na molarity between 2 and 8. This large discrepancy is due in part that the simulated conductivity is for the supernate only where as the measured conductivity is for the entire slurry (supernate plus solids). Prior modeling work[9] showed that the experimental conductivity has a standard deviation about the value of water of 6.5%. The simulated conductivities are based on correction factors for the conductivity of water using various anions/cations as defined in Perry's Chemical Handbook.[15]

The simulated conductivities for all envelopes fell within a 3% standard deviation of the value of water. Since the measurement error is higher than this value, the predicted conductivities cannot be distinguished from those of water. Therefore there is no need to use a complicated prediction equation for conductivity when statistically a prediction for the conductivity of water is just as accurate.

Table 1. Comparison between Measured and Predicted Physical Properties

Property	Molarity Range	Envelopes	Measured within Predicted	Comments
Na M	6 - 10	A, B	+/-15%	none
	2	A, B	+/-55%	none
	2 - 10	C	+/-32%	none
Density	2 - 10	A	+/-6%	none
	1.2 - 8	B	+/-5%	none
	2 - 10	C	+/-11%	none
Heat Capacity	2 - 8	A	+/-15%	4 out of the 31 samples did not fall within +/-15%
	1.2 - 5	B	+/-15%	
	2 - 8	C	+/-10%	
Thermal Conductivity	2 - 8	A	+/-25%	3 out of the 21 samples did not fall within +/-25%
	1.2 - 5	B	+/-25%	4 out of the 12 samples did not fall within +/-25%
	2 - 8	C	+/-20%	3 out of the 12 samples did not fall within +/-25%
Viscosity	2 - 9	A	+/-20%	100% 25°C measurements
	2 - 8	A	+/-50%	40% of 15°C, 60°C measurements (other 60% within +/- 20%)
	1.2 - 9	B	+/-60%	15°C measurements
	1.2 - 9	B	+/-70%	25°C measurements
	1.2 - 9	B	+/-50%	60°C measurements
	2 - 9	C	+/-20 to 70%	15°C - 60°C measurements

The viscosity predictions for all envelopes had large errors when compared to the measured values. It is expected that the lower and higher temperature extremes produced solids that are not accounted for by the viscosity prediction since it is based only on the supernate phase of the bottoms concentrate. Another factor contributing to the difference is that the viscosity prediction models were based on the bottoms concentrate ranging from 6 to 10 M Na while the test data covered 2 to 10 M Na. Since the WTP is likely to operate the evaporator at a concentration between 6 and 8 Na M then the correlation will provide a more accurate prediction within this range. To obtain a better predictor of viscosity at the low and high sodium molarities, an accurate count of the solids in each sample plus a solids correction term derived from experimental results would need to be included. Prior modeling work[9] for the waste feed evaporator showed that when the supernate viscosity was measured experimentally and compared with modeling predictions there was relatively good agreement (within +/- 15%).

No accurate prediction equations for the solubility of the evaporator bottoms stream in terms of the total insoluble solids present could be derived for Envelopes A, B, and C. Several attempts were made to include nonlinear and linear terms in the prediction fits, but the waste feed compositions, SBS to treated Waste Feed ratio, the bottoms temperature and Na molarity did not provide enough data to characterize these phenomena. The inability to derive a linear equation to predict solubility or solids behavior is not surprising due to the discontinuities present regarding solubility of various salts. For example, it is difficult to predict solids behavior when temperature-induced phase transitions occur, like for mono-hepta-deca hydrated sodium carbonate, where each phase has a different solubility. It is also difficult to capture the inverse solubility behavior of species like sulfates which can appear and disappear in large quantities with a small temperature change. Sodium nitrate also will suddenly drop out in large quantities with shifts in the sodium molarity. Despite these obstacles some general observations were made from the simulations.

For Envelope A, about 35% of the simulated values (116 out of 336 total – including fit and validation points) had bottoms insoluble solids greater than 1 wt% but only about 10% of the simulated values (33 points) had insoluble solids greater than 2 wt%. Of this 10% segment, 64% of the values were between 2 wt% and 5 wt%, 9% of the values were between 5 wt% and 10 wt%, and 27% were between 10 wt% and 20wt%. A complete listing of the solids predicted for Envelope A is shown in Table 35 and Table 36. The high weight percent insoluble solids were only observed at bottoms temperatures less than 20°C and sodium molarities greater than 8. The primary salts were sodium oxalate, sodium carbonate, sodium sulfate-carbonate, sodium fluoride, sodium aluminosilicate gelatin (NASGEL), and sodium nitrate. The sodium nitrate only came out at 10 M Na concentrations. For the simulated runs, NASGEL solids appear in the bottoms concentrate stream over a wider % range at 6 Na M than 8 Na M and 10 Na M as shown in Figure 3. In fact at 10 Na M, no NASGEL forms for the simulated runs performed. The NASGEL solids appear at all tested bottoms temperatures as shown in Figure 4. The SBS/Feed ratio has no effect on NASGEL formation at 10 Na M as shown in Figure 5. Increasing the SBS/Feed ratio above 1.75 slightly increases the chance of NASGEL formation as shown in Figure 6. Increasing the SBS/feed ratio above 0.5 greatly increases the chance of NASGEL formation at 6 Na M as shown in Figure 7. Please note that due to the variability in the data, a low Na M like 6 and a high SBS/Feed ratio does not guarantee that NASGEL will form.

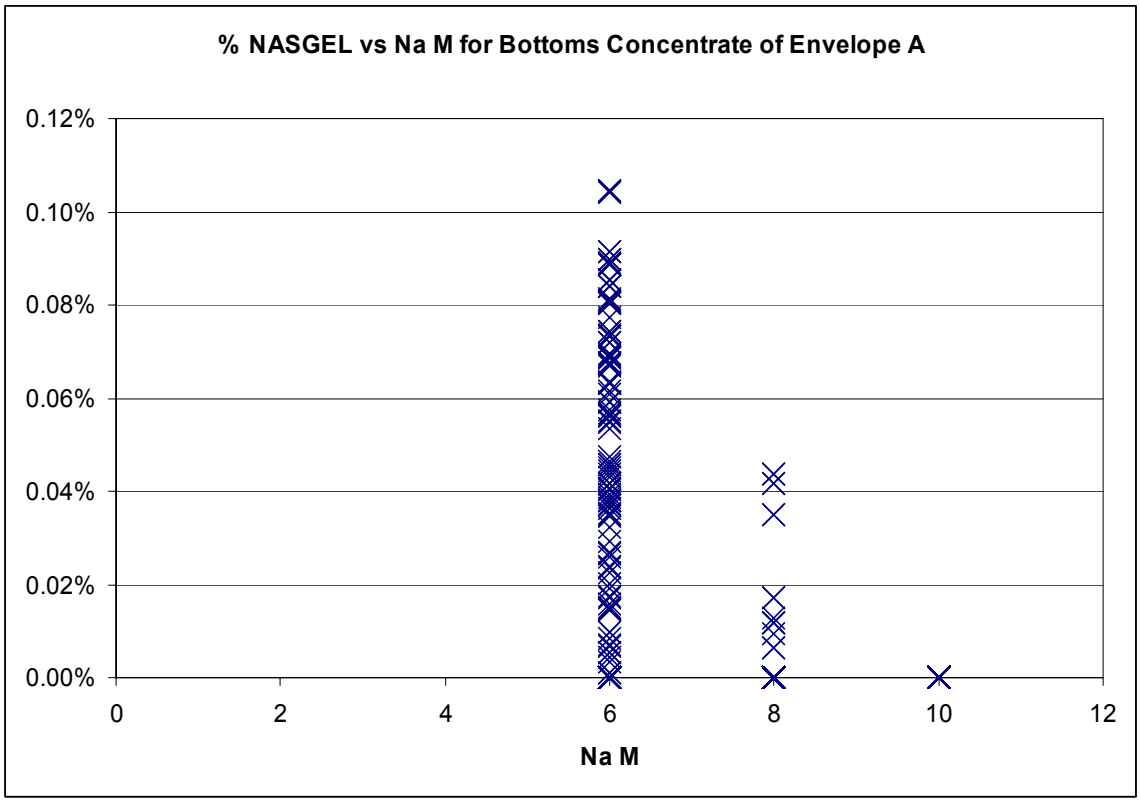

Figure 3. % NASGEL versus Na M for Bottoms Concentrate of Envelope A

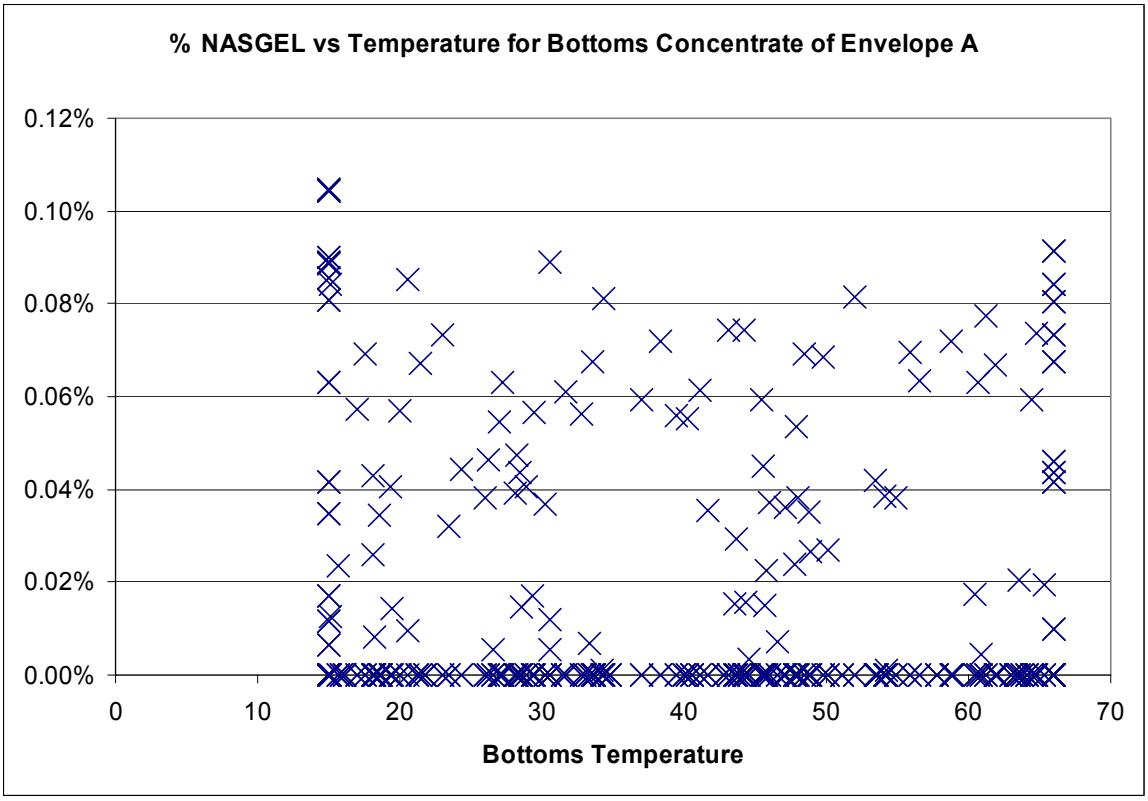

Figure 4. % NASGEL versus Temperature for Bottoms Concentrate of Envelope A

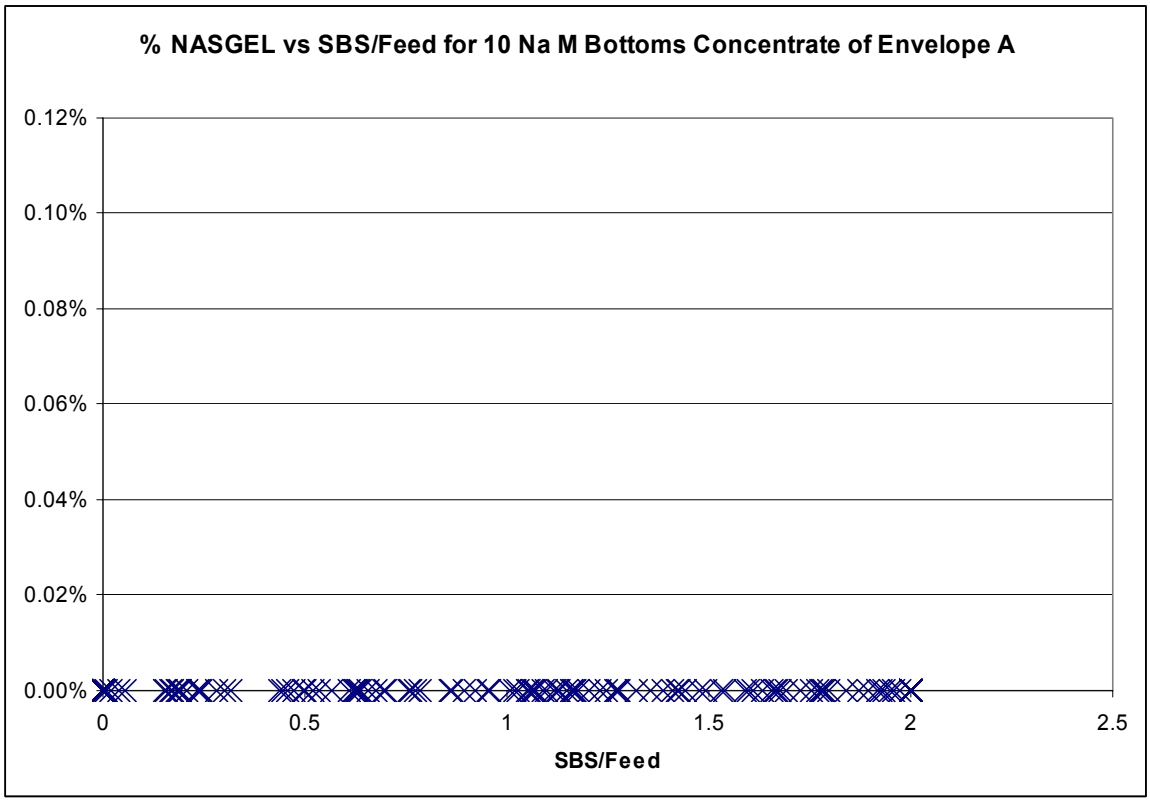

Figure 5. % NASGEL versus SBS/Feed for 10 Na M Bottoms Concentrate of Envelope A

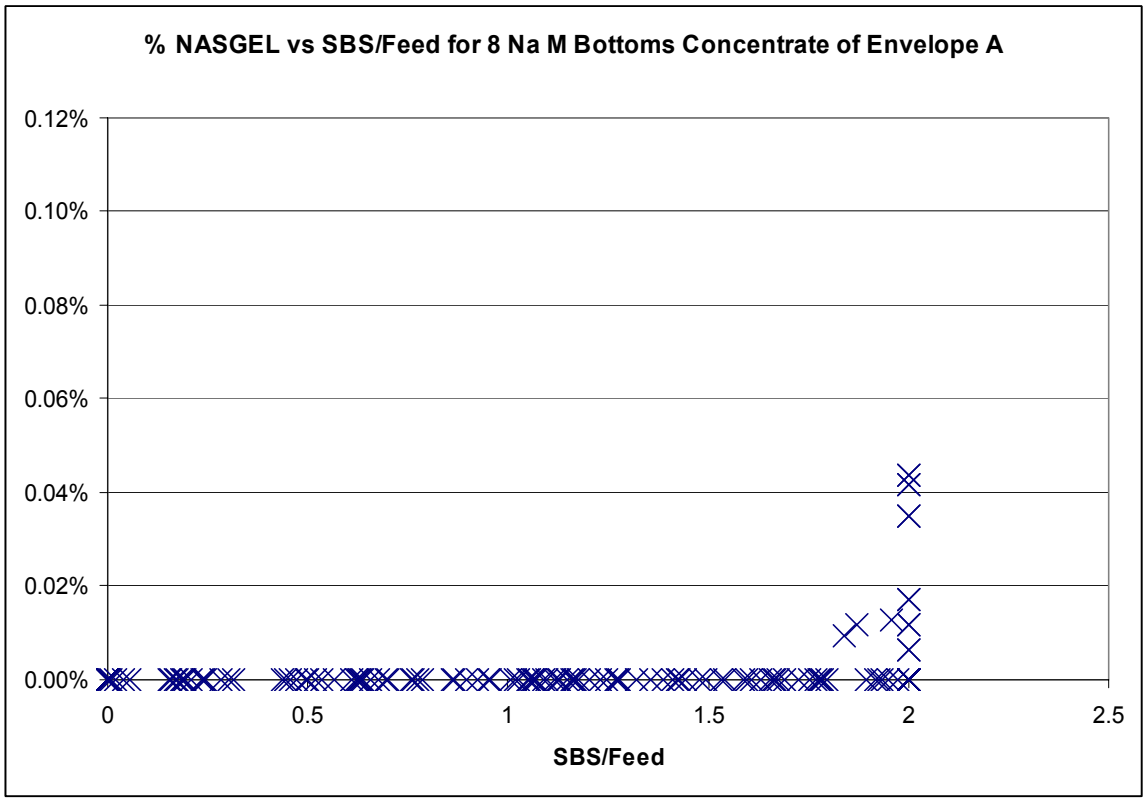

Figure 6. % NASGEL versus SBS/Feed for 8 Na M Bottoms Concentrate of Envelope A

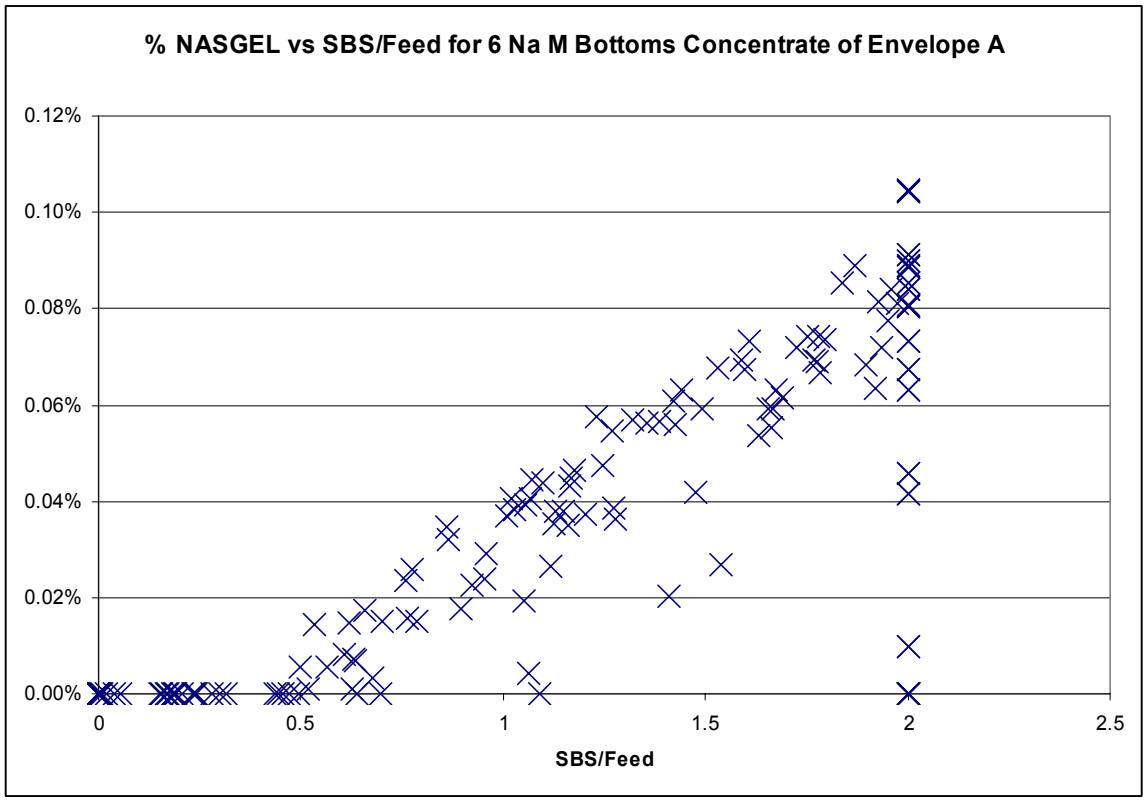

Figure 7. % NASGEL versus SBS/Feed for 6 Na M Bottoms Concentrate of Envelope A

For Envelope B, about 21% of the simulated values (83 out of 399 total – including fit and validation points) had bottoms insoluble solids greater than 1 wt% but only about 11% of the simulated values (42 points) had insoluble solids greater than 2 wt%. None of the predicted values went over 3 wt%. The insoluble solids only went above 2 wt% when the Na molarity went above 8 M Na. At 6 M Na the solids stayed below 1 wt%, at 8 M Na the solids stayed below 2 wt%, and at 10 M Na the solids stayed below 3 wt%. More solids appear to come out between 20 and 40 °C than the other temperatures. The primary salts were aluminum hydroxide, sodium oxalate, sodium fluorosulfate, and sodium fluoride. None of the runs indicated that NASGEL forms.

For envelope C, about 60% of the simulated values (242 out of 405 points – including fit and validation points) had bottoms insoluble solids greater than 1 wt% but only about 36% of the simulated values (145 points) had insoluble solids greater than 2 wt%. Of this 36% segment, 83% of the values were between 2 wt% and 5 wt% while the remaining 17% of the values were between 5 wt% and 7 wt%. The higher weight percents were observed at NA M greater than 8. Also temperatures have a much smaller impact on the solubility than the Na molarity. The primary salts were calcium fluoride, hydrosodalite, sodium oxalate, sodium carbonate, sodium fluorosulfate, sodium sulfate-carbonate, sodium fluoride, sodium aluminosilicate gelatin (NASGEL), and sodium nitrate.

For the simulated runs, NASGEL solids appear in the bottoms concentrate stream over a wider % range at 10 Na M than 8 Na M and 6 Na M as shown in Figure 8. For all sodium molarities simulated, the % NASGEL in the bottoms stream stays below 1.2%. The NASGEL solids appear range 0 and 1.2% for bottoms temperatures between 15°C and 66 °C as shown in Figure 9. Increasing the SBS/Feed ratio above 0.5 for the 10 Na M bottoms concentrate increases the chance of NASGEL formation as shown in Figure 10. Increasing the SBS/Feed ratio above 0.25 for the 8 Na M bottoms concentrate increases the chance of NASGEL formation as shown in Figure 11. For the 8 Na M bottoms concentrate NASGEL begins to form at lower SBS/Feed ratios but the % NASGEL at the highest SBS/Feed ratio is less than at 10 Na M. The 6 Na M bottoms concentrate shows NASGEL formation starting around SBS/Feed of 0.15 and increasing as SBS/Feed ratio increases. Going from 10 Na M bottoms concentrate down to 8 a M then 6 Na M, the maximum amount of NASGEL formed at the highest SBS/Feed ratio decreases along with the Na M. Please note that due to the variability in the data, a low Na M like 6 and a high SBS/Feed ratio like 2 can still form more NASGEL than a higher Na M at the same SBS/Feed ratio.

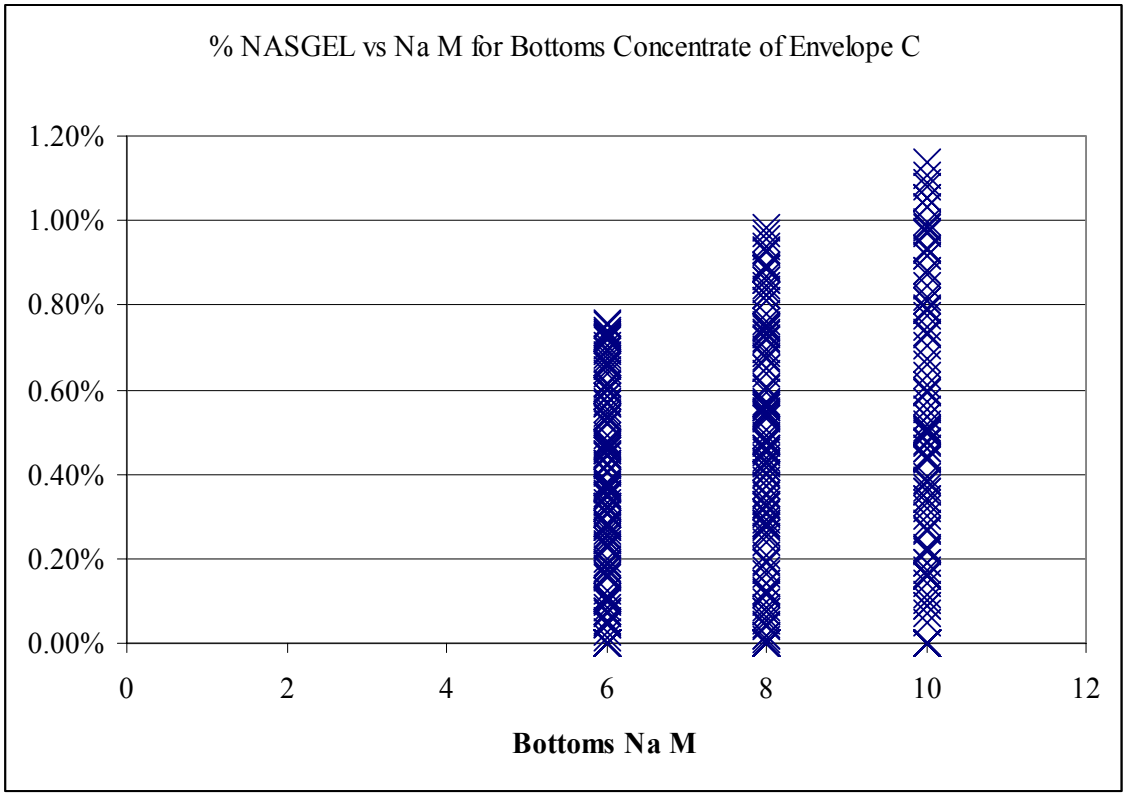

Figure 8. % NASGEL versus Na M for Bottoms Concentrate of Envelope C

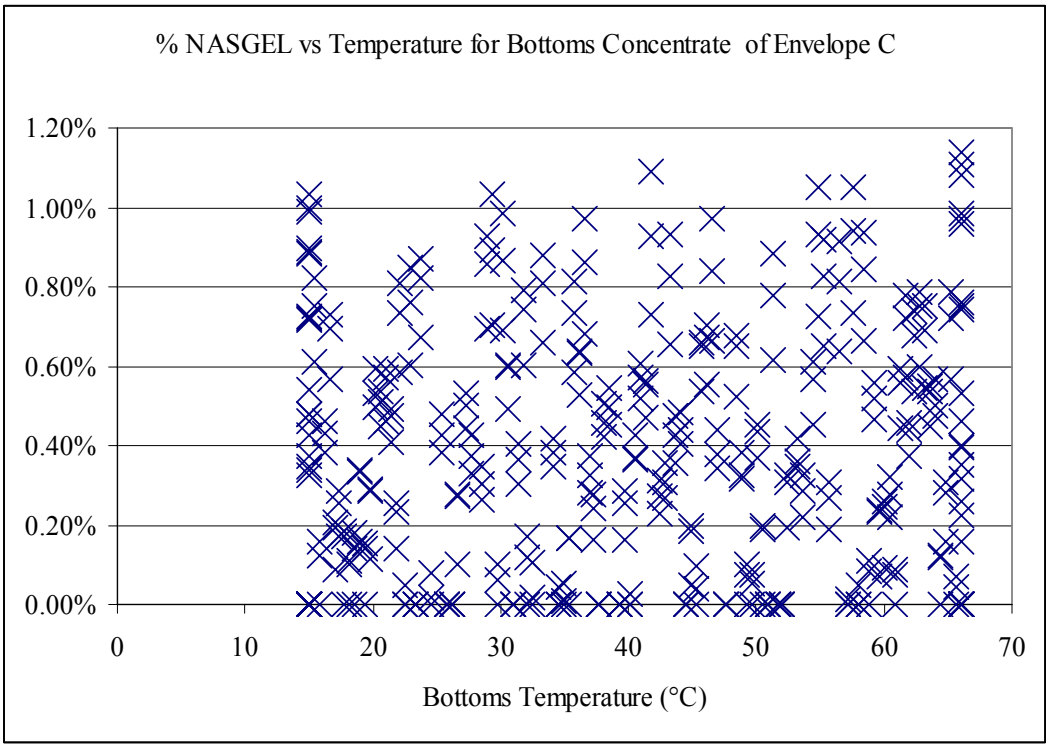

Figure 9. % NASGEL versus Na M for Bottoms Temperature of Envelope C

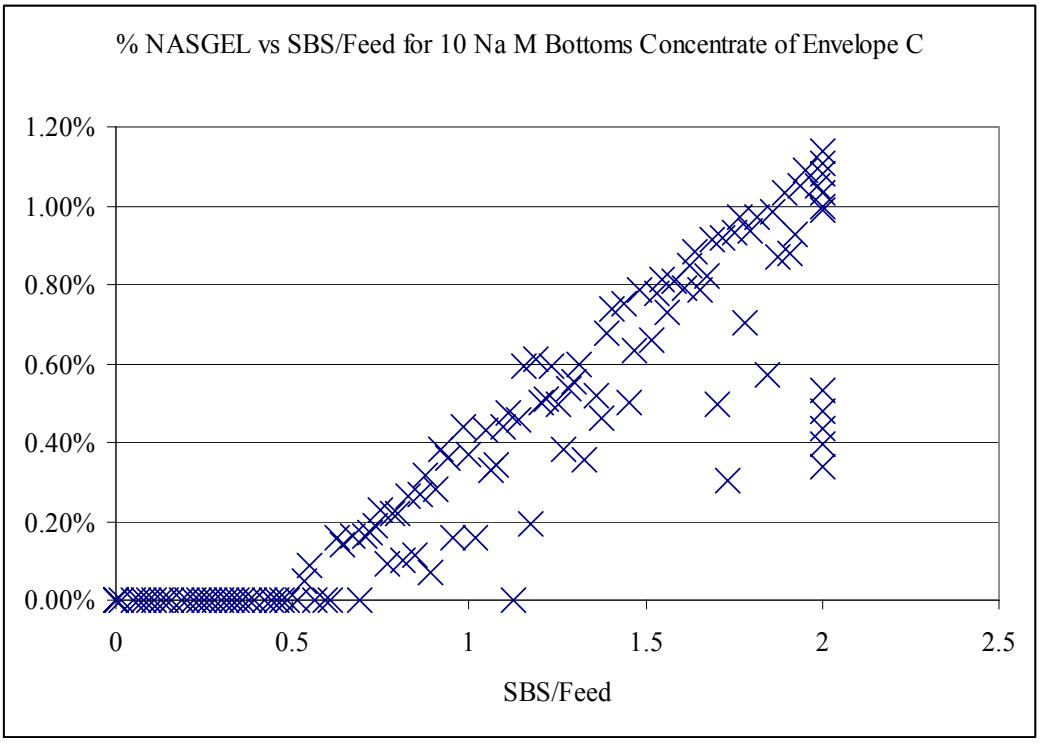

Figure 10. % NASGEL versus SBS/Feed for 10 Na M Bottoms Concentrate of Envelope C

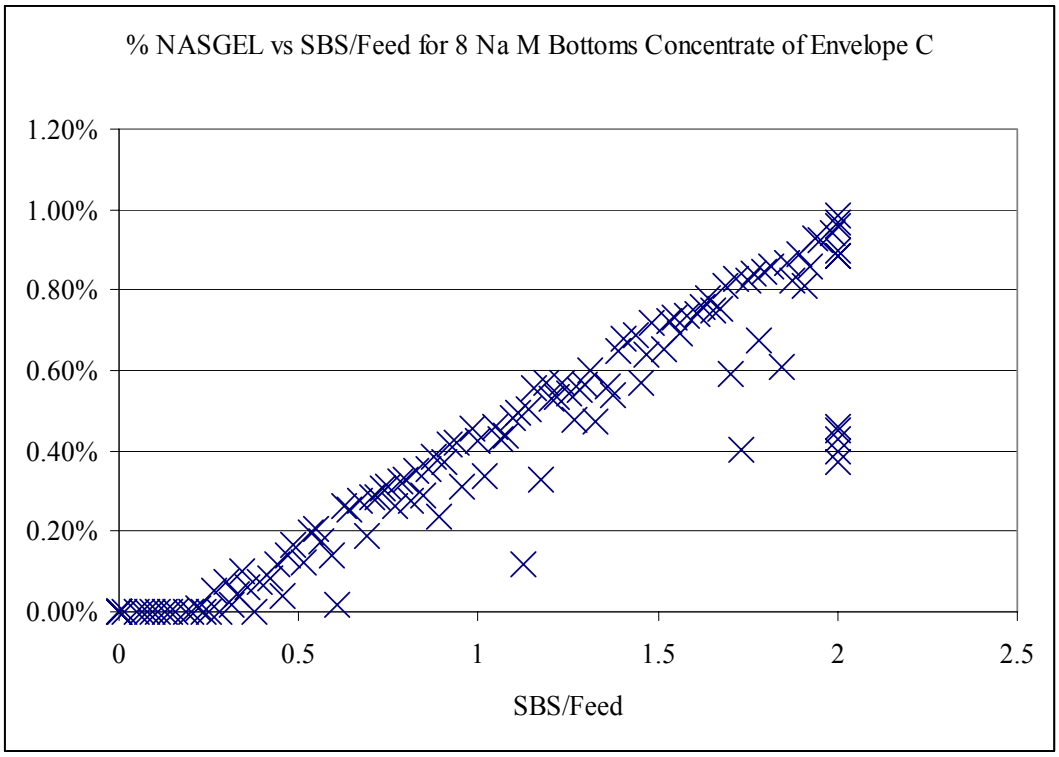

Figure 11. % NASGEL versus SBS/Feed for 8 Na M Bottoms Concentrate of Envelope C

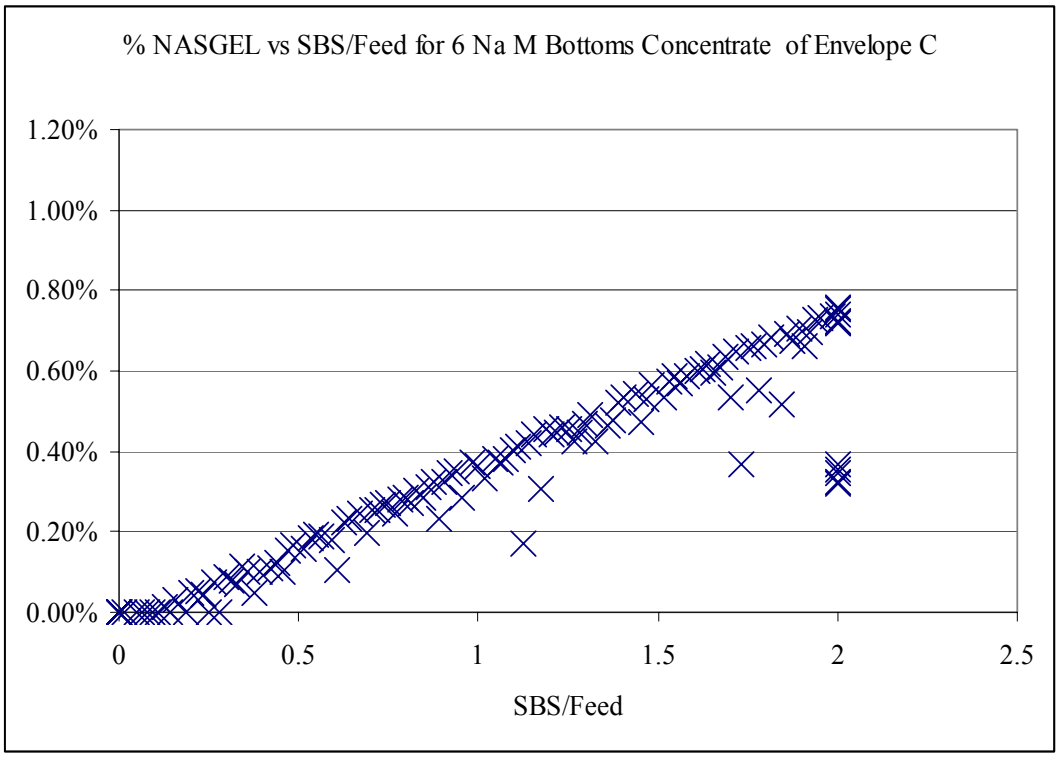

Figure 12. % NASGEL versus SBS/Feed for 6 Na M Bottoms Concentrate of Envelope C

1.4 QUALITY REQUIREMENTS

This work was conducted in accordance with the RPP-WTP QA requirements specified for work conducted by SRTC as identified in DOE IWO M0SRLE60. SRTC has provided matrices to WTP demonstrating compliance of the SRTC QA program with the requirements specified by WTP. Specific information regarding the compliance of the SRTC QA program with RW-0333P, Revision 10, NQA-1 1989, Part 1, Basic and Supplementary Requirements and NQA-2a 1990, Subpart 2.7 is contained in these matrices. The quality assurance plan is documented in the *Task Technical and Quality Assurance Plan for Modeling Treated LAW Feed Evaporation and Validation of Evaporation Pilot Testing.*[16]

The quality requirements pertaining to OLI/ESP simulation software have been addressed in the document "Software Quality Assurance Plan for Hanford RPP-WTP Evaporator Modeling"[17]. OLI/ESP version 6.6 was used with the private databases CARBONAT, HNO3DB, SILICA, and ZEOLITE. JMP version 5.0.1 was used to fit the simulation physical property data to the mathematical forms.

1.5 ISSUES

None

2.0 DISCUSSION

2.1 BACKGROUND

This report describes the treated feed evaporator (TFE) modeling work as requested in *Treated LAW Feed: Simulant Evaporation and Physical Properties Modeling* test specification from RPP[5] and specified in the *Task Technical and Quality Assurance Plan for Modeling Treated LAW Feed Evaporation and Validation of Evaporation Pilot Testing*[16] for the R&T Test Scoping Statement S-93A in support of the Hanford River Protection Project (RPP) Waste Treatment Plant (WTP) project.

Previous Hanford-RPP evaporator modeling has focused on the treated LAW feed and eluate evaporation systems without the inclusion of secondary waste recycles.[1-4] This task investigates the potential impact that secondary-waste recycle streams may have on the operation of the treated LAW evaporator. The treated LAW evaporator will concentrate the treated waste effluent streams from the Cs ion exchange blended with the LAW melter offgas scrubbing recycle stream. The Tc ion exchange system that was originally part of the test specification has since been eliminated. The LAW melter offgas scrubbing recycle stream is by far the major contributor to the overall recycle volume that is to be mixed with the treated waste feed prior to evaporation and known to contain silica from the LAW melter. Based on experience at Savannah River Site, the introduction of silica from melter offgas recycle into high sodium feeds can produce sodium-aluminum-silicate precipitates upon concentration. These sodium-aluminum-silicates can cause operational shutdowns due to plugging of lines and fouling of heat transfer surfaces. This task will examine the potential of the treated waste feed blends to form sodium-aluminum-silicate precipitates when evaporated using the zeolite database.

To investigate the behavior of the blended pretreated waste feeds, an OLI ESP model of the treated LAW evaporator was built. The model was to simulate the treated LAW evaporator operating at 50°C under the appropriate vacuum with Envelope A, B, and C wastes blended with LAW melter offgas scrubbing recycle (SBS) as feed and the evaporator concentrate or bottoms stream being varied between 15°C and 66°C. The treated LAW evaporator model was run at 6, 8, and 10 endpoint Na molarities for the bottoms concentrate stream to generate data about the density, heat capacity, thermal conductivity, viscosity, and solubility of this stream. This run data was then regressed to generate predictive equations describing the physical properties of the Treated LAW evaporator bottoms concentrate. Additional runs with treated LAW evaporator were performed to compare chemical and physical property model predictions and experimental results for small scale radioactive tests (S-69) of the treated feed (AW 101) evaporation processes.

Equations for the sodium molarity, density, heat capacity, thermal conductivity, and viscosity of the Treated LAW evaporator bottoms concentrate were developed. These equations were successful based on the goal of developing physical property correlations for each waste envelope with an error no greater than ±15% between calculated and modeled physical properties. The equation to predict solubility or the amount of total solids in the Treated LAW evaporator bottoms concentrate could not be developed to satisfy this goal. Not enough information was captured by the chosen model inputs to accurately describe the bottom concentrate solids content. However, general trends were identified with respect to the bottoms Na molarity and temperature, which will be discussed later.

2.2 DESCRIPTION OF THE PROCESS

The Waste Treatment Plant process is described in detail in the document "WTP Material Balance and Process Flowsheet Bases, Requirements, and Results"[18]. To summarize, evaporation is used throughout the Waste Treatment Plant pretreatment process to minimize the volume of waste that must vitrified on the back side of the process. Evaporation is used throughout the process to help reduce the volume of waste, as in the first unit process in pretreatment (Waste Feed Evaporators) which has been modeled in earlier work.[9] Evaporation is also employed before the LAW vitrification (Treated Feed Evaporator) step. The treated LAW evaporator will concentrate the treated waste effluent stream from the Cs ion exchange blended with the LAW melter offgas scrubbing recycle stream. The goal of the Treated Feed Evaporation process is removal of the as much water as possible while maintaining a reasonably low insoluble solids content.

A major goal of this modeling task was to validate the experimental work on the treated feed evaporator.[7] To that end, the waste feeds for envelopes A, B, and C were taken from this prior report.[7] To simulate the pretreatment of these waste feeds, they were first diluted to a density of 1.22 g/ml for the aqueous phase. Additionally, as in the experimental work, the waste feeds were filtered to simulate the pretreatment process. This filtering action was duplicated in the modeling. The OLI modeling is described next.

2.3 OLI/ESP MODEL FLOWSHEET AND CHEMISTRY MODEL

The treated feed evaporation process was simulated using the OLI Environmental Simulation Program (OLI/ESP) version 6.6 using the CARBONAT, HNO3DB, SILICA, URANIUM, and ZEOLITE private databases, along with the public database. OLI ESP only performs steady state calculations.

The treated feed evaporator was modeled as a flash calculation.[15] To simulate the pretreatment of LAW waste feeds, all waste feeds were first diluted to reach the UF permeate target density of 1.22 g/ml, which corresponds to a sodium molarity of about 5. The waste feeds were then filtered to approximate the Cs effluent resulting from the pre-treatment steps. The SBS feed rate was controlled to match a specified volume ratio between 0 and 2. A range of SBS/Feed ratios were chosen to accommodate the expected variations in flow ratio during actual plant operations.

The supernate from the pretreatment waste feeds along with the ratioed SBS stream were then evaporated at 50°C at the bubble point pressure. The evaporator bottoms stream was then cooled at 1 atm to a temperature in the desired range of 15 to 66 °C. The Na M of this cooled evaporator bottoms (product) stream was then checked against desired values of 6, 8, or 10. If the desired Na M was not reached, the evaporator molar vapor fraction was adjusted until the desired setpoint was achieved.

The waste feed flow rates used in the OLI simulations were based on a LAW glass production rate of 30 metric tons per day (two melters) at a Na_2O loading of 19.5, 5.0, and 11.2 wt% for Envelope A, B, and C respectively (from Table A-15 of the TF COUP document[19] and Min Prod Rate from Flowsheet Bases Assumptions and Requirements 24590-WTP-RPT-PT-02-005), where only the sodium content of the waste stream was used to calculate the Na_2O loading. This production rate was chosen as a matter of convenience and any mass flow rate could have been used.

The LAW SBS flow rate is not tied directly to the treated feed evaporator process but to the downstream LAW vitrification off gas treatment. Based on run data from Duratek SBS Run Data from VSL-02R8800-2 Rev 0 and input from the customer, the SBS flow rate was treated as an independent variable for the physical property models developed here. It is expressed in terms of its volumetric flow relative to that of the treated waste feed stream, having a range of 0 – 2 (i.e., up to twice the volumetric flow rate of the treated waste feed stream). The composition was based on the analytical results from the VSL melter pilot testing, Mark Crowder's AW-101 testing[8] and from prior experimental work.[7]

OLI/ESP does not have the ability to calculate the heat capacity of a stream directly, so this was accomplished for the evaporator bottoms concentrate stream using the OLI Scratch Pad tool in OLI/Express. The scratch pad tool was used to generate an enthalpy vs. temperature plot at each calculated steady-state composition for the temperature range 15 – 66°C in one-degree increments.

The chemistry models used for all the simulations are shown in Table 2.

Table 2. OLI Chemistry Models

Species (OLI Name)	Species (Common name)	Species Formula	AW101 Chemistry model	Envelope A Chemistry Model	Envelope B Chemistry Model	Envelope C Chemistry Model
AGOH	Silver Hydroxide	AgOH	X	n/a	n/a	n/a
AL2O3	Aluminum Oxide	Al2O3	X	n/a	n/a	n/a
AL2O5H5CL	Dialuminum Chloride Pentahydroxide	Al2(OH)5Cl	n/a	X	n/a	n/a
ALOOH	Aluminum Oxide Hydroxide	AlO(OH)	n/a	X	n/a	n/a
ALBR3	Aluminum Bromide	AlBr3	X	n/a	n/a	n/a
BOH3	Boric Acid	B(OH)3		X	n/a	n/a
BAOH2	Barium Hydroxide	Ba(OH)2	X	n/a	n/a	X
CAF2	Calcium Fluoride	CaF2	X	n/a	n/a	n/a
CAOH2	Calcium Hydroxide	Ca(OH)2	X	X	X	X
CDOH2	Cadmium Hydroxide	Cd(OH)2	X	n/a	n/a	n/a
CEOH3	Cerium (III) Hydroxide	Ce(OH)3	X	n/a	n/a	n/a
CITRAC	Citric Acid	C6H8O7	n/a	n/a	X	X
CO2	Carbon Dioxide	CO2	n/a	X	-	-
CROH3	Chromium (III) Hydroxide	Cr(OH)3	X	X	X	X
CSOH	Cesium Hydroxide	CsOH	X	n/a	n/a	n/a
CUOH2	Copper (II) Hydroxide	Cu(OH)2	X	n/a	X	X
FEIIIOH3	Iron (III) Hydroxide	Fe(OH)3	X	X	X	X
FETIO3	Iron (II) Titanate	FeTiO3	X	n/a	n/a	n/a
FORM2	Formic Acid (dimer)	C2H4O4	X	n/a	n/a	X
GDOH3	Gadolinium (III) Hydroxide	Gd(OH)3	X	n/a	n/a	n/a
H2CO3	Carbonic Acid	H2CO3	X	n/a	n/a	n/a
H2CRO4	Chromic (VI) Acid	H2CrO4	X	n/a	n/a	n/a
H2MOO4	Molybdenic (VI) Acid	H2MoO4	X	n/a	X	X
H2O	Water	H2O	X	X	X	X
H2SO4	Sulfuric Acid	H2SO4	n/a	X	n/a	n/a
H3PO4	Phosphoric Acid	H3PO4	X	X	n/a	n/a
H4SIO4	Silicic Acid	H4SiO4	X	X	X	X

n/a = not applicable

Table 2. OLI Chemistry Models (cont'd)

Species (OLI Name)	Species (Common name)	Species Formula	AW101 Chemistry model	Envelope A Chemistry Model	Envelope B Chemistry Model	Envelope C Chemistry Model
H6F6	Hydrogen Fluoride (Hexamer)	(HF)6	X	X	X	X
HCL	Hydrogen Chloride	HCl	X	X	X	X
HF	Hydrofluoric Acid	HF	n/a	X	n/a	n/a
HNO2	Nitrous (III) Acid	HNO2	X	X	X	X
HNO3	Nitric Acid	HNO3	X	X	X	X
K1ALSO4	Potassium Aluminum Sulfate	KAl(SO4)2	X	n/a	n/a	n/a
K2CRO4	Potassium Chromate (VI)	K2CrO4	X	n/a	X	X
KMGCL3	Potassium Magnesium Chloride	KMgCl3	X	X	X	X
KOH	Potassium Hydroxide	KOH	X	X	X	X
LAOH3	Lanthanum (III) Hydroxide	La(OH)3	X	n/a	n/a	n/a
LIOH	Lithium Hydroxide	LiOH	X	X	X	X
MGOH2	Magnesium Hydroxide	Mg(OH)2	X	n/a	n/a	n/a
MNOH2	Manganese (II) Hydroxide	Mn(OH)2	X	n/a	X	X
NA2C2O4	Sodium Oxalate	Na2C2O4	X	X	X	X
NA2CO3	Sodium Carbonate	Na2CO3	X	X	X	X
NA2MOO4	Sodium Molybdate (VI)	Na2MoO4	X	n/a	n/a	n/a
NA2SIO3	Sodium Metasilicate	Na2SiO3	X	X	n/a	n/a
NA2SO4	Sodium Sulfate	Na2SO4	X	X	X	X
NA2U2O7	Sodium Pyrouranate (VI)	Na2U2O7	n/a	X	n/a	n/a
NA3HSO42	Sodium Sulfate Bisulfate	Na2SO4.NaHSO4	X	X	X	X
NA3PO4	Sodium Phosphate	Na3PO4	X	X	X	X
NAALO2	Sodium Aluminate	NaAlO2	X	X	X	X
NAALOH4	Sodium Aluminum Hydroxide	NaAl(OH)4	X	X	X	X
NABO2	Sodium Metaborate	NaBO2	X	n/a	n/a	n/a
NABOH4	Sodium Boron Hydroxide	NaB(OH)4	X	X	X	X
NACL	Sodium Chloride	NaCl	X	X	n/a	X

n/a = not applicable

Table 2. OLI Chemistry Models (cont'd)

Species (OLI Name)	Species (Common name)	Species Formula	AW101 Chemistry model	Envelope A Chemistry Model	Envelope B Chemistry Model	Envelope C Chemistry Model
NACOOH	Sodium Formate	NaCOOH	X		X	X
NAF	Sodium Fluoride	NaF	X	X	X	X
NAGLYCOLAT	Sodium Glycolate	Na[C2H3O3]	n/a	n/a	X	X
NANO2	Sodium Nitrite	NaNO2	X	X	X	X
NANO3	Sodium Nitrate	NaNO3	X	X	X	X
NAOH	Sodium Hydroxide	NaOH	X	X	X	X
NAPHOH.12H2O	Sodium Orthophosphate Hydroxide Dodecahydrate	Na3PO4.O.25NaOH.12H2O	n/a	X	n/a	n/a
NATCVIIO4	Sodium Pertechnetate (VII)	NaTcO4	X	n/a	n/a	n/a
NDOH3	Neodymium (III) Hydroxide	Nd(OH)3	X	n/a	n/a	n/a
NIOH2	Nickel (II) Hydroxide	Ni(OH)2	X	n/a	X	X
OXALAC	Oxalic Acid	C2H2O4	X	n/a	X	X
PBOH2	Lead (II) Hydroxide	Pb(OH)2	X	n/a	n/a	n/a
P2O5	Phosphorus Pentoxide	P2O5	n/a	X	n/a	n/a
SBOH3	Antimony (III) Hydroxide	Sb(OH)3	X	n/a	n/a	n/a
SIO2	Silicon Dioxide	SiO2	X	X	n/a	n/a
SNIVOH4	Tin (IV) Hydroxide	Sn(OH)4	X	-	n/a	n/a
SO3	Sulfur Trioxide	SO3		X	n/a	n/a
SROH2	Strontium Hydroxide	Sr(OH)2	X	n/a	n/a	X
TCIVOOH22	Oxytechnetium (IV) Dihydroxide (dimer)	(TcO(OH)2)2	X	n/a	n/a	n/a
TIIVOH4	Titanium (IV) Hydroxide	Ti(OH)4	n/a	X	X	X
UIVOH4	Uranium (IV) Hydroxide	U(OH)4	X	n/a	n/a	n/a
VOOH3	Vanadate (V) Hydroxide	VO(OH)3	X	n/a	n/a	n/a
ZNOH2	Zinc Hydroxide	Zn(OH)2	X	X	X	X
ZRBR4	Zirconium Bromide	ZrBr4	X	n/a	n/a	n/a
ZROH4	Zirconium Hydroxide	Zr(OH)4	X	X	X	X

n/a = not applicable

Sodium aluminosilicate gelatin (NASGEL) is a necessary precursor to the formation of crystalline aluminosilicates (zeolite A, hydroxysodalite, and cancrinite). For this reason, only the precipitation of NASGEL was modeled in these OLI simulations. These solids should not form in the evaporator bottoms due to the relative short residence time of evaporator bottoms compared to the kinetics of crystalline aluminosilicate formation. If OLI predicts NASGEL in the evaporator bottoms, then that may indicate that its other crystalline forms could precipitate later in the process such as in holding tanks.

2.4 DETERMINATION OF THE FACTOR SPACE FOR THE DESIGNS OF EXPERIMENT

The simulation design matrices were derived from a model factor space defined by certain model variables and their ranges. The design matrices are given in Appendix A and described briefly below. Their derivation is more fully described in other documents[20-22].

The design matrices consist of two types of design points – fit points and validation points. The fit points are used for the model fits and consist of the extreme (minimum and maximum) values of each of the variable ranges. This minimum/maximum choice assumes a linear response. The validation points are generated using the Orthogonal Latin Hypercube (OLH) technique[23], which produces points uniformly distributed over the linear factor space. The validation points are used to validate the property model predictions against the simulation results or they are used to improve the model fit when the response appears to be non-linear. The model variables, their constraints, and the corresponding factor spaces used to derive the design matrices are described next.

The physical property models are expressed the in terms of two variable types, 1) mixture variables, which define the composition of the waste feed stream, and 2) process variables which define the "state" of the process, the evaporator bottoms temperature and Na molarity and the SBS to Feed volume ratio.

For all envelopes, the temperature range used for the bottoms concentrate was 15-66^{o}C and the LAW SBS to treated waste feed volume flow ratio was 0 to 2. The bottoms concentrate Na molarity was varied between 6 and 10 molarity based on the prior experimental work.[7]

Given the broad range of compositions between Envelopes A, B, and C, physical property models were developed for each envelope. The significant species and concentration ranges for each of the envelopes were based on the characterization done in the parallel experimental work.[7]

Envelope A was based on prior work done for the Waste Feed Evaporator;[9] Envelope B was represented by the tanks AZ-101 and AZ-102; and Envelope C was represented by the tanks AN-102 and AN-107, as described in the prior experimental work.[7]

The treated waste feed will be concentrated to various endpoint Na molarities depending on operational and processing constraints. From prior modeling work[9] it was shown that the waste feed should be expressed in terms of the mass of its non-water species since the amount of water evaporated will change depending on the dilution of the waste feed via pre-treatment and/or the addition of Law SBS recycle. However, the non-water species will always be present and thus have the greatest impact on the properties of the bottoms concentrate.

Using the recipes and tank characterizations from the prior experimental work,[7] the waste feed compositions for each envelope were analyzed and the significant species which varied the most were chosen to define the waste feed composition factor space. The waste feed composition factor space for Envelope A was defined in earlier modeling work[9] and is shown in Table 3. The constraints were defined such that $[AlO_2]/[OH] \le 0.7$, $[PO_4] + 0.07[F] \le 0.05$, and the sum of the molar charge of the mixture variables must be equal to 4.73648. The concentrations are in terms of a 5M Na solution (i.e., a concentration of 0.1M OH in a 7M Na solution is adjusted to $0.1x5/7 = 0.0714$ M OH).

Table 3. Definition for Envelope A Factor Space

Mixture Variable Molar Ranges Normalized to equivalent molarity at 5M Na								**Process Variables**		
Variable	**[AlO_2]** (molar at 5M Na)	**[CO_3]** (molar at 5M Na)	**[F]** (molar at 5M Na)	**[NO_2]** (molar at 5M Na)	**[NO_3]** (molar at 5M Na)	**[OH]** (molar at 5M Na)	**[PO_4]** (molar at 5M Na)	**[Na]** (molar)	**SBS / Feed** (volumetric)	**Temp** (°C)
minimum	0.207	0.326	0.00927	0.731	0.991	0.983	0.00632	6	0.0	15
maximum	1.12	0.686	0.236	1.59	2.08	2.89	0.0436	10	2.0	66
constraints	$[AlO_2]/[OH] \le 0.7$		$[PO_4] + 0.07[F] \le 0.05$		charge equivalent: $[AlO_2] + 2[CO_3] + [F] + [NO_3] + [NO_2] + [OH] + 3[PO_4] = 4.73648$					

Fixed Molar Concentrations			
$[SO_4]$ (molar at 5M Na)	$[C_2O_4]$ (molar at 5M Na)	[Cl] (molar at 5M Na)	$[SiO_3]$ (molar at 5M Na)
0.0544	0.02	0.102	0.00636

The composition factor space for Envelope B is shown in Table 4, along with the concentration of the species that were held fixed relative to that of sodium. Note that the Envelope B waste feed input to OLI was targeted at a Na molarity of 6.5 to avoid convergence issues with the dilution to 1.22 g/ml step. To calculate the molarity of the fixed species at another initial Na Molarity simply multiply the ratio term shown in Table 4 by the new desired initial Na molarity.

Table 4. Definition for Envelope B Factor Space

	Mixture Variable Mass Fraction Ranges Mass fraction relative to total mass of mixture variables						Process Variables		
Variable	AlO_2^{-1} **mass fraction**	CO_3^{-2} **mass fraction**	NO_3^{-1} **mass fraction**	OH^{-1} **mass fraction**	SO_4^{-2} **mass fraction**	$C_2O_4^{-2}$ **mass fraction**	**[Na] (molar)**	**SBS / Feed (volumetric)**	**Temp (°C)**
Min	0.0380	0.2529	0.3603	0.0928	0.1438	0.0000	6	0.0	15
Max	0.1107	0.2785	0.3755	0.1074	0.2152	0.0248	10	2.0	66
charge constraint	$-0.0270 \le -0.016955 \cdot AlO_2^{-1} - 0.033328 \cdot CO_3^{-2} - 0.016128 \cdot NO_3^{-1} - 0.058798 \cdot OH^{-1} - 0.02082 \cdot SO_4^{-2} - 0.02272 \cdot C_2O_4^{-2} \le -0.0251$								

Molar Ratios Fixed Relative to Sodium Molarity							
$[NO_2]$	[K]	[F]	[COOH]	$[CrO_4]$	$[C_6H_7O_7]$ (citrate)	$[HOCH_2COO]$ (glycolate)	$[PO_4]$
0.267	0.0271	0.0197	0.0190	0.00419	0.00423	0.0212	0.00262

The composition factor space for Envelope C is shown in Table 5, along with the concentration of the species that were held fixed relative to that of sodium. Note that the Envelope C waste feed input to OLI was targeted at a Na molarity of 6.5 to avoid convergence issues with the dilution to 1.22 g/ml step. To calculate the molarity of the fixed species at another initial Na Molarity simply multiply the ratio term shown in Table 4 by the new desired initial Na molarity.

Table 5. Definition for Envelope C Factor Space

	Mixture Variable Mass Fraction Ranges Mass fraction relative to total mass of mixture variables					Process Variables		
Variable	AlO_2^{-1} **mass fraction**	CO_3^{-2} **mass fraction**	NO_2^{-1} **mass fraction**	OH^{-1} **mass fraction**	SO_3^{-2} **mass fraction**	**[Na] (molar)**	**SBS / Feed (volumetric)**	**Temp (°C)**
minimum	0.0052	0.2984	0.3926	0.0828	0.0644	6	0.0	15
maximum	0.1319	0.3282	0.5131	0.1099	0.0733	10	2.0	66
charge constraint	$-0.0310 \le -0.016955 \cdot AlO_2^{-1} - 0.0333 \cdot CO_3^{-2} - 0.02174 \cdot NO_2^{-1} - 0.058798 \cdot OH^{-1} - 0.02082 \cdot SO_4^{-2} \le -0.0260$							

Molar Ratios Fixed Relative to Sodium Molarity						
[Cl]	[F]	$[PO_4]$	$[C_2O_4]$	[K]	$[NO_3]$	[COOH]
0.0114	0.0168	0.00336	0.00241	0.00732	0.394	0.0238

In the treated feed evaporator experimental work, the waste feeds for all envelopes were created from recipes and then filtered. Since the state of the treated evaporator waste feed could be characterized in a number of ways, the choice was made to dilute the characterized waste feeds to 1.22 g/ml density to provide a common basis for the modeling. It is expected that the treated waste feed will be at or near this density after the pre-treatment. This density corresponds to a feed roughly at 5 Na M. The filtration step just simulates the pre-treatment filtration and precipitation removal with the outlet streams ultimately representing the treated waste feeds.

2.5 RESULTS

The results are given in two sections, 1) the model fits with plots comparing model predictions with simulation results and 2) the comparison of simulation with experimental results.

Computer simulations have no inherent random error like real experimental work so statistics normally used to gauge the success of an experiment could not be used here. Therefore, the physical property models were first validated using a portion of the design points (OLH or Orthogonal Latin Hypercube). [23] If the physical property models adequately predicted a majority of the OLH points within +/-15%, the model was considered to be adequate in terms of predicting the OLI simulation results. As a final part of the validation, the experimental results from the prior work on Treated Feed Evaporation[7] were compared with model predictions.

2.5.1 Predictive Physical Property Models and Validation Phase 1

This section shows the predictive models derived from the OLI simulations along with graphs of the simulation results versus the physical model predictions for each waste envelope. In each graph the design points used to fit the model are identified with blue open circles, the validation (OLH) points are identified by red asterisks, a solid red line identifies the predicted value +15%, and a solid green line identifies the predicted value -15%.

The physical property models for all the waste envelopes were able to meet the ±15% of predicted values criterion except for the Na molarity prediction for Envelope C. Even in this case, 96% of OLH points still fell within the ±15% border. So the model still does a fair job at predicting the sodium molarity for most cases.

2.5.1.1 Envelope A Predictive Models

All concentrations are in terms of molarity as shown in Table 6. The concentrations of the mixture variables (all species except Na) are expressed relative to a stream at a 5M Na concentration. (e.g., an [AlO_2] concentration of 2M in an 8M Na stream is first adjusted to an equivalent concentration in a 5M stream: 2M AlO_2*(5M Na / 8M Na) = 1.25M AlO_2) and then applied to the equation. The three process variables are [Na] (the bottoms concentrate Na molarity, as opposed to the treated evaporator feed stream Na concentration just mentioned), SBS/Feed (volumetric ratio of LAW SBS to treated waste feed flow, and Temp (the bottoms concentrate temperature).

Table 6. Valid Variable Ranges for Envelope A Models

	Mixture Variable Molar Ranges Normalized to equivalent molarity at 5M Na							Process Variables		
Variable	**$[AlO_2]$ (molar at 5M Na)**	**$[CO_3]$ (molar at 5M Na)**	**[F] (molar at 5M Na)**	**$[NO_2]$ (molar at 5M Na)**	**$[NO_3]$ (molar at 5M Na)**	**[OH] (molar at 5M Na)**	**$[PO_4]$ (molar at 5M Na)**	**[Na] (molar)**	**SBS / Feed (volumetric)**	**Temp (^oC)**
minimum	0.207	0.326	0.00927	0.731	0.991	0.983	0.00632	6	0.0	15
maximum	1.12	0.686	0.236	1.59	2.08	2.89	0.0436	10	2.0	66

Envelope A bottoms concentrate slurry density at its steady state endpoint condition is represented by Equation 2 and shown in Figure 13.

Equation 2

$$\text{density}_{\text{EnvA}}\left[\frac{\text{g}}{\text{ml}}\right] = 1.117 \cdot x_{AlO2} + 1.110 \cdot x_{CO3} + 1.075 \cdot x_{F} + 1.072 \cdot x_{NO2} + 1.096 \cdot x_{NO3} + 0.9813 \cdot x_{OH} + 1.141 \cdot \text{x}_{\text{PO4}} - 1.119\text{E-}3 \cdot Temp + 7.046\text{E-}3 \cdot SBS/Feed + 0.03258 \cdot [Na] - 4.438\text{E-}5 \cdot (SBS/Feed - 1) \cdot (Temp - 40.5) - 1.150\text{E-}4 \cdot ([Na] - 8) \cdot (Temp - 40.5)$$

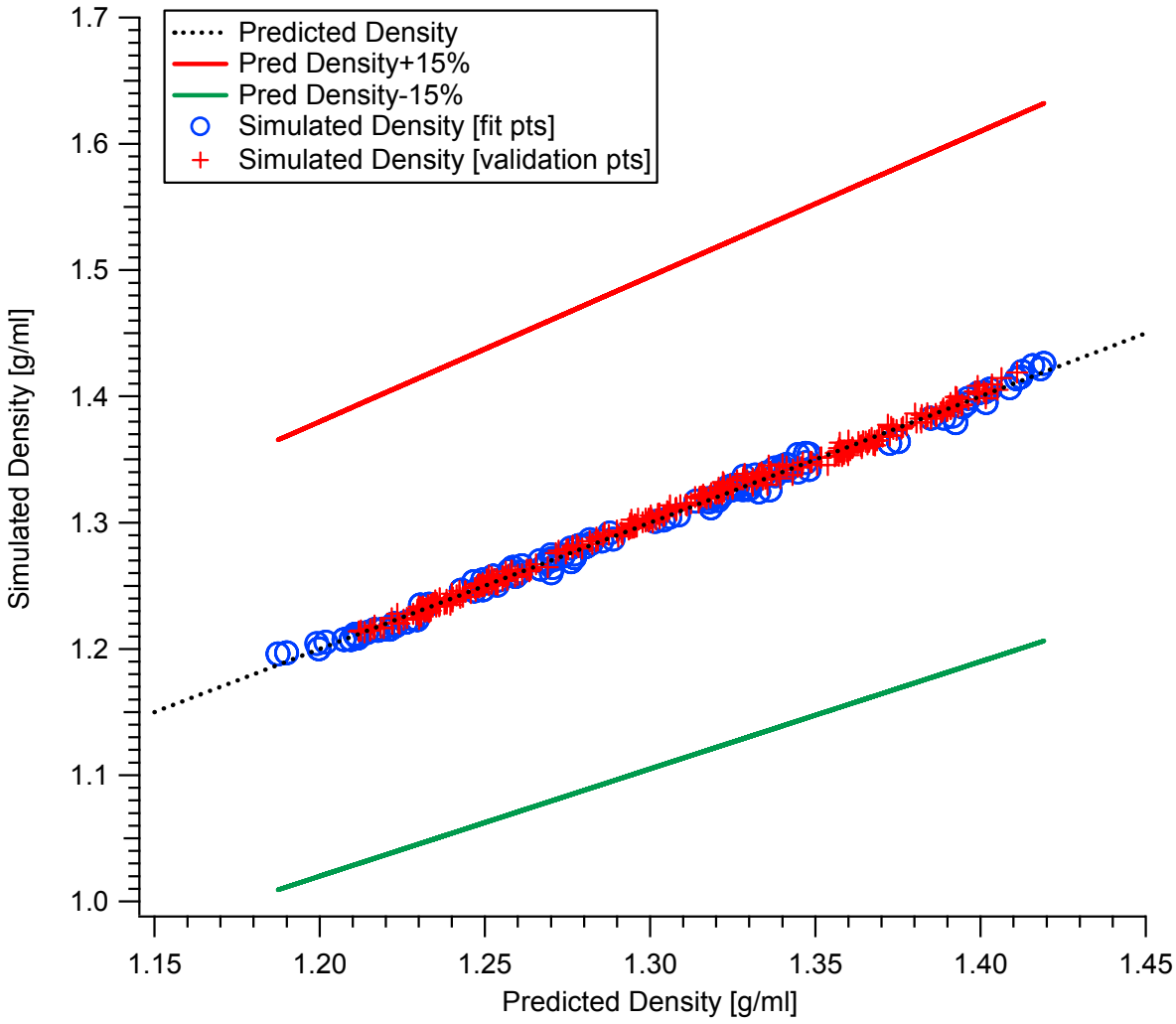

Figure 13. Simulated Density versus Predicted Density for Envelope A

Envelope A bottoms concentrate slurry conductivity at its steady state endpoint condition is represented by Equation 3 and shown in Figure 14.

Equation 3

$$\text{conductivity}_{\text{EnvA}}\left[\frac{\text{cal}}{\text{s}\cdot\text{cm}\cdot\text{K}}\right] = 1.271\text{E-}3\cdot x_{AlO2} + 1.326\text{E-}3\cdot x_{CO3} + 1.392\text{E-}3\cdot x_{F} + 1.304\text{E-}3\cdot x_{NO2} + 1.272\text{E-}3\cdot x_{NO3} + 1.863\text{E-}3\cdot x_{OH} + 1.402\text{E-}3\cdot x_{PO4} + 3.087\text{E-}6\cdot Temp - 5.159\text{E-}6\cdot SBS/Feed - 3.590\text{E-}6\cdot[Na] + 1.639\text{E-}6\cdot(Temp\text{-}40.5)\cdot(x_{OH}\text{-}0.1422) + 4.555\text{E-}4\cdot(x_{NO3}\text{-}0.4156)\cdot(x_{NO3}\text{-}0.4156)$$

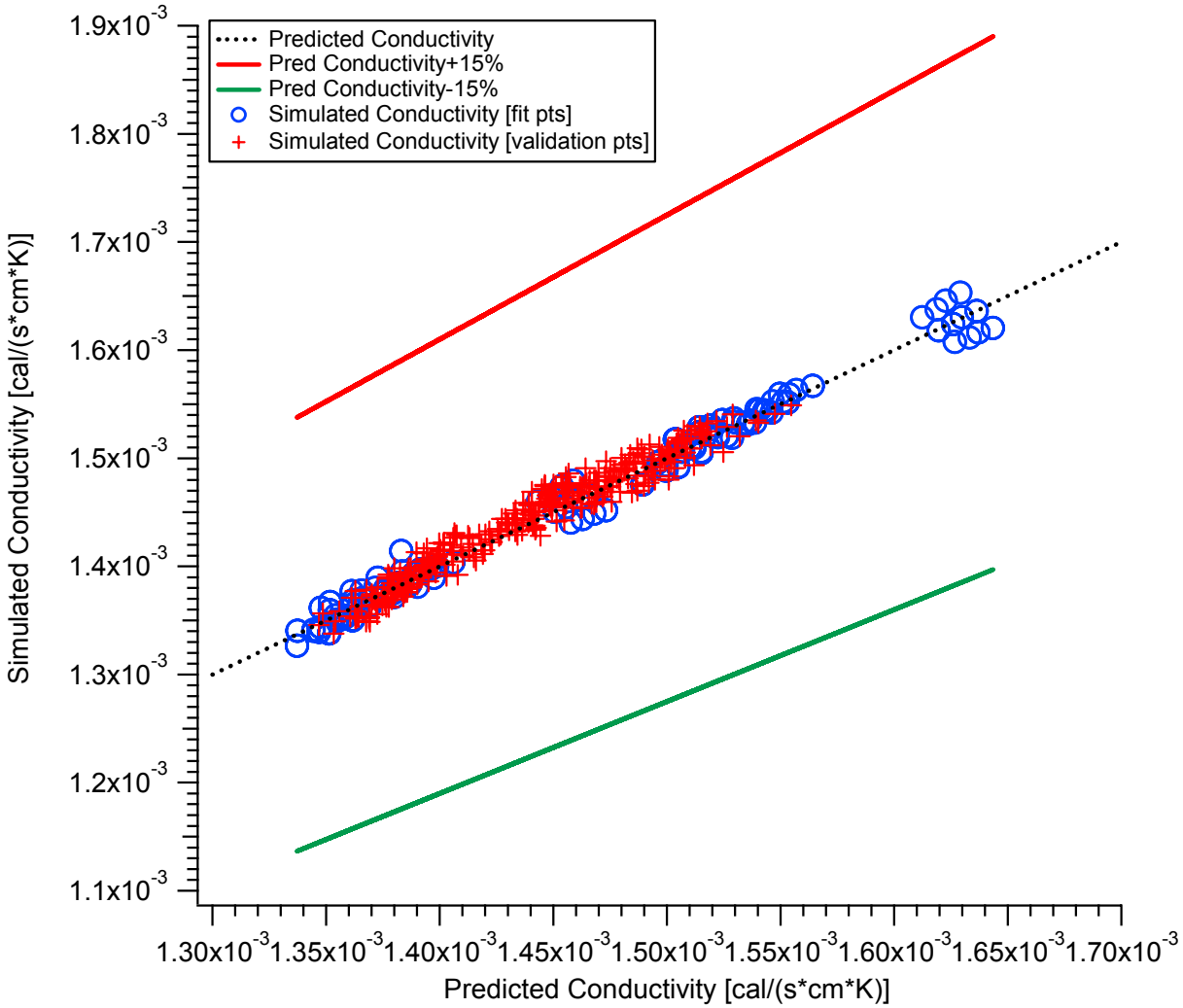

Figure 14. Simulated Conductivity versus Predicted Conductivity for Envelope A

Envelope A bottoms concentrate slurry heat capacity at its steady state endpoint condition is represented by Equation 4 and shown in Figure 15.

Equation 4

$$Cp_{EnvA}\left[\frac{cal}{g\ ^{o}C}\right] = 0.8824*x_{AlO2} + 0.7165*x_{CO3} + 0.9227*x_{F} + 0.7351*x_{NO2} +$$
$$0.8640*x_{NO3} + 0.9586*x_{OH} + 0.8870*x_{PO4} - 3.443E\text{-}3*SBS/Feed -$$
$$2.020e\text{-}2*[Na] - 0.05588*(x_{CO3}-0.0510)*([Na]-8) +$$
$$-0.03794*(x_{NO2}-0.2331)*([Na]-8) + 0.02999*(x_{NO3}-0.4156)*([Na]-8) +$$
$$0.002053*(x_{NO3}-0.4156)*(Temp-40.5) + 9.093e\text{-}5*([Na]-8)*(Temp-40.5)$$

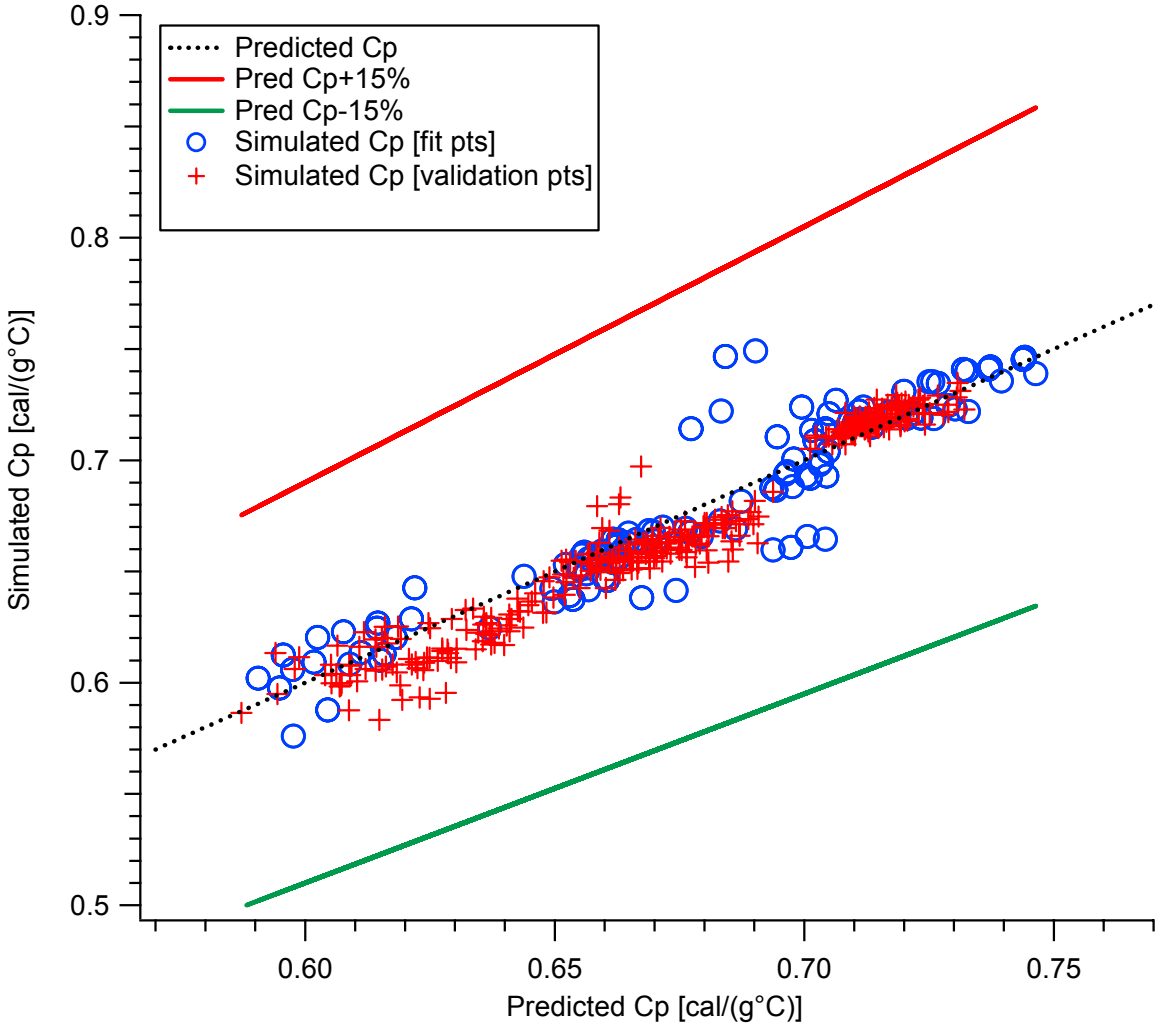

Figure 15. Simulated Cp versus Predicted Cp for Envelope A

Envelope A bottoms concentrate slurry Na molarity at its steady state endpoint condition is represented by Equation 5 and shown in Figure 16.

Equation 5

$$[\mathrm{Na}]_{\mathrm{EnvA}}\left[\frac{\mathrm{gmol}}{\mathrm{L}}\right] = -34.36\cdot x_{AlO2} - 34.10\cdot x_{CO3} - 33.09\cdot x_{F} - 32.95\cdot x_{NO2} - 33.72\cdot x_{NO3} - 30.24\cdot x_{OH} - 35.14\cdot x_{PO4} + 0.03444\cdot Temp - 0.2139\cdot SBS/Feed + 30.82\cdot Density + 0.1106\cdot(Density - 1.300)\cdot(Temp - 40.5) - 0.9262\cdot(Density - 1.300)\cdot(SBS/Feed - 1)$$

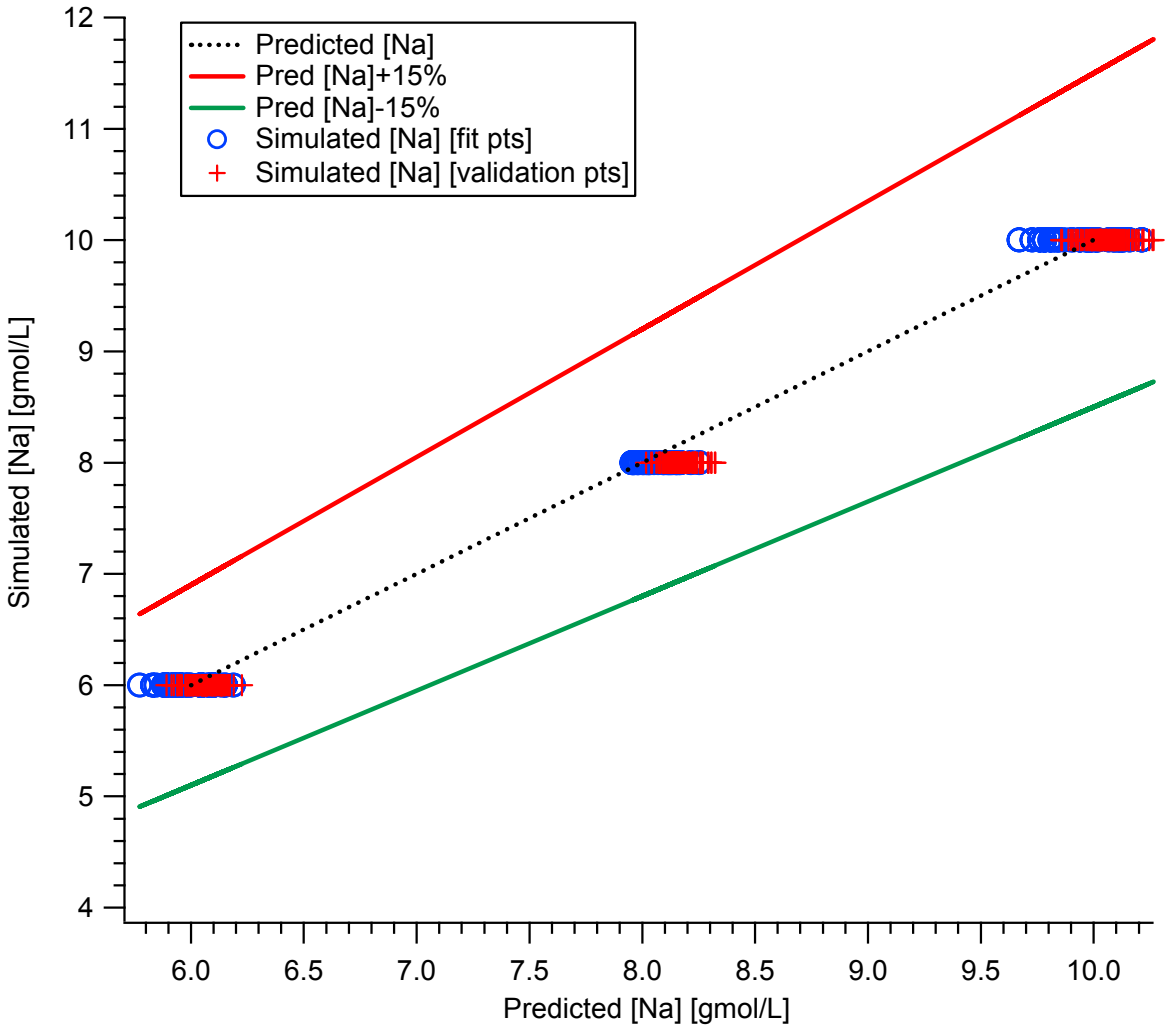

Figure 16. Simulated [Na] versus Predicted [Na] for Envelope A

Although no valid solids prediction model could be developed for the bottoms concentrate stream for Envelope A, the general behavior of the simulated points can be seen in Figure 17. As is evident from the graph, insoluble solids in the bottoms concentrate should not be a concern unless a high Na molarity like 10 M and a low temperature like 20 °C are targeted simultaneously.

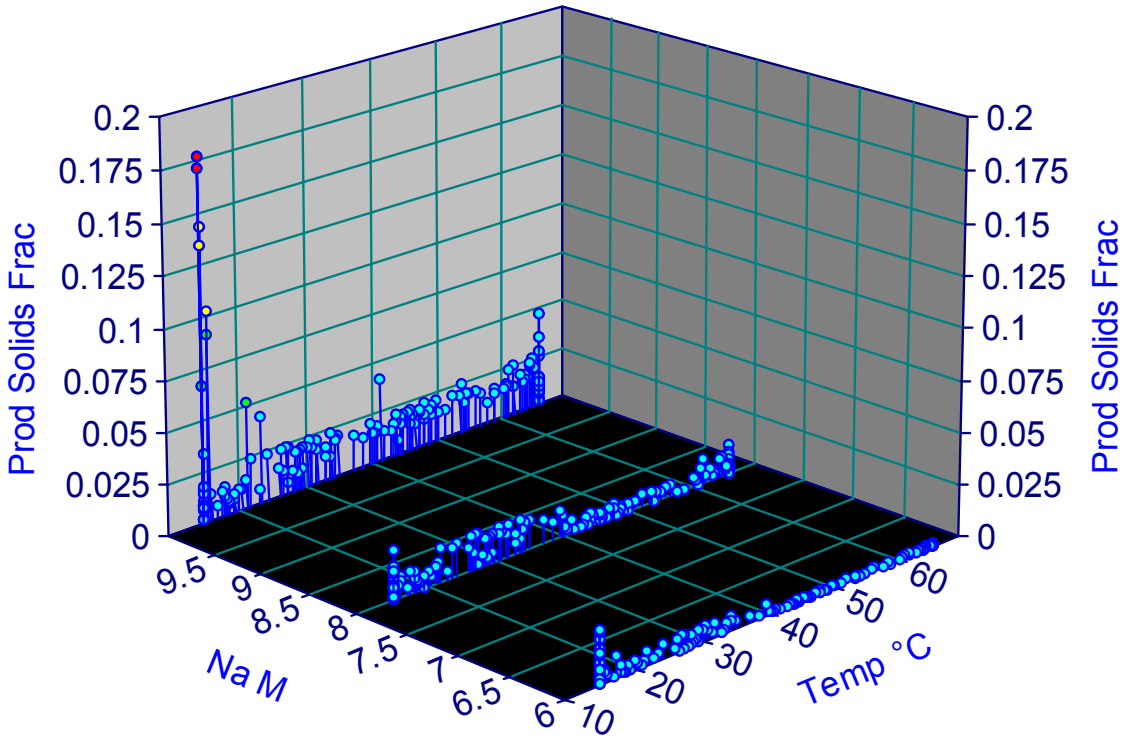

Figure 17. Envelope A Bottoms Solids Fraction versus Na Molarity and Temperature

2.5.1.2 Envelope B Predictive Models

All concentrations for the Envelope B model mixture variables listed in Table 7 are in terms of weight fraction relative to the total mass of all the mixture variables. The three process variables are [Na] (the bottoms concentrate Na molarity), SBS/Feed (volumetric ratio of LAW SBS to treated waste feed flow, and Temp (the bottoms concentrate temperature).

Table 7. Valid Variable Ranges for Envelope B Models

	Mixture Variable Mass Fraction Ranges Mass fraction relative to total mass of mixture variables						**Process Variables**		
Variable	AlO_2^{-1} **mass fraction**	CO_3^{-2} **mass fraction**	NO_3^{-1} **mass fraction**	OH^{-1} **mass fraction**	SO_4^{-2} **mass fraction**	$C_2O_4^{-2}$ **mass fraction**	**[Na]** (molar)	**SBS / Feed** (volumetric)	**Temp** (^oC)
Min	0.0380	0.2529	0.3603	0.0928	0.1438	0.0000	6	0.0	15
Max	0.1107	0.2785	0.3755	0.1074	0.2152	0.0248	10	2.0	66

The Envelope B evaporator bottoms concentrate slurry density at its steady state endpoint condition is represented by Equation 6 and shown in Figure 18.

Equation 6

$$\text{density}_{\text{EnvB}}\left[\frac{\text{g}}{\text{ml}}\right] = 3.463\text{E-}3 \cdot (SBS/Feed - 1) - 0.02774 \cdot (Temp - 45)/25) + 1.034 \cdot x_{AlO2} + 1.009 \cdot x_{CO3} + 0.9938 \cdot x_{NO3} + 0.9362 \cdot x_{OH} + 1.068 \cdot x_{SO4} + 1.020 \cdot x_{C2O4} + 0.04177 \cdot [Na]$$

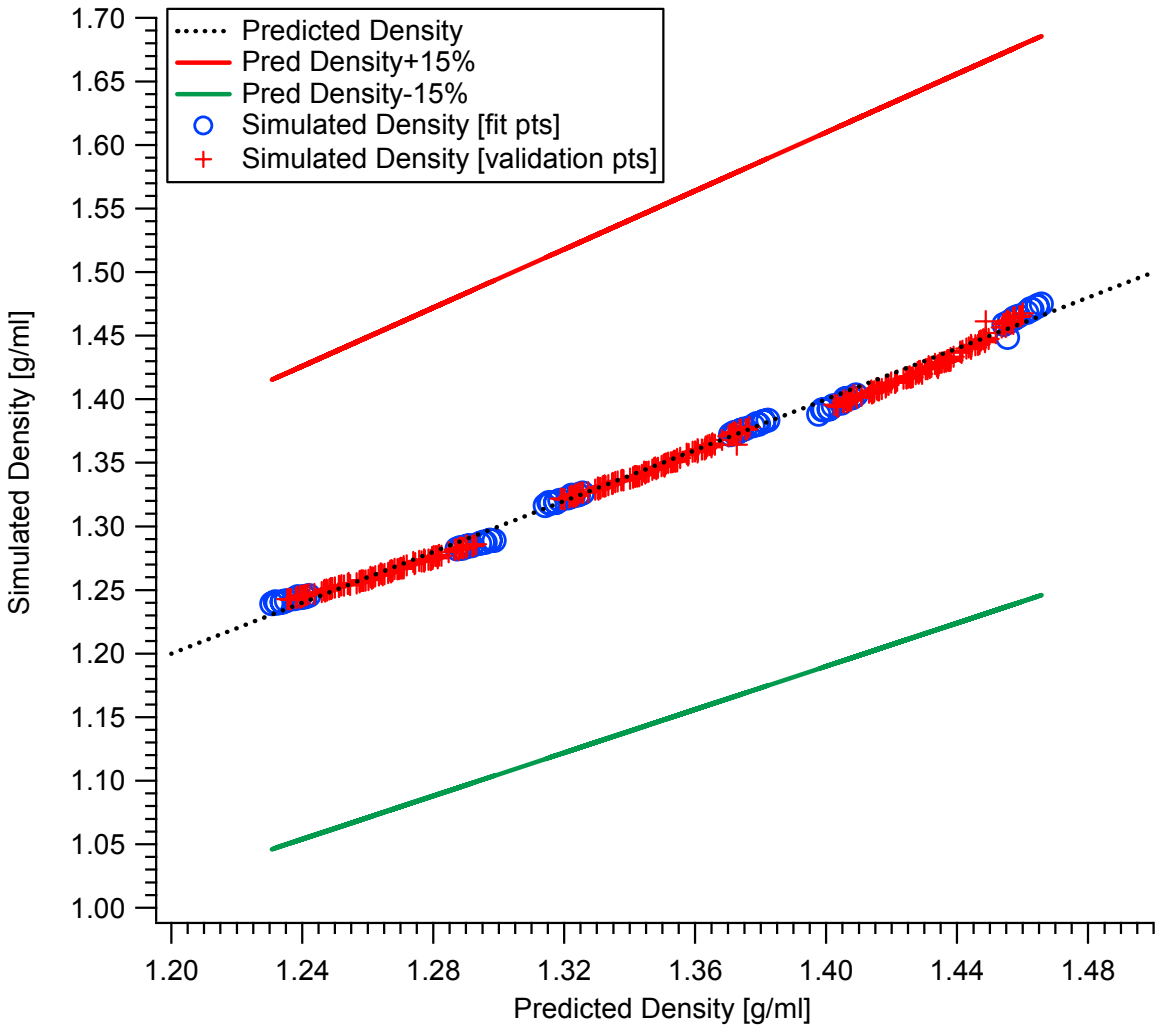

Figure 18. Simulated Density versus Predicted Density for Envelope B

The Envelope B evaporator bottoms supernate viscosity at its steady state endpoint condition is represented by Equation 7 and shown in Figure 19.

Equation 7

$$\text{visc}_{\text{EnvB}}[\text{cP}] = \text{Exp}\left(\frac{2122}{137.5 + Temp} + 0.2318 \cdot [Na] + 5.162 \cdot x_{OH} - 15.24\right) +$$
$$0.5203 \cdot [Na] - 4.817 \cdot x_{OH} + 0.08783 \cdot x_{OH} \cdot Temp - 4.700\text{E-}3 \cdot [Na] \cdot Temp$$

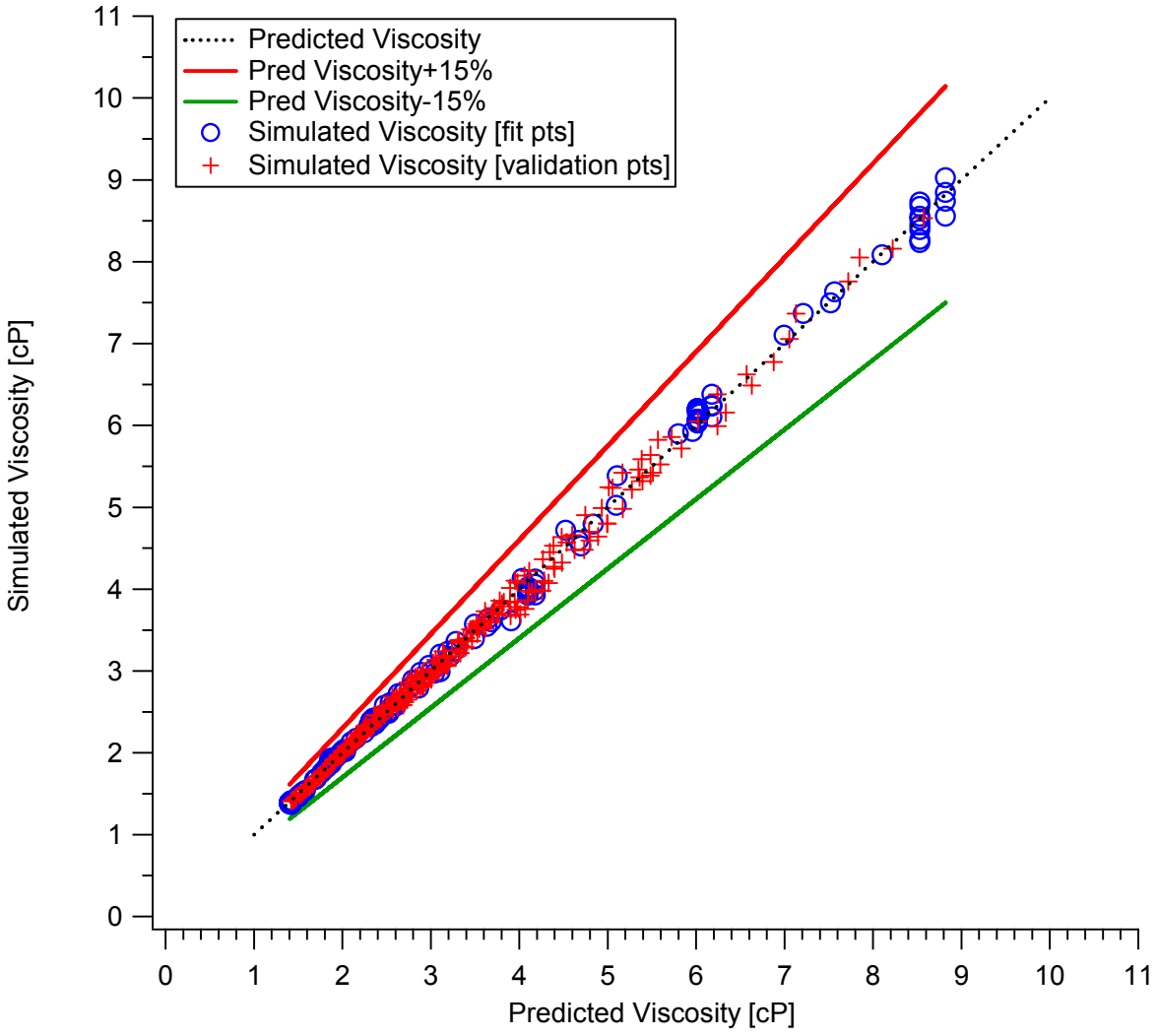

Figure 19. Simulated Viscosity versus Predicted Viscosity for Envelope B

The Envelope B evaporator bottoms concentrate slurry conductivity at its steady state endpoint condition is represented by Equation 8 and shown in Figure 20.

Equation 8

$$\text{conductivity}_{\text{EnvB}}\left[\frac{\text{cal}}{\text{s}\cdot\text{cm}\cdot\text{K}}\right] = 1.274\text{E-}3\cdot x_{AlO2} + 1.355\text{E-}3\cdot x_{CO3} + 1.432\text{E-}3\cdot x_{NO3} + 1.674\text{E-}3\cdot x_{OH} + 1.373\text{E-}3\cdot x_{SO4} + 1.418\text{E-}3\cdot x_{C2O4} - 1.041\text{E-}6\cdot (SBS/Feed - 1) - 6.550\text{E-}6\cdot [Na] - 1.785\text{E-}5\cdot ([Na] - 8)\cdot (x_{AlO2} - 0.06883) + 3.853\text{E-}5\cdot ([Na] - 8)\cdot (x_{OH} - 0.09767)$$

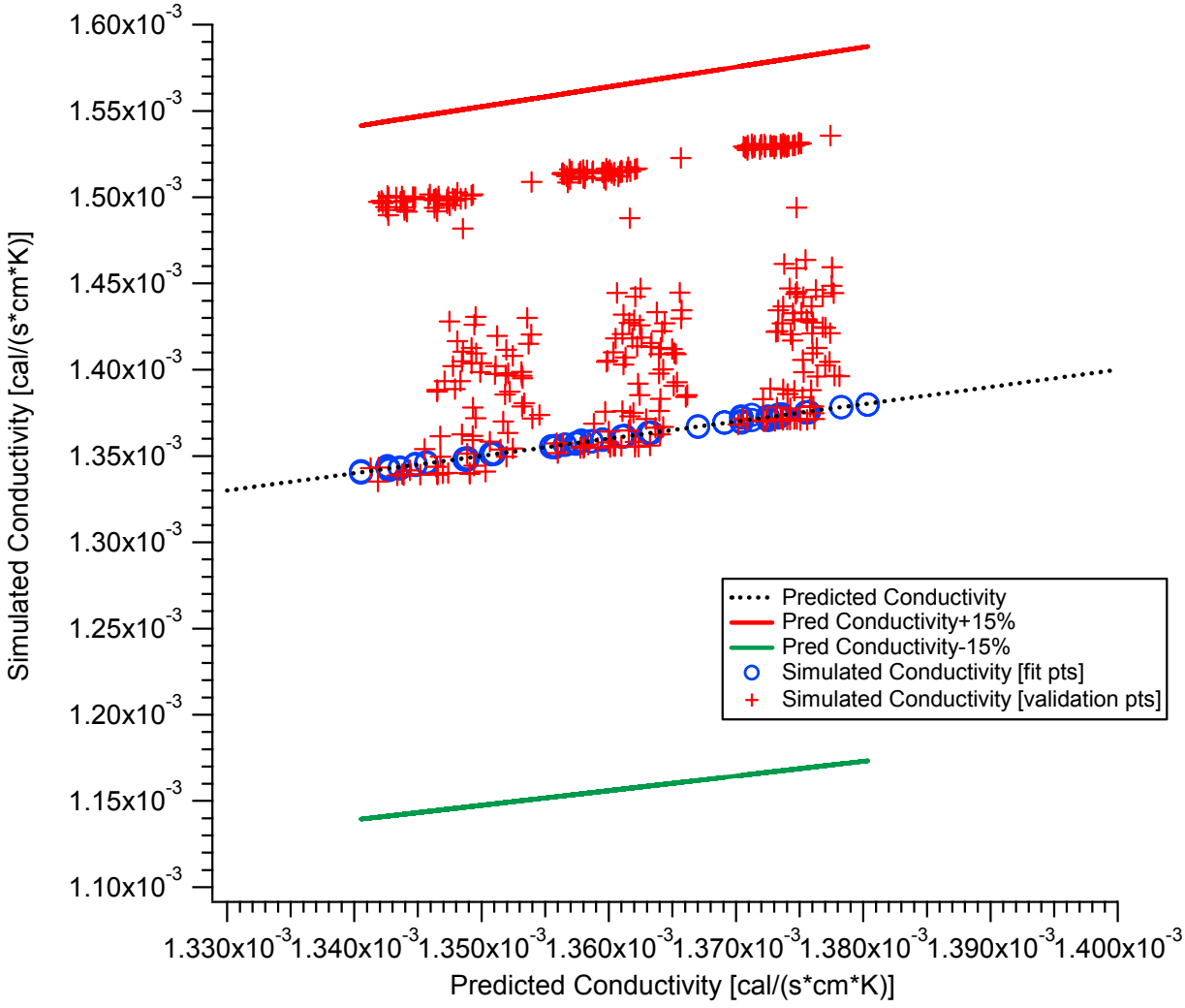

Figure 20. Simulated Conductivity versus Predicted Conductivity for Envelope B

Envelope B bottoms concentrate slurry heat capacity at its steady state endpoint condition is represented by Equation 9 and shown in Figure 21.

Equation 9

$$Cp_{EnvB}\left[\frac{cal}{g\ ^{o}C}\right] = -0.01526 \cdot x_{AlO2} + 1.168 \cdot x_{CO3} + 1.149 \cdot x_{F} + 0.9522 \cdot x_{NO2} +$$
$$1.398 \cdot x_{NO3} + 1.188 \cdot x_{OH} + 1.228 \cdot x_{PO4} - 7.754E\text{-}2 \cdot SBS/Feed -$$
$$2.020e\text{-}2 \cdot [Na] - 0.05588 \cdot (x_{CO3} - 0.0510) \cdot ([Na] - 8) +$$
$$-0.03794 \cdot (x_{NO2} - 0.2331) \cdot ([Na] - 8) + 0.02999 \cdot (x_{NO3} - 0.4156) \cdot ([Na] - 8) +$$
$$0.002053 \cdot (x_{NO3} - 0.4156) \cdot (Temp - 40.5) + 9.093e\text{-}5 \cdot ([Na] - 8) \cdot (Temp - 40.5)$$

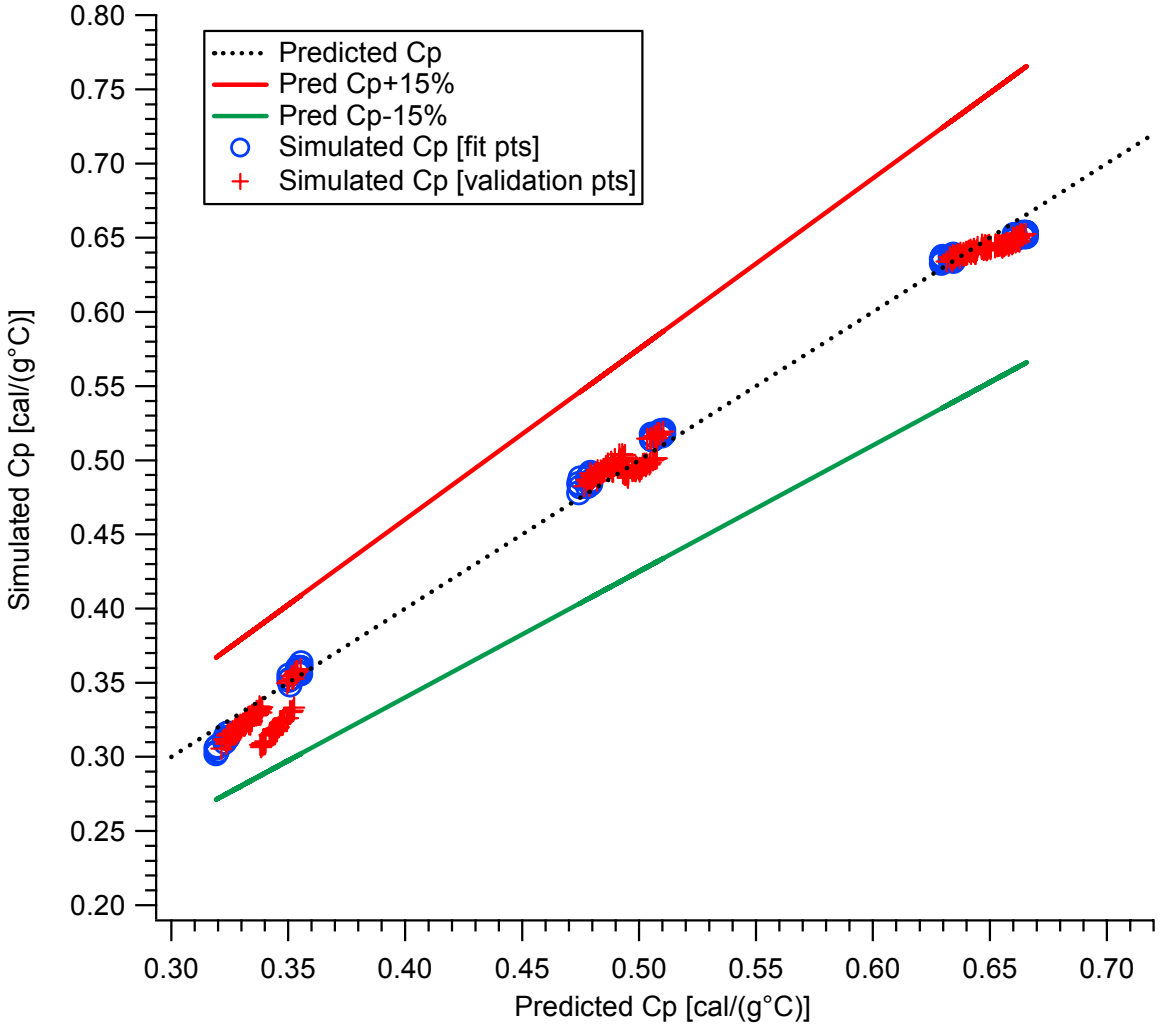

Figure 21. Simulated Cp versus Predicted Cp for Envelope B

The Envelope B evaporator bottoms concentrate slurry Na molarity at its steady state endpoint condition is represented by Equation 10 and shown in Figure 22.

Equation 10

$$[\mathrm{Na}]_{\mathrm{EnvB}}\left[\frac{\mathrm{gmol}}{\mathrm{L}}\right] = -0.08268\cdot(SBS/Feed - 1) + 0.6680\cdot\frac{(Temp - 45)}{25} - 25.34\cdot x_{AlO2} - 24.70\cdot x_{CO3} - 24.41\cdot x_{NO3} - 22.97\cdot x_{OH} - 26.14\cdot x_{SO4} - 25.03\cdot x_{C2O4} + 24.41\cdot Density - 0.3649\cdot(SBS/Feed - 1)\cdot(Density - 1.348) + 1.854\cdot\frac{(Temp - 45)}{25}\cdot(Density - 1.348)$$

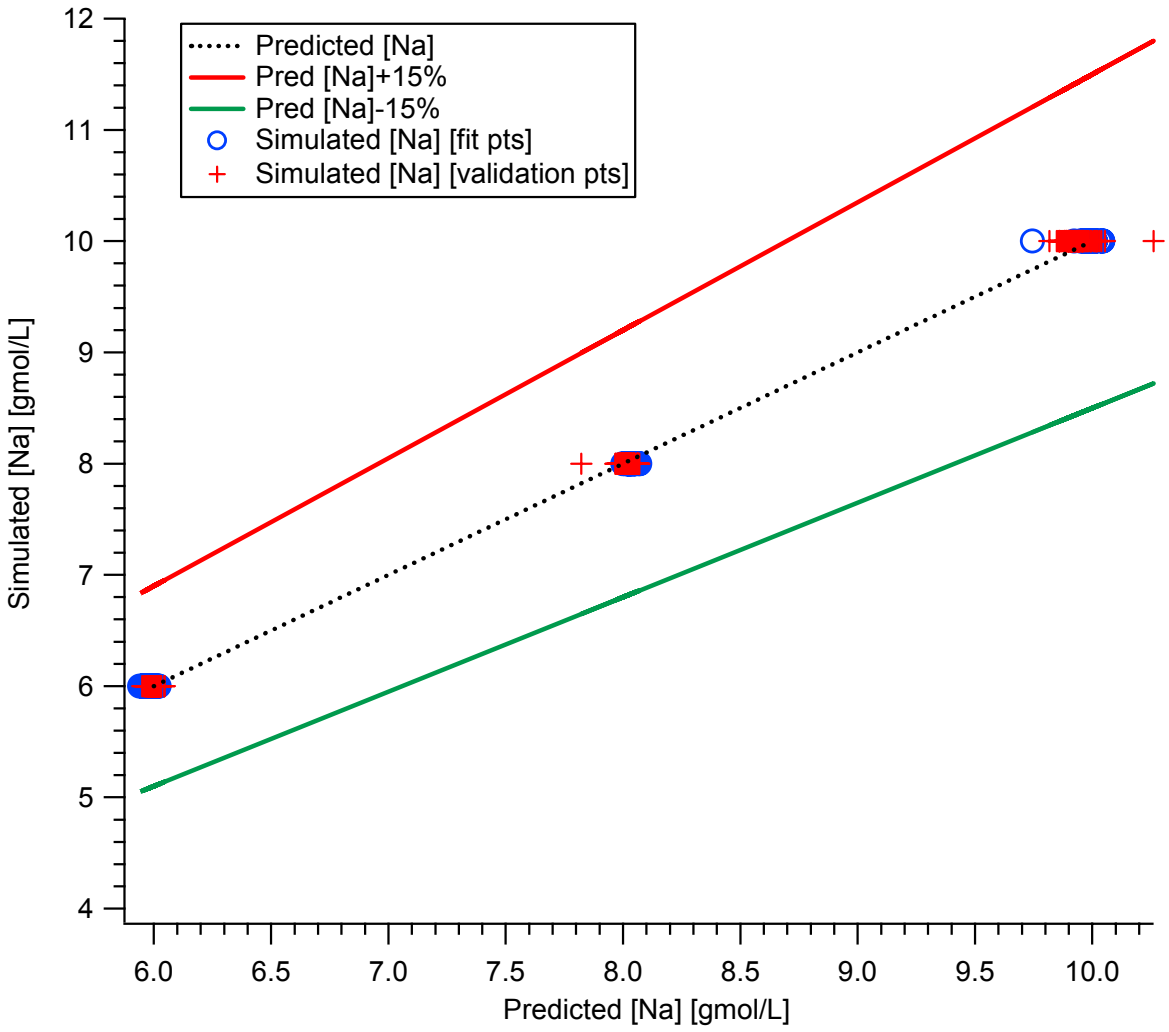

Figure 22. Simulated [Na] versus Predicted [Na] for Envelope B

Although no valid solids prediction model could be developed for the bottoms concentrate stream for Envelope B, the general behavior of the simulated points can be seen in Figure 23. The graph shows that for a temperature range of 15 to 66°C and a Na molarity range of 6 to 10 Na M, the fraction of insoluble solids in the bottoms stream is always below 3 wt-%. The graph also shows that the bottoms Na molarity concentration has the biggest impact on the amount solids that forms compared to temperature. The graph also shows that the majority of solids precipitate out between 20 and 40°C.

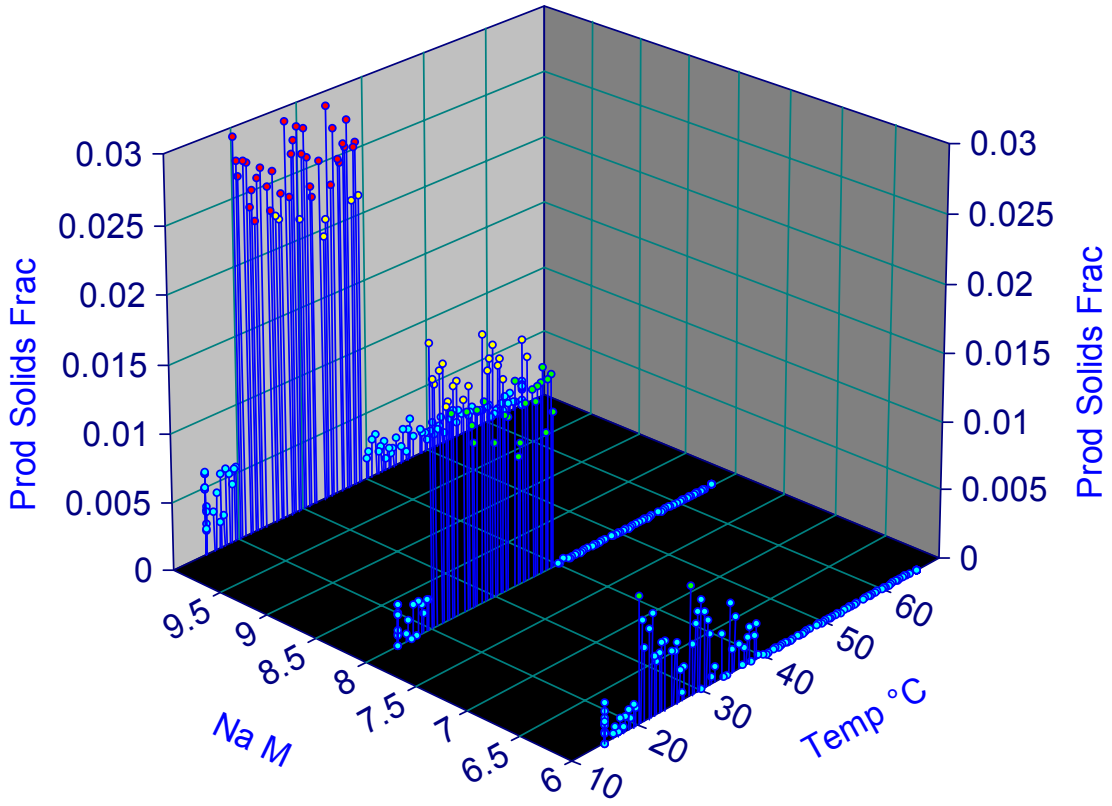

Figure 23. Envelope B Bottoms Solids Fraction versus Na Molarity and Temperature

2.5.1.3 Envelope C Predictive Models

Concentrations for the Envelope C model mixture variables listed in Table 8 are in terms of weight fraction relative to the total mass of all the mixture variables. The three process variables are [Na] (the bottoms concentrate Na molarity), SBS/Feed (volumetric ratio of LAW SBS to treated waste feed flow, and Temp (the bottoms concentrate temperature).

Table 8. Valid Variable Ranges for Envelope C Models

	Mixture Variable Mass Fraction Ranges Mass fraction relative to total mass of mixture variables					**Process Variables**		
Variable	AlO_2^{-1} **mass fraction**	CO_3^{-2} **mass fraction**	NO_2^{-1} **mass fraction**	OH^{-1} **mass fraction**	SO_3^{-2} **mass fraction**	**[Na]** (molar)	**SBS / Feed** (volumetric)	**Temp** (°C)
minimum	0.0052	0.2984	0.3926	0.0828	0.0644	6	0.0	15
maximum	0.1319	0.3282	0.5131	0.1099	0.0733	10	2.0	66

The Envelope C evaporator bottoms concentrate slurry density at its steady state endpoint condition is represented by Equation 11 and shown in Figure 24.

Equation 11

$$\text{density}_{EnvC}\left[\frac{g}{ml}\right] = 0.01257\cdot(SBS/Feed - 1) - 0.03233\cdot\frac{Temp - 45}{25} -$$
$$1.765\text{E-}3\cdot(SBS/Feed - 1)\cdot\frac{Temp - 45}{25} +$$
$$1.074\cdot x_{AlO2} + 1.051\cdot x_{CO3} + 1.042\cdot x_{NO2} + 1.018\cdot x_{OH} + 1.132\cdot x_{SO4} +$$
$$0.03275\cdot[Na] - 2.685\text{E-}3\cdot([Na] - 8)\cdot\frac{Temp - 45}{25}$$

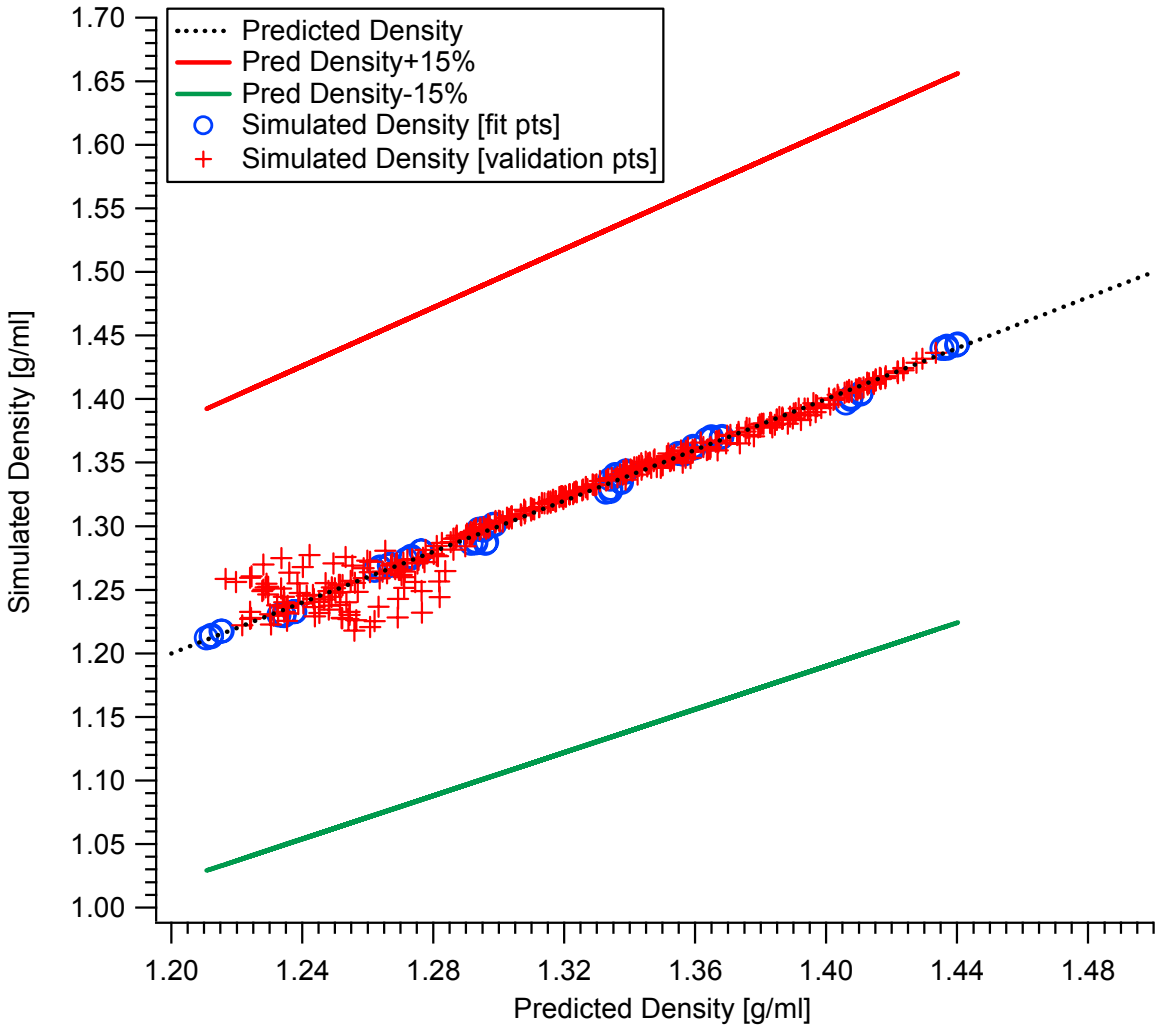

Figure 24. Simulated Density versus Predicted Density for Envelope C

The Envelope C evaporator bottoms supernate viscosity at its steady state endpoint condition is represented by Equation 12 and shown in Figure 25.

Equation 12

$$\text{visc}_{\text{EnvC}}[\text{cP}] = \text{Exp}\left(\frac{7418}{31.70 + Temp} + 0.2390\cdot[Na] - 0.7285\cdot x_{NO2} + \right) +$$
$$\left. - 22.96 + -0.08727\cdot SBS/Feed \right)$$
$$0.4093\cdot[Na] - 0.4685\cdot x_{NO2} - 2.672\text{E-}3\cdot[Na]\cdot Temp - 0.04042\cdot SBS/Feed$$

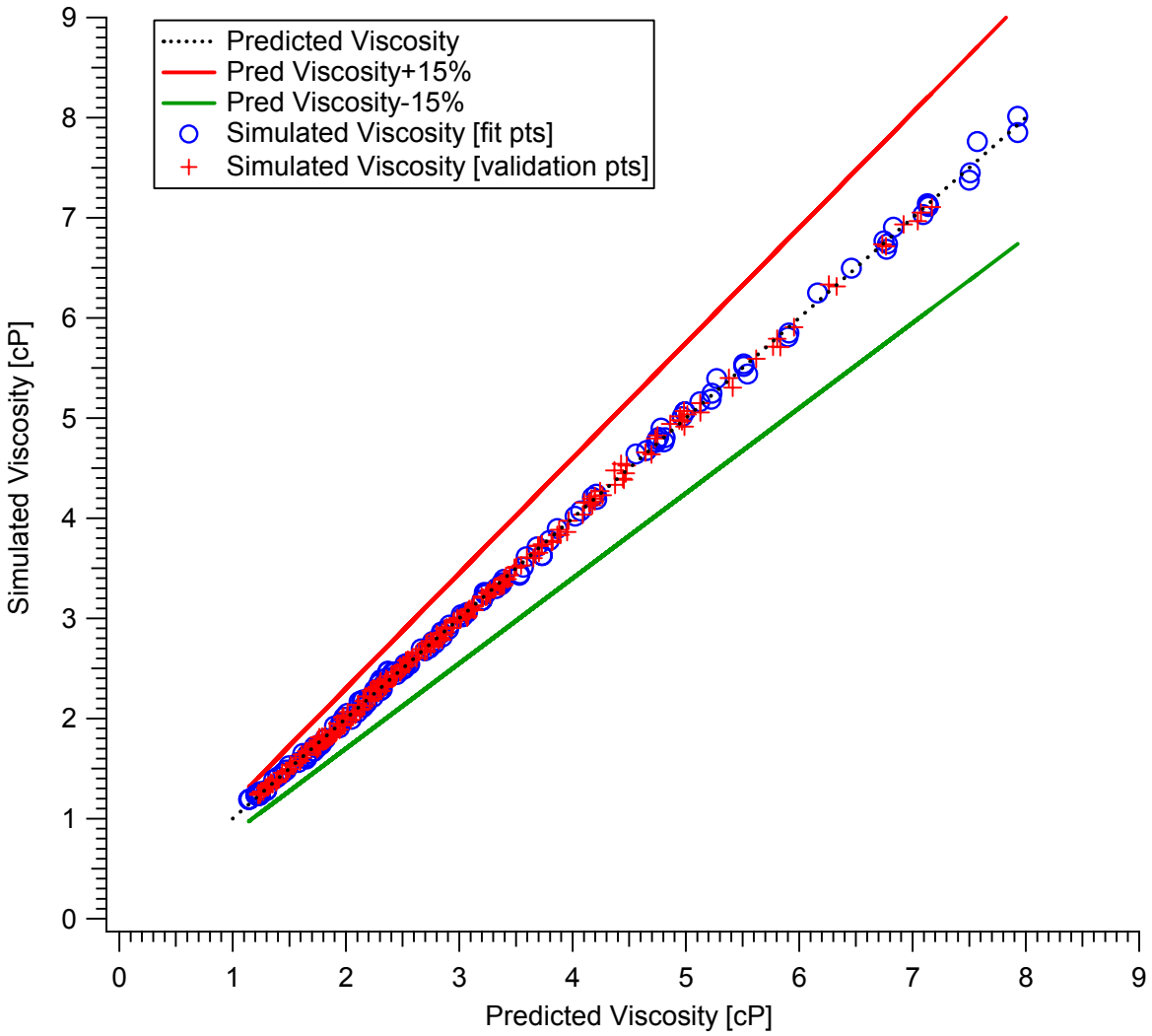

Figure 25. Simulated Viscosity versus Predicted Viscosity for Envelope C

The Envelope C evaporator bottoms concentrate slurry conductivity at its steady state endpoint condition is represented by Equation 13 and shown in Figure 26.

Equation 13

$$\text{conductivity}_{\text{EnvC}}\left[\frac{\text{cal}}{\text{s}\cdot\text{cm}\cdot\text{K}}\right] = \text{-7.282E-6}\cdot(SBS/Feed - 1) - \text{1.498E-6}\cdot\frac{\text{Temp - 45}}{25} +$$
$$-\text{9.488E-7}\cdot(SBS/Feed - 1)\cdot\frac{Temp - 45}{25} + \text{1.318E-3}\cdot x_{AlO2} +$$
$$\text{1.468E-3}\cdot x_{CO3} + \text{1.385E-3}\cdot x_{NO2} + \text{1.602E-3}\cdot x_{OH} +$$
$$\text{1.258E-3}\cdot x_{SO4} - \text{1.110E-5}\cdot[\text{Na}]$$

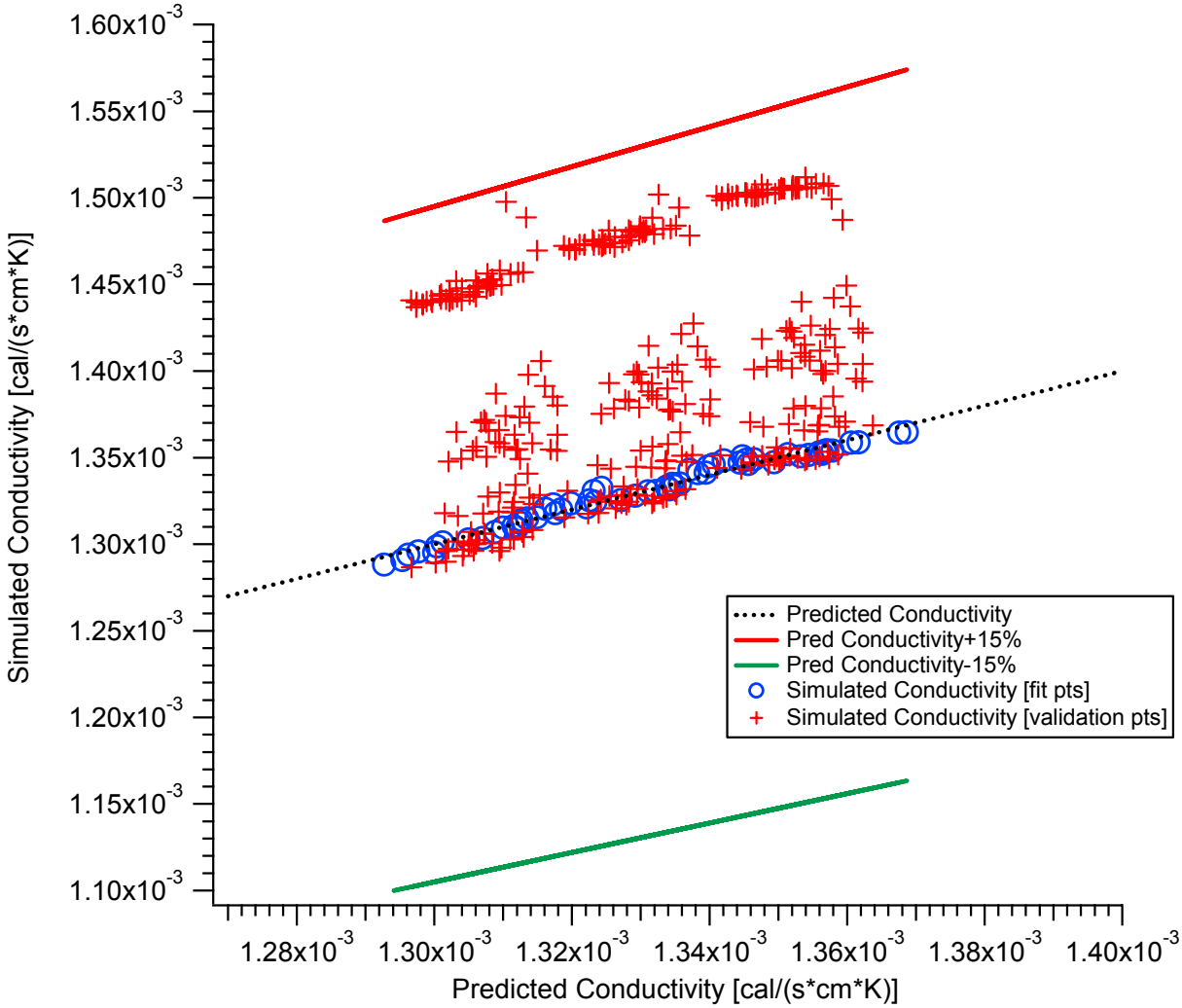

Figure 26. Simulated Conductivity versus Predicted Conductivity for Envelope C

Envelope C bottoms concentrate slurry heat capacity at its steady state endpoint condition is represented by Equation 14 and shown in Figure 27.

Equation 14

$$Cp_{EnvC}\left[\frac{cal}{g\ ^{o}C}\right] = -0.008923\cdot\frac{Temp - 45}{25} + 0.9093\cdot x_{AlO2} + 0.8587 * x_{CO3} + 0.8621\cdot x_{NO2} + 1.005\cdot x_{OH} + 0.9629\cdot x_{SO4} - 0.03087\cdot[Na]$$

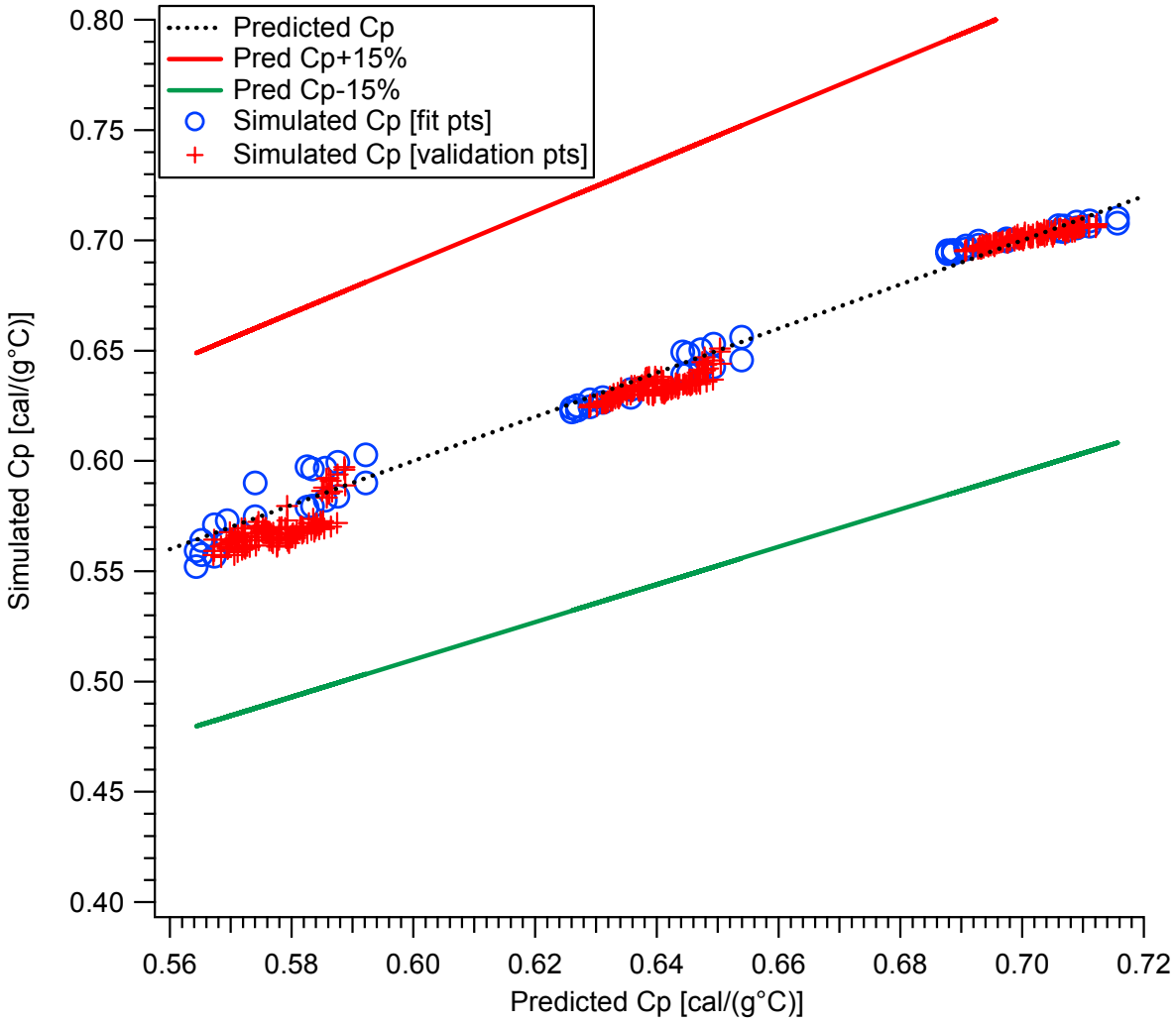

Figure 27. Simulated Cp versus Predicted Cp for Envelope C

The Envelope C evaporator bottoms concentrate slurry Na molarity at its steady state endpoint condition is represented by Equation 15 and shown in Figure 28.

Equation 15

$$[\mathrm{Na}]_{\mathrm{EnvC}}\left[\frac{\mathrm{gmol}}{\mathrm{L}}\right] = -0.3663\cdot(SBS/Feed - 1) + 0.9644\cdot\frac{Temp - 45}{25} - 33.00\cdot x_{AlO2} - 31.33\cdot x_{CO3} - 31.88\cdot \mathrm{x}_{\mathrm{NO2}} - 32.29\cdot \mathrm{x}_{\mathrm{OH}} - 34.16\cdot \mathrm{x}_{\mathrm{SO4}} + 30.49\cdot Density - 1.764\cdot(SBS/Feed - 1)\cdot(Density - 1.322) + 2.327\cdot\frac{Temp - 45}{25}\cdot(Density - 1.322)$$

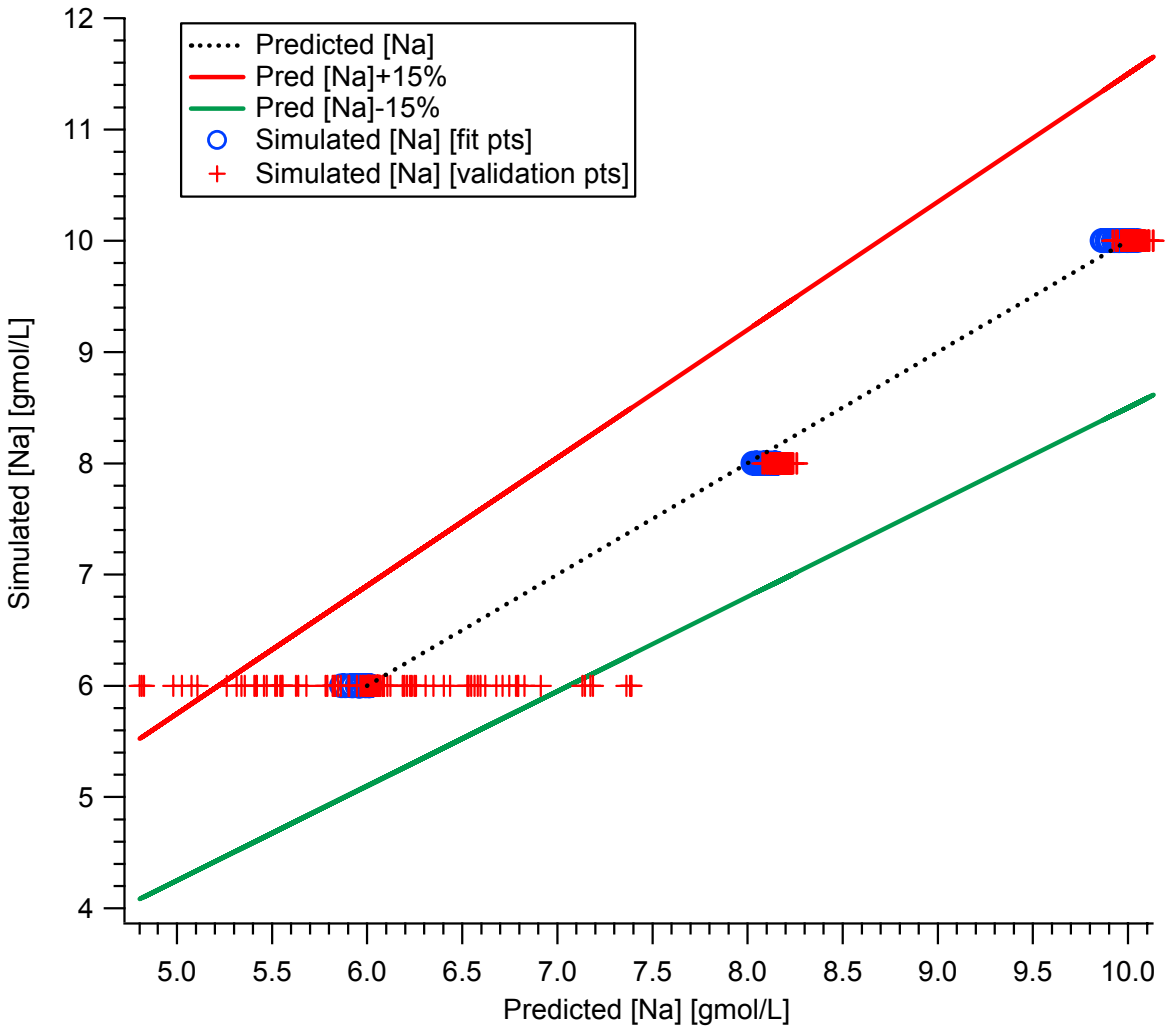

Figure 28. Simulated [Na] versus Predicted [Na] for Envelope C

Although no valid solids prediction model could be developed for the bottoms concentrate stream for Envelope C, the general behavior of the simulated points can be seen in Figure 29 and Figure 30. The graphs show that the bottoms Na molarity concentration and the SBS/Feed ratio have the biggest impact on the amount solids that form compared to temperature. As the Na molarity or the SBS/Feed ratio increase the amount of insoluble solids also increases.

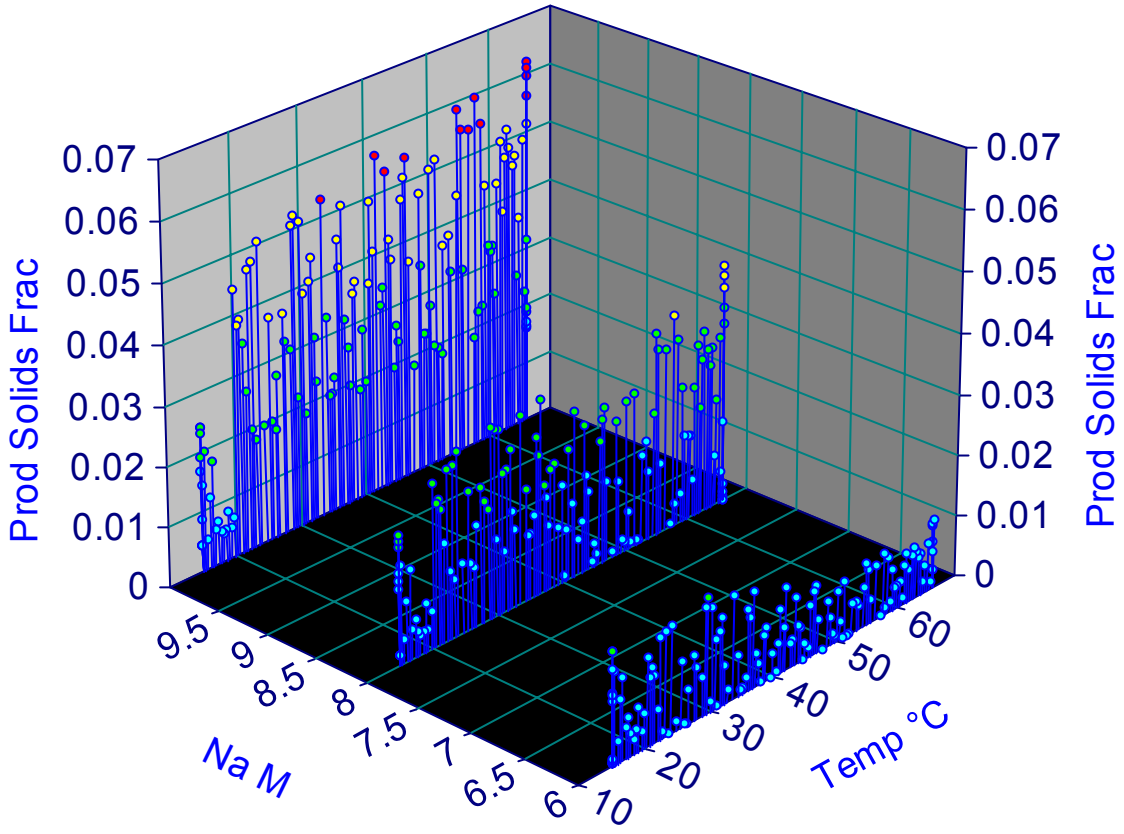

Figure 29. Envelope C Bottoms Solids Fraction versus Na Molarity and Temperature

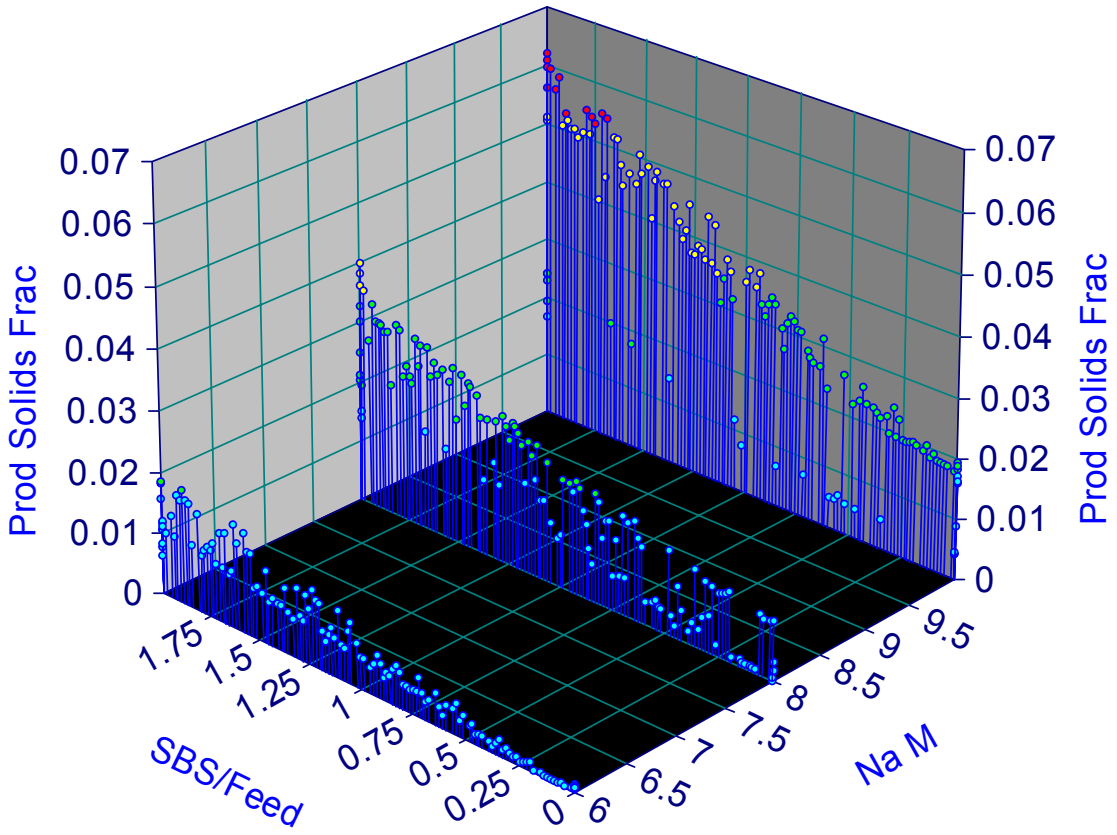

Figure 30. Envelope C Bottoms Solids Fraction versus Na Molarity and SBS/Feed

2.5.2 Comparison of Simulation Results with Experimental Results

Experimental work was completed as part of Task S-94 to generate data concerning the evaporation of the LAW treated wastes for Envelopes A, B, and C.[7] Several physical properties were measured for the various waste feeds against which the prediction models discussed earlier can be compared.

The density predictions for Envelope A were within +/-6% of the measured values for the bottoms concentrate with a Na molarity between 2 and 10. The predicted density for Envelope A versus measured values is shown in Table 9. As is evidenced from the table, the model prediction for density does a good job at matching the experimental values.

Table 9. Comparison of Measured and Predicted Densities for Envelope A

Temperature (Degrees C)	Measured Density [g/ml]				Predicted Density [g/ml]				% Difference b/n Meas & Pred Density			
	15	25	50	65	15	25	50	65	15	25	50	65
SM-01-INIT-A	1.110	1.106	1.093	1.085	1.145	1.141	1.129	1.122	-3.2%	-3.2%	-3.3%	-3.4%
SM-02-INIT-A	1.100	1.096	1.084	1.075	1.136	1.132	1.121	1.114	-3.3%	-3.3%	-3.4%	-3.6%
SM-03-INIT-A	1.100	1.096	1.083	1.074	1.125	1.120	1.109	1.102	-2.2%	-2.2%	-2.4%	-2.6%
SM-04-INIT-A	1.093	1.089	1.076	1.068	1.103	1.098	1.087	1.080	-0.9%	-0.9%	-1.0%	-1.2%
SM-05-INIT-A	1.096	1.091	1.079	1.070	1.106	1.102	1.090	1.083	-1.0%	-0.9%	-1.0%	-1.2%
SM-06-INIT-A	1.103	1.099	1.086	1.077	1.131	1.127	1.115	1.109	-2.5%	-2.5%	-2.7%	-2.9%
SM-07-INIT-A	1.114	1.110	1.097	1.089	1.137	1.132	1.120	1.113	-2.1%	-2.0%	-2.1%	-2.2%
SM-08-INIT-A	1.100	1.096	1.083	1.074	1.127	1.122	1.111	1.104	-2.4%	-2.4%	-2.5%	-2.7%
SM-09-INIT-A	1.108	1.104	1.091	1.082	1.134	1.129	1.118	1.111	-2.3%	-2.3%	-2.5%	-2.7%
SM-10-INIT-A	1.106	1.102	1.089	1.080	1.121	1.116	1.105	1.098	-1.3%	-1.3%	-1.5%	-1.7%
SM-11-INIT-A	1.105	1.100	1.088	1.079	1.130	1.126	1.114	1.107	-2.3%	-2.3%	-2.4%	-2.6%
SM-12-INIT-A	1.105	1.100	1.088	1.079	1.130	1.125	1.114	1.107	-2.3%	-2.2%	-2.4%	-2.6%
SM-01-06-A	1.293	1.286	1.270	1.260	1.284	1.275	1.252	1.238	0.7%	0.9%	1.4%	1.7%
SM-02-06-A	1.268	1.262	1.246	1.235	1.272	1.263	1.241	1.228	-0.3%	-0.1%	0.4%	0.6%
SM-03-06-A	1.268	1.262	1.245	1.235	1.260	1.251	1.229	1.215	0.6%	0.8%	1.3%	1.6%
SM-04-06-A	1.243	1.238	1.222	1.212	1.232	1.224	1.202	1.189	0.9%	1.1%	1.6%	1.9%
SM-05-06-A	1.251	1.245	1.230	1.220	1.246	1.237	1.214	1.200	0.4%	0.7%	1.3%	1.6%
SM-06-06-A	1.278	1.272	1.256	1.245	1.267	1.258	1.236	1.222	0.9%	1.1%	1.6%	1.9%
SM-07-06-A	1.297	1.291	1.275	1.265	1.282	1.273	1.249	1.235	1.1%	1.4%	2.0%	2.4%
SM-08-06-A	1.271	1.265	1.248	1.238	1.260	1.252	1.229	1.216	0.9%	1.1%	1.5%	1.8%
SM-09-06-A	1.294	1.288	1.271	1.258	1.273	1.264	1.241	1.227	1.6%	1.9%	2.3%	2.4%
SM-10-06-A	1.283	1.277	1.261	1.251	1.262	1.253	1.230	1.216	1.7%	1.9%	2.5%	2.8%
SM-11-06-A	1.282	1.276	1.260	1.250	1.274	1.264	1.241	1.227	0.7%	0.9%	1.5%	1.8%
SM-12-06-A	1.282	1.276	1.260	1.250	1.271	1.261	1.239	1.225	0.9%	1.1%	1.7%	2.0%
SM-01-08-A	1.341	1.335	1.318	1.308	1.330	1.319	1.292	1.276	0.9%	1.2%	1.9%	2.4%
SM-02-08-A	1.335	1.328	1.310	1.298	1.329	1.318	1.292	1.275	0.4%	0.7%	1.4%	1.7%
SM-03-08-A	1.340	1.334	1.317	1.309	1.324	1.313	1.286	1.269	1.2%	1.6%	2.4%	3.0%
SM-04-08-A	1.307	1.301	1.285	1.276	1.294	1.283	1.256	1.240	1.1%	1.4%	2.3%	2.8%

Table 9. Comparison of Measured and Predicted Densities for Envelope A (cont'd)

Temperature (Degrees C)	Measured Density [g/ml]				Predicted Density [g/ml]				% Difference b/n Meas & Pred Density			
	15	25	50	65	15	25	50	65	15	25	50	65
SM-05-08-A	1.318	1.312	1.295	1.285	1.312	1.300	1.272	1.255	0.5%	0.9%	1.8%	2.3%
SM-06-08-A	1.353	1.346	1.328	1.317	1.331	1.320	1.292	1.276	1.6%	2.0%	2.7%	3.1%
SM-07-08-A	1.375	1.368	1.351	1.341	1.351	1.339	1.310	1.292	1.8%	2.1%	3.1%	3.6%
SM-08-08-A	1.346	1.339	1.321	1.310	1.323	1.312	1.285	1.269	1.7%	2.0%	2.7%	3.2%
SM-09-08-A	1.376	1.369	1.350	1.332	1.338	1.327	1.299	1.282	2.7%	3.0%	3.8%	3.8%
SM-10-08-A	1.361	1.354	1.336	1.325	1.328	1.316	1.288	1.271	2.4%	2.8%	3.6%	4.0%
SM-11-08-A	1.354	1.347	1.331	1.321	1.340	1.328	1.300	1.283	1.0%	1.4%	2.3%	2.9%
SM-12-08-A	1.356	1.350	1.334	1.325	1.336	1.325	1.297	1.280	1.4%	1.8%	2.8%	3.4%
SM-01-10-A	1.502	1.495	1.479	1.472	1.486	1.470	1.431	1.408	1.0%	1.6%	3.2%	4.4%
SM-02-10-A	1.445	1.438	1.423	1.414	1.435	1.421	1.386	1.364	0.7%	1.2%	2.6%	3.5%
SM-03-10-A	1.455	1.448	1.429	1.416	1.433	1.419	1.382	1.360	1.5%	2.0%	3.3%	3.9%
SM-04-10-A	1.415	1.409	1.391	1.380	1.402	1.388	1.353	1.331	0.9%	1.5%	2.8%	3.5%
SM-05-10-A	1.424	1.418	1.401	1.392	1.426	1.411	1.374	1.351	-0.1%	0.5%	2.0%	3.0%
SM-06-10-A	1.468	1.462	1.445	1.434	1.439	1.424	1.388	1.366	2.0%	2.6%	3.9%	4.7%
SM-07-10-A	1.499	1.492	1.474	1.463	1.465	1.450	1.411	1.388	2.3%	2.9%	4.2%	5.1%
SM-08-10-A	1.455	1.451	1.435	1.423	1.432	1.417	1.381	1.359	1.6%	2.3%	3.7%	4.4%
SM-09-10-A	1.477	1.472	1.458	1.447	1.488	1.472	1.432	1.407	-0.7%	0.1%	1.8%	2.7%
SM-10-10-A	1.481	1.474	1.456	1.445	1.440	1.425	1.388	1.365	2.8%	3.3%	4.7%	5.5%
SM-11-10-A	1.476	1.469	1.451	1.439	1.454	1.439	1.401	1.379	1.5%	2.0%	3.4%	4.2%
SM-12-10-A	1.476	1.469	1.452	1.441	1.449	1.434	1.396	1.374	1.9%	2.4%	3.8%	4.6%

The comparison of the measured versus predicted viscosities was not as good as for the densities as shown in Table 10. The best predictions were for 25°C and for Na molarities between 6 and 10. The viscosity predictions for Envelope A were within +/-20% for the 25°C measurements but only +/-50% for 15°C and 60°C tests. It is expected that the lower and higher temperature extremes produced solids that are not accounted for by the viscosity prediction since it is based only on the supernate phase of the bottoms concentrate. For the 15°C and 60°C viscosity measurements versus predictions, less than 40% of the test points had the large +/-50% error while the remaining 60% of the test points fell within +/-20%. Another factor contributing to the difference is that the viscosity prediction model was based on bottoms concentrate ranging from 6 to 10 M Na while the test data covered 2 to 10 M Na.

Table 10. Comparison of Measured versus Predicted Viscosities for Envelope A

Envelope A Sample	Measured Na M at 15°C and 60°C	Measured Viscosity [cP] at 15°C	Predicted Viscosity [cP] at 15°C	% Diff b/n Meas & Pred Visc. at 15°C	Measured Na M at 25°C	Measured Viscosity [cP] at 25°C	Predicted Viscosity [cP] at 25°C	% Diff b/n Meas & Pred Visc. at 25°C	Measured Viscosity [cP] at 60°C	Predicted Viscosity [cP] at 60°C	% Diff b/n Meas & Pred Visc. at 60°C
1-2	2.10	1.90	1.75	8.0%	2.01	1.41	1.40	0.0%	0.73	1.00	-36.3%
1-6	6.01	6.41	4.12	35.7%	6.70	4.31	3.31	4.0%	1.87	1.68	10.3%
1-8	7.29	10.22	5.36	47.5%	8.94	6.28	4.95	5.3%	2.47	1.94	21.4%
2-2	1.97	1.68	1.53	9.0%	2.10	1.27	1.05	0.9%	0.67	0.51	24.1%
2-6	5.80	4.50	3.69	18.0%	6.00	3.14	2.99	0.6%	1.44	1.36	5.3%
2-8	7.40	7.06	5.14	27.2%	8.00	4.79	4.04	3.0%	2.04	1.77	13.5%
3-2	2.02	1.62	1.50	7.6%	2.00	1.22	1.30	-0.3%	0.65	0.83	-27.7%
3-6	5.83	3.99	3.66	8.2%	6.09	2.92	2.48	1.7%	1.39	1.25	10.4%
3-8	7.63	6.63	5.35	19.3%	8.00	4.51	4.12	1.6%	2.07	1.85	10.8%
4-2	1.97	1.65	1.39	15.6%	2.20	1.25	1.05	0.8%	0.66	0.60	8.4%
4-6	5.62	3.89	3.90	-0.3%	6.46	2.83	2.89	-0.2%	1.33	1.29	3.1%
4-8	7.34	6.44	5.91	8.3%	8.43	4.22	4.65	-1.7%	1.91	1.91	-0.1%
5-2	2.09	1.65	1.46	11.2%	2.00	1.26	1.40	-0.5%	0.65	0.99	-52.8%
5-6	6.02	4.12	4.33	-5.0%	6.28	3.08	3.07	0.1%	1.40	1.68	-19.9%
5-8	7.87	7.07	6.76	4.4%	8.33	4.74	4.41	1.3%	2.06	2.10	-2.1%
6-2	2.01	1.54	1.30	15.7%	2.18	1.21	1.08	0.5%	0.64	0.52	19.3%
6-6	5.83	3.78	3.55	6.1%	6.00	2.76	2.99	-0.9%	1.32	1.37	-3.9%
6-8	7.62	6.48	5.31	18.1%	8.66	4.31	4.61	-1.2%	2.05	1.83	10.9%
7-2	2.14	1.92	1.73	9.9%	2.00	1.44	1.30	0.6%	0.72	0.85	-18.5%
7-6	6.25	6.76	4.62	31.7%	6.00	4.67	2.44	8.9%	1.88	1.34	28.7%
7-8	8.17	13.40	7.10	47.0%	8.00	8.47	4.12	17.4%	3.27	2.01	38.5%
8-2	2.02	1.50	1.13	24.9%	2.16	1.15	1.04	0.5%	0.62	0.61	1.0%
8-6	5.79	3.20	3.13	2.2%	6.60	2.39	2.97	-2.3%	1.21	1.33	-9.7%
8-8	7.56	5.09	4.63	9.1%	8.38	3.52	4.61	-4.3%	1.74	1.97	-13.5%
9-2	2.03	1.63	1.33	18.3%	2.13	1.25	1.44	-0.8%	0.66	0.98	-48.8%
9-6	5.95	4.37	3.73	14.6%	6.66	3.13	3.28	-0.6%	1.44	1.66	-15.5%
9-8	7.79	7.42	5.66	23.7%	7.74	4.95	3.95	4.0%	2.17	2.08	4.2%
10-2	2.07	1.70	1.27	25.5%	2.13	1.30	1.06	1.0%	0.67	0.53	21.2%
10-6	6.04	4.96	3.41	31.3%	6.55	3.55	3.38	0.7%	1.59	1.43	10.2%
10-8	7.90	9.51	5.05	46.9%	8.48	5.55	4.45	4.4%	2.47	1.91	22.7%
11-2	2.10	1.65	1.29	21.6%	2.25	1.19	1.39	-0.8%	0.67	0.85	-26.2%
11-6	6.14	4.69	3.70	21.2%	6.83	3.55	2.88	2.7%	1.54	1.32	14.6%
11-8	8.00	8.01	5.59	30.2%	8.44	5.39	4.50	3.5%	2.38	1.96	17.7%
12-2	2.07	1.66	1.50	9.8%	2.24	1.31	1.06	1.0%	0.67	0.62	7.1%
12-6	6.04	4.68	3.96	15.3%	6.77	3.43	3.07	1.4%	1.54	1.39	10.0%
12-8	7.89	7.95	5.95	25.1%	8.00	5.37	4.27	4.4%	2.21	2.07	6.2%

The thermal conductivity predictions for Envelope A were within +/-25% of all the measured values for the bottoms concentrate with a Na molarity between 2 and 8 except for 3 samples. This large discrepancy is due in part to the fact that the simulated conductivity is for the supernate only, whereas the measured conductivity is for the entire slurry (supernate plus solids). Prior modeling work[9] showed that the experimental conductivity has a standard deviation of 6.5% (about the value of water). The simulated conductivities are based on correction factors for the conductivity of water using various anions/cations as defined in Perry's Chemical Handbook.[15] The simulated conductivities for all envelopes fell within a 3% standard deviation of the value of water. Since the measurement error is higher than this value, the predicted conductivities cannot be distinguished from those of water. Therefore, there is no need to use the complicated prediction equation for conductivity when statistically a prediction for the conductivity of water is just as accurate. A complete list of the measured versus predicted conductivities is shown in Table 11.

Table 11. Comparison of Measured versus Predicted Conductivity for Envelope A

Envelope A Sample	Measured Conductivity [W/m°C] at 25°C	Predicted Conductivity [W/m°C] at 25°C	% Diff b/n measured & Predicted Conductivity
SM-55-01	0.531	0.571	-7.4%
SM-55-02	0.539	0.627	-16.5%
SM-55-04	0.474	0.591	-24.8%
SM-55-05	0.482	0.571	-18.5%
SM-55-06	0.512	0.627	-22.6%
SM-55-07	0.603	0.594	1.4%
SM-55-09	0.584	0.571	2.4%
SM-55-10	0.519	0.627	-21.0%
SM-55-12	0.576	0.591	-2.6%
SM-01-6M	0.445	0.564	-26.6%
SM-02-6M	0.547	0.623	-13.7%
SM-10-6M	0.486	0.622	-27.8%
SM-01-8M	0.513	0.585	-14.1%
SM-03-8M	0.504	0.572	-13.5%
SM-04-8M	0.348	0.579	-66.3%
SM-05-8M	0.523	0.586	-12.0%
SM-06-8M	0.485	0.575	-18.6%
SM-07-8M	0.559	0.572	-2.3%
SM-08-8M	0.499	0.579	-16.0%
SM-10-8M	0.500	0.576	-15.2%
SM-12-8M	0.542	0.580	-6.9%

The heat capacity predictions for Envelope A were within +/-15% of all the measured values for the bottoms concentrate with a Na molarity between 2 and 8 except for 4 samples. Part of the reason for the 4 points that exceeded +/-15% is that the experimental heat capacities are for the supernate, while those predicted are for the slurry (supernate plus solids). Analyses of the experimental samples show evidence of solids which in turn helps explain some of the deviation from predicted values. A complete listing of the measured versus predicted heat capacities is shown in Table 12.

Table 12. Comparison of Measured versus Predicted Cp for Envelope A

Envelope A Sample	Measured Cp [cal/g*K]	Predicted Cp [cal/g*K]	% Diff b/n measured & Predicted Cp
SM-55-01	0.849	0.840	1.1%
SM-55-02	0.862	0.812	5.8%
SM-55-04	0.865	0.829	4.2%
SM-55-05	0.876	0.841	4.0%
SM-55-06	0.860	0.811	5.7%
SM-55-07	0.872	0.831	4.8%
SM-55-08	0.858	0.830	3.2%
SM-55-09	0.994	0.837	15.8%
SM-55-10	0.871	0.812	6.8%
SM-55-12	0.857	0.828	3.4%
SM-01-6M	0.731	0.677	7.3%
SM-02-6M	0.836	0.735	12.0%
SM-03-6M	0.769	0.694	9.8%
SM-04-6M	0.780	0.705	9.7%
SM-05-6M	0.788	0.690	12.4%
SM-06-6M	0.388	0.735	-89.7%
SM-07-6M	0.792	0.696	12.1%
SM-08-6M	0.762	0.702	7.9%
SM-09-6M	0.759	0.678	10.7%
SM-10-6M	0.776	0.724	6.7%
SM-11-6M	0.773	0.679	12.2%
SM-01-8M	0.768	0.611	20.4%
SM-03-8M	0.736	0.680	7.7%
SM-04-8M	0.506	0.656	-29.6%
SM-05-8M	0.761	0.633	16.9%
SM-06-8M	0.734	0.649	11.7%
SM-07-8M	0.732	0.680	7.1%
SM-08-8M	0.712	0.657	7.8%
SM-10-8M	0.739	0.652	11.7%
SM-11-8M	0.764	0.673	11.9%
SM-12-8M	0.726	0.667	8.2%

The sodium molarity predictions for Envelope A were within +/-15% of the measured values for the bottoms concentrate with a Na molarity between 6 and 10. However, for the initial samples at 2 molar, the predicted values are within +/-50%. This discrepancy is due to the prediction being derived from data with Na M between 6 and 10, and thus should not be expected to do well when extrapolated down to 2 M. Another reason for the large discrepancy is that it is difficult to derive a predictive relationship relating waste feed composition (dry basis), SBS/Feed ratio, bottoms temperature, and bottoms density to bottoms Na molarity. The measured sodium molarities versus model predictions are shown in Table 13.

No accurate prediction equations for the solubility of the evaporator bottoms stream in terms of the total insoluble solids present could be derived in either linear or nonlinear forms for Envelopes A, B, or C. Several attempts were made to include nonlinear and linear terms in the prediction fits, but the waste feed compositions, SBS to waste Feed ratio, the bottoms temperature, and Na molarity did not provide enough data about this phenomena. However, some general observations were made from the simulations.

For Envelope A, about 35% of the simulated values (16 out of 336 total – including fit and validation points) had bottoms insoluble solids greater than 1 wt% but only about 10% of the simulated values (33 points) had insoluble solids greater than 2 wt%. Of this 10% segment, 64% of the values were between 2 wt% and 5 wt%, 9% of the values were between 5 wt% and 10 wt%, and 27% were between 10 wt% and 20wt%. The high weight percent insoluble solids were only observed at bottoms temperatures less than 20°C and sodium molarities greater than 8. The primary salts were sodium oxalate, sodium carbonate, sodium sulfate-carbonate, sodium fluoride, sodium aluminosilicate gelatin (NASGEL), and sodium nitrate. The sodium nitrate only came out at 10 M Na concentrations. For the simulated runs, NASGEL solids appear in the bottoms concentrate stream over a wider % range at 6 Na M than 8 Na M and 10 Na M as shown in Figure 3. In fact at 10 Na M, no NASGEL forms for the simulated runs performed. The NASGEL solids appear at all tested bottoms temperatures as shown in Figure 4. The SBS/Feed ratio has no effect on NASGEL formation at 10 Na M as shown in Figure 5. Increasing the SBS/Feed ratio above 1.75 slightly increases the chance of NASGEL formation as shown in Figure 6. Increasing the SBS/feed ratio above 0.5 greatly increases the chance of NASGEL formation at 6 Na M as shown in Figure 7. Please note that due to the variability in the data, a low Na M like 6 and a high SBS/Feed ratio does not guarantee that NASGEL will form. The experimental solids measurements from prior work[7] were only qualitative and not quantitative. This fact makes comparison of simulated solids predictions with experimental results difficult. However, Table 14 shows some simulated solids predictions for runs that have similar waste composition, SBS/Feed ratio, and Na M as some experimental runs as identified by the column *Experimental ID*. The table also shows various trends as Na M is increased with the same waste feed. A complete listing of all the simulated solids predictions for Envelope A is shown in Appendix B.

Table 13. Comparison of Measured versus Predicted Na M for Envelope A

Experimental ID	Measured Na M	Predicted Na M	%Diff Meas Na M& Pred Na M @25°C
1-INIT-A	2.10	1.23	41.5%
2-INIT-A	1.97	1.08	44.9%
3-INIT-A	2.02	1.49	26.5%
4-INIT-A	1.97	1.87	5.1%
5-INIT-A	2.09	1.98	5.4%
6-INIT-A	2.01	1.35	32.7%
7-INIT-A	2.14	1.64	23.5%
8-INIT-A	2.02	1.42	29.5%
9-INIT-A	2.03	1.44	29.3%
10-INIT-A	2.07	1.83	11.7%
11-INIT-A	2.10	1.52	27.5%
12-INIT-A	2.07	1.51	27.0%
1-6-A	6.01	6.39	-6.4%
2-6-A	5.80	5.84	-0.6%
3-6-A	5.83	6.23	-6.8%
4-6-A	5.62	6.13	-9.2%
5-6-A	6.02	6.38	-5.9%
6-6-A	5.83	6.31	-8.2%
7-6-A	6.25	6.83	-9.2%
8-6-A	5.79	6.26	-8.1%
9-6-A	5.95	6.69	-12.5%
10-6-A	6.04	6.85	-13.4%
11-6-A	6.14	6.55	-6.6%
12-6-A	6.04	6.52	-8.0%
1-8-A	7.29	7.78	-6.7%
2-8-A	7.40	7.71	-4.2%
3-8-A	7.63	8.29	-8.7%
4-8-A	7.34	7.96	-8.4%
5-8-A	7.87	8.28	-5.2%
6-8-A	7.62	8.42	-10.5%
7-8-A	8.17	9.03	-10.5%
8-8-A	7.56	8.38	-10.8%
9-8-A	7.79	9.01	-15.6%
10-8-A	7.90	9.04	-14.5%
11-8-A	8.00	8.58	-7.3%
12-8-A	7.89	8.64	-9.6%

Table 13. Comparison of Measured versus Predicted Na M for Envelope A (cont'd)

Experimental ID	Measured Na M	Predicted Na M	%Diff Meas Na M& Pred Na M @25°C
1-10-A	11.70	12.36	-5.6%
2-10-A	10.39	10.88	-4.7%
3-10-A	10.70	11.56	-8.0%
4-10-A	10.40	11.03	-6.0%
5-10-A	11.09	11.31	-2.0%
6-10-A	10.67	11.73	-10.0%
7-10-A	11.39	12.57	-10.4%
8-10-A	10.61	11.57	-9.0%
9-10-A	12.00	11.97	0.2%
10-10-A	11.06	12.49	-12.9%
11-10-A	11.22	12.06	-7.5%
12-10-A	11.05	12.06	-9.2%

Table 14. Predicted Solids for Envelope A Simulations – Part 1

Experi-mental ID	Sim. Point Type	Sim. ID	Temp	SBS/ Feed	Na M	ALOH3 [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]	NA2C2O4 [g]	NA2CO3.1H2O [g]	NA2U2O7 [g]	NA3FSO4 [g]	NA6SO42CO3 [g]	NAF [g]
SM-55-10	MPV	10EA035	15.0	2.0	10	0	0	0	0	321	51	0	0	75	727	0	0	0	0	7542
SM-55-10	MPV	8EA035	15.0	2.0	8	0	0	0	336	0	50	0	1448	75	607	0	0	0	0	5532
SM-55-10	MPV	6EA035	15.0	2.0	6	0	0	0	338	0	51	0	0	75	303	0	0	0	0	1841
SM-55-09	OLH	10EA084	15.9	0.3	10	0	0	0	0	53	8	0	0	12	1127	0	0	0	0	9985
SM-55-09	OLH	8EA084	15.9	0.3	8	0	0	0	55	0	8	0	0	12	972	0	0	0	0	8017
SM-55-09	OLH	6EA084	15.9	0.3	6	3318	0	0	56	0	8	0	0	12	618	0	0	0	0	4038
SM-55-09	OLH	10EA100	23.0	1.6	10	0	0	0	0	287	45	0	0	67	1089	0	4.24E-07	6894	0	0
SM-55-09	OLH	8EA100	23.0	1.6	8	0	0	0	0	285	45	0	0	67	907	0	4.04E-07	3393	0	0
SM-55-09	OLH	6EA100	23.0	1.6	6	0	375	0	11	0	45	0	0	67	429	0	2.46E-07	0	0	0
SM-55-12	MPV	10EA037	15.0	2.0	10	0	0	0	0	362	57	0	0	85	1394	0	3.09E-05	0	0	0
SM-55-01	MPV	8EA037	15.0	2.0	8	0	0	0	0	360	57	0	0	85	1220	5020	3.04E-05	0	0	0
SM-55-12	MPV	6EA037	15.0	2.0	6	6421	0	484	0		57	0	0	85	861	25304	2.90E-05	0	0	0
SM-55-01	MPV	10EA067	66.0	2.0	10	0	0	0	0	361	57	0	0	85	931	16857	0	0	18151	0
SM-55-12	MPV	8EA067	66.0	2.0	8	0	0	486	0	0	57	12	0	85	309	0	0	0	10990	0
SM-55-01	MPV	6EA067	66.0	2.0	6	0	0	486	0	0	57	28	0	85	0	0	0	0	0	0
SM-55-12	MPV	10EA077	66.0	2.0	10	0	0	0	0	361	57		0	85	931	16857	0	0	18151	0
SM-55-01	MPV	8EA077	66.0	2.0	8	0	0	486	0	0	57	12	0	85	309	0	0	0	10990	0
SM-55-12	MPV	6EA077	66.0	2.0	6	0	0	486	0	0	57	28	0	85	0	0	0	0	0	0
SM-55-02	MPV	10EA066	66.0	2.0	10	0	0	0	373	0	56	5	0	83	969	0	0	0	17478	9692
SM-55-03	MPV	8EA066	66.0	2.0	8	0	0	0	374	0	56	25	0	83	332	0	0	0	8824	6829
SM-55-02	MPV	6EA066	66.0	2.0	6	0	0	0	375	0	56	37	0	83	0	0	0	0	0	418
SM-55-03	MPV	10EA076	66.0	2.0	10	0	0	0	373	0	56	5	0	83	969	0	0	0	17478	9692
SM-55-02	MPV	8EA076	66.0	2.0	8	0	0	0	374	0	56	25	0	83	332	0	0	0	8824	6829
SM-55-03	MPV	6EA076	66.0	2.0	6	0	0	0	375	0	56	37	0	83	0	0	0	0	0	418
SM-55-04	MPV	10EA061	66.0	2.0	10	0	0	0	0	315	50	0	0	74	214	0	0	0	13876	0
SM-55-05	MPV	8EA061	66.0	2.0	8	0	0	0	0	313	50	0	0	74	0	0	0	0	4085	0
SM-55-04	MPV	6EA061	66.0	2.0	6	0	435	0	0	0	50	0	0	74	0	0	0	0	0	0
SM-55-05	MPV	10EA062	66.0	2.0	10	0	0	0	0	319	50	0	0	75	202	0	0	0	13992	0
SM-55-04	MPV	8EA062	66.0	2.0	8	0	0	0	0	318	50	0	0	75	0	0	0	0	4339	0

Table 14. Predicted Solids from Envelope A Simulations – Part 1 (cont'd)

Experi-mental ID	Sim. Point Type	Sim. ID	Temp	SBS/ Feed	Na M	ALOH3 [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]	NA2C2O4 [g]	NA2CO3.1H2O [g]	NA2U2O7 [g]	NA3FSO4 [g]	NA6SO42CO3 [g]	NAF [g]
SM-55-05	MPV	6EA062	66.0	2.0	6	0	440	0	0	0	50	0	0	75	0	0	0	0	0	0
SM-55-04	MPV	10EA071	66.0	2.0	10	0	0	0	0	315	50	0	0	74	214	0	0	0	13876	0
SM-55-05	MPV	8EA071	66.0	2.0	8	0	0	0	0	313	50	0	0	74	0	0	0	0	4085	0
SM-55-04	MPV	6EA071	66.0	2.0	6	0	435	0	0	0	50	0	0	74	0	0	0	0	0	0
SM-55-05	MPV	10EA072	66.0	2.0	10	0	0	0	0	319	50	0	0	75	202	0	0	0	13992	0
SM-55-04	MPV	8EA072	66.0	2.0	8	0	0	0	0	318	50	0	0	75	0	0	0	0	4339	0
SM-55-05	MPV	6EA072	66.0	2.0	6	0	440	0	0	0	50	0	0	75	0	0	0	0	0	0
SM-55-06	MPV	10EA064	66.0	2.0	10	0	0	0	0	340	54	0	0	80	471	0	0	0	4966	7849
SM-55-06	MPV	8EA064	66.0	2.0	8	0	0	0	358	0	54	0	0	80	0	0	0	0	0	4794
SM-55-06	MPV	6EA064	66.0	2.0	6	0	0	0	359	0	54	18	0	80	0	0	0	0	0	
SM-55-06	MPV	10EA074	66.0	2.0	10	0	0	0	0	340	54	0	0	80	471	0	0	0	4966	7849
SM-55-06	MPV	8EA074	66.0	2.0	8	0	0	0	358	0	54	0	0	80	0	0	0	0	0	4794
SM-55-06	MPV	6EA074	66.0	2.0	6	0	0	0	359	0	54	18	0	80	0	0	0	0	0	0
SM-55-06	OLH	10EA138	43.2	1.8	10	0	0	0	335	0	50	0	0	75	1113	0	8.69E-06	0	15423	1190
SM-55-06	OLH	8EA138	43.2	1.8	8	0	0	0	335	0	50	0	0	75	705	0	0	0	380	0
SM-55-06	OLH	6EA138	43.2	1.8	6	0	0	0	333	0	50	0	0	75	0	0	0	0	0	0
SM-55-07	MPV	10EA070	66.0	2.0	10	0	0	0	0	337	53	0	0	79	414	0	0	0	7758	6630
SM-55-07	MPV	8EA070	66.0	2.0	8	0	0	0	354	0	53	0	0	79	27	0	0	0	0	3986
SM-55-07	MPV	6EA070	66.0	2.0	6	0	0	0	355	0	53	0	0	79	0	0	0	0	0	0
SM-55-07	MPV	10EA080	66.0	2.0	10	0	0	0	0	337	53	0	0	79	414	0	0	0	7758	6630
SM-55-07	MPV	8EA080	66.0	2.0	8	0	0	0	354	0	53	0	0	79	27	0	0	0	0	3986
SM-55-07	MPV	6EA080	66.0	2.0	6	0	0	0	355	0	53	0	0	79	0	0	0	0	0	0
SM-55-08	MPV	10EA063	66.0	2.0	10	0	0	0	0	352	56	0	0	83	494	0	0	0	2511	0
SM-55-08	MPV	8EA063	66.0	2.0	8	0	491	0	0	0	56	21	0	83	0	0	0	0	0	0
SM-55-08	MPV	6EA063	66.0	2.0	6	0	490	0	0	0	56	35	0	83	0	0	0	0	0	0
SM-55-08	MPV	10EA073	66.0	2.0	10	0	0	0	0	352	56	0	0	83	494	0	0	0	2511	0
SM-55-08	MPV	8EA073	66.0	2.0	8	0	491	0	0	0	56	21	0	83	0	0	0	0	0	0
SM-55-08	MPV	6EA073	66.0	2.0	6	0	490	0	0	0	56	35	0	83	0	0	0	0	0	0
SM-55-09	MPV	10EA068	66.0	2.0	10	0	498	0	0	0	57	0	0	84	584	0	0	0	7050	0

Table 14. Predicted Solids from Envelope A Simulations – Part 1 (cont'd)

Experi-mental ID	Sim. Point Type	Sim. ID	Temp	SBS/ Feed	Na M	ALOH3 [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]	NA2C2O4 [g]	NA2CO3.1H2O [g]	NA2U2O7 [g]	NA3FSO4 [g]	NA6SO42CO3 [g]	NAF [g]
SM-55-09	MPV	8EA068	66.0	2.0	8	0	498	0	0	0	57	5	0	84	51	0	0	0	0	0
SM-55-09	MPV	6EA068	66.0	2.0	6	0	496	0	0	0	57	24	0	84	0	0	0	0	0	0
SM-55-09	MPV	10EA078	66.0	2.0	10	0	498	0	0	0	57	0	0	84	584	0	0	0	7050	0
SM-55-09	MPV	8EA078	66.0	2.0	8	0	498	0	0	0	57	5	0	84	51	0	0	0	0	0
SM-55-09	MPV	6EA078	66.0	2.0	6	0	496	0	0	0	57	24	0	84	0	0	0	0	0	0
SM-55-09	OLH	10EA166	54.1	1.3	10	0	0	0	0	224	36	0	0	53	823	0	1.19E-07	0	13589	547
SM-55-09	OLH	8EA166	54.1	1.3	8	0	48	0	198	0	36	0	0	53	399	0	0	0	0	0
SM-55-09	OLH	6EA166	54.1	1.3	6	0	309	0	0	0	36	0	0	53	0	0	0	0	0	0
SM-55-10	MPV	10EA065	66.0	2.0	10	0	0	0	0	320	51	0	0	75	381	0	0	0	5419	6439
SM-55-10	MPV	8EA065	66.0	2.0	8	0	0	0	337	0	51	0	0	75	0	0	0	0	0	3634
SM-55-10	MPV	6EA065	66.0	2.0	6	0	0	0	338	0	51	9	0	75	0	0	0	0	0	0
SM-55-10	MPV	10EA075	66.0	2.0	10	0	0	0	0	320	51	0	0	75	381	0	0	0	5419	6439
SM-55-10	MPV	8EA075	66.0	2.0	8	0	0	0	337	0	51	0	0	75	0	0	0	0	0	3634
SM-55-10	MPV	6EA075	66.0	2.0	6	0	0	0	338	0	51	9	0	75	0	0	0	0	0	0
SM-55-10	OLH	10EA142	44.2	1.8	10	0	0	0	322	0	48	0	0	72	913	0	0	0	5681	8866
SM-55-10	OLH	8EA142	44.2	1.8	8	0	0	0	322	0	48	0	0	72	563	0	0	0	0	6371
SM-55-10	OLH	6EA142	44.2	1.8	6	0	0	0	322	0	48	0	0	72	0	0	0	0	0	931
SM-55-11	MPV	10EA069	66.0	2.0	10	0	483	0	0	0	55	0	0	82	528	0	0	0	9773	0
SM-55-11	MPV	8EA069	66.0	2.0	8	0	482	0	0	0	55	0	0	82	60	0	0	0	0	0
SM-55-11	MPV	6EA069	66.0	2.0	6	0	481	0	0	0	55	17	0	82	0	0	0	0	0	0
SM-55-11	MPV	10EA079	66.0	2.0	10	0	483	0	0	0	55	0	0	82	528	0	0	0	9773	0
SM-55-11	MPV	8EA079	66.0	2.0	8	0	482	0	0	0	55	0	0	82	60	0	0	0	0	0
SM-55-11	MPV	6EA079	66.0	2.0	6	0	481	0	0	0	55	17	0	82	0	0	0	0	0	0
SM-55-11	OLH	10EA153	47.1	1.3	10	0	0	0	0	220	35	0	0	52	753	0	0	0	10556	7013
SM-55-11	OLH	8EA153	47.1	1.3	8	0	0	0	231	0	35	0	0	52	456	0	0	0	0	4599
SM-55-11	OLH	6EA153	47.1	1.3	6	0	0	0	232	0	35	0	0	52	0	0	0	0	0	0

Table 15. Predicted Solids from Envelope A Simulations – Part 2

Experimental ID	Simulation Point Type	Simulation ID	Temp	SBS/Feed	Na M	NAFPO4.19H2O [g]	NANO3 [g]	NAPHOH.12H2O [g]	NASGEL.15.5H2O [g]	ZRO2 [g]	Total Insoluble Solids [g]	Total Soln Mass [g]	Insoluble Solids % of Total Soln
SM-55-10	MPV	10EA035	15.0	2.0	10	0	0	442	0	0	9157	1063410	0.9%
SM-55-10	MPV	8EA035	15.0	2.0	8	0	0	1693	0	0	9741	1260550	0.8%
SM-55-10	MPV	6EA035	15.0	2.0	6	0	0	598	1014	0	4219	1606820	0.3%
SM-55-09	OLH	10EA084	15.9	0.3	10	0	78089	2551	0	0	91825	1010770	9.1%
SM-55-09	OLH	8EA084	15.9	0.3	8	0	0	1852	0	0	10918	1267330	0.9%
SM-55-09	OLH	6EA084	15.9	0.3	6	0	0	818	0	0	8868	1614340	0.5%
SM-55-09	OLH	10EA100	23.0	1.6	10	0	0	0	0	0	8383	1111410	0.8%
SM-55-09	OLH	8EA100	23.0	1.6	8	1288	0	0	0	0	5986	1327270	0.5%
SM-55-09	OLH	6EA100	23.0	1.6	6	0	0	0	1231	0	2160	1680660	0.1%
SM-55-12	MPV	10EA037	15.0	2.0	10	0	0	0	0	0	1897	1146220	0.2%
SM-55-01	MPV	8EA037	15.0	2.0	8	0	0	0	473	0	7216	1358540	0.5%
SM-55-12	MPV	6EA037	15.0	2.0	6	0	0	0	1513	0	34725	1682650	2.1%
SM-55-01	MPV	10EA067	66.0	2.0	10	0	0	0	0	2	36444	1040280	3.5%
SM-55-12	MPV	8EA067	66.0	2.0	8	0	0	0	0	1	11940	1278210	0.9%
SM-55-01	MPV	6EA067	66.0	2.0	6	0	0	0	1380	1	2036	1640640	0.1%
SM-55-12	MPV	10EA077	66.0	2.0	10	0	0	0	0	2	36444	1040280	3.5%
SM-55-01	MPV	8EA077	66.0	2.0	8	0	0	0	0	1	11940	1278210	0.9%
SM-55-12	MPV	6EA077	66.0	2.0	6	0	0	0	1380	1	2036	1640640	0.1%
SM-55-02	MPV	10EA066	66.0	2.0	10	0	0	0	0	2	28659	1024260	2.8%
SM-55-03	MPV	8EA066	66.0	2.0	8	0	0	0	542	2	17069	1244260	1.4%
SM-55-02	MPV	6EA066	66.0	2.0	6	0	0	0	1476	2	2447	1615790	0.2%
SM-55-03	MPV	10EA076	66.0	2.0	10	0	0	0	0	2	28659	1024260	2.8%
SM-55-02	MPV	8EA076	66.0	2.0	8	0	0	0	542	2	17069	1244260	1.4%
SM-55-03	MPV	6EA076	66.0	2.0	6	0	0	0	1476	2	2447	1615790	0.2%
SM-55-04	MPV	10EA061	66.0	2.0	10	0	0	0	0	0	14528	1024620	1.4%
SM-55-05	MPV	8EA061	66.0	2.0	8	0	0	0	0	0	4521	1239210	0.4%
SM-55-04	MPV	6EA061	66.0	2.0	6	0	0	0	0	0	558	1580500	0.0%
SM-55-05	MPV	10EA062	66.0	2.0	10	0	0	0	0	0	14637	1041660	1.4%
SM-55-04	MPV	8EA062	66.0	2.0	8	0	0	0	0	0	4781	1259580	0.4%
SM-55-05	MPV	6EA062	66.0	2.0	6	0	0	0	0	0	565	1607210	0.0%

Table 15. Predicted Solids from Envelope A Simulations – Part 2 (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp	SBS/Feed	Na M	NAFPO4.19H2O [g]	NANO3 [g]	NAPHOH.12H2O [g]	NASGEL.15.5H2O [g]	ZRO2 [g]	Total Insoluble Solids [g]	Total Soln Mass [g]	Insoluble Solids % of Total Soln
SM-55-04	MPV	10EA071	66.0	2.0	10	0	0	0	0	0	14528	1024620	1.4%
SM-55-05	MPV	8EA071	66.0	2.0	8	0	0	0	0	0	4521	1239210	0.4%
SM-55-04	MPV	6EA071	66.0	2.0	6	0	0	0	0	0	558	1580500	0.0%
SM-55-05	MPV	10EA072	66.0	2.0	10	0	0	0	0	0	14637	1041660	1.4%
SM-55-04	MPV	8EA072	66.0	2.0	8	0	0	0	0	0	4781	1259580	0.4%
SM-55-05	MPV	6EA072	66.0	2.0	6	0	0	0	0	0	565	1607210	0.0%
SM-55-06	MPV	10EA064	66.0	2.0	10	0	0	0	0	2	13760	1037530	1.3%
SM-55-06	MPV	8EA064	66.0	2.0	8	0	0	0	0	1	5286	1251370	0.4%
SM-55-06	MPV	6EA064	66.0	2.0	6	0	0	0	733	0	1244	1599360	0.1%
SM-55-06	MPV	10EA074	66.0	2.0	10	0	0	0	0	2	13760	1037530	1.3%
SM-55-06	MPV	8EA074	66.0	2.0	8	0	0	0	0	1	5286	1251370	0.4%
SM-55-06	MPV	6EA074	66.0	2.0	6	0	0	0	733	0	1244	1599360	0.1%
SM-55-06	OLH	10EA138	43.2	1.8	10	0	0	0	0	0	18185	1077310	1.7%
SM-55-06	OLH	8EA138	43.2	1.8	8	0	0	0	0	0	1545	1311840	0.1%
SM-55-06	OLH	6EA138	43.2	1.8	6	0	0	0	1232	0	1690	1659720	0.1%
SM-55-07	MPV	10EA070	66.0	2.0	10	0	0	0	0	0	15272	1030910	1.5%
SM-55-07	MPV	8EA070	66.0	2.0	8	0	0	0	0	0	4500	1248220	0.4%
SM-55-07	MPV	6EA070	66.0	2.0	6	0	0	0	664	0	1151	1592410	0.1%
SM-55-07	MPV	10EA080	66.0	2.0	10	0	0	0	0	0	15272	1030910	1.5%
SM-55-07	MPV	8EA080	66.0	2.0	8	0	0	0	0	0	4500	1248220	0.4%
SM-55-07	MPV	6EA080	66.0	2.0	6	0	0	0	664	0	1151	1592410	0.1%
SM-55-08	MPV	10EA063	66.0	2.0	10	0	0	0	0	3	3498	1075780	0.3%
SM-55-08	MPV	8EA063	66.0	2.0	8	0	0	0	0	2	653	1287540	0.1%
SM-55-08	MPV	6EA063	66.0	2.0	6	0	0	0	1310	2	1975	1629160	0.1%
SM-55-08	MPV	10EA073	66.0	2.0	10	0	0	0	0	3	3498	1075780	0.3%
SM-55-08	MPV	8EA073	66.0	2.0	8	0	0	0	0	2	653	1287540	0.1%
SM-55-08	MPV	6EA073	66.0	2.0	6	0	0	0	1310	2	1975	1629160	0.1%
SM-55-09	MPV	10EA068	66.0	2.0	10	0	0	0	0	2	8275	1081440	0.8%
SM-55-09	MPV	8EA068	66.0	2.0	8	0	0	0	0	1	696	1298520	0.1%
SM-55-09	MPV	6EA068	66.0	2.0	6	0	0	0	1201	1	1864	1640040	0.1%

Table 15. Predicted Solids from Envelope A Simulations – Part 2 (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp	SBS/Feed	Na M	NAFPO4.19H2O [g]	NANO3 [g]	NAPHOH.12H2O [g]	NASGEL.15.5H2O [g]	ZRO2 [g]	Total Insoluble Solids [g]	Total Soln Mass [g]	Insoluble Solids % of Total Soln
SM-55-09	MPV	10EA078	66.0	2.0	10	0	0	0	0	2	8275	1081440	0.8%
SM-55-09	MPV	8EA078	66.0	2.0	8	0	0	0	0	1	696	1298520	0.1%
SM-55-09	MPV	6EA078	66.0	2.0	6	0	0	0	1201	1	1864	1640040	0.1%
SM-55-09	OLH	10EA166	54.1	1.3	10	0	0	0	0		15271	1056870	1.4%
SM-55-09	OLH	8EA166	54.1	1.3	8	0	0	0	0		733	1282420	0.1%
SM-55-09	OLH	6EA166	54.1	1.3	6	0	0	0	625		1022	1622340	0.1%
SM-55-10	MPV	10EA065	66.0	2.0	10	0	0	0	0	1	12686	1003030	1.3%
SM-55-10	MPV	8EA065	66.0	2.0	8	0	0	0	0	0	4097	1214500	0.3%
SM-55-10	MPV	6EA065	66.0	2.0	6	0	0	0	152	0	625	1552640	0.0%
SM-55-10	MPV	10EA075	66.0	2.0	10	0	0	0	0	1	12686	1003030	1.3%
SM-55-10	MPV	8EA075	66.0	2.0	8	0	0	0	0	0	4097	1214500	0.3%
SM-55-10	MPV	6EA075	66.0	2.0	6	0	0	0	152	0	625	1552640	0.0%
SM-55-10	OLH	10EA142	44.2	1.8	10	0	0	0	0	0	15901	1065420	1.5%
SM-55-10	OLH	8EA142	44.2	1.8	8	0	0	0	0	0	7376	1284360	0.6%
SM-55-10	OLH	6EA142	44.2	1.8	6	0	0	0	1220	0	2593	1642590	0.2%
SM-55-11	MPV	10EA069	66.0	2.0	10	0	0	0	0	1	10921	1062980	1.0%
SM-55-11	MPV	8EA069	66.0	2.0	8	0	0	0	0	1	679	1284020	0.1%
SM-55-11	MPV	6EA069	66.0	2.0	6	0	0	0	1096	0	1730	1624750	0.1%
SM-55-11	MPV	10EA079	66.0	2.0	10	0	0	0	0	1	10921	1062980	1.0%
SM-55-11	MPV	8EA079	66.0	2.0	8	0	0	0	0	1	679	1284020	0.1%
SM-55-11	MPV	6EA079	66.0	2.0	6	0	0	0	1096	0	1730	1624750	0.1%
SM-55-11	OLH	10EA153	47.1	1.3	10	0	0	0	0	0	18628	1036670	1.8%
SM-55-11	OLH	8EA153	47.1	1.3	8	0	0	0	0	0	5373	1257080	0.4%
SM-55-11	OLH	6EA153	47.1	1.3	6	0	0	0	581	0	899	1605420	0.1%

The density predictions for Envelope B were within +/-5% of the measured values for the bottoms concentrate with a Na molarity between 1.2 and 8. All the simulated and measured values are shown in Table 16.

Table 16. Comparison of Measured and Predicted Densities for Envelope B

Temperature Degrees C	Measured Density [g/ml]				Predicted Density [g/ml]				% Difference b/n Meas & Pred Density			
	15	25	50	65	15	25	50	65	15	25	50	65
1-INIT	1.090	1.086	1.074	1.065	1.083	1.072	1.044	1.028	0.7%	1.3%	2.8%	3.5%
2-INIT	1.067	1.064	1.052	1.044	1.095	1.084	1.056	1.040	-2.6%	-1.9%	-0.4%	0.4%
3-INIT	1.092	1.088	1.076	1.067	1.105	1.094	1.067	1.050	-1.2%	-0.6%	0.9%	1.6%
4-INIT	1.069	1.065	1.054	1.045	1.113	1.102	1.074	1.057	-4.1%	-3.4%	-1.9%	-1.1%
1-3-B	1.157	1.153	1.139	1.127	1.158	1.147	1.119	1.103	-0.1%	0.5%	1.7%	2.2%
2-3-B	1.149	1.145	1.134	1.125	1.162	1.151	1.123	1.106	-1.1%	-0.5%	1.0%	1.6%
3-3-B	1.157	1.152	1.138	1.129	1.176	1.165	1.138	1.121	-1.7%	-1.2%	0.0%	0.7%
4-3-B	1.149	1.144	1.132	1.124	1.180	1.169	1.141	1.125	-2.7%	-2.2%	-0.8%	-0.1%
1-5-B	1.238	1.236	1.226	1.209	1.242	1.231	1.203	1.186	-0.3%	0.5%	1.9%	1.9%
2-5-B	1.247	1.243	1.225	1.214	1.263	1.252	1.225	1.208	-1.4%	-0.7%	0.0%	0.5%
3-5-B	1.248	1.242	1.226	1.216	1.260	1.249	1.221	1.204	-1.0%	-0.6%	0.4%	0.9%
4-5-B	1.235	1.229	1.215	1.206	1.291	1.279	1.252	1.235	-4.5%	-4.1%	-3.0%	-2.4%
1-8-B	1.392	1.383	1.364	1.350	1.367	1.356	1.328	1.312	1.8%	1.9%	2.6%	2.8%
2-8-B	1.367	1.363	1.348	1.341	1.395	1.384	1.357	1.340	-2.1%	-1.6%	-0.6%	0.1%
3-8-B	1.407	1.402	1.381	1.368	1.385	1.374	1.346	1.330	1.6%	2.0%	2.5%	2.8%
4-8-B	1.360	1.362	1.356	1.348	1.401	1.390	1.363	1.346	-3.0%	-2.1%	-0.5%	0.2%

The viscosity predictions for Envelope B did not match the experimental values as well as those for Envelope A. At a temperature of 15°C the predicted viscosity varied +/-60% of the measured value. At a temperature of 25°C the predicted viscosity varied +/-70% of the measured value. At a temperature of 60°C the predicted viscosity varied +/-50% of the measured value. These bad matches are all at points less than 6 Na M and the viscosity prediction model was based on bottoms concentrate ranging from 6 to 10 M Na. It is also expected that the lower and higher temperature extremes produced solids that are not accounted for by the viscosity prediction since it is based only on the supernate phase of the bottoms concentrate. To obtain a better predictor of viscosity, an accurate count of the solids in each sample plus a solids correction term derived from experimental results would need to be included. Prior modeling work[9] for the waste feed evaporator showed that when the supernate viscosity was measured experimentally and compared with modeling predictions there was relatively good agreement (within +/- 15%). A complete listing of the measured versus predicted viscosities is shown in Table 17.

Table 17. Comparison of Measured versus Predicted Viscosities for Envelope B

Envelope B Sample	Measured Na M	Measured Viscosity [cP] at 15°C	Predicted Viscosity [cP] at 15°C	% Diff b/n Meas & Pred Visc. at 15°C	Measured Viscosity [cP] at 25°C	Predicted Viscosity [cP] at 25°C	% Diff b/n Meas & Pred Visc. at 25°C	Measured Viscosity [cP] at 60°C	Predicted Viscosity [cP] at 60°C	% Diff b/n Meas & Pred Visc. at 60°C
1-2 (INIT)	1.40	1.33	0.97	27.1%	1.05	0.48	54.7%	0.59	0.47	20.3%
1-3	3.00	1.88	2.17	-15.2%	1.42	1.32	6.8%	0.74	0.87	-17.9%
1-5	5.48	2.80	4.47	-59.6%	2.11	2.83	-33.9%	1.04	1.51	-45.4%
1-8	8.59	6.94	8.75	-26.0%	4.80	5.30	-10.4%	2	2.37	-18.7%
2-2 (INIT)	1.39	1.40	0.91	35.3%	1.08	0.60	44.5%	0.57	0.38	32.5%
2-3	3.00	2.01	1.87	7.0%	1.56	1.35	13.5%	0.8	0.78	2.7%
2-5	5.64	3.60	3.70	-2.8%	2.64	2.69	-1.8%	1.29	1.44	-11.2%
2-8	8.30	7.47	6.10	18.4%	5.19	4.27	17.8%	2.14	2.12	1.0%
3-2 (INIT)	1.20	1.43	0.83	41.7%	1.14	0.38	67.0%	0.61	0.42	30.9%
3-3	3.00	1.93	2.17	-12.2%	1.52	1.32	13.0%	0.8	0.87	-9.0%
3-5	5.00	3.00	3.97	-32.4%	2.32	2.51	-8.3%	1.11	1.39	-25.0%
3-8	8.00	8.07	7.77	3.7%	5.52	4.76	13.7%	2.33	2.20	5.4%
4-2 (INIT)	1.30	1.54	0.86	44.4%	1.42	0.56	60.6%	0.66	0.36	45.0%
4-3	3.00	2.04	1.87	8.4%	1.59	1.35	15.1%	0.83	0.78	6.2%
4-5	5.00	3.46	3.22	7.0%	2.65	2.35	11.4%	1.3	1.27	2.0%
4-8	8.00	8.61	5.79	32.8%	5.64	4.07	27.8%	2.44	2.04	16.4%

The thermal conductivity predictions for Envelope B were within +/-25% of the measured values for the bottoms concentrate with a Na molarity between 1.2 and 5 except for four samples. This large discrepancy is due in part that the simulated conductivity is for the supernate only, whereas the measured conductivity is for the entire slurry (supernate plus solids). Prior modeling work[9] showed that the experimental conductivity has a standard deviation of 6.5% (about the value of water). The simulated conductivities are based on correction factors for the conductivity of water using various anions/cations as defined in Perry's Chemical Handbook.[15] The simulated conductivities for all envelopes fell within a 3% standard deviation of the value of water. Since the measurement error is higher than this value, the predicted conductivities cannot be distinguished from those of water. Therefore there is no need to use the complicated prediction equation for conductivity when statistically a prediction for the conductivity of water is just as accurate. A complete list of the measured versus predicted conductivities is shown in Table 18.

Table 18. Comparison of Measured versus Predicted Conductivity for Envelope B

Envelope B Sample	Measured Conductivity [W/m°C] at 25°C	Predicted Conductivity [W/m°C] at 25°C	% Diff b/n measured & Predicted Conductivity
1-IN-B	0.514	0.592	-15.3%
2-IN-B	0.474	0.592	-24.8%
3-IN-B	0.504	0.583	-15.7%
4-IN-B	0.472	0.582	-23.2%
1-3-B	0.428	0.590	-37.8%
2-3-B	0.466	0.589	-26.5%
3-3-B	0.466	0.578	-23.9%
4-3-B	0.475	0.577	-21.5%
1-5-B	0.434	0.587	-35.3%
2-5-B	0.444	0.585	-31.8%
3-5-B	0.538	0.572	-6.4%
4-5-B	0.512	0.570	-11.4%

The heat capacity predictions for Envelope B were within +/-15% of the measured values for the bottoms concentrate with a Na molarity between 1.2 and 5. Table 19 shows a complete listing of the measured versus predicted values for Envelope B.

Table 19. Comparison of Measured versus Predicted Cp for Envelope B

Envelope B Sample	Measured Conductivity [W/m°C] at 25°C	Predicted Conductivity [W/m°C] at 25°C	% Diff b/n measured & Predicted Conductivity
1-IN-B	0.514	0.592	-15.3%
2-IN-B	0.474	0.592	-24.8%
3-IN-B	0.504	0.583	-15.7%
4-IN-B	0.472	0.582	-23.2%
1-3-B	0.428	0.590	-37.8%
2-3-B	0.466	0.589	-26.5%
3-3-B	0.466	0.578	-23.9%
4-3-B	0.475	0.577	-21.5%
1-5-B	0.434	0.587	-35.3%
2-5-B	0.444	0.585	-31.8%
3-5-B	0.538	0.572	-6.4%
4-5-B	0.512	0.570	-11.4%

The sodium molarity predictions for Envelope B were within +/-15% of the measured values for the bottoms concentrate with a Na molarity between 6 and 10. . However, for the initial samples at 2 molar, the predicted values are within +/-55%. This discrepancy is again due to the fact that the model prediction was based on simulated data with Na M between 6 and 10. Another reason for the large discrepancy is that it is difficult to derive a predictive relationship relating waste feed composition (dry basis), SBS/Feed ratio, bottoms temperature, and bottoms density to bottoms Na molarity. A complete listing of the measured versus predicted Na molarities is shown in Table 20.

Table 20. Comparison of Measured versus Predicted Na M for Envelope B

Experimental ID	Measured Na M	Predicted Na M	%Diff Meas Na M & Pred Na M @25°C
1-INIT	1.2	1.9	-54.4%
2-INIT	1.4	1.8	-26.9%
3-INIT	1.3	1.9	-47.4%
4-INIT	1.4	1.3	4.0%
1-3-B	3.0	3.7	-24.0%
2-3-B	3.0	3.1	-2.0%
3-3-B	3.0	3.3	-8.5%
4-3-B	3.0	3.0	0.0%
1-5-B	5.0	5.5	-9.5%
2-5-B	5.4	5.3	1.9%
3-5-B	5.0	5.2	-3.1%
4-5-B	5.6	4.8	15.1%
1-8-B	8.0	8.6	-7.5%
2-8-B	8.6	8.1	5.6%
3-8-B	8.0	8.6	-7.6%
4-8-B	8.3	7.7	7.7%

No accurate prediction equations for the solubility of the evaporator bottoms stream in terms of the total insoluble solids present could be derived for Envelopes A, B, or C. Several attempts were made to include nonlinear and linear terms in the prediction fits, but the waste feed compositions, SBS to waste feed ratio, the bottoms temperature and Na molarity did not provide enough data to characterize these phenomena. However, some general observations were made from the simulations. For Envelope B, about 21% of the simulated values (83 out of 399 total – including fit and validation points) had bottoms insoluble solids greater than 1 wt% but only about 11% of the simulated values (42 points) had insoluble solids greater than 2 wt%. None of the predicted values went over 3 wt%. The insoluble solids only went above 2 wt% when the Na molarity went above 8 M. At 6 M Na the solids stayed below 1 wt%, at 8 M the solids stayed below 2 wt%, and at 10 M Na the solids stayed below 3 wt%. More solids appear to come out between 20 °C and 40 °C than the other temperatures. The primary salts were aluminum hydroxide, sodium oxalate, sodium fluorosulfate, and sodium fluoride. For further comparison with experimental results, Table 21 was created which shows simulated run data that is similar to the experimental run points in terms of waste composition, SBS/Feed ratio, and Na M. The table also shows various trends as Na M is increased with the same waste feed. Please send Appendix B for a complete listing of all solids that formed for all the simulated runs for Envelope B.

Table 21. Predicted Solids from Envelope B

Experimental ID	Simulation Point Type	Simulation ID	Temp °C	SBS/Feed	Na Molarity	ALOH3 [g]	CAF2 [g]	CATIO3 [g]	MGOH2 [g]	NA2C2O4 [g]	NA3FSO4 [g]	NAF [g]	NIOH2 [g]	ZRO2 [g]	Total Solids [g]	Total Soln Mass [g]	Solids % of Total Soln
Initial AZ101- 70.7%,60%	EV	10TB001	15	0	10	0	0	0	0	830	0	583	0	0	1.41E+03	2.91E+05	4.86E-03
Initial AZ102- 70.7%,60%	EV	10TB005	15	0	10	0	0	0	0	878	0	565	0	0	1.44E+03	2.91E+05	4.96E-03
Initial AZ101- 70.7%,60%	EV	10TB007	66	0	10	0	0	0	0	0	0	0	0	0	0	2.79E+05	0
Initial AZ102- 70.7%,60%	EV	10TB011	66	0	10	0	0	0	0	66	0	38	0	0	1.05E+02	2.79E+05	3.75E-04
Initial AZ101- 70.7%,60%	EV	10TB013	15	2	10	0	4	1	10	793	0	999	0	0	1.81E+03	3.01E+05	6.00E-03
Initial AZ102- 70.7%,60%	EV	10TB017	15	2	10	0	4	1	10	842	0	983	0	0	1.84E+03	3.02E+05	6.10E-03
Initial AZ101- 70.7%,60%	EV	10TB019	66	2	10	0	4	1	10	0	0	405	1	0	4.21E+02	2.89E+05	1.46E-03
Initial AZ102- 70.7%,60%	EV	10TB023	66	2	10	0	4	1	10	0	0	448	1	0	4.64E+02	2.89E+05	1.61E-03
Initial AZ101- 70.7%,60%	OLH	10TB025	40	1	10	0	2	1	4	0	0	441	0	0	4.48E+02	2.91E+05	1.54E-03
Initial AZ101- 70.7%,60%	OLH	10TB029	23	1	10	0	1	3.63E-01	3	0	6810	0	0	0	6.81E+03	2.86E+05	2.39E-02
Initial AZ101- 70.7%,60%	OLH	10TB037	32	1	10	0	1	3.63E-01	3	495	6175	0	0	0	6.67E+03	2.83E+05	2.36E-02
Initial AZ101- 70.7%,60%	OLH	10TB048	37	2	10	0	3	1	8	327	6998	0	6.13E-02	0	7.34E+03	2.85E+05	2.58E-02
Initial AZ101- 70.7%,60%	OLH	10TB058	51	1	10	0	1	3.03E-01	2	0	0	290	0	0	2.94E+02	2.85E+05	1.03E-03
Initial AZ101- 70.7%,60%	OLH	10TB063	53	0	10	0	1	1.82E-01	1	35	0	185	0	0	2.22E+02	2.84E+05	7.80E-04
Initial AZ101- 70.7%,60%	OLH	10TB070	66	2	10	0	4	1	9	0	0	483	1	0	4.98E+02	2.89E+05	1.72E-03
Initial AZ102- 70.7%,60%	OLH	10TB084	58	1	10	0	3	1	7	0	0	313	1	0	3.25E+02	2.88E+05	1.13E-03
Initial AZ102- 70.7%,60%	OLH	10TB094	62	1	10	0	1	4.24E-01	3	0	0	191	2.17E-01	0	1.97E+02	2.85E+05	6.91E-04
Initial AZ102- 70.7%,60%	OLH	10TB100	45	0	10	0	1	2.43E-01	2	325	0	288	0	0	6.16E+02	2.86E+05	2.15E-03
Initial AZ101- 70.7%,60%	EV	8TB001	15	0	8	0	0	0	0	767	0	0	0	0	7.67E+02	3.43E+05	2.24E-03
Initial AZ102- 70.7%,60%	EV	8TB005	15	0	8	0	0	0	0	795	0	0	0	0	7.95E+02	3.44E+05	2.31E-03
Initial AZ101- 70.7%,60%	EV	8TB007	66	0	8	0	0	0	0	0	0	0	0	0	0	3.30E+05	0
Initial AZ102- 70.7%,60%	EV	8TB011	66	0	8	0	0	0	0	0	0	0	0	0	0	3.31E+05	0
Initial AZ101- 70.7%,60%	EV	8TB013	15	2	8	0	4	1	10	728	0	325	0	0	1.07E+03	3.55E+05	3.01E-03
Initial AZ102- 70.7%,60%	EV	8TB017	15	2	8	0	4	1	10	755	0	282	0	0	1.05E+03	3.56E+05	2.95E-03
Initial AZ101- 70.7%,60%	EV	8TB019	66	2	8	0	4	1	10	0	0	0	1	0	1.63E+01	3.43E+05	4.75E-05
Initial AZ102- 70.7%,60%	EV	8TB023	66	2	8	0	4	1	10	0	0	0	1	4.12E-03	1.64E+01	3.43E+05	4.76E-05
Initial AZ101- 70.7%,60%	OLH	8TB025	40	1	8	0	2	1	4	0	0	0	6.75E-02	0	6.93E+00	3.44E+05	2.01E-05
Initial AZ101- 70.7%,60%	OLH	8TB029	23	1	8	0	1	3.63E-01	3	0	5170	0	0	0	5.17E+03	3.38E+05	1.53E-02
Initial AZ101- 70.7%,60%	OLH	8TB037	32	1	8	0	1	3.63E-01	3	352	3916	0	0	0	4.27E+03	3.37E+05	1.27E-02
Initial AZ101- 70.7%,60%	OLH	8TB048	37	2	8	0	3	1	8	155	4474	0	4.09E-01	0	4.64E+03	3.39E+05	1.37E-02

Table 21. Predicted Solids from Envelope B (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp oC	SBS/Feed	Na Molarity	ALOH3 [g]	CAF2 [g]	CATIO3 [g]	MGOH2 [g]	NA2C2O4 [g]	NA3FSO4 [g]	NAF [g]	NIOH2 [g]	ZRO2 [g]	Total Solids [g]	Total Soln Mass [g]	Solids % of Total Soln
Initial AZ101- 70.7%,60%	OLH	8TB052	44	1	8	0	2	1	5	0	0	0	1.98E-01	0	7.80E+00	3.44E+05	2.27E-05
Initial AZ101- 70.7%,60%	OLH	8TB054	46	1	8	0	2	4.85E-01	4	0	0	0	1.09E-01	0	6.17E+00	3.42E+05	1.81E-05
Initial AZ101- 70.7%,60%	OLH	8TB058	51	1	8	0	1	3.03E-01	2	0	0	0	5.20E-03	0	3.76E+00	3.38E+05	1.11E-05
Initial AZ101- 70.7%,60%	OLH	8TB063	53	0	8	0	1	1.82E-01	1	0	0	0	0	0	2.23E+00	3.37E+05	6.61E-06
Initial AZ101- 70.7%,60%	OLH	8TB070	66	2	8	0	4	1	9	0	0	0	1	0	1.47E+01	3.43E+05	4.27E-05
Initial AZ102- 70.7%,60%	OLH	8TB084	58	1	8	0	3	1	7	0	0	0	1	0	1.13E+01	3.41E+05	3.32E-05
Initial AZ102- 70.7%,60%	OLH	8TB094	62	1	8	0	1	4.24E-01	3	0	0	0	2.92E-01	0	5.55E+00	3.37E+05	1.64E-05
Initial AZ102- 70.7%,60%	OLH	8TB100	45	0	8	0	1	2.43E-01	2	19	0	0	0	0	2.21E+01	3.39E+05	6.51E-05
Initial AZ101- 70.7%,60%	EV	6TB001	15	0	6	341	0	0	0	608	0	0	0	0	9.49E+02	4.28E+05	2.22E-03
Initial AZ102- 70.7%,60%	EV	6TB005	15	0	6	0	0	0	0	626	0	0	0	0	6.26E+02	4.28E+05	1.46E-03
Initial AZ101- 70.7%,60%	EV	6TB007	66	0	6	0	0	0	0	0	0	0	0	0	0	4.14E+05	0
Initial AZ102- 70.7%,60%	EV	6TB011	66	0	6	0	0	0	0	0	0	0	0	0	0	4.15E+05	0
Initial AZ101- 70.7%,60%	EV	6TB013	15	2	6	714	4	1	10	567	0	0	8.13E-02	0	1.30E+03	4.44E+05	2.92E-03
Initial AZ102- 70.7%,60%	EV	6TB017	15	2	6	0	4	1	10	579	0	0	2.82E-01	0	5.95E+02	4.44E+05	1.34E-03
Initial AZ101- 70.7%,60%	EV	6TB019	66	2	6	0	4	1	10	0	0	0	1	0	1.62E+01	4.30E+05	3.77E-05
Initial AZ102- 70.7%,60%	EV	6TB023	66	2	6	0	4	1	10	0	0	0	1	3.78E-02	1.63E+01	4.30E+05	3.79E-05
Initial AZ101- 70.7%,60%	OLH	6TB025	40	1	6	0	2	1	4	0	0	0	2.40E-01	0	7.04E+00	4.31E+05	1.64E-05
Initial AZ101- 70.7%,60%	OLH	6TB029	23	1	6	0	1	3.63E-01	3	0	1801	0	0	0	1.81E+03	4.29E+05	4.21E-03
Initial AZ101- 70.7%,60%	OLH	6TB037	32	1	6	0	1	3.63E-01	3	104	113	0	0	0	2.22E+02	4.30E+05	5.16E-04
Initial AZ101- 70.7%,60%	OLH	6TB048	37	2	6	0	3	1	8	0	555	0	1	0	5.67E+02	4.33E+05	1.31E-03
Initial AZ101- 70.7%,60%	OLH	6TB052	44	1	6	0	2	1	5	0	0	0	3.46E-01	0	7.88E+00	4.30E+05	1.83E-05
Initial AZ101- 70.7%,60%	OLH	6TB054	46	1	6	0	2	4.85E-01	4	0	0	0	2.43E-01	0	6.23E+00	4.28E+05	1.46E-05
Initial AZ101- 70.7%,60%	OLH	6TB058	51	1	6	0	1	3.03E-01	2	0	0	0	1.08E-01	0	3.76E+00	4.24E+05	8.86E-06
Initial AZ101- 70.7%,60%	OLH	6TB063	53	0	6	0	4.64E-01	1.82E-01	1	0	0	0	8.02E-03	0	2.12E+00	4.22E+05	5.03E-06
Initial AZ101- 70.7%,60%	OLH	6TB070	66	2	6	0	4	1	9	0	0	0	1	0	1.46E+01	4.30E+05	3.38E-05
Initial AZ102- 70.7%,60%	OLH	6TB084	58	1	6	0	3	1	7	0	0	0	1	0	1.13E+01	4.27E+05	2.64E-05
Initial AZ102- 70.7%,60%	OLH	6TB094	62	1	6	0	1	4.24E-01	3	0	0	0	3.40E-01	0	5.45E+00	4.23E+05	1.29E-05
Initial AZ102- 70.7%,60%	OLH	6TB100	45	0	6	0	1	2.43E-01	2	0	0	0	2.89E-03	0	2.94E+00	4.25E+05	6.92E-06

The density predictions for Envelope C were within +/- 11% of the measured values for the bottoms concentrate with a Na molarity between 2 and 10. The experimental runs that were compared are shown in Table 22. The measured and predicted value comparison is shown in Table 23.

Table 22. Experimental IDs for Envelope C

Experimental Description	Experimental ID
1=55% SBS (C2), 43% AN102	1-INIT
2=55% SBS (C2), 43% AN107	2-INIT
3=43% SBS (C2), 55% AN102	3-INIT
4=43% SBS (C2), 55% AN107	4-INIT
1=55% SBS (C2), 43% AN102 conc to 6 Na M	#1-6
2=55% SBS (C2), 43% AN107 conc to 6 Na M	#2-6
3=43% SBS (C2), 55% AN102 conc to 6 Na M	#3-6
4=43% SBS (C2), 55% AN107 conc to 6 Na M	#4-6
1=55% SBS (C2), 43% AN102 conc to 8 Na M	#1-8
2=55% SBS (C2), 43% AN107 conc to 8 Na M	#2-8
3=43% SBS (C2), 55% AN102 conc to 8 Na M	#3-8
4=43% SBS (C2), 55% AN107 conc to 8 Na M	#4-8
1=55% SBS (C2), 43% AN102 conc to 10 Na M	#1-10
2=55% SBS (C2), 43% AN107 conc to 10 Na M	#2-10
3=43% SBS (C2), 55% AN102 conc to 10 Na M	#3-10
4=43% SBS (C2), 55% AN107 conc to 10 Na M	#4-10

Table 23. Comparison of Measured and Predicted Densities for Envelope C

	Measured Density [g/ml]				Predicted Density [g/ml]				% Difference b/n Meas & Pred Density			
Temperature	15	25	50	65	15	25	50	65	15	25	50	65
1-INIT	1.143	1.138	1.124	1.112	1.150	1.143	1.126	1.115	-0.62%	-0.44%	-0.11%	-0.30%
2-INIT	1.128	1.123	1.109	1.099	1.147	1.139	1.122	1.111	-1.66%	-1.46%	-1.12%	-1.13%
3-INIT	1.176	1.171	1.157	1.149	1.165	1.157	1.139	1.128	0.98%	1.17%	1.55%	1.79%
4-INIT	1.160	1.155	1.141	1.132	1.158	1.151	1.133	1.122	0.17%	0.36%	0.74%	0.89%
#1-6	1.383	1.376	1.356	1.343	1.313	1.301	1.271	1.253	5.05%	5.43%	6.25%	6.66%
#2-6	1.359	1.351	1.328	1.313	1.306	1.294	1.265	1.247	3.86%	4.20%	4.73%	5.03%
#3-6	1.371	1.365	1.349	1.343	1.298	1.287	1.258	1.242	5.33%	5.72%	6.72%	7.55%
#4-6	1.332	1.325	1.308	1.298	1.289	1.278	1.250	1.233	3.23%	3.59%	4.45%	4.95%
#1-8	1.487	1.479	1.460	1.445	1.391	1.377	1.341	1.320	6.45%	6.95%	8.16%	8.69%
#2-8	1.448	1.440	1.421	1.409	1.382	1.368	1.333	1.312	4.56%	5.00%	6.18%	6.89%
#3-8	1.476	1.470	1.460	1.456	1.377	1.363	1.329	1.308	6.73%	7.26%	8.98%	10.17%
#4-8	1.429	1.422	1.405	1.396	1.366	1.353	1.319	1.299	4.38%	4.87%	6.12%	6.92%
#1-10	1.577	1.569	1.549	1.537	1.455	1.439	1.399	1.374	7.70%	8.26%	9.70%	10.58%
#2-10	1.501	1.492	1.473	1.460	1.443	1.427	1.387	1.363	3.89%	4.39%	5.81%	6.64%
#3-10	n/a	1.510	n/a	n/a	1.433	1.418	1.379	1.356	n/a	6.12%	n/a	n/a
#4-10	n/a	1.488	1.469	1.458	1.411	1.397	1.360	1.338	n/a	6.16%	7.46%	8.25%

The viscosity predictions for Envelope C were not good as Envelope A, with errors between the measured and predicted values ranging from 20% to 70%. It is estimated that part of this error is due to the prediction being based on simulated values between 6 and 10 molar. It is also expected that the lower and higher temperature extremes produced solids that are not accounted for by the viscosity prediction since it is based only on the supernate phase of the bottoms concentrate. A better predictor of viscosity could be obtained by getting an accurate count of the solids in each sample plus a solids correction term derived from experimental results would need to be included. Prior modeling work[9] for the waste feed evaporator showed that when the supernate viscosity was measured experimentally and compared with modeling predictions, relatively good agreement (within +/- 15%) was obtained. A complete listing of the measured versus predicted viscosities is shown in Table 24.

Table 24. Comparison of Measured versus Predicted Viscosities for Envelope C

Envelope C Sample	Measured Na M	Measured Viscosity [cP] at 15°C	Predicted Viscosity [cP] at 15°C	% Diff b/n Meas & Pred Visc. at 15°C	Measured Viscosity [cP] at 25°C	Predicted Viscosity [cP] at 25°C	% Diff b/n Meas & Pred Visc. at 25°C	Measured Viscosity [cP] at 60°C	Predicted Viscosity [cP] at 60°C	% Diff b/n Meas & Pred Visc. at 60°C
1-2	2.19	1.77	1.12	36.6%	1.46	0.79	-46.2%	0.76	0.32	58.0%
1-6	6.71	7.52	3.92	47.8%	4.97	2.92	-41.2%	2.39	1.52	36.2%
1-8	8.87	15.31	5.88	61.6%	12.80	4.26	-66.7%	5.04	2.14	57.5%
2-2	2.16	1.73	1.14	34.0%	1.37	0.80	-41.6%	0.67	0.33	50.6%
2-6	6.60	6.33	3.90	38.4%	4.35	2.90	-33.2%	1.99	1.51	23.9%
2-8	8.71	13.68	5.80	57.6%	9.80	4.21	-57.0%	3.71	2.12	42.9%
3-2	2.84	2.13	1.52	28.5%	1.72	1.10	-35.8%	0.88	0.52	41.4%
3-6	6.55	7.38	3.91	47.0%	4.87	2.90	-40.4%	2.23	1.51	32.3%
3-8	8.73	15.02	5.91	60.7%	11.29	4.27	-62.2%	3.73	2.14	42.7%
4-2	2.72	2.03	1.50	26.2%	1.57	1.08	-31.1%	0.86	0.51	41.3%
4-6	6.37	5.95	3.84	35.5%	4.16	2.85	-31.5%	1.85	1.48	19.9%
4-8	8.51	11.97	5.78	51.8%	7.84	4.18	-46.7%	2.99	2.10	29.9%

The thermal conductivity predictions for Envelope C were within +/- 20% of the measured values for the bottoms concentrate with a Na molarity between 2 and 8 except for 3 samples. The discrepancy for the 3 samples outside the +/-20% range is due in part to the fact that the simulated conductivity is for the supernate only where as the measured conductivity is for the entire slurry (supernate plus solids). Prior modeling work[9] showed that the experimental conductivity has a standard deviation of 6.5% (about the value of water). The simulated conductivities are based on correction factors for the conductivity of water using various anions/cations as defined in Perry's Chemical Handbook.[15] The simulated conductivities for all envelopes fell within a 3% standard deviation of the value of water. Since the measurement error is higher than this value, the predicted conductivities cannot be distinguished from those of water. Therefore there is no need to use the complicated prediction equation for conductivity when statistically a prediction for the conductivity of water is just as accurate. A complete listing of the measured versus predicted conductivities is shown in Table 25.

Table 25. Comparison of Measured versus Predicted Conductivity for Envelope C

Envelope C Sample	Measured Conductivity [W/m°C] at 25°C	Predicted Conductivity [W/m°C] at 25°C	% Diff b/n measured & Predicted Conductivity
1-in-C	0.229	0.581	-154.1%
2-in-C	0.209	0.590	-182.6%
3-in-C	0.587	0.580	1.2%
4-in-C	0.634	0.590	7.0%
1-6-C	0.403	0.560	-39.0%
2-6-C	0.638	0.570	10.7%
3-6-C	0.672	0.563	16.2%
4-6-C	0.713	0.573	19.7%
1-8-C	0.643	0.550	14.5%
2-8-C	0.601	0.560	6.8%
3-8-C	0.675	0.553	18.1%
4-8-C	0.603	0.563	6.6%

The heat capacity predictions for Envelope C were within +/- 10% of the measured values for the bottoms concentrate with a Na molarity between 2 and 8. A complete listing of the measured versus predicted values is shown in Table 26.

Table 26. Comparison of Measured versus Predicted Cp for Envelope C

Envelope B Sample	Measured Cp [cal/g*K]	Predicted Cp [cal/g*K]	% Diff b/n measured & Predicted Cp
1-in-C	0.836	0.837	-0.2%
2-in-C	0.837	0.823	1.7%
2-6-C	0.728	0.686	5.8%
1-8-C	0.683	0.631	7.6%
2-8-C	0.679	0.621	8.6%

The sodium molarity predictions for envelope C were worse than for the other envelopes only coming within +/- 32% of the measured values for the bottoms concentrate with a Na molarity between 2 and 10. This poor comparison was expected since the Na molarity prediction did not satisfy the +/-15% of the predicted values criterion even after adding some of the validation points to the fits to try to capture some nonlinear behavior. One reason for the large discrepancy is because it is difficult to derive a predictive relationship relating waste feed composition (dry basis), SBS/Feed ratio, bottoms temperature, and bottoms density to bottoms Na molarity. Table 27 shows a complete list of the measured versus predicted Na molarities.

Table 27. Comparison of Measured versus Predicted Na M for Envelope C

Experimental ID	Measured Na M	Predicted Na M	%Diff Meas Na M & Pred Na M @25°C
1-INIT	2.2	2.1	4.1%
2-INIT	2.2	2.0	6.4%
3-INIT	2.8	3.1	-8.1%
4-INIT	2.7	2.9	-7.9%
#1-6	6.7	8.7	-29.3%
#2-6	6.6	8.3	-26.4%
#3-6	6.5	8.6	-32.1%
#4-6	6.4	7.9	-23.3%
#1-8	8.9	11.5	-30.1%
#2-8	8.7	10.8	-24.0%
#3-8	8.7	11.7	-33.6%
#4-8	8.5	10.6	-24.9%
#1-10	10.7	14.0	-31.5%
#2-10	10.4	12.2	-17.8%
#3-10	10.3	12.8	-24.6%
#4-10	9.8	12.5	-28.3%

Table 29 and Table 30 show the predicted solids for Envelope C and identify experimental run samples that are similar in composition, SBS/Feed ratio, and endpoint Na molarity. Because of slight differences in experimental runs and simulation runs no points are exact matches. However, the points listed in the table come close. Note that the experimental ID is described in Table 28. For Envelope C, about 60% of the simulated values (242 our of 405 points – including fit and validation points) had bottoms insoluble solids greater than 1 wt%, but only about 36% of the simulated values (145 points) had insoluble solids greater than 2 wt%. Of this 36% segment, 83% of the values were between 2 wt% and 5 wt%, while the remaining 17% of the values were between 5 wt% and 7 wt%. The higher solids weight percents were observed at NA M greater than 8. Temperatures have a much smaller impact on the solubility than the Na molarity. The primary salts were calcium fluoride, hydrosodalite, sodium oxalate, sodium carbonate, sodium fluorosulfate, sodium sulfate-carbonate, sodium fluoride, sodium aluminosilicate gelatin (NASGEL), and sodium nitrate. For the simulated runs, NASGEL solids appear in the bottoms concentrate stream over a wider % range at 10 Na M than 8 Na M and 6 Na M as shown in Figure 8. For all sodium molarities simulated, the % NASGEL in the bottoms stream stays below 1.2%. The NASGEL solids range between 0 and 1.2% for bottoms temperatures between 15°C and 66 °C as shown in Figure 9. Increasing the SBS/Feed ratio above 0.5 for the 10 Na M bottoms concentrate increases the chance of NASGEL formation as shown in Figure 10. Increasing the SBS/Feed ratio above 0.25 for the 8 Na M bottoms concentrate increases the chance of NASGEL formation as shown in Figure 11. For the 8 Na M bottoms concentrate NASGEL begins to form at lower SBS/Feed ratios but the % NASGEL at the highest SBS/Feed ratio is less than at 10 Na M. The 6 Na M bottoms concentrate shows NASGEL formation starting around SBS/Feed of 0.15 and increasing as SBS/Feed ratio increases. Going from 10 Na M bottoms concentrate down to 8 Na M then 6 Na M, the maximum amount of NASGEL formed at the highest SBS/Feed ratio decreases along with the Na M. Please note that due to the variability in the data, a low Na M like 6 and a high SBS/Feed ratio like 2 can still form more NASGEL than a higher Na M at the same SBS/Feed ratio. For a complete listing of the solids predicted for Envelope C please see Appendix B.

Table 28. Experimental ID for Envelope C

ID	Experimental Description
1	55% SBS (C2), 43% AN102
2	55% SBS (C2), 43% AN107
3	43% SBS (C2), 55% AN102
4	43% SBS (C2), 55% AN107

Additional experiments were performed with AW-101 radioactive simulant.[8] The physical property prediction models for Envelope A were used to compare measured versus predicted values from this experimental work. These comparisons are shown in Table 31. As can be seen the Na M predictions for the experimental samples other than the feed are not very good. Since the experimental samples were taken as the process was still being evaporated and not at steady state, the Na M predictions would not be expected to be very good since they are based on steady state simulated conditions. The density predictions are within +/- 15% which is a good indicator of the ability of OLI to predict density, at least within an acceptable range.

The predicted viscosities are off by as much as 50% from the measured values. Since the viscosity prediction has a strong dependence on Na molarity and represents the equilibrium value, it is not surprising the predicting values are off as indicated. In the experiment, samples were pulled at various bottom concentrations which most likely did not represent the process at equilibrium. OLI is a steady state simulator and thus any predictions derived from its results represent steady state points. Also the viscosity can be strongly influenced by solids which can cause the large discrepancies seen here. The predicted heat capacities are within +/-20%.

Table 29. Predicted Solids from Envelope C Simulations – Part 1

Experimental ID	Simulation Point Type	Simulation ID	Temp °C (P2)	SBS/Feed (P1)	Na M	ALOH3 [g]	BASO4 [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	FEIIIOH3 [g]	HYDROSOD [g]	MGF2 [g]	MGOH2 [g]
1	EV	10TC001	15	0	10	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	8TC001	15	0	8	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	6TC001	15	0	6	371	0	0	0	0	0	0	0	0	0	0	0
1	EV	10TC002	15	0	10	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	8TC002	15	0	8	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	6TC002	15	0	6	515	0	0	0	0	0	0	0	0	0	0	0
2	EV	10TC004	15	0	10	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	8TC004	15	0	8	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	6TC004	15	0	6	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	10TC005	15	0	10	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	8TC005	15	0	8	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	6TC005	15	0	6	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	10TC006	66	0	10	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	8TC006	66	0	8	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	6TC006	66	0	6	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	10TC007	66	0	10	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	8TC007	66	0	8	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	6TC007	66	0	6	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	10TC009	66	0	10	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	8TC009	66	0	8	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	6TC009	66	0	6	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	10TC010	66	0	10	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	8TC010	66	0	8	0	0	0	0	0	0	0	0	0	0	0	0
2	EV	6TC010	66	0	6	0	0	0	0	0	0	0	0	0	0	0	0
1	EV	10TC011	15	2.0	10	0	0	0	0	2036	0	289	0	471	4113	0	374
1	EV	8TC011	15	2.0	8	1507	1	0	0	2036	0	289	0	512	4468	0	374
1	EV	6TC011	15	2.0	6	3177	4	0	0	2036	0	289	0	537	4684	0	374
1	EV	10TC012	15	2.0	10	0	0	0	0	2028	0	288	0	429	3739	0	372
1	EV	8TC012	15	2.0	8	1162	1	0	0	2028	0	288	0	487	4251	0	372
1	EV	6TC012	15	2.0	6	3389	4	0	0	2028	0	288	0	520	4535	0	372

Table 29. Predicted Solids from Envelope C Simulations – Part 1 (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp °C (P2)	SBS/Feed (P1)	Na M	ALOH3 [g]	BASO4 [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	FEIIIOH3 [g]	HYDROSOD [g]	MGF2 [g]	MGOH2 [g]
2	EV	10TC014	15	2.0	10	0	0	0	0	1991	0	283	0	461	4024	0	365
2	EV	8TC014	15	2.0	8	0	1	0	0	1991	0	283	0	503	4390	0	365
2	EV	6TC014	15	2.0	6	0	4	0	0	1991	0	283	18	529	4612	0	365
2	EV	10TC015	15	2.0	10	0	0	0	0	2007	0	285	0	517	4512	530	368
2	EV	8TC015	15	2.0	8	0	0	0	0	2007	0	285	58	540	4707	101	368
2	EV	6TC015	15	2.0	6	0	4	0	0	2007	0	285	136	552	4820	0	368
1	EV	10TC016	66	2.0	10	0	3	0	0	2035	0	289	264	0	0	1227	374
1	EV	8TC016	66	2.0	8	0	3	0	0	2035	0	289	268	0	0	248	374
1	EV	6TC016	66	2.0	6	0	3	0	0	2034	0	289	271	0	0	0	374
1	EV	10TC017	66	2.0	10	0	3	0	0	2027	0	288	259	0	0	1042	372
1	EV	8TC017	66	2.0	8	0	3	0	0	2027	0	288	265	0	0	73	372
1	EV	6TC017	66	2.0	6	0	3	0	0	2026	0	288	268	0	0	0	372
2	EV	10TC019	66	2.0	10	0	3	0	0	1990	0	283	258	0	0	1134	365
2	EV	8TC019	66	2.0	8	0	3	0	0	1990	0	283	262	0	0	133	365
2	EV	6TC019	66	2.0	6	0	3	0	0	1989	0	283	264	0	0	0	365
2	EV	10TC020	66	2.0	10	0	4	0	0	2006	0	285	266	0	0	1362	368
2	EV	8TC020	66	2.0	8	0	3	0	0	2006	0	285	268	0	0	400	368
2	EV	6TC020	66	2.0	6	0	2	0	0	2005	0	285	269	118	1033	0	368
1	OLH	10TC025	31	0	10	0	0	0	0	0	0	0	0	0	0	0	0
1	OLH	8TC025	31	0	8	0	0	0	0	0	0	0	0	0	0	0	0
1	OLH	6TC025	31	0	6	0	0	0	0	0	0	0	0	0	0	0	0
3	OLH	10TC035	49	0.9	10	0	1	0	0	888	0	126	34	0	0	0	163
3	OLH	8TC035	49	0.9	8	0	0	0	0	889	0	126	67	0	0	0	163
3	OLH	6TC035	49	0.9	6	0	0.3	0	0	888	0	126	85	0	0	0	163
1	OLH	10TC040	50	0.3	10	0	0	0	0	270	0	38	0	0	0	0	50
1	OLH	8TC040	50	0.3	8	0	0	0	0	270	0	38	0	0	0	0	50
1	OLH	6TC040	50	0.3	6	0	0	0	0	269	0	38	0	0	0	0	50
1	OLH	10TC046	55	1.7	10	0	3	0	0	1746	0	248	199	0	0	469	320
1	OLH	8TC046	55	1.7	8	0	2	0	0	1746	0	248	213	0	0	0	320
1	OLH	6TC046	55	1.7	6	0	2	0	0	1745	0	248	221	0	0	0	320

Table 29. Predicted Solids from Envelope C Simulations – Part 1 (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp °C (P2)	SBS/Feed (P1)	Na M	ALOH3 [g]	BASO4 [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	FEIIIOH3 [g]	HYDROSOD [g]	MGF2 [g]	MGOH2 [g]
1	OLH	10TC048	48	1.4	10	0	2	0	0	1412	0	201	110	0	0	0	259
1	OLH	8TC048	48	1.4	8	0	1	0	0	1412	0	201	141	0	0	0	259
1	OLH	6TC048	48	1.4	6	0	1	0	0	1412	0	201	159	0	0	0	259
1	OLH	10TC050	40	0.2	10	0	0	0	0	158	0	23	0	0	0	0	29
1	OLH	8TC050	40	0.2	8	0	0	0	0	158	0	23	0	0	0	0	29
1	OLH	6TC050	40	0.2	6	0	0	0	0	158	0	23	0	0	0	0	29
1	OLH	10TC052	35	0.2	10	0	0	0	0	113	102	32	0	0	0	0	41
1	OLH	8TC052	35	0.2	8	0	0	0	0	221	0	32	0	0	0	0	41
1	OLH	6TC052	35	0.2	6	0	0	0	0	221	0	32	0	0	0	0	41
3	OLH	10TC055	29	0.8	10	0	1	0	0	0	796	120	0	0	0	0	154
3	OLH	8TC055	29	0.8	8	0	0	0	0	840	0	120	0	0	0	0	154
3	OLH	6TC055	29	0.8	6	0	1	0	0	841	0	120	0	43	376	0	154
1	OLH	10TC060	21	1.1	10	0	1	0	0	0	1067	160	0	31	274	0	207
1	OLH	8TC060	21	1.1	8	0	1	0	0	1125	0	160	0	139	1214	0	207
1	OLH	6TC060	21	1.1	6	959	2	0	0	1126	0	160	0	210	1830	0	207
1	OLH	10TC062	37	1.8	10	0	3	511	1866	0	0	262	87	0	0	0	338
1	OLH	8TC062	37	1.8	8	0	2	143	792	1116	0	262	151	208	1812	0	338
1	OLH	6TC062	37	1.8	6	0	2	0	0	1843	0	262	187	326	2845	0	338
1	OLH	10TC067	56	0.7	10	0	0.49	0	0	745	0	106	47	0	0	0	137
1	OLH	8TC067	56	0.7	8	0	0.03	0	0	745	0	106	67	0	0	0	137
1	OLH	6TC067	56	0.7	6	0	0.00	0	0	744	0	106	79	0	0	0	137
1	OLH	10TC068	61	0.3	10	0	0	0	0	301	0	43	6	0	0	0	55
1	OLH	8TC068	61	0.3	8	0	0	0	0	301	0	43	19	0	0	0	55
1	OLH	6TC068	61	0.3	6	0	0	0	0	300	0	43	26	0	0	0	55
1	OLH	10TC074	43	1.8	10	0	3	0	0	1778	0	253	140	0	0	0	326
1	OLH	8TC074	43	1.8	8	0	1	0	0	1778	0	253	179	3	30	0	326
1	OLH	6TC074	43	1.8	6	0	2	0	0	1777	0	253	201	181	1580	0	326
2	OLH	10TC083	50	2.0	10	0	3	0	0	1991	0	283	225	0	0	854	365
2	OLH	8TC083	50	2.0	8	0	2	0	0	1991	0	283	241	0	0	17	365
2	OLH	6TC083	50	2.0	6	0	2	0	0	1991	0	283	250	167	1453	0	365

Table 29. Predicted Solids from Envelope C Simulations – Part 1 (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp °C (P2)	SBS/Feed (P1)	Na M	ALOH3 [g]	BASO4 [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	FEIIIOH3 [g]	HYDROSOD [g]	MGF2 [g]	MGOH2 [g]
4	OLH	10TC093	32	1.1	10	0	1	289	1153	0	0	159	0	0	0	0	206
4	OLH	8TC093	32	1.1	8	0	1	0	0	1119	0	159	0	0	0	0	206
4	OLH	6TC093	32	1.1	6	0	1	0	0	1120	0	159	33	111	968	0	206
2	OLH	10TC098	31	1.7	10	0	3	444	1778	0	0	245	0	90	786	0	317
2	OLH	8TC098	31	1.7	8	0	2	0	0	1722	0	245	73	239	2087	0	317
2	OLH	6TC098	31	1.7	6	0	2	0	0	1724	0	245	131	331	2891	0	317

Table 30. Predicted Solids from Envelope C Simulations - Part 2

Experimental ID	Simulation Point Type	Simulation ID	Temp oC (P2)	SBS/Feed (P1)	Na M	NA2C2O4 [g]	NA3FSO4 [g]	NA6SO42CO3 [g]	NAF [g]	NANO3 [g]	NASGEL.15.5H2O [g]	NIOH2 [g]	SRCO3 [g]	ZRO2 [g]	Total Solids [g]	Total Soln Mass [g]	Solids % of Total Soln
1	EV	10TC001	15	0	10	1165	0	0	1690	0	0	0	0	0	2.85E+03	6.29E+05	0.45%
1	EV	8TC001	15	0	8	1018	0	0	364	0	0	0	0	0	1.38E+03	7.56E+05	0.18%
1	EV	6TC001	15	0	6	687	0	0	0	0	0	0	0	0	1.06E+03	9.55E+05	0.11%
1	EV	10TC002	15	0	10	1099	0	0	1737	2711	0	0	0	0	5.55E+03	6.27E+05	0.89%
1	EV	8TC002	15	0	8	960	0	0	441	0	0	0	0	0	1.40E+03	7.55E+05	0.19%
1	EV	6TC002	15	0	6	647	0	0	0	0	0	0	0	0	1.16E+03	9.54E+05	0.12%
2	EV	10TC004	15	0	10	1063	0	0	1684	0	0	0	0	0	2.75E+03	6.25E+05	0.44%
2	EV	8TC004	15	0	8	920	0	0	381	0	0	0	0	0	1.30E+03	7.52E+05	0.17%
2	EV	6TC004	15	0	6	597	0	0	0	0	0	0	0	0	5.97E+02	9.51E+05	0.06%
2	EV	10TC005	15	0	10	1144	0	0	1639	0	0	0	0	0	2.78E+03	6.27E+05	0.44%
2	EV	8TC005	15	0	8	990	0	0	284	0	0	0	0	0	1.27E+03	7.54E+05	0.17%
2	EV	6TC005	15	0	6	649	0	0	0	0	0	0	0	0	6.49E+02	9.52E+05	0.07%
1	EV	10TC006	66	0	10	673	0	8455	986	0	0	0	0	0	1.01E+04	5.91E+05	1.71%
1	EV	8TC006	66	0	8	246	0	310	0	0	0	0	0	0	5.55E+02	7.22E+05	0.08%
1	EV	6TC006	66	0	6	0	0	0	0	0	0	0	0	0	0	9.16E+05	0
1	EV	10TC007	66	0	10	648	0	9837	1038	0	0	0	0	0	1.15E+04	5.90E+05	1.95%
1	EV	8TC007	66	0	8	238	0	1984	0	0	0	0	0	0	2.22E+03	7.19E+05	0.31%
1	EV	6TC007	66	0	6	0	0	0	0	0	0	0	0	0	0	9.16E+05	0
2	EV	10TC009	66	0	10	598	0	7838	968	0	0	0	0	0	9.40E+03	5.88E+05	1.60%
2	EV	8TC009	66	0	8	181	0	0	0	0	0	0	0	0	1.81E+02	7.18E+05	0.03%
2	EV	6TC009	66	0	6	0	0	0	0	0	0	0	0	0	0	9.12E+05	0
2	EV	10TC010	66	0	10	639	0	9535	948	0	0	0	0	0	1.11E+04	5.87E+05	1.90%
2	EV	8TC010	66	0	8	208	0	1000	0	0	0	0	0	0	1.21E+03	7.18E+05	0.17%
2	EV	6TC010	66	0	6	0	0	0	0	0	0	0	0	0	0	9.13E+05	0
1	EV	10TC011	15	2.0	10	1160	0	0	1232	0	7344	55	5	45	1.71E+04	7.11E+05	2.41%
1	EV	8TC011	15	2.0	8	985	0	0	0	0	7595	56	5	44	1.79E+04	8.47E+05	2.11%
1	EV	6TC011	15	2.0	6	609	0	0	0	0	7673	57	5	43	1.95E+04	1.06E+06	1.84%
1	EV	10TC012	15	2.0	10	1094	0	0	1279	0	7020	54	5	41	1.63E+04	7.10E+05	2.30%
1	EV	8TC012	15	2.0	8	929	0	0	0	0	7478	55	5	40	1.71E+04	8.46E+05	2.02%
1	EV	6TC012	15	2.0	6	572	0	0	0	0	7596	56	5	39	1.94E+04	1.06E+06	1.83%

Table 30. Predicted Solids from Envelope C Simulations – Part 2 (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp oC (P2)	SBS/Feed (P1)	Na M	NA2C2O4 [g]	NA3FSO4 [g]	NA6SO42CO3 [g]	NAF [g]	NANO3 [g]	NASGEL.15.5H2O [g]	NIOH2 [g]	SRCO3 [g]	ZRO2 [g]	Total Solids [g]	Total Soln Mass [g]	Solids % of Total Soln
2	EV	10TC014	15	2.0	10	1042	0	0	1195	0	2398	54	5	44	1.19E+04	7.06E+05	1.68%
2	EV	8TC014	15	2.0	8	864	0	0	0	0	3147	55	5	43	1.16E+04	8.41E+05	1.38%
2	EV	6TC014	15	2.0	6	483	0	0	0	0	3425	56	5	43	1.18E+04	1.05E+06	1.12%
2	EV	10TC015	15	2.0	10	1122	0	0	778	0	3397	56	5	49	1.36E+04	7.09E+05	1.92%
2	EV	8TC015	15	2.0	8	932	0	0	0	0	3612	56	5	49	1.27E+04	8.44E+05	1.51%
2	EV	6TC015	15	2.0	6	531	0	0	0	0	3676	57	5	49	1.25E+04	1.06E+06	1.18%
1	EV	10TC016	66	2.0	10	686	0	26982	0	0	7342	58	5	56	3.93E+04	6.46E+05	6.09%
1	EV	8TC016	66	2.0	8	250	0	18490	0	0	7642	58	5	56	2.97E+04	7.77E+05	3.83%
1	EV	6TC016	66	2.0	6	0	0	0	0	0	7696	58	5	56	1.08E+04	1.01E+06	1.06%
1	EV	10TC017	66	2.0	10	657	0	28196	68	0	6965	58	5	55	4.00E+04	6.44E+05	6.21%
1	EV	8TC017	66	2.0	8	240	0	19975	0	0	7506	58	5	55	3.09E+04	7.74E+05	3.99%
1	EV	6TC017	66	2.0	6	0	0	1038	0	0	7610	58	5	55	1.17E+04	1.01E+06	1.16%
2	EV	10TC019	66	2.0	10	562	0	25684	0	0	2532	57	5	54	3.29E+04	6.42E+05	5.13%
2	EV	8TC019	66	2.0	8	133	0	16990	0	0	3088	57	5	54	2.34E+04	7.74E+05	3.02%
2	EV	6TC019	66	2.0	6	0	0	0	0	0	3212	57	5	54	6.23E+03	1.01E+06	0.62%
2	EV	10TC020	66	2.0	10	609	0	27567	0	0	3421	57	5	55	3.60E+04	6.41E+05	5.62%
2	EV	8TC020	66	2.0	8	167	0	18216	0	0	3559	57	5	55	2.54E+04	7.73E+05	3.28%
2	EV	6TC020	66	2.0	6	0	0	0	0	0	3571	57	5	55	7.77E+03	1.01E+06	0.77%
1	OLH	10TC025	31	0	10	1060	10131	0	0	0	0	0	0	0	1.12E+04	6.10E+05	1.84%
1	OLH	8TC025	31	0	8	857	6462	0	0	0	0	0	0	0	7.32E+03	7.34E+05	1.00%
1	OLH	6TC025	31	0	6	363	0	0	0	0	0	0	0	0	3.63E+02	9.43E+05	0.04%
3	OLH	10TC035	49	0.9	10	890	0	16372	1156	0	1986	25	2	23	2.17E+04	6.24E+05	3.47%
3	OLH	8TC035	49	0.9	8	550	0	4471	0	0	2936	25	2	22	9.25E+03	7.63E+05	1.21%
3	OLH	6TC035	49	0.9	6	0	0	0	0	0	3160	25	2	22	4.47E+03	9.73E+05	0.46%
1	OLH	10TC040	50	0.3	10	897	0	11269	1227	0	0	7	1	5	1.38E+04	6.06E+05	2.27%
1	OLH	8TC040	50	0.3	8	554	0	0	0	0	394	7	1	5	1.32E+03	7.45E+05	0.18%
1	OLH	6TC040	50	0.3	6	0	0	0	0	0	702	7	1	5	1.07E+03	9.43E+05	0.11%
1	OLH	10TC046	55	1.7	10	823	0	25005	645	0	5895	49	4	47	3.55E+04	6.43E+05	5.52%
1	OLH	8TC046	55	1.7	8	448	0	14622	0	0	6428	50	4	47	2.41E+04	7.78E+05	3.10%
1	OLH	6TC046	55	1.7	6	0	0	0	0	0	6544	50	4	47	9.18E+03	1.01E+06	0.91%

Table 30. Predicted Solids from Envelope C Simulations – Part 2 (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp oC (P2)	SBS/Feed (P1)	Na M	NA2C2O4 [g]	NA3FSO4 [g]	NA6SO42CO3 [g]	NAF [g]	NANO3 [g]	NASGEL.15.5H2O [g]	NIOH2 [g]	SRCO3 [g]	ZRO2 [g]	Total Solids [g]	Total Soln Mass [g]	Solids % of Total Soln
1	OLH	10TC048	48	1.4	10	894	0	21644	1112	0	4303	40	3	37	3.00E+04	6.37E+05	4.71%
1	OLH	8TC048	48	1.4	8	556	0	9719	0	0	5048	40	3	37	1.74E+04	7.77E+05	2.24%
1	OLH	6TC048	48	1.4	6	0	0	0	0	0	5224	40	3	37	7.34E+03	9.99E+05	0.73%
1	OLH	10TC050	40	0.2	10	979	0	9185	1389	0	0	3	0.3	0.5	1.18E+04	6.10E+05	1.93%
1	OLH	8TC050	40	0.2	8	701	0	0	0	0	0	4	0.3	0.3	9.15E+02	7.46E+05	0.12%
1	OLH	6TC050	40	0.2	6	124	0	0	0	0	269	4	0.3	0.2	6.07E+02	9.44E+05	0.06%
1	OLH	10TC052	35	0.2	10	995	10924	0	0	0	0	4	0.4	0.4	1.22E+04	6.14E+05	1.99%
1	OLH	8TC052	35	0.2	8	776	6910	0	0	0	54	5	0.4	0.1	8.04E+03	7.40E+05	1.09%
1	OLH	6TC052	35	0.2	6	242	0	0	0	0	500	5	0.4	0	1.04E+03	9.51E+05	0.11%
3	OLH	10TC055	29	0.8	10	1050	15455	0	0	0	1680	21	2	16	1.93E+04	6.36E+05	3.03%
3	OLH	8TC055	29	0.8	8	853	9189	0	0	0	2675	22	2	16	1.39E+04	7.67E+05	1.81%
3	OLH	6TC055	29	0.8	6	362	1395	0	0	0	2992	23	2	16	6.32E+03	9.83E+05	0.64%
1	OLH	10TC060	21	1.1	10	1096	16765	0	0	0	3089	29	3	21	2.27E+04	6.50E+05	3.50%
1	OLH	8TC060	21	1.1	8	924	9535	0	0	0	3862	30	3	19	1.72E+04	7.84E+05	2.20%
1	OLH	6TC060	21	1.1	6	503	1768	0	0	0	4108	31	3	19	1.09E+04	1.00E+06	1.09%
1	OLH	10TC062	37	1.8	10	1024	20066	2798	0	0	6419	52	4	48	3.35E+04	6.60E+05	5.07%
1	OLH	8TC062	37	1.8	8	753	12968	0	0	0	6855	52	4	48	2.55E+04	7.98E+05	3.20%
1	OLH	6TC062	37	1.8	6	118	3168	0	0	0	6972	52	4	48	1.62E+04	1.02E+06	1.58%
1	OLH	10TC067	56	0.7	10	795	0	14957	1077	0	1165	21	2	19	1.91E+04	6.16E+05	3.10%
1	OLH	8TC067	56	0.7	8	432	0	5072	0	0	2300	21	2	19	8.90E+03	7.52E+05	1.18%
1	OLH	6TC067	56	0.7	6	0	0	0	0	0	2556	21	2	19	3.66E+03	9.60E+05	0.38%
1	OLH	10TC068	61	0.3	10	744	0	12402	1044	0	0	8	1	7	1.46E+04	6.00E+05	2.43%
1	OLH	8TC068	61	0.3	8	348	0	3218	0	0	539	8	1	7	4.54E+03	7.33E+05	0.62%
1	OLH	6TC068	61	0.3	6	0	0	0	0	0	806	8	1	7	1.25E+03	9.35E+05	0.13%
1	OLH	10TC074	43	1.8	10	957	0	23824	1120	0	6080	50	4	47	3.46E+04	6.52E+05	5.31%
1	OLH	8TC074	43	1.8	8	630	0	9562		0	6576	50	4	47	1.94E+04	7.97E+05	2.44%
1	OLH	6TC074	43	1.8	6	0	0	0		0	6695	50	4	47	1.11E+04	1.02E+06	1.09%
2	OLH	10TC083	50	2.0	10	785	0	25189	345	0	2850	56	5	54	3.30E+04	6.52E+05	5.06%
2	OLH	8TC083	50	2.0	8	424	0	12638		0	3574	57	5	54	1.97E+04	7.92E+05	2.48%
2	OLH	6TC083	50	2.0	6	0	0	0		0	3780	57	5	54	8.41E+03	1.02E+06	0.82%

Table 30. Predicted Solids from Envelope C Simulations – Part 2 (cont'd)

Experimental ID	Simulation Point Type	Simulation ID	Temp oC (P2)	SBS/Feed (P1)	Na M	NA2C2O4 [g]	NA3FSO4 [g]	NA6SO42CO3 [g]	NAF [g]	NANO3 [g]	NASGEL.15.5H2O [g]	NIOH2 [g]	SRCO3 [g]	ZRO2 [g]	Total Solids [g]	Total Soln Mass [g]	Solids % of Total Soln
4	OLH	10TC093	32	1.1	10	955	16732	0	0	0	0	30	3	26	1.96E+04	6.40E+05	3.06%
4	OLH	8TC093	32	1.1	8	722	9227	0	0	0	917	31	3	26	1.24E+04	7.73E+05	1.60%
4	OLH	6TC093	32	1.1	6	181	1574	0	0	0	1705	31	3	26	6.12E+03	9.92E+05	0.62%
2	OLH	10TC098	31	1.7	10	943	19874	0	0	0	1985	48	4	44	2.66E+04	6.59E+05	4.03%
2	OLH	8TC098	31	1.7	8	702	9953	0	0	0	3216	48	4	43	1.87E+04	7.98E+05	2.34%
2	OLH	6TC098	31	1.7	6	159	2855	0	0	0	3741	49	4	43	1.25E+04	1.02E+06	1.23%

Table 31. Comparisons of AW-101 Radioactive Experimental Measured Values versus Envelope A Predictions

AW101 Test ID	Meas Temp	Meas Press [mmHg]	SBS/Feed	Measured Na M	Predicted Na M	% Diff b/n Meas/ & Pred Na M	Measured Density [g/ml]	Predicted Density [g/ml]	% Diff b/n Meas/Pred Density	Meas visc [cP]	Pred Visc [cP]	% Diff b/n Meas/Pred Visc	Meas Cp [supernate] [cal/g°C]	Meas Cp [slurry] [cal/g°C]	Pred Cp [supernate] [cal/g°C]	% Diff b/n Meas/Pred Cp
AW101007	44.9	64.0	1.2	7.0	10.3	-48.5%	1.36	1.25	7.8%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AW101008	47.1	72.9	1.2	7.0	10.4	-49.8%	1.36	1.25	8.0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AW101009	50.1	80.5	1.2	7.0	10.6	-51.6%	1.36	1.25	8.2%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AW101010	52.3	60.2	1.9	7.6	11.1	-46.0%	1.38	1.27	7.9%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
feed	25	760.0	1.9	2.1	1.4	33.2%	1.08	1.11	-3.1%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AW101011	55.6	71.6	1.9	7.6	11.2	-47.9%	1.38	1.27	8.2%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AW101012	58.4	80.5	1.9	7.6	11.4	-49.5%	1.38	1.26	8.4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AW101013	62.7	75.4	1.2	10.4	18.0	-73.2%	1.57	1.34	14.7%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
feed	25	760.0	1.2	2.2	2.0	8.8%	1.10	1.11	-1.0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
visc pt	25	760.0	1.2	n/a	n/a	n/a	n/a	n/a	n/a	7.1	3.7	47.9%	n/a	n/a	n/a	n/a
visc pt 2	25	760.0	1.9	n/a	n/a	n/a	n/a	n/a	n/a	8.7	4.2	52.2%	n/a	n/a	n/a	n/a
Cp pt-Blend 1	50	760.0	1.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.78	0.81	0.64	20.97%
Cp pt 2-Blend 2	50	760.0	1.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.79	0.76	0.65	14.70%

3.0 REFERENCES

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APPENDIX A. DESIGN MATRICES FOR ENVELOPES A, B, AND C

The following tables list the compositions of the waste feed streams, SBS/Feed volumetric flow ratio, bottoms concentrate temperature, and bottoms concentrate target Na molarity used in the OLI/ESP computer simulations. The waste feed compositions are in terms of mass fractions to one another. In other words, the mass fractions of the species shown must sum to one. As described earlier, a dry basis is used to represent those species in the waste feeds that have significant variance across the various tanks of each envelope. The remaining species in the waste feeds have fixed compositions.

The **Run No**. indicates the simulation run number. The **Test ID** indicates the type of run with the first 1-2 digits represent the target Sodium Molarity (10, 8 or 6) and then EA, TB, or TC for Envelope A, B, and C respectively followed by the 3 digits that represent the run number. The **Type** describes the type of design point. MPV and EV indicate model design points used in the property model fits and are derived using only the minimum and maximum values of the factor space. OLH indicates a design point used to validate the model (though some were occasionally used in the model fits as described in the results section and are marked by asterisk in the following tables), and were generated to be uniformly distributed over the factor space (as opposed to only the extreme vertices of the MPV points). The columns x_{AlO2}, x_{CO3}, x_F, x_{NO2}, x_{NO3}, x_{OH}, x_{PO4} x_{SO4}, and x_{C2O4}, are the relative waste feed mass fractions of AlO_2^-,CO_3^{-2}, F^-, NO_2^-, NO_3^-, OH^-, PO_4^{-3}, SO_4^{-2}, and $C_2O_4^{-2}$ respectively. Note that this is the complete list of mass feed fractions for all envelopes and only certain species were varied per envelope. **SBS/Feed** is the volumetric feed flow ratio of the LAW SBS recycle stream to the treated waste feed stream. **Temp** is the temperature in °C of the bottoms concentrate stream. **Na M** is the Na molarity of the bottoms concentrate stream.

Table 32. Envelope A Design Matrix for OLI Simulations

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
1	10EA001	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	15	10
2	10EA002	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	15	10
3	10EA003	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	15	10
4	10EA004	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	15	10
5	10EA005	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	15	10
6	10EA006	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	15	10
7	10EA007	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	15	10
8	10EA008	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	15	10
9	10EA009	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	15	10
10	10EA010	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	15	10
11	10EA011	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	15	10
12	10EA012	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	15	10
13	10EA013	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	15	10
14	10EA014	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	15	10
15	10EA015	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	15	10
16	10EA016	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	15	10
17	10EA017	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	15	10
18	10EA018	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	15	10
19	10EA019	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	15	10
20	10EA020	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	15	10
21	10EA021	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	15	10
22	10EA022	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	15	10
23	10EA023	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	15	10
24	10EA024	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	15	10
25	10EA025	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	15	10
26	10EA026	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	15	10
27	10EA027	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	15	10
28	10EA028	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	15	10
29	10EA029	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	15	10
30	10EA030	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	15	10
31	10EA031	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	15	10
32	10EA032	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	15	10
33	10EA033	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	15	10
34	10EA034	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	15	10
35	10EA035	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	15	10
36	10EA036	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	15	10
37	10EA037	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	15	10
38	10EA038	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	15	10
39	10EA039	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	15	10
40	10EA040	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	15	10
41	10EA041	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	66	10
42	10EA042	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	66	10
43	10EA043	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	66	10
44	10EA044	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	66	10
45	10EA045	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	66	10
46	10EA046	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	66	10

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
47	10EA047	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	66	10
48	10EA048	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	66	10
49	10EA049	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	66	10
50	10EA050	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	66	10
51	10EA051	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	66	10
52	10EA052	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	66	10
53	10EA053	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	66	10
54	10EA054	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	66	10
55	10EA055	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	66	10
56	10EA056	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	66	10
57	10EA057	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	66	10
58	10EA058	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	66	10
59	10EA059	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	66	10
60	10EA060	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	66	10
61	10EA061	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	66	10
62	10EA062	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	66	10
63	10EA063	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	66	10
64	10EA064	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	66	10
65	10EA065	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	66	10
66	10EA066	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	66	10
67	10EA067	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	66	10
68	10EA068	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	66	10
69	10EA069	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	66	10
70	10EA070	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	66	10
71	10EA071	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	66	10
72	10EA072	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	66	10
73	10EA073	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	66	10
74	10EA074	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	66	10
75	10EA075	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	66	10
76	10EA076	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	66	10
77	10EA077	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	66	10
78	10EA078	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	66	10
79	10EA079	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	66	10
80	10EA080	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	66	10
81	10EA081	OLH	0.1918	0.1138	0.0232	0.2382	0.3215	0.0952	0.0163	0.0391	15	10
82	10EA082	OLH	0.1843	0.0414	0.0223	0.2884	0.3481	0.1047	0.0108	1.957	15.102	10
83	10EA083	OLH	0.1542	0.0297	0.0155	0.1729	0.5433	0.0790	0.0053	0.7578	15.714	10
84	10EA084	OLH	0.1966	0.0295	0.0198	0.1654	0.4987	0.0840	0.0060	0.3008	15.918	10
85	10EA085	OLH	0.0956	0.1002	0.0214	0.3327	0.3348	0.0982	0.0171	0.0039	16.122	10
*86	10EA086	OLH	0.0998	0.0861	0.0117	0.3543	0.3352	0.1095	0.0033	1.2305	17.04	10
87	10EA087	OLH	0.1262	0.1404	0.0048	0.2244	0.3738	0.1118	0.0186	1.5898	17.55	10
88	10EA088	OLH	0.1821	0.1572	0.0199	0.1779	0.3597	0.0908	0.0123	0.7734	18.06	10
89	10EA089	OLH	0.2399	0.0212	0.0184	0.2003	0.3729	0.1371	0.0102	1.1641	18.162	10
*90	10EA090	OLH	0.0750	0.0439	0.0136	0.2872	0.4361	0.1371	0.0070	0.6094	18.264	10
91	10EA091	OLH	0.1154	0.0306	0.0105	0.3533	0.3620	0.1211	0.0071	0.8594	18.57	10
92	10EA092	OLH	0.1491	0.0195	0.0069	0.3508	0.3724	0.0931	0.0083	0.1914	18.672	10

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
*93	10EA093	OLH	0.1173	0.0919	0.0084	0.2373	0.4153	0.1102	0.0195	1.0195	19.284	10
94	10EA094	OLH	0.1130	0.0907	0.0043	0.1710	0.5200	0.0981	0.0030	0.5352	19.488	10
95	10EA095	OLH	0.1898	0.0323	0.0215	0.2772	0.3724	0.0925	0.0144	1.3203	19.998	10
96	10EA096	OLH	0.1669	0.0748	0.0031	0.3337	0.3280	0.0894	0.0040	1.8398	20.508	10
97	10EA097	OLH	0.2043	0.1181	0.0061	0.2501	0.3185	0.0955	0.0074	0.1563	21.222	10
98	10EA098	OLH	0.1058	0.0125	0.0041	0.1956	0.5094	0.1547	0.0179	1.5977	21.426	10
99	10EA099	OLH	0.2003	0.1021	0.0199	0.2472	0.3224	0.0956	0.0126	0.1719	21.732	10
100	10EA100	OLH	0.1876	0.0509	0.0021	0.1938	0.4624	0.0914	0.0119	1.6094	22.956	10
101	10EA101	OLH	0.1378	0.0348	0.0086	0.2134	0.5015	0.0869	0.0169	0.8633	23.466	10
102	10EA102	OLH	0.1185	0.1199	0.0182	0.1962	0.4383	0.1047	0.0042	1.0703	24.282	10
103	10EA103	OLH	0.1916	0.0103	0.0056	0.2613	0.4231	0.0934	0.0148	1.0273	26.016	10
104	10EA104	OLH	0.1544	0.0814	0.0136	0.1791	0.4433	0.1194	0.0087	1.1758	26.22	10
*105	10EA105	OLH	0.2332	0.0319	0.0046	0.2387	0.3824	0.1014	0.0079	0.5	26.526	10
106	10EA106	OLH	0.1655	0.0487	0.0189	0.2203	0.4583	0.0802	0.0082	1.2695	27.036	10
107	10EA107	OLH	0.2505	0.0207	0.0017	0.2818	0.3293	0.1081	0.0077	0.0195	27.138	10
108	10EA108	OLH	0.1492	0.0373	0.0219	0.2318	0.4468	0.0979	0.0151	1.4414	27.24	10
109	10EA109	OLH	0.1778	0.0144	0.0032	0.2740	0.4405	0.0866	0.0036	1.0547	28.056	10
110	10EA110	OLH	0.2498	0.0426	0.0124	0.2232	0.3617	0.1069	0.0034	1.2461	28.26	10
111	10EA111	OLH	0.0733	0.0262	0.0027	0.2809	0.5244	0.0829	0.0097	1.0977	28.464	10
*112	10EA112	OLH	0.1772	0.0437	0.0069	0.2768	0.3998	0.0841	0.0115	0.6211	28.566	10
113	10EA113	OLH	0.1312	0.0821	0.0080	0.3134	0.3320	0.1126	0.0208	1.0664	28.872	10
*114	10EA114	OLH	0.1219	0.0573	0.0032	0.2411	0.4850	0.0883	0.0032	0.6563	29.382	10
115	10EA115	OLH	0.1898	0.0209	0.0170	0.2095	0.4567	0.1016	0.0045	1.3867	29.484	10
*116	10EA116	OLH	0.1441	0.0763	0.0138	0.2381	0.4232	0.1011	0.0035	1.0078	30.198	10
117	10EA117	OLH	0.1307	0.0292	0.0147	0.3527	0.3787	0.0836	0.0105	1.8711	30.504	10
118	10EA118	OLH	0.2601	0.0891	0.0172	0.1871	0.3239	0.1178	0.0049	0.5664	30.606	10
119	10EA119	OLH	0.0716	0.0437	0.0121	0.2888	0.3934	0.1807	0.0097	0.6953	31.422	10
*120	10EA120	OLH	0.1124	0.0277	0.0204	0.2901	0.4374	0.1046	0.0075	1.4219	31.626	10
121	10EA121	OLH	0.1520	0.0487	0.0037	0.2465	0.4610	0.0827	0.0054	1.3555	32.748	10
122	10EA122	OLH	0.1398	0.1680	0.0101	0.2033	0.3637	0.1084	0.0067	0.2383	32.952	10
123	10EA123	OLH	0.2073	0.0202	0.0032	0.1988	0.4432	0.1137	0.0136	0.6328	33.36	10
124	10EA124	OLH	0.0982	0.1168	0.0127	0.3097	0.3397	0.1029	0.0201	1.5313	33.564	10
*125	10EA125	OLH	0.0829	0.0137	0.0221	0.1901	0.5254	0.1598	0.0060	0.4727	33.666	10
126	10EA126	OLH	0.1996	0.0242	0.0128	0.2253	0.4113	0.1147	0.0122	0.5195	34.176	10
127	10EA127	OLH	0.2046	0.0536	0.0149	0.1910	0.3573	0.1683	0.0103	1.9727	34.278	10
128	10EA128	OLH	0.1158	0.0555	0.0131	0.3186	0.3849	0.1004	0.0118	0.1523	34.788	10
129	10EA129	OLH	0.1708	0.0205	0.0083	0.1925	0.4250	0.1767	0.0062	1.668	37.032	10
130	10EA130	OLH	0.1130	0.0351	0.0057	0.1819	0.5027	0.1567	0.0050	1.9336	38.358	10
131	10EA131	OLH	0.1606	0.0717	0.0140	0.1845	0.4605	0.0986	0.0100	1.4258	39.48	10
*132	10EA132	OLH	0.1098	0.0634	0.0106	0.2276	0.4297	0.1397	0.0191	0.168	39.99	10
133	10EA133	OLH	0.3090	0.0103	0.0189	0.1772	0.3275	0.1534	0.0037	1.6641	40.194	10
134	10EA134	OLH	0.1224	0.0753	0.0109	0.1920	0.4947	0.1004	0.0042	0.2344	40.602	10
135	10EA135	OLH	0.0984	0.1516	0.0077	0.1989	0.3849	0.1472	0.0113	1.6914	41.112	10
*136	10EA136	OLH	0.1669	0.0697	0.0017	0.2348	0.4110	0.1045	0.0114	1.125	41.622	10
137	10EA137	OLH	0.0589	0.0346	0.0075	0.2795	0.5124	0.0947	0.0124	0.2813	42.744	10
*138	10EA138	OLH	0.0626	0.1291	0.0064	0.1950	0.4996	0.0994	0.0079	1.7813	43.152	10
139	10EA139	OLH	0.1311	0.1039	0.0144	0.2730	0.3735	0.0956	0.0085	0.6992	43.56	10

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
140	10EA140	OLH	0.1595	0.0782	0.0088	0.2218	0.4479	0.0805	0.0034	0.957	43.662	10
141	10EA141	OLH	0.1533	0.0128	0.0022	0.2050	0.5234	0.0881	0.0152	0.3164	43.866	10
142	10EA142	OLH	0.0698	0.0153	0.0170	0.3329	0.4729	0.0880	0.0043	1.7539	44.172	10
*143	10EA143	OLH	0.1615	0.1301	0.0010	0.2107	0.3925	0.0951	0.0091	0.4375	44.274	10
144	10EA144	OLH	0.1759	0.0258	0.0155	0.2949	0.3976	0.0845	0.0058	0.7617	44.376	10
145	10EA145	OLH	0.0835	0.1155	0.0123	0.2952	0.3669	0.1216	0.0049	0.6758	44.58	10
*146	10EA146	OLH	0.1345	0.0261	0.0159	0.3489	0.3629	0.0958	0.0159	1.4922	45.396	10
147	10EA147	OLH	0.0912	0.1248	0.0125	0.1967	0.4709	0.0918	0.0120	1.168	45.6	10
148	10EA148	OLH	0.1887	0.0493	0.0034	0.2270	0.4343	0.0792	0.0181	0.7852	45.702	10
*149	10EA149	OLH	0.0686	0.1216	0.0090	0.3445	0.3364	0.1002	0.0197	0.9219	45.804	10
150	10EA150	OLH	0.2098	0.0921	0.0073	0.1675	0.4174	0.0975	0.0083	1.2031	46.008	10
151	10EA151	OLH	0.1460	0.0424	0.0042	0.2977	0.4206	0.0856	0.0034	0.6289	46.518	10
152	10EA152	OLH	0.2237	0.0336	0.0172	0.1951	0.4230	0.0982	0.0093	0.0078	47.028	10
153	10EA153	OLH	0.1656	0.0179	0.0162	0.1905	0.4556	0.1377	0.0165	1.2773	47.13	10
*154	10EA154	OLH	0.1154	0.1181	0.0060	0.2646	0.3665	0.1198	0.0096	0.9531	47.742	10
155	10EA155	OLH	0.0801	0.0774	0.0229	0.2804	0.3884	0.1344	0.0164	1.6328	47.844	10
*156	10EA156	OLH	0.1280	0.0508	0.0015	0.3018	0.4202	0.0851	0.0127	1.1289	47.946	10
157	10EA157	OLH	0.2177	0.0376	0.0074	0.2628	0.3774	0.0914	0.0058	1.7773	48.456	10
158	10EA158	OLH	0.1680	0.0695	0.0027	0.3174	0.3216	0.1056	0.0151	1.1602	48.762	10
159	10EA159	OLH	0.1811	0.0320	0.0164	0.2236	0.3974	0.1312	0.0182	1.1172	48.864	10
160	10EA160	OLH	0.1595	0.0307	0.0151	0.2310	0.3962	0.1559	0.0116	1.8945	49.782	10
161	10EA161	OLH	0.0732	0.0251	0.0068	0.1875	0.5517	0.1364	0.0192	1.5391	50.088	10
162	10EA162	OLH	0.1318	0.1021	0.0025	0.1808	0.4500	0.1235	0.0094	0.0547	51.108	10
163	10EA163	OLH	0.1505	0.1198	0.0105	0.2479	0.3470	0.1066	0.0178	1.9258	52.026	10
164	10EA164	OLH	0.2540	0.0581	0.0084	0.1858	0.3611	0.1153	0.0173	1.4766	53.454	10
165	10EA165	OLH	0.1877	0.1616	0.0038	0.2156	0.3339	0.0871	0.0104	0.457	53.556	10
166	10EA166	OLH	0.1839	0.0375	0.0052	0.2007	0.4698	0.0871	0.0157	1.2734	54.066	10
167	10EA167	OLH	0.1168	0.0904	0.0115	0.2788	0.3790	0.1191	0.0045	0.625	54.27	10
168	10EA168	OLH	0.1445	0.1280	0.0089	0.1786	0.4385	0.0878	0.0138	1.1484	54.882	10
*169	10EA169	OLH	0.1160	0.0887	0.0084	0.2963	0.3542	0.1161	0.0203	1.7695	55.902	10
170	10EA170	OLH	0.2639	0.0480	0.0011	0.1958	0.3705	0.1146	0.0061	1.918	56.514	10
171	10EA171	OLH	0.0857	0.0219	0.0025	0.2029	0.5554	0.1201	0.0115	0.207	57.738	10
172	10EA172	OLH	0.0944	0.0558	0.0035	0.3378	0.4044	0.0890	0.0151	1.7266	58.758	10
173	10EA173	OLH	0.0711	0.0286	0.0090	0.3841	0.3570	0.1442	0.0061	1.0898	58.86	10
174	10EA174	OLH	0.0687	0.1321	0.0055	0.2443	0.4377	0.0954	0.0163	0.8945	60.39	10
*175	10EA175	OLH	0.1743	0.0647	0.0030	0.1795	0.4891	0.0792	0.0104	1.6758	60.696	10
176	10EA176	OLH	0.2841	0.0169	0.0098	0.1980	0.3539	0.1186	0.0187	1.0625	60.9	10
177	10EA177	OLH	0.1433	0.0625	0.0156	0.2674	0.3988	0.1082	0.0041	1.9492	61.206	10
*178	10EA178	OLH	0.2261	0.1236	0.0196	0.2022	0.3185	0.0934	0.0167	1.7852	61.92	10
179	10EA179	OLH	0.1113	0.0153	0.0137	0.2596	0.5009	0.0841	0.0151	0.2422	62.022	10
*180	10EA180	OLH	0.2326	0.0556	0.0121	0.2253	0.3643	0.0969	0.0132	0.4961	63.042	10
181	10EA181	OLH	0.0911	0.0228	0.0120	0.2286	0.5396	0.0948	0.0111	0.6367	63.348	10
182	10EA182	OLH	0.1226	0.0255	0.0083	0.2787	0.3779	0.1696	0.0173	1.4102	63.552	10
183	10EA183	OLH	0.2295	0.0373	0.0119	0.1679	0.4290	0.1072	0.0171	0.4453	63.756	10
184	10EA184	OLH	0.1460	0.0645	0.0103	0.1800	0.4975	0.0978	0.0040	0.1836	64.164	10
*185	10EA185	OLH	0.1361	0.0601	0.0204	0.2124	0.4612	0.1047	0.0050	1.6563	64.47	10
186	10EA186	OLH	0.1504	0.1056	0.0174	0.2417	0.3505	0.1218	0.0126	0.1875	64.674	10

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
*187	10EA187	OLH	0.1310	0.0956	0.0228	0.2471	0.4037	0.0897	0.0101	1.7969	64.776	10
188	10EA188	OLH	0.1555	0.0348	0.0175	0.3104	0.3612	0.1086	0.0120	1.0508	65.388	10
189	8EA001	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	15	8
190	8EA002	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	15	8
191	8EA003	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	15	8
192	8EA004	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	15	8
193	8EA005	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	15	8
194	8EA006	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	15	8
195	8EA007	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	15	8
196	8EA008	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	15	8
197	8EA009	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	15	8
198	8EA010	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	15	8
199	8EA011	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	15	8
200	8EA012	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	15	8
201	8EA013	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	15	8
202	8EA014	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	15	8
203	8EA015	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	15	8
204	8EA016	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	15	8
205	8EA017	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	15	8
206	8EA018	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	15	8
207	8EA019	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	15	8
208	8EA020	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	15	8
209	8EA021	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	15	8
210	8EA022	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	15	8
211	8EA023	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	15	8
212	8EA024	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	15	8
213	8EA025	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	15	8
214	8EA026	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	15	8
215	8EA027	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	15	8
216	8EA028	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	15	8
217	8EA029	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	15	8
218	8EA030	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	15	8
219	8EA031	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	15	8
220	8EA032	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	15	8
221	8EA033	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	15	8
222	8EA034	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	15	8
223	8EA035	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	15	8
224	8EA036	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	15	8
225	8EA037	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	15	8
226	8EA038	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	15	8
227	8EA039	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	15	8
228	8EA040	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	15	8
229	8EA041	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	66	8
230	8EA042	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	66	8
231	8EA043	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	66	8
232	8EA044	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	66	8
233	8EA045	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	66	8

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
234	8EA046	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	66	8
235	8EA047	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	66	8
236	8EA048	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	66	8
237	8EA049	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	66	8
238	8EA050	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	66	8
239	8EA051	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	66	8
240	8EA052	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	66	8
241	8EA053	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	66	8
242	8EA054	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	66	8
243	8EA055	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	66	8
244	8EA056	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	66	8
245	8EA057	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	66	8
246	8EA058	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	66	8
247	8EA059	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	66	8
248	8EA060	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	66	8
249	8EA061	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	66	8
250	8EA062	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	66	8
251	8EA063	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	66	8
252	8EA064	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	66	8
253	8EA065	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	66	8
254	8EA066	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	66	8
255	8EA067	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	66	8
256	8EA068	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	66	8
257	8EA069	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	66	8
258	8EA070	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	66	8
259	8EA071	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	66	8
260	8EA072	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	66	8
261	8EA073	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	66	8
262	8EA074	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	66	8
263	8EA075	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	66	8
264	8EA076	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	66	8
265	8EA077	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	66	8
266	8EA078	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	66	8
267	8EA079	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	66	8
268	8EA080	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	66	8
269	8EA081	OLH	0.1918	0.1138	0.0232	0.2382	0.3215	0.0952	0.0163	0.0391	15	8
270	8EA082	OLH	0.1843	0.0414	0.0223	0.2884	0.3481	0.1047	0.0108	1.957	15.102	8
*271	8EA083	OLH	0.1542	0.0297	0.0155	0.1729	0.5433	0.0790	0.0053	0.7578	15.714	8
272	8EA084	OLH	0.1966	0.0295	0.0198	0.1654	0.4987	0.0840	0.0060	0.3008	15.918	8
273	8EA085	OLH	0.0956	0.1002	0.0214	0.3327	0.3348	0.0982	0.0171	0.0039	16.122	8
274	8EA086	OLH	0.0998	0.0861	0.0117	0.3543	0.3352	0.1095	0.0033	1.2305	17.04	8
*275	8EA087	OLH	0.1262	0.1404	0.0048	0.2244	0.3738	0.1118	0.0186	1.5898	17.55	8
276	8EA088	OLH	0.1821	0.1572	0.0199	0.1779	0.3597	0.0908	0.0123	0.7734	18.06	8
277	8EA089	OLH	0.2399	0.0212	0.0184	0.2003	0.3729	0.1371	0.0102	1.1641	18.162	8
278	8EA090	OLH	0.0750	0.0439	0.0136	0.2872	0.4361	0.1371	0.0070	0.6094	18.264	8
*279	8EA091	OLH	0.1154	0.0306	0.0105	0.3533	0.3620	0.1211	0.0071	0.8594	18.57	8
280	8EA092	OLH	0.1491	0.0195	0.0069	0.3508	0.3724	0.0931	0.0083	0.1914	18.672	8

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
281	8EA093	OLH	0.1173	0.0919	0.0084	0.2373	0.4153	0.1102	0.0195	1.0195	19.284	8
282	8EA094	OLH	0.1130	0.0907	0.0043	0.1710	0.5200	0.0981	0.0030	0.5352	19.488	8
*283	8EA095	OLH	0.1898	0.0323	0.0215	0.2772	0.3724	0.0925	0.0144	1.3203	19.998	8
284	8EA096	OLH	0.1669	0.0748	0.0031	0.3337	0.3280	0.0894	0.0040	1.8398	20.508	8
285	8EA097	OLH	0.2043	0.1181	0.0061	0.2501	0.3185	0.0955	0.0074	0.1563	21.222	8
*286	8EA098	OLH	0.1058	0.0125	0.0041	0.1956	0.5094	0.1547	0.0179	1.5977	21.426	8
287	8EA099	OLH	0.2003	0.1021	0.0199	0.2472	0.3224	0.0956	0.0126	0.1719	21.732	8
288	8EA100	OLH	0.1876	0.0509	0.0021	0.1938	0.4624	0.0914	0.0119	1.6094	22.956	8
*289	8EA101	OLH	0.1378	0.0348	0.0086	0.2134	0.5015	0.0869	0.0169	0.8633	23.466	8
290	8EA102	OLH	0.1185	0.1199	0.0182	0.1962	0.4383	0.1047	0.0042	1.0703	24.282	8
291	8EA103	OLH	0.1916	0.0103	0.0056	0.2613	0.4231	0.0934	0.0148	1.0273	26.016	8
*292	8EA104	OLH	0.1544	0.0814	0.0136	0.1791	0.4433	0.1194	0.0087	1.1758	26.22	8
293	8EA105	OLH	0.2332	0.0319	0.0046	0.2387	0.3824	0.1014	0.0079	0.5	26.526	8
294	8EA106	OLH	0.1655	0.0487	0.0189	0.2203	0.4583	0.0802	0.0082	1.2695	27.036	8
295	8EA107	OLH	0.2505	0.0207	0.0017	0.2818	0.3293	0.1081	0.0077	0.0195	27.138	8
296	8EA108	OLH	0.1492	0.0373	0.0219	0.2318	0.4468	0.0979	0.0151	1.4414	27.24	8
297	8EA109	OLH	0.1778	0.0144	0.0032	0.2740	0.4405	0.0866	0.0036	1.0547	28.056	8
*298	8EA110	OLH	0.2498	0.0426	0.0124	0.2232	0.3617	0.1069	0.0034	1.2461	28.26	8
299	8EA111	OLH	0.0733	0.0262	0.0027	0.2809	0.5244	0.0829	0.0097	1.0977	28.464	8
300	8EA112	OLH	0.1772	0.0437	0.0069	0.2768	0.3998	0.0841	0.0115	0.6211	28.566	8
301	8EA113	OLH	0.1312	0.0821	0.0080	0.3134	0.3320	0.1126	0.0208	1.0664	28.872	8
302	8EA114	OLH	0.1219	0.0573	0.0032	0.2411	0.4850	0.0883	0.0032	0.6563	29.382	8
*303	8EA115	OLH	0.1898	0.0209	0.0170	0.2095	0.4567	0.1016	0.0045	1.3867	29.484	8
304	8EA116	OLH	0.1441	0.0763	0.0138	0.2381	0.4232	0.1011	0.0035	1.0078	30.198	8
305	8EA117	OLH	0.1307	0.0292	0.0147	0.3527	0.3787	0.0836	0.0105	1.8711	30.504	8
306	8EA118	OLH	0.2601	0.0891	0.0172	0.1871	0.3239	0.1178	0.0049	0.5664	30.606	8
307	8EA119	OLH	0.0716	0.0437	0.0121	0.2888	0.3934	0.1807	0.0097	0.6953	31.422	8
308	8EA120	OLH	0.1124	0.0277	0.0204	0.2901	0.4374	0.1046	0.0075	1.4219	31.626	8
309	8EA121	OLH	0.1520	0.0487	0.0037	0.2465	0.4610	0.0827	0.0054	1.3555	32.748	8
310	8EA122	OLH	0.1398	0.1680	0.0101	0.2033	0.3637	0.1084	0.0067	0.2383	32.952	8
311	8EA123	OLH	0.2073	0.0202	0.0032	0.1988	0.4432	0.1137	0.0136	0.6328	33.36	8
312	8EA124	OLH	0.0982	0.1168	0.0127	0.3097	0.3397	0.1029	0.0201	1.5313	33.564	8
313	8EA125	OLH	0.0829	0.0137	0.0221	0.1901	0.5254	0.1598	0.0060	0.4727	33.666	8
314	8EA126	OLH	0.1996	0.0242	0.0128	0.2253	0.4113	0.1147	0.0122	0.5195	34.176	8
315	8EA127	OLH	0.2046	0.0536	0.0149	0.1910	0.3573	0.1683	0.0103	1.9727	34.278	8
*316	8EA128	OLH	0.1158	0.0555	0.0131	0.3186	0.3849	0.1004	0.0118	0.1523	34.788	8
317	8EA129	OLH	0.1708	0.0205	0.0083	0.1925	0.4250	0.1767	0.0062	1.668	37.032	8
318	8EA130	OLH	0.1130	0.0351	0.0057	0.1819	0.5027	0.1567	0.0050	1.9336	38.358	8
319	8EA131	OLH	0.1606	0.0717	0.0140	0.1845	0.4605	0.0986	0.0100	1.4258	39.48	8
320	8EA132	OLH	0.1098	0.0634	0.0106	0.2276	0.4297	0.1397	0.0191	0.168	39.99	8
*321	8EA133	OLH	0.3090	0.0103	0.0189	0.1772	0.3275	0.1534	0.0037	1.6641	40.194	8
322	8EA134	OLH	0.1224	0.0753	0.0109	0.1920	0.4947	0.1004	0.0042	0.2344	40.602	8
323	8EA135	OLH	0.0984	0.1516	0.0077	0.1989	0.3849	0.1472	0.0113	1.6914	41.112	8
324	8EA136	OLH	0.1669	0.0697	0.0017	0.2348	0.4110	0.1045	0.0114	1.125	41.622	8
325	8EA137	OLH	0.0589	0.0346	0.0075	0.2795	0.5124	0.0947	0.0124	0.2813	42.744	8
326	8EA138	OLH	0.0626	0.1291	0.0064	0.1950	0.4996	0.0994	0.0079	1.7813	43.152	8
327	8EA139	OLH	0.1311	0.1039	0.0144	0.2730	0.3735	0.0956	0.0085	0.6992	43.56	8

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
328	8EA140	OLH	0.1595	0.0782	0.0088	0.2218	0.4479	0.0805	0.0034	0.957	43.662	8
*329	8EA141	OLH	0.1533	0.0128	0.0022	0.2050	0.5234	0.0881	0.0152	0.3164	43.866	8
330	8EA142	OLH	0.0698	0.0153	0.0170	0.3329	0.4729	0.0880	0.0043	1.7539	44.172	8
331	8EA143	OLH	0.1615	0.1301	0.0010	0.2107	0.3925	0.0951	0.0091	0.4375	44.274	8
332	8EA144	OLH	0.1759	0.0258	0.0155	0.2949	0.3976	0.0845	0.0058	0.7617	44.376	8
333	8EA145	OLH	0.0835	0.1155	0.0123	0.2952	0.3669	0.1216	0.0049	0.6758	44.58	8
334	8EA146	OLH	0.1345	0.0261	0.0159	0.3489	0.3629	0.0958	0.0159	1.4922	45.396	8
*335	8EA147	OLH	0.0912	0.1248	0.0125	0.1967	0.4709	0.0918	0.0120	1.168	45.6	8
336	8EA148	OLH	0.1887	0.0493	0.0034	0.2270	0.4343	0.0792	0.0181	0.7852	45.702	8
337	8EA149	OLH	0.0686	0.1216	0.0090	0.3445	0.3364	0.1002	0.0197	0.9219	45.804	8
338	8EA150	OLH	0.2098	0.0921	0.0073	0.1675	0.4174	0.0975	0.0083	1.2031	46.008	8
339	8EA151	OLH	0.1460	0.0424	0.0042	0.2977	0.4206	0.0856	0.0034	0.6289	46.518	8
340	8EA152	OLH	0.2237	0.0336	0.0172	0.1951	0.4230	0.0982	0.0093	0.0078	47.028	8
341	8EA153	OLH	0.1656	0.0179	0.0162	0.1905	0.4556	0.1377	0.0165	1.2773	47.13	8
342	8EA154	OLH	0.1154	0.1181	0.0060	0.2646	0.3665	0.1198	0.0096	0.9531	47.742	8
343	8EA155	OLH	0.0801	0.0774	0.0229	0.2804	0.3884	0.1344	0.0164	1.6328	47.844	8
*344	8EA156	OLH	0.1280	0.0508	0.0015	0.3018	0.4202	0.0851	0.0127	1.1289	47.946	8
345	8EA157	OLH	0.2177	0.0376	0.0074	0.2628	0.3774	0.0914	0.0058	1.7773	48.456	8
*346	8EA158	OLH	0.1680	0.0695	0.0027	0.3174	0.3216	0.1056	0.0151	1.1602	48.762	8
347	8EA159	OLH	0.1811	0.0320	0.0164	0.2236	0.3974	0.1312	0.0182	1.1172	48.864	8
348	8EA160	OLH	0.1595	0.0307	0.0151	0.2310	0.3962	0.1559	0.0116	1.8945	49.782	8
349	8EA161	OLH	0.0732	0.0251	0.0068	0.1875	0.5517	0.1364	0.0192	1.5391	50.088	8
350	8EA162	OLH	0.1318	0.1021	0.0025	0.1808	0.4500	0.1235	0.0094	0.0547	51.108	8
351	8EA163	OLH	0.1505	0.1198	0.0105	0.2479	0.3470	0.1066	0.0178	1.9258	52.026	8
352	8EA164	OLH	0.2540	0.0581	0.0084	0.1858	0.3611	0.1153	0.0173	1.4766	53.454	8
353	8EA165	OLH	0.1877	0.1616	0.0038	0.2156	0.3339	0.0871	0.0104	0.457	53.556	8
354	8EA166	OLH	0.1839	0.0375	0.0052	0.2007	0.4698	0.0871	0.0157	1.2734	54.066	8
*355	8EA167	OLH	0.1168	0.0904	0.0115	0.2788	0.3790	0.1191	0.0045	0.625	54.27	8
356	8EA168	OLH	0.1445	0.1280	0.0089	0.1786	0.4385	0.0878	0.0138	1.1484	54.882	8
357	8EA169	OLH	0.1160	0.0887	0.0084	0.2963	0.3542	0.1161	0.0203	1.7695	55.902	8
358	8EA170	OLH	0.2639	0.0480	0.0011	0.1958	0.3705	0.1146	0.0061	1.918	56.514	8
*359	8EA171	OLH	0.0857	0.0219	0.0025	0.2029	0.5554	0.1201	0.0115	0.207	57.738	8
360	8EA172	OLH	0.0944	0.0558	0.0035	0.3378	0.4044	0.0890	0.0151	1.7266	58.758	8
361	8EA173	OLH	0.0711	0.0286	0.0090	0.3841	0.3570	0.1442	0.0061	1.0898	58.86	8
362	8EA174	OLH	0.0687	0.1321	0.0055	0.2443	0.4377	0.0954	0.0163	0.8945	60.39	8
*363	8EA175	OLH	0.1743	0.0647	0.0030	0.1795	0.4891	0.0792	0.0104	1.6758	60.696	8
364	8EA176	OLH	0.2841	0.0169	0.0098	0.1980	0.3539	0.1186	0.0187	1.0625	60.9	8
365	8EA177	OLH	0.1433	0.0625	0.0156	0.2674	0.3988	0.1082	0.0041	1.9492	61.206	8
366	8EA178	OLH	0.2261	0.1236	0.0196	0.2022	0.3185	0.0934	0.0167	1.7852	61.92	8
367	8EA179	OLH	0.1113	0.0153	0.0137	0.2596	0.5009	0.0841	0.0151	0.2422	62.022	8
368	8EA180	OLH	0.2326	0.0556	0.0121	0.2253	0.3643	0.0969	0.0132	0.4961	63.042	8
*369	8EA181	OLH	0.0911	0.0228	0.0120	0.2286	0.5396	0.0948	0.0111	0.6367	63.348	8
370	8EA182	OLH	0.1226	0.0255	0.0083	0.2787	0.3779	0.1696	0.0173	1.4102	63.552	8
*371	8EA183	OLH	0.2295	0.0373	0.0119	0.1679	0.4290	0.1072	0.0171	0.4453	63.756	8
372	8EA184	OLH	0.1460	0.0645	0.0103	0.1800	0.4975	0.0978	0.0040	0.1836	64.164	8
373	8EA185	OLH	0.1361	0.0601	0.0204	0.2124	0.4612	0.1047	0.0050	1.6563	64.47	8
374	8EA186	OLH	0.1504	0.1056	0.0174	0.2417	0.3505	0.1218	0.0126	0.1875	64.674	8

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
*375	8EA187	OLH	0.1310	0.0956	0.0228	0.2471	0.4037	0.0897	0.0101	1.7969	64.776	8
376	8EA188	OLH	0.1555	0.0348	0.0175	0.3104	0.3612	0.1086	0.0120	1.0508	65.388	8
377	6EA001	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	15	6
378	6EA002	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	15	6
379	6EA003	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	15	6
380	6EA004	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	15	6
381	6EA005	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	15	6
382	6EA006	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	15	6
383	6EA007	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	15	6
384	6EA008	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	15	6
385	6EA009	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	15	6
386	6EA010	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	15	6
387	6EA011	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	15	6
388	6EA012	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	15	6
389	6EA013	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	15	6
390	6EA014	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	15	6
391	6EA015	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	15	6
392	6EA016	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	15	6
393	6EA017	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	15	6
394	6EA018	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	15	6
395	6EA019	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	15	6
396	6EA020	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	15	6
397	6EA021	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	15	6
398	6EA022	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	15	6
399	6EA023	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	15	6
400	6EA024	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	15	6
401	6EA025	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	15	6
402	6EA026	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	15	6
403	6EA027	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	15	6
404	6EA028	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	15	6
405	6EA029	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	15	6
406	6EA030	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	15	6
407	6EA031	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	15	6
408	6EA032	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	15	6
409	6EA033	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	15	6
410	6EA034	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	15	6
411	6EA035	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	15	6
412	6EA036	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	15	6
413	6EA037	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	15	6
414	6EA038	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	15	6
415	6EA039	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	15	6
416	6EA040	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	15	6
417	6EA041	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	66	6
418	6EA042	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	66	6
419	6EA043	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	66	6
420	6EA044	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	66	6
421	6EA045	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	66	6

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
422	6EA046	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	66	6
423	6EA047	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	66	6
424	6EA048	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	66	6
425	6EA049	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	66	6
426	6EA050	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	66	6
427	6EA051	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	0	66	6
428	6EA052	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	0	66	6
429	6EA053	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	0	66	6
430	6EA054	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	0	66	6
431	6EA055	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	0	66	6
432	6EA056	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	0	66	6
433	6EA057	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	0	66	6
434	6EA058	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	0	66	6
435	6EA059	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	0	66	6
436	6EA060	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	0	66	6
437	6EA061	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	66	6
438	6EA062	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	66	6
439	6EA063	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	66	6
440	6EA064	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	66	6
441	6EA065	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	66	6
442	6EA066	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	66	6
443	6EA067	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	66	6
444	6EA068	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	66	6
445	6EA069	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	66	6
446	6EA070	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	66	6
447	6EA071	MPV	0.0774	0.0124	0.0011	0.2132	0.3895	0.2810	0.0254	2	66	6
448	6EA072	MPV	0.0782	0.0125	0.0011	0.2153	0.3935	0.2956	0.0038	2	66	6
449	6EA073	MPV	0.0552	0.0089	0.0008	0.3208	0.5360	0.0756	0.0027	2	66	6
450	6EA074	MPV	0.0602	0.0097	0.0214	0.1659	0.6167	0.1232	0.0030	2	66	6
451	6EA075	MPV	0.0673	0.0108	0.0240	0.3911	0.3389	0.1501	0.0178	2	66	6
452	6EA076	MPV	0.0672	0.2197	0.0239	0.1852	0.3941	0.0920	0.0178	2	66	6
453	6EA077	MPV	0.2066	0.2077	0.0009	0.1750	0.3197	0.0870	0.0031	2	66	6
454	6EA078	MPV	0.1920	0.0087	0.0008	0.1487	0.5530	0.0791	0.0178	2	66	6
455	6EA079	MPV	0.2347	0.0094	0.0009	0.3423	0.2966	0.0967	0.0194	2	66	6
456	6EA080	MPV	0.3310	0.0101	0.0225	0.1738	0.3176	0.1420	0.0031	2	66	6
457	6EA081	OLH	0.1918	0.1138	0.0232	0.2382	0.3215	0.0952	0.0163	0.0391	15	6
458	6EA082	OLH	0.1843	0.0414	0.0223	0.2884	0.3481	0.1047	0.0108	1.957	15.102	6
459	6EA083	OLH	0.1542	0.0297	0.0155	0.1729	0.5433	0.0790	0.0053	0.7578	15.714	6
460	6EA084	OLH	0.1966	0.0295	0.0198	0.1654	0.4987	0.0840	0.0060	0.3008	15.918	6
461	6EA085	OLH	0.0956	0.1002	0.0214	0.3327	0.3348	0.0982	0.0171	0.0039	16.122	6
*462	6EA086	OLH	0.0998	0.0861	0.0117	0.3543	0.3352	0.1095	0.0033	1.2305	17.04	6
463	6EA087	OLH	0.1262	0.1404	0.0048	0.2244	0.3738	0.1118	0.0186	1.5898	17.55	6
464	6EA088	OLH	0.1821	0.1572	0.0199	0.1779	0.3597	0.0908	0.0123	0.7734	18.06	6
*465	6EA089	OLH	0.2399	0.0212	0.0184	0.2003	0.3729	0.1371	0.0102	1.1641	18.162	6
466	6EA090	OLH	0.0750	0.0439	0.0136	0.2872	0.4361	0.1371	0.0070	0.6094	18.264	6
467	6EA091	OLH	0.1154	0.0306	0.0105	0.3533	0.3620	0.1211	0.0071	0.8594	18.57	6
468	6EA092	OLH	0.1491	0.0195	0.0069	0.3508	0.3724	0.0931	0.0083	0.1914	18.672	6

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
*469	6EA093	OLH	0.1173	0.0919	0.0084	0.2373	0.4153	0.1102	0.0195	1.0195	19.284	6
470	6EA094	OLH	0.1130	0.0907	0.0043	0.1710	0.5200	0.0981	0.0030	0.5352	19.488	6
471	6EA095	OLH	0.1898	0.0323	0.0215	0.2772	0.3724	0.0925	0.0144	1.3203	19.998	6
*472	6EA096	OLH	0.1669	0.0748	0.0031	0.3337	0.3280	0.0894	0.0040	1.8398	20.508	6
473	6EA097	OLH	0.2043	0.1181	0.0061	0.2501	0.3185	0.0955	0.0074	0.1563	21.222	6
474	6EA098	OLH	0.1058	0.0125	0.0041	0.1956	0.5094	0.1547	0.0179	1.5977	21.426	6
475	6EA099	OLH	0.2003	0.1021	0.0199	0.2472	0.3224	0.0956	0.0126	0.1719	21.732	6
*476	6EA100	OLH	0.1876	0.0509	0.0021	0.1938	0.4624	0.0914	0.0119	1.6094	22.956	6
477	6EA101	OLH	0.1378	0.0348	0.0086	0.2134	0.5015	0.0869	0.0169	0.8633	23.466	6
478	6EA102	OLH	0.1185	0.1199	0.0182	0.1962	0.4383	0.1047	0.0042	1.0703	24.282	6
479	6EA103	OLH	0.1916	0.0103	0.0056	0.2613	0.4231	0.0934	0.0148	1.0273	26.016	6
480	6EA104	OLH	0.1544	0.0814	0.0136	0.1791	0.4433	0.1194	0.0087	1.1758	26.22	6
481	6EA105	OLH	0.2332	0.0319	0.0046	0.2387	0.3824	0.1014	0.0079	0.5	26.526	6
482	6EA106	OLH	0.1655	0.0487	0.0189	0.2203	0.4583	0.0802	0.0082	1.2695	27.036	6
483	6EA107	OLH	0.2505	0.0207	0.0017	0.2818	0.3293	0.1081	0.0077	0.0195	27.138	6
*484	6EA108	OLH	0.1492	0.0373	0.0219	0.2318	0.4468	0.0979	0.0151	1.4414	27.24	6
485	6EA109	OLH	0.1778	0.0144	0.0032	0.2740	0.4405	0.0866	0.0036	1.0547	28.056	6
486	6EA110	OLH	0.2498	0.0426	0.0124	0.2232	0.3617	0.1069	0.0034	1.2461	28.26	6
*487	6EA111	OLH	0.0733	0.0262	0.0027	0.2809	0.5244	0.0829	0.0097	1.0977	28.464	6
488	6EA112	OLH	0.1772	0.0437	0.0069	0.2768	0.3998	0.0841	0.0115	0.6211	28.566	6
489	6EA113	OLH	0.1312	0.0821	0.0080	0.3134	0.3320	0.1126	0.0208	1.0664	28.872	6
490	6EA114	OLH	0.1219	0.0573	0.0032	0.2411	0.4850	0.0883	0.0032	0.6563	29.382	6
*491	6EA115	OLH	0.1898	0.0209	0.0170	0.2095	0.4567	0.1016	0.0045	1.3867	29.484	6
492	6EA116	OLH	0.1441	0.0763	0.0138	0.2381	0.4232	0.1011	0.0035	1.0078	30.198	6
493	6EA117	OLH	0.1307	0.0292	0.0147	0.3527	0.3787	0.0836	0.0105	1.8711	30.504	6
494	6EA118	OLH	0.2601	0.0891	0.0172	0.1871	0.3239	0.1178	0.0049	0.5664	30.606	6
495	6EA119	OLH	0.0716	0.0437	0.0121	0.2888	0.3934	0.1807	0.0097	0.6953	31.422	6
496	6EA120	OLH	0.1124	0.0277	0.0204	0.2901	0.4374	0.1046	0.0075	1.4219	31.626	6
497	6EA121	OLH	0.1520	0.0487	0.0037	0.2465	0.4610	0.0827	0.0054	1.3555	32.748	6
498	6EA122	OLH	0.1398	0.1680	0.0101	0.2033	0.3637	0.1084	0.0067	0.2383	32.952	6
*499	6EA123	OLH	0.2073	0.0202	0.0032	0.1988	0.4432	0.1137	0.0136	0.6328	33.36	6
500	6EA124	OLH	0.0982	0.1168	0.0127	0.3097	0.3397	0.1029	0.0201	1.5313	33.564	6
*501	6EA125	OLH	0.0829	0.0137	0.0221	0.1901	0.5254	0.1598	0.0060	0.4727	33.666	6
502	6EA126	OLH	0.1996	0.0242	0.0128	0.2253	0.4113	0.1147	0.0122	0.5195	34.176	6
503	6EA127	OLH	0.2046	0.0536	0.0149	0.1910	0.3573	0.1683	0.0103	1.9727	34.278	6
*504	6EA128	OLH	0.1158	0.0555	0.0131	0.3186	0.3849	0.1004	0.0118	0.1523	34.788	6
505	6EA129	OLH	0.1708	0.0205	0.0083	0.1925	0.4250	0.1767	0.0062	1.668	37.032	6
506	6EA130	OLH	0.1130	0.0351	0.0057	0.1819	0.5027	0.1567	0.0050	1.9336	38.358	6
507	6EA131	OLH	0.1606	0.0717	0.0140	0.1845	0.4605	0.0986	0.0100	1.4258	39.48	6
508	6EA132	OLH	0.1098	0.0634	0.0106	0.2276	0.4297	0.1397	0.0191	0.168	39.99	6
*509	6EA133	OLH	0.3090	0.0103	0.0189	0.1772	0.3275	0.1534	0.0037	1.6641	40.194	6
510	6EA134	OLH	0.1224	0.0753	0.0109	0.1920	0.4947	0.1004	0.0042	0.2344	40.602	6
511	6EA135	OLH	0.0984	0.1516	0.0077	0.1989	0.3849	0.1472	0.0113	1.6914	41.112	6
*512	6EA136	OLH	0.1669	0.0697	0.0017	0.2348	0.4110	0.1045	0.0114	1.125	41.622	6
513	6EA137	OLH	0.0589	0.0346	0.0075	0.2795	0.5124	0.0947	0.0124	0.2813	42.744	6
514	6EA138	OLH	0.0626	0.1291	0.0064	0.1950	0.4996	0.0994	0.0079	1.7813	43.152	6
515	6EA139	OLH	0.1311	0.1039	0.0144	0.2730	0.3735	0.0956	0.0085	0.6992	43.56	6

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
516	6EA140	OLH	0.1595	0.0782	0.0088	0.2218	0.4479	0.0805	0.0034	0.957	43.662	6
517	6EA141	OLH	0.1533	0.0128	0.0022	0.2050	0.5234	0.0881	0.0152	0.3164	43.866	6
*518	6EA142	OLH	0.0698	0.0153	0.0170	0.3329	0.4729	0.0880	0.0043	1.7539	44.172	6
519	6EA143	OLH	0.1615	0.1301	0.0010	0.2107	0.3925	0.0951	0.0091	0.4375	44.274	6
520	6EA144	OLH	0.1759	0.0258	0.0155	0.2949	0.3976	0.0845	0.0058	0.7617	44.376	6
521	6EA145	OLH	0.0835	0.1155	0.0123	0.2952	0.3669	0.1216	0.0049	0.6758	44.58	6
522	6EA146	OLH	0.1345	0.0261	0.0159	0.3489	0.3629	0.0958	0.0159	1.4922	45.396	6
*523	6EA147	OLH	0.0912	0.1248	0.0125	0.1967	0.4709	0.0918	0.0120	1.168	45.6	6
524	6EA148	OLH	0.1887	0.0493	0.0034	0.2270	0.4343	0.0792	0.0181	0.7852	45.702	6
*525	6EA149	OLH	0.0686	0.1216	0.0090	0.3445	0.3364	0.1002	0.0197	0.9219	45.804	6
526	6EA150	OLH	0.2098	0.0921	0.0073	0.1675	0.4174	0.0975	0.0083	1.2031	46.008	6
527	6EA151	OLH	0.1460	0.0424	0.0042	0.2977	0.4206	0.0856	0.0034	0.6289	46.518	6
528	6EA152	OLH	0.2237	0.0336	0.0172	0.1951	0.4230	0.0982	0.0093	0.0078	47.028	6
529	6EA153	OLH	0.1656	0.0179	0.0162	0.1905	0.4556	0.1377	0.0165	1.2773	47.13	6
530	6EA154	OLH	0.1154	0.1181	0.0060	0.2646	0.3665	0.1198	0.0096	0.9531	47.742	6
*531	6EA155	OLH	0.0801	0.0774	0.0229	0.2804	0.3884	0.1344	0.0164	1.6328	47.844	6
532	6EA156	OLH	0.1280	0.0508	0.0015	0.3018	0.4202	0.0851	0.0127	1.1289	47.946	6
533	6EA157	OLH	0.2177	0.0376	0.0074	0.2628	0.3774	0.0914	0.0058	1.7773	48.456	6
534	6EA158	OLH	0.1680	0.0695	0.0027	0.3174	0.3216	0.1056	0.0151	1.1602	48.762	6
*535	6EA159	OLH	0.1811	0.0320	0.0164	0.2236	0.3974	0.1312	0.0182	1.1172	48.864	6
536	6EA160	OLH	0.1595	0.0307	0.0151	0.2310	0.3962	0.1559	0.0116	1.8945	49.782	6
537	6EA161	OLH	0.0732	0.0251	0.0068	0.1875	0.5517	0.1364	0.0192	1.5391	50.088	6
*538	6EA162	OLH	0.1318	0.1021	0.0025	0.1808	0.4500	0.1235	0.0094	0.0547	51.108	6
539	6EA163	OLH	0.1505	0.1198	0.0105	0.2479	0.3470	0.1066	0.0178	1.9258	52.026	6
540	6EA164	OLH	0.2540	0.0581	0.0084	0.1858	0.3611	0.1153	0.0173	1.4766	53.454	6
541	6EA165	OLH	0.1877	0.1616	0.0038	0.2156	0.3339	0.0871	0.0104	0.457	53.556	6
542	6EA166	OLH	0.1839	0.0375	0.0052	0.2007	0.4698	0.0871	0.0157	1.2734	54.066	6
543	6EA167	OLH	0.1168	0.0904	0.0115	0.2788	0.3790	0.1191	0.0045	0.625	54.27	6
*544	6EA168	OLH	0.1445	0.1280	0.0089	0.1786	0.4385	0.0878	0.0138	1.1484	54.882	6
545	6EA169	OLH	0.1160	0.0887	0.0084	0.2963	0.3542	0.1161	0.0203	1.7695	55.902	6
546	6EA170	OLH	0.2639	0.0480	0.0011	0.1958	0.3705	0.1146	0.0061	1.918	56.514	6
547	6EA171	OLH	0.0857	0.0219	0.0025	0.2029	0.5554	0.1201	0.0115	0.207	57.738	6
*548	6EA172	OLH	0.0944	0.0558	0.0035	0.3378	0.4044	0.0890	0.0151	1.7266	58.758	6
549	6EA173	OLH	0.0711	0.0286	0.0090	0.3841	0.3570	0.1442	0.0061	1.0898	58.86	6
550	6EA174	OLH	0.0687	0.1321	0.0055	0.2443	0.4377	0.0954	0.0163	0.8945	60.39	6
551	6EA175	OLH	0.1743	0.0647	0.0030	0.1795	0.4891	0.0792	0.0104	1.6758	60.696	6
552	6EA176	OLH	0.2841	0.0169	0.0098	0.1980	0.3539	0.1186	0.0187	1.0625	60.9	6
553	6EA177	OLH	0.1433	0.0625	0.0156	0.2674	0.3988	0.1082	0.0041	1.9492	61.206	6
554	6EA178	OLH	0.2261	0.1236	0.0196	0.2022	0.3185	0.0934	0.0167	1.7852	61.92	6
*555	6EA179	OLH	0.1113	0.0153	0.0137	0.2596	0.5009	0.0841	0.0151	0.2422	62.022	6
556	6EA180	OLH	0.2326	0.0556	0.0121	0.2253	0.3643	0.0969	0.0132	0.4961	63.042	6
557	6EA181	OLH	0.0911	0.0228	0.0120	0.2286	0.5396	0.0948	0.0111	0.6367	63.348	6
558	6EA182	OLH	0.1226	0.0255	0.0083	0.2787	0.3779	0.1696	0.0173	1.4102	63.552	6
*559	6EA183	OLH	0.2295	0.0373	0.0119	0.1679	0.4290	0.1072	0.0171	0.4453	63.756	6
560	6EA184	OLH	0.1460	0.0645	0.0103	0.1800	0.4975	0.0978	0.0040	0.1836	64.164	6
561	6EA185	OLH	0.1361	0.0601	0.0204	0.2124	0.4612	0.1047	0.0050	1.6563	64.47	6
562	6EA186	OLH	0.1504	0.1056	0.0174	0.2417	0.3505	0.1218	0.0126	0.1875	64.674	6

Table 32. Envelope A Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_F	x_{NO2}	x_{NO3}	x_{OH}	x_{PO4}	SBS/Feed	Temp	Na M
*563	6EA187	OLH	0.1310	0.0956	0.0228	0.2471	0.4037	0.0897	0.0101	1.7969	64.776	6
564	6EA188	OLH	0.1555	0.0348	0.0175	0.3104	0.3612	0.1086	0.0120	1.0508	65.388	6

* OLH Points used in fits where more points needed to capture nonlinear behavior

Table 33. Envelope B Design Matrix for OLI Simulations

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
1	10TB001	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	0	15	10
2	10TB002	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	0	15	10
3	10TB003	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	0	15	10
4	10TB004	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	0	15	10
5	10TB005	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	0	15	10
6	10TB006	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	0	15	10
7	10TB007	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	0	66	10
8	10TB008	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	0	66	10
9	10TB009	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	0	66	10
10	10TB010	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	0	66	10
11	10TB011	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	0	66	10
12	10TB012	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	0	66	10
13	10TB013	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	2	15	10
14	10TB014	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	2	15	10
15	10TB015	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	2	15	10
16	10TB016	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	2	15	10
17	10TB017	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	2	15	10
18	10TB018	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	2	15	10
19	10TB019	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	2	66	10
20	10TB020	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	2	66	10
21	10TB021	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	2	66	10
22	10TB022	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	2	66	10
23	10TB023	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	2	66	10
24	10TB024	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	2	66	10
25	10TB025	OLH	0.0988	0.2617	0.3635	0.0936	0.1741	0.0083	0.9	40.1016	10
26	10TB026	OLH	0.0857	0.2743	0.3637	0.0998	0.1722	0.0043	0.1	16.9922	10
27	10TB027	OLH	0.0942	0.2583	0.3703	0.0960	0.1752	0.0060	0.8	34.9219	10
28	10TB028	OLH	0.0954	0.2727	0.3730	0.0930	0.1570	0.0089	0.1	33.7266	10
29	10TB029	OLH	0.1096	0.2585	0.3611	0.1043	0.1665	0.0000	0.6	22.5703	10
30	10TB030	OLH	0.0948	0.2781	0.3675	0.1041	0.1475	0.0079	0.3	34.125	10
*31	10TB031	OLH	0.0761	0.2543	0.3722	0.1024	0.1906	0.0045	0.6	28.5469	10
32	10TB032	OLH	0.0925	0.2575	0.3603	0.0977	0.1685	0.0234	0.6	20.9766	10
*33	10TB033	OLH	0.0976	0.2721	0.3652	0.0953	0.1568	0.0130	0	30.1406	10
34	10TB034	OLH	0.0874	0.2529	0.3728	0.0963	0.1712	0.0194	0.1	38.1094	10
*35	10TB035	OLH	0.0846	0.2591	0.3654	0.1074	0.1640	0.0196	0.3	22.9688	10
36	10TB036	OLH	0.0931	0.2693	0.3629	0.1027	0.1528	0.0192	0.8	36.5156	10
*37	10TB037	OLH	0.0982	0.2615	0.3718	0.1048	0.1474	0.0163	0.6	31.7344	10
38	10TB038	OLH	0.0863	0.2741	0.3700	0.1038	0.1451	0.0207	0	26.9531	10
39	10TB039	OLH	0.1101	0.2607	0.3624	0.0969	0.1590	0.0109	1.3	18.9844	10
40	10TB040	OLH	0.0886	0.2783	0.3665	0.0931	0.1720	0.0016	1.7	28.9453	10
41	10TB041	OLH	0.0812	0.2565	0.3709	0.0933	0.1883	0.0099	1.5	20.5781	10
42	10TB042	OLH	0.1005	0.2681	0.3754	0.0966	0.1583	0.0012	1.3	25.3594	10
43	10TB043	OLH	0.0920	0.2537	0.3646	0.1054	0.1767	0.0078	2	20.1797	10
44	10TB044	OLH	0.1084	0.2719	0.3607	0.1015	0.1543	0.0033	1.4	38.5078	10
45	10TB045	OLH	0.1090	0.2601	0.3750	0.1030	0.1458	0.0072	1.6	36.1172	10

Table 33. Envelope B Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
46	10TB046	OLH	0.0766	0.2603	0.3651	0.0992	0.1810	0.0178	1.9	34.5234	10
*47	10TB047	OLH	0.0897	0.2665	0.3623	0.0937	0.1636	0.0242	1	18.5859	10
48	10TB048	OLH	0.1010	0.2609	0.3711	0.0986	0.1443	0.0240	1.6	36.9141	10
49	10TB049	OLH	0.0880	0.2751	0.3684	0.0935	0.1567	0.0184	2	37.7109	10
*50	10TB050	OLH	0.0817	0.2773	0.3613	0.1055	0.1595	0.0147	1.5	19.7813	10
51	10TB051	OLH	0.0789	0.2769	0.3748	0.1006	0.1443	0.0246	1.7	19.3828	10
52	10TB052	OLH	0.1045	0.2579	0.3632	0.0984	0.1742	0.0019	1	43.6875	10
53	10TB053	OLH	0.0965	0.2763	0.3617	0.0938	0.1649	0.0068	0.1	62.8125	10
54	10TB054	OLH	0.1039	0.2577	0.3725	0.0991	0.1641	0.0027	0.8	45.6797	10
*55	10TB055	OLH	0.0971	0.2761	0.3742	0.0993	0.1483	0.0050	0.7	63.6094	10
56	10TB056	OLH	0.0783	0.2639	0.3661	0.1047	0.1845	0.0025	0.3	50.0625	10
57	10TB057	OLH	0.0795	0.2671	0.3614	0.1060	0.1746	0.0114	0.8	59.2266	10
58	10TB058	OLH	0.1056	0.2627	0.3690	0.1046	0.1479	0.0103	0.5	51.2578	10
59	10TB059	OLH	0.0829	0.2767	0.3687	0.1062	0.1568	0.0087	1	42.0938	10
*60	10TB060	OLH	0.0851	0.2635	0.3618	0.0939	0.1803	0.0153	0.2	51.6563	10
61	10TB061	OLH	0.0806	0.2695	0.3673	0.0968	0.1627	0.0231	0.6	64.8047	10
*62	10TB062	OLH	0.0772	0.2555	0.3692	0.0944	0.1896	0.0141	0.9	64.4063	10
63	10TB063	OLH	0.1033	0.2667	0.3702	0.0958	0.1503	0.0138	0.3	52.8516	10
64	10TB064	OLH	0.0959	0.2557	0.3615	0.1059	0.1608	0.0202	0.3	58.8281	10
65	10TB065	OLH	0.0908	0.2549	0.3738	0.1014	0.1591	0.0200	0.7	50.4609	10
66	10TB066	OLH	0.0937	0.2613	0.3627	0.0945	0.1756	0.0122	1.8	48.8672	10
67	10TB067	OLH	0.0869	0.2725	0.3667	0.0971	0.1758	0.0010	1.5	57.2344	10
68	10TB068	OLH	0.0800	0.2569	0.3705	0.0994	0.1835	0.0097	1.8	53.6484	10
69	10TB069	OLH	0.0993	0.2677	0.3719	0.0946	0.1573	0.0091	1.6	47.6719	10
*70	10TB070	OLH	0.1016	0.2645	0.3621	0.1051	0.1630	0.0037	1.8	66	10
71	10TB071	OLH	0.0778	0.2753	0.3648	0.1012	0.1716	0.0093	1.1	49.6641	10
72	10TB072	OLH	0.0891	0.2559	0.3686	0.1026	0.1772	0.0066	1.2	56.8359	10
73	10TB073	OLH	0.0755	0.2597	0.3626	0.1000	0.1804	0.0219	1.2	63.2109	10
*74	10TB074	OLH	0.0914	0.2661	0.3660	0.0934	0.1657	0.0174	1.9	41.6953	10
75	10TB075	OLH	0.0834	0.2567	0.3715	0.0985	0.1763	0.0136	1.1	54.8438	10
*76	10TB076	OLH	0.0840	0.2629	0.3678	0.1052	0.1592	0.0209	1.6	55.2422	10
77	10TB077	OLH	0.0823	0.2691	0.3609	0.1019	0.1714	0.0143	1.8	54.4453	10
78	10TB078	OLH	0.0749	0.2775	0.3699	0.1003	0.1583	0.0190	1.8	57.6328	10
*79	10TB079	OLH	0.0744	0.2657	0.3679	0.1001	0.1796	0.0124	1	40.5	10
80	10TB080	OLH	0.0499	0.2697	0.3723	0.1066	0.1850	0.0165	1.1	40.8984	10
81	10TB081	OLH	0.0630	0.2571	0.3721	0.1004	0.1869	0.0205	1.9	64.0078	10
82	10TB082	OLH	0.0545	0.2731	0.3655	0.1042	0.1839	0.0188	1.2	46.0781	10
83	10TB083	OLH	0.0533	0.2587	0.3628	0.1072	0.2021	0.0159	1.9	47.2734	10
84	10TB084	OLH	0.0391	0.2729	0.3747	0.0959	0.1926	0.0248	1.4	58.4297	10
85	10TB085	OLH	0.0539	0.2533	0.3683	0.0961	0.2116	0.0169	1.7	46.875	10
86	10TB086	OLH	0.0727	0.2771	0.3636	0.0978	0.1685	0.0203	1.4	52.4531	10
87	10TB087	OLH	0.0562	0.2739	0.3755	0.1025	0.1906	0.0014	1.4	60.0234	10
*88	10TB088	OLH	0.0511	0.2593	0.3706	0.1049	0.2023	0.0118	2	50.8594	10
89	10TB089	OLH	0.0613	0.2785	0.3630	0.1039	0.1879	0.0054	1.9	42.8906	10
90	10TB090	OLH	0.0641	0.2723	0.3704	0.0928	0.1952	0.0052	1.7	58.0313	10
*91	10TB091	OLH	0.0556	0.2621	0.3729	0.0975	0.2063	0.0056	1.2	44.4844	10

Table 33. Envelope B Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
92	10TB092	OLH	0.0505	0.2699	0.3640	0.0954	0.2117	0.0085	1.4	49.2656	10
93	10TB093	OLH	0.0624	0.2573	0.3658	0.0965	0.2140	0.0041	2	54.0469	10
*94	10TB094	OLH	0.0386	0.2707	0.3734	0.1033	0.2001	0.0140	0.7	62.0156	10
95	10TB095	OLH	0.0602	0.2531	0.3693	0.1071	0.1871	0.0233	0.3	52.0547	10
*96	10TB096	OLH	0.0675	0.2749	0.3649	0.1069	0.1708	0.0149	0.5	60.4219	10
97	10TB097	OLH	0.0482	0.2633	0.3604	0.1036	0.2008	0.0236	0.7	55.6406	10
98	10TB098	OLH	0.0567	0.2777	0.3712	0.0949	0.1824	0.0171	0	60.8203	10
*99	10TB099	OLH	0.0403	0.2595	0.3751	0.0987	0.2049	0.0215	0.6	42.4922	10
100	10TB100	OLH	0.0397	0.2713	0.3608	0.0973	0.2133	0.0176	0.4	44.8828	10
101	10TB101	OLH	0.0721	0.2711	0.3708	0.1010	0.1781	0.0070	0.1	46.4766	10
*102	10TB102	OLH	0.0590	0.2649	0.3735	0.1065	0.1955	0.0006	1	62.4141	10
103	10TB103	OLH	0.0477	0.2705	0.3647	0.1016	0.2148	0.0008	0.4	44.0859	10
104	10TB104	OLH	0.0607	0.2563	0.3674	0.1067	0.2024	0.0064	0	43.2891	10
*105	10TB105	OLH	0.0670	0.2541	0.3746	0.0947	0.1996	0.0101	0.5	61.2188	10
106	10TB106	OLH	0.0698	0.2545	0.3610	0.0996	0.2149	0.0002	0.3	61.6172	10
107	10TB107	OLH	0.0443	0.2735	0.3727	0.1018	0.1849	0.0229	1	37.3125	10
*108	10TB108	OLH	0.0522	0.2551	0.3741	0.1064	0.1942	0.0180	1.9	18.1875	10
109	10TB109	OLH	0.0448	0.2737	0.3633	0.1011	0.1950	0.0221	1.2	35.3203	10
110	10TB110	OLH	0.0516	0.2553	0.3616	0.1009	0.2108	0.0198	1.3	17.3906	10
111	10TB111	OLH	0.0704	0.2675	0.3697	0.0955	0.1746	0.0223	1.7	30.9375	10
112	10TB112	OLH	0.0692	0.2643	0.3744	0.0942	0.1845	0.0134	1.3	21.7734	10
113	10TB113	OLH	0.0431	0.2687	0.3668	0.0957	0.2112	0.0145	1.5	29.7422	10
*114	10TB114	OLH	0.0658	0.2547	0.3671	0.0941	0.2023	0.0161	1	38.9063	10
115	10TB115	OLH	0.0636	0.2679	0.3740	0.1063	0.1788	0.0095	1.8	29.3438	10
116	10TB116	OLH	0.0681	0.2619	0.3685	0.1034	0.1964	0.0017	1.4	16.1953	10
*117	10TB117	OLH	0.0715	0.2759	0.3666	0.1058	0.1695	0.0107	1.1	16.5938	10
118	10TB118	OLH	0.0454	0.2647	0.3656	0.1044	0.2088	0.0110	1.8	28.1484	10
119	10TB119	OLH	0.0528	0.2757	0.3743	0.0943	0.1983	0.0047	1.7	22.1719	10
120	10TB120	OLH	0.0579	0.2765	0.3620	0.0989	0.2000	0.0048	1.3	30.5391	10
121	10TB121	OLH	0.0550	0.2701	0.3731	0.1057	0.1835	0.0126	0.2	32.1328	10
*122	10TB122	OLH	0.0619	0.2589	0.3691	0.1031	0.1833	0.0238	0.5	23.7656	10
123	10TB123	OLH	0.0687	0.2745	0.3653	0.1008	0.1757	0.0151	0.2	27.3516	10
124	10TB124	OLH	0.0494	0.2637	0.3639	0.1056	0.2018	0.0157	0.4	33.3281	10
125	10TB125	OLH	0.0471	0.2669	0.3737	0.0951	0.1961	0.0211	0.2	15	10
*126	10TB126	OLH	0.0709	0.2561	0.3710	0.0990	0.1875	0.0155	0.9	31.3359	10
127	10TB127	OLH	0.0596	0.2755	0.3672	0.0976	0.1819	0.0182	0.8	24.1641	10
*128	10TB128	OLH	0.0732	0.2717	0.3732	0.1002	0.1787	0.0029	0.8	17.7891	10
129	10TB129	OLH	0.0573	0.2653	0.3698	0.1068	0.1934	0.0074	0.1	39.3047	10
130	10TB130	OLH	0.0653	0.2747	0.3643	0.1017	0.1828	0.0112	0.9	26.1563	10
131	10TB131	OLH	0.0647	0.2685	0.3680	0.0950	0.1999	0.0039	0.4	25.7578	10
132	10TB132	OLH	0.0664	0.2623	0.3749	0.0983	0.1877	0.0105	0.2	26.5547	10
133	10TB133	OLH	0.0738	0.2539	0.3659	0.0999	0.2008	0.0058	0.2	23.3672	10
134	8TB001	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	0	15	8
135	8TB002	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	0	15	8
136	8TB003	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	0	15	8
137	8TB004	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	0	15	8
138	8TB005	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	0	15	8

Table 33. Envelope B Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
139	8TB006	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	0	15	8
140	8TB007	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	0	66	8
141	8TB008	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	0	66	8
142	8TB009	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	0	66	8
143	8TB010	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	0	66	8
144	8TB011	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	0	66	8
145	8TB012	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	0	66	8
146	8TB013	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	2	15	8
147	8TB014	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	2	15	8
148	8TB015	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	2	15	8
149	8TB016	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	2	15	8
150	8TB017	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	2	15	8
151	8TB018	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	2	15	8
152	8TB019	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	2	66	8
153	8TB020	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	2	66	8
154	8TB021	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	2	66	8
155	8TB022	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	2	66	8
156	8TB023	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	2	66	8
157	8TB024	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	2	66	8
158	8TB025	OLH	0.0988	0.2617	0.3635	0.0936	0.1741	0.0083	0.9	40.1016	8
159	8TB026	OLH	0.0857	0.2743	0.3637	0.0998	0.1722	0.0043	0.1	16.9922	8
160	8TB027	OLH	0.0942	0.2583	0.3703	0.0960	0.1752	0.0060	0.8	34.9219	8
161	8TB028	OLH	0.0954	0.2727	0.3730	0.0930	0.1570	0.0089	0.1	33.7266	8
*162	8TB029	OLH	0.1096	0.2585	0.3611	0.1043	0.1665	0.0000	0.6	22.5703	8
163	8TB030	OLH	0.0948	0.2781	0.3675	0.1041	0.1475	0.0079	0.3	34.125	8
164	8TB031	OLH	0.0761	0.2543	0.3722	0.1024	0.1906	0.0045	0.6	28.5469	8
165	8TB032	OLH	0.0925	0.2575	0.3603	0.0977	0.1685	0.0234	0.6	20.9766	8
166	8TB033	OLH	0.0976	0.2721	0.3652	0.0953	0.1568	0.0130	0	30.1406	8
167	8TB034	OLH	0.0874	0.2529	0.3728	0.0963	0.1712	0.0194	0.1	38.1094	8
168	8TB035	OLH	0.0846	0.2591	0.3654	0.1074	0.1640	0.0196	0.3	22.9688	8
169	8TB036	OLH	0.0931	0.2693	0.3629	0.1027	0.1528	0.0192	0.8	36.5156	8
*170	8TB037	OLH	0.0982	0.2615	0.3718	0.1048	0.1474	0.0163	0.6	31.7344	8
171	8TB038	OLH	0.0863	0.2741	0.3700	0.1038	0.1451	0.0207	0	26.9531	8
*172	8TB039	OLH	0.1101	0.2607	0.3624	0.0969	0.1590	0.0109	1.3	18.9844	8
173	8TB040	OLH	0.0886	0.2783	0.3665	0.0931	0.1720	0.0016	1.7	28.9453	8
174	8TB041	OLH	0.0812	0.2565	0.3709	0.0933	0.1883	0.0099	1.5	20.5781	8
175	8TB042	OLH	0.1005	0.2681	0.3754	0.0966	0.1583	0.0012	1.3	25.3594	8
176	8TB043	OLH	0.0920	0.2537	0.3646	0.1054	0.1767	0.0078	2	20.1797	8
*177	8TB044	OLH	0.1084	0.2719	0.3607	0.1015	0.1543	0.0033	1.4	38.5078	8
178	8TB045	OLH	0.1090	0.2601	0.3750	0.1030	0.1458	0.0072	1.6	36.1172	8
*179	8TB046	OLH	0.0766	0.2603	0.3651	0.0992	0.1810	0.0178	1.9	34.5234	8
180	8TB047	OLH	0.0897	0.2665	0.3623	0.0937	0.1636	0.0242	1	18.5859	8
181	8TB048	OLH	0.1010	0.2609	0.3711	0.0986	0.1443	0.0240	1.6	36.9141	8
182	8TB049	OLH	0.0880	0.2751	0.3684	0.0935	0.1567	0.0184	2	37.7109	8
183	8TB050	OLH	0.0817	0.2773	0.3613	0.1055	0.1595	0.0147	1.5	19.7813	8
184	8TB051	OLH	0.0789	0.2769	0.3748	0.1006	0.1443	0.0246	1.7	19.3828	8
185	8TB052	OLH	0.1045	0.2579	0.3632	0.0984	0.1742	0.0019	1	43.6875	8

Table 33. Envelope B Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
*186	8TB053	OLH	0.0965	0.2763	0.3617	0.0938	0.1649	0.0068	0.1	62.8125	8
187	8TB054	OLH	0.1039	0.2577	0.3725	0.0991	0.1641	0.0027	0.8	45.6797	8
188	8TB055	OLH	0.0971	0.2761	0.3742	0.0993	0.1483	0.0050	0.7	63.6094	8
*189	8TB056	OLH	0.0783	0.2639	0.3661	0.1047	0.1845	0.0025	0.3	50.0625	8
190	8TB057	OLH	0.0795	0.2671	0.3614	0.1060	0.1746	0.0114	0.8	59.2266	8
191	8TB058	OLH	0.1056	0.2627	0.3690	0.1046	0.1479	0.0103	0.5	51.2578	8
192	8TB059	OLH	0.0829	0.2767	0.3687	0.1062	0.1568	0.0087	1	42.0938	8
*193	8TB060	OLH	0.0851	0.2635	0.3618	0.0939	0.1803	0.0153	0.2	51.6563	8
194	8TB061	OLH	0.0806	0.2695	0.3673	0.0968	0.1627	0.0231	0.6	64.8047	8
*195	8TB062	OLH	0.0772	0.2555	0.3692	0.0944	0.1896	0.0141	0.9	64.4063	8
196	8TB063	OLH	0.1033	0.2667	0.3702	0.0958	0.1503	0.0138	0.3	52.8516	8
197	8TB064	OLH	0.0959	0.2557	0.3615	0.1059	0.1608	0.0202	0.3	58.8281	8
198	8TB065	OLH	0.0908	0.2549	0.3738	0.1014	0.1591	0.0200	0.7	50.4609	8
199	8TB066	OLH	0.0937	0.2613	0.3627	0.0945	0.1756	0.0122	1.8	48.8672	8
200	8TB067	OLH	0.0869	0.2725	0.3667	0.0971	0.1758	0.0010	1.5	57.2344	8
201	8TB068	OLH	0.0800	0.2569	0.3705	0.0994	0.1835	0.0097	1.8	53.6484	8
202	8TB069	OLH	0.0993	0.2677	0.3719	0.0946	0.1573	0.0091	1.6	47.6719	8
*203	8TB070	OLH	0.1016	0.2645	0.3621	0.1051	0.1630	0.0037	1.8	66	8
204	8TB071	OLH	0.0778	0.2753	0.3648	0.1012	0.1716	0.0093	1.1	49.6641	8
205	8TB072	OLH	0.0891	0.2559	0.3686	0.1026	0.1772	0.0066	1.2	56.8359	8
206	8TB073	OLH	0.0755	0.2597	0.3626	0.1000	0.1804	0.0219	1.2	63.2109	8
*207	8TB074	OLH	0.0914	0.2661	0.3660	0.0934	0.1657	0.0174	1.9	41.6953	8
208	8TB075	OLH	0.0834	0.2567	0.3715	0.0985	0.1763	0.0136	1.1	54.8438	8
*209	8TB076	OLH	0.0840	0.2629	0.3678	0.1052	0.1592	0.0209	1.6	55.2422	8
210	8TB077	OLH	0.0823	0.2691	0.3609	0.1019	0.1714	0.0143	1.8	54.4453	8
211	8TB078	OLH	0.0749	0.2775	0.3699	0.1003	0.1583	0.0190	1.8	57.6328	8
212	8TB079	OLH	0.0744	0.2657	0.3679	0.1001	0.1796	0.0124	1	40.5	8
213	8TB080	OLH	0.0499	0.2697	0.3723	0.1066	0.1850	0.0165	1.1	40.8984	8
*214	8TB081	OLH	0.0630	0.2571	0.3721	0.1004	0.1869	0.0205	1.9	64.0078	8
215	8TB082	OLH	0.0545	0.2731	0.3655	0.1042	0.1839	0.0188	1.2	46.0781	8
*216	8TB083	OLH	0.0533	0.2587	0.3628	0.1072	0.2021	0.0159	1.9	47.2734	8
217	8TB084	OLH	0.0391	0.2729	0.3747	0.0959	0.1926	0.0248	1.4	58.4297	8
*218	8TB085	OLH	0.0539	0.2533	0.3683	0.0961	0.2116	0.0169	1.7	46.875	8
219	8TB086	OLH	0.0727	0.2771	0.3636	0.0978	0.1685	0.0203	1.4	52.4531	8
220	8TB087	OLH	0.0562	0.2739	0.3755	0.1025	0.1906	0.0014	1.4	60.0234	8
*221	8TB088	OLH	0.0511	0.2593	0.3706	0.1049	0.2023	0.0118	2	50.8594	8
222	8TB089	OLH	0.0613	0.2785	0.3630	0.1039	0.1879	0.0054	1.9	42.8906	8
223	8TB090	OLH	0.0641	0.2723	0.3704	0.0928	0.1952	0.0052	1.7	58.0313	8
224	8TB091	OLH	0.0556	0.2621	0.3729	0.0975	0.2063	0.0056	1.2	44.4844	8
225	8TB092	OLH	0.0505	0.2699	0.3640	0.0954	0.2117	0.0085	1.4	49.2656	8
226	8TB093	OLH	0.0624	0.2573	0.3658	0.0965	0.2140	0.0041	2	54.0469	8
227	8TB094	OLH	0.0386	0.2707	0.3734	0.1033	0.2001	0.0140	0.7	62.0156	8
*228	8TB095	OLH	0.0602	0.2531	0.3693	0.1071	0.1871	0.0233	0.3	52.0547	8
229	8TB096	OLH	0.0675	0.2749	0.3649	0.1069	0.1708	0.0149	0.5	60.4219	8
230	8TB097	OLH	0.0482	0.2633	0.3604	0.1036	0.2008	0.0236	0.7	55.6406	8
*231	8TB098	OLH	0.0567	0.2777	0.3712	0.0949	0.1824	0.0171	0	60.8203	8
232	8TB099	OLH	0.0403	0.2595	0.3751	0.0987	0.2049	0.0215	0.6	42.4922	8

Table 33. Envelope B Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
233	8TB100	OLH	0.0397	0.2713	0.3608	0.0973	0.2133	0.0176	0.4	44.8828	8
234	8TB101	OLH	0.0721	0.2711	0.3708	0.1010	0.1781	0.0070	0.1	46.4766	8
235	8TB102	OLH	0.0590	0.2649	0.3735	0.1065	0.1955	0.0006	1	62.4141	8
236	8TB103	OLH	0.0477	0.2705	0.3647	0.1016	0.2148	0.0008	0.4	44.0859	8
*237	8TB104	OLH	0.0607	0.2563	0.3674	0.1067	0.2024	0.0064	0	43.2891	8
238	8TB105	OLH	0.0670	0.2541	0.3746	0.0947	0.1996	0.0101	0.5	61.2188	8
*239	8TB106	OLH	0.0698	0.2545	0.3610	0.0996	0.2149	0.0002	0.3	61.6172	8
240	8TB107	OLH	0.0443	0.2735	0.3727	0.1018	0.1849	0.0229	1	37.3125	8
241	8TB108	OLH	0.0522	0.2551	0.3741	0.1064	0.1942	0.0180	1.9	18.1875	8
*242	8TB109	OLH	0.0448	0.2737	0.3633	0.1011	0.1950	0.0221	1.2	35.3203	8
243	8TB110	OLH	0.0516	0.2553	0.3616	0.1009	0.2108	0.0198	1.3	17.3906	8
244	8TB111	OLH	0.0704	0.2675	0.3697	0.0955	0.1746	0.0223	1.7	30.9375	8
245	8TB112	OLH	0.0692	0.2643	0.3744	0.0942	0.1845	0.0134	1.3	21.7734	8
*246	8TB113	OLH	0.0431	0.2687	0.3668	0.0957	0.2112	0.0145	1.5	29.7422	8
247	8TB114	OLH	0.0658	0.2547	0.3671	0.0941	0.2023	0.0161	1	38.9063	8
248	8TB115	OLH	0.0636	0.2679	0.3740	0.1063	0.1788	0.0095	1.8	29.3438	8
*249	8TB116	OLH	0.0681	0.2619	0.3685	0.1034	0.1964	0.0017	1.4	16.1953	8
250	8TB117	OLH	0.0715	0.2759	0.3666	0.1058	0.1695	0.0107	1.1	16.5938	8
251	8TB118	OLH	0.0454	0.2647	0.3656	0.1044	0.2088	0.0110	1.8	28.1484	8
252	8TB119	OLH	0.0528	0.2757	0.3743	0.0943	0.1983	0.0047	1.7	22.1719	8
253	8TB120	OLH	0.0579	0.2765	0.3620	0.0989	0.2000	0.0048	1.3	30.5391	8
254	8TB121	OLH	0.0550	0.2701	0.3731	0.1057	0.1835	0.0126	0.2	32.1328	8
255	8TB122	OLH	0.0619	0.2589	0.3691	0.1031	0.1833	0.0238	0.5	23.7656	8
256	8TB123	OLH	0.0687	0.2745	0.3653	0.1008	0.1757	0.0151	0.2	27.3516	8
257	8TB124	OLH	0.0494	0.2637	0.3639	0.1056	0.2018	0.0157	0.4	33.3281	8
*258	8TB125	OLH	0.0471	0.2669	0.3737	0.0951	0.1961	0.0211	0.2	15	8
259	8TB126	OLH	0.0709	0.2561	0.3710	0.0990	0.1875	0.0155	0.9	31.3359	8
260	8TB127	OLH	0.0596	0.2755	0.3672	0.0976	0.1819	0.0182	0.8	24.1641	8
261	8TB128	OLH	0.0732	0.2717	0.3732	0.1002	0.1787	0.0029	0.8	17.7891	8
262	8TB129	OLH	0.0573	0.2653	0.3698	0.1068	0.1934	0.0074	0.1	39.3047	8
*263	8TB130	OLH	0.0653	0.2747	0.3643	0.1017	0.1828	0.0112	0.9	26.1563	8
264	8TB131	OLH	0.0647	0.2685	0.3680	0.0950	0.1999	0.0039	0.4	25.7578	8
265	8TB132	OLH	0.0664	0.2623	0.3749	0.0983	0.1877	0.0105	0.2	26.5547	8
266	8TB133	OLH	0.0738	0.2539	0.3659	0.0999	0.2008	0.0058	0.2	23.3672	8
267	6TB001	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	0	15	6
268	6TB002	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	0	15	6
269	6TB003	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	0	15	6
270	6TB004	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	0	15	6
271	6TB005	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	0	15	6
272	6TB006	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	0	15	6
273	6TB007	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	0	66	6
274	6TB008	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	0	66	6
275	6TB009	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	0	66	6
276	6TB010	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	0	66	6
277	6TB011	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	0	66	6
278	6TB012	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	0	66	6
279	6TB013	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	2	15	6

Table 33. Envelope B Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
280	6TB014	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	2	15	6
281	6TB015	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	2	15	6
282	6TB016	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	2	15	6
283	6TB017	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	2	15	6
284	6TB018	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	2	15	6
285	6TB019	EV	0.1102	0.2529	0.3755	0.0928	0.1438	0.0248	2	66	6
286	6TB020	EV	0.0380	0.2785	0.3755	0.0928	0.2152	0.0000	2	66	6
287	6TB021	EV	0.0788	0.2529	0.3603	0.0928	0.2152	0.0000	2	66	6
288	6TB022	EV	0.0380	0.2529	0.3755	0.1074	0.2014	0.0248	2	66	6
289	6TB023	EV	0.0380	0.2785	0.3603	0.0928	0.2056	0.0248	2	66	6
290	6TB024	EV	0.1100	0.2785	0.3603	0.1074	0.1438	0.0000	2	66	6
291	6TB025	OLH	0.0988	0.2617	0.3635	0.0936	0.1741	0.0083	0.9	40.1016	6
292	6TB026	OLH	0.0857	0.2743	0.3637	0.0998	0.1722	0.0043	0.1	16.9922	6
*293	6TB027	OLH	0.0942	0.2583	0.3703	0.0960	0.1752	0.0060	0.8	34.9219	6
294	6TB028	OLH	0.0954	0.2727	0.3730	0.0930	0.1570	0.0089	0.1	33.7266	6
295	6TB029	OLH	0.1096	0.2585	0.3611	0.1043	0.1665	0.0000	0.6	22.5703	6
296	6TB030	OLH	0.0948	0.2781	0.3675	0.1041	0.1475	0.0079	0.3	34.125	6
297	6TB031	OLH	0.0761	0.2543	0.3722	0.1024	0.1906	0.0045	0.6	28.5469	6
*298	6TB032	OLH	0.0925	0.2575	0.3603	0.0977	0.1685	0.0234	0.6	20.9766	6
299	6TB033	OLH	0.0976	0.2721	0.3652	0.0953	0.1568	0.0130	0	30.1406	6
300	6TB034	OLH	0.0874	0.2529	0.3728	0.0963	0.1712	0.0194	0.1	38.1094	6
*301	6TB035	OLH	0.0846	0.2591	0.3654	0.1074	0.1640	0.0196	0.3	22.9688	6
302	6TB036	OLH	0.0931	0.2693	0.3629	0.1027	0.1528	0.0192	0.8	36.5156	6
*303	6TB037	OLH	0.0982	0.2615	0.3718	0.1048	0.1474	0.0163	0.6	31.7344	6
304	6TB038	OLH	0.0863	0.2741	0.3700	0.1038	0.1451	0.0207	0	26.9531	6
305	6TB039	OLH	0.1101	0.2607	0.3624	0.0969	0.1590	0.0109	1.3	18.9844	6
*306	6TB040	OLH	0.0886	0.2783	0.3665	0.0931	0.1720	0.0016	1.7	28.9453	6
307	6TB041	OLH	0.0812	0.2565	0.3709	0.0933	0.1883	0.0099	1.5	20.5781	6
*308	6TB042	OLH	0.1005	0.2681	0.3754	0.0966	0.1583	0.0012	1.3	25.3594	6
309	6TB043	OLH	0.0920	0.2537	0.3646	0.1054	0.1767	0.0078	2	20.1797	6
310	6TB044	OLH	0.1084	0.2719	0.3607	0.1015	0.1543	0.0033	1.4	38.5078	6
311	6TB045	OLH	0.1090	0.2601	0.3750	0.1030	0.1458	0.0072	1.6	36.1172	6
*312	6TB046	OLH	0.0766	0.2603	0.3651	0.0992	0.1810	0.0178	1.9	34.5234	6
313	6TB047	OLH	0.0897	0.2665	0.3623	0.0937	0.1636	0.0242	1	18.5859	6
314	6TB048	OLH	0.1010	0.2609	0.3711	0.0986	0.1443	0.0240	1.6	36.9141	6
315	6TB049	OLH	0.0880	0.2751	0.3684	0.0935	0.1567	0.0184	2	37.7109	6
316	6TB050	OLH	0.0817	0.2773	0.3613	0.1055	0.1595	0.0147	1.5	19.7813	6
317	6TB051	OLH	0.0789	0.2769	0.3748	0.1006	0.1443	0.0246	1.7	19.3828	6
*318	6TB052	OLH	0.1045	0.2579	0.3632	0.0984	0.1742	0.0019	1	43.6875	6
319	6TB053	OLH	0.0965	0.2763	0.3617	0.0938	0.1649	0.0068	0.1	62.8125	6
320	6TB054	OLH	0.1039	0.2577	0.3725	0.0991	0.1641	0.0027	0.8	45.6797	6
321	6TB055	OLH	0.0971	0.2761	0.3742	0.0993	0.1483	0.0050	0.7	63.6094	6
322	6TB056	OLH	0.0783	0.2639	0.3661	0.1047	0.1845	0.0025	0.3	50.0625	6
323	6TB057	OLH	0.0795	0.2671	0.3614	0.1060	0.1746	0.0114	0.8	59.2266	6
*324	6TB058	OLH	0.1056	0.2627	0.3690	0.1046	0.1479	0.0103	0.5	51.2578	6
325	6TB059	OLH	0.0829	0.2767	0.3687	0.1062	0.1568	0.0087	1	42.0938	6
326	6TB060	OLH	0.0851	0.2635	0.3618	0.0939	0.1803	0.0153	0.2	51.6563	6

Table 33. Envelope B Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
327	6TB061	OLH	0.0806	0.2695	0.3673	0.0968	0.1627	0.0231	0.6	64.8047	6
328	6TB062	OLH	0.0772	0.2555	0.3692	0.0944	0.1896	0.0141	0.9	64.4063	6
329	6TB063	OLH	0.1033	0.2667	0.3702	0.0958	0.1503	0.0138	0.3	52.8516	6
330	6TB064	OLH	0.0959	0.2557	0.3615	0.1059	0.1608	0.0202	0.3	58.8281	6
331	6TB065	OLH	0.0908	0.2549	0.3738	0.1014	0.1591	0.0200	0.7	50.4609	6
*332	6TB066	OLH	0.0937	0.2613	0.3627	0.0945	0.1756	0.0122	1.8	48.8672	6
333	6TB067	OLH	0.0869	0.2725	0.3667	0.0971	0.1758	0.0010	1.5	57.2344	6
*334	6TB068	OLH	0.0800	0.2569	0.3705	0.0994	0.1835	0.0097	1.8	53.6484	6
335	6TB069	OLH	0.0993	0.2677	0.3719	0.0946	0.1573	0.0091	1.6	47.6719	6
336	6TB070	OLH	0.1016	0.2645	0.3621	0.1051	0.1630	0.0037	1.8	66	6
*337	6TB071	OLH	0.0778	0.2753	0.3648	0.1012	0.1716	0.0093	1.1	49.6641	6
338	6TB072	OLH	0.0891	0.2559	0.3686	0.1026	0.1772	0.0066	1.2	56.8359	6
339	6TB073	OLH	0.0755	0.2597	0.3626	0.1000	0.1804	0.0219	1.2	63.2109	6
340	6TB074	OLH	0.0914	0.2661	0.3660	0.0934	0.1657	0.0174	1.9	41.6953	6
341	6TB075	OLH	0.0834	0.2567	0.3715	0.0985	0.1763	0.0136	1.1	54.8438	6
342	6TB076	OLH	0.0840	0.2629	0.3678	0.1052	0.1592	0.0209	1.6	55.2422	6
*343	6TB077	OLH	0.0823	0.2691	0.3609	0.1019	0.1714	0.0143	1.8	54.4453	6
344	6TB078	OLH	0.0749	0.2775	0.3699	0.1003	0.1583	0.0190	1.8	57.6328	6
*345	6TB079	OLH	0.0744	0.2657	0.3679	0.1001	0.1796	0.0124	1	40.5	6
346	6TB080	OLH	0.0499	0.2697	0.3723	0.1066	0.1850	0.0165	1.1	40.8984	6
347	6TB081	OLH	0.0630	0.2571	0.3721	0.1004	0.1869	0.0205	1.9	64.0078	6
348	6TB082	OLH	0.0545	0.2731	0.3655	0.1042	0.1839	0.0188	1.2	46.0781	6
349	6TB083	OLH	0.0533	0.2587	0.3628	0.1072	0.2021	0.0159	1.9	47.2734	6
*350	6TB084	OLH	0.0391	0.2729	0.3747	0.0959	0.1926	0.0248	1.4	58.4297	6
351	6TB085	OLH	0.0539	0.2533	0.3683	0.0961	0.2116	0.0169	1.7	46.875	6
352	6TB086	OLH	0.0727	0.2771	0.3636	0.0978	0.1685	0.0203	1.4	52.4531	6
*353	6TB087	OLH	0.0562	0.2739	0.3755	0.1025	0.1906	0.0014	1.4	60.0234	6
354	6TB088	OLH	0.0511	0.2593	0.3706	0.1049	0.2023	0.0118	2	50.8594	6
*355	6TB089	OLH	0.0613	0.2785	0.3630	0.1039	0.1879	0.0054	1.9	42.8906	6
356	6TB090	OLH	0.0641	0.2723	0.3704	0.0928	0.1952	0.0052	1.7	58.0313	6
357	6TB091	OLH	0.0556	0.2621	0.3729	0.0975	0.2063	0.0056	1.2	44.4844	6
358	6TB092	OLH	0.0505	0.2699	0.3640	0.0954	0.2117	0.0085	1.4	49.2656	6
359	6TB093	OLH	0.0624	0.2573	0.3658	0.0965	0.2140	0.0041	2	54.0469	6
*360	6TB094	OLH	0.0386	0.2707	0.3734	0.1033	0.2001	0.0140	0.7	62.0156	6
361	6TB095	OLH	0.0602	0.2531	0.3693	0.1071	0.1871	0.0233	0.3	52.0547	6
362	6TB096	OLH	0.0675	0.2749	0.3649	0.1069	0.1708	0.0149	0.5	60.4219	6
363	6TB097	OLH	0.0482	0.2633	0.3604	0.1036	0.2008	0.0236	0.7	55.6406	6
364	6TB098	OLH	0.0567	0.2777	0.3712	0.0949	0.1824	0.0171	0	60.8203	6
*365	6TB099	OLH	0.0403	0.2595	0.3751	0.0987	0.2049	0.0215	0.6	42.4922	6
366	6TB100	OLH	0.0397	0.2713	0.3608	0.0973	0.2133	0.0176	0.4	44.8828	6
367	6TB101	OLH	0.0721	0.2711	0.3708	0.1010	0.1781	0.0070	0.1	46.4766	6
*368	6TB102	OLH	0.0590	0.2649	0.3735	0.1065	0.1955	0.0006	1	62.4141	6
369	6TB103	OLH	0.0477	0.2705	0.3647	0.1016	0.2148	0.0008	0.4	44.0859	6
370	6TB104	OLH	0.0607	0.2563	0.3674	0.1067	0.2024	0.0064	0	43.2891	6
371	6TB105	OLH	0.0670	0.2541	0.3746	0.0947	0.1996	0.0101	0.5	61.2188	6
*372	6TB106	OLH	0.0698	0.2545	0.3610	0.0996	0.2149	0.0002	0.3	61.6172	6
373	6TB107	OLH	0.0443	0.2735	0.3727	0.1018	0.1849	0.0229	1	37.3125	6

Table 33. Envelope B Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO3}	x_{OH}	x_{SO4}	x_{C2O4}	SBS/Feed	Temp	Na M
374	6TB108	OLH	0.0522	0.2551	0.3741	0.1064	0.1942	0.0180	1.9	18.1875	6
*375	6TB109	OLH	0.0448	0.2737	0.3633	0.1011	0.1950	0.0221	1.2	35.3203	6
376	6TB110	OLH	0.0516	0.2553	0.3616	0.1009	0.2108	0.0198	1.3	17.3906	6
377	6TB111	OLH	0.0704	0.2675	0.3697	0.0955	0.1746	0.0223	1.7	30.9375	6
*378	6TB112	OLH	0.0692	0.2643	0.3744	0.0942	0.1845	0.0134	1.3	21.7734	6
379	6TB113	OLH	0.0431	0.2687	0.3668	0.0957	0.2112	0.0145	1.5	29.7422	6
*380	6TB114	OLH	0.0658	0.2547	0.3671	0.0941	0.2023	0.0161	1	38.9063	6
381	6TB115	OLH	0.0636	0.2679	0.3740	0.1063	0.1788	0.0095	1.8	29.3438	6
382	6TB116	OLH	0.0681	0.2619	0.3685	0.1034	0.1964	0.0017	1.4	16.1953	6
383	6TB117	OLH	0.0715	0.2759	0.3666	0.1058	0.1695	0.0107	1.1	16.5938	6
*384	6TB118	OLH	0.0454	0.2647	0.3656	0.1044	0.2088	0.0110	1.8	28.1484	6
385	6TB119	OLH	0.0528	0.2757	0.3743	0.0943	0.1983	0.0047	1.7	22.1719	6
*386	6TB120	OLH	0.0579	0.2765	0.3620	0.0989	0.2000	0.0048	1.3	30.5391	6
387	6TB121	OLH	0.0550	0.2701	0.3731	0.1057	0.1835	0.0126	0.2	32.1328	6
388	6TB122	OLH	0.0619	0.2589	0.3691	0.1031	0.1833	0.0238	0.5	23.7656	6
389	6TB123	OLH	0.0687	0.2745	0.3653	0.1008	0.1757	0.0151	0.2	27.3516	6
390	6TB124	OLH	0.0494	0.2637	0.3639	0.1056	0.2018	0.0157	0.4	33.3281	6
391	6TB125	OLH	0.0471	0.2669	0.3737	0.0951	0.1961	0.0211	0.2	15	6
392	6TB126	OLH	0.0709	0.2561	0.3710	0.0990	0.1875	0.0155	0.9	31.3359	6
*393	6TB127	OLH	0.0596	0.2755	0.3672	0.0976	0.1819	0.0182	0.8	24.1641	6
394	6TB128	OLH	0.0732	0.2717	0.3732	0.1002	0.1787	0.0029	0.8	17.7891	6
395	6TB129	OLH	0.0573	0.2653	0.3698	0.1068	0.1934	0.0074	0.1	39.3047	6
396	6TB130	OLH	0.0653	0.2747	0.3643	0.1017	0.1828	0.0112	0.9	26.1563	6
397	6TB131	OLH	0.0647	0.2685	0.3680	0.0950	0.1999	0.0039	0.4	25.7578	6
*398	6TB132	OLH	0.0664	0.2623	0.3749	0.0983	0.1877	0.0105	0.2	26.5547	6
399	6TB133	OLH	0.0738	0.2539	0.3659	0.0999	0.2008	0.0058	0.2	23.3672	6

* OLH Points used in fits where more points needed to capture nonlinear behavior

Table 34. Envelope C Design Matrix for OLI Simulations

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
1	10TC001	EV	0.1319	0.3282	0.3927	0.0828	0.0644	0	15	10
2	10TC002	EV	0.1258	0.2984	0.3926	0.1099	0.0733	0	15	10
3	10TC003	EV	0.0413	0.2984	0.5131	0.0828	0.0644	0	15	10
4	10TC004	EV	0.0052	0.3282	0.4923	0.1099	0.0644	0	15	10
5	10TC005	EV	0.0052	0.3282	0.5105	0.0828	0.0733	0	15	10
6	10TC006	EV	0.1319	0.3282	0.3927	0.0828	0.0644	0	66	10
7	10TC007	EV	0.1258	0.2984	0.3926	0.1099	0.0733	0	66	10
8	10TC008	EV	0.0413	0.2984	0.5131	0.0828	0.0644	0	66	10
9	10TC009	EV	0.0052	0.3282	0.4923	0.1099	0.0644	0	66	10
10	10TC010	EV	0.0052	0.3282	0.5105	0.0828	0.0733	0	66	10
11	10TC011	EV	0.1319	0.3282	0.3927	0.0828	0.0644	2	15	10
12	10TC012	EV	0.1258	0.2984	0.3926	0.1099	0.0733	2	15	10
13	10TC013	EV	0.0413	0.2984	0.5131	0.0828	0.0644	2	15	10
14	10TC014	EV	0.0052	0.3282	0.4923	0.1099	0.0644	2	15	10
15	10TC015	EV	0.0052	0.3282	0.5105	0.0828	0.0733	2	15	10
16	10TC016	EV	0.1319	0.3282	0.3927	0.0828	0.0644	2	66	10
17	10TC017	EV	0.1258	0.2984	0.3926	0.1099	0.0733	2	66	10
18	10TC018	EV	0.0413	0.2984	0.5131	0.0828	0.0644	2	66	10
19	10TC019	EV	0.0052	0.3282	0.4923	0.1099	0.0644	2	66	10
20	10TC020	EV	0.0052	0.3282	0.5105	0.0828	0.0733	2	66	10
21	10TC021	OLH	0.11111	0.30864	0.42684	0.08852	0.06489	0.672	37.3125	10
22	10TC022	OLH	0.08835	0.32331	0.43076	0.08894	0.06864	0.344	18.1875	10
*23	10TC023	OLH	0.1032	0.30469	0.42519	0.10058	0.06634	0.484	35.3203	10
24	10TC024	OLH	0.10517	0.32145	0.40338	0.10545	0.06455	0.719	17.3906	10
25	10TC025	OLH	0.12992	0.30492	0.40946	0.08428	0.07142	0	30.9375	10
26	10TC026	OLH	0.10418	0.32773	0.40108	0.09572	0.07129	0.641	21.7734	10
*27	10TC027	OLH	0.07152	0.30003	0.45424	0.10397	0.07024	0.359	29.7422	10
28	10TC028	OLH	0.10023	0.30376	0.44583	0.0828	0.06738	1.891	29.3438	10
*29	10TC029	OLH	0.10913	0.32075	0.41271	0.09148	0.06593	1.047	16.1953	10
30	10TC030	OLH	0.09132	0.2984	0.4387	0.10503	0.06655	1.563	16.5938	10
*31	10TC031	OLH	0.08637	0.30562	0.44281	0.0919	0.0733	1.578	22.1719	10
32	10TC032	OLH	0.10122	0.31749	0.42339	0.08746	0.07044	1.547	35.7188	10
33	10TC033	OLH	0.11012	0.30841	0.40643	0.10334	0.0717	1.313	30.5391	10
34	10TC034	OLH	0.08934	0.32308	0.41635	0.10016	0.07107	1.672	15.3984	10
*35	10TC035	OLH	0.13091	0.30748	0.4081	0.08661	0.0669	0.875	48.8672	10
36	10TC036	OLH	0.0933	0.32797	0.42032	0.09381	0.0646	0.125	57.2344	10
37	10TC037	OLH	0.08043	0.30259	0.45066	0.10164	0.06468	0.797	53.6484	10
*38	10TC038	OLH	0.11408	0.31609	0.39344	0.10969	0.0667	0.094	47.6719	10
39	10TC039	OLH	0.09924	0.29933	0.43896	0.09042	0.07205	0.625	66	10
40	10TC040	OLH	0.12794	0.32052	0.39842	0.08344	0.06968	0.266	49.6641	10
*41	10TC041	OLH	0.09627	0.3275	0.40009	0.10291	0.07323	0.938	53.25	10
42	10TC042	OLH	0.07251	0.30701	0.46091	0.09127	0.0683	1.438	63.2109	10
43	10TC043	OLH	0.09528	0.31423	0.43914	0.0864	0.06495	1.953	41.6953	10
44	10TC044	OLH	0.11507	0.30771	0.4072	0.10207	0.06795	1.938	54.8438	10
45	10TC045	OLH	0.09231	0.32424	0.42144	0.0972	0.06481	1.484	65.2031	10

Table 34. Envelope C Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
*46	10TC046	OLH	0.12596	0.31027	0.39859	0.09466	0.07052	1.719	55.2422	10
47	10TC047	OLH	0.08142	0.3268	0.43517	0.08449	0.07212	1.188	54.4453	10
48	10TC048	OLH	0.12398	0.31144	0.39475	0.0991	0.07073	1.391	48.4688	10
*49	10TC049	OLH	0.07647	0.32634	0.41944	0.10863	0.06912	1.984	57.6328	10
50	10TC050	OLH	0.12101	0.30422	0.41908	0.08788	0.06781	0.156	40.1016	10
51	10TC051	OLH	0.10715	0.32564	0.41684	0.08534	0.06503	0.547	16.9922	10
*52	10TC052	OLH	0.12002	0.30399	0.40316	0.10461	0.06822	0.219	34.9219	10
53	10TC053	OLH	0.07548	0.31121	0.44851	0.09317	0.07163	0.203	22.5703	10
54	10TC054	OLH	0.07746	0.31493	0.45044	0.08471	0.07246	0.922	34.125	10
*55	10TC055	OLH	0.12299	0.30981	0.39738	0.09826	0.07156	0.828	28.5469	10
56	10TC056	OLH	0.0834	0.32611	0.42013	0.09783	0.07253	0.703	39.7031	10
57	10TC057	OLH	0.08736	0.31074	0.45126	0.08555	0.06509	1.234	20.9766	10
58	10TC058	OLH	0.07944	0.31772	0.44071	0.09529	0.06684	1.859	30.1406	10
59	10TC059	OLH	0.0735	0.30143	0.46102	0.09868	0.06537	1.141	38.1094	10
*60	10TC060	OLH	0.11903	0.31446	0.39992	0.10037	0.06622	1.109	21.375	10
61	10TC061	OLH	0.10616	0.30166	0.43486	0.08492	0.0724	1.625	22.9688	10
62	10TC062	OLH	0.11804	0.32215	0.4004	0.09021	0.0692	1.813	36.5156	10
63	10TC063	OLH	0.09726	0.30073	0.42547	0.10694	0.0696	1.609	31.7344	10
*64	10TC064	OLH	0.10221	0.30818	0.43714	0.08703	0.06544	0.984	62.0156	10
65	10TC065	OLH	0.09033	0.32122	0.42718	0.09423	0.06704	0.078	52.0547	10
66	10TC066	OLH	0.07845	0.30306	0.44905	0.10101	0.06843	0.781	60.4219	10
67	10TC067	OLH	0.1121	0.31563	0.40321	0.10355	0.06551	0.734	55.6406	10
68	10TC068	OLH	0.11606	0.3119	0.41415	0.08598	0.07191	0.297	60.8203	10
69	10TC069	OLH	0.07449	0.32448	0.44065	0.09085	0.06953	0.75	42.4922	10
70	10TC070	OLH	0.09429	0.30189	0.43582	0.09762	0.07038	0.531	44.8828	10
71	10TC071	OLH	0.07053	0.30632	0.46755	0.08682	0.06878	1.766	46.4766	10
72	10TC072	OLH	0.09825	0.31377	0.43028	0.09296	0.06474	1.406	62.4141	10
73	10TC073	OLH	0.08439	0.30282	0.44221	0.1027	0.06788	1.094	44.0859	10
*74	10TC074	OLH	0.11309	0.31703	0.40544	0.09677	0.06767	1.75	43.2891	10
75	10TC075	OLH	0.08538	0.31004	0.43646	0.09614	0.07198	1.688	56.4375	10
76	10TC076	OLH	0.08241	0.31726	0.44651	0.08386	0.06996	1.156	61.2188	10
77	10TC077	OLH	0.06954	0.32704	0.43449	0.09995	0.06898	1.531	61.6172	10
78	10TC078	OLH	0.06855	0.3133	0.45295	0.09635	0.06885	1	40.5	10
79	10TC079	OLH	0.02599	0.31796	0.47906	0.10418	0.07281	1.328	43.6875	10
80	10TC080	OLH	0.04875	0.30329	0.47514	0.10376	0.06906	1.656	62.8125	10
81	10TC081	OLH	0.03391	0.32191	0.48071	0.09212	0.07135	1.516	45.6797	10
*82	10TC082	OLH	0.03193	0.30515	0.50252	0.08725	0.07315	1.281	63.6094	10
83	10TC083	OLH	0.00718	0.32168	0.49644	0.10842	0.06628	2	50.0625	10
84	10TC084	OLH	0.03292	0.29887	0.50482	0.09699	0.0664	1.359	59.2266	10
*85	10TC085	OLH	0.06558	0.32657	0.45166	0.08873	0.06746	1.641	51.2578	10
86	10TC086	OLH	0.03688	0.32285	0.46007	0.1099	0.0703	0.109	51.6563	10
87	10TC087	OLH	0.02797	0.30585	0.49319	0.10122	0.07177	0.953	64.8047	10
*88	10TC088	OLH	0.04578	0.3282	0.4672	0.08767	0.07115	0.438	64.4063	10
89	10TC089	OLH	0.05073	0.32098	0.46309	0.1008	0.0644	0.422	58.8281	10
90	10TC090	OLH	0.03589	0.30911	0.48251	0.10524	0.06725	0.453	45.2813	10

Table 34. Envelope C Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
91	10TC091	OLH	0.02698	0.31819	0.49947	0.08936	0.066	0.688	50.4609	10
92	10TC092	OLH	0.04776	0.30352	0.48955	0.09254	0.06663	0.328	65.6016	10
93	10TC093	OLH	0.00619	0.31912	0.4978	0.10609	0.0708	1.125	32.1328	10
94	10TC094	OLH	0.0438	0.29863	0.48558	0.09889	0.0731	1.875	23.7656	10
*95	10TC095	OLH	0.05667	0.32401	0.45524	0.09106	0.07302	1.203	27.3516	10
96	10TC096	OLH	0.02302	0.31051	0.51246	0.08301	0.071	1.906	33.3281	10
*97	10TC097	OLH	0.03787	0.32727	0.46694	0.10228	0.06564	1.375	15	10
98	10TC098	OLH	0.00916	0.30608	0.50748	0.10927	0.06801	1.734	31.3359	10
99	10TC099	OLH	0.04083	0.2991	0.50581	0.08979	0.06447	1.063	27.75	10
*100	10TC100	OLH	0.06459	0.31959	0.44499	0.10143	0.0694	0.563	17.7891	10
101	10TC101	OLH	0.04182	0.31237	0.46676	0.1063	0.07275	0.047	39.3047	10
102	10TC102	OLH	0.02203	0.31889	0.4987	0.09063	0.06975	0.063	26.1563	10
103	10TC103	OLH	0.04479	0.30236	0.48446	0.0955	0.07289	0.516	15.7969	10
*104	10TC104	OLH	0.01114	0.31633	0.50731	0.09804	0.06718	0.281	25.7578	10
105	10TC105	OLH	0.05568	0.2998	0.47073	0.10821	0.06558	0.813	26.5547	10
*106	10TC106	OLH	0.01312	0.31516	0.51115	0.0936	0.06697	0.609	32.5313	10
107	10TC107	OLH	0.06063	0.30026	0.48646	0.08407	0.06858	0.016	23.3672	10
108	10TC108	OLH	0.01609	0.32238	0.48682	0.10482	0.06989	1.844	40.8984	10
109	10TC109	OLH	0.02995	0.30096	0.48906	0.10736	0.07267	1.453	64.0078	10
110	10TC110	OLH	0.01708	0.32261	0.50274	0.08809	0.06948	1.781	46.0781	10
*111	10TC111	OLH	0.06162	0.3154	0.45739	0.09953	0.06606	1.797	58.4297	10
112	10TC112	OLH	0.05964	0.31167	0.45546	0.108	0.06523	1.078	46.875	10
*113	10TC113	OLH	0.01411	0.31679	0.50852	0.09445	0.06613	1.172	52.4531	10
114	10TC114	OLH	0.0537	0.3005	0.48577	0.09487	0.06516	1.297	41.2969	10
*115	10TC115	OLH	0.04974	0.31586	0.45464	0.10715	0.07261	0.766	60.0234	10
116	10TC116	OLH	0.05766	0.30888	0.46519	0.09741	0.07086	0.141	50.8594	10
117	10TC117	OLH	0.0636	0.32517	0.44488	0.09402	0.07233	0.859	42.8906	10
118	10TC118	OLH	0.01807	0.31214	0.50598	0.09233	0.07148	0.891	59.625	10
119	10TC119	OLH	0.03094	0.32494	0.47104	0.10778	0.0653	0.375	58.0313	10
120	10TC120	OLH	0.01906	0.30445	0.5055	0.10249	0.0685	0.188	44.4844	10
*121	10TC121	OLH	0.03985	0.32587	0.48043	0.08576	0.06809	0.391	49.2656	10
122	10TC122	OLH	0.0349	0.31842	0.46876	0.10567	0.07225	1.016	18.9844	10
123	10TC123	OLH	0.04677	0.30538	0.47872	0.09847	0.07066	1.922	28.9453	10
*124	10TC124	OLH	0.05865	0.32354	0.45685	0.09169	0.06927	1.219	20.5781	10
125	10TC125	OLH	0.025	0.31097	0.50269	0.08915	0.07219	1.266	25.3594	10
126	10TC126	OLH	0.02104	0.3147	0.49175	0.10672	0.06579	1.703	20.1797	10
127	10TC127	OLH	0.06261	0.30213	0.46525	0.10186	0.06815	1.25	38.5078	10
128	10TC128	OLH	0.04281	0.32471	0.47008	0.09508	0.06732	1.469	36.1172	10
129	10TC129	OLH	0.06657	0.32028	0.43835	0.10588	0.06892	0.234	34.5234	10
*130	10TC130	OLH	0.03886	0.31283	0.47562	0.09974	0.07295	0.594	18.5859	10
131	10TC131	OLH	0.05271	0.32378	0.46369	0.09	0.06982	0.906	36.9141	10
*132	10TC132	OLH	0.02401	0.30958	0.50046	0.09593	0.07002	0.25	37.7109	10
133	10TC133	OLH	0.05172	0.31656	0.46944	0.09656	0.06572	0.313	24.5625	10
*134	10TC134	OLH	0.05469	0.30934	0.45939	0.10884	0.06774	0.844	19.7813	10
135	10TC135	OLH	0.06756	0.29956	0.47141	0.09275	0.06872	0.469	19.3828	10
136	8TC001	EV	0.1319	0.3282	0.3927	0.0828	0.0644	0	15	8
137	8TC002	EV	0.1258	0.2984	0.3926	0.1099	0.0733	0	15	8

Table 34. Envelope C Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
138	8TC003	EV	0.0413	0.2984	0.5131	0.0828	0.0644	0	15	8
139	8TC004	EV	0.0052	0.3282	0.4923	0.1099	0.0644	0	15	8
140	8TC005	EV	0.0052	0.3282	0.5105	0.0828	0.0733	0	15	8
141	8TC006	EV	0.1319	0.3282	0.3927	0.0828	0.0644	0	66	8
142	8TC007	EV	0.1258	0.2984	0.3926	0.1099	0.0733	0	66	8
143	8TC008	EV	0.0413	0.2984	0.5131	0.0828	0.0644	0	66	8
144	8TC009	EV	0.0052	0.3282	0.4923	0.1099	0.0644	0	66	8
145	8TC010	EV	0.0052	0.3282	0.5105	0.0828	0.0733	0	66	8
146	8TC011	EV	0.1319	0.3282	0.3927	0.0828	0.0644	2	15	8
147	8TC012	EV	0.1258	0.2984	0.3926	0.1099	0.0733	2	15	8
148	8TC013	EV	0.0413	0.2984	0.5131	0.0828	0.0644	2	15	8
149	8TC014	EV	0.0052	0.3282	0.4923	0.1099	0.0644	2	15	8
150	8TC015	EV	0.0052	0.3282	0.5105	0.0828	0.0733	2	15	8
151	8TC016	EV	0.1319	0.3282	0.3927	0.0828	0.0644	2	66	8
152	8TC017	EV	0.1258	0.2984	0.3926	0.1099	0.0733	2	66	8
153	8TC018	EV	0.0413	0.2984	0.5131	0.0828	0.0644	2	66	8
154	8TC019	EV	0.0052	0.3282	0.4923	0.1099	0.0644	2	66	8
155	8TC020	EV	0.0052	0.3282	0.5105	0.0828	0.0733	2	66	8
156	8TC021	OLH	0.11111	0.30864	0.42684	0.08852	0.06489	0.672	37.3125	8
*157	8TC022	OLH	0.08835	0.32331	0.43076	0.08894	0.06864	0.344	18.1875	8
158	8TC023	OLH	0.1032	0.30469	0.42519	0.10058	0.06634	0.484	35.3203	8
159	8TC024	OLH	0.10517	0.32145	0.40338	0.10545	0.06455	0.719	17.3906	8
*160	8TC025	OLH	0.12992	0.30492	0.40946	0.08428	0.07142	0	30.9375	8
161	8TC026	OLH	0.10418	0.32773	0.40108	0.09572	0.07129	0.641	21.7734	8
162	8TC027	OLH	0.07152	0.30003	0.45424	0.10397	0.07024	0.359	29.7422	8
163	8TC028	OLH	0.10023	0.30376	0.44583	0.0828	0.06738	1.891	29.3438	8
*164	8TC029	OLH	0.10913	0.32075	0.41271	0.09148	0.06593	1.047	16.1953	8
165	8TC030	OLH	0.09132	0.2984	0.4387	0.10503	0.06655	1.563	16.5938	8
166	8TC031	OLH	0.08637	0.30562	0.44281	0.0919	0.0733	1.578	22.1719	8
167	8TC032	OLH	0.10122	0.31749	0.42339	0.08746	0.07044	1.547	35.7188	8
168	8TC033	OLH	0.11012	0.30841	0.40643	0.10334	0.0717	1.313	30.5391	8
169	8TC034	OLH	0.08934	0.32308	0.41635	0.10016	0.07107	1.672	15.3984	8
*170	8TC035	OLH	0.13091	0.30748	0.4081	0.08661	0.0669	0.875	48.8672	8
171	8TC036	OLH	0.0933	0.32797	0.42032	0.09381	0.0646	0.125	57.2344	8
172	8TC037	OLH	0.08043	0.30259	0.45066	0.10164	0.06468	0.797	53.6484	8
173	8TC038	OLH	0.11408	0.31609	0.39344	0.10969	0.0667	0.094	47.6719	8
174	8TC039	OLH	0.09924	0.29933	0.43896	0.09042	0.07205	0.625	66	8
175	8TC040	OLH	0.12794	0.32052	0.39842	0.08344	0.06968	0.266	49.6641	8
176	8TC041	OLH	0.09627	0.3275	0.40009	0.10291	0.07323	0.938	53.25	8
*177	8TC042	OLH	0.07251	0.30701	0.46091	0.09127	0.0683	1.438	63.2109	8
178	8TC043	OLH	0.09528	0.31423	0.43914	0.0864	0.06495	1.953	41.6953	8
179	8TC044	OLH	0.11507	0.30771	0.4072	0.10207	0.06795	1.938	54.8438	8
180	8TC045	OLH	0.09231	0.32424	0.42144	0.0972	0.06481	1.484	65.2031	8
*181	8TC046	OLH	0.12596	0.31027	0.39859	0.09466	0.07052	1.719	55.2422	8
182	8TC047	OLH	0.08142	0.3268	0.43517	0.08449	0.07212	1.188	54.4453	8
183	8TC048	OLH	0.12398	0.31144	0.39475	0.0991	0.07073	1.391	48.4688	8
184	8TC049	OLH	0.07647	0.32634	0.41944	0.10863	0.06912	1.984	57.6328	8

Table 34. Envelope C Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
*185	8TC050	OLH	0.12101	0.30422	0.41908	0.08788	0.06781	0.156	40.1016	8
186	8TC051	OLH	0.10715	0.32564	0.41684	0.08534	0.06503	0.547	16.9922	8
187	8TC052	OLH	0.12002	0.30399	0.40316	0.10461	0.06822	0.219	34.9219	8
188	8TC053	OLH	0.07548	0.31121	0.44851	0.09317	0.07163	0.203	22.5703	8
189	8TC054	OLH	0.07746	0.31493	0.45044	0.08471	0.07246	0.922	34.125	8
190	8TC055	OLH	0.12299	0.30981	0.39738	0.09826	0.07156	0.828	28.5469	8
*191	8TC056	OLH	0.0834	0.32611	0.42013	0.09783	0.07253	0.703	39.7031	8
192	8TC057	OLH	0.08736	0.31074	0.45126	0.08555	0.06509	1.234	20.9766	8
193	8TC058	OLH	0.07944	0.31772	0.44071	0.09529	0.06684	1.859	30.1406	8
194	8TC059	OLH	0.0735	0.30143	0.46102	0.09868	0.06537	1.141	38.1094	8
*195	8TC060	OLH	0.11903	0.31446	0.39992	0.10037	0.06622	1.109	21.375	8
196	8TC061	OLH	0.10616	0.30166	0.43486	0.08492	0.0724	1.625	22.9688	8
197	8TC062	OLH	0.11804	0.32215	0.4004	0.09021	0.0692	1.813	36.5156	8
198	8TC063	OLH	0.09726	0.30073	0.42547	0.10694	0.0696	1.609	31.7344	8
199	8TC064	OLH	0.10221	0.30818	0.43714	0.08703	0.06544	0.984	62.0156	8
*200	8TC065	OLH	0.09033	0.32122	0.42718	0.09423	0.06704	0.078	52.0547	8
201	8TC066	OLH	0.07845	0.30306	0.44905	0.10101	0.06843	0.781	60.4219	8
202	8TC067	OLH	0.1121	0.31563	0.40321	0.10355	0.06551	0.734	55.6406	8
*203	8TC068	OLH	0.11606	0.3119	0.41415	0.08598	0.07191	0.297	60.8203	8
204	8TC069	OLH	0.07449	0.32448	0.44065	0.09085	0.06953	0.75	42.4922	8
205	8TC070	OLH	0.09429	0.30189	0.43582	0.09762	0.07038	0.531	44.8828	8
206	8TC071	OLH	0.07053	0.30632	0.46755	0.08682	0.06878	1.766	46.4766	8
207	8TC072	OLH	0.09825	0.31377	0.43028	0.09296	0.06474	1.406	62.4141	8
208	8TC073	OLH	0.08439	0.30282	0.44221	0.1027	0.06788	1.094	44.0859	8
*209	8TC074	OLH	0.11309	0.31703	0.40544	0.09677	0.06767	1.75	43.2891	8
210	8TC075	OLH	0.08538	0.31004	0.43646	0.09614	0.07198	1.688	56.4375	8
211	8TC076	OLH	0.08241	0.31726	0.44651	0.08386	0.06996	1.156	61.2188	8
212	8TC077	OLH	0.06954	0.32704	0.43449	0.09995	0.06898	1.531	61.6172	8
213	8TC078	OLH	0.06855	0.3133	0.45295	0.09635	0.06885	1	40.5	8
*214	8TC079	OLH	0.02599	0.31796	0.47906	0.10418	0.07281	1.328	43.6875	8
215	8TC080	OLH	0.04875	0.30329	0.47514	0.10376	0.06906	1.656	62.8125	8
216	8TC081	OLH	0.03391	0.32191	0.48071	0.09212	0.07135	1.516	45.6797	8
217	8TC082	OLH	0.03193	0.30515	0.50252	0.08725	0.07315	1.281	63.6094	8
218	8TC083	OLH	0.00718	0.32168	0.49644	0.10842	0.06628	2	50.0625	8
219	8TC084	OLH	0.03292	0.29887	0.50482	0.09699	0.0664	1.359	59.2266	8
*220	8TC085	OLH	0.06558	0.32657	0.45166	0.08873	0.06746	1.641	51.2578	8
221	8TC086	OLH	0.03688	0.32285	0.46007	0.1099	0.0703	0.109	51.6563	8
*222	8TC087	OLH	0.02797	0.30585	0.49319	0.10122	0.07177	0.953	64.8047	8
223	8TC088	OLH	0.04578	0.3282	0.4672	0.08767	0.07115	0.438	64.4063	8
224	8TC089	OLH	0.05073	0.32098	0.46309	0.1008	0.0644	0.422	58.8281	8
225	8TC090	OLH	0.03589	0.30911	0.48251	0.10524	0.06725	0.453	45.2813	8
226	8TC091	OLH	0.02698	0.31819	0.49947	0.08936	0.066	0.688	50.4609	8
227	8TC092	OLH	0.04776	0.30352	0.48955	0.09254	0.06663	0.328	65.6016	8
228	8TC093	OLH	0.00619	0.31912	0.4978	0.10609	0.0708	1.125	32.1328	8
*229	8TC094	OLH	0.0438	0.29863	0.48558	0.09889	0.0731	1.875	23.7656	8
230	8TC095	OLH	0.05667	0.32401	0.45524	0.09106	0.07302	1.203	27.3516	8
*231	8TC096	OLH	0.02302	0.31051	0.51246	0.08301	0.071	1.906	33.3281	8

Table 34. Envelope C Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
232	8TC097	OLH	0.03787	0.32727	0.46694	0.10228	0.06564	1.375	15	8
233	8TC098	OLH	0.00916	0.30608	0.50748	0.10927	0.06801	1.734	31.3359	8
234	8TC099	OLH	0.04083	0.2991	0.50581	0.08979	0.06447	1.063	27.75	8
235	8TC100	OLH	0.06459	0.31959	0.44499	0.10143	0.0694	0.563	17.7891	8
236	8TC101	OLH	0.04182	0.31237	0.46676	0.1063	0.07275	0.047	39.3047	8
237	8TC102	OLH	0.02203	0.31889	0.4987	0.09063	0.06975	0.063	26.1563	8
238	8TC103	OLH	0.04479	0.30236	0.48446	0.0955	0.07289	0.516	15.7969	8
239	8TC104	OLH	0.01114	0.31633	0.50731	0.09804	0.06718	0.281	25.7578	8
*240	8TC105	OLH	0.05568	0.2998	0.47073	0.10821	0.06558	0.813	26.5547	8
241	8TC106	OLH	0.01312	0.31516	0.51115	0.0936	0.06697	0.609	32.5313	8
*242	8TC107	OLH	0.06063	0.30026	0.48646	0.08407	0.06858	0.016	23.3672	8
243	8TC108	OLH	0.01609	0.32238	0.48682	0.10482	0.06989	1.844	40.8984	8
244	8TC109	OLH	0.02995	0.30096	0.48906	0.10736	0.07267	1.453	64.0078	8
*245	8TC110	OLH	0.01708	0.32261	0.50274	0.08809	0.06948	1.781	46.0781	8
246	8TC111	OLH	0.06162	0.3154	0.45739	0.09953	0.06606	1.797	58.4297	8
247	8TC112	OLH	0.05964	0.31167	0.45546	0.108	0.06523	1.078	46.875	8
*248	8TC113	OLH	0.01411	0.31679	0.50852	0.09445	0.06613	1.172	52.4531	8
249	8TC114	OLH	0.0537	0.3005	0.48577	0.09487	0.06516	1.297	41.2969	8
250	8TC115	OLH	0.04974	0.31586	0.45464	0.10715	0.07261	0.766	60.0234	8
251	8TC116	OLH	0.05766	0.30888	0.46519	0.09741	0.07086	0.141	50.8594	8
*252	8TC117	OLH	0.0636	0.32517	0.44488	0.09402	0.07233	0.859	42.8906	8
253	8TC118	OLH	0.01807	0.31214	0.50598	0.09233	0.07148	0.891	59.625	8
254	8TC119	OLH	0.03094	0.32494	0.47104	0.10778	0.0653	0.375	58.0313	8
255	8TC120	OLH	0.01906	0.30445	0.5055	0.10249	0.0685	0.188	44.4844	8
256	8TC121	OLH	0.03985	0.32587	0.48043	0.08576	0.06809	0.391	49.2656	8
257	8TC122	OLH	0.0349	0.31842	0.46876	0.10567	0.07225	1.016	18.9844	8
*258	8TC123	OLH	0.04677	0.30538	0.47872	0.09847	0.07066	1.922	28.9453	8
259	8TC124	OLH	0.05865	0.32354	0.45685	0.09169	0.06927	1.219	20.5781	8
260	8TC125	OLH	0.025	0.31097	0.50269	0.08915	0.07219	1.266	25.3594	8
261	8TC126	OLH	0.02104	0.3147	0.49175	0.10672	0.06579	1.703	20.1797	8
262	8TC127	OLH	0.06261	0.30213	0.46525	0.10186	0.06815	1.25	38.5078	8
263	8TC128	OLH	0.04281	0.32471	0.47008	0.09508	0.06732	1.469	36.1172	8
264	8TC129	OLH	0.06657	0.32028	0.43835	0.10588	0.06892	0.234	34.5234	8
*265	8TC130	OLH	0.03886	0.31283	0.47562	0.09974	0.07295	0.594	18.5859	8
266	8TC131	OLH	0.05271	0.32378	0.46369	0.09	0.06982	0.906	36.9141	8
267	8TC132	OLH	0.02401	0.30958	0.50046	0.09593	0.07002	0.25	37.7109	8
*268	8TC133	OLH	0.05172	0.31656	0.46944	0.09656	0.06572	0.313	24.5625	8
269	8TC134	OLH	0.05469	0.30934	0.45939	0.10884	0.06774	0.844	19.7813	8
270	8TC135	OLH	0.06756	0.29956	0.47141	0.09275	0.06872	0.469	19.3828	8
271	6TC001	EV	0.1319	0.3282	0.3927	0.0828	0.0644	0	15	6
272	6TC002	EV	0.1258	0.2984	0.3926	0.1099	0.0733	0	15	6
273	6TC003	EV	0.0413	0.2984	0.5131	0.0828	0.0644	0	15	6
274	6TC004	EV	0.0052	0.3282	0.4923	0.1099	0.0644	0	15	6
275	6TC005	EV	0.0052	0.3282	0.5105	0.0828	0.0733	0	15	6
276	6TC006	EV	0.1319	0.3282	0.3927	0.0828	0.0644	0	66	6
277	6TC007	EV	0.1258	0.2984	0.3926	0.1099	0.0733	0	66	6
278	6TC008	EV	0.0413	0.2984	0.5131	0.0828	0.0644	0	66	6

Table 34. Envelope C Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
279	6TC009	EV	0.0052	0.3282	0.4923	0.1099	0.0644	0	66	6
280	6TC010	EV	0.0052	0.3282	0.5105	0.0828	0.0733	0	66	6
281	6TC011	EV	0.1319	0.3282	0.3927	0.0828	0.0644	2	15	6
282	6TC012	EV	0.1258	0.2984	0.3926	0.1099	0.0733	2	15	6
283	6TC013	EV	0.0413	0.2984	0.5131	0.0828	0.0644	2	15	6
284	6TC014	EV	0.0052	0.3282	0.4923	0.1099	0.0644	2	15	6
285	6TC015	EV	0.0052	0.3282	0.5105	0.0828	0.0733	2	15	6
286	6TC016	EV	0.1319	0.3282	0.3927	0.0828	0.0644	2	66	6
287	6TC017	EV	0.1258	0.2984	0.3926	0.1099	0.0733	2	66	6
288	6TC018	EV	0.0413	0.2984	0.5131	0.0828	0.0644	2	66	6
289	6TC019	EV	0.0052	0.3282	0.4923	0.1099	0.0644	2	66	6
290	6TC020	EV	0.0052	0.3282	0.5105	0.0828	0.0733	2	66	6
291	6TC021	OLH	0.11111	0.30864	0.42684	0.08852	0.06489	0.672	37.3125	6
292	6TC022	OLH	0.08835	0.32331	0.43076	0.08894	0.06864	0.344	18.1875	6
293	6TC023	OLH	0.1032	0.30469	0.42519	0.10058	0.06634	0.484	35.3203	6
294	6TC024	OLH	0.10517	0.32145	0.40338	0.10545	0.06455	0.719	17.3906	6
295	6TC025	OLH	0.12992	0.30492	0.40946	0.08428	0.07142	0	30.9375	6
*296	6TC026	OLH	0.10418	0.32773	0.40108	0.09572	0.07129	0.641	21.7734	6
297	6TC027	OLH	0.07152	0.30003	0.45424	0.10397	0.07024	0.359	29.7422	6
298	6TC028	OLH	0.10023	0.30376	0.44583	0.0828	0.06738	1.891	29.3438	6
*299	6TC029	OLH	0.10913	0.32075	0.41271	0.09148	0.06593	1.047	16.1953	6
300	6TC030	OLH	0.09132	0.2984	0.4387	0.10503	0.06655	1.563	16.5938	6
301	6TC031	OLH	0.08637	0.30562	0.44281	0.0919	0.0733	1.578	22.1719	6
*302	6TC032	OLH	0.10122	0.31749	0.42339	0.08746	0.07044	1.547	35.7188	6
303	6TC033	OLH	0.11012	0.30841	0.40643	0.10334	0.0717	1.313	30.5391	6
304	6TC034	OLH	0.08934	0.32308	0.41635	0.10016	0.07107	1.672	15.3984	6
305	6TC035	OLH	0.13091	0.30748	0.4081	0.08661	0.0669	0.875	48.8672	6
306	6TC036	OLH	0.0933	0.32797	0.42032	0.09381	0.0646	0.125	57.2344	6
307	6TC037	OLH	0.08043	0.30259	0.45066	0.10164	0.06468	0.797	53.6484	6
308	6TC038	OLH	0.11408	0.31609	0.39344	0.10969	0.0667	0.094	47.6719	6
309	6TC039	OLH	0.09924	0.29933	0.43896	0.09042	0.07205	0.625	66	6
*310	6TC040	OLH	0.12794	0.32052	0.39842	0.08344	0.06968	0.266	49.6641	6
311	6TC041	OLH	0.09627	0.3275	0.40009	0.10291	0.07323	0.938	53.25	6
312	6TC042	OLH	0.07251	0.30701	0.46091	0.09127	0.0683	1.438	63.2109	6
313	6TC043	OLH	0.09528	0.31423	0.43914	0.0864	0.06495	1.953	41.6953	6
314	6TC044	OLH	0.11507	0.30771	0.4072	0.10207	0.06795	1.938	54.8438	6
315	6TC045	OLH	0.09231	0.32424	0.42144	0.0972	0.06481	1.484	65.2031	6
*316	6TC046	OLH	0.12596	0.31027	0.39859	0.09466	0.07052	1.719	55.2422	6
317	6TC047	OLH	0.08142	0.3268	0.43517	0.08449	0.07212	1.188	54.4453	6
318	6TC048	OLH	0.12398	0.31144	0.39475	0.0991	0.07073	1.391	48.4688	6
*319	6TC049	OLH	0.07647	0.32634	0.41944	0.10863	0.06912	1.984	57.6328	6
320	6TC050	OLH	0.12101	0.30422	0.41908	0.08788	0.06781	0.156	40.1016	6
321	6TC051	OLH	0.10715	0.32564	0.41684	0.08534	0.06503	0.547	16.9922	6
322	6TC052	OLH	0.12002	0.30399	0.40316	0.10461	0.06822	0.219	34.9219	6
323	6TC053	OLH	0.07548	0.31121	0.44851	0.09317	0.07163	0.203	22.5703	6
324	6TC054	OLH	0.07746	0.31493	0.45044	0.08471	0.07246	0.922	34.125	6
*325	6TC055	OLH	0.12299	0.30981	0.39738	0.09826	0.07156	0.828	28.5469	6

Table 34. Envelope C Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
326	6TC056	OLH	0.0834	0.32611	0.42013	0.09783	0.07253	0.703	39.7031	6
*327	6TC057	OLH	0.08736	0.31074	0.45126	0.08555	0.06509	1.234	20.9766	6
328	6TC058	OLH	0.07944	0.31772	0.44071	0.09529	0.06684	1.859	30.1406	6
329	6TC059	OLH	0.0735	0.30143	0.46102	0.09868	0.06537	1.141	38.1094	6
330	6TC060	OLH	0.11903	0.31446	0.39992	0.10037	0.06622	1.109	21.375	6
*331	6TC061	OLH	0.10616	0.30166	0.43486	0.08492	0.0724	1.625	22.9688	6
332	6TC062	OLH	0.11804	0.32215	0.4004	0.09021	0.0692	1.813	36.5156	6
333	6TC063	OLH	0.09726	0.30073	0.42547	0.10694	0.0696	1.609	31.7344	6
334	6TC064	OLH	0.10221	0.30818	0.43714	0.08703	0.06544	0.984	62.0156	6
335	6TC065	OLH	0.09033	0.32122	0.42718	0.09423	0.06704	0.078	52.0547	6
336	6TC066	OLH	0.07845	0.30306	0.44905	0.10101	0.06843	0.781	60.4219	6
337	6TC067	OLH	0.1121	0.31563	0.40321	0.10355	0.06551	0.734	55.6406	6
338	6TC068	OLH	0.11606	0.3119	0.41415	0.08598	0.07191	0.297	60.8203	6
339	6TC069	OLH	0.07449	0.32448	0.44065	0.09085	0.06953	0.75	42.4922	6
340	6TC070	OLH	0.09429	0.30189	0.43582	0.09762	0.07038	0.531	44.8828	6
*341	6TC071	OLH	0.07053	0.30632	0.46755	0.08682	0.06878	1.766	46.4766	6
342	6TC072	OLH	0.09825	0.31377	0.43028	0.09296	0.06474	1.406	62.4141	6
343	6TC073	OLH	0.08439	0.30282	0.44221	0.1027	0.06788	1.094	44.0859	6
344	6TC074	OLH	0.11309	0.31703	0.40544	0.09677	0.06767	1.75	43.2891	6
*345	6TC075	OLH	0.08538	0.31004	0.43646	0.09614	0.07198	1.688	56.4375	6
346	6TC076	OLH	0.08241	0.31726	0.44651	0.08386	0.06996	1.156	61.2188	6
347	6TC077	OLH	0.06954	0.32704	0.43449	0.09995	0.06898	1.531	61.6172	6
348	6TC078	OLH	0.06855	0.3133	0.45295	0.09635	0.06885	1	40.5	6
349	6TC079	OLH	0.02599	0.31796	0.47906	0.10418	0.07281	1.328	43.6875	6
*350	6TC080	OLH	0.04875	0.30329	0.47514	0.10376	0.06906	1.656	62.8125	6
351	6TC081	OLH	0.03391	0.32191	0.48071	0.09212	0.07135	1.516	45.6797	6
352	6TC082	OLH	0.03193	0.30515	0.50252	0.08725	0.07315	1.281	63.6094	6
*353	6TC083	OLH	0.00718	0.32168	0.49644	0.10842	0.06628	2	50.0625	6
354	6TC084	OLH	0.03292	0.29887	0.50482	0.09699	0.0664	1.359	59.2266	6
355	6TC085	OLH	0.06558	0.32657	0.45166	0.08873	0.06746	1.641	51.2578	6
*356	6TC086	OLH	0.03688	0.32285	0.46007	0.1099	0.0703	0.109	51.6563	6
357	6TC087	OLH	0.02797	0.30585	0.49319	0.10122	0.07177	0.953	64.8047	6
358	6TC088	OLH	0.04578	0.3282	0.4672	0.08767	0.07115	0.438	64.4063	6
359	6TC089	OLH	0.05073	0.32098	0.46309	0.1008	0.0644	0.422	58.8281	6
*360	6TC090	OLH	0.03589	0.30911	0.48251	0.10524	0.06725	0.453	45.2813	6
361	6TC091	OLH	0.02698	0.31819	0.49947	0.08936	0.066	0.688	50.4609	6
362	6TC092	OLH	0.04776	0.30352	0.48955	0.09254	0.06663	0.328	65.6016	6
*363	6TC093	OLH	0.00619	0.31912	0.4978	0.10609	0.0708	1.125	32.1328	6
364	6TC094	OLH	0.0438	0.29863	0.48558	0.09889	0.0731	1.875	23.7656	6
*365	6TC095	OLH	0.05667	0.32401	0.45524	0.09106	0.07302	1.203	27.3516	6
366	6TC096	OLH	0.02302	0.31051	0.51246	0.08301	0.071	1.906	33.3281	6
367	6TC097	OLH	0.03787	0.32727	0.46694	0.10228	0.06564	1.375	15	6
*368	6TC098	OLH	0.00916	0.30608	0.50748	0.10927	0.06801	1.734	31.3359	6
369	6TC099	OLH	0.04083	0.2991	0.50581	0.08979	0.06447	1.063	27.75	6
370	6TC100	OLH	0.06459	0.31959	0.44499	0.10143	0.0694	0.563	17.7891	6
*371	6TC101	OLH	0.04182	0.31237	0.46676	0.1063	0.07275	0.047	39.3047	6
372	6TC102	OLH	0.02203	0.31889	0.4987	0.09063	0.06975	0.063	26.1563	6

Table 34. Envelope C Design Matrix for OLI Simulations (cont'd)

Run No.	Test ID	Type	x_{AlO2}	x_{CO3}	x_{NO2}	x_{OH}	x_{SO4}	SBS/Feed	Temp	Na M
373	6TC103	OLH	0.04479	0.30236	0.48446	0.0955	0.07289	0.516	15.7969	6
374	6TC104	OLH	0.01114	0.31633	0.50731	0.09804	0.06718	0.281	25.7578	6
375	6TC105	OLH	0.05568	0.2998	0.47073	0.10821	0.06558	0.813	26.5547	6
*376	6TC106	OLH	0.01312	0.31516	0.51115	0.0936	0.06697	0.609	32.5313	6
377	6TC107	OLH	0.06063	0.30026	0.48646	0.08407	0.06858	0.016	23.3672	6
378	6TC108	OLH	0.01609	0.32238	0.48682	0.10482	0.06989	1.844	40.8984	6
*379	6TC109	OLH	0.02995	0.30096	0.48906	0.10736	0.07267	1.453	64.0078	6
380	6TC110	OLH	0.01708	0.32261	0.50274	0.08809	0.06948	1.781	46.0781	6
381	6TC111	OLH	0.06162	0.3154	0.45739	0.09953	0.06606	1.797	58.4297	6
382	6TC112	OLH	0.05964	0.31167	0.45546	0.108	0.06523	1.078	46.875	6
*383	6TC113	OLH	0.01411	0.31679	0.50852	0.09445	0.06613	1.172	52.4531	6
384	6TC114	OLH	0.0537	0.3005	0.48577	0.09487	0.06516	1.297	41.2969	6
385	6TC115	OLH	0.04974	0.31586	0.45464	0.10715	0.07261	0.766	60.0234	6
386	6TC116	OLH	0.05766	0.30888	0.46519	0.09741	0.07086	0.141	50.8594	6
387	6TC117	OLH	0.0636	0.32517	0.44488	0.09402	0.07233	0.859	42.8906	6
388	6TC118	OLH	0.01807	0.31214	0.50598	0.09233	0.07148	0.891	59.625	6
389	6TC119	OLH	0.03094	0.32494	0.47104	0.10778	0.0653	0.375	58.0313	6
390	6TC120	OLH	0.01906	0.30445	0.5055	0.10249	0.0685	0.188	44.4844	6
391	6TC121	OLH	0.03985	0.32587	0.48043	0.08576	0.06809	0.391	49.2656	6
*392	6TC122	OLH	0.0349	0.31842	0.46876	0.10567	0.07225	1.016	18.9844	6
393	6TC123	OLH	0.04677	0.30538	0.47872	0.09847	0.07066	1.922	28.9453	6
394	6TC124	OLH	0.05865	0.32354	0.45685	0.09169	0.06927	1.219	20.5781	6
395	6TC125	OLH	0.025	0.31097	0.50269	0.08915	0.07219	1.266	25.3594	6
396	6TC126	OLH	0.02104	0.3147	0.49175	0.10672	0.06579	1.703	20.1797	6
*397	6TC127	OLH	0.06261	0.30213	0.46525	0.10186	0.06815	1.25	38.5078	6
398	6TC128	OLH	0.04281	0.32471	0.47008	0.09508	0.06732	1.469	36.1172	6
399	6TC129	OLH	0.06657	0.32028	0.43835	0.10588	0.06892	0.234	34.5234	6
400	6TC130	OLH	0.03886	0.31283	0.47562	0.09974	0.07295	0.594	18.5859	6
*401	6TC131	OLH	0.05271	0.32378	0.46369	0.09	0.06982	0.906	36.9141	6
402	6TC132	OLH	0.02401	0.30958	0.50046	0.09593	0.07002	0.25	37.7109	6
403	6TC133	OLH	0.05172	0.31656	0.46944	0.09656	0.06572	0.313	24.5625	6
404	6TC134	OLH	0.05469	0.30934	0.45939	0.10884	0.06774	0.844	19.7813	6
405	6TC135	OLH	0.06756	0.29956	0.47141	0.09275	0.06872	0.469	19.3828	6

* OLH Points used in fits where more points needed to capture nonlinear behavior

APPENDIX B. SOLIDS PREDICTIONS FOR ENVELOPES A, B, AND C

Table 35 through Table 40 lists the predicted solids from the OLI simulations for Envelopes A, B, and C. The **Test ID** indicates the type of run with the first 1-2 digits represent the target Sodium Molarity (10, 8 or 6) and then EA, TB, or TC for Envelope A, B, and C respectively followed by the 3 digits that represent the run number. No accurate prediction equations for the solubility of the evaporator bottoms stream in terms of the total insoluble solids present could be derived in either linear or nonlinear forms for Envelopes A, B, or C. Several attempts were made to include nonlinear and linear terms in the prediction fits, but the waste feed compositions, SBS to waste Feed ratio, the bottoms temperature, and Na molarity did not provide enough data about this phenomenon. The following tables are included to show what solids OLI predicted for each run.

Table 35. Predicted Solids for Envelope A Simulations – Part 1

Test ID	SBS/Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
10EA001	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA002	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA003	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA004	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA005	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA006	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA007	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA008	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA009	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA010	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA011	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA012	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA013	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA014	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA015	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA016	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA017	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA018	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA019	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA020	0	15	10	0	0	0	0	0	0	0	0	0	0	0
10EA021	2	15	10	0	0	0	0	0	0	3.15E+02	4.97E+01	0	0	7.38E+01
10EA022	2	15	10	0	0	0	0	0	0	3.19E+02	5.03E+01	0	0	7.46E+01
10EA023	2	15	10	0	0	0	0	0	0	3.54E+02	5.58E+01	0	0	8.28E+01
10EA024	2	15	10	0	0	0	0	0	0	3.41E+02	5.37E+01	0	0	7.97E+01
10EA025	2	15	10	0	0	0	0	0	0	3.21E+02	5.06E+01	0	0	7.51E+01
10EA026	2	15	10	0	0	0	0	3.75E+02	0	0	5.61E+01	0	0	8.33E+01
10EA027	2	15	10	0	0	0	0	0	0	3.62E+02	5.70E+01	0	0	8.47E+01
10EA028	2	15	10	0	0	0	0	0	0	3.60E+02	5.68E+01	0	0	8.43E+01
10EA029	2	15	10	0	0	0	0	0	0	3.49E+02	5.50E+01	0	0	8.17E+01
10EA030	2	15	10	0	0	0	0	0	0	3.37E+02	5.32E+01	0	0	7.89E+01
10EA031	2	15	10	0	0	0	0	0	0	3.15E+02	4.97E+01	0	0	7.38E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
10EA032	2	15	10	0	0	0	0	0	0	3.19E+02	5.03E+01	0	0	7.46E+01
10EA033	2	15	10	0	0	0	0	0	0	3.54E+02	5.58E+01	0	0	8.28E+01
10EA034	2	15	10	0	0	0	0	0	0	3.41E+02	5.37E+01	0	0	7.97E+01
10EA035	2	15	10	0	0	0	0	0	0	3.21E+02	5.06E+01	0	0	7.51E+01
10EA036	2	15	10	0	0	0	0	3.75E+02	0	0	5.61E+01	0	0	8.33E+01
10EA037	2	15	10	0	0	0	0	0	0	3.62E+02	5.70E+01	0	0	8.47E+01
10EA038	2	15	10	0	0	0	0	0	0	3.60E+02	5.68E+01	0	0	8.43E+01
10EA039	2	15	10	0	0	0	0	0	0	3.49E+02	5.50E+01	0	0	8.17E+01
10EA040	2	15	10	0	0	0	0	0	0	3.37E+02	5.32E+01	0	0	7.89E+01
10EA041	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA042	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA043	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA044	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA045	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA046	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA047	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA048	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA049	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA050	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA051	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA052	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA053	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA054	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA055	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA056	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA057	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA058	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA059	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA060	0	66	10	0	0	0	0	0	0	0	0	0	0	0
10EA061	2	66	10	0	0	0	0	0	0	3.15E+02	4.97E+01	0	0	7.38E+01
10EA062	2	66	10	0	0	0	0	0	0	3.19E+02	5.03E+01	0	0	7.46E+01
10EA063	2	66	10	0	0	0	0	0	0	3.52E+02	5.58E+01	0	0	8.28E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
10EA064	2	66	10	0	0	0	0	0	0	3.40E+02	5.37E+01	0	0	7.97E+01
10EA065	2	66	10	0	0	0	0	0	0	3.20E+02	5.06E+01	0	0	7.51E+01
10EA066	2	66	10	0	0	0	0	3.73E+02	0	0	5.61E+01	4.69E+00	0	8.33E+01
10EA067	2	66	10	0	0	0	0	0	0	3.61E+02	5.70E+01	0	0	8.47E+01
10EA068	2	66	10	0	0	4.98E+02	0	0	0	0	5.68E+01	0	0	8.43E+01
10EA069	2	66	10	0	0	4.83E+02	0	0	0	0	5.50E+01	0	0	8.17E+01
10EA070	2	66	10	0	0	0	0	0	0	3.37E+02	5.32E+01	0	0	7.89E+01
10EA071	2	66	10	0	0	0	0	0	0	3.15E+02	4.97E+01	0	0	7.38E+01
10EA072	2	66	10	0	0	0	0	0	0	3.19E+02	5.03E+01	0	0	7.46E+01
10EA073	2	66	10	0	0	0	0	0	0	3.52E+02	5.58E+01	0	0	8.28E+01
10EA074	2	66	10	0	0	0	0	0	0	3.40E+02	5.37E+01	0	0	7.97E+01
10EA075	2	66	10	0	0	0	0	0	0	3.20E+02	5.06E+01	0	0	7.51E+01
10EA076	2	66	10	0	0	0	0	3.73E+02	0	0	5.61E+01	4.69E+00	0	8.33E+01
10EA077	2	66	10	0	0	0	0	0	0	3.61E+02	5.70E+01	0	0	8.47E+01
10EA078	2	66	10	0	0	4.98E+02	0	0	0	0	5.68E+01	0	0	8.43E+01
10EA079	2	66	10	0	0	4.83E+02	0	0	0	0	5.50E+01	0	0	8.17E+01
10EA080	2	66	10	0	0	0	0	0	0	3.37E+02	5.32E+01	0	0	7.89E+01
10EA081	0.0391	15	10	0	0	0	0	0	0	6.51E+00	1.07E+00	0	0	1.58E+00
10EA082	1.957	15.102	10	0	0	0	0	0	0	3.35E+02	5.29E+01	0	0	7.85E+01
10EA083	0.7578	15.714	10	0	0	0	0	0	0	1.35E+02	2.14E+01	0	0	3.17E+01
10EA084	0.3008	15.918	10	0	0	0	0	0	0	5.28E+01	8.34E+00	0	0	1.24E+01
10EA085	0.0039	16.122	10	0	0	0	0	0	0	2.80E-01	1.07E-01	0	0	1.59E-01
10EA086	1.2305	17.04	10	0	0	0	0	0	0	2.16E+02	3.41E+01	0	0	5.06E+01
10EA087	1.5898	17.55	10	0	0	0	0	0	0	2.85E+02	4.50E+01	0	0	6.68E+01
10EA088	0.7734	18.06	10	0	0	0	0	0	0	1.37E+02	2.17E+01	0	0	3.22E+01
10EA089	1.1641	18.162	10	0	0	0	0	0	0	1.99E+02	3.14E+01	0	0	4.66E+01
10EA090	0.6094	18.264	10	0	0	0	0	0	0	1.04E+02	1.65E+01	0	0	2.45E+01
10EA091	0.8594	18.57	10	0	0	0	0	0	0	1.50E+02	2.36E+01	0	0	3.51E+01
10EA092	0.1914	18.672	10	0	0	0	0	0	0	3.34E+01	5.31E+00	0	0	7.89E+00
10EA093	1.0195	19.284	10	0	0	0	0	0	0	1.80E+02	2.84E+01	0	0	4.22E+01
10EA094	0.5352	19.488	10	0	0	0	0	0	0	9.64E+01	1.52E+01	0	0	2.26E+01
10EA095	1.3203	19.998	10	0	0	0	0	0	0	2.26E+02	3.56E+01	0	0	5.29E+01
10EA096	1.8398	20.508	10	0	0	0	0	0	0	3.26E+02	5.14E+01	0	0	7.62E+01
10EA097	0.1563	21.222	10	0	0	0	0	0	0	2.74E+01	4.39E+00	0	0	6.51E+00

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
10EA098	1.5977	21.426	10	0	0	0	0	0	0	2.74E+02	4.32E+01	0	0	6.42E+01
10EA099	0.1719	21.732	10	0	0	0	0	0	0	2.97E+01	4.73E+00	0	0	7.02E+00
10EA100	1.6094	22.956	10	0	0	0	0	0	0	2.87E+02	4.54E+01	0	0	6.74E+01
10EA101	0.8633	23.466	10	0	0	0	0	0	0	1.53E+02	2.41E+01	0	0	3.58E+01
10EA102	1.0703	24.282	10	0	0	0	0	0	0	1.91E+02	3.02E+01	0	0	4.48E+01
10EA103	1.0273	26.016	10	0	0	0	0	0	0	1.80E+02	2.84E+01	0	0	4.22E+01
10EA104	1.1758	26.22	10	0	0	0	0	0	0	2.09E+02	3.30E+01	0	0	4.90E+01
10EA105	0.5	26.526	10	0	0	0	0	0	0	8.79E+01	1.39E+01	0	0	2.06E+01
10EA106	1.2695	27.036	10	0	0	0	0	0	0	2.24E+02	3.53E+01	0	0	5.25E+01
10EA107	0.0195	27.138	10	0	0	0	0	0	0	3.08E+00	5.39E-01	0	0	8.00E-01
10EA108	1.4414	27.24	10	0	0	0	0	0	0	2.48E+02	3.92E+01	0	0	5.82E+01
10EA109	1.0547	28.056	10	0	0	0	0	0	0	1.87E+02	2.94E+01	0	0	4.37E+01
10EA110	1.2461	28.26	10	0	0	0	0	0	0	2.19E+02	3.45E+01	0	0	5.12E+01
10EA111	1.0977	28.464	10	0	0	0	0	0	0	1.95E+02	3.09E+01	0	0	4.58E+01
10EA112	0.6211	28.566	10	0	0	0	0	0	0	1.10E+02	1.74E+01	0	0	2.58E+01
10EA113	1.0664	28.872	10	0	0	0	0	0	0	1.86E+02	2.94E+01	0	0	4.37E+01
10EA114	0.6563	29.382	10	0	0	0	0	0	0	1.17E+02	1.85E+01	0	0	2.75E+01
10EA115	1.3867	29.484	10	0	0	0	0	0	0	2.43E+02	3.83E+01	0	0	5.69E+01
10EA116	1.0078	30.198	10	0	0	0	0	0	0	1.79E+02	2.82E+01	0	0	4.19E+01
10EA117	1.8711	30.504	10	0	0	0	0	0	0	3.28E+02	5.17E+01	0	0	7.68E+01
10EA118	0.5664	30.606	10	0	0	0	0	0	0	9.88E+01	1.56E+01	0	0	2.32E+01
10EA119	0.6953	31.422	10	0	0	0	0	0	0	1.15E+02	1.82E+01	0	0	2.70E+01
10EA120	1.4219	31.626	10	0	0	0	0	0	0	2.48E+02	3.91E+01	0	0	5.81E+01
10EA121	1.3555	32.748	10	0	0	0	0	0	0	2.42E+02	3.82E+01	0	0	5.67E+01
10EA122	0.2383	32.952	10	0	0	0	0	0	0	4.23E+01	6.75E+00	0	0	1.00E+01
10EA123	0.6328	33.36	10	0	0	0	0	0	0	1.11E+02	1.77E+01	0	0	2.62E+01
10EA124	1.5313	33.564	10	0	0	0	0	0	0	2.68E+02	4.23E+01	0	0	6.28E+01
10EA125	0.4727	33.666	10	0	0	0	0	0	0	7.85E+01	1.24E+01	0	0	1.84E+01
10EA126	0.5195	34.176	10	0	0	0	0	0	0	9.03E+01	1.43E+01	0	0	2.12E+01
10EA127	1.9727	34.278	10	0	0	0	0	0	0	3.42E+02	5.39E+01	0	0	8.00E+01
10EA128	0.1523	34.788	10	0	0	0	0	0	0	2.62E+01	4.23E+00	0	0	6.28E+00
10EA129	1.668	37.032	10	0	0	0	0	0	0	2.90E+02	4.58E+01	0	0	6.80E+01
10EA130	1.9336	38.358	10	0	0	0	0	0	0	3.36E+02	5.30E+01	0	0	7.86E+01
10EA131	1.4258	39.48	10	0	0	0	0	0	0	2.53E+02	4.00E+01	0	0	5.94E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
10EA132	0.168	39.99	10	0	0	0	0	0	0	2.84E+01	4.56E+00	0	0	6.78E+00
10EA133	1.6641	40.194	10	0	0	0	0	0	0	2.83E+02	4.46E+01	0	0	6.63E+01
10EA134	0.2344	40.602	10	0	0	0	0	0	0	4.15E+01	6.62E+00	0	0	9.83E+00
10EA135	1.6914	41.112	10	0	0	0	0	0	0	2.97E+02	4.69E+01	0	0	6.97E+01
10EA136	1.125	41.622	10	0	0	0	0	0	0	2.00E+02	3.16E+01	0	0	4.69E+01
10EA137	0.2813	42.744	10	0	0	0	0	0	0	4.80E+01	7.79E+00	0	0	1.16E+01
10EA138	1.7813	43.152	10	0	0	0	0	3.35E+02	0	0	5.02E+01	0	0	7.45E+01
10EA139	0.6992	43.56	10	0	0	0	0	0	0	1.23E+02	1.96E+01	0	0	2.91E+01
10EA140	0.957	43.662	10	0	0	0	0	0	0	1.71E+02	2.70E+01	0	0	4.01E+01
10EA141	0.3164	43.866	10	0	0	0	0	0	0	5.51E+01	8.94E+00	0	0	1.33E+01
10EA142	1.7539	44.172	10	0	0	0	0	3.22E+02	0	0	4.82E+01	0	0	7.16E+01
10EA143	0.4375	44.274	10	0	0	0	0	0	0	7.76E+01	1.24E+01	0	0	1.84E+01
10EA144	0.7617	44.376	10	0	0	0	0	0	0	1.33E+02	2.11E+01	0	0	3.13E+01
10EA145	0.6758	44.58	10	0	0	0	0	0	0	1.18E+02	1.86E+01	0	0	2.77E+01
10EA146	1.4922	45.396	10	0	0	0	0	0	0	2.57E+02	4.07E+01	0	0	6.05E+01
10EA147	1.168	45.6	10	0	0	0	0	2.21E+02	0	0	3.33E+01	0	0	4.94E+01
10EA148	0.7852	45.702	10	0	0	0	0	0	0	1.38E+02	2.21E+01	0	0	3.27E+01
10EA149	0.9219	45.804	10	0	0	0	0	1.68E+02	0	0	2.54E+01	0	0	3.77E+01
10EA150	1.2031	46.008	10	0	0	0	0	0	0	2.14E+02	3.39E+01	0	0	5.03E+01
10EA151	0.6289	46.518	10	0	0	0	0	0	0	1.11E+02	1.76E+01	0	0	2.61E+01
10EA152	0.0078	47.028	10	0	0	0	0	0	0	7.87E-01	2.14E-01	0	0	3.18E-01
10EA153	1.2773	47.13	10	0	0	0	0	0	0	2.20E+02	3.47E+01	0	0	5.15E+01
10EA154	0.9531	47.742	10	0	0	0	0	0	0	1.68E+02	2.67E+01	0	0	3.97E+01
10EA155	1.6328	47.844	10	0	0	0	0	0	0	2.73E+02	4.32E+01	0	0	6.41E+01
10EA156	1.1289	47.946	10	0	0	0	0	0	0	1.99E+02	3.18E+01	0	0	4.71E+01
10EA157	1.7773	48.456	10	0	0	0	0	0	0	3.13E+02	4.94E+01	0	0	7.34E+01
10EA158	1.1602	48.762	10	0	0	0	0	0	0	2.04E+02	3.24E+01	0	0	4.81E+01
10EA159	1.1172	48.864	10	0	0	0	0	0	0	1.91E+02	3.02E+01	0	0	4.49E+01
10EA160	1.8945	49.782	10	0	0	0	0	0	0	3.27E+02	5.16E+01	0	0	7.67E+01
10EA161	1.5391	50.088	10	0	0	0	0	0	0	2.62E+02	4.15E+01	0	0	6.16E+01
10EA162	0.0547	51.108	10	0	0	0	0	0	0	8.69E+00	1.55E+00	0	0	2.30E+00
10EA163	1.9258	52.026	10	0	0	0	0	0	0	3.38E+02	5.36E+01	0	0	7.96E+01
10EA164	1.4766	53.454	10	0	0	0	0	0	0	2.56E+02	4.05E+01	0	0	6.02E+01
10EA165	0.457	53.556	10	0	0	0	0	0	0	8.05E+01	1.30E+01	0	0	1.93E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
10EA166	1.2734	54.066	10	0	0	0	0	0	0	2.24E+02	3.57E+01	0	0	5.30E+01
10EA167	0.625	54.27	10	0	0	0	0	0	0	1.10E+02	1.74E+01	0	0	2.59E+01
10EA168	1.1484	54.882	10	0	0	0	0	2.16E+02	0	0	3.27E+01	0	0	4.85E+01
10EA169	1.7695	55.902	10	0	0	0	0	0	0	3.08E+02	4.89E+01	0	0	7.25E+01
10EA170	1.918	56.514	10	0	0	0	0	0	0	3.38E+02	5.33E+01	0	0	7.92E+01
10EA171	0.207	57.738	10	0	0	0	0	0	0	3.48E+01	5.75E+00	0	0	8.53E+00
10EA172	1.7266	58.758	10	0	0	4.25E+02	0	0	0	0	4.85E+01	0	0	7.20E+01
10EA173	1.0898	58.86	10	0	0	0	0	0	0	1.84E+02	2.91E+01	0	0	4.32E+01
10EA174	0.8945	60.39	10	0	0	0	0	1.65E+02	0	0	2.52E+01	0	0	3.75E+01
10EA175	1.6758	60.696	10	0	0	0	0	0	0	2.99E+02	4.76E+01	0	0	7.06E+01
10EA176	1.0625	60.9	10	0	0	0	0	0	0	1.82E+02	2.88E+01	0	0	4.27E+01
10EA177	1.9492	61.206	10	0	0	0	0	0	0	3.43E+02	5.43E+01	0	0	8.06E+01
10EA178	1.7852	61.92	10	0	0	0	0	0	0	3.10E+02	4.91E+01	0	0	7.29E+01
10EA179	0.2422	62.022	10	0	0	0	0	0	0	4.05E+01	6.72E+00	0	0	9.98E+00
10EA180	0.4961	63.042	10	0	0	0	0	0	0	8.55E+01	1.37E+01	0	0	2.03E+01
10EA181	0.6367	63.348	10	0	0	0	0	0	0	1.11E+02	1.78E+01	0	0	2.65E+01
10EA182	1.4102	63.552	10	0	0	0	0	0	0	2.37E+02	3.76E+01	0	0	5.58E+01
10EA183	0.4453	63.756	10	0	0	0	0	0	0	7.64E+01	1.22E+01	0	0	1.81E+01
10EA184	0.1836	64.164	10	0	0	0	0	0	0	3.19E+01	5.18E+00	0	0	7.69E+00
10EA185	1.6563	64.47	10	0	0	0	0	0	0	2.91E+02	4.60E+01	0	0	6.83E+01
10EA186	0.1875	64.674	10	0	0	0	0	0	0	3.15E+01	5.20E+00	0	0	7.72E+00
10EA187	1.7969	64.776	10	0	0	0	0	3.31E+02	0	0	4.99E+01	0	0	7.41E+01
10EA188	1.0508	65.388	10	0	0	0	0	0	0	1.80E+02	2.87E+01	0	0	4.26E+01
8EA001	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA002	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA003	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA004	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA005	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA006	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA007	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA008	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA009	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA010	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA011	0	15	8	0	0	0	0	0	0	0	0	0	0	0

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
8EA012	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA013	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA014	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA015	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA016	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA017	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA018	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA019	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA020	0	15	8	0	0	0	0	0	0	0	0	0	0	0
8EA021	2	15	8	0	0	0	0	0	0	3.15E+02	4.97E+01	0	0	7.38E+01
8EA022	2	15	8	0	0	0	0	0	0	3.19E+02	5.03E+01	0	0	7.46E+01
8EA023	2	15	8	0	0	0	0	0	0	3.52E+02	5.58E+01	0	0	8.28E+01
8EA024	2	15	8	0	0	0	0	3.59E+02	0	0	5.37E+01	0	0	7.97E+01
8EA025	2	15	8	0	0	0	0	3.36E+02	0	0	5.03E+01	0	1.45E+03	7.47E+01
8EA026	2	15	8	0	0	0	0	3.75E+02	0	0	5.61E+01	0	0	8.33E+01
8EA027	2	15	8	0	0	0	0	0	0	3.60E+02	5.70E+01	0	0	8.47E+01
8EA028	2	15	8	0	0	0	0	0	0	3.59E+02	5.68E+01	0	0	8.43E+01
8EA029	2	15	8	0	0	0	0	0	0	3.48E+02	5.50E+01	0	0	8.17E+01
8EA030	2	15	8	0	0	0	0	3.55E+02	0	0	5.32E+01	0	0	7.89E+01
8EA031	2	15	8	0	0	0	0	0	0	3.15E+02	4.97E+01	0	0	7.38E+01
8EA032	2	15	8	0	0	0	0	0	0	3.19E+02	5.03E+01	0	0	7.46E+01
8EA033	2	15	8	0	0	0	0	0	0	3.52E+02	5.58E+01	0	0	8.28E+01
8EA034	2	15	8	0	0	0	0	3.59E+02	0	0	5.37E+01	0	0	7.97E+01
8EA035	2	15	8	0	0	0	0	3.36E+02	0	0	5.03E+01	0	1.45E+03	7.47E+01
8EA036	2	15	8	0	0	0	0	3.75E+02	0	0	5.61E+01	0	0	8.33E+01
8EA037	2	15	8	0	0	0	0	0	0	3.60E+02	5.70E+01	0	0	8.47E+01
8EA038	2	15	8	0	0	0	0	0	0	3.59E+02	5.68E+01	0	0	8.43E+01
8EA039	2	15	8	0	0	0	0	0	0	3.48E+02	5.50E+01	0	0	8.17E+01
8EA040	2	15	8	0	0	0	0	3.55E+02	0	0	5.32E+01	0	0	7.89E+01
8EA041	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA042	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA043	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA044	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA045	0	66	8	0	0	0	0	0	0	0	0	0	0	0

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
8EA046	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA047	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA048	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA049	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA050	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA051	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA052	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA053	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA054	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA055	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA056	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA057	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA058	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA059	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA060	0	66	8	0	0	0	0	0	0	0	0	0	0	0
8EA061	2	66	8	0	0	0	0	0	0	3.13E+02	4.97E+01	0	0	7.38E+01
8EA062	2	66	8	0	0	0	0	0	0	3.18E+02	5.03E+01	0	0	7.46E+01
8EA063	2	66	8	0	0	4.91E+02	0	0	0	0	5.58E+01	2.08E+01	0	8.28E+01
8EA064	2	66	8	0	0	0	0	3.58E+02	0	0	5.37E+01	0	0	7.97E+01
8EA065	2	66	8	0	0	0	0	3.37E+02	0	0	5.06E+01	0	0	7.51E+01
8EA066	2	66	8	0	0	0	0	3.74E+02	0	0	5.61E+01	2.51E+01	0	8.33E+01
8EA067	2	66	8	0	0	0	4.86E+02	0	0	0	5.70E+01	1.16E+01	0	8.47E+01
8EA068	2	66	8	0	0	4.98E+02	0	0	0	0	5.68E+01	4.93E+00	0	8.43E+01
8EA069	2	66	8	0	0	4.82E+02	0	0	0	0	5.50E+01	0	0	8.17E+01
8EA070	2	66	8	0	0	0	0	3.54E+02	0	0	5.32E+01	0	0	7.89E+01
8EA071	2	66	8	0	0	0	0	0	0	3.13E+02	4.97E+01	0	0	7.38E+01
8EA072	2	66	8	0	0	0	0	0	0	3.18E+02	5.03E+01	0	0	7.46E+01
8EA073	2	66	8	0	0	4.91E+02	0	0	0	0	5.58E+01	2.08E+01	0	8.28E+01
8EA074	2	66	8	0	0	0	0	3.58E+02	0	0	5.37E+01	0	0	7.97E+01
8EA075	2	66	8	0	0	0	0	3.37E+02	0	0	5.06E+01	0	0	7.51E+01
8EA076	2	66	8	0	0	0	0	3.74E+02	0	0	5.61E+01	2.51E+01	0	8.33E+01
8EA077	2	66	8	0	0	0	4.86E+02	0	0	0	5.70E+01	1.16E+01	0	8.47E+01
8EA078	2	66	8	0	0	4.98E+02	0	0	0	0	5.68E+01	4.93E+00	0	8.43E+01
8EA079	2	66	8	0	0	4.82E+02	0	0	0	0	5.50E+01	0	0	8.17E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
8EA080	2	66	8	0	0	0	0	3.54E+02	0	0	5.32E+01	0	0	7.89E+01
8EA081	0.0391	15	8	0	0	0	0	6.86E+00	0	0	1.07E+00	0	0	1.58E+00
8EA082	1.957	15.102	8	0	0	0	0	3.53E+02	0	0	5.29E+01	0	0	7.85E+01
8EA083	0.7578	15.714	8	0	0	0	0	1.43E+02	0	0	2.14E+01	0	0	3.17E+01
8EA084	0.3008	15.918	8	0	0	0	0	5.54E+01	0	0	8.34E+00	0	0	1.24E+01
8EA085	0.0039	16.122	8	0	0	0	0	4.43E-01	0	0	1.07E-01	0	0	1.59E-01
8EA086	1.2305	17.04	8	0	0	0	0	2.28E+02	0	0	3.41E+01	0	0	5.06E+01
8EA087	1.5898	17.55	8	0	0	0	0	3.00E+02	0	0	4.50E+01	0	0	6.68E+01
8EA088	0.7734	18.06	8	0	0	0	0	1.45E+02	0	0	2.17E+01	0	0	3.22E+01
8EA089	1.1641	18.162	8	0	0	0	0	2.09E+02	0	0	3.14E+01	0	0	4.66E+01
8EA090	0.6094	18.264	8	0	0	0	0	1.10E+02	0	0	1.65E+01	0	0	2.45E+01
8EA091	0.8594	18.57	8	0	0	0	0	1.58E+02	0	0	2.36E+01	0	0	3.51E+01
8EA092	0.1914	18.672	8	0	0	0	0	3.52E+01	0	0	5.31E+00	0	0	7.89E+00
8EA093	1.0195	19.284	8	0	0	0	0	1.90E+02	0	0	2.84E+01	0	0	4.22E+01
8EA094	0.5352	19.488	8	0	0	0	0	1.01E+02	0	0	1.52E+01	0	0	2.26E+01
8EA095	1.3203	19.998	8	0	0	0	0	2.38E+02	0	0	3.56E+01	0	0	5.29E+01
8EA096	1.8398	20.508	8	0	0	0	0	0	0	3.24E+02	5.14E+01	0	0	7.62E+01
8EA097	0.1563	21.222	8	0	0	0	0	0	0	2.62E+01	4.39E+00	0	0	6.51E+00
8EA098	1.5977	21.426	8	0	0	0	0	0	0	2.73E+02	4.32E+01	0	0	6.42E+01
8EA099	0.1719	21.732	8	0	0	0	0	3.13E+01	0	0	4.73E+00	0	0	7.02E+00
8EA100	1.6094	22.956	8	0	0	0	0	0	0	2.85E+02	4.54E+01	0	0	6.74E+01
8EA101	0.8633	23.466	8	0	0	0	0	1.60E+02	0	0	2.41E+01	0	0	3.58E+01
8EA102	1.0703	24.282	8	0	0	0	0	2.02E+02	0	0	3.02E+01	0	0	4.48E+01
8EA103	1.0273	26.016	8	0	0	0	0	0	0	1.78E+02	2.84E+01	0	0	4.22E+01
8EA104	1.1758	26.22	8	0	0	0	0	2.20E+02	0	0	3.30E+01	0	0	4.90E+01
8EA105	0.5	26.526	8	0	0	0	0	0	0	8.66E+01	1.39E+01	0	0	2.06E+01
8EA106	1.2695	27.036	8	0	0	0	0	2.36E+02	0	0	3.53E+01	0	0	5.25E+01
8EA107	0.0195	27.138	8	0	0	0	0	0	0	1.87E+00	5.39E-01	0	0	8.00E-01
8EA108	1.4414	27.24	8	0	0	0	0	2.62E+02	0	0	3.92E+01	0	0	5.82E+01
8EA109	1.0547	28.056	8	0	0	0	0	0	0	1.85E+02	2.94E+01	0	0	4.37E+01
8EA110	1.2461	28.26	8	0	0	0	0	2.30E+02	0	0	3.45E+01	0	0	5.12E+01
8EA111	1.0977	28.464	8	0	0	0	0	0	0	1.91E+02	3.09E+01	0	0	4.58E+01
8EA112	0.6211	28.566	8	0	0	0	0	1.14E+02	0	0	1.74E+01	0	0	2.58E+01
8EA113	1.0664	28.872	8	0	0	0	0	4.02E+01	0	1.46E+02	2.94E+01	0	0	4.37E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
8EA114	0.6563	29.382	8	0	0	0	0	0	0	1.16E+02	1.85E+01	0	0	2.75E+01
8EA115	1.3867	29.484	8	0	0	0	0	2.56E+02	0	0	3.83E+01	0	0	5.69E+01
8EA116	1.0078	30.198	8	0	0	0	0	1.89E+02	0	0	2.82E+01	0	0	4.19E+01
8EA117	1.8711	30.504	8	0	0	0	0	3.46E+02	0	0	5.17E+01	0	0	7.68E+01
8EA118	0.5664	30.606	8	0	0	0	0	1.04E+02	0	0	1.56E+01	0	0	2.32E+01
8EA119	0.6953	31.422	8	0	0	0	0	1.21E+02	0	0	1.82E+01	0	0	2.70E+01
8EA120	1.4219	31.626	8	0	0	0	0	2.61E+02	0	0	3.91E+01	0	0	5.81E+01
8EA121	1.3555	32.748	8	0	0	0	0	0	0	2.39E+02	3.82E+01	0	0	5.67E+01
8EA122	0.2383	32.952	8	0	0	0	0	4.44E+01	0	0	6.75E+00	0	0	1.00E+01
8EA123	0.6328	33.36	8	0	0	0	0	0	0	1.09E+02	1.77E+01	0	0	2.62E+01
8EA124	1.5313	33.564	8	0	0	0	0	2.82E+02	0	0	4.23E+01	0	0	6.28E+01
8EA125	0.4727	33.666	8	0	0	0	0	8.23E+01	0	0	1.24E+01	0	0	1.84E+01
8EA126	0.5195	34.176	8	0	0	0	0	9.49E+01	0	0	1.43E+01	0	0	2.12E+01
8EA127	1.9727	34.278	8	0	0	0	0	3.60E+02	0	0	5.39E+01	0	0	8.00E+01
8EA128	0.1523	34.788	8	0	0	0	0	2.77E+01	0	0	4.23E+00	0	0	6.28E+00
8EA129	1.668	37.032	8	0	0	0	0	0	0	2.89E+02	4.58E+01	0	0	6.80E+01
8EA130	1.9336	38.358	8	0	0	0	0	0	0	3.34E+02	5.30E+01	0	0	7.86E+01
8EA131	1.4258	39.48	8	0	0	0	0	2.67E+02	0	0	4.00E+01	0	0	5.94E+01
8EA132	0.168	39.99	8	0	0	0	0	2.85E+01	0	0	4.56E+00	0	0	6.78E+00
8EA133	1.6641	40.194	8	0	0	0	0	2.98E+02	0	0	4.46E+01	0	0	6.63E+01
8EA134	0.2344	40.602	8	0	0	0	0	4.38E+01	0	0	6.62E+00	0	0	9.83E+00
8EA135	1.6914	41.112	8	0	0	0	0	3.13E+02	0	0	4.69E+01	0	0	6.97E+01
8EA136	1.125	41.622	8	0	0	1.56E+02	0	0	0	8.36E+01	3.16E+01	0	0	4.69E+01
8EA137	0.2813	42.744	8	0	0	0	0	5.10E+01	0	0	7.79E+00	0	0	1.16E+01
8EA138	1.7813	43.152	8	0	0	0	0	3.35E+02	0	0	5.02E+01	0	0	7.45E+01
8EA139	0.6992	43.56	8	0	0	0	0	1.31E+02	0	0	1.96E+01	0	0	2.91E+01
8EA140	0.957	43.662	8	0	0	0	0	1.80E+02	0	0	2.70E+01	0	0	4.01E+01
8EA141	0.3164	43.866	8	0	0	7.18E+01	0	0	0	0	8.94E+00	0	0	1.33E+01
8EA142	1.7539	44.172	8	0	0	0	0	3.22E+02	0	0	4.82E+01	0	0	7.16E+01
8EA143	0.4375	44.274	8	0	0	1.03E+02	0	0	0	0	1.24E+01	0	0	1.84E+01
8EA144	0.7617	44.376	8	0	0	0	0	1.40E+02	0	0	2.11E+01	0	0	3.13E+01
8EA145	0.6758	44.58	8	0	0	0	0	1.24E+02	0	0	1.86E+01	0	0	2.77E+01
8EA146	1.4922	45.396	8	0	0	0	0	2.72E+02	0	0	4.07E+01	0	0	6.05E+01
8EA147	1.168	45.6	8	0	0	0	0	2.22E+02	0	0	3.33E+01	0	0	4.94E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
8EA148	0.7852	45.702	8	0	0	1.88E+02	0	0	0	0	2.21E+01	0	0	3.27E+01
8EA149	0.9219	45.804	8	0	0	0	0	1.68E+02	0	0	2.54E+01	0	0	3.77E+01
8EA150	1.2031	46.008	8	0	0	0	0	2.26E+02	0	0	3.39E+01	0	0	5.03E+01
8EA151	0.6289	46.518	8	0	0	0	0	1.16E+02	0	0	1.76E+01	0	0	2.61E+01
8EA152	0.0078	47.028	8	0	0	0	0	4.74E-01	0	0	2.14E-01	0	0	3.18E-01
8EA153	1.2773	47.13	8	0	0	0	0	2.31E+02	0	0	3.47E+01	0	0	5.15E+01
8EA154	0.9531	47.742	8	0	0	0	0	1.77E+02	0	0	2.67E+01	0	0	3.97E+01
8EA155	1.6328	47.844	8	0	0	0	0	2.88E+02	0	0	4.32E+01	0	0	6.41E+01
8EA156	1.1289	47.946	8	0	0	2.75E+02	0	0	0	0	3.18E+01	0	0	4.71E+01
8EA157	1.7773	48.456	8	0	0	0	0	3.30E+02	0	0	4.94E+01	0	0	7.34E+01
8EA158	1.1602	48.762	8	0	0	2.80E+02	0	0	0	0	3.24E+01	0	0	4.81E+01
8EA159	1.1172	48.864	8	0	0	0	0	2.01E+02	0	0	3.02E+01	0	0	4.49E+01
8EA160	1.8945	49.782	8	0	0	0	0	3.44E+02	0	0	5.16E+01	0	0	7.67E+01
8EA161	1.5391	50.088	8	0	0	0	0	2.75E+02	0	0	4.15E+01	0	0	6.16E+01
8EA162	0.0547	51.108	8	0	0	7.92E+00	0	0	0	0	1.55E+00	0	0	2.30E+00
8EA163	1.9258	52.026	8	0	0	0	0	3.57E+02	0	0	5.36E+01	0	0	7.96E+01
8EA164	1.4766	53.454	8	0	0	0	0	2.69E+02	0	0	4.05E+01	0	0	6.02E+01
8EA165	0.457	53.556	8	0	0	1.09E+02	0	0	0	0	1.30E+01	0	0	1.93E+01
8EA166	1.2734	54.066	8	0	0	4.78E+01	0	1.98E+02	0	0	3.57E+01	0	0	5.30E+01
8EA167	0.625	54.27	8	0	0	0	0	1.16E+02	0	0	1.74E+01	0	0	2.59E+01
8EA168	1.1484	54.882	8	0	0	0	0	2.17E+02	0	0	3.27E+01	0	0	4.85E+01
8EA169	1.7695	55.902	8	0	0	0	0	3.25E+02	0	0	4.89E+01	0	0	7.25E+01
8EA170	1.918	56.514	8	0	0	0	0	0	0	3.35E+02	5.33E+01	0	0	7.92E+01
8EA171	0.207	57.738	8	0	0	4.54E+01	0	0	0	0	5.75E+00	0	0	8.53E+00
8EA172	1.7266	58.758	8	0	0	4.24E+02	0	0	0	0	4.85E+01	0	0	7.20E+01
8EA173	1.0898	58.86	8	0	0	0	0	1.93E+02	0	0	2.91E+01	0	0	4.32E+01
8EA174	0.8945	60.39	8	0	0	2.18E+02	0	0	0	0	2.52E+01	0	0	3.75E+01
8EA175	1.6758	60.696	8	0	0	4.16E+02	0	0	0	0	4.76E+01	0	0	7.06E+01
8EA176	1.0625	60.9	8	0	0	0	0	1.91E+02	0	0	2.88E+01	0	0	4.27E+01
8EA177	1.9492	61.206	8	0	0	0	0	3.62E+02	0	0	5.43E+01	0	0	8.06E+01
8EA178	1.7852	61.92	8	0	0	0	0	3.27E+02	0	0	4.91E+01	0	0	7.29E+01
8EA179	0.2422	62.022	8	0	0	0	0	4.36E+01	0	0	6.72E+00	0	0	9.98E+00
8EA180	0.4961	63.042	8	0	0	0	0	9.00E+01	0	0	1.37E+01	0	0	2.03E+01
8EA181	0.6367	63.348	8	0	0	0	0	1.18E+02	0	0	1.78E+01	0	0	2.65E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
8EA182	1.4102	63.552	8	0	0	0	0	2.48E+02	0	0	3.76E+01	0	0	5.58E+01
8EA183	0.4453	63.756	8	0	0	0	0	8.02E+01	0	0	1.22E+01	0	0	1.81E+01
8EA184	0.1836	64.164	8	0	0	0	0	3.39E+01	0	0	5.18E+00	0	0	7.69E+00
8EA185	1.6563	64.47	8	0	0	0	0	3.06E+02	0	0	4.59E+01	0	1.32E+03	6.81E+01
8EA186	0.1875	64.674	8	0	0	0	0	3.33E+01	0	0	5.20E+00	0	0	7.72E+00
8EA187	1.7969	64.776	8	0	0	0	0	3.32E+02	0	0	4.99E+01	2.98E+00	0	7.41E+01
8EA188	1.0508	65.388	8	0	0	0	0	1.90E+02	0	0	2.87E+01	0	0	4.26E+01
6EA001	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA002	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA003	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA004	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA005	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA006	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA007	0	15	6	2.84E+03	0	0	0	0	0	0	0	0	0	0
6EA008	0	15	6	2.82E+03	0	0	0	0	0	0	0	0	0	0
6EA009	0	15	6	4.56E+03	0	0	0	0	0	0	0	0	0	0
6EA010	0	15	6	6.82E+03	0	0	0	0	0	0	0	0	0	0
6EA011	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA012	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA013	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA014	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA015	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA016	0	15	6	0	0	0	0	0	0	0	0	0	0	0
6EA017	0	15	6	2.84E+03	0	0	0	0	0	0	0	0	0	0
6EA018	0	15	6	2.82E+03	0	0	0	0	0	0	0	0	0	0
6EA019	0	15	6	4.56E+03	0	0	0	0	0	0	0	0	0	0
6EA020	0	15	6	6.82E+03	0	0	0	0	0	0	0	0	0	0
6EA021	2	15	6	0	0	0	0	0	0	3.14E+02	4.97E+01	0	0	7.38E+01
6EA022	2	15	6	0	0	0	0	0	0	3.17E+02	5.03E+01	0	0	7.46E+01
6EA023	2	15	6	0	0	3.08E+02	0	1.32E+02	0	0	5.58E+01	0	0	8.28E+01
6EA024	2	15	6	0	0	0	0	3.59E+02	0	0	5.37E+01	0	0	7.97E+01
6EA025	2	15	6	0	0	0	0	3.38E+02	0	0	5.06E+01	0	0	7.51E+01
6EA026	2	15	6	0	0	0	0	3.75E+02	0	0	5.61E+01	0	0	8.33E+01
6EA027	2	15	6	6.42E+03	0	0	4.84E+02	0	0	0	5.70E+01	0	0	8.47E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
6EA028	2	15	6	7.12E+03	0	0	0	0	0	3.52E+02	5.68E+01	0	0	8.43E+01
6EA029	2	15	6	8.88E+03	0	0	0	0	0	3.43E+02	5.50E+01	0	0	8.17E+01
6EA030	2	15	6	1.09E+04	0	0	0	3.55E+02	0	0	5.32E+01	0	0	7.89E+01
6EA031	2	15	6	0	0	0	0	0	0	3.14E+02	4.97E+01	0	0	7.38E+01
6EA032	2	15	6	0	0	0	0	0	0	3.17E+02	5.03E+01	0	0	7.46E+01
6EA033	2	15	6	0	0	3.08E+02	0	1.32E+02	0	0	5.58E+01	0	0	8.28E+01
6EA034	2	15	6	0	0	0	0	3.59E+02	0	0	5.37E+01	0	0	7.97E+01
6EA035	2	15	6	0	0	0	0	3.38E+02	0	0	5.06E+01	0	0	7.51E+01
6EA036	2	15	6	0	0	0	0	3.75E+02	0	0	5.61E+01	0	0	8.33E+01
6EA037	2	15	6	6.42E+03	0	0	4.84E+02	0	0	0	5.70E+01	0	0	8.47E+01
6EA038	2	15	6	7.12E+03	0	0	0	0	0	3.52E+02	5.68E+01	0	0	8.43E+01
6EA039	2	15	6	8.88E+03	0	0	0	0	0	3.43E+02	5.50E+01	0	0	8.17E+01
6EA040	2	15	6	1.09E+04	0	0	0	3.55E+02	0	0	5.32E+01	0	0	7.89E+01
6EA041	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA042	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA043	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA044	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA045	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA046	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA047	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA048	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA049	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA050	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA051	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA052	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA053	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA054	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA055	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA056	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA057	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA058	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA059	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA060	0	66	6	0	0	0	0	0	0	0	0	0	0	0
6EA061	2	66	6	0	0	4.35E+02	0	0	0	0	4.97E+01	0	0	7.38E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
6EA062	2	66	6	0	0	4.40E+02	0	0	0	0	5.03E+01	0	0	7.46E+01
6EA063	2	66	6	0	0	4.90E+02	0	0	0	0	5.58E+01	3.50E+01	0	8.28E+01
6EA064	2	66	6	0	0	0	0	3.59E+02	0	0	5.37E+01	1.81E+01	0	7.97E+01
6EA065	2	66	6	0	0	0	0	3.38E+02	0	0	5.06E+01	9.15E+00	0	7.51E+01
6EA066	2	66	6	0	0	0	0	3.75E+02	0	0	5.61E+01	3.70E+01	0	8.33E+01
6EA067	2	66	6	0	0	0	4.86E+02	0	0	0	5.70E+01	2.79E+01	0	8.47E+01
6EA068	2	66	6	0	0	4.96E+02	0	0	0	0	5.68E+01	2.44E+01	0	8.43E+01
6EA069	2	66	6	0	0	4.81E+02	0	0	0	0	5.50E+01	1.65E+01	0	8.17E+01
6EA070	2	66	6	0	0	0	0	3.55E+02	0	0	5.32E+01	0	0	7.89E+01
6EA071	2	66	6	0	0	4.35E+02	0	0	0	0	4.97E+01	0	0	7.38E+01
6EA072	2	66	6	0	0	4.40E+02	0	0	0	0	5.03E+01	0	0	7.46E+01
6EA073	2	66	6	0	0	4.90E+02	0	0	0	0	5.58E+01	3.50E+01	0	8.28E+01
6EA074	2	66	6	0	0	0	0	3.59E+02	0	0	5.37E+01	1.81E+01	0	7.97E+01
6EA075	2	66	6	0	0	0	0	3.38E+02	0	0	5.06E+01	9.15E+00	0	7.51E+01
6EA076	2	66	6	0	0	0	0	3.75E+02	0	0	5.61E+01	3.70E+01	0	8.33E+01
6EA077	2	66	6	0	0	0	4.86E+02	0	0	0	5.70E+01	2.79E+01	0	8.47E+01
6EA078	2	66	6	0	0	4.96E+02	0	0	0	0	5.68E+01	2.44E+01	0	8.43E+01
6EA079	2	66	6	0	0	4.81E+02	0	0	0	0	5.50E+01	1.65E+01	0	8.17E+01
6EA080	2	66	6	0	0	0	0	3.55E+02	0	0	5.32E+01	0	0	7.89E+01
6EA081	0.0391	15	6	3.83E+03	0	0	0	6.98E+00	0	0	1.07E+00	0	0	1.58E+00
6EA082	1.957	15.102	6	7.90E+03	0	0	0	3.54E+02	0	0	5.29E+01	0	0	7.85E+01
6EA083	0.7578	15.714	6	3.90E+03	0	0	0	1.43E+02	0	0	2.14E+01	0	0	3.17E+01
6EA084	0.3008	15.918	6	3.32E+03	0	0	0	5.56E+01	0	0	8.34E+00	0	0	1.24E+01
6EA085	0.0039	16.122	6	2.42E+02	0	0	0	5.49E-01	0	0	1.07E-01	0	0	1.59E-01
6EA086	1.2305	17.04	6	0	0	0	0	2.28E+02	0	0	3.41E+01	0	0	5.06E+01
6EA087	1.5898	17.55	6	3.96E+03	0	0	0	2.99E+02	0	0	4.50E+01	0	0	6.68E+01
6EA088	0.7734	18.06	6	2.06E+03	0	0	0	1.45E+02	0	0	2.17E+01	0	0	3.22E+01
6EA089	1.1641	18.162	6	4.04E+03	0	0	0	2.10E+02	0	0	3.14E+01	0	0	4.66E+01
6EA090	0.6094	18.264	6	0	0	0	0	1.10E+02	0	0	1.65E+01	0	0	2.45E+01
6EA091	0.8594	18.57	6	0	0	0	0	1.58E+02	0	0	2.36E+01	0	0	3.51E+01
6EA092	0.1914	18.672	6	9.44E+02	0	0	0	3.48E+01	0	0	5.31E+00	0	0	7.89E+00
6EA093	1.0195	19.284	6	1.55E+03	0	0	0	1.89E+02	0	0	2.84E+01	0	0	4.22E+01
6EA094	0.5352	19.488	6	1.21E+02	0	0	0	1.01E+02	0	0	1.52E+01	0	0	2.26E+01
6EA095	1.3203	19.998	6	1.76E+03	0	0	0	2.38E+02	0	0	3.56E+01	0	0	5.29E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
6EA096	1.8398	20.508	6	2.31E+03	0	0	0	3.41E+02	0	0	5.14E+01	0	0	7.62E+01
6EA097	0.1563	21.222	6	0	0	0	0	2.83E+01	0	0	4.39E+00	0	0	6.51E+00
6EA098	1.5977	21.426	6	0	0	0	0	2.84E+02	0	0	4.32E+01	0	0	6.42E+01
6EA099	0.1719	21.732	6	0	0	0	0	3.14E+01	0	0	4.73E+00	0	0	7.02E+00
6EA100	1.6094	22.956	6	0	0	3.75E+02	0	1.12E+01	0	0	4.54E+01	0	0	6.74E+01
6EA101	0.8633	23.466	6	0	0	0	0	1.61E+02	0	0	2.41E+01	0	0	3.58E+01
6EA102	1.0703	24.282	6	0	0	0	0	2.02E+02	0	0	3.02E+01	0	0	4.48E+01
6EA103	1.0273	26.016	6	0	0	0	0	1.88E+02	0	0	2.84E+01	0	0	4.22E+01
6EA104	1.1758	26.22	6	0	0	0	0	2.20E+02	0	0	3.30E+01	0	0	4.90E+01
6EA105	0.5	26.526	6	0	0	0	0	9.05E+01	0	0	1.39E+01	0	0	2.06E+01
6EA106	1.2695	27.036	6	0	0	0	0	2.36E+02	0	0	3.53E+01	0	0	5.25E+01
6EA107	0.0195	27.138	6	0	0	0	0	0	0	0	5.39E-01	0	0	8.00E-01
6EA108	1.4414	27.24	6	0	0	0	0	2.62E+02	0	0	3.92E+01	0	0	5.82E+01
6EA109	1.0547	28.056	6	0	0	0	0	1.94E+02	0	0	2.94E+01	0	0	4.37E+01
6EA110	1.2461	28.26	6	0	0	0	0	2.30E+02	0	0	3.45E+01	0	0	5.12E+01
6EA111	1.0977	28.464	6	0	0	4.78E+01	0	1.62E+02	0	0	3.09E+01	0	0	4.58E+01
6EA112	0.6211	28.566	6	0	0	0	0	1.15E+02	0	0	1.74E+01	0	0	2.58E+01
6EA113	1.0664	28.872	6	0	0	0	0	1.95E+02	0	0	2.94E+01	0	0	4.37E+01
6EA114	0.6563	29.382	6	0	0	0	0	1.22E+02	0	0	1.85E+01	0	0	2.75E+01
6EA115	1.3867	29.484	6	0	0	0	0	2.56E+02	0	0	3.83E+01	0	0	5.69E+01
6EA116	1.0078	30.198	6	0	0	0	0	1.89E+02	0	0	2.82E+01	0	0	4.19E+01
6EA117	1.8711	30.504	6	0	0	0	0	3.46E+02	0	0	5.17E+01	0	0	7.68E+01
6EA118	0.5664	30.606	6	0	0	0	0	1.04E+02	0	0	1.56E+01	0	0	2.32E+01
6EA119	0.6953	31.422	6	0	0	0	0	1.21E+02	0	0	1.82E+01	0	0	2.70E+01
6EA120	1.4219	31.626	6	0	0	0	0	2.61E+02	0	0	3.91E+01	0	0	5.81E+01
6EA121	1.3555	32.748	6	0	0	0	0	2.52E+02	0	0	3.82E+01	0	0	5.67E+01
6EA122	0.2383	32.952	6	0	0	0	0	4.46E+01	0	0	6.75E+00	0	0	1.00E+01
6EA123	0.6328	33.36	6	0	0	1.46E+02	0	0	0	0	1.77E+01	0	0	2.62E+01
6EA124	1.5313	33.564	6	0	0	0	0	2.82E+02	0	0	4.23E+01	0	0	6.28E+01
6EA125	0.4727	33.666	6	0	0	0	0	8.26E+01	0	0	1.24E+01	0	0	1.84E+01
6EA126	0.5195	34.176	6	0	0	0	0	9.49E+01	0	0	1.43E+01	0	0	2.12E+01
6EA127	1.9727	34.278	6	0	0	0	0	3.60E+02	0	0	5.39E+01	0	0	8.00E+01
6EA128	0.1523	34.788	6	0	0	0	0	2.77E+01	0	0	4.23E+00	0	0	6.28E+00
6EA129	1.668	37.032	6	0	0	0	0	3.04E+02	0	0	4.58E+01	0	0	6.80E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
6EA130	1.9336	38.358	6	0	0	0	0	3.52E+02	0	0	5.30E+01	0	0	7.86E+01
6EA131	1.4258	39.48	6	0	0	0	0	2.67E+02	0	0	4.00E+01	0	0	5.94E+01
6EA132	0.168	39.99	6	0	0	0	0	2.91E+01	0	0	4.56E+00	0	0	6.78E+00
6EA133	1.6641	40.194	6	0	0	0	0	2.98E+02	0	0	4.46E+01	0	0	6.63E+01
6EA134	0.2344	40.602	6	0	0	0	0	4.39E+01	0	0	6.62E+00	0	0	9.83E+00
6EA135	1.6914	41.112	6	0	0	0	0	3.11E+02	0	0	4.69E+01	0	0	6.97E+01
6EA136	1.125	41.622	6	0	0	2.71E+02	0	0	0	0	3.16E+01	0	0	4.69E+01
6EA137	0.2813	42.744	6	0	0	0	0	4.98E+01	0	0	7.79E+00	0	0	1.16E+01
6EA138	1.7813	43.152	6	0	0	0	0	3.33E+02	0	0	5.02E+01	0	0	7.45E+01
6EA139	0.6992	43.56	6	0	0	0	0	1.31E+02	0	0	1.96E+01	0	0	2.91E+01
6EA140	0.957	43.662	6	0	0	0	0	1.80E+02	0	0	2.70E+01	0	0	4.01E+01
6EA141	0.3164	43.866	6	0	0	6.99E+01	0	0	0	0	8.94E+00	0	0	1.33E+01
6EA142	1.7539	44.172	6	0	0	0	0	3.22E+02	0	0	4.82E+01	0	0	7.16E+01
6EA143	0.4375	44.274	6	0	0	1.02E+02	0	0	0	0	1.24E+01	0	0	1.84E+01
6EA144	0.7617	44.376	6	0	0	0	0	1.41E+02	0	0	2.11E+01	0	0	3.13E+01
6EA145	0.6758	44.58	6	0	0	0	0	1.24E+02	0	0	1.86E+01	0	0	2.77E+01
6EA146	1.4922	45.396	6	0	0	0	0	2.72E+02	0	0	4.07E+01	0	0	6.05E+01
6EA147	1.168	45.6	6	0	0	0	0	2.22E+02	0	0	3.33E+01	0	0	4.94E+01
6EA148	0.7852	45.702	6	0	0	1.86E+02	0	0	0	0	2.21E+01	0	0	3.27E+01
6EA149	0.9219	45.804	6	0	0	0	0	1.67E+02	0	0	2.54E+01	0	0	3.77E+01
6EA150	1.2031	46.008	6	0	0	0	0	2.25E+02	0	0	3.39E+01	0	0	5.03E+01
6EA151	0.6289	46.518	6	0	0	0	0	1.15E+02	0	0	1.76E+01	0	0	2.61E+01
6EA152	0.0078	47.028	6	0	0	0	0	9.47E-01	0	0	2.14E-01	0	0	3.18E-01
6EA153	1.2773	47.13	6	0	0	0	0	2.32E+02	0	0	3.47E+01	0	0	5.15E+01
6EA154	0.9531	47.742	6	0	0	0	0	1.75E+02	0	0	2.67E+01	0	0	3.97E+01
6EA155	1.6328	47.844	6	0	0	0	0	2.88E+02	0	0	4.32E+01	0	0	6.41E+01
6EA156	1.1289	47.946	6	0	0	2.73E+02	0	0	0	0	3.18E+01	0	0	4.71E+01
6EA157	1.7773	48.456	6	0	0	0	0	3.29E+02	0	0	4.94E+01	0	0	7.34E+01
6EA158	1.1602	48.762	6	0	0	2.78E+02	0	0	0	0	3.24E+01	0	0	4.81E+01
6EA159	1.1172	48.864	6	0	0	0	0	2.02E+02	0	0	3.02E+01	0	0	4.49E+01
6EA160	1.8945	49.782	6	0	0	0	0	3.45E+02	0	0	5.16E+01	0	0	7.67E+01
6EA161	1.5391	50.088	6	0	0	0	0	2.72E+02	0	0	4.15E+01	0	0	6.16E+01
6EA162	0.0547	51.108	6	0	0	6.48E+00	0	0	0	0	1.55E+00	0	0	2.30E+00
6EA163	1.9258	52.026	6	0	0	0	0	3.57E+02	0	0	5.36E+01	0	0	7.96E+01

Table 35. Predicted Solids for Envelope A Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3 [g]	ANATASE [g]	CA3PO42 [g]	CACO3 [g]	CAF2 [g]	CANC [g]	CAOH2 [g]	CATIO3 [g]	CROH3 [g]	HYDROSOD [g]	MGOH2 [g]
6EA164	1.4766	53.454	6	0	0	0	0	2.68E+02	0	0	4.05E+01	0	0	6.02E+01
6EA165	0.457	53.556	6	0	0	1.08E+02	0	0	0	0	1.30E+01	0	0	1.93E+01
6EA166	1.2734	54.066	6	0	0	3.09E+02	0	0	0	0	3.57E+01	0	0	5.30E+01
6EA167	0.625	54.27	6	0	0	0	0	1.16E+02	0	0	1.74E+01	0	0	2.59E+01
6EA168	1.1484	54.882	6	0	0	0	0	2.15E+02	0	0	3.27E+01	0	0	4.85E+01
6EA169	1.7695	55.902	6	0	0	0	0	3.22E+02	0	0	4.89E+01	0	0	7.25E+01
6EA170	1.918	56.514	6	0	0	4.66E+02	0	0	0	0	5.33E+01	0	0	7.92E+01
6EA171	0.207	57.738	6	0	0	4.41E+01	0	0	0	0	5.75E+00	0	0	8.53E+00
6EA172	1.7266	58.758	6	0	0	4.23E+02	0	0	0	0	4.85E+01	0	0	7.20E+01
6EA173	1.0898	58.86	6	0	0	0	0	1.92E+02	0	0	2.91E+01	0	0	4.32E+01
6EA174	0.8945	60.39	6	0	0	2.17E+02	0	0	0	0	2.52E+01	0	0	3.75E+01
6EA175	1.6758	60.696	6	0	0	4.15E+02	0	0	0	0	4.76E+01	0	0	7.06E+01
6EA176	1.0625	60.9	6	0	0	0	0	1.90E+02	0	0	2.88E+01	0	0	4.27E+01
6EA177	1.9492	61.206	6	0	0	0	0	3.63E+02	0	0	5.43E+01	2.91E+00	0	8.06E+01
6EA178	1.7852	61.92	6	0	0	0	0	3.28E+02	0	0	4.91E+01	0	0	7.29E+01
6EA179	0.2422	62.022	6	0	0	0	0	4.38E+01	0	0	6.72E+00	0	0	9.98E+00
6EA180	0.4961	63.042	6	0	0	0	0	8.99E+01	0	0	1.37E+01	0	0	2.03E+01
6EA181	0.6367	63.348	6	0	0	0	0	1.18E+02	0	0	1.78E+01	0	0	2.65E+01
6EA182	1.4102	63.552	6	0	0	3.27E+02	0	0	0	0	3.76E+01	0	0	5.58E+01
6EA183	0.4453	63.756	6	0	0	0	0	8.00E+01	0	0	1.22E+01	0	0	1.81E+01
6EA184	0.1836	64.164	6	0	0	0	0	3.35E+01	0	0	5.18E+00	0	0	7.69E+00
6EA185	1.6563	64.47	6	0	0	0	0	3.07E+02	0	0	4.60E+01	8.66E+00	0	6.83E+01
6EA186	0.1875	64.674	6	0	0	0	0	3.39E+01	0	0	5.20E+00	0	0	7.72E+00
6EA187	1.7969	64.776	6	0	0	0	0	3.33E+02	0	0	4.99E+01	2.03E+01	0	7.41E+01
6EA188	1.0508	65.388	6	0	0	0	0	1.91E+02	0	0	2.87E+01	0	0	4.26E+01

Table 36. Predicted Solids for Envelope A Simulations – Part 2

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
10EA001	4.26E+02	0	0	0	0	0	0	5.68E+02	6.75E+03	0	0	0	7.74E+03	1.04E+06	0.74%
10EA002	4.07E+02	0	0	0	0	0	0	0	1.21E+03	0	0	0	1.62E+03	1.06E+06	0.15%
10EA003	1.25E+03	0	0	0	0	0	0	6.85E+04	0	0	0	0	6.98E+04	1.04E+06	6.69%
10EA004	9.85E+02	0	0	0	0	9.20E+03	0	1.55E+05	6.75E+02	0	0	0	1.66E+05	9.41E+05	17.67%
10EA005	7.42E+02	0	0	0	0	7.30E+03	0	0	1.12E+03	0	0	0	9.17E+03	1.02E+06	0.90%
10EA006	1.61E+03	0	7.13E-05	0	0	1.11E+04	0	0	6.34E+03	0	0	0	1.90E+04	1.05E+06	1.81%
10EA007	1.42E+03	0	3.10E-05	0	0	0	0	0	0	0	0	0	1.42E+03	1.10E+06	0.13%
10EA008	1.17E+03	0	0	0	0	0	0	1.47E+05	2.19E+04	0	0	0	1.70E+05	9.91E+05	17.18%
10EA009	9.40E+02	0	0	0	0	0	0	0	1.60E+04	0	0	0	1.70E+04	1.08E+06	1.56%
10EA010	6.95E+02	0	0	0	0	7.34E+03	0	0	2.07E+02	0	0	0	8.24E+03	1.05E+06	0.79%
10EA011	4.26E+02	0	0	0	0	0	0	5.68E+02	6.75E+03	0	0	0	7.74E+03	1.04E+06	0.74%
10EA012	4.07E+02	0	0	0	0	0	0	0	1.21E+03	0	0	0	1.62E+03	1.06E+06	0.15%
10EA013	1.25E+03	0	0	0	0	0	0	6.85E+04	0	0	0	0	6.98E+04	1.04E+06	6.69%
10EA014	9.85E+02	0	0	0	0	9.20E+03	0	1.55E+05	6.75E+02	0	0	0	1.66E+05	9.41E+05	17.67%
10EA015	7.42E+02	0	0	0	0	7.30E+03	0	0	1.12E+03	0	0	0	9.17E+03	1.02E+06	0.90%
10EA016	1.61E+03	0	7.13E-05	0	0	1.11E+04	0	0	6.34E+03	0	0	0	1.90E+04	1.05E+06	1.81%
10EA017	1.42E+03	0	3.10E-05	0	0	0	0	0	0	0	0	0	1.42E+03	1.10E+06	0.13%
10EA018	1.17E+03	0	0	0	0	0	0	1.47E+05	2.19E+04	0	0	0	1.70E+05	9.91E+05	17.18%
10EA019	9.40E+02	0	0	0	0	0	0	0	1.60E+04	0	0	0	1.70E+04	1.08E+06	1.56%
10EA020	6.95E+02	0	0	0	0	7.34E+03	0	0	2.07E+02	0	0	0	8.24E+03	1.05E+06	0.79%
10EA021	4.19E+02	0	0	0	0	0	0	0	6.43E+03	0	0	0	7.28E+03	1.09E+06	0.67%
10EA022	4.01E+02	0	0	0	0	0	0	0	9.10E+02	0	0	0	1.75E+03	1.11E+06	0.16%
10EA023	1.20E+03	0	0	0	0	0	0	3.59E+04	0	0	0	0	3.76E+04	1.11E+06	3.38%
10EA024	9.65E+02	0	0	0	0	9.43E+03	0	1.33E+05	0	0	0	0	1.43E+05	1.00E+06	14.33%
10EA025	7.27E+02	0	0	0	0	7.54E+03	0	0	4.42E+02	0	0	0	9.16E+03	1.06E+06	0.86%
10EA026	1.58E+03	0	7.12E-05	0	0	1.09E+04	0	0	5.22E+03	0	0	0	1.82E+04	1.10E+06	1.65%
10EA027	1.39E+03	0	3.09E-05	0	0	0	0	0	0	0	0	0	1.90E+03	1.15E+06	0.17%
10EA028	1.15E+03	0	0	0	0	0	0	1.20E+05	2.02E+04	0	0	0	1.42E+05	1.06E+06	13.45%
10EA029	9.21E+02	0	0	0	0	0	0	0	1.52E+04	0	0	0	1.66E+04	1.13E+06	1.47%
10EA030	6.85E+02	0	0	0	0	7.65E+03	0	0	0	0	0	0	8.80E+03	1.09E+06	0.81%
10EA031	4.19E+02	0	0	0	0	0	0	0	6.43E+03	0	0	0	7.28E+03	1.09E+06	0.67%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
10EA032	4.01E+02	0	0	0	0	0	0	0	9.10E+02	0	0	0	1.75E+03	1.11E+06	0.16%
10EA033	1.20E+03	0	0	0	0	0	0	3.59E+04	0	0	0	0	3.76E+04	1.11E+06	3.38%
10EA034	9.65E+02	0	0	0	0	9.43E+03	0	1.33E+05	0	0	0	0	1.43E+05	1.00E+06	14.33%
10EA035	7.27E+02	0	0	0	0	7.54E+03	0	0	4.42E+02	0	0	0	9.16E+03	1.06E+06	0.86%
10EA036	1.58E+03	0	7.12E-05	0	0	1.09E+04	0	0	5.22E+03	0	0	0	1.82E+04	1.10E+06	1.65%
10EA037	1.39E+03	0	3.09E-05	0	0	0	0	0	0	0	0	0	1.90E+03	1.15E+06	0.17%
10EA038	1.15E+03	0	0	0	0	0	0	1.20E+05	2.02E+04	0	0	0	1.42E+05	1.06E+06	13.45%
10EA039	9.21E+02	0	0	0	0	0	0	0	1.52E+04	0	0	0	1.66E+04	1.13E+06	1.47%
10EA040	6.85E+02	0	0	0	0	7.65E+03	0	0	0	0	0	0	8.80E+03	1.09E+06	0.81%
10EA041	2.35E+02	0	0	0	1.19E+04	0	0	0	0	0	0	0	1.21E+04	9.90E+05	1.22%
10EA042	2.22E+02	0	0	0	1.19E+04	0	0	0	0	0	0	0	1.22E+04	1.01E+06	1.21%
10EA043	5.79E+02	0	0	0	1.46E+03	0	0	0	0	0	0	0	2.04E+03	1.03E+06	0.20%
10EA044	5.24E+02	0	0	0	3.26E+03	7.62E+03	0	0	0	0	0	0	1.14E+04	1.00E+06	1.14%
10EA045	4.18E+02	0	0	0	3.33E+03	6.20E+03	0	0	0	0	0	0	9.95E+03	9.68E+05	1.03%
10EA046	1.03E+03	4.22E+02	0	0	1.39E+04	9.85E+03	0	0	0	0	0	0	2.52E+04	9.86E+05	2.55%
10EA047	1.02E+03	3.10E+04	0	0	1.45E+04	0	0	0	0	0	0	0	4.66E+04	9.86E+05	4.72%
10EA048	6.45E+02	0	0	0	5.50E+03	0	0	0	0	0	0	0	6.15E+03	1.04E+06	0.59%
10EA049	5.72E+02	0	0	0	7.97E+03	0	0	0	0	0	0	0	8.54E+03	1.02E+06	0.83%
10EA050	4.43E+02	0	0	0	5.30E+03	6.35E+03	0	0	0	0	0	0	1.21E+04	9.94E+05	1.22%
10EA051	2.35E+02	0	0	0	1.19E+04	0	0	0	0	0	0	0	1.21E+04	9.90E+05	1.22%
10EA052	2.22E+02	0	0	0	1.19E+04	0	0	0	0	0	0	0	1.22E+04	1.01E+06	1.21%
10EA053	5.79E+02	0	0	0	1.46E+03	0	0	0	0	0	0	0	2.04E+03	1.03E+06	0.20%
10EA054	5.24E+02	0	0	0	3.26E+03	7.62E+03	0	0	0	0	0	0	1.14E+04	1.00E+06	1.14%
10EA055	4.18E+02	0	0	0	3.33E+03	6.20E+03	0	0	0	0	0	0	9.95E+03	9.68E+05	1.03%
10EA056	1.03E+03	4.22E+02	0	0	1.39E+04	9.85E+03	0	0	0	0	0	0	2.52E+04	9.86E+05	2.55%
10EA057	1.02E+03	3.10E+04	0	0	1.45E+04	0	0	0	0	0	0	0	4.66E+04	9.86E+05	4.72%
10EA058	6.45E+02	0	0	0	5.50E+03	0	0	0	0	0	0	0	6.15E+03	1.04E+06	0.59%
10EA059	5.72E+02	0	0	0	7.97E+03	0	0	0	0	0	0	0	8.54E+03	1.02E+06	0.83%
10EA060	4.43E+02	0	0	0	5.30E+03	6.35E+03	0	0	0	0	0	0	1.21E+04	9.94E+05	1.22%
10EA061	2.14E+02	0	0	0	1.39E+04	0	0	0	0	0	0	0	1.45E+04	1.02E+06	1.42%
10EA062	2.02E+02	0	0	0	1.40E+04	0	0	0	0	0	0	0	1.46E+04	1.04E+06	1.41%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
10EA063	4.94E+02	0	0	0	2.51E+03	0	0	0	0	0	2.76E+00	0	3.50E+03	1.08E+06	0.33%
10EA064	4.71E+02	0	0	0	4.97E+03	7.85E+03	0	0	0	0	1.52E+00	0	1.38E+04	1.04E+06	1.33%
10EA065	3.81E+02	0	0	0	5.42E+03	6.44E+03	0	0	0	0	7.97E-01	0	1.27E+04	1.00E+06	1.26%
10EA066	9.69E+02	0	0	0	1.75E+04	9.69E+03	0	0	0	0	2.35E+00	0	2.87E+04	1.02E+06	2.80%
10EA067	9.31E+02	1.69E+04	0	0	1.82E+04	0	0	0	0	0	1.68E+00	0	3.64E+04	1.04E+06	3.50%
10EA068	5.84E+02	0	0	0	7.05E+03	0	0	0	0	0	1.89E+00	0	8.28E+03	1.08E+06	0.77%
10EA069	5.28E+02	0	0	0	9.77E+03	0	0	0	0	0	1.29E+00	0	1.09E+04	1.06E+06	1.03%
10EA070	4.14E+02	0	0	0	7.76E+03	6.63E+03	0	0	0	0	1.33E-01	0	1.53E+04	1.03E+06	1.48%
10EA071	2.14E+02	0	0	0	1.39E+04	0	0	0	0	0	0	0	1.45E+04	1.02E+06	1.42%
10EA072	2.02E+02	0	0	0	1.40E+04	0	0	0	0	0	0	0	1.46E+04	1.04E+06	1.41%
10EA073	4.94E+02	0	0	0	2.51E+03	0	0	0	0	0	2.76E+00	0	3.50E+03	1.08E+06	0.33%
10EA074	4.71E+02	0	0	0	4.97E+03	7.85E+03	0	0	0	0	1.52E+00	0	1.38E+04	1.04E+06	1.33%
10EA075	3.81E+02	0	0	0	5.42E+03	6.44E+03	0	0	0	0	7.97E-01	0	1.27E+04	1.00E+06	1.26%
10EA076	9.69E+02	0	0	0	1.75E+04	9.69E+03	0	0	0	0	2.35E+00	0	2.87E+04	1.02E+06	2.80%
10EA077	9.31E+02	1.69E+04	0	0	1.82E+04	0	0	0	0	0	1.68E+00	0	3.64E+04	1.04E+06	3.50%
10EA078	5.84E+02	0	0	0	7.05E+03	0	0	0	0	0	1.89E+00	0	8.28E+03	1.08E+06	0.77%
10EA079	5.28E+02	0	0	0	9.77E+03	0	0	0	0	0	1.29E+00	0	1.09E+04	1.06E+06	1.03%
10EA080	4.14E+02	0	0	0	7.76E+03	6.63E+03	0	0	0	0	1.33E-01	0	1.53E+04	1.03E+06	1.48%
10EA081	1.19E+03	0	4.22E-06	0	0	9.61E+03	0	0	3.96E+03	0	0	0	1.48E+04	1.05E+06	1.41%
10EA082	9.98E+02	0	0	0	0	9.27E+03	0	0	1.17E+03	0	0	0	1.19E+04	1.09E+06	1.09%
10EA083	1.24E+03	0	1.43E-07	0	0	9.78E+03	0	9.34E+04	8.16E+02	0	0	0	1.05E+05	1.03E+06	10.29%
10EA084	1.13E+03	0	0	0	0	9.98E+03	0	7.81E+04	2.55E+03	0	0	0	9.18E+04	1.01E+06	9.08%
10EA085	1.26E+03	0	4.49E-06	0	0	9.96E+03	0	0	2.69E+03	0	0	0	1.39E+04	1.05E+06	1.32%
10EA086	1.15E+03	0	1.94E-06	0	0	5.38E+03	0	0	0	0	0	0	6.83E+03	1.11E+06	0.62%
10EA087	1.29E+03	0	8.92E-06	0	0	2.14E+01	1.18E+04	0	0	0	0	0	1.35E+04	1.12E+06	1.20%
10EA088	1.34E+03	0	1.42E-05	0	0	1.02E+04	3.08E+03	0	0	0	0	0	1.48E+04	1.08E+06	1.37%
10EA089	8.15E+02	0	0	0	0	8.24E+03	6.17E+02	0	0	0	0	0	9.95E+03	1.07E+06	0.93%
10EA090	9.26E+02	0	0	0	0	6.29E+03	1.14E+03	0	0	0	0	0	8.50E+03	1.08E+06	0.79%
10EA091	9.98E+02	0	0	0	0	4.62E+03	8.68E+02	0	0	0	0	0	6.69E+03	1.09E+06	0.61%
10EA092	1.07E+03	0	0	0	0	2.33E+03	2.03E+03	0	0	0	0	0	5.48E+03	1.09E+06	0.50%
10EA093	1.20E+03	0	2.59E-06	0	0	2.41E+03	6.55E+03	0	0	0	0	0	1.04E+04	1.09E+06	0.95%
10EA094	1.28E+03	0	3.50E-06	0	0	6.42E+02	0	5.52E+03	0	0	0	0	7.58E+03	1.10E+06	0.69%
10EA095	1.00E+03	0	0	0	0	9.17E+03	7.47E+02	0	0	0	0	0	1.12E+04	1.07E+06	1.05%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
10EA096	1.12E+03	0	1.45E-06	9.41E+03	0	0	0	0	0	0	0	0	1.10E+04	1.12E+06	0.98%
10EA097	1.18E+03	0	4.38E-06	1.36E+04	0	0	2.22E+02	0	0	0	0	0	1.50E+04	1.07E+06	1.40%
10EA098	8.23E+02	0	0	1.05E+04	0	0	0	4.02E+04	2.90E+03	0	0	0	5.48E+04	1.06E+06	5.16%
10EA099	1.14E+03	0	2.86E-06	1.36E+04	0	6.23E+03	3.09E+03	0	0	0	0	0	2.41E+04	1.04E+06	2.32%
10EA100	1.09E+03	0	4.24E-07	6.89E+03	0	0	0	0	0	0	0	0	8.38E+03	1.11E+06	0.75%
10EA101	1.16E+03	0	2.05E-07	1.61E+04	0	0	4.94E+03	2.27E+04	0	0	0	0	4.51E+04	1.05E+06	4.28%
10EA102	1.27E+03	0	6.73E-06	1.65E+04	0	6.06E+03	0	0	0	0	0	0	2.41E+04	1.07E+06	2.24%
10EA103	9.74E+02	0	0	1.43E+04	0	0	8.32E+01	0	0	0	0	0	1.56E+04	1.08E+06	1.45%
10EA104	1.09E+03	0	1.24E-06	1.68E+04	0	2.71E+03	3.41E+03	0	0	0	0	0	2.43E+04	1.08E+06	2.26%
10EA105	9.40E+02	0	0	1.26E+04	0	0	0	0	0	0	0	0	1.37E+04	1.07E+06	1.27%
10EA106	1.14E+03	0	5.43E-07	1.60E+04	0	6.32E+03	1.28E+03	0	0	0	0	0	2.51E+04	1.06E+06	2.36%
10EA107	8.64E+02	0	0	4.57E+03	0	0	0	0	0	0	0	0	5.44E+03	1.07E+06	0.51%
10EA108	1.04E+03	0	0	1.52E+04	0	6.00E+03	9.49E+02	0	0	0	0	0	2.36E+04	1.05E+06	2.25%
10EA109	1.00E+03	0	0	9.67E+03	0	0	0	0	0	0	0	0	1.09E+04	1.09E+06	1.00%
10EA110	9.07E+02	0	0	1.71E+04	0	2.37E+03	0	0	0	0	0	0	2.07E+04	1.08E+06	1.92%
10EA111	1.15E+03	0	0	7.99E+03	0	0	0	0	0	0	0	0	9.41E+03	1.09E+06	0.86%
10EA112	1.08E+03	0	3.15E-07	1.49E+04	0	0	3.64E+03	0	0	0	0	0	1.98E+04	1.07E+06	1.86%
10EA113	1.08E+03	0	1.49E-06	1.52E+04	0	0	4.12E+03	0	0	0	0	0	2.06E+04	1.06E+06	1.94%
10EA114	1.16E+03	0	9.66E-07	8.99E+03	0	0	0	0	0	0	0	0	1.03E+04	1.08E+06	0.96%
10EA115	9.54E+02	0	0	1.47E+04	0	5.89E+03	0	0	0	0	0	0	2.18E+04	1.07E+06	2.05%
10EA116	1.11E+03	0	1.48E-06	1.64E+04	0	3.26E+03	0	0	0	0	0	0	2.10E+04	1.07E+06	1.97%
10EA117	1.07E+03	0	0	1.78E+04	0	3.81E+03	9.42E+02	0	0	0	0	0	2.40E+04	1.08E+06	2.23%
10EA118	9.35E+02	0	9.35E-07	1.33E+04	0	5.17E+03	7.26E+02	0	0	0	0	0	2.03E+04	1.05E+06	1.93%
10EA119	6.77E+02	0	0	1.42E+04	0	7.14E+02	1.75E+03	0	0	0	0	0	1.75E+04	1.04E+06	1.68%
10EA120	1.03E+03	0	0	1.54E+04	0	6.10E+03	0	0	0	0	0	0	2.28E+04	1.06E+06	2.15%
10EA121	1.09E+03	0	5.38E-07	1.06E+04	1.30E+03	0	0	0	0	0	0	0	1.34E+04	1.09E+06	1.23%
10EA122	1.26E+03	0	1.50E-05	1.50E+04	0	3.12E+02	9.56E+02	0	0	0	0	0	1.75E+04	1.06E+06	1.66%
10EA123	8.96E+02	0	0	8.47E+03	3.05E+03	0	0	0	0	0	0	0	1.26E+04	1.07E+06	1.17%
10EA124	1.16E+03	0	6.15E-06	1.71E+04	0	9.41E+02	4.35E+03	0	0	0	0	0	2.40E+04	1.06E+06	2.25%
10EA125	7.17E+02	0	0	1.03E+04	0	5.13E+03	0	6.53E+03	0	0	0	0	2.28E+04	1.02E+06	2.24%
10EA126	8.91E+02	0	0	1.58E+04	0	2.28E+03	7.51E+02	0	0	0	0	0	1.98E+04	1.05E+06	1.90%
10EA127	7.82E+02	0	0	1.67E+04	0	2.35E+03	9.77E+02	0	0	0	0	0	2.12E+04	1.08E+06	1.98%
10EA128	1.08E+03	0	6.50E-07	1.49E+04	0	2.57E+03	1.83E+03	0	0	0	0	0	2.04E+04	1.04E+06	1.96%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
10EA129	7.23E+02	0	0	1.73E+04	0	0	0	0	0	0	0	0	1.84E+04	1.08E+06	1.71%
10EA130	7.61E+02	0	0	1.51E+04	0	0	0	0	0	0	0	0	1.63E+04	1.08E+06	1.50%
10EA131	1.04E+03	0	1.16E-06	1.71E+04	0	3.20E+03	0	0	0	0	0	0	2.17E+04	1.06E+06	2.04%
10EA132	8.70E+02	0	3.54E-07	1.50E+04	0	0	1.39E+02	0	0	0	0	0	1.61E+04	1.03E+06	1.56%
10EA133	6.21E+02	0	0	0	7.79E+03	7.24E+03	0	0	0	0	0	0	1.60E+04	1.06E+06	1.52%
10EA134	1.10E+03	0	1.68E-06	0	1.27E+04	4.86E+03	0	0	0	0	0	0	1.87E+04	1.04E+06	1.79%
10EA135	1.00E+03	2.06E+04	4.67E-06	0	1.69E+04	1.99E+03	2.67E+03	0	0	0	0	0	4.36E+04	1.05E+06	4.17%
10EA136	9.77E+02	0	8.65E-07	0	1.46E+04	0	0	0	0	0	0	0	1.58E+04	1.07E+06	1.48%
10EA137	9.79E+02	0	1.81E-07	0	9.94E+03	2.39E+03	0	0	0	0	0	0	1.34E+04	1.04E+06	1.28%
10EA138	1.11E+03	0	8.69E-06	0	1.54E+04	1.19E+03	0	0	0	0	0	0	1.82E+04	1.08E+06	1.69%
10EA139	1.10E+03	0	4.24E-06	0	1.40E+04	6.88E+03	0	0	0	0	0	0	2.21E+04	1.04E+06	2.12%
10EA140	1.06E+03	0	2.15E-06	0	1.38E+04	3.52E+03	0	0	0	0	0	0	1.86E+04	1.06E+06	1.76%
10EA141	9.55E+02	0	0	0	7.18E+03	0	0	0	0	0	0	0	8.21E+03	1.06E+06	0.77%
10EA142	9.13E+02	0	0	0	5.68E+03	8.87E+03	0	0	0	0	0	0	1.59E+04	1.07E+06	1.49%
10EA143	1.10E+03	0	7.12E-06	0	1.41E+04	0	0	0	0	0	0	0	1.53E+04	1.05E+06	1.46%
10EA144	9.20E+02	0	0	0	1.03E+04	8.27E+03	0	0	0	0	0	0	1.96E+04	1.04E+06	1.88%
10EA145	9.70E+02	0	3.05E-06	0	1.45E+04	4.99E+03	0	0	0	0	0	0	2.06E+04	1.04E+06	1.98%
10EA146	8.87E+02	0	0	0	1.15E+04	7.69E+03	0	0	0	0	0	0	2.04E+04	1.04E+06	1.96%
10EA147	1.19E+03	0	1.06E-05	0	1.45E+04	5.37E+03	0	0	0	0	0	0	2.14E+04	1.06E+06	2.03%
10EA148	9.68E+02	0	4.43E-07	0	1.31E+04	0	0	0	0	0	0	0	1.43E+04	1.06E+06	1.35%
10EA149	1.04E+03	0	5.94E-06	0	1.44E+04	2.24E+03	0	0	0	0	0	0	1.79E+04	1.04E+06	1.72%
10EA150	9.62E+02	0	1.74E-06	0	1.56E+04	2.27E+03	0	0	0	0	0	0	1.91E+04	1.06E+06	1.80%
10EA151	9.41E+02	0	2.98E-07	0	1.18E+04	1.02E+02	0	0	0	0	0	0	1.30E+04	1.06E+06	1.23%
10EA152	8.41E+02	0	7.55E-08	0	9.53E+03	8.49E+03	0	0	0	0	0	0	1.89E+04	1.02E+06	1.86%
10EA153	7.53E+02	0	0	0	1.06E+04	7.01E+03	0	0	0	0	0	0	1.86E+04	1.04E+06	1.80%
10EA154	9.86E+02	0	3.36E-06	0	1.51E+04	9.26E+02	0	0	0	0	0	0	1.73E+04	1.06E+06	1.64%
10EA155	7.77E+02	0	5.35E-07	0	1.24E+04	8.14E+03	0	0	0	0	0	0	2.17E+04	1.02E+06	2.12%
10EA156	9.64E+02	0	5.61E-07	0	1.29E+04	0	0	0	0	0	0	0	1.42E+04	1.06E+06	1.33%
10EA157	8.19E+02	0	0	0	1.47E+04	2.50E+03	0	0	0	0	0	0	1.85E+04	1.07E+06	1.73%
10EA158	8.94E+02	0	6.70E-07	0	1.51E+04	0	0	0	0	0	0	0	1.63E+04	1.06E+06	1.53%
10EA159	7.54E+02	0	0	0	1.22E+04	6.92E+03	0	0	0	0	0	0	2.02E+04	1.03E+06	1.97%
10EA160	7.04E+02	0	0	0	1.39E+04	6.22E+03	0	0	0	0	0	0	2.13E+04	1.05E+06	2.03%
10EA161	6.96E+02	0	0	0	1.33E+04	1.12E+03	0	0	0	0	0	0	1.55E+04	1.05E+06	1.47%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
10EA162	9.47E+02	0	1.92E-06	0	1.37E+04	0	0	0	0	0	0	0	1.47E+04	1.04E+06	1.41%
10EA163	9.43E+02	0	2.50E-06	0	1.70E+04	3.52E+03	0	0	0	0	0	0	2.20E+04	1.05E+06	2.08%
10EA164	7.26E+02	0	1.76E-07	0	1.64E+04	2.19E+03	0	0	0	0	0	0	1.96E+04	1.04E+06	1.88%
10EA165	1.08E+03	1.00E+04	1.00E-05	0	1.48E+04	0	0	0	0	0	0	0	2.60E+04	1.03E+06	2.52%
10EA166	8.23E+02	0	1.19E-07	0	1.36E+04	5.47E+02	0	0	0	0	0	0	1.53E+04	1.06E+06	1.44%
10EA167	8.75E+02	0	9.68E-07	0	1.44E+04	4.44E+03	0	0	0	0	0	0	1.99E+04	1.03E+06	1.93%
10EA168	1.02E+03	0	3.00E-06	0	1.54E+04	2.67E+03	0	0	0	0	0	0	1.93E+04	1.05E+06	1.84%
10EA169	8.30E+02	0	3.30E-07	0	1.64E+04	1.90E+03	0	0	0	0	0	0	1.95E+04	1.05E+06	1.86%
10EA170	6.64E+02	0	0	0	1.69E+04	0	0	0	0	0	0	0	1.80E+04	1.07E+06	1.68%
10EA171	7.07E+02	0	0	0	1.03E+04	0	0	0	0	0	0	0	1.11E+04	1.04E+06	1.07%
10EA172	8.14E+02	0	0	0	1.41E+04	0	0	0	0	0	5.55E-01	0	1.55E+04	1.06E+06	1.46%
10EA173	5.64E+02	0	0	0	1.34E+04	2.51E+03	0	0	0	0	0	0	1.67E+04	1.04E+06	1.61%
10EA174	9.10E+02	0	0	0	1.47E+04	7.25E+01	0	0	0	0	0	0	1.59E+04	1.04E+06	1.52%
10EA175	7.88E+02	0	0	0	1.53E+04	0	0	0	0	0	2.43E-01	0	1.65E+04	1.07E+06	1.55%
10EA176	5.59E+02	0	0	0	1.31E+04	2.78E+03	0	0	0	0	0	0	1.67E+04	1.03E+06	1.63%
10EA177	7.27E+02	0	0	0	1.60E+04	7.58E+03	0	0	0	0	8.41E-01	0	2.48E+04	1.05E+06	2.37%
10EA178	7.95E+02	0	0	0	1.61E+04	8.78E+03	0	0	0	0	1.11E-02	0	2.61E+04	1.02E+06	2.55%
10EA179	7.36E+02	0	0	0	7.05E+03	6.26E+03	0	0	0	0	0	0	1.41E+04	1.02E+06	1.39%
10EA180	6.81E+02	0	0	0	1.42E+04	4.78E+03	0	0	0	0	0	0	1.98E+04	1.02E+06	1.95%
10EA181	7.11E+02	0	0	0	9.67E+03	5.27E+03	0	0	0	0	0	0	1.58E+04	1.03E+06	1.53%
10EA182	4.77E+02	0	0	0	1.44E+04	1.34E+03	0	0	0	0	0	0	1.65E+04	1.03E+06	1.60%
10EA183	6.28E+02	0	0	0	1.35E+04	4.41E+03	0	0	0	0	0	0	1.86E+04	1.01E+06	1.84%
10EA184	7.50E+02	0	0	0	1.29E+04	3.92E+03	0	0	0	0	0	0	1.76E+04	1.02E+06	1.72%
10EA185	6.89E+02	0	0	0	1.40E+04	9.00E+03	0	0	0	0	6.79E-01	0	2.41E+04	1.03E+06	2.33%
10EA186	7.62E+02	0	0	0	1.43E+04	7.46E+03	0	0	0	0	0	0	2.25E+04	1.00E+06	2.25%
10EA187	7.71E+02	0	0	0	1.62E+04	9.02E+03	0	0	0	0	1.38E+00	0	2.64E+04	1.03E+06	2.57%
10EA188	6.18E+02	0	0	0	1.13E+04	7.85E+03	0	0	0	0	0	0	2.01E+04	1.02E+06	1.97%
8EA001	3.72E+02	0	0	0	0	0	0	0	7.42E+03	0	0	0	7.79E+03	1.25E+06	0.63%
8EA002	3.54E+02	0	0	0	0	0	0	0	1.87E+03	0	0	0	2.22E+03	1.27E+06	0.18%
8EA003	1.06E+03	0	0	0	0	0	0	0	0	0	0	0	1.06E+03	1.30E+06	0.08%
8EA004	8.31E+02	0	0	0	0	7.22E+03	0	0	0	0	0	0	8.05E+03	1.25E+06	0.65%
8EA005	6.47E+02	0	0	0	0	5.89E+03	0	0	2.36E+03	0	0	0	8.89E+03	1.22E+06	0.73%
8EA006	1.45E+03	1.23E+04	7.08E-05	0	0	9.38E+03	0	0	6.32E+03	0	0	0	2.94E+04	1.25E+06	2.35%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
8EA007	1.29E+03	1.66E+04	3.07E-05	0	0	0	0	0	0	0	0	0	1.79E+04	1.30E+06	1.37%
8EA008	1.01E+03	0	0	0	0	0	0	0	1.96E+04	0	0	0	2.06E+04	1.29E+06	1.60%
8EA009	8.37E+02	0	0	0	0	0	0	0	1.76E+04	0	0	0	1.84E+04	1.29E+06	1.43%
8EA010	6.26E+02	0	0	0	0	6.21E+03	0	0	1.12E+03	0	0	0	7.95E+03	1.24E+06	0.64%
8EA011	3.72E+02	0	0	0	0	0	0	0	7.42E+03	0	0	0	7.79E+03	1.25E+06	0.63%
8EA012	3.54E+02	0	0	0	0	0	0	0	1.87E+03	0	0	0	2.22E+03	1.27E+06	0.18%
8EA013	1.06E+03	0	0	0	0	0	0	0	0	0	0	0	1.06E+03	1.30E+06	0.08%
8EA014	8.31E+02	0	0	0	0	7.22E+03	0	0	0	0	0	0	8.05E+03	1.25E+06	0.65%
8EA015	6.47E+02	0	0	0	0	5.89E+03	0	0	2.36E+03	0	0	0	8.89E+03	1.22E+06	0.73%
8EA016	1.45E+03	1.23E+04	7.08E-05	0	0	9.38E+03	0	0	6.32E+03	0	0	0	2.94E+04	1.25E+06	2.35%
8EA017	1.29E+03	1.66E+04	3.07E-05	0	0	0	0	0	0	0	0	0	1.79E+04	1.30E+06	1.37%
8EA018	1.01E+03	0	0	0	0	0	0	0	1.96E+04	0	0	0	2.06E+04	1.29E+06	1.60%
8EA019	8.37E+02	0	0	0	0	0	0	0	1.76E+04	0	0	0	1.84E+04	1.29E+06	1.43%
8EA020	6.26E+02	0	0	0	0	6.21E+03	0	0	1.12E+03	0	0	0	7.95E+03	1.24E+06	0.64%
8EA021	3.56E+02	0	0	0	0	0	0	0	7.11E+03	0	0	0	7.90E+03	1.29E+06	0.61%
8EA022	3.39E+02	0	0	0	0	0	0	0	1.57E+03	0	0	0	2.35E+03	1.32E+06	0.18%
8EA023	1.01E+03	0	0	0	0	0	0	0	0	2.30E+02	0	0	1.73E+03	1.35E+06	0.13%
8EA024	7.97E+02	0	0	0	0	6.91E+03	0	0	0	0	0	0	8.20E+03	1.30E+06	0.63%
8EA025	6.07E+02	0	0	0	0	5.53E+03	0	0	1.69E+03	0	0	0	9.74E+03	1.26E+06	0.77%
8EA026	1.37E+03	0	6.98E-05	0	0	8.86E+03	0	0	4.86E+03	5.46E+02	0	0	1.61E+04	1.31E+06	1.23%
8EA027	1.22E+03	5.02E+03	3.04E-05	0	0	0	0	0	0	4.73E+02	0	0	7.22E+03	1.36E+06	0.53%
8EA028	9.71E+02	0	0	0	0	0	0	0	1.85E+04	1.56E+02	0	0	2.02E+04	1.35E+06	1.50%
8EA029	8.03E+02	0	0	0	0	0	0	0	1.68E+04	8.53E+01	0	0	1.81E+04	1.34E+06	1.35%
8EA030	6.05E+02	0	0	0	0	5.97E+03	0	0	6.42E+02	0	0	0	7.71E+03	1.29E+06	0.60%
8EA031	3.56E+02	0	0	0	0	0	0	0	7.11E+03	0	0	0	7.90E+03	1.29E+06	0.61%
8EA032	3.39E+02	0	0	0	0	0	0	0	1.57E+03	0	0	0	2.35E+03	1.32E+06	0.18%
8EA033	1.01E+03	0	0	0	0	0	0	0	0	2.30E+02	0	0	1.73E+03	1.35E+06	0.13%
8EA034	7.97E+02	0	0	0	0	6.91E+03	0	0	0	0	0	0	8.20E+03	1.30E+06	0.63%
8EA035	6.07E+02	0	0	0	0	5.53E+03	0	0	1.69E+03	0	0	0	9.74E+03	1.26E+06	0.77%
8EA036	1.37E+03	0	6.98E-05	0	0	8.86E+03	0	0	4.86E+03	5.46E+02	0	0	1.61E+04	1.31E+06	1.23%
8EA037	1.22E+03	5.02E+03	3.04E-05	0	0	0	0	0	0	4.73E+02	0	0	7.22E+03	1.36E+06	0.53%
8EA038	9.71E+02	0	0	0	0	0	0	0	1.85E+04	1.56E+02	0	0	2.02E+04	1.35E+06	1.50%
8EA039	8.03E+02	0	0	0	0	0	0	0	1.68E+04	8.53E+01	0	0	1.81E+04	1.34E+06	1.35%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
8EA040	6.05E+02	0	0	0	0	5.97E+03	0	0	6.42E+02	0	0	0	7.71E+03	1.29E+06	0.60%
8EA041	0	0	0	0	2.45E+03	0	0	0	0	0	0	0	2.45E+03	1.20E+06	0.20%
8EA042	0	0	0	0	2.64E+03	0	0	0	0	0	0	0	2.64E+03	1.22E+06	0.22%
8EA043	7.06E+01	0	0	0	0	0	0	0	0	0	0	0	7.06E+01	1.24E+06	0.01%
8EA044	6.70E+01	0	0	0	0	5.12E+03	0	0	0	0	0	0	5.19E+03	1.21E+06	0.43%
8EA045	2.95E+01	0	0	0	0	3.92E+03	0	0	0	0	0	0	3.95E+03	1.17E+06	0.34%
8EA046	4.15E+02	0	0	0	5.73E+03	7.11E+03	0	0	0	0	0	0	1.33E+04	1.20E+06	1.10%
8EA047	3.85E+02	0	0	0	7.75E+03	0	0	0	0	0	0	0	8.14E+03	1.23E+06	0.66%
8EA048	1.54E+02	0	0	0	0	0	0	0	0	0	0	0	1.54E+02	1.25E+06	0.01%
8EA049	1.41E+02	0	0	0	0	0	0	0	0	0	0	0	1.41E+02	1.24E+06	0.01%
8EA050	9.05E+01	0	0	0	0	4.26E+03	0	0	0	0	0	0	4.35E+03	1.20E+06	0.36%
8EA051	0	0	0	0	2.45E+03	0	0	0	0	0	0	0	2.45E+03	1.20E+06	0.20%
8EA052	0	0	0	0	2.64E+03	0	0	0	0	0	0	0	2.64E+03	1.22E+06	0.22%
8EA053	7.06E+01	0	0	0	0	0	0	0	0	0	0	0	7.06E+01	1.24E+06	0.01%
8EA054	6.70E+01	0	0	0	0	5.12E+03	0	0	0	0	0	0	5.19E+03	1.21E+06	0.43%
8EA055	2.95E+01	0	0	0	0	3.92E+03	0	0	0	0	0	0	3.95E+03	1.17E+06	0.34%
8EA056	4.15E+02	0	0	0	5.73E+03	7.11E+03	0	0	0	0	0	0	1.33E+04	1.20E+06	1.10%
8EA057	3.85E+02	0	0	0	7.75E+03	0	0	0	0	0	0	0	8.14E+03	1.23E+06	0.66%
8EA058	1.54E+02	0	0	0	0	0	0	0	0	0	0	0	1.54E+02	1.25E+06	0.01%
8EA059	1.41E+02	0	0	0	0	0	0	0	0	0	0	0	1.41E+02	1.24E+06	0.01%
8EA060	9.05E+01	0	0	0	0	4.26E+03	0	0	0	0	0	0	4.35E+03	1.20E+06	0.36%
8EA061	0	0	0	0	4.08E+03	0	0	0	0	0	0	0	4.52E+03	1.24E+06	0.36%
8EA062	0	0	0	0	4.34E+03	0	0	0	0	0	0	0	4.78E+03	1.26E+06	0.38%
8EA063	0	0	0	0	0	0	0	0	0	0	2.40E+00	0	6.53E+02	1.29E+06	0.05%
8EA064	0	0	0	0	0	4.79E+03	0	0	0	0	8.19E-01	0	5.29E+03	1.25E+06	0.42%
8EA065	0	0	0	0	0	3.63E+03	0	0	0	0	6.49E-02	0	4.10E+03	1.21E+06	0.34%
8EA066	3.32E+02	0	0	0	8.82E+03	6.83E+03	0	0	0	5.42E+02	2.09E+00	0	1.71E+04	1.24E+06	1.37%
8EA067	3.09E+02	0	0	0	1.10E+04	0	0	0	0	0	1.20E+00	0	1.19E+04	1.28E+06	0.93%
8EA068	5.13E+01	0	0	0	0	0	0	0	0	0	1.29E+00	0	6.96E+02	1.30E+06	0.05%
8EA069	6.00E+01	0	0	0	0	0	0	0	0	0	6.31E-01	0	6.79E+02	1.28E+06	0.05%
8EA070	2.74E+01	0	0	0	0	3.99E+03	0	0	0	0	0	0	4.50E+03	1.25E+06	0.36%
8EA071	0	0	0	0	4.08E+03	0	0	0	0	0	0	0	4.52E+03	1.24E+06	0.36%
8EA072	0	0	0	0	4.34E+03	0	0	0	0	0	0	0	4.78E+03	1.26E+06	0.38%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
8EA073	0	0	0	0	0	0	0	0	0	0	2.40E+00	0	6.53E+02	1.29E+06	0.05%
8EA074	0	0	0	0	0	4.79E+03	0	0	0	0	8.19E-01	0	5.29E+03	1.25E+06	0.42%
8EA075	0	0	0	0	0	3.63E+03	0	0	0	0	6.49E-02	0	4.10E+03	1.21E+06	0.34%
8EA076	3.32E+02	0	0	0	8.82E+03	6.83E+03	0	0	0	5.42E+02	2.09E+00	0	1.71E+04	1.24E+06	1.37%
8EA077	3.09E+02	0	0	0	1.10E+04	0	0	0	0	0	1.20E+00	0	1.19E+04	1.28E+06	0.93%
8EA078	5.13E+01	0	0	0	0	0	0	0	0	0	1.29E+00	0	6.96E+02	1.30E+06	0.05%
8EA079	6.00E+01	0	0	0	0	0	0	0	0	0	6.31E-01	0	6.79E+02	1.28E+06	0.05%
8EA080	2.74E+01	0	0	0	0	3.99E+03	0	0	0	0	0	0	4.50E+03	1.25E+06	0.36%
8EA081	1.05E+03	0	4.17E-06	0	0	7.99E+03	0	0	4.36E+03	0	0	0	1.34E+04	1.25E+06	1.07%
8EA082	8.68E+02	0	0	0	0	7.17E+03	0	0	2.43E+03	1.64E+02	0	0	1.11E+04	1.30E+06	0.86%
8EA083	1.06E+03	0	1.41E-07	0	0	7.48E+03	0	0	0	0	0	0	8.74E+03	1.30E+06	0.67%
8EA084	9.72E+02	0	0	0	0	8.02E+03	0	0	1.85E+03	0	0	0	1.09E+04	1.27E+06	0.86%
8EA085	1.11E+03	0	4.43E-06	0	0	8.18E+03	0	0	3.34E+03	0	0	0	1.26E+04	1.25E+06	1.01%
8EA086	9.81E+02	0	1.89E-06	0	0	3.24E+03	0	0	0	0	0	0	4.54E+03	1.32E+06	0.34%
8EA087	1.11E+03	0	8.70E-06	0	0	0	0	0	1.25E+04	0	0	0	1.40E+04	1.34E+06	1.05%
8EA088	1.16E+03	0	1.39E-05	0	0	8.24E+03	2.89E+03	0	0	0	0	0	1.25E+04	1.29E+06	0.97%
8EA089	7.10E+02	0	0	0	0	6.51E+03	1.34E+03	0	0	0	0	0	8.84E+03	1.28E+06	0.69%
8EA090	7.91E+02	0	0	0	0	4.44E+03	1.96E+03	0	0	0	0	0	7.35E+03	1.29E+06	0.57%
8EA091	8.53E+02	0	0	0	0	2.61E+03	1.76E+03	0	0	0	0	0	5.44E+03	1.31E+06	0.42%
8EA092	9.22E+02	0	0	0	0	3.89E+02	3.28E+03	0	0	0	0	0	4.64E+03	1.30E+06	0.36%
8EA093	1.02E+03	0	2.52E-06	0	0	3.04E+02	7.02E+03	0	0	0	0	0	8.61E+03	1.30E+06	0.66%
8EA094	1.10E+03	0	3.41E-06	0	0	0	0	0	0	0	0	0	1.24E+03	1.31E+06	0.09%
8EA095	8.52E+02	0	0	0	0	7.09E+03	1.68E+03	0	0	0	0	0	9.95E+03	1.27E+06	0.78%
8EA096	9.40E+02	0	1.39E-06	5.54E+03	0	0	0	0	0	1.27E+02	0	0	7.06E+03	1.33E+06	0.53%
8EA097	1.01E+03	0	4.26E-06	9.38E+03	0	0	7.02E+02	0	0	0	0	0	1.11E+04	1.28E+06	0.87%
8EA098	6.79E+02	0	0	7.43E+03	0	0	0	0	4.26E+03	0	0	0	1.28E+04	1.30E+06	0.98%
8EA099	9.83E+02	0	2.77E-06	1.17E+04	0	4.94E+03	3.27E+03	0	0	0	0	0	2.09E+04	1.24E+06	1.68%
8EA100	9.07E+02	0	4.04E-07	3.39E+03	0	0	1.29E+03	0	0	0	0	0	5.99E+03	1.33E+06	0.45%
8EA101	9.73E+02	0	1.97E-07	1.23E+04	0	0	4.70E+03	0	0	0	0	0	1.82E+04	1.28E+06	1.42%
8EA102	1.07E+03	0	6.39E-06	1.41E+04	0	4.42E+03	0	0	0	0	0	0	1.99E+04	1.28E+06	1.55%
8EA103	8.06E+02	0	0	9.69E+03	0	0	3.76E+03	0	0	0	0	0	1.45E+04	1.28E+06	1.13%
8EA104	9.08E+02	0	1.16E-06	1.49E+04	0	1.05E+03	4.01E+03	0	0	0	0	0	2.11E+04	1.29E+06	1.64%
8EA105	7.80E+02	0	0	8.61E+03	0	0	9.28E+02	0	0	0	0	0	1.04E+04	1.28E+06	0.81%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
8EA106	9.35E+02	0	5.01E-07	1.39E+04	0	4.51E+03	2.50E+03	0	0	0	0	0	2.21E+04	1.27E+06	1.74%
8EA107	7.15E+02	0	0	2.05E+03	0	0	0	0	0	0	0	0	2.77E+03	1.28E+06	0.22%
8EA108	8.49E+02	0	0	1.33E+04	0	4.20E+03	2.17E+03	0	0	0	0	0	2.09E+04	1.25E+06	1.66%
8EA109	8.04E+02	0	0	5.86E+03	0	0	0	0	0	0	0	0	6.92E+03	1.30E+06	0.53%
8EA110	7.41E+02	0	0	1.54E+04	0	7.57E+02	0	0	0	0	0	0	1.72E+04	1.29E+06	1.34%
8EA111	9.13E+02	0	0	3.72E+03	0	0	0	0	0	0	0	0	4.90E+03	1.31E+06	0.38%
8EA112	8.84E+02	0	2.89E-07	1.06E+04	0	0	4.62E+03	0	0	0	0	0	1.62E+04	1.28E+06	1.27%
8EA113	8.72E+02	0	1.34E-06	1.07E+04	0	0	4.88E+03	0	0	0	0	0	1.67E+04	1.27E+06	1.32%
8EA114	9.29E+02	0	8.73E-07	4.68E+03	0	0	0	0	0	0	0	0	5.77E+03	1.29E+06	0.45%
8EA115	7.69E+02	0	0	1.28E+04	0	4.14E+03	0	0	0	0	0	0	1.81E+04	1.28E+06	1.42%
8EA116	8.95E+02	0	1.31E-06	1.43E+04	0	1.55E+03	0	0	0	0	0	0	1.70E+04	1.28E+06	1.33%
8EA117	8.38E+02	0	0	1.55E+04	0	1.73E+03	2.38E+03	0	0	1.54E+02	0	0	2.11E+04	1.29E+06	1.64%
8EA118	7.62E+02	0	8.30E-07	1.17E+04	0	3.74E+03	9.70E+02	0	0	0	0	0	1.73E+04	1.26E+06	1.38%
8EA119	5.22E+02	0	0	1.24E+04	0	0	1.99E+03	0	0	0	0	0	1.50E+04	1.25E+06	1.20%
8EA120	8.07E+02	0	0	1.33E+04	0	4.17E+03	1.39E+03	0	0	0	0	0	2.00E+04	1.27E+06	1.58%
8EA121	8.35E+02	0	4.36E-07	6.38E+03	0	0	0	0	0	0	0	0	7.55E+03	1.30E+06	0.58%
8EA122	1.00E+03	0	1.27E-05	1.17E+04	0	0	6.63E+01	0	0	0	0	0	1.29E+04	1.27E+06	1.01%
8EA123	7.01E+02	0	0	5.06E+03	0	0	3.01E+03	0	0	0	0	0	8.93E+03	1.28E+06	0.70%
8EA124	8.94E+02	0	4.70E-06	1.41E+04	0	0	3.96E+03	0	0	0	0	0	1.93E+04	1.27E+06	1.52%
8EA125	5.46E+02	0	0	8.77E+03	0	3.66E+03	5.74E+02	0	0	0	0	0	1.37E+04	1.23E+06	1.11%
8EA126	7.01E+02	0	0	1.41E+04	0	6.70E+02	2.05E+03	0	0	0	0	0	1.76E+04	1.25E+06	1.41%
8EA127	6.04E+02	0	0	1.51E+04	0	5.62E+02	1.54E+03	0	0	0	0	0	1.83E+04	1.28E+06	1.42%
8EA128	8.44E+02	0	5.26E-07	1.27E+04	0	9.21E+02	2.93E+03	0	0	0	0	0	1.75E+04	1.25E+06	1.40%
8EA129	5.37E+02	0	0	1.41E+04	0	0	0	0	0	0	0	0	1.51E+04	1.29E+06	1.17%
8EA130	5.36E+02	0	0	1.09E+04	0	0	0	0	0	0	0	0	1.19E+04	1.30E+06	0.92%
8EA131	7.59E+02	0	5.76E-07	1.49E+04	0	1.27E+03	0	0	0	0	0	0	1.73E+04	1.28E+06	1.35%
8EA132	6.37E+02	0	2.00E-07	1.21E+04	0	0	0	0	0	0	0	0	1.28E+04	1.23E+06	1.04%
8EA133	4.32E+02	0	0	0	0	5.20E+03	0	0	0	0	0	0	6.04E+03	1.27E+06	0.47%
8EA134	7.74E+02	0	8.59E-07	0	0	2.50E+03	0	0	0	0	0	0	3.33E+03	1.27E+06	0.26%
8EA135	6.57E+02	0	1.09E-06	0	6.45E+03	0	1.52E+03	0	0	0	0	0	9.06E+03	1.30E+06	0.70%
8EA136	6.63E+02	0	2.61E-07	0	3.71E+02	0	0	0	0	0	0	0	1.35E+03	1.30E+06	0.10%
8EA137	6.41E+02	0	4.00E-08	0	0	0	0	0	0	0	0	0	7.12E+02	1.27E+06	0.06%
8EA138	7.05E+02	0	0	0	3.80E+02	0	0	0	0	0	0	0	1.54E+03	1.31E+06	0.12%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
8EA139	7.36E+02	0	3.16E-07	0	4.55E+02	4.33E+03	0	0	0	0	0	0	5.70E+03	1.27E+06	0.45%
8EA140	6.92E+02	0	0	0	0	8.49E+02	0	0	0	0	0	0	1.79E+03	1.29E+06	0.14%
8EA141	6.46E+02	0	0	0	0	0	0	0	0	0	0	0	7.40E+02	1.28E+06	0.06%
8EA142	5.63E+02	0	0	0	0	6.37E+03	0	0	0	0	0	0	7.38E+03	1.28E+06	0.57%
8EA143	7.53E+02	0	7.37E-07	0	2.67E+03	0	0	0	0	0	0	0	3.55E+03	1.28E+06	0.28%
8EA144	6.00E+02	0	0	0	0	5.79E+03	0	0	0	0	0	0	6.58E+03	1.27E+06	0.52%
8EA145	6.28E+02	0	0	0	2.97E+03	2.54E+03	0	0	0	0	0	0	6.31E+03	1.27E+06	0.50%
8EA146	5.48E+02	0	0	0	0	4.99E+03	0	0	0	0	0	0	5.91E+03	1.27E+06	0.47%
8EA147	7.60E+02	0	0	0	0	2.78E+03	0	0	0	0	0	0	3.84E+03	1.29E+06	0.30%
8EA148	6.17E+02	0	0	0	0	0	0	0	0	0	0	0	8.60E+02	1.28E+06	0.07%
8EA149	6.50E+02	0	0	0	1.35E+03	0	0	0	0	0	0	0	2.23E+03	1.27E+06	0.18%
8EA150	6.14E+02	0	0	0	4.13E+03	0	0	0	0	0	0	0	5.05E+03	1.29E+06	0.39%
8EA151	5.84E+02	0	0	0	0	0	0	0	0	0	0	0	7.43E+02	1.28E+06	0.06%
8EA152	5.44E+02	0	0	0	0	6.35E+03	0	0	0	0	0	0	6.90E+03	1.23E+06	0.56%
8EA153	4.56E+02	0	0	0	0	4.60E+03	0	0	0	0	0	0	5.37E+03	1.26E+06	0.43%
8EA154	6.17E+02	0	0	0	4.17E+03	0	0	0	0	0	0	0	5.03E+03	1.28E+06	0.39%
8EA155	4.39E+02	0	0	0	1.15E+03	5.55E+03	0	0	0	0	0	0	7.54E+03	1.24E+06	0.61%
8EA156	5.72E+02	0	0	0	0	0	0	0	0	0	0	0	9.26E+02	1.29E+06	0.07%
8EA157	4.55E+02	0	0	0	0	0	0	0	0	0	0	0	9.07E+02	1.30E+06	0.07%
8EA158	5.40E+02	0	0	0	2.89E+03	0	0	0	0	0	0	0	3.79E+03	1.28E+06	0.30%
8EA159	4.40E+02	0	0	0	0	4.50E+03	0	0	0	0	0	0	5.22E+03	1.25E+06	0.42%
8EA160	3.80E+02	0	0	0	2.44E+02	3.59E+03	0	0	0	0	0	0	4.69E+03	1.28E+06	0.37%
8EA161	3.42E+02	0	0	0	0	0	0	0	0	0	0	0	7.20E+02	1.27E+06	0.06%
8EA162	5.74E+02	0	0	0	3.73E+03	0	0	0	0	0	0	0	4.32E+03	1.26E+06	0.34%
8EA163	5.22E+02	0	0	0	6.52E+03	6.21E+02	0	0	0	0	0	0	8.15E+03	1.28E+06	0.64%
8EA164	3.78E+02	0	0	0	6.63E+03	0	0	0	0	0	0	0	7.38E+03	1.27E+06	0.58%
8EA165	6.19E+02	0	0	0	5.72E+03	0	0	0	0	0	0	0	6.48E+03	1.26E+06	0.51%
8EA166	3.99E+02	0	0	0	0	0	0	0	0	0	0	0	7.33E+02	1.28E+06	0.06%
8EA167	4.61E+02	0	0	0	3.85E+03	1.83E+03	0	0	0	0	0	0	6.30E+03	1.26E+06	0.50%
8EA168	5.32E+02	0	0	0	4.21E+03	8.01E+00	0	0	0	0	0	0	5.05E+03	1.28E+06	0.40%
8EA169	3.91E+02	0	0	0	5.49E+03	0	0	0	0	0	0	0	6.33E+03	1.27E+06	0.50%
8EA170	2.91E+02	0	0	0	6.65E+03	0	0	0	0	0	0	0	7.41E+03	1.29E+06	0.57%
8EA171	2.89E+02	0	0	0	0	0	0	0	0	0	0	0	3.49E+02	1.26E+06	0.03%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
8EA172	2.98E+02	0	0	0	0	0	0	0	0	0	4.63E-02	0	8.43E+02	1.29E+06	0.07%
8EA173	1.53E+02	0	0	0	0	0	0	0	0	0	0	0	4.19E+02	1.26E+06	0.03%
8EA174	3.71E+02	0	0	0	4.10E+03	0	0	0	0	0	0	0	4.75E+03	1.26E+06	0.38%
8EA175	2.68E+02	0	0	0	2.70E+03	0	0	0	0	0	0	0	3.50E+03	1.29E+06	0.27%
8EA176	1.66E+02	0	0	0	0	2.21E+02	0	0	0	0	0	0	6.50E+02	1.25E+06	0.05%
8EA177	2.34E+02	0	0	0	4.33E+03	4.48E+03	0	0	0	0	1.79E-01	0	9.54E+03	1.28E+06	0.75%
8EA178	3.23E+02	0	0	0	8.42E+03	5.91E+03	0	0	0	0	0	0	1.51E+04	1.24E+06	1.22%
8EA179	2.49E+02	0	0	0	0	3.51E+03	0	0	0	0	0	0	3.82E+03	1.23E+06	0.31%
8EA180	2.29E+02	0	0	0	4.41E+03	2.18E+03	0	0	0	0	0	0	6.95E+03	1.23E+06	0.56%
8EA181	1.87E+02	0	0	0	0	2.35E+03	0	0	0	0	0	0	2.70E+03	1.25E+06	0.22%
8EA182	6.35E+01	0	0	0	2.59E+03	0	0	0	0	0	0	0	2.99E+03	1.25E+06	0.24%
8EA183	1.76E+02	0	0	0	2.45E+03	1.84E+03	0	0	0	0	0	0	4.58E+03	1.23E+06	0.37%
8EA184	2.20E+02	0	0	0	1.68E+03	1.16E+03	0	0	0	0	0	0	3.10E+03	1.25E+06	0.25%
8EA185	1.64E+02	0	0	0	2.64E+03	5.90E+03	0	0	0	0	5.75E-02	0	1.05E+04	1.25E+06	0.83%
8EA186	2.84E+02	0	0	0	6.46E+03	4.92E+03	0	0	0	0	0	0	1.17E+04	1.22E+06	0.96%
8EA187	2.12E+02	0	0	0	5.76E+03	6.22E+03	0	0	0	0	9.59E-01	0	1.26E+04	1.25E+06	1.01%
8EA188	1.24E+02	0	0	0	0	4.97E+03	0	0	0	0	0	0	5.36E+03	1.24E+06	0.43%
6EA001	1.89E+02	0	0	0	0	0	0	0	6.87E+03	0	0	0	7.06E+03	1.57E+06	0.45%
6EA002	1.72E+02	0	0	0	0	0	0	0	1.32E+03	0	0	0	1.50E+03	1.61E+06	0.09%
6EA003	6.59E+02	0	0	0	0	0	0	0	0	0	0	0	6.59E+02	1.64E+06	0.04%
6EA004	5.09E+02	0	0	0	0	3.38E+03	0	0	0	0	0	0	3.89E+03	1.59E+06	0.24%
6EA005	3.61E+02	0	0	0	0	2.35E+03	0	0	1.39E+03	0	0	0	4.09E+03	1.55E+06	0.26%
6EA006	1.04E+03	2.71E+04	6.82E-05	0	0	5.56E+03	0	0	4.28E+03	0	0	0	3.80E+04	1.57E+06	2.43%
6EA007	9.66E+02	3.69E+04	3.00E-05	0	0	0	0	0	0	0	0	0	4.07E+04	1.60E+06	2.54%
6EA008	6.89E+02	0	0	0	0	0	0	0	1.92E+04	0	0	0	2.27E+04	1.63E+06	1.40%
6EA009	5.47E+02	0	0	0	0	0	0	0	1.68E+04	0	0	0	2.19E+04	1.62E+06	1.35%
6EA010	4.04E+02	0	0	0	0	3.05E+03	0	0	4.45E+02	0	0	0	1.07E+04	1.58E+06	0.68%
6EA011	1.89E+02	0	0	0	0	0	0	0	6.87E+03	0	0	0	7.06E+03	1.57E+06	0.45%
6EA012	1.72E+02	0	0	0	0	0	0	0	1.32E+03	0	0	0	1.50E+03	1.61E+06	0.09%
6EA013	6.59E+02	0	0	0	0	0	0	0	0	0	0	0	6.59E+02	1.64E+06	0.04%
6EA014	5.09E+02	0	0	0	0	3.38E+03	0	0	0	0	0	0	3.89E+03	1.59E+06	0.24%
6EA015	3.61E+02	0	0	0	0	2.35E+03	0	0	1.39E+03	0	0	0	4.09E+03	1.55E+06	0.26%
6EA016	1.04E+03	2.71E+04	6.82E-05	0	0	5.56E+03	0	0	4.28E+03	0	0	0	3.80E+04	1.57E+06	2.43%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
6EA017	9.66E+02	3.69E+04	3.00E-05	0	0	0	0	0	0	0	0	0	4.07E+04	1.60E+06	2.54%
6EA018	6.89E+02	0	0	0	0	0	0	0	1.92E+04	0	0	0	2.27E+04	1.63E+06	1.40%
6EA019	5.47E+02	0	0	0	0	0	0	0	1.68E+04	0	0	0	2.19E+04	1.62E+06	1.35%
6EA020	4.04E+02	0	0	0	0	3.05E+03	0	0	4.45E+02	0	0	0	1.07E+04	1.58E+06	0.68%
6EA021	1.51E+02	0	0	0	0	0	0	0	6.45E+03	0	0	0	7.04E+03	1.63E+06	0.43%
6EA022	1.35E+02	0	0	0	0	0	0	0	9.15E+02	0	0	0	1.49E+03	1.66E+06	0.09%
6EA023	5.79E+02	0	0	0	0	0	0	0	0	1.77E+03	0	0	2.93E+03	1.70E+06	0.17%
6EA024	4.44E+02	0	0	0	0	2.83E+03	0	0	0	1.47E+03	0	0	5.24E+03	1.65E+06	0.32%
6EA025	3.03E+02	0	0	0	0	1.84E+03	0	0	5.98E+02	1.01E+03	0	0	4.22E+03	1.61E+06	0.26%
6EA026	8.93E+02	1.30E+04	6.33E-05	0	0	4.58E+03	0	0	2.22E+03	1.73E+03	0	0	2.30E+04	1.65E+06	1.39%
6EA027	8.61E+02	2.53E+04	2.90E-05	0	0	0	0	0	0	1.51E+03	0	0	3.47E+04	1.68E+06	2.06%
6EA028	6.27E+02	0	0	0	0	0	0	0	1.83E+04	1.50E+03	0	0	2.80E+04	1.69E+06	1.65%
6EA029	4.93E+02	0	0	0	0	0	0	0	1.60E+04	1.44E+03	0	0	2.73E+04	1.68E+06	1.63%
6EA030	3.63E+02	0	0	0	0	2.61E+03	0	0	0	1.33E+03	0	0	1.57E+04	1.64E+06	0.95%
6EA031	1.51E+02	0	0	0	0	0	0	0	6.45E+03	0	0	0	7.04E+03	1.63E+06	0.43%
6EA032	1.35E+02	0	0	0	0	0	0	0	9.15E+02	0	0	0	1.49E+03	1.66E+06	0.09%
6EA033	5.79E+02	0	0	0	0	0	0	0	0	1.77E+03	0	0	2.93E+03	1.70E+06	0.17%
6EA034	4.44E+02	0	0	0	0	2.83E+03	0	0	0	1.47E+03	0	0	5.24E+03	1.65E+06	0.32%
6EA035	3.03E+02	0	0	0	0	1.84E+03	0	0	5.98E+02	1.01E+03	0	0	4.22E+03	1.61E+06	0.26%
6EA036	8.93E+02	1.30E+04	6.33E-05	0	0	4.58E+03	0	0	2.22E+03	1.73E+03	0	0	2.30E+04	1.65E+06	1.39%
6EA037	8.61E+02	2.53E+04	2.90E-05	0	0	0	0	0	0	1.51E+03	0	0	3.47E+04	1.68E+06	2.06%
6EA038	6.27E+02	0	0	0	0	0	0	0	1.83E+04	1.50E+03	0	0	2.80E+04	1.69E+06	1.65%
6EA039	4.93E+02	0	0	0	0	0	0	0	1.60E+04	1.44E+03	0	0	2.73E+04	1.68E+06	1.63%
6EA040	3.63E+02	0	0	0	0	2.61E+03	0	0	0	1.33E+03	0	0	1.57E+04	1.64E+06	0.95%
6EA041	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.53E+06	0.00%
6EA042	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.56E+06	0.00%
6EA043	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.57E+06	0.00%
6EA044	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.55E+06	0.00%
6EA045	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.50E+06	0.00%
6EA046	0	0	0	0	0	1.00E+03	0	0	0	0	0	0	1.00E+03	1.56E+06	0.06%
6EA047	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.58E+06	0.00%
6EA048	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.58E+06	0.00%
6EA049	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.57E+06	0.00%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
6EA050	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.54E+06	0.00%
6EA051	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.53E+06	0.00%
6EA052	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.56E+06	0.00%
6EA053	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.57E+06	0.00%
6EA054	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.55E+06	0.00%
6EA055	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.50E+06	0.00%
6EA056	0	0	0	0	0	1.00E+03	0	0	0	0	0	0	1.00E+03	1.56E+06	0.06%
6EA057	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.58E+06	0.00%
6EA058	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.58E+06	0.00%
6EA059	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.57E+06	0.00%
6EA060	0	0	0	0	0	0	0	0	0	0	0	0	0.00E+00	1.54E+06	0.00%
6EA061	0	0	0	0	0	0	0	0	0	0	0	0	5.58E+02	1.58E+06	0.04%
6EA062	0	0	0	0	0	0	0	0	0	0	0	0	5.65E+02	1.61E+06	0.04%
6EA063	0	0	0	0	0	0	0	0	0	1.31E+03	2.03E+00	0	1.98E+03	1.63E+06	0.12%
6EA064	0	0	0	0	0	0	0	0	0	7.33E+02	1.83E-01	0	1.24E+03	1.60E+06	0.08%
6EA065	0	0	0	0	0	0	0	0	0	1.52E+02	0	0	6.25E+02	1.55E+06	0.04%
6EA066	0	0	0	0	0	4.18E+02	0	0	0	1.48E+03	1.81E+00	0	2.45E+03	1.62E+06	0.15%
6EA067	0	0	0	0	0	0	0	0	0	1.38E+03	7.78E-01	0	2.04E+03	1.64E+06	0.12%
6EA068	0	0	0	0	0	0	0	0	0	1.20E+03	7.34E-01	0	1.86E+03	1.64E+06	0.11%
6EA069	0	0	0	0	0	0	0	0	0	1.10E+03	2.89E-02	0	1.73E+03	1.62E+06	0.11%
6EA070	0	0	0	0	0	0	0	0	0	6.64E+02	0	0	1.15E+03	1.59E+06	0.07%
6EA071	0	0	0	0	0	0	0	0	0	0	0	0	5.58E+02	1.58E+06	0.04%
6EA072	0	0	0	0	0	0	0	0	0	0	0	0	5.65E+02	1.61E+06	0.04%
6EA073	0	0	0	0	0	0	0	0	0	1.31E+03	2.03E+00	0	1.98E+03	1.63E+06	0.12%
6EA074	0	0	0	0	0	0	0	0	0	7.33E+02	1.83E-01	0	1.24E+03	1.60E+06	0.08%
6EA075	0	0	0	0	0	0	0	0	0	1.52E+02	0	0	6.25E+02	1.55E+06	0.04%
6EA076	0	0	0	0	0	4.18E+02	0	0	0	1.48E+03	1.81E+00	0	2.45E+03	1.62E+06	0.15%
6EA077	0	0	0	0	0	0	0	0	0	1.38E+03	7.78E-01	0	2.04E+03	1.64E+06	0.12%
6EA078	0	0	0	0	0	0	0	0	0	1.20E+03	7.34E-01	0	1.86E+03	1.64E+06	0.11%
6EA079	0	0	0	0	0	0	0	0	0	1.10E+03	2.89E-02	0	1.73E+03	1.62E+06	0.11%
6EA080	0	0	0	0	0	0	0	0	0	6.64E+02	0	0	1.15E+03	1.59E+06	0.07%
6EA081	6.85E+02	0	3.78E-06	0	0	4.10E+03	0	0	2.69E+03	0	0	0	1.13E+04	1.59E+06	0.71%
6EA082	5.20E+02	0	0	0	0	3.20E+03	0	0	1.33E+03	1.39E+03	0	0	1.48E+04	1.65E+06	0.90%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
6EA083	6.66E+02	0	1.25E-07	0	0	3.26E+03	0	0	0	3.91E+02	0	0	8.41E+03	1.65E+06	0.51%
6EA084	6.18E+02	0	0	0	0	4.04E+03	0	0	8.18E+02	0	0	0	8.87E+03	1.61E+06	0.55%
6EA085	6.80E+02	0	3.92E-06	0	0	4.00E+03	0	0	1.06E+03	0	0	0	5.99E+03	1.60E+06	0.38%
6EA086	5.43E+02	0	1.55E-06	0	0	0	0	0	0	9.60E+02	0	0	1.81E+03	1.67E+06	0.11%
6EA087	6.66E+02	0	7.27E-06	0	0	0	0	0	1.00E+04	1.17E+03	0	0	1.62E+04	1.68E+06	0.97%
6EA088	6.92E+02	0	1.17E-05	0	0	4.08E+03	5.50E+02	0	0	4.22E+02	0	0	8.00E+03	1.64E+06	0.49%
6EA089	3.98E+02	0	0	0	0	2.88E+03	1.41E+02	0	0	7.01E+02	0	0	8.45E+03	1.63E+06	0.52%
6EA090	4.08E+02	0	0	0	0	4.53E+02	4.82E+02	0	0	1.36E+02	0	0	1.63E+03	1.64E+06	0.10%
6EA091	4.52E+02	0	0	0	0	0	0	0	0	5.73E+02	0	0	1.24E+03	1.66E+06	0.07%
6EA092	5.20E+02	0	0	0	0	0	0	0	0	0	0	0	1.51E+03	1.64E+06	0.09%
6EA093	5.75E+02	0	2.00E-06	0	0	0	2.71E+03	0	0	6.67E+02	0	0	5.76E+03	1.65E+06	0.35%
6EA094	6.36E+02	0	2.77E-06	0	0	0	0	0	0	2.38E+02	0	0	1.13E+03	1.66E+06	0.07%
6EA095	4.41E+02	0	0	0	0	3.01E+03	3.94E+02	0	0	9.21E+02	0	0	6.86E+03	1.62E+06	0.42%
6EA096	4.68E+02	0	9.76E-07	0	0	0	0	0	0	1.44E+03	0	0	4.69E+03	1.69E+06	0.28%
6EA097	5.41E+02	0	3.23E-06	0	0	0	0	0	0	0	0	0	5.80E+02	1.64E+06	0.04%
6EA098	3.01E+02	0	0	0	0	0	0	0	2.48E+03	1.11E+03	0	0	4.29E+03	1.65E+06	0.26%
6EA099	5.28E+02	0	2.06E-06	5.84E+03	0	2.19E+03	1.51E+03	0	0	0	0	0	1.01E+04	1.59E+06	0.64%
6EA100	4.29E+02	0	2.46E-07	0	0	0	0	0	0	1.23E+03	0	0	2.16E+03	1.68E+06	0.13%
6EA101	4.73E+02	0	1.25E-07	1.76E+03	0	0	2.92E+03	0	0	5.25E+02	0	0	5.90E+03	1.63E+06	0.36%
6EA102	5.14E+02	0	3.71E-06	7.80E+03	0	1.26E+03	0	0	0	7.29E+02	0	0	1.06E+04	1.64E+06	0.65%
6EA103	3.23E+02	0	0	0	0	0	2.82E+03	0	0	6.26E+02	0	0	4.03E+03	1.64E+06	0.25%
6EA104	3.91E+02	0	5.09E-07	7.30E+03	0	0	1.84E+03	0	0	7.63E+02	0	0	1.06E+04	1.64E+06	0.65%
6EA105	3.14E+02	0	0	0	0	0	0	0	0	8.93E+01	0	0	5.28E+02	1.64E+06	0.03%
6EA106	3.80E+02	0	1.68E-07	7.97E+03	0	1.29E+03	1.21E+03	0	0	8.89E+02	0	0	1.21E+04	1.63E+06	0.74%
6EA107	2.88E+02	0	0	0	0	0	0	0	0	0	0	0	2.90E+02	1.62E+06	0.02%
6EA108	3.26E+02	0	0	7.68E+03	0	1.06E+03	9.77E+02	0	0	1.01E+03	0	0	1.14E+04	1.60E+06	0.71%
6EA109	2.80E+02	0	0	0	0	0	0	0	0	6.50E+02	0	0	1.20E+03	1.65E+06	0.07%
6EA110	2.60E+02	0	0	8.06E+03	0	0	0	0	0	7.74E+02	0	0	9.41E+03	1.64E+06	0.57%
6EA111	3.18E+02	0	0	0	0	0	0	0	0	7.24E+02	0	0	1.33E+03	1.66E+06	0.08%
6EA112	3.20E+02	0	7.23E-08	0	0	0	2.91E+03	0	0	2.42E+02	0	0	3.63E+03	1.64E+06	0.22%
6EA113	2.94E+02	0	1.74E-07	0	0	0	2.73E+03	0	0	6.61E+02	0	0	3.95E+03	1.63E+06	0.24%
6EA114	3.33E+02	0	1.52E-07	0	0	0	0	0	0	2.83E+02	0	0	7.84E+02	1.64E+06	0.05%
6EA115	2.45E+02	0	0	7.45E+03	0	8.55E+02	0	0	0	9.23E+02	0	0	9.83E+03	1.63E+06	0.60%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
6EA116	2.94E+02	0	0	6.78E+03	0	0	0	0	0	6.02E+02	0	0	7.94E+03	1.64E+06	0.49%
6EA117	2.19E+02	0	0	8.25E+03	0	0	3.95E+02	0	0	1.47E+03	0	0	1.08E+04	1.65E+06	0.66%
6EA118	2.45E+02	0	0	6.45E+03	0	7.07E+02	0	0	0	8.82E+01	0	0	7.64E+03	1.61E+06	0.47%
6EA119	5.38E+01	0	0	4.57E+03	0	0	0	0	0	0	0	0	4.79E+03	1.60E+06	0.30%
6EA120	2.05E+02	0	0	7.72E+03	0	7.58E+02	1.26E+02	0	0	9.88E+02	0	0	1.02E+04	1.62E+06	0.63%
6EA121	1.87E+02	0	0	0	0	0	0	0	0	9.33E+02	0	0	1.47E+03	1.66E+06	0.09%
6EA122	3.02E+02	0	0	1.17E+03	0	0	0	0	0	0	0	0	1.53E+03	1.63E+06	0.09%
6EA123	1.57E+02	0	0	0	0	0	1.01E+03	0	0	1.12E+02	0	0	1.47E+03	1.63E+06	0.09%
6EA124	1.81E+02	0	0	4.08E+03	0	0	2.52E+02	0	0	1.10E+03	0	0	6.00E+03	1.63E+06	0.37%
6EA125	4.87E+01	0	0	4.03E+03	0	5.41E+02	0	0	0	0	0	0	4.73E+03	1.57E+06	0.30%
6EA126	1.48E+02	0	0	6.85E+03	0	0	0	0	0	1.45E+01	0	0	7.14E+03	1.60E+06	0.45%
6EA127	7.45E+01	0	0	8.12E+03	0	0	0	0	0	1.33E+03	0	0	1.00E+04	1.64E+06	0.61%
6EA128	1.84E+02	0	0	4.87E+03	0	0	8.72E+01	0	0	0	0	0	5.18E+03	1.60E+06	0.32%
6EA129	0	0	0	4.00E+03	0	0	0	0	0	9.75E+02	0	0	5.39E+03	1.65E+06	0.33%
6EA130	0	0	0	0	0	0	0	0	0	1.20E+03	0	0	1.68E+03	1.66E+06	0.10%
6EA131	7.72E+00	0	0	7.11E+03	0	0	0	0	0	9.15E+02	0	0	8.40E+03	1.63E+06	0.51%
6EA132	0	0	0	2.61E+03	0	0	0	0	0	0	0	0	2.65E+03	1.58E+06	0.17%
6EA133	0	0	0	0	0	8.93E+02	0	0	0	8.97E+02	0	0	2.20E+03	1.62E+06	0.14%
6EA134	7.84E+00	0	0	0	0	0	0	0	0	0	0	0	6.82E+01	1.62E+06	0.00%
6EA135	0	0	0	0	0	0	0	0	0	1.02E+03	0	0	1.45E+03	1.66E+06	0.09%
6EA136	0	0	0	0	0	0	0	0	0	5.81E+02	0	0	9.31E+02	1.64E+06	0.06%
6EA137	0	0	0	0	0	0	0	0	0	0	0	0	6.91E+01	1.61E+06	0.00%
6EA138	0	0	0	0	0	0	0	0	0	1.23E+03	0	0	1.69E+03	1.66E+06	0.10%
6EA139	0	0	0	0	0	0	0	0	0	2.47E+02	0	0	4.27E+02	1.63E+06	0.03%
6EA140	0	0	0	0	0	0	0	0	0	4.78E+02	0	0	7.25E+02	1.64E+06	0.04%
6EA141	0	0	0	0	0	0	0	0	0	0	0	0	9.21E+01	1.62E+06	0.01%
6EA142	0	0	0	0	0	9.31E+02	0	0	0	1.22E+03	0	0	2.59E+03	1.64E+06	0.16%
6EA143	0	0	0	0	0	0	0	0	0	0	0	0	1.33E+02	1.62E+06	0.01%
6EA144	0	0	0	0	0	6.12E+02	0	0	0	2.54E+02	0	0	1.06E+03	1.62E+06	0.07%
6EA145	0	0	0	0	0	0	0	0	0	5.37E+01	0	0	2.24E+02	1.62E+06	0.01%
6EA146	0	0	0	0	0	0	0	0	0	9.59E+02	0	0	1.33E+03	1.62E+06	0.08%
6EA147	0	0	0	0	0	0	0	0	0	7.36E+02	0	0	1.04E+03	1.64E+06	0.06%
6EA148	0	0	0	0	0	0	0	0	0	2.42E+02	0	0	4.83E+02	1.62E+06	0.03%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
6EA149	0	0	0	0	0	0	0	0	0	3.64E+02	0	0	5.94E+02	1.61E+06	0.04%
6EA150	0	0	0	0	0	0	0	0	0	6.11E+02	0	0	9.20E+02	1.64E+06	0.06%
6EA151	0	0	0	0	0	0	0	0	0	1.15E+02	0	0	2.74E+02	1.62E+06	0.02%
6EA152	0	0	0	0	0	1.44E+03	0	0	0	0	0	0	1.44E+03	1.58E+06	0.09%
6EA153	0	0	0	0	0	0	0	0	0	5.81E+02	0	0	8.99E+02	1.61E+06	0.06%
6EA154	0	0	0	0	0	0	0	0	0	3.90E+02	0	0	6.31E+02	1.63E+06	0.04%
6EA155	0	0	0	0	0	4.59E+02	0	0	0	8.53E+02	0	0	1.71E+03	1.59E+06	0.11%
6EA156	0	0	0	0	0	0	0	0	0	6.22E+02	0	0	9.74E+02	1.63E+06	0.06%
6EA157	0	0	0	0	0	0	0	0	0	1.14E+03	0	0	1.59E+03	1.65E+06	0.10%
6EA158	0	0	0	0	0	0	0	0	0	5.70E+02	0	0	9.29E+02	1.63E+06	0.06%
6EA159	0	0	0	0	0	0	0	0	0	4.25E+02	0	0	7.01E+02	1.59E+06	0.04%
6EA160	0	0	0	0	0	0	0	0	0	1.12E+03	0	0	1.59E+03	1.63E+06	0.10%
6EA161	0	0	0	0	0	0	0	0	0	4.34E+02	0	0	8.09E+02	1.61E+06	0.05%
6EA162	0	0	0	0	0	0	0	0	0	0	0	0	1.03E+01	1.60E+06	0.00%
6EA163	0	0	0	0	0	0	0	0	0	1.33E+03	0	0	1.82E+03	1.64E+06	0.11%
6EA164	0	0	0	0	0	0	0	0	0	6.75E+02	0	0	1.04E+03	1.61E+06	0.06%
6EA165	0	0	0	0	0	0	0	0	0	0	0	0	1.40E+02	1.61E+06	0.01%
6EA166	0	0	0	0	0	0	0	0	0	6.25E+02	0	0	1.02E+03	1.62E+06	0.06%
6EA167	0	0	0	0	0	0	0	0	0	1.82E+01	0	0	1.77E+02	1.61E+06	0.01%
6EA168	0	0	0	0	0	0	0	0	0	6.19E+02	0	0	9.16E+02	1.63E+06	0.06%
6EA169	0	0	0	0	0	0	0	0	0	1.13E+03	0	0	1.57E+03	1.62E+06	0.10%
6EA170	0	0	0	0	0	0	0	0	0	1.04E+03	0	0	1.64E+03	1.64E+06	0.10%
6EA171	0	0	0	0	0	0	0	0	0	0	0	0	5.84E+01	1.59E+06	0.00%
6EA172	0	0	0	0	0	0	0	0	0	1.18E+03	0	0	1.72E+03	1.64E+06	0.11%
6EA173	0	0	0	0	0	0	0	0	0	0	0	0	2.65E+02	1.60E+06	0.02%
6EA174	0	0	0	0	0	0	0	0	0	2.82E+02	0	0	5.62E+02	1.61E+06	0.03%
6EA175	0	0	0	0	0	0	0	0	0	1.03E+03	0	0	1.57E+03	1.64E+06	0.10%
6EA176	0	0	0	0	0	0	0	0	0	6.91E+01	0	0	3.30E+02	1.58E+06	0.02%
6EA177	0	0	0	0	0	0	0	0	0	1.27E+03	0	0	1.77E+03	1.64E+06	0.11%
6EA178	0	0	0	0	0	7.02E+01	0	0	0	1.07E+03	0	0	1.59E+03	1.61E+06	0.10%
6EA179	0	0	0	0	0	0	0	0	0	0	0	0	6.05E+01	1.57E+06	0.00%
6EA180	0	0	0	0	0	0	0	0	0	0	0	0	1.24E+02	1.58E+06	0.01%
6EA181	0	0	0	0	0	0	0	0	0	0	0	0	1.62E+02	1.59E+06	0.01%

Table 36. Predicted Solids for Envelope A Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	ZRO2	ZRSO42.4H2O	Total Solids	Total Soln Mass	Solids % of Total Soln
6EA182	0	0	0	0	0	0	0	0	0	3.23E+02	0	0	7.44E+02	1.59E+06	0.05%
6EA183	0	0	0	0	0	0	0	0	0	0	0	0	1.10E+02	1.57E+06	0.01%
6EA184	0	0	0	0	0	0	0	0	0	0	0	0	4.64E+01	1.59E+06	0.00%
6EA185	0	0	0	0	0	0	0	0	0	9.56E+02	0	0	1.39E+03	1.61E+06	0.09%
6EA186	0	0	0	0	0	0	0	0	0	0	0	0	4.68E+01	1.58E+06	0.00%
6EA187	0	0	0	0	0	6.19E+01	0	0	0	1.19E+03	5.46E-01	0	1.73E+03	1.61E+06	0.11%
6EA188	0	0	0	0	0	0	0	0	0	3.06E+02	0	0	5.69E+02	1.59E+06	0.04%

Table 37. Predicted Solids for Envelope B Simulations – Part 1

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
10TB001	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB002	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB003	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB004	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB005	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB006	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB007	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB008	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB009	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB010	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB011	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB012	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB013	2	15	10	0	0	0	0	4.24E+00	0	0	1.21E+00	0	0	0	9.74E+00
10TB014	2	15	10	0	0	0	0	4.27E+00	0	0	1.21E+00	0	0	0	9.81E+00
10TB015	2	15	10	0	0	0	0	4.29E+00	0	0	1.22E+00	0	0	0	9.84E+00
10TB016	2	15	10	0	0	0	0	4.23E+00	0	0	1.20E+00	0	0	0	9.71E+00
10TB017	2	15	10	0	0	0	0	4.26E+00	0	0	1.21E+00	0	0	0	9.78E+00
10TB018	2	15	10	0	0	0	0	4.24E+00	0	0	1.21E+00	0	0	0	9.75E+00
10TB019	2	66	10	0	0	0	0	4.20E+00	0	0	1.21E+00	0	0	0	9.74E+00
10TB020	2	66	10	0	0	0	0	4.23E+00	0	0	1.21E+00	0	0	0	9.81E+00
10TB021	2	66	10	0	0	0	0	4.24E+00	0	0	1.22E+00	0	0	0	9.84E+00
10TB022	2	66	10	0	0	0	0	4.18E+00	0	0	1.20E+00	0	0	0	9.71E+00
10TB023	2	66	10	0	0	0	0	4.21E+00	0	0	1.21E+00	0	0	0	9.78E+00
10TB024	2	66	10	0	0	0	0	4.18E+00	0	0	1.21E+00	0	0	0	9.75E+00
10TB025	0.9	40.1016	10	0	0	0	0	1.90E+00	0	0	5.47E-01	0	0	0	4.42E+00
10TB026	0.1	16.9922	10	0	0	0	0	1.97E-01	0	0	6.07E-02	0	0	0	4.90E-01
10TB027	0.8	34.9219	10	0	0	0	0	1.43E+00	0	0	4.86E-01	0	0	0	3.92E+00
10TB028	0.1	33.7266	10	0	0	0	0	2.65E-02	0	0	6.07E-02	0	0	0	4.91E-01
10TB029	0.6	22.5703	10	0	0	0	0	9.32E-01	0	0	3.63E-01	0	0	0	2.93E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
10TB030	0.3	34.125	10	0	0	0	0	4.15E-01	0	0	1.82E-01	0	0	0	1.47E+00
10TB031	0.6	28.5469	10	0	0	0	0	9.57E-01	0	0	3.65E-01	0	0	0	2.95E+00
10TB032	0.6	20.9766	10	0	0	0	0	9.98E-01	0	0	3.63E-01	0	0	0	2.93E+00
10TB033	0	30.1406	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB034	0.1	38.1094	10	0	0	0	0	0	0	0	6.07E-02	0	0	0	4.90E-01
10TB035	0.3	22.9688	10	0	0	0	0	3.61E-01	0	0	1.81E-01	0	0	0	1.47E+00
10TB036	0.8	36.5156	10	0	0	0	0	1.43E+00	0	0	4.84E-01	0	0	0	3.91E+00
10TB037	0.6	31.7344	10	0	0	0	0	1.07E+00	0	0	3.63E-01	0	0	0	2.93E+00
10TB038	0	26.9531	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB039	1.3	18.9844	10	0	0	0	0	2.76E+00	0	0	7.88E-01	0	0	0	6.37E+00
10TB040	1.7	28.9453	10	0	0	0	0	3.39E+00	0	0	1.03E+00	0	0	0	8.34E+00
10TB041	1.5	20.5781	10	0	0	0	0	2.95E+00	0	0	9.14E-01	0	0	0	7.38E+00
10TB042	1.3	25.3594	10	0	0	0	0	2.58E+00	0	0	7.88E-01	0	0	0	6.36E+00
10TB043	2	20.1797	10	0	0	0	0	3.91E+00	0	0	1.21E+00	0	0	0	9.80E+00
10TB044	1.4	38.5078	10	0	0	0	0	2.66E+00	0	0	8.47E-01	0	0	0	6.84E+00
10TB045	1.6	36.1172	10	0	0	0	0	3.20E+00	0	0	9.68E-01	0	0	0	7.82E+00
10TB046	1.9	34.5234	10	0	0	0	0	3.74E+00	0	0	1.15E+00	0	0	0	9.33E+00
10TB047	1	18.5859	10	0	0	0	0	2.12E+00	0	0	6.05E-01	0	0	0	4.89E+00
10TB048	1.6	36.9141	10	0	0	0	0	3.20E+00	0	0	9.65E-01	0	0	0	7.79E+00
10TB049	2	37.7109	10	0	0	0	0	4.05E+00	0	0	1.21E+00	0	0	0	9.81E+00
10TB050	1.5	19.7813	10	0	0	0	0	3.19E+00	0	0	9.10E-01	0	0	0	7.35E+00
10TB051	1.7	19.3828	10	0	0	0	0	3.61E+00	0	0	1.03E+00	0	0	0	8.29E+00
10TB052	1	43.6875	10	0	0	0	0	2.11E+00	0	0	6.06E-01	0	0	0	4.90E+00
10TB053	0.1	62.8125	10	0	0	0	0	1.52E-01	0	0	6.07E-02	0	0	0	4.91E-01
10TB054	0.8	45.6797	10	0	0	0	0	1.68E+00	0	0	4.85E-01	0	0	0	3.91E+00
10TB055	0.7	63.6094	10	0	0	0	0	1.44E+00	0	0	4.24E-01	0	0	0	3.43E+00
10TB056	0.3	50.0625	10	0	0	0	0	6.03E-01	0	0	1.82E-01	0	0	0	1.47E+00
10TB057	0.8	59.2266	10	0	0	0	0	1.66E+00	0	0	4.86E-01	0	0	0	3.92E+00
10TB058	0.5	51.2578	10	0	0	0	0	1.03E+00	0	0	3.03E-01	0	0	0	2.44E+00
10TB059	1	42.0938	10	0	0	0	0	2.11E+00	0	0	6.06E-01	0	0	0	4.90E+00
10TB060	0.2	51.6563	10	0	0	0	0	3.90E-01	0	0	1.22E-01	0	0	0	9.84E-01
10TB061	0.6	64.8047	10	0	0	0	0	1.22E+00	0	0	3.63E-01	0	0	0	2.93E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
10TB062	0.9	64.4063	10	0	0	0	0	1.88E+00	0	0	5.49E-01	0	0	0	4.43E+00
10TB063	0.3	52.8516	10	0	0	0	0	6.02E-01	0	0	1.82E-01	0	0	0	1.47E+00
10TB064	0.3	58.8281	10	0	0	0	0	5.81E-01	0	0	1.81E-01	0	0	0	1.46E+00
10TB065	0.7	50.4609	10	0	0	0	0	1.46E+00	0	0	4.24E-01	0	0	0	3.42E+00
10TB066	1.8	48.8672	10	0	0	0	0	3.83E+00	0	0	1.09E+00	0	0	0	8.84E+00
10TB067	1.5	57.2344	10	0	0	0	0	3.17E+00	0	0	9.11E-01	0	0	0	7.36E+00
10TB068	1.8	53.6484	10	0	0	0	0	3.82E+00	0	0	1.09E+00	0	0	0	8.84E+00
10TB069	1.6	47.6719	10	0	0	0	0	3.39E+00	0	0	9.71E-01	0	0	0	7.85E+00
10TB070	1.8	66	10	0	0	0	0	3.77E+00	0	0	1.09E+00	0	0	0	8.80E+00
10TB071	1.1	49.6641	10	0	0	0	0	2.32E+00	0	0	6.68E-01	0	0	0	5.40E+00
10TB072	1.2	56.8359	10	0	0	0	0	2.52E+00	0	0	7.28E-01	0	0	0	5.88E+00
10TB073	1.2	63.2109	10	0	0	0	0	2.51E+00	0	0	7.27E-01	0	0	0	5.88E+00
10TB074	1.9	41.6953	10	0	0	0	0	4.05E+00	0	0	1.15E+00	0	0	0	9.33E+00
10TB075	1.1	54.8438	10	0	0	0	0	2.32E+00	0	0	6.69E-01	0	0	0	5.41E+00
10TB076	1.6	55.2422	10	0	0	0	0	3.37E+00	0	0	9.67E-01	0	0	0	7.81E+00
10TB077	1.8	54.4453	10	0	0	0	0	3.81E+00	0	0	1.09E+00	0	0	0	8.84E+00
10TB078	1.8	57.6328	10	0	0	0	0	3.81E+00	0	0	1.09E+00	0	0	0	8.82E+00
10TB079	1	40.5	10	0	0	0	0	2.12E+00	0	0	6.08E-01	0	0	0	4.92E+00
10TB080	1.1	40.8984	10	0	0	0	0	2.32E+00	0	0	6.65E-01	0	0	0	5.38E+00
10TB081	1.9	64.0078	10	0	0	0	0	4.01E+00	0	0	1.15E+00	0	0	0	9.31E+00
10TB082	1.2	46.0781	10	0	0	0	0	2.53E+00	0	0	7.26E-01	0	0	0	5.87E+00
10TB083	1.9	47.2734	10	0	0	0	0	4.02E+00	0	0	1.15E+00	0	0	0	9.30E+00
10TB084	1.4	58.4297	10	0	0	0	0	2.94E+00	0	0	8.46E-01	0	0	0	6.83E+00
10TB085	1.7	46.875	10	0	0	0	0	3.62E+00	0	0	1.04E+00	0	0	0	8.36E+00
10TB086	1.4	52.4531	10	0	0	0	0	2.96E+00	0	0	8.50E-01	0	0	0	6.86E+00
10TB087	1.4	60.0234	10	0	0	0	0	2.94E+00	0	0	8.48E-01	0	0	0	6.85E+00
10TB088	2	50.8594	10	0	0	0	0	4.24E+00	0	0	1.21E+00	0	0	0	9.79E+00
10TB089	1.9	42.8906	10	0	0	0	0	4.03E+00	0	0	1.15E+00	0	0	0	9.31E+00
10TB090	1.7	58.0313	10	0	0	0	0	3.61E+00	0	0	1.04E+00	0	0	0	8.37E+00
10TB091	1.2	44.4844	10	0	0	0	0	2.55E+00	0	0	7.30E-01	0	0	0	5.90E+00
10TB092	1.4	49.2656	10	0	0	0	0	2.97E+00	0	0	8.52E-01	0	0	0	6.88E+00
10TB093	2	54.0469	10	0	0	0	0	4.26E+00	0	0	1.22E+00	0	0	0	9.84E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
10TB094	0.7	62.0156	10	0	0	0	0	1.44E+00	0	0	4.24E-01	0	0	0	3.42E+00
10TB095	0.3	52.0547	10	0	0	0	0	5.97E-01	0	0	1.81E-01	0	0	0	1.46E+00
10TB096	0.5	60.4219	10	0	0	0	0	1.01E+00	0	0	3.03E-01	0	0	0	2.45E+00
10TB097	0.7	55.6406	10	0	0	0	0	1.44E+00	0	0	4.22E-01	0	0	0	3.41E+00
10TB098	0	60.8203	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB099	0.6	42.4922	10	0	0	0	0	1.25E+00	0	0	3.63E-01	0	0	0	2.93E+00
10TB100	0.4	44.8828	10	0	0	0	0	8.25E-01	0	0	2.43E-01	0	0	0	1.96E+00
10TB101	0.1	46.4766	10	0	0	0	0	1.82E-01	0	0	6.08E-02	0	0	0	4.91E-01
10TB102	1	62.4141	10	0	0	0	0	2.08E+00	0	0	6.05E-01	0	0	0	4.89E+00
10TB103	0.4	44.0859	10	0	0	0	0	8.24E-01	0	0	2.42E-01	0	0	0	1.96E+00
10TB104	0	43.2891	10	0	0	0	0	0	0	0	0	0	0	0	0
10TB105	0.5	61.2188	10	0	0	0	0	1.03E+00	0	0	3.05E-01	0	0	0	2.46E+00
10TB106	0.3	61.6172	10	0	0	0	0	5.85E-01	0	0	1.83E-01	0	0	0	1.48E+00
10TB107	1	37.3125	10	0	0	0	0	1.81E+00	0	0	6.03E-01	0	0	0	4.87E+00
10TB108	1.9	18.1875	10	0	0	0	0	4.04E+00	0	0	1.15E+00	0	0	0	9.29E+00
10TB109	1.2	35.3203	10	0	0	0	0	2.14E+00	0	0	7.25E-01	0	0	0	5.86E+00
10TB110	1.3	17.3906	10	0	0	0	0	2.76E+00	0	0	7.88E-01	0	0	0	6.37E+00
10TB111	1.7	30.9375	10	0	0	0	0	3.40E+00	0	0	1.03E+00	0	0	0	8.34E+00
10TB112	1.3	21.7734	10	0	0	0	0	2.57E+00	0	0	7.93E-01	0	0	0	6.40E+00
10TB113	1.5	29.7422	10	0	0	0	0	2.84E+00	0	0	9.13E-01	0	0	0	7.37E+00
10TB114	1	38.9063	10	0	0	0	0	1.77E+00	0	0	6.11E-01	0	0	0	4.93E+00
10TB115	1.8	29.3438	10	0	0	0	0	3.55E+00	0	0	1.09E+00	0	0	0	8.81E+00
10TB116	1.4	16.1953	10	0	0	0	0	2.98E+00	0	0	8.50E-01	0	0	0	6.87E+00
10TB117	1.1	16.5938	10	0	0	0	0	2.34E+00	0	0	6.67E-01	0	0	0	5.39E+00
10TB118	1.8	28.1484	10	0	0	0	0	3.38E+00	0	0	1.09E+00	0	0	0	8.81E+00
10TB119	1.7	22.1719	10	0	0	0	0	3.38E+00	0	0	1.03E+00	0	0	0	8.35E+00
10TB120	1.3	30.5391	10	0	0	0	0	2.37E+00	0	0	7.90E-01	0	0	0	6.38E+00
10TB121	0.2	32.1328	10	0	0	0	0	1.12E-01	0	0	1.21E-01	0	0	0	9.79E-01
10TB122	0.5	23.7656	10	0	0	0	0	7.68E-01	0	0	3.02E-01	0	0	0	2.44E+00
10TB123	0.2	27.3516	10	0	0	0	0	1.49E-01	0	0	1.22E-01	0	0	0	9.83E-01
10TB124	0.4	33.3281	10	0	0	0	0	3.68E-01	0	0	2.42E-01	0	0	0	1.96E+00
10TB125	0.2	15	10	0	0	0	0	4.14E-01	0	0	1.21E-01	0	0	0	9.80E-01

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
10TB126	0.9	31.3359	10	0	0	0	0	1.64E+00	0	0	5.48E-01	0	0	0	4.43E+00
10TB127	0.8	24.1641	10	0	0	0	0	1.45E+00	0	0	4.86E-01	0	0	0	3.93E+00
10TB128	0.8	17.7891	10	0	0	0	0	1.70E+00	0	0	4.86E-01	0	0	0	3.93E+00
10TB129	0.1	39.3047	10	0	0	0	0	0	0	0	6.06E-02	0	0	0	4.89E-01
10TB130	0.9	26.1563	10	0	0	0	0	1.60E+00	0	0	5.47E-01	0	0	0	4.42E+00
10TB131	0.4	25.7578	10	0	0	0	0	5.38E-01	0	0	2.44E-01	0	0	0	1.97E+00
10TB132	0.2	26.5547	10	0	0	0	0	1.70E-01	0	0	1.22E-01	0	0	0	9.84E-01
10TB133	0.2	23.3672	10	0	0	0	0	4.05E-02	0	0	1.22E-01	0	0	0	9.83E-01
8TB001	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB002	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB003	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB004	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB005	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB006	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB007	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB008	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB009	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB010	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB011	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB012	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB013	2	15	8	0	0	0	0	4.24E+00	0	0	1.21E+00	0	0	0	9.74E+00
8TB014	2	15	8	0	0	0	0	4.28E+00	0	0	1.21E+00	0	0	0	9.81E+00
8TB015	2	15	8	0	0	0	0	4.29E+00	0	0	1.22E+00	0	0	0	9.84E+00
8TB016	2	15	8	0	0	0	0	4.23E+00	0	0	1.20E+00	0	0	0	9.71E+00
8TB017	2	15	8	0	0	0	0	4.26E+00	0	0	1.21E+00	0	0	0	9.78E+00
8TB018	2	15	8	0	0	0	0	4.24E+00	0	0	1.21E+00	0	0	0	9.75E+00
8TB019	2	66	8	0	0	0	0	4.18E+00	0	0	1.21E+00	0	0	0	9.74E+00
8TB020	2	66	8	0	0	0	0	4.21E+00	0	0	1.21E+00	0	0	0	9.81E+00
8TB021	2	66	8	0	0	0	0	4.22E+00	0	0	1.22E+00	0	0	0	9.84E+00
8TB022	2	66	8	0	0	0	0	4.16E+00	0	0	1.20E+00	0	0	0	9.71E+00
8TB023	2	66	8	0	0	0	0	4.19E+00	0	0	1.21E+00	0	0	0	9.78E+00
8TB024	2	66	8	0	0	0	0	4.17E+00	0	0	1.21E+00	0	0	0	9.75E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
8TB025	0.9	40.1016	8	0	0	0	0	1.90E+00	0	0	5.47E-01	0	0	0	4.42E+00
8TB026	0.1	16.9922	8	0	0	0	0	1.99E-01	0	0	6.07E-02	0	0	0	4.90E-01
8TB027	0.8	34.9219	8	0	0	0	0	1.60E+00	0	0	4.86E-01	0	0	0	3.92E+00
8TB028	0.1	33.7266	8	0	0	0	0	1.30E-01	0	0	6.07E-02	0	0	0	4.91E-01
8TB029	0.6	22.5703	8	0	0	0	0	1.15E+00	0	0	3.63E-01	0	0	0	2.93E+00
8TB030	0.3	34.125	8	0	0	0	0	5.47E-01	0	0	1.82E-01	0	0	0	1.47E+00
8TB031	0.6	28.5469	8	0	0	0	0	1.16E+00	0	0	3.65E-01	0	0	0	2.95E+00
8TB032	0.6	20.9766	8	0	0	0	0	1.17E+00	0	0	3.63E-01	0	0	0	2.93E+00
8TB033	0	30.1406	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB034	0.1	38.1094	8	0	0	0	0	1.09E-01	0	0	6.07E-02	0	0	0	4.90E-01
8TB035	0.3	22.9688	8	0	0	0	0	5.28E-01	0	0	1.81E-01	0	0	0	1.47E+00
8TB036	0.8	36.5156	8	0	0	0	0	1.60E+00	0	0	4.84E-01	0	0	0	3.91E+00
8TB037	0.6	31.7344	8	0	0	0	0	1.19E+00	0	0	3.63E-01	0	0	0	2.93E+00
8TB038	0	26.9531	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB039	1.3	18.9844	8	0	0	0	0	2.77E+00	0	0	7.88E-01	0	0	0	6.37E+00
8TB040	1.7	28.9453	8	0	0	0	0	3.54E+00	0	0	1.03E+00	0	0	0	8.34E+00
8TB041	1.5	20.5781	8	0	0	0	0	3.11E+00	0	0	9.14E-01	0	0	0	7.38E+00
8TB042	1.3	25.3594	8	0	0	0	0	2.69E+00	0	0	7.88E-01	0	0	0	6.36E+00
8TB043	2	20.1797	8	0	0	0	0	4.14E+00	0	0	1.21E+00	0	0	0	9.80E+00
8TB044	1.4	38.5078	8	0	0	0	0	2.87E+00	0	0	8.47E-01	0	0	0	6.84E+00
8TB045	1.6	36.1172	8	0	0	0	0	3.32E+00	0	0	9.68E-01	0	0	0	7.82E+00
8TB046	1.9	34.5234	8	0	0	0	0	3.95E+00	0	0	1.15E+00	0	0	0	9.33E+00
8TB047	1	18.5859	8	0	0	0	0	2.12E+00	0	0	6.05E-01	0	0	0	4.89E+00
8TB048	1.6	36.9141	8	0	0	0	0	3.31E+00	0	0	9.65E-01	0	0	0	7.79E+00
8TB049	2	37.7109	8	0	0	0	0	4.19E+00	0	0	1.21E+00	0	0	0	9.81E+00
8TB050	1.5	19.7813	8	0	0	0	0	3.20E+00	0	0	9.10E-01	0	0	0	7.35E+00
8TB051	1.7	19.3828	8	0	0	0	0	3.61E+00	0	0	1.03E+00	0	0	0	8.29E+00
8TB052	1	43.6875	8	0	0	0	0	2.10E+00	0	0	6.06E-01	0	0	0	4.90E+00
8TB053	0.1	62.8125	8	0	0	0	0	1.05E-01	0	0	6.07E-02	0	0	0	4.91E-01
8TB054	0.8	45.6797	8	0	0	0	0	1.67E+00	0	0	4.85E-01	0	0	0	3.91E+00
8TB055	0.7	63.6094	8	0	0	0	0	1.40E+00	0	0	4.24E-01	0	0	0	3.43E+00
8TB056	0.3	50.0625	8	0	0	0	0	5.83E-01	0	0	1.82E-01	0	0	0	1.47E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
8TB057	0.8	59.2266	8	0	0	0	0	1.63E+00	0	0	4.86E-01	0	0	0	3.92E+00
8TB058	0.5	51.2578	8	0	0	0	0	1.01E+00	0	0	3.03E-01	0	0	0	2.44E+00
8TB059	1	42.0938	8	0	0	0	0	2.10E+00	0	0	6.06E-01	0	0	0	4.90E+00
8TB060	0.2	51.6563	8	0	0	0	0	3.65E-01	0	0	1.22E-01	0	0	0	9.84E-01
8TB061	0.6	64.8047	8	0	0	0	0	1.18E+00	0	0	3.63E-01	0	0	0	2.93E+00
8TB062	0.9	64.4063	8	0	0	0	0	1.84E+00	0	0	5.49E-01	0	0	0	4.43E+00
8TB063	0.3	52.8516	8	0	0	0	0	5.75E-01	0	0	1.82E-01	0	0	0	1.47E+00
8TB064	0.3	58.8281	8	0	0	0	0	5.50E-01	0	0	1.81E-01	0	0	0	1.46E+00
8TB065	0.7	50.4609	8	0	0	0	0	1.44E+00	0	0	4.24E-01	0	0	0	3.42E+00
8TB066	1.8	48.8672	8	0	0	0	0	3.82E+00	0	0	1.09E+00	0	0	0	8.84E+00
8TB067	1.5	57.2344	8	0	0	0	0	3.15E+00	0	0	9.11E-01	0	0	0	7.36E+00
8TB068	1.8	53.6484	8	0	0	0	0	3.81E+00	0	0	1.09E+00	0	0	0	8.84E+00
8TB069	1.6	47.6719	8	0	0	0	0	3.39E+00	0	0	9.71E-01	0	0	0	7.85E+00
8TB070	1.8	66	8	0	0	0	0	3.75E+00	0	0	1.09E+00	0	0	0	8.80E+00
8TB071	1.1	49.6641	8	0	0	0	0	2.31E+00	0	0	6.68E-01	0	0	0	5.40E+00
8TB072	1.2	56.8359	8	0	0	0	0	2.50E+00	0	0	7.28E-01	0	0	0	5.88E+00
8TB073	1.2	63.2109	8	0	0	0	0	2.48E+00	0	0	7.27E-01	0	0	0	5.88E+00
8TB074	1.9	41.6953	8	0	0	0	0	4.04E+00	0	0	1.15E+00	0	0	0	9.33E+00
8TB075	1.1	54.8438	8	0	0	0	0	2.30E+00	0	0	6.69E-01	0	0	0	5.41E+00
8TB076	1.6	55.2422	8	0	0	0	0	3.36E+00	0	0	9.67E-01	0	0	0	7.81E+00
8TB077	1.8	54.4453	8	0	0	0	0	3.81E+00	0	0	1.09E+00	0	0	0	8.84E+00
8TB078	1.8	57.6328	8	0	0	0	0	3.79E+00	0	0	1.09E+00	0	0	0	8.82E+00
8TB079	1	40.5	8	0	0	0	0	2.11E+00	0	0	6.08E-01	0	0	0	4.92E+00
8TB080	1.1	40.8984	8	0	0	0	0	2.31E+00	0	0	6.65E-01	0	0	0	5.38E+00
8TB081	1.9	64.0078	8	0	0	0	0	3.99E+00	0	0	1.15E+00	0	0	0	9.31E+00
8TB082	1.2	46.0781	8	0	0	0	0	2.52E+00	0	0	7.26E-01	0	0	0	5.87E+00
8TB083	1.9	47.2734	8	0	0	0	0	4.02E+00	0	0	1.15E+00	0	0	0	9.30E+00
8TB084	1.4	58.4297	8	0	0	0	0	2.92E+00	0	0	8.46E-01	0	0	0	6.83E+00
8TB085	1.7	46.875	8	0	0	0	0	3.62E+00	0	0	1.04E+00	0	0	0	8.36E+00
8TB086	1.4	52.4531	8	0	0	0	0	2.95E+00	0	0	8.50E-01	0	0	0	6.86E+00
8TB087	1.4	60.0234	8	0	0	0	0	2.92E+00	0	0	8.48E-01	0	0	0	6.85E+00
8TB088	2	50.8594	8	0	0	0	0	4.24E+00	0	0	1.21E+00	0	0	0	9.79E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
8TB089	1.9	42.8906	8	0	0	0	0	4.03E+00	0	0	1.15E+00	0	0	0	9.31E+00
8TB090	1.7	58.0313	8	0	0	0	0	3.60E+00	0	0	1.04E+00	0	0	0	8.37E+00
8TB091	1.2	44.4844	8	0	0	0	0	2.54E+00	0	0	7.30E-01	0	0	0	5.90E+00
8TB092	1.4	49.2656	8	0	0	0	0	2.96E+00	0	0	8.52E-01	0	0	0	6.88E+00
8TB093	2	54.0469	8	0	0	0	0	4.25E+00	0	0	1.22E+00	0	0	0	9.84E+00
8TB094	0.7	62.0156	8	0	0	0	0	1.41E+00	0	0	4.24E-01	0	0	0	3.42E+00
8TB095	0.3	52.0547	8	0	0	0	0	5.74E-01	0	0	1.81E-01	0	0	0	1.46E+00
8TB096	0.5	60.4219	8	0	0	0	0	9.79E-01	0	0	3.03E-01	0	0	0	2.45E+00
8TB097	0.7	55.6406	8	0	0	0	0	1.42E+00	0	0	4.22E-01	0	0	0	3.41E+00
8TB098	0	60.8203	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB099	0.6	42.4922	8	0	0	0	0	1.24E+00	0	0	3.63E-01	0	0	0	2.93E+00
8TB100	0.4	44.8828	8	0	0	0	0	8.11E-01	0	0	2.43E-01	0	0	0	1.96E+00
8TB101	0.1	46.4766	8	0	0	0	0	1.62E-01	0	0	6.08E-02	0	0	0	4.91E-01
8TB102	1	62.4141	8	0	0	0	0	2.05E+00	0	0	6.05E-01	0	0	0	4.89E+00
8TB103	0.4	44.0859	8	0	0	0	0	8.11E-01	0	0	2.42E-01	0	0	0	1.96E+00
8TB104	0	43.2891	8	0	0	0	0	0	0	0	0	0	0	0	0
8TB105	0.5	61.2188	8	0	0	0	0	9.88E-01	0	0	3.05E-01	0	0	0	2.46E+00
8TB106	0.3	61.6172	8	0	0	0	0	5.47E-01	0	0	1.83E-01	0	0	0	1.48E+00
8TB107	1	37.3125	8	0	0	0	0	2.01E+00	0	0	6.03E-01	0	0	0	4.87E+00
8TB108	1.9	18.1875	8	0	0	0	0	4.04E+00	0	0	1.15E+00	0	0	0	9.29E+00
8TB109	1.2	35.3203	8	0	0	0	0	2.41E+00	0	0	7.25E-01	0	0	0	5.86E+00
8TB110	1.3	17.3906	8	0	0	0	0	2.77E+00	0	0	7.88E-01	0	0	0	6.37E+00
8TB111	1.7	30.9375	8	0	0	0	0	3.54E+00	0	0	1.03E+00	0	0	0	8.34E+00
8TB112	1.3	21.7734	8	0	0	0	0	2.69E+00	0	0	7.93E-01	0	0	0	6.40E+00
8TB113	1.5	29.7422	8	0	0	0	0	3.08E+00	0	0	9.13E-01	0	0	0	7.37E+00
8TB114	1	38.9063	8	0	0	0	0	2.02E+00	0	0	6.11E-01	0	0	0	4.93E+00
8TB115	1.8	29.3438	8	0	0	0	0	3.73E+00	0	0	1.09E+00	0	0	0	8.81E+00
8TB116	1.4	16.1953	8	0	0	0	0	2.99E+00	0	0	8.50E-01	0	0	0	6.87E+00
8TB117	1.1	16.5938	8	0	0	0	0	2.34E+00	0	0	6.67E-01	0	0	0	5.39E+00
8TB118	1.8	28.1484	8	0	0	0	0	3.68E+00	0	0	1.09E+00	0	0	0	8.81E+00
8TB119	1.7	22.1719	8	0	0	0	0	3.53E+00	0	0	1.03E+00	0	0	0	8.35E+00
8TB120	1.3	30.5391	8	0	0	0	0	2.64E+00	0	0	7.90E-01	0	0	0	6.38E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
8TB121	0.2	32.1328	8	0	0	0	0	3.07E-01	0	0	1.21E-01	0	0	0	9.79E-01
8TB122	0.5	23.7656	8	0	0	0	0	9.45E-01	0	0	3.02E-01	0	0	0	2.44E+00
8TB123	0.2	27.3516	8	0	0	0	0	3.20E-01	0	0	1.22E-01	0	0	0	9.83E-01
8TB124	0.4	33.3281	8	0	0	0	0	6.93E-01	0	0	2.42E-01	0	0	0	1.96E+00
8TB125	0.2	15	8	0	0	0	0	4.15E-01	0	0	1.21E-01	0	0	0	9.80E-01
8TB126	0.9	31.3359	8	0	0	0	0	1.82E+00	0	0	5.48E-01	0	0	0	4.43E+00
8TB127	0.8	24.1641	8	0	0	0	0	1.61E+00	0	0	4.86E-01	0	0	0	3.93E+00
8TB128	0.8	17.7891	8	0	0	0	0	1.70E+00	0	0	4.86E-01	0	0	0	3.93E+00
8TB129	0.1	39.3047	8	0	0	0	0	6.13E-02	0	0	6.06E-02	0	0	0	4.89E-01
8TB130	0.9	26.1563	8	0	0	0	0	1.81E+00	0	0	5.47E-01	0	0	0	4.42E+00
8TB131	0.4	25.7578	8	0	0	0	0	7.34E-01	0	0	2.44E-01	0	0	0	1.97E+00
8TB132	0.2	26.5547	8	0	0	0	0	3.20E-01	0	0	1.22E-01	0	0	0	9.84E-01
8TB133	0.2	23.3672	8	0	0	0	0	2.83E-01	0	0	1.22E-01	0	0	0	9.83E-01
6TB001	0	15	6	3.41E+02	0	0	0	0	0	0	0	0	0	0	0
6TB002	0	15	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB003	0	15	6	2.93E+02	0	0	0	0	0	0	0	0	0	0	0
6TB004	0	15	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB005	0	15	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB006	0	15	6	3.77E+02	0	0	0	0	0	0	0	0	0	0	0
6TB007	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB008	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB009	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB010	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB011	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB012	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB013	2	15	6	7.14E+02	0	0	0	4.23E+00	0	0	1.21E+00	0	0	0	9.74E+00
6TB014	2	15	6	0	0	0	0	4.26E+00	0	0	1.21E+00	0	0	0	9.81E+00
6TB015	2	15	6	6.67E+02	0	0	0	4.27E+00	0	0	1.22E+00	0	0	0	9.84E+00
6TB016	2	15	6	0	0	0	0	4.22E+00	0	0	1.20E+00	0	0	0	9.71E+00
6TB017	2	15	6	0	0	0	0	4.25E+00	0	0	1.21E+00	0	0	0	9.78E+00
6TB018	2	15	6	7.59E+02	0	0	0	4.23E+00	0	0	1.21E+00	0	0	0	9.75E+00
6TB019	2	66	6	0	0	0	0	4.05E+00	0	0	1.21E+00	0	0	0	9.74E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
6TB020	2	66	6	0	0	0	0	4.09E+00	0	0	1.21E+00	0	0	0	9.81E+00
6TB021	2	66	6	0	0	0	0	4.10E+00	0	0	1.22E+00	0	0	0	9.84E+00
6TB022	2	66	6	0	0	0	0	4.03E+00	0	0	1.20E+00	0	0	0	9.71E+00
6TB023	2	66	6	0	0	0	0	4.07E+00	0	0	1.21E+00	0	0	0	9.78E+00
6TB024	2	66	6	0	0	0	0	4.04E+00	0	0	1.21E+00	0	0	0	9.75E+00
6TB025	0.9	40.1016	6	0	0	0	0	1.84E+00	0	0	5.47E-01	0	0	0	4.42E+00
6TB026	0.1	16.9922	6	1.46E+02	0	0	0	1.73E-01	0	0	6.07E-02	0	0	0	4.90E-01
6TB027	0.8	34.9219	6	0	0	0	0	1.63E+00	0	0	4.86E-01	0	0	0	3.92E+00
6TB028	0.1	33.7266	6	0	0	0	0	1.31E-01	0	0	6.07E-02	0	0	0	4.91E-01
6TB029	0.6	22.5703	6	0	0	0	0	1.20E+00	0	0	3.63E-01	0	0	0	2.93E+00
6TB030	0.3	34.125	6	0	0	0	0	5.58E-01	0	0	1.82E-01	0	0	0	1.47E+00
6TB031	0.6	28.5469	6	0	0	0	0	1.20E+00	0	0	3.65E-01	0	0	0	2.95E+00
6TB032	0.6	20.9766	6	0	0	0	0	1.21E+00	0	0	3.63E-01	0	0	0	2.93E+00
6TB033	0	30.1406	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB034	0.1	38.1094	6	0	0	0	0	1.14E-01	0	0	6.07E-02	0	0	0	4.90E-01
6TB035	0.3	22.9688	6	0	0	0	0	5.70E-01	0	0	1.81E-01	0	0	0	1.47E+00
6TB036	0.8	36.5156	6	0	0	0	0	1.62E+00	0	0	4.84E-01	0	0	0	3.91E+00
6TB037	0.6	31.7344	6	0	0	0	0	1.21E+00	0	0	3.63E-01	0	0	0	2.93E+00
6TB038	0	26.9531	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB039	1.3	18.9844	6	1.92E+02	0	0	0	2.75E+00	0	0	7.88E-01	0	0	0	6.37E+00
6TB040	1.7	28.9453	6	0	0	0	0	3.57E+00	0	0	1.03E+00	0	0	0	8.34E+00
6TB041	1.5	20.5781	6	6.13E+01	0	0	0	3.15E+00	0	0	9.14E-01	0	0	0	7.38E+00
6TB042	1.3	25.3594	6	0	0	0	0	2.71E+00	0	0	7.88E-01	0	0	0	6.36E+00
6TB043	2	20.1797	6	1.87E+02	0	0	0	4.20E+00	0	0	1.21E+00	0	0	0	9.80E+00
6TB044	1.4	38.5078	6	0	0	0	0	2.90E+00	0	0	8.47E-01	0	0	0	6.84E+00
6TB045	1.6	36.1172	6	0	0	0	0	3.33E+00	0	0	9.68E-01	0	0	0	7.82E+00
6TB046	1.9	34.5234	6	0	0	0	0	3.98E+00	0	0	1.15E+00	0	0	0	9.33E+00
6TB047	1	18.5859	6	1.62E+02	0	0	0	2.10E+00	0	0	6.05E-01	0	0	0	4.89E+00
6TB048	1.6	36.9141	6	0	0	0	0	3.33E+00	0	0	9.65E-01	0	0	0	7.79E+00
6TB049	2	37.7109	6	0	0	0	0	4.20E+00	0	0	1.21E+00	0	0	0	9.81E+00
6TB050	1.5	19.7813	6	1.44E+02	0	0	0	3.18E+00	0	0	9.10E-01	0	0	0	7.35E+00
6TB051	1.7	19.3828	6	2.32E+02	0	0	0	3.59E+00	0	0	1.03E+00	0	0	0	8.29E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
6TB052	1	43.6875	6	0	0	0	0	2.03E+00	0	0	6.06E-01	0	0	0	4.90E+00
6TB053	0.1	62.8125	6	0	0	0	0	0	0	0	6.07E-02	0	0	0	4.91E-01
6TB054	0.8	45.6797	6	0	0	0	0	1.59E+00	0	0	4.85E-01	0	0	0	3.91E+00
6TB055	0.7	63.6094	6	0	0	0	0	1.25E+00	0	0	4.24E-01	0	0	0	3.43E+00
6TB056	0.3	50.0625	6	0	0	0	0	4.83E-01	0	0	1.82E-01	0	0	0	1.47E+00
6TB057	0.8	59.2266	6	0	0	0	0	1.51E+00	0	0	4.86E-01	0	0	0	3.92E+00
6TB058	0.5	51.2578	6	0	0	0	0	9.05E-01	0	0	3.03E-01	0	0	0	2.44E+00
6TB059	1	42.0938	6	0	0	0	0	2.04E+00	0	0	6.06E-01	0	0	0	4.90E+00
6TB060	0.2	51.6563	6	0	0	0	0	2.57E-01	0	0	1.22E-01	0	0	0	9.84E-01
6TB061	0.6	64.8047	6	0	0	0	0	1.02E+00	0	0	3.63E-01	0	0	0	2.93E+00
6TB062	0.9	64.4063	6	0	0	0	0	1.69E+00	0	0	5.49E-01	0	0	0	4.43E+00
6TB063	0.3	52.8516	6	0	0	0	0	4.64E-01	0	0	1.82E-01	0	0	0	1.47E+00
6TB064	0.3	58.8281	6	0	0	0	0	4.08E-01	0	0	1.81E-01	0	0	0	1.46E+00
6TB065	0.7	50.4609	6	0	0	0	0	1.35E+00	0	0	4.24E-01	0	0	0	3.42E+00
6TB066	1.8	48.8672	6	0	0	0	0	3.75E+00	0	0	1.09E+00	0	0	0	8.84E+00
6TB067	1.5	57.2344	6	0	0	0	0	3.05E+00	0	0	9.11E-01	0	0	0	7.36E+00
6TB068	1.8	53.6484	6	0	0	0	0	3.73E+00	0	0	1.09E+00	0	0	0	8.84E+00
6TB069	1.6	47.6719	6	0	0	0	0	3.32E+00	0	0	9.71E-01	0	0	0	7.85E+00
6TB070	1.8	66	6	0	0	0	0	3.62E+00	0	0	1.09E+00	0	0	0	8.80E+00
6TB071	1.1	49.6641	6	0	0	0	0	2.23E+00	0	0	6.68E-01	0	0	0	5.40E+00
6TB072	1.2	56.8359	6	0	0	0	0	2.40E+00	0	0	7.28E-01	0	0	0	5.88E+00
6TB073	1.2	63.2109	6	0	0	0	0	2.35E+00	0	0	7.27E-01	0	0	0	5.88E+00
6TB074	1.9	41.6953	6	0	0	0	0	3.99E+00	0	0	1.15E+00	0	0	0	9.33E+00
6TB075	1.1	54.8438	6	0	0	0	0	2.20E+00	0	0	6.69E-01	0	0	0	5.41E+00
6TB076	1.6	55.2422	6	0	0	0	0	3.27E+00	0	0	9.67E-01	0	0	0	7.81E+00
6TB077	1.8	54.4453	6	0	0	0	0	3.72E+00	0	0	1.09E+00	0	0	0	8.84E+00
6TB078	1.8	57.6328	6	0	0	0	0	3.70E+00	0	0	1.09E+00	0	0	0	8.82E+00
6TB079	1	40.5	6	0	0	0	0	2.06E+00	0	0	6.08E-01	0	0	0	4.92E+00
6TB080	1.1	40.8984	6	0	0	0	0	2.26E+00	0	0	6.65E-01	0	0	0	5.38E+00
6TB081	1.9	64.0078	6	0	0	0	0	3.87E+00	0	0	1.15E+00	0	0	0	9.31E+00
6TB082	1.2	46.0781	6	0	0	0	0	2.45E+00	0	0	7.26E-01	0	0	0	5.87E+00
6TB083	1.9	47.2734	6	0	0	0	0	3.96E+00	0	0	1.15E+00	0	0	0	9.30E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
6TB084	1.4	58.4297	6	0	0	0	0	2.82E+00	0	0	8.46E-01	0	0	0	6.83E+00
6TB085	1.7	46.875	6	0	0	0	0	3.55E+00	0	0	1.04E+00	0	0	0	8.36E+00
6TB086	1.4	52.4531	6	0	0	0	0	2.86E+00	0	0	8.50E-01	0	0	0	6.86E+00
6TB087	1.4	60.0234	6	0	0	0	0	2.81E+00	0	0	8.48E-01	0	0	0	6.85E+00
6TB088	2	50.8594	6	0	0	0	0	4.16E+00	0	0	1.21E+00	0	0	0	9.79E+00
6TB089	1.9	42.8906	6	0	0	0	0	3.98E+00	0	0	1.15E+00	0	0	0	9.31E+00
6TB090	1.7	58.0313	6	0	0	0	0	3.50E+00	0	0	1.04E+00	0	0	0	8.37E+00
6TB091	1.2	44.4844	6	0	0	0	0	2.47E+00	0	0	7.30E-01	0	0	0	5.90E+00
6TB092	1.4	49.2656	6	0	0	0	0	2.89E+00	0	0	8.52E-01	0	0	0	6.88E+00
6TB093	2	54.0469	6	0	0	0	0	4.17E+00	0	0	1.22E+00	0	0	0	9.84E+00
6TB094	0.7	62.0156	6	0	0	0	0	1.26E+00	0	0	4.24E-01	0	0	0	3.42E+00
6TB095	0.3	52.0547	6	0	0	0	0	4.66E-01	0	0	1.81E-01	0	0	0	1.46E+00
6TB096	0.5	60.4219	6	0	0	0	0	8.36E-01	0	0	3.03E-01	0	0	0	2.45E+00
6TB097	0.7	55.6406	6	0	0	0	0	1.31E+00	0	0	4.22E-01	0	0	0	3.41E+00
6TB098	0	60.8203	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB099	0.6	42.4922	6	0	0	0	0	1.18E+00	0	0	3.63E-01	0	0	0	2.93E+00
6TB100	0.4	44.8828	6	0	0	0	0	7.33E-01	0	0	2.43E-01	0	0	0	1.96E+00
6TB101	0.1	46.4766	6	0	0	0	0	7.16E-02	0	0	6.08E-02	0	0	0	4.91E-01
6TB102	1	62.4141	6	0	0	0	0	1.91E+00	0	0	6.05E-01	0	0	0	4.89E+00
6TB103	0.4	44.0859	6	0	0	0	0	7.35E-01	0	0	2.42E-01	0	0	0	1.96E+00
6TB104	0	43.2891	6	0	0	0	0	0	0	0	0	0	0	0	0
6TB105	0.5	61.2188	6	0	0	0	0	8.45E-01	0	0	3.05E-01	0	0	0	2.46E+00
6TB106	0.3	61.6172	6	0	0	0	0	3.92E-01	0	0	1.83E-01	0	0	0	1.47E+00
6TB107	1	37.3125	6	0	0	0	0	2.03E+00	0	0	6.03E-01	0	0	0	4.87E+00
6TB108	1.9	18.1875	6	0	0	0	0	4.03E+00	0	0	1.15E+00	0	0	0	9.29E+00
6TB109	1.2	35.3203	6	0	0	0	0	2.46E+00	0	0	7.25E-01	0	0	0	5.86E+00
6TB110	1.3	17.3906	6	0	0	0	0	2.75E+00	0	0	7.88E-01	0	0	0	6.37E+00
6TB111	1.7	30.9375	6	0	0	0	0	3.56E+00	0	0	1.03E+00	0	0	0	8.34E+00
6TB112	1.3	21.7734	6	0	0	0	0	2.73E+00	0	0	7.93E-01	0	0	0	6.40E+00
6TB113	1.5	29.7422	6	0	0	0	0	3.12E+00	0	0	9.13E-01	0	0	0	7.37E+00
6TB114	1	38.9063	6	0	0	0	0	2.05E+00	0	0	6.11E-01	0	0	0	4.93E+00
6TB115	1.8	29.3438	6	0	0	0	0	3.76E+00	0	0	1.09E+00	0	0	0	8.81E+00

Table 37. Predicted Solids for Envelope B Simulation – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	ANATASE	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGOH2
6TB116	1.4	16.1953	6	1.74E+02	0	0	0	2.97E+00	0	0	8.50E-01	0	0	0	6.87E+00
6TB117	1.1	16.5938	6	1.59E+02	0	0	0	2.32E+00	0	0	6.67E-01	0	0	0	5.39E+00
6TB118	1.8	28.1484	6	0	0	0	0	3.74E+00	0	0	1.09E+00	0	0	0	8.81E+00
6TB119	1.7	22.1719	6	0	0	0	0	3.57E+00	0	0	1.03E+00	0	0	0	8.35E+00
6TB120	1.3	30.5391	6	0	0	0	0	2.69E+00	0	0	7.90E-01	0	0	0	6.38E+00
6TB121	0.2	32.1328	6	0	0	0	0	3.40E-01	0	0	1.21E-01	0	0	0	9.79E-01
6TB122	0.5	23.7656	6	0	0	0	0	9.89E-01	0	0	3.02E-01	0	0	0	2.44E+00
6TB123	0.2	27.3516	6	0	0	0	0	3.54E-01	0	0	1.22E-01	0	0	0	9.83E-01
6TB124	0.4	33.3281	6	0	0	0	0	7.47E-01	0	0	2.42E-01	0	0	0	1.96E+00
6TB125	0.2	15	6	0	0	0	0	3.93E-01	0	0	1.21E-01	0	0	0	9.80E-01
6TB126	0.9	31.3359	6	0	0	0	0	1.85E+00	0	0	5.48E-01	0	0	0	4.43E+00
6TB127	0.8	24.1641	6	0	0	0	0	1.64E+00	0	0	4.86E-01	0	0	0	3.93E+00
6TB128	0.8	17.7891	6	2.04E+02	0	0	0	1.68E+00	0	0	4.86E-01	0	0	0	3.93E+00
6TB129	0.1	39.3047	6	0	0	0	0	1.03E-01	0	0	6.06E-02	0	0	0	4.89E-01
6TB130	0.9	26.1563	6	0	0	0	0	1.85E+00	0	0	5.47E-01	0	0	0	4.42E+00
6TB131	0.4	25.7578	6	0	0	0	0	7.76E-01	0	0	2.44E-01	0	0	0	1.97E+00
6TB132	0.2	26.5547	6	0	0	0	0	3.52E-01	0	0	1.22E-01	0	0	0	9.84E-01
6TB133	0.2	23.3672	6	0	0	0	0	3.41E-01	0	0	1.22E-01	0	0	0	9.83E-01

Table 38. Predicted Solids for Envelope B Simulations – Part 2

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TB001	8.30E+02	0	0	0	0	5.83E+02	0	0	0	0	0	0	1.41E+03	2.91E+05	0.49%
10TB002	0	0	0	0	0	5.22E+02	0	0	0	0	0	0	5.22E+02	2.94E+05	0.18%
10TB003	0	0	0	0	0	5.76E+02	0	0	0	0	0	0	5.76E+02	2.94E+05	0.20%
10TB004	8.33E+02	0	0	0	0	5.92E+02	0	0	0	0	0	0	1.42E+03	2.90E+05	0.49%
10TB005	8.78E+02	0	0	0	0	5.65E+02	0	0	0	0	0	0	1.44E+03	2.91E+05	0.50%
10TB006	0	0	0	0	0	6.54E+02	0	0	0	0	0	0	6.54E+02	2.93E+05	0.22%
10TB007	0	0	0	0	0	0	0	0	0	0	0	0	0	2.79E+05	0
10TB008	0	0	0	0	0	0	0	0	0	0	0	0	0	2.81E+05	0
10TB009	0	0	0	0	0	3.80E+01	0	0	0	0	0	0	3.80E+01	2.81E+05	0.01%
10TB010	0	0	0	0	0	3.27E+01	0	0	0	0	0	0	3.27E+01	2.79E+05	0.01%
10TB011	6.65E+01	0	0	0	0	3.83E+01	0	0	0	0	0	0	1.05E+02	2.79E+05	0.04%
10TB012	0	0	0	0	0	1.44E+02	0	0	0	0	0	0	1.44E+02	2.80E+05	0.05%
10TB013	7.93E+02	0	0	0	0	9.99E+02	0	0	0	0	0	0	1.81E+03	3.01E+05	0.60%
10TB014	0	0	0	0	0	9.41E+02	0	0	0	0	0	0	9.57E+02	3.05E+05	0.31%
10TB015	0	0	0	0	0	9.98E+02	0	0	0	0	0	0	1.01E+03	3.05E+05	0.33%
10TB016	7.98E+02	0	0	0	0	1.01E+03	0	0	0	0	0	0	1.82E+03	3.01E+05	0.60%
10TB017	8.42E+02	0	0	0	0	9.83E+02	0	0	0	0	0	0	1.84E+03	3.02E+05	0.61%
10TB018	0	0	0	0	0	1.08E+03	0	0	0	0	0	0	1.09E+03	3.03E+05	0.36%
10TB019	0	0	0	0	0	4.05E+02	0	0	0	0	1.09E+00	0	4.21E+02	2.89E+05	0.15%
10TB020	0	0	0	0	0	3.75E+02	0	0	0	0	1.13E+00	0	3.91E+02	2.91E+05	0.13%
10TB021	0	0	0	0	0	4.51E+02	0	0	0	0	1.12E+00	0	4.67E+02	2.91E+05	0.16%
10TB022	0	0	0	0	0	4.40E+02	0	0	0	0	1.09E+00	0	4.56E+02	2.89E+05	0.16%
10TB023	0	0	0	0	0	4.48E+02	0	0	0	0	1.13E+00	0	4.64E+02	2.89E+05	0.16%
10TB024	0	0	0	0	0	5.55E+02	0	0	0	0	1.08E+00	0	5.71E+02	2.90E+05	0.20%
10TB025	0	0	0	0	0	4.41E+02	0	0	0	0	0	0	4.48E+02	2.91E+05	0.15%
10TB026	0	0	0	0	0	5.93E+02	0	0	0	0	0	0	5.93E+02	2.93E+05	0.20%
10TB027	0	0	0	6.56E+03	0	0	0	0	0	0	0	0	6.56E+03	2.84E+05	2.31%
10TB028	0	0	0	5.50E+03	0	0	0	0	0	0	0	0	5.50E+03	2.81E+05	1.96%
10TB029	0	0	0	6.81E+03	0	0	0	0	0	0	0	0	6.81E+03	2.86E+05	2.39%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TB030	0	0	0	5.83E+03	0	0	0	0	0	0	0	0	5.83E+03	2.81E+05	2.07%
10TB031	0	0	0	6.66E+03	0	0	0	0	0	0	0	0	6.66E+03	2.85E+05	2.34%
10TB032	7.27E+02	0	0	6.76E+03	0	0	0	0	0	0	0	0	7.50E+03	2.84E+05	2.64%
10TB033	3.96E+02	0	0	5.65E+03	0	0	0	0	0	0	0	0	6.05E+03	2.81E+05	2.15%
10TB034	3.40E+02	0	0	5.60E+03	0	0	0	0	0	0	0	0	5.94E+03	2.79E+05	2.13%
10TB035	6.94E+02	0	0	6.37E+03	0	0	0	0	0	0	0	0	7.07E+03	2.83E+05	2.50%
10TB036	4.26E+02	0	0	6.44E+03	0	0	0	0	0	0	0	0	6.87E+03	2.82E+05	2.44%
10TB037	4.95E+02	0	0	6.17E+03	0	0	0	0	0	0	0	0	6.67E+03	2.83E+05	2.36%
10TB038	6.18E+02	0	0	5.58E+03	0	0	0	0	0	0	0	0	6.20E+03	2.81E+05	2.21%
10TB039	4.51E+02	0	0	0	0	8.29E+02	0	0	0	0	0	0	1.29E+03	2.98E+05	0.43%
10TB040	0	0	0	7.65E+03	0	0	0	0	0	0	0	0	7.66E+03	2.89E+05	2.65%
10TB041	2.59E+02	0	0	7.73E+03	0	0	0	0	0	0	0	0	8.00E+03	2.91E+05	2.75%
10TB042	0	0	0	7.13E+03	0	0	0	0	0	0	0	0	7.14E+03	2.88E+05	2.47%
10TB043	1.60E+02	0	0	8.39E+03	0	0	0	0	0	0	0	0	8.57E+03	2.92E+05	2.93%
10TB044	0	0	0	7.14E+03	0	0	0	0	0	0	0	0	7.15E+03	2.85E+05	2.51%
10TB045	0	0	0	7.09E+03	0	0	0	0	0	0	0	0	7.10E+03	2.87E+05	2.48%
10TB046	4.05E+02	0	0	7.88E+03	0	0	0	0	0	0	2.14E-01	0	8.30E+03	2.87E+05	2.89%
10TB047	7.73E+02	0	0	0	0	7.49E+02	0	0	0	0	0	0	1.53E+03	2.95E+05	0.52%
10TB048	3.27E+02	0	0	7.00E+03	0	0	0	0	0	0	6.13E-02	0	7.34E+03	2.85E+05	2.58%
10TB049	3.04E+02	0	0	7.54E+03	0	0	0	0	0	0	4.56E-01	0	7.86E+03	2.87E+05	2.74%
10TB050	7.33E+02	0	0	0	0	8.75E+02	0	0	0	0	0	0	1.62E+03	2.99E+05	0.54%
10TB051	7.30E+02	0	0	0	0	8.70E+02	0	0	0	0	0	0	1.61E+03	2.98E+05	0.54%
10TB052	0	0	0	0	0	4.55E+02	0	0	0	0	0	0	4.63E+02	2.90E+05	0.16%
10TB053	0	0	0	0	0	1.02E+02	0	0	0	0	0	0	1.03E+02	2.81E+05	0.04%
10TB054	0	0	0	0	0	3.57E+02	0	0	0	0	0	0	3.63E+02	2.89E+05	0.13%
10TB055	0	0	0	0	0	1.94E+02	0	0	0	0	2.26E-01	0	1.99E+02	2.84E+05	0.07%
10TB056	0	0	0	0	0	2.50E+02	0	0	0	0	0	0	2.53E+02	2.85E+05	0.09%
10TB057	0	0	0	0	0	3.10E+02	0	0	0	0	2.27E-01	0	3.17E+02	2.86E+05	0.11%
10TB058	0	0	0	0	0	2.90E+02	0	0	0	0	0	0	2.94E+02	2.85E+05	0.10%
10TB059	0	0	0	0	0	4.74E+02	0	0	0	0	0	0	4.82E+02	2.90E+05	0.17%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TB060	1.94E+02	0	0	0	0	1.85E+02	0	0	0	0	0	0	3.81E+02	2.84E+05	0.13%
10TB061	0	0	0	0	0	1.71E+02	0	0	0	0	1.88E-01	0	1.75E+02	2.83E+05	0.06%
10TB062	0	0	0	0	0	1.98E+02	0	0	0	0	3.87E-01	0	2.05E+02	2.86E+05	0.07%
10TB063	3.48E+01	0	0	0	0	1.85E+02	0	0	0	0	0	0	2.22E+02	2.84E+05	0.08%
10TB064	1.33E+02	0	0	0	0	2.20E+02	0	0	0	0	0	0	3.56E+02	2.82E+05	0.13%
10TB065	1.32E+02	0	0	0	0	2.86E+02	0	0	0	0	0	0	4.23E+02	2.86E+05	0.15%
10TB066	0	0	0	0	0	5.43E+02	0	0	0	0	6.91E-01	0	5.57E+02	2.93E+05	0.19%
10TB067	0	0	0	0	0	4.11E+02	0	0	0	0	6.68E-01	0	4.23E+02	2.90E+05	0.15%
10TB068	0	0	0	0	0	4.79E+02	0	0	0	0	8.00E-01	0	4.93E+02	2.92E+05	0.17%
10TB069	0	0	0	0	0	4.80E+02	0	0	0	0	5.17E-01	0	4.93E+02	2.92E+05	0.17%
10TB070	0	0	0	0	0	4.83E+02	0	0	0	0	9.56E-01	0	4.98E+02	2.89E+05	0.17%
10TB071	0	0	0	0	0	4.10E+02	0	0	0	0	2.44E-01	0	4.19E+02	2.89E+05	0.14%
10TB072	0	0	0	0	0	3.64E+02	0	0	0	0	4.46E-01	0	3.74E+02	2.88E+05	0.13%
10TB073	2.64E+01	0	0	0	0	3.30E+02	0	0	0	0	5.57E-01	0	3.66E+02	2.86E+05	0.13%
10TB074	2.78E+02	0	0	0	0	6.15E+02	0	0	0	0	5.47E-01	0	9.08E+02	2.95E+05	0.31%
10TB075	0	0	0	0	0	3.19E+02	0	0	0	0	3.61E-01	0	3.27E+02	2.89E+05	0.11%
10TB076	9.07E+01	0	0	0	0	4.76E+02	0	0	0	0	6.75E-01	0	5.80E+02	2.89E+05	0.20%
10TB077	8.87E+01	0	0	0	0	5.37E+02	0	0	0	0	8.07E-01	0	6.40E+02	2.92E+05	0.22%
10TB078	3.17E+01	0	0	0	0	4.65E+02	0	0	0	0	8.74E-01	0	5.11E+02	2.91E+05	0.18%
10TB079	1.18E+02	0	0	0	0	4.53E+02	0	0	0	0	0	0	5.79E+02	2.91E+05	0.20%
10TB080	3.37E+02	0	0	0	0	4.78E+02	0	0	0	0	0	0	8.24E+02	2.91E+05	0.28%
10TB081	0	0	0	0	0	4.19E+02	0	0	0	0	1.03E+00	0	4.34E+02	2.90E+05	0.15%
10TB082	2.70E+02	0	0	0	0	4.66E+02	0	0	0	0	2.05E-01	0	7.45E+02	2.90E+05	0.26%
10TB083	2.44E+02	0	0	0	0	6.17E+02	0	0	0	0	6.91E-01	0	8.77E+02	2.93E+05	0.30%
10TB084	0	0	0	0	0	3.13E+02	0	0	0	0	6.39E-01	0	3.25E+02	2.88E+05	0.11%
10TB085	1.78E+02	0	0	0	0	4.93E+02	0	0	0	0	6.07E-01	0	6.84E+02	2.93E+05	0.23%
10TB086	1.49E+02	0	0	0	0	4.36E+02	0	0	0	0	5.25E-01	0	5.96E+02	2.89E+05	0.21%
10TB087	0	0	0	0	0	3.43E+02	0	0	0	0	6.46E-01	0	3.54E+02	2.89E+05	0.12%
10TB088	0	0	0	0	0	5.58E+02	0	0	0	0	8.63E-01	0	5.74E+02	2.94E+05	0.20%
10TB089	0	0	0	0	0	6.51E+02	0	0	0	0	5.73E-01	0	6.67E+02	2.95E+05	0.23%
10TB090	0	0	0	0	0	3.88E+02	0	0	0	0	8.44E-01	0	4.01E+02	2.91E+05	0.14%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO4 2CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TB091	0	0	0	0	0	4.05E+02	0	0	0	0	1.95E-01	0	4.15E+02	2.92E+05	0.14%
10TB092	0	0	0	0	0	4.31E+02	0	0	0	0	4.73E-01	0	4.42E+02	2.91E+05	0.15%
10TB093	0	0	0	0	0	5.12E+02	0	0	0	0	9.63E-01	0	5.28E+02	2.94E+05	0.18%
10TB094	0	0	0	0	0	1.91E+02	0	0	0	0	2.17E-01	0	1.97E+02	2.85E+05	0.07%
10TB095	1.74E+02	0	0	0	0	2.22E+02	0	0	0	0	0	0	3.99E+02	2.83E+05	0.14%
10TB096	1.09E+02	0	0	0	0	2.29E+02	0	0	0	0	5.21E-02	0	3.42E+02	2.84E+05	0.12%
10TB097	1.66E+02	0	0	0	0	2.97E+02	0	0	0	0	1.09E-01	0	4.68E+02	2.84E+05	0.16%
10TB098	3.57E+01	0	0	0	0	2.83E+01	0	0	0	0	0	0	6.40E+01	2.81E+05	0.02%
10TB099	2.71E+02	0	0	0	0	2.96E+02	0	0	0	0	0	0	5.71E+02	2.88E+05	0.20%
10TB100	3.25E+02	0	0	0	0	2.88E+02	0	0	0	0	0	0	6.16E+02	2.86E+05	0.22%
10TB101	0	0	0	0	0	2.00E+02	0	0	0	0	0	0	2.01E+02	2.85E+05	0.07%
10TB102	0	0	0	0	0	2.72E+02	0	0	0	0	4.07E-01	0	2.80E+02	2.86E+05	0.10%
10TB103	0	0	0	0	0	3.05E+02	0	0	0	0	0	0	3.08E+02	2.87E+05	0.11%
10TB104	0	0	0	0	0	2.45E+02	0	0	0	0	0	0	2.45E+02	2.85E+05	0.09%
10TB105	0	0	0	0	0	1.00E+02	0	0	0	0	9.17E-02	0	1.04E+02	2.85E+05	0.04%
10TB106	0	0	0	0	0	1.50E+02	0	0	0	0	0	0	1.53E+02	2.83E+05	0.05%
10TB107	3.53E+02	0	0	6.78E+03	0	0	0	0	0	0	0	0	7.14E+03	2.82E+05	2.53%
10TB108	7.49E+02	0	0	0	0	9.38E+02	0	0	0	0	0	0	1.70E+03	3.01E+05	0.57%
10TB109	4.31E+02	0	0	7.25E+03	0	0	0	0	0	0	0	0	7.69E+03	2.83E+05	2.72%
10TB110	7.96E+02	0	0	0	0	8.33E+02	0	0	0	0	0	0	1.64E+03	2.98E+05	0.55%
10TB111	4.63E+02	0	0	7.55E+03	0	0	0	0	0	0	0	0	8.02E+03	2.87E+05	2.79%
10TB112	4.95E+02	0	0	7.40E+03	0	0	0	0	0	0	0	0	7.90E+03	2.89E+05	2.73%
10TB113	4.24E+02	0	0	7.69E+03	0	0	0	0	0	0	0	0	8.13E+03	2.87E+05	2.83%
10TB114	3.12E+02	0	0	6.89E+03	0	0	0	0	0	0	0	0	7.21E+03	2.83E+05	2.55%
10TB115	6.00E+01	0	0	7.83E+03	0	0	0	0	0	0	0	0	7.91E+03	2.89E+05	2.74%
10TB116	0	0	0	0	0	8.68E+02	0	0	0	0	0	0	8.79E+02	3.01E+05	0.29%
10TB117	4.55E+02	0	0	0	0	8.18E+02	0	0	0	0	0	0	1.28E+03	2.98E+05	0.43%
10TB118	2.30E+02	0	0	8.14E+03	0	0	0	0	0	0	0	0	8.38E+03	2.89E+05	2.90%
10TB119	0	0	0	7.90E+03	0	0	0	0	0	0	0	0	7.92E+03	2.91E+05	2.72%
10TB120	0	0	0	7.49E+03	0	0	0	0	0	0	0	0	7.50E+03	2.87E+05	2.62%
10TB121	2.96E+02	0	0	6.09E+03	0	0	0	0	0	0	0	0	6.39E+03	2.81E+05	2.27%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TB122	6.66E+02	0	0	6.63E+03	0	0	0	0	0	0	0	0	7.30E+03	2.83E+05	2.58%
10TB123	6.05E+02	0	0	6.16E+03	0	0	0	0	0	0	0	0	6.77E+03	2.82E+05	2.40%
10TB124	5.05E+02	0	0	6.54E+03	0	0	0	0	0	0	0	0	7.05E+03	2.81E+05	2.51%
10TB125	8.61E+02	0	0	0	0	5.88E+02	0	0	0	0	0	0	1.45E+03	2.93E+05	0.50%
10TB126	4.85E+02	0	0	6.84E+03	0	0	0	0	0	0	0	0	7.33E+03	2.85E+05	2.58%
10TB127	6.63E+02	0	0	6.88E+03	0	0	0	0	0	0	0	0	7.55E+03	2.85E+05	2.64%
10TB128	0	0	0	0	0	6.97E+02	0	0	0	0	0	0	7.03E+02	2.97E+05	0.24%
10TB129	0	0	0	5.99E+03	0	0	0	0	0	0	0	0	5.99E+03	2.79E+05	2.15%
10TB130	3.08E+02	0	0	7.03E+03	0	0	0	0	0	0	0	0	7.35E+03	2.86E+05	2.57%
10TB131	0	0	0	6.53E+03	0	0	0	0	0	0	0	0	6.53E+03	2.85E+05	2.29%
10TB132	1.97E+02	0	0	6.15E+03	0	0	0	0	0	0	0	0	6.35E+03	2.83E+05	2.24%
10TB133	0	0	0	6.46E+03	0	0	0	0	0	0	0	0	6.47E+03	2.84E+05	2.27%
8TB001	7.67E+02	0	0	0	0	0	0	0	0	0	0	0	7.67E+02	3.43E+05	0.22%
8TB002	0	0	0	0	0	0	0	0	0	0	0	0	0	3.47E+05	0.00%
8TB003	0	0	0	0	0	0	0	0	0	0	0	0	0	3.47E+05	0.00%
8TB004	7.58E+02	0	0	0	0	0	0	0	0	0	0	0	7.58E+02	3.43E+05	0.22%
8TB005	7.95E+02	0	0	0	0	0	0	0	0	0	0	0	7.95E+02	3.44E+05	0.23%
8TB006	0	0	0	0	0	2.67E+00	0	0	0	0	0	0	2.67E+00	3.46E+05	0.00%
8TB007	0	0	0	0	0	0	0	0	0	0	0	0	0	3.30E+05	0.00%
8TB008	0	0	0	0	0	0	0	0	0	0	0	0	0	3.32E+05	0.00%
8TB009	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33E+05	0.00%
8TB010	0	0	0	0	0	0	0	0	0	0	0	0	0	3.30E+05	0.00%
8TB011	0	0	0	0	0	0	0	0	0	0	0	0	0	3.31E+05	0.00%
8TB012	0	0	0	0	0	0	0	0	0	0	0	0	0	3.32E+05	0.00%
8TB013	7.28E+02	0	0	0	0	3.25E+02	0	0	0	0	0	0	1.07E+03	3.55E+05	0.30%
8TB014	0	0	0	0	0	2.38E+02	0	0	0	0	0	0	2.54E+02	3.59E+05	0.07%
8TB015	0	0	0	0	0	2.96E+02	0	0	0	0	0	0	3.12E+02	3.60E+05	0.09%
8TB016	7.19E+02	0	0	0	0	3.26E+02	0	0	0	0	0	0	1.06E+03	3.55E+05	0.30%
8TB017	7.55E+02	0	0	0	0	2.82E+02	0	0	0	0	0	0	1.05E+03	3.56E+05	0.30%
8TB018	0	0	0	0	0	3.92E+02	0	0	0	0	0	0	4.07E+02	3.58E+05	0.11%
8TB019	0	0	0	0	0	0	0	0	0	0	1.15E+00	0	1.63E+01	3.43E+05	0.00%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
8TB020	0	0	0	0	0	0	0	0	0	0	1.18E+00	0	1.64E+01	3.45E+05	0.00%
8TB021	0	0	0	0	0	0	0	0	0	0	1.18E+00	0	1.65E+01	3.46E+05	0.00%
8TB022	0	0	0	0	0	0	0	0	0	0	1.15E+00	0	1.62E+01	3.43E+05	0.00%
8TB023	0	0	0	0	0	0	0	0	0	0	1.17E+00	4.12E-03	1.64E+01	3.43E+05	0.00%
8TB024	0	0	0	0	0	0	0	0	0	0	1.14E+00	0	1.63E+01	3.44E+05	0.00%
8TB025	0	0	0	0	0	0	0	0	0	0	6.75E-02	0	6.93E+00	3.44E+05	0.00%
8TB026	0	0	0	0	0	0	0	0	0	0	0	0	7.50E-01	3.47E+05	0.00%
8TB027	0	0	0	4.35E+03	0	0	0	0	0	0	0	0	4.36E+03	3.38E+05	1.29%
8TB028	0	0	0	3.12E+03	0	0	0	0	0	0	0	0	3.12E+03	3.35E+05	0.93%
8TB029	0	0	0	5.17E+03	0	0	0	0	0	0	0	0	5.17E+03	3.38E+05	1.53%
8TB030	0	0	0	3.42E+03	0	0	0	0	0	0	0	0	3.43E+03	3.36E+05	1.02%
8TB031	0	0	0	4.85E+03	0	0	0	0	0	0	0	0	4.86E+03	3.37E+05	1.44%
8TB032	6.39E+02	0	0	5.15E+03	0	0	0	0	0	0	0	0	5.79E+03	3.36E+05	1.72%
8TB033	2.58E+02	0	0	3.47E+03	0	0	0	0	0	0	0	0	3.73E+03	3.35E+05	1.11%
8TB034	1.60E+02	0	0	3.19E+03	0	0	0	0	0	0	0	0	3.36E+03	3.33E+05	1.01%
8TB035	5.94E+02	0	0	4.65E+03	0	0	0	0	0	0	0	0	5.24E+03	3.35E+05	1.56%
8TB036	2.38E+02	0	0	4.03E+03	0	0	0	0	0	0	0	0	4.27E+03	3.36E+05	1.27%
8TB037	3.52E+02	0	0	3.92E+03	0	0	0	0	0	0	0	0	4.27E+03	3.37E+05	1.27%
8TB038	5.01E+02	0	0	3.46E+03	0	0	0	0	0	0	0	0	3.96E+03	3.34E+05	1.18%
8TB039	3.53E+02	0	0	0	0	1.15E+02	0	0	0	0	0	0	4.78E+02	3.53E+05	0.14%
8TB040	0	0	0	5.64E+03	0	0	0	0	0	0	2.43E-01	0	5.65E+03	3.43E+05	1.65%
8TB041	1.78E+02	0	0	6.03E+03	0	0	0	0	0	0	0	0	6.22E+03	3.50E+05	1.78%
8TB042	0	0	0	5.22E+03	0	0	0	0	0	0	0	0	5.23E+03	3.42E+05	1.53%
8TB043	7.37E+01	0	0	6.91E+03	0	0	0	0	0	0	0	0	7.00E+03	3.45E+05	2.03%
8TB044	0	0	0	4.71E+03	0	0	0	0	0	0	3.06E-01	0	4.73E+03	3.39E+05	1.39%
8TB045	0	0	0	4.64E+03	0	0	0	0	0	0	3.52E-01	0	4.66E+03	3.41E+05	1.36%
8TB046	2.33E+02	0	0	5.74E+03	0	0	0	0	0	0	5.79E-01	0	5.99E+03	3.42E+05	1.75%
8TB047	6.81E+02	0	0	0	0	4.20E+01	0	0	0	0	0	0	7.30E+02	3.49E+05	0.21%
8TB048	1.55E+02	0	0	4.47E+03	0	0	0	0	0	0	4.09E-01	0	4.64E+03	3.39E+05	1.37%
8TB049	1.19E+02	0	0	5.00E+03	0	0	0	0	0	0	7.54E-01	0	5.13E+03	3.43E+05	1.50%
8TB050	6.24E+02	0	0	0	0	1.46E+02	0	0	0	0	0	0	7.82E+02	3.53E+05	0.22%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
8TB051	6.40E+02	0	0	0	0	1.49E+02	0	0	0	0	0	0	8.02E+02	3.53E+05	0.23%
8TB052	0	0	0	0	0	0	0	0	0	0	1.98E-01	0	7.80E+00	3.44E+05	0.00%
8TB053	0	0	0	0	0	0	0	0	0	0	0	0	6.56E-01	3.34E+05	0.00%
8TB054	0	0	0	0	0	0	0	0	0	0	1.09E-01	0	6.17E+00	3.42E+05	0.00%
8TB055	0	0	0	0	0	0	0	0	0	0	2.99E-01	0	5.55E+00	3.37E+05	0.00%
8TB056	0	0	0	0	0	0	0	0	0	0	0	0	2.24E+00	3.38E+05	0.00%
8TB057	0	0	0	0	0	0	0	0	0	0	3.23E-01	0	6.37E+00	3.39E+05	0.00%
8TB058	0	0	0	0	0	0	0	0	0	0	5.20E-03	0	3.76E+00	3.38E+05	0.00%
8TB059	0	0	0	0	0	0	0	0	0	0	1.64E-01	0	7.77E+00	3.44E+05	0.00%
8TB060	0	0	0	0	0	0	0	0	0	0	0	0	1.47E+00	3.37E+05	0.00%
8TB061	0	0	0	0	0	0	0	0	0	0	2.52E-01	0	4.73E+00	3.35E+05	0.00%
8TB062	0	0	0	0	0	0	0	0	0	0	4.50E-01	0	7.27E+00	3.39E+05	0.00%
8TB063	0	0	0	0	0	0	0	0	0	0	0	0	2.23E+00	3.37E+05	0.00%
8TB064	0	0	0	0	0	0	0	0	0	0	0	0	2.20E+00	3.35E+05	0.00%
8TB065	0	0	0	0	0	0	0	0	0	0	1.40E-01	0	5.43E+00	3.39E+05	0.00%
8TB066	0	0	0	0	0	0	0	0	0	0	8.53E-01	0	1.46E+01	3.48E+05	0.00%
8TB067	0	0	0	0	0	0	0	0	0	0	7.67E-01	0	1.22E+01	3.44E+05	0.00%
8TB068	0	0	0	0	0	0	0	0	0	0	9.22E-01	0	1.47E+01	3.47E+05	0.00%
8TB069	0	0	0	0	0	0	0	0	0	0	6.95E-01	0	1.29E+01	3.47E+05	0.00%
8TB070	0	0	0	0	0	0	0	0	0	0	1.02E+00	0	1.47E+01	3.43E+05	0.00%
8TB071	0	0	0	0	0	0	0	0	0	0	4.05E-01	0	8.78E+00	3.43E+05	0.00%
8TB072	0	0	0	0	0	0	0	0	0	0	5.56E-01	0	9.67E+00	3.42E+05	0.00%
8TB073	0	0	0	0	0	0	0	0	0	0	6.26E-01	0	9.71E+00	3.39E+05	0.00%
8TB074	1.05E+01	0	0	0	0	0	0	0	0	0	7.85E-01	0	2.59E+01	3.50E+05	0.01%
8TB075	0	0	0	0	0	0	0	0	0	0	4.78E-01	0	8.85E+00	3.42E+05	0.00%
8TB076	0	0	0	0	0	0	0	0	0	0	7.93E-01	0	1.29E+01	3.44E+05	0.00%
8TB077	0	0	0	0	0	0	0	0	0	0	9.26E-01	0	1.47E+01	3.46E+05	0.00%
8TB078	0	0	0	0	0	0	0	0	0	0	9.68E-01	0	1.47E+01	3.45E+05	0.00%
8TB079	0	0	0	0	0	0	0	0	0	0	1.56E-01	0	7.79E+00	3.45E+05	0.00%
8TB080	7.74E+01	0	0	0	0	0	0	0	0	0	2.08E-01	0	8.60E+01	3.45E+05	0.02%
8TB081	0	0	0	0	0	0	0	0	0	0	1.09E+00	0	1.55E+01	3.44E+05	0.00%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
8TB082	0	0	0	0	0	0	0	0	0	0	4.01E-01	0	9.51E+00	3.44E+05	0.00%
8TB083	0	0	0	0	0	0	0	0	0	0	8.73E-01	0	1.53E+01	3.48E+05	0.00%
8TB084	0	0	0	0	0	0	0	0	0	0	7.24E-01	0	1.13E+01	3.41E+05	0.00%
8TB085	0	0	0	0	0	0	0	0	0	0	7.75E-01	0	1.38E+01	3.48E+05	0.00%
8TB086	0	0	0	0	0	0	0	0	0	0	6.53E-01	0	1.13E+01	3.43E+05	0.00%
8TB087	0	0	0	0	0	0	0	0	0	0	7.29E-01	0	1.14E+01	3.42E+05	0.00%
8TB088	0	0	0	0	0	0	0	0	0	0	1.01E+00	0	1.62E+01	3.48E+05	0.00%
8TB089	0	0	0	0	0	0	0	0	0	0	7.99E-01	0	1.53E+01	3.50E+05	0.00%
8TB090	0	0	0	0	0	0	0	0	0	0	9.28E-01	0	1.39E+01	3.45E+05	0.00%
8TB091	0	0	0	0	0	0	0	0	0	0	3.96E-01	0	9.56E+00	3.45E+05	0.00%
8TB092	0	0	0	0	0	0	0	0	0	0	6.20E-01	0	1.13E+01	3.45E+05	0.00%
8TB093	0	0	0	0	0	0	0	0	0	0	1.07E+00	0	1.64E+01	3.48E+05	0.00%
8TB094	0	0	0	0	0	0	0	0	0	0	2.92E-01	0	5.55E+00	3.37E+05	0.00%
8TB095	0	0	0	0	0	0	0	0	0	0	0	0	2.22E+00	3.36E+05	0.00%
8TB096	0	0	0	0	0	0	0	0	0	0	1.41E-01	0	3.87E+00	3.37E+05	0.00%
8TB097	0	0	0	0	0	0	0	0	0	0	2.23E-01	0	5.48E+00	3.37E+05	0.00%
8TB098	0	0	0	0	0	0	0	0	0	0	0	0	0	3.33E+05	0.00%
8TB099	2.54E+00	0	0	0	0	0	0	0	0	0	0	0	7.08E+00	3.41E+05	0.00%
8TB100	1.91E+01	0	0	0	0	0	0	0	0	0	0	0	2.21E+01	3.39E+05	0.01%
8TB101	0	0	0	0	0	0	0	0	0	0	0	0	7.14E-01	3.38E+05	0.00%
8TB102	0	0	0	0	0	0	0	0	0	0	4.83E-01	0	8.03E+00	3.39E+05	0.00%
8TB103	0	0	0	0	0	0	0	0	0	0	0	0	3.01E+00	3.40E+05	0.00%
8TB104	0	0	0	0	0	0	0	0	0	0	0	0	0	3.38E+05	0.00%
8TB105	0	0	0	0	0	0	0	0	0	0	1.68E-01	0	3.93E+00	3.37E+05	0.00%
8TB106	0	0	0	0	0	0	0	0	0	0	3.25E-02	0	2.24E+00	3.36E+05	0.00%
8TB107	1.66E+02	0	0	4.51E+03	0	0	0	0	0	0	6.19E-02	0	4.68E+03	3.36E+05	1.39%
8TB108	6.57E+02	0	0	0	0	2.23E+02	0	0	0	0	0	0	8.94E+02	3.56E+05	0.25%
8TB109	2.44E+02	0	0	5.18E+03	0	0	0	0	0	0	1.36E-01	0	5.43E+03	3.37E+05	1.61%
8TB110	7.00E+02	0	0	0	0	1.27E+02	0	0	0	0	0	0	8.37E+02	3.52E+05	0.24%
8TB111	3.29E+02	0	0	5.45E+03	0	0	0	0	0	0	3.49E-01	0	5.79E+03	3.41E+05	1.70%
8TB112	4.21E+02	0	0	5.77E+03	0	0	0	0	0	0	0	0	6.20E+03	3.42E+05	1.81%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
8TB113	2.84E+02	0	0	5.90E+03	0	0	0	0	0	0	1.78E-01	0	6.19E+03	3.41E+05	1.82%
8TB114	1.11E+02	0	0	4.66E+03	0	0	0	0	0	0	1.47E-01	0	4.78E+03	3.37E+05	1.42%
8TB115	0	0	0	5.90E+03	0	0	0	0	0	0	2.72E-01	0	5.91E+03	3.43E+05	1.72%
8TB116	0	0	0	0	0	1.72E+02	0	0	0	0	0	0	1.83E+02	3.55E+05	0.05%
8TB117	3.65E+02	0	0	0	0	1.24E+02	0	0	0	0	0	0	4.98E+02	3.52E+05	0.14%
8TB118	9.34E+01	0	0	6.48E+03	0	0	0	0	0	0	2.33E-01	0	6.59E+03	3.42E+05	1.93%
8TB119	0	0	0	6.32E+03	0	0	0	0	0	0	0	0	6.33E+03	3.44E+05	1.84%
8TB120	0	0	0	5.63E+03	0	0	0	0	0	0	4.47E-02	0	5.64E+03	3.40E+05	1.66%
8TB121	1.43E+02	0	0	4.04E+03	0	0	0	0	0	0	0	0	4.19E+03	3.35E+05	1.25%
8TB122	5.68E+02	0	0	4.97E+03	0	0	0	0	0	0	0	0	5.54E+03	3.35E+05	1.65%
8TB123	4.79E+02	0	0	4.24E+03	0	0	0	0	0	0	0	0	4.72E+03	3.35E+05	1.41%
8TB124	3.32E+02	0	0	4.65E+03	0	0	0	0	0	0	0	0	4.99E+03	3.34E+05	1.49%
8TB125	7.89E+02	0	0	0	0	0	0	0	0	0	0	0	7.91E+02	3.46E+05	0.23%
8TB126	3.46E+02	0	0	4.85E+03	0	0	0	0	0	0	0	0	5.20E+03	3.38E+05	1.54%
8TB127	5.62E+02	0	0	5.13E+03	0	0	0	0	0	0	0	0	5.69E+03	3.38E+05	1.68%
8TB128	0	0	0	0	0	0	0	0	0	0	0	0	6.11E+00	3.51E+05	0.00%
8TB129	0	0	0	3.78E+03	0	0	0	0	0	0	0	0	3.78E+03	3.33E+05	1.14%
8TB130	1.86E+02	0	0	5.24E+03	0	0	0	0	0	0	0	0	5.43E+03	3.39E+05	1.60%
8TB131	0	0	0	4.82E+03	0	0	0	0	0	0	0	0	4.82E+03	3.37E+05	1.43%
8TB132	9.12E+01	0	0	4.33E+03	0	0	0	0	0	0	0	0	4.43E+03	3.36E+05	1.32%
8TB133	0	0	0	4.93E+03	0	0	0	0	0	0	0	0	4.94E+03	3.36E+05	1.47%
6TB001	6.08E+02	0	0	0	0	0	0	0	0	0	0	0	9.49E+02	4.28E+05	0.22%
6TB002	0	0	0	0	0	0	0	0	0	0	0	0	0	4.32E+05	0.00%
6TB003	0	0	0	0	0	0	0	0	0	0	0	0	2.93E+02	4.32E+05	0.07%
6TB004	5.94E+02	0	0	0	0	0	0	0	0	0	0	0	5.94E+02	4.27E+05	0.14%
6TB005	6.26E+02	0	0	0	0	0	0	0	0	0	0	0	6.26E+02	4.28E+05	0.15%
6TB006	0	0	0	0	0	0	0	0	0	0	0	0	3.77E+02	4.31E+05	0.09%
6TB007	0	0	0	0	0	0	0	0	0	0	0	0	0	4.14E+05	0.00%
6TB008	0	0	0	0	0	0	0	0	0	0	0	0	0	4.17E+05	0.00%
6TB009	0	0	0	0	0	0	0	0	0	0	0	0	0	4.17E+05	0.00%
6TB010	0	0	0	0	0	0	0	0	0	0	0	0	0	4.14E+05	0.00%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO4 2CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
6TB011	0	0	0	0	0	0	0	0	0	0	0	0	0	4.15E+05	0.00%
6TB012	0	0	0	0	0	0	0	0	0	0	0	0	0	4.16E+05	0.00%
6TB013	5.67E+02	0	0	0	0	0	0	0	0	0	8.13E-02	0	1.30E+03	4.44E+05	0.29%
6TB014	0	0	0	0	0	0	0	0	0	0	2.85E-01	0	1.56E+01	4.48E+05	0.00%
6TB015	0	0	0	0	0	0	0	0	0	0	2.01E-01	0	6.83E+02	4.48E+05	0.15%
6TB016	5.49E+02	0	0	0	0	0	0	0	0	0	1.10E-01	0	5.64E+02	4.43E+05	0.13%
6TB017	5.79E+02	0	0	0	0	0	0	0	0	0	2.82E-01	0	5.95E+02	4.44E+05	0.13%
6TB018	0	0	0	0	0	0	0	0	0	0	0	0	7.74E+02	4.47E+05	0.17%
6TB019	0	0	0	0	0	0	0	0	0	0	1.19E+00	0	1.62E+01	4.30E+05	0.00%
6TB020	0	0	0	0	0	0	0	0	0	0	1.21E+00	3.58E-02	1.64E+01	4.32E+05	0.00%
6TB021	0	0	0	0	0	0	0	0	0	0	1.21E+00	7.30E-04	1.64E+01	4.33E+05	0.00%
6TB022	0	0	0	0	0	0	0	0	0	0	1.18E+00	0	1.61E+01	4.29E+05	0.00%
6TB023	0	0	0	0	0	0	0	0	0	0	1.21E+00	3.78E-02	1.63E+01	4.30E+05	0.00%
6TB024	0	0	0	0	0	0	0	0	0	0	1.18E+00	0	1.62E+01	4.32E+05	0.00%
6TB025	0	0	0	0	0	0	0	0	0	0	2.40E-01	0	7.04E+00	4.31E+05	0.00%
6TB026	0	0	0	0	0	0	0	0	0	0	0	0	1.47E+02	4.32E+05	0.03%
6TB027	0	0	0	7.46E+02	0	0	0	0	0	0	6.80E-02	0	7.52E+02	4.30E+05	0.18%
6TB028	0	0	0	0	0	0	0	0	0	0	0	0	6.82E-01	4.26E+05	0.00%
6TB029	0	0	0	1.80E+03	0	0	0	0	0	0	0	0	1.81E+03	4.29E+05	0.42%
6TB030	0	0	0	0	0	0	0	0	0	0	0	0	2.21E+00	4.28E+05	0.00%
6TB031	0	0	0	1.57E+03	0	0	0	0	0	0	0	0	1.57E+03	4.28E+05	0.37%
6TB032	4.47E+02	0	0	1.80E+03	0	0	0	0	0	0	0	0	2.25E+03	4.27E+05	0.53%
6TB033	1.92E+01	0	0	0	0	0	0	0	0	0	0	0	1.92E+01	4.27E+05	0.00%
6TB034	0	0	0	0	0	0	0	0	0	0	0	0	6.65E-01	4.24E+05	0.00%
6TB035	3.92E+02	0	0	1.20E+03	0	0	0	0	0	0	0	0	1.59E+03	4.26E+05	0.37%
6TB036	0	0	0	8.34E+01	0	0	0	0	0	0	8.46E-02	0	8.96E+01	4.30E+05	0.02%
6TB037	1.04E+02	0	0	1.13E+02	0	0	0	0	0	0	0	0	2.22E+02	4.30E+05	0.05%
6TB038	2.80E+02	0	0	0	0	0	0	0	0	0	0	0	2.80E+02	4.26E+05	0.07%
6TB039	1.68E+02	0	0	0	0	0	0	0	0	0	0	0	3.70E+02	4.40E+05	0.08%
6TB040	0	0	0	2.14E+03	0	0	0	0	0	0	5.40E-01	0	2.16E+03	4.35E+05	0.50%
6TB041	6.62E+00	0	0	3.05E+03	0	0	0	0	0	0	1.27E-01	0	3.13E+03	4.35E+05	0.72%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
6TB042	0	0	0	1.70E+03	0	0	0	0	0	0	1.15E-01	0	1.71E+03	4.34E+05	0.39%
6TB043	0	0	0	3.71E+03	0	0	0	0	0	0	3.36E-01	0	3.92E+03	4.37E+05	0.90%
6TB044	0	0	0	7.66E+02	0	0	0	0	0	0	5.08E-01	0	7.77E+02	4.33E+05	0.18%
6TB045	0	0	0	7.79E+02	0	0	0	0	0	0	5.82E-01	0	7.91E+02	4.35E+05	0.18%
6TB046	0	0	0	2.19E+03	0	0	0	0	0	0	8.01E-01	0	2.20E+03	4.34E+05	0.51%
6TB047	5.01E+02	0	0	0	0	0	0	0	0	0	0	0	6.71E+02	4.35E+05	0.15%
6TB048	0	0	0	5.55E+02	0	0	0	0	0	0	6.18E-01	0	5.67E+02	4.33E+05	0.13%
6TB049	0	0	0	1.10E+03	0	0	0	0	0	0	9.35E-01	0	1.12E+03	4.37E+05	0.26%
6TB050	4.31E+02	0	0	0	0	0	0	0	0	0	1.46E-02	0	5.86E+02	4.41E+05	0.13%
6TB051	4.59E+02	0	0	0	0	0	0	0	0	0	1.63E-01	0	7.04E+02	4.40E+05	0.16%
6TB052	0	0	0	0	0	0	0	0	0	0	3.46E-01	0	7.88E+00	4.30E+05	0.00%
6TB053	0	0	0	0	0	0	0	0	0	0	0	0	5.51E-01	4.18E+05	0.00%
6TB054	0	0	0	0	0	0	0	0	0	0	2.43E-01	0	6.23E+00	4.28E+05	0.00%
6TB055	0	0	0	0	0	0	0	0	0	0	3.45E-01	0	5.44E+00	4.23E+05	0.00%
6TB056	0	0	0	0	0	0	0	0	0	0	0	0	2.14E+00	4.23E+05	0.00%
6TB057	0	0	0	0	0	0	0	0	0	0	3.83E-01	0	6.30E+00	4.25E+05	0.00%
6TB058	0	0	0	0	0	0	0	0	0	0	1.08E-01	0	3.76E+00	4.24E+05	0.00%
6TB059	0	0	0	0	0	0	0	0	0	0	3.24E-01	0	7.87E+00	4.31E+05	0.00%
6TB060	0	0	0	0	0	0	0	0	0	0	0	0	1.36E+00	4.22E+05	0.00%
6TB061	0	0	0	0	0	0	0	0	0	0	2.92E-01	0	4.61E+00	4.20E+05	0.00%
6TB062	0	0	0	0	0	0	0	0	0	0	4.89E-01	0	7.16E+00	4.25E+05	0.00%
6TB063	0	0	0	0	0	0	0	0	0	0	8.02E-03	0	2.12E+00	4.22E+05	0.00%
6TB064	0	0	0	0	0	0	0	0	0	0	4.92E-02	0	2.10E+00	4.19E+05	0.00%
6TB065	0	0	0	0	0	0	0	0	0	0	2.40E-01	0	5.43E+00	4.25E+05	0.00%
6TB066	0	0	0	0	0	0	0	0	0	0	9.53E-01	0	1.46E+01	4.35E+05	0.00%
6TB067	0	0	0	0	0	0	0	0	0	0	8.29E-01	0	1.21E+01	4.31E+05	0.00%
6TB068	0	0	0	0	0	0	0	0	0	0	9.97E-01	0	1.47E+01	4.34E+05	0.00%
6TB069	0	0	0	0	0	0	0	0	0	0	8.04E-01	0	1.29E+01	4.34E+05	0.00%
6TB070	0	0	0	0	0	0	0	0	0	0	1.06E+00	0	1.46E+01	4.30E+05	0.00%
6TB071	0	0	0	0	0	0	0	0	0	0	5.03E-01	0	8.80E+00	4.30E+05	0.00%
6TB072	0	0	0	0	0	0	0	0	0	0	6.24E-01	0	9.63E+00	4.28E+05	0.00%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
6TB073	0	0	0	0	0	0	0	0	0	0	6.70E-01	0	9.62E+00	4.25E+05	0.00%
6TB074	0	0	0	0	0	0	0	0	0	0	9.31E-01	0	1.54E+01	4.38E+05	0.00%
6TB075	0	0	0	0	0	0	0	0	0	0	5.52E-01	0	8.83E+00	4.28E+05	0.00%
6TB076	0	0	0	0	0	0	0	0	0	0	8.67E-01	0	1.29E+01	4.30E+05	0.00%
6TB077	0	0	0	0	0	0	0	0	0	0	1.00E+00	0	1.47E+01	4.34E+05	0.00%
6TB078	0	0	0	0	0	0	0	0	0	0	1.03E+00	0	1.46E+01	4.32E+05	0.00%
6TB079	0	0	0	0	0	0	0	0	0	0	3.20E-01	0	7.90E+00	4.32E+05	0.00%
6TB080	0	0	0	0	0	0	0	0	0	0	3.74E-01	0	8.67E+00	4.31E+05	0.00%
6TB081	0	0	0	0	0	0	0	0	0	0	1.13E+00	0	1.55E+01	4.31E+05	0.00%
6TB082	0	0	0	0	0	0	0	0	0	0	5.22E-01	0	9.57E+00	4.30E+05	0.00%
6TB083	0	0	0	0	0	0	0	0	0	0	9.86E-01	0	1.54E+01	4.36E+05	0.00%
6TB084	0	0	0	0	0	0	0	0	0	0	7.77E-01	0	1.13E+01	4.27E+05	0.00%
6TB085	0	0	0	0	0	0	0	0	0	0	8.80E-01	0	1.38E+01	4.35E+05	0.00%
6TB086	0	0	0	0	0	0	0	0	0	0	7.32E-01	0	1.13E+01	4.30E+05	0.00%
6TB087	0	0	0	0	0	0	0	0	0	0	7.81E-01	0	1.13E+01	4.29E+05	0.00%
6TB088	0	0	0	0	0	0	0	0	0	0	1.10E+00	0	1.63E+01	4.36E+05	0.00%
6TB089	0	0	0	0	0	0	0	0	0	0	9.39E-01	0	1.54E+01	4.37E+05	0.00%
6TB090	0	0	0	0	0	0	0	0	0	0	9.81E-01	0	1.39E+01	4.32E+05	0.00%
6TB091	0	0	0	0	0	0	0	0	0	0	5.20E-01	0	9.62E+00	4.32E+05	0.00%
6TB092	0	0	0	0	0	0	0	0	0	0	7.11E-01	0	1.13E+01	4.32E+05	0.00%
6TB093	0	0	0	0	0	0	0	0	0	0	1.14E+00	0	1.64E+01	4.36E+05	0.00%
6TB094	0	0	0	0	0	0	0	0	0	0	3.40E-01	0	5.45E+00	4.23E+05	0.00%
6TB095	0	0	0	0	0	0	0	0	0	0	0	0	2.11E+00	4.20E+05	0.00%
6TB096	0	0	0	0	0	0	0	0	0	0	1.97E-01	0	3.79E+00	4.22E+05	0.00%
6TB097	0	0	0	0	0	0	0	0	0	0	2.94E-01	0	5.44E+00	4.23E+05	0.00%
6TB098	0	0	0	0	0	0	0	0	0	0	0	0	0	4.18E+05	0.00%
6TB099	0	0	0	0	0	0	0	0	0	0	9.43E-02	0	4.57E+00	4.26E+05	0.00%
6TB100	0	0	0	0	0	0	0	0	0	0	2.89E-03	0	2.94E+00	4.25E+05	0.00%
6TB101	0	0	0	0	0	0	0	0	0	0	0	0	6.23E-01	4.23E+05	0.00%
6TB102	0	0	0	0	0	0	0	0	0	0	5.31E-01	0	7.94E+00	4.25E+05	0.00%
6TB103	0	0	0	0	0	0	0	0	0	0	0	0	2.94E+00	4.25E+05	0.00%

Table 38. Predicted Solids for Envelope B Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2CO3.1H2O	NA2U2O7	NA3FSO4	NA6SO42CO3	NAF	NAFPO4.19H2O	NANO3	NAPHOH.12H2O	NASGEL.15.5H2O	NIOH2	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
6TB104	0	0	0	0	0	0	0	0	0	0	0	0	0	4.23E+05	0.00%
6TB105	0	0	0	0	0	0	0	0	0	0	2.16E-01	0	3.83E+00	4.22E+05	0.00%
6TB106	0	0	0	0	0	0	0	0	0	0	8.25E-02	0	2.13E+00	4.21E+05	0.00%
6TB107	0	0	0	8.47E+02	0	0	0	0	0	0	2.58E-01	0	8.55E+02	4.28E+05	0.20%
6TB108	4.76E+02	0	0	0	0	0	0	0	0	0	2.24E-01	0	4.91E+02	4.44E+05	0.11%
6TB109	0	0	0	1.66E+03	0	0	0	0	0	0	3.53E-01	0	1.67E+03	4.29E+05	0.39%
6TB110	5.21E+02	0	0	0	0	0	0	0	0	0	0	0	5.30E+02	4.39E+05	0.12%
6TB111	1.04E+02	0	0	1.93E+03	0	0	0	0	0	0	6.07E-01	0	2.05E+03	4.33E+05	0.47%
6TB112	2.38E+02	0	0	2.51E+03	0	0	0	0	0	0	6.54E-02	0	2.76E+03	4.33E+05	0.64%
6TB113	6.48E+01	0	0	2.71E+03	0	0	0	0	0	0	4.52E-01	0	2.78E+03	4.32E+05	0.64%
6TB114	0	0	0	1.11E+03	0	0	0	0	0	0	3.18E-01	0	1.12E+03	4.30E+05	0.26%
6TB115	0	0	0	2.48E+03	0	0	0	0	0	0	5.80E-01	0	2.49E+03	4.35E+05	0.57%
6TB116	0	0	0	0	0	0	0	0	0	0	0	0	1.84E+02	4.42E+05	0.04%
6TB117	1.86E+02	0	0	0	0	0	0	0	0	0	0	0	3.54E+02	4.40E+05	0.08%
6TB118	0	0	0	3.35E+03	0	0	0	0	0	0	5.55E-01	0	3.37E+03	4.33E+05	0.78%
6TB119	0	0	0	3.18E+03	0	0	0	0	0	0	3.62E-01	0	3.19E+03	4.35E+05	0.73%
6TB120	0	0	0	2.32E+03	0	0	0	0	0	0	3.21E-01	0	2.33E+03	4.31E+05	0.54%
6TB121	0	0	0	5.08E+02	0	0	0	0	0	0	0	0	5.10E+02	4.26E+05	0.12%
6TB122	3.71E+02	0	0	1.70E+03	0	0	0	0	0	0	0	0	2.08E+03	4.25E+05	0.49%
6TB123	2.56E+02	0	0	7.33E+02	0	0	0	0	0	0	0	0	9.91E+02	4.27E+05	0.23%
6TB124	7.13E+01	0	0	1.26E+03	0	0	0	0	0	0	0	0	1.33E+03	4.25E+05	0.31%
6TB125	6.24E+02	0	0	0	0	0	0	0	0	0	0	0	6.26E+02	4.31E+05	0.15%
6TB126	1.18E+02	0	0	1.43E+03	0	0	0	0	0	0	6.93E-02	0	1.56E+03	4.30E+05	0.36%
6TB127	3.60E+02	0	0	1.77E+03	0	0	0	0	0	0	0	0	2.14E+03	4.29E+05	0.50%
6TB128	0	0	0	0	0	0	0	0	0	0	0	0	2.10E+02	4.37E+05	0.05%
6TB129	0	0	0	1.11E+02	0	0	0	0	0	0	0	0	1.12E+02	4.24E+05	0.03%
6TB130	0	0	0	1.84E+03	0	0	0	0	0	0	0	0	1.85E+03	4.31E+05	0.43%
6TB131	0	0	0	1.62E+03	0	0	0	0	0	0	0	0	1.62E+03	4.28E+05	0.38%
6TB132	0	0	0	1.00E+03	0	0	0	0	0	0	0	0	1.00E+03	4.27E+05	0.23%
6TB133	0	0	0	1.83E+03	0	0	0	0	0	0	0	0	1.83E+03	4.26E+05	0.43%

Table 39. Predicted Solids for Envelope C Simulations – Part 1

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROS OD	MGF2	MGOH2
10TC001	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC002	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC003	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC004	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC005	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC006	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC007	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC008	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC009	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC010	0	66	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC011	2	15	10	0	0	0	0	2.04E+03	0	2.89E+02	0	4.71E+02	4.11E+03	0	3.74E+02
10TC012	2	15	10	0	0	0	0	2.03E+03	0	2.88E+02	0	4.29E+02	3.74E+03	0	3.72E+02
10TC013	2	15	10	0	0	0	0	2.01E+03	0	2.86E+02	0	4.94E+02	4.31E+03	2.01E+02	3.70E+02
10TC014	2	15	10	0	0	0	0	1.99E+03	0	2.83E+02	0	4.61E+02	4.02E+03	0	3.65E+02
10TC015	2	15	10	0	0	0	0	2.01E+03	0	2.85E+02	0	5.17E+02	4.51E+03	5.30E+02	3.68E+02
10TC016	2	66	10	0	3.47E+00	0	0	2.04E+03	0	2.89E+02	2.64E+02	0	0	1.23E+03	3.74E+02
10TC017	2	66	10	0	3.47E+00	0	0	2.03E+03	0	2.88E+02	2.59E+02	0	0	1.04E+03	3.72E+02
10TC018	2	66	10	0	3.55E+00	0	0	2.01E+03	0	2.86E+02	2.64E+02	0	0	1.28E+03	3.70E+02
10TC019	2	66	10	0	3.42E+00	0	0	1.99E+03	0	2.83E+02	2.58E+02	0	0	1.13E+03	3.65E+02
10TC020	2	66	10	0	3.53E+00	0	0	2.01E+03	0	2.85E+02	2.66E+02	0	0	1.36E+03	3.68E+02
10TC021	0.672	37.3125	10	0	2.52E-01	4.87E+02	2.10E+02	1.48E+02	0	9.70E+01	0	0	0	0	1.25E+02
10TC022	0.344	18.1875	10	0	0	0	0	3.50E+02	0	4.97E+01	0	0	0	0	6.42E+01
10TC023	0.484	35.3203	10	0	0	0	0	2.23E+02	2.53E+02	6.98E+01	0	0	0	0	9.02E+01
10TC024	0.719	17.3906	10	0	0	0	0	7.30E+02	0	1.04E+02	0	0	0	0	1.34E+02
10TC025	0	30.9375	10	0	0	0	0	0	0	0	0	0	0	0	0
10TC026	0.641	21.7734	10	0	1.78E-01	0	0	8.54E+01	5.36E+02	9.27E+01	0	0	0	0	1.20E+02
10TC027	0.359	29.7422	10	0	0	0	0	9.79E+01	2.49E+02	5.15E+01	0	0	0	0	6.65E+01
10TC028	1.891	29.3438	10	0	3.05E+00	2.32E+02	2.23E+03	0	0	2.73E+02	3.09E+01	2.75E+02	2.40E+03	0	3.52E+02
10TC029	1.047	16.1953	10	0	0	0	0	1.06E+03	0	1.51E+02	0	1.09E+02	9.55E+02	0	1.95E+02

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
10TC030	1.563	16.5938	10	0	0	0	0	1.58E+03	0	0	2.25E+02	0	2.72E+02	2.37E+03	0	2.90E+02
10TC031	1.578	22.1719	10	0	2.45E+00	0	2.05E+03	0	0	0	2.28E+02	0	2.35E+02	2.05E+03	0	2.94E+02
10TC032	1.547	35.7188	10	0	2.38E+00	4.63E+02	1.57E+03	0	0	0	2.24E+02	3.40E+01	0	0	0	2.89E+02
10TC033	1.313	30.5391	10	0	1.85E+00	2.25E+02	1.49E+03	0	0	0	1.89E+02	0	0	0	0	2.45E+02
10TC034	1.672	15.3984	10	0	0	0	0	1.70E+03	0	0	2.41E+02	0	3.41E+02	2.97E+03	0	3.11E+02
10TC035	0.875	48.8672	10	0	8.60E-01	0	0	8.88E+02	0	0	1.26E+02	3.35E+01	0	0	0	1.63E+02
10TC036	0.125	57.2344	10	0	0	0	0	1.27E+02	0	0	1.81E+01	0	0	0	0	2.33E+01
10TC037	0.797	53.6484	10	0	6.74E-01	0	0	8.05E+02	0	0	1.14E+02	4.93E+01	0	0	0	1.48E+02
10TC038	0.094	47.6719	10	0	0	0	0	9.46E+01	0	0	1.35E+01	0	0	0	0	1.75E+01
10TC039	0.625	66	10	0	2.39E-01	0	0	6.34E+02	0	0	9.02E+01	6.70E+01	0	0	0	1.16E+02
10TC040	0.266	49.6641	10	0	0	0	0	2.70E+02	0	0	3.84E+01	0	0	0	0	4.96E+01
10TC041	0.938	53.25	10	0	9.78E-01	0	0	9.52E+02	0	0	1.35E+02	6.99E+01	0	0	0	1.75E+02
10TC042	1.438	63.2109	10	0	2.19E+00	0	0	1.45E+03	0	0	2.07E+02	1.80E+02	0	0	3.46E+02	2.67E+02
10TC043	1.953	41.6953	10	0	3.31E+00	0	0	1.98E+03	0	0	2.82E+02	1.85E+02	1.76E+01	1.53E+02	7.47E+02	3.64E+02
10TC044	1.938	54.8438	10	0	3.34E+00	0	0	1.97E+03	0	0	2.79E+02	2.29E+02	0	0	7.76E+02	3.61E+02
10TC045	1.484	65.2031	10	0	2.25E+00	0	0	1.51E+03	0	0	2.14E+02	1.89E+02	0	0	4.30E+02	2.77E+02
10TC046	1.719	55.2422	10	0	2.83E+00	0	0	1.75E+03	0	0	2.48E+02	1.99E+02	0	0	4.69E+02	3.20E+02
10TC047	1.188	54.4453	10	0	1.62E+00	0	0	1.21E+03	0	0	1.72E+02	1.26E+02	0	0	0	2.22E+02
10TC048	1.391	48.4688	10	0	2.04E+00	0	0	1.41E+03	0	0	2.01E+02	1.10E+02	0	0	0	2.59E+02
10TC049	1.984	57.6328	10	0	3.40E+00	0	0	2.00E+03	0	0	2.85E+02	2.43E+02	0	0	9.11E+02	3.68E+02
10TC050	0.156	40.1016	10	0	0	0	0	1.58E+02	0	0	2.26E+01	0	0	0	0	2.91E+01
10TC051	0.547	16.9922	10	0	0	0	0	5.56E+02	0	0	7.91E+01	0	0	0	0	1.02E+02
10TC052	0.219	34.9219	10	0	0	0	0	1.13E+02	0	1.02E+02	3.15E+01	0	0	0	0	4.07E+01
10TC053	0.203	22.5703	10	0	0	0	0	2.04E+02	0	0	2.93E+01	0	0	0	0	3.78E+01
10TC054	0.922	34.125	10	0	9.37E-01	3.08E+02	9.00E+02	0	0	0	1.33E+02	0	0	0	0	1.72E+02
10TC055	0.828	28.5469	10	0	6.51E-01	0	0	0	0	7.96E+02	1.20E+02	0	0	0	0	1.54E+02
10TC056	0.703	39.7031	10	0	3.85E-01	5.39E+02	3.91E+02	0	0	0	1.01E+02	0	0	0	0	1.31E+02

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
10TC057	1.234	20.9766	10	0	1.66E+00	0	1.48E+03	9.43E+01	0	0	1.78E+02	0	1.34E+02	1.17E+03	0	2.30E+02
10TC058	1.859	30.1406	10	0	3.02E+00	2.11E+02	2.21E+03	0	0	0	2.68E+02	6.44E+00	2.05E+02	1.79E+03	0	3.46E+02
10TC059	1.141	38.1094	10	0	1.42E+00	6.97E+02	7.99E+02	0	0	0	1.64E+02	0	0	0	0	2.11E+02
10TC060	1.109	21.375	10	0	1.31E+00	0	0	0	0	1.07E+03	1.60E+02	0	3.14E+01	2.74E+02	0	2.07E+02
10TC061	1.625	22.9688	10	0	2.54E+00	0	2.11E+03	0	0	0	2.35E+02	0	2.44E+02	2.13E+03	0	3.03E+02
10TC062	1.813	36.5156	10	0	2.97E+00	5.11E+02	1.87E+03	0	0	0	2.62E+02	8.70E+01	0	0	0	3.38E+02
10TC063	1.609	31.7344	10	0	2.51E+00	4.38E+02	1.66E+03	0	0	0	2.32E+02	0	0	0	0	2.99E+02
10TC064	0.984	62.0156	10	0	1.11E+00	0	0	9.99E+02	0	0	1.42E+02	1.12E+02	0	0	0	1.84E+02
10TC065	0.078	52.0547	10	0	0	0	0	7.89E+01	0	0	1.13E+01	0	0	0	0	1.46E+01
10TC066	0.781	60.4219	10	0	6.16E-01	0	0	7.89E+02	0	0	1.12E+02	7.46E+01	0	0	0	1.45E+02
10TC067	0.734	55.6406	10	0	4.87E-01	0	0	7.45E+02	0	0	1.06E+02	4.75E+01	0	0	0	1.37E+02
10TC068	0.297	60.8203	10	0	0	0	0	3.01E+02	0	0	4.29E+01	6.20E+00	0	0	0	5.54E+01
10TC069	0.75	42.4922	10	0	5.81E-01	0	0	7.61E+02	0	0	1.08E+02	0	0	0	0	1.40E+02
10TC070	0.531	44.8828	10	0	8.42E-02	0	0	5.39E+02	0	0	7.66E+01	0	0	0	0	9.89E+01
10TC071	1.766	46.4766	10	0	2.93E+00	0	0	1.79E+03	0	0	2.54E+02	1.84E+02	0	0	0	3.28E+02
10TC072	1.406	62.4141	10	0	2.10E+00	0	0	1.43E+03	0	0	2.03E+02	1.73E+02	0	0	2.50E+02	2.62E+02
10TC073	1.094	44.0859	10	0	1.37E+00	0	0	1.11E+03	0	0	1.57E+02	2.41E+01	0	0	0	2.03E+02
10TC074	1.75	43.2891	10	0	2.86E+00	0	0	1.78E+03	0	0	2.53E+02	1.40E+02	0	0	0	3.26E+02
10TC075	1.688	56.4375	10	0	2.78E+00	0	0	1.71E+03	0	0	2.43E+02	2.01E+02	0	0	0	3.14E+02
10TC076	1.156	61.2188	10	0	1.55E+00	0	0	1.18E+03	0	0	1.67E+02	1.38E+02	0	0	0	2.16E+02
10TC077	1.531	61.6172	10	0	2.36E+00	0	0	1.55E+03	0	0	2.20E+02	1.88E+02	0	0	3.84E+02	2.84E+02
10TC078	1	40.5	10	0	1.14E+00	0	0	1.01E+03	0	0	1.44E+02	0	0	0	0	1.85E+02
10TC079	1.328	43.6875	10	0	1.87E+00	0	0	1.33E+03	0	0	1.89E+02	6.85E+01	0	0	0	2.44E+02
10TC080	1.656	62.8125	10	0	2.66E+00	0	0	1.66E+03	0	0	2.36E+02	2.06E+02	0	0	0	3.05E+02
10TC081	1.516	45.6797	10	0	2.31E+00	0	0	1.52E+03	0	0	2.17E+02	1.32E+02	0	0	6.73E+01	2.80E+02
10TC082	1.281	63.6094	10	0	1.83E+00	0	0	1.29E+03	0	0	1.83E+02	1.58E+02	0	0	1.53E+02	2.36E+02
10TC083	2	50.0625	10	0	3.39E+00	0	0	1.99E+03	0	0	2.83E+02	2.25E+02	0	0	8.54E+02	3.65E+02
10TC084	1.359	59.2266	10	0	2.00E+00	0	0	1.36E+03	0	0	1.94E+02	1.58E+02	0	0	4.47E+01	2.50E+02
10TC085	1.641	51.2578	10	0	2.64E+00	0	0	1.66E+03	0	0	2.36E+02	1.83E+02	0	0	0	3.05E+02
10TC086	0.109	51.6563	10	0	0	0	0	1.09E+02	0	0	1.56E+01	0	0	0	0	2.01E+01

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
10TC087	0.953	64.8047	10	0	9.96E-01	0	0	9.53E+02	0	0	1.36E+02	1.10E+02	0	0	0	1.75E+02
10TC088	0.438	64.4063	10	0	0	0	0	4.41E+02	0	0	6.28E+01	3.87E+01	0	0	0	8.11E+01
10TC089	0.422	58.8281	10	0	0	0	0	4.24E+02	0	0	6.03E+01	1.61E+01	0	0	0	7.79E+01
10TC090	0.453	45.2813	10	0	0	0	0	4.53E+02	0	0	6.45E+01	0	0	0	0	8.32E+01
10TC091	0.688	50.4609	10	0	4.39E-01	0	0	6.90E+02	0	0	9.81E+01	2.59E+01	0	0	0	1.27E+02
10TC092	0.328	65.6016	10	0	0	0	0	3.29E+02	0	0	4.69E+01	2.33E+01	0	0	0	6.06E+01
10TC093	1.125	32.1328	10	0	1.33E+00	2.89E+02	1.15E+03	0	0	0	1.59E+02	0	0	0	0	2.06E+02
10TC094	1.875	23.7656	10	0	3.00E+00	2.45E+01	2.39E+03	0	0	0	2.68E+02	0	3.08E+02	2.69E+03	0	3.45E+02
10TC095	1.203	27.3516	10	0	1.57E+00	0	1.56E+03	0	0	0	1.73E+02	0	0	0	0	2.23E+02
10TC096	1.906	33.3281	10	0	3.07E+00	4.81E+02	1.99E+03	0	0	0	2.72E+02	1.24E+02	2.67E+02	2.33E+03	0	3.52E+02
10TC097	1.375	15	10	0	0	0	0	1.38E+03	0	0	1.96E+02	0	2.37E+02	2.07E+03	0	2.53E+02
10TC098	1.734	31.3359	10	0	2.69E+00	4.44E+02	1.78E+03	0	0	0	2.45E+02	0	9.01E+01	7.86E+02	0	3.17E+02
10TC099	1.063	27.75	10	0	1.19E+00	1.14E+02	1.08E+03	1.39E+02	0	0	1.52E+02	0	0	0	0	1.96E+02
10TC100	0.563	17.7891	10	0	0	0	0	5.68E+02	0	0	8.07E+01	0	0	0	0	1.04E+02
10TC101	0.047	39.3047	10	0	0	0	0	4.55E+01	0	0	6.68E+00	0	0	0	0	8.63E+00
10TC102	0.063	26.1563	10	0	0	0	0	6.19E+01	0	0	8.91E+00	0	0	0	0	1.15E+01
10TC103	0.516	15.7969	10	0	0	0	0	5.18E+02	0	0	7.37E+01	0	0	0	0	9.51E+01
10TC104	0.281	25.7578	10	0	0	0	0	2.80E+02	0	0	3.99E+01	0	0	0	0	5.15E+01
10TC105	0.813	26.5547	10	0	5.14E-01	0	0	1.27E+02	0	6.51E+02	1.16E+02	0	0	0	0	1.50E+02
10TC106	0.609	32.5313	10	0	1.15E-01	2.15E+02	1.35E+02	3.39E+02	0	0	8.66E+01	0	0	0	0	1.12E+02
10TC107	0.016	23.3672	10	0	0	0	0	1.51E+01	0	0	2.25E+00	0	0	0	0	2.90E+00
10TC108	1.844	40.8984	10	0	2.99E+00	0	0	1.84E+03	0	0	2.62E+02	1.42E+02	0	0	3.60E+02	3.38E+02
10TC109	1.453	64.0078	10	0	2.17E+00	0	0	1.45E+03	0	0	2.06E+02	1.78E+02	0	0	2.04E+02	2.66E+02
10TC110	1.781	46.0781	10	0	2.91E+00	0	0	1.79E+03	0	0	2.54E+02	1.88E+02	0	0	0	3.28E+02
10TC111	1.797	58.4297	10	0	3.00E+00	0	0	1.81E+03	0	0	2.58E+02	2.20E+02	0	0	7.18E+02	3.32E+02
10TC112	1.078	46.875	10	0	1.30E+00	0	0	1.08E+03	0	0	1.54E+02	4.41E+01	0	0	0	1.99E+02
10TC113	1.172	52.4531	10	0	1.55E+00	0	0	1.17E+03	0	0	1.67E+02	1.11E+02	0	0	0	2.15E+02
10TC114	1.297	41.2969	10	0	1.82E+00	0	0	1.30E+03	0	0	1.86E+02	4.60E+01	0	0	0	2.40E+02
10TC115	0.766	60.0234	10	0	5.41E-01	0	0	7.69E+02	0	0	1.09E+02	6.96E+01	0	0	0	1.41E+02
10TC116	0.141	50.8594	10	0	0	0	0	1.41E+02	0	0	2.01E+01	0	0	0	0	2.60E+01

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROS OD	MGF2	MGOH2
10TC117	0.859	42.8906	10	0	8.24E-01	0	0	8.69E+02	0	0	1.24E+02	0	0	0	0	1.60E+02
10TC118	0.891	59.625	10	0	9.01E-01	0	0	8.92E+02	0	0	1.27E+02	9.27E+01	0	0	0	1.64E+02
10TC119	0.375	58.0313	10	0	0	0	0	3.75E+02	0	0	5.33E+01	2.75E+00	0	0	0	6.89E+01
10TC120	0.188	44.4844	10	0	0	0	0	1.87E+02	0	0	2.66E+01	0	0	0	0	3.43E+01
10TC121	0.391	49.2656	10	0	0	0	0	3.94E+02	0	0	5.60E+01	0	0	0	0	7.23E+01
10TC122	1.016	18.9844	10	0	0	0	0	1.02E+03	0	0	1.45E+02	0	4.16E+01	3.63E+02	0	1.87E+02
10TC123	1.922	28.9453	10	0	3.07E+00	2.83E+02	2.20E+03	0	0	0	2.75E+02	0	2.41E+02	2.11E+03	0	3.54E+02
10TC124	1.219	20.5781	10	0	1.61E+00	0	1.58E+03	0	0	0	1.75E+02	0	1.21E+02	1.06E+03	0	2.26E+02
10TC125	1.266	25.3594	10	0	1.70E+00	0	1.62E+03	0	0	0	1.81E+02	0	7.75E+01	6.76E+02	0	2.33E+02
10TC126	1.703	20.1797	10	0	2.68E+00	0	2.17E+03	0	0	0	2.42E+02	0	2.81E+02	2.45E+03	0	3.12E+02
10TC127	1.25	38.5078	10	0	1.70E+00	7.36E+02	8.98E+02	0	0	0	1.79E+02	0	0	0	0	2.31E+02
10TC128	1.469	36.1172	10	0	2.16E+00	4.63E+02	1.44E+03	0	0	0	2.10E+02	1.87E+01	0	0	0	2.71E+02
10TC129	0.234	34.5234	10	0	0	0	0	2.09E+02	0	2.43E+01	3.36E+01	0	0	0	0	4.34E+01
10TC130	0.594	18.5859	10	0	0	0	0	5.96E+02	0	0	8.47E+01	0	0	0	0	1.09E+02
10TC131	0.906	36.9141	10	0	8.54E-01	4.26E+02	7.58E+02	0	0	0	1.30E+02	0	0	0	0	1.68E+02
10TC132	0.25	37.7109	10	0	0	0	0	2.48E+02	0	0	3.56E+01	0	0	0	0	4.59E+01
10TC133	0.313	24.5625	10	0	0	0	0	3.13E+02	0	0	4.47E+01	0	0	0	0	5.78E+01
10TC134	0.844	19.7813	10	0	0	0	0	8.47E+02	0	0	1.20E+02	0	0	0	0	1.55E+02
10TC135	0.469	19.3828	10	0	0	0	0	4.73E+02	0	0	6.73E+01	0	0	0	0	8.69E+01
8TC001	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC002	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC003	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC004	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC005	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC006	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC007	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC008	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC009	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC010	0	66	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC011	2	15	8	1.51E+03	1.05E+00	0	0	2.04E+03	0	0	2.89E+02	0	5.12E+02	4.47E+03	0	3.74E+02

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROS OD	MGF2	MGOH2
8TC012	2	15	8	1.16E+03	8.13E-01	0	0	2.03E+03	0	0	2.88E+02	0	4.87E+02	4.25E+03	0	3.72E+02
8TC013	2	15	8	0	8.57E-01	0	0	2.01E+03	0	0	2.86E+02	0	5.28E+02	4.61E+03	0	3.70E+02
8TC014	2	15	8	0	1.20E+00	0	0	1.99E+03	0	0	2.83E+02	0	5.03E+02	4.39E+03	0	3.65E+02
8TC015	2	15	8	0	3.62E-01	0	0	2.01E+03	0	0	2.85E+02	5.80E+01	5.40E+02	4.71E+03	1.01E+02	3.68E+02
8TC016	2	66	8	0	3.44E+00	0	0	2.03E+03	0	0	2.89E+02	2.68E+02	0	0	2.48E+02	3.74E+02
8TC017	2	66	8	0	3.48E+00	0	0	2.03E+03	0	0	2.88E+02	2.65E+02	0	0	7.29E+01	3.72E+02
8TC018	2	66	8	0	3.37E+00	0	0	2.01E+03	0	0	2.86E+02	2.67E+02	0	0	3.15E+02	3.70E+02
8TC019	2	66	8	0	3.32E+00	0	0	1.99E+03	0	0	2.83E+02	2.62E+02	0	0	1.33E+02	3.65E+02
8TC020	2	66	8	0	3.32E+00	0	0	2.01E+03	0	0	2.85E+02	2.68E+02	0	0	4.00E+02	3.68E+02
8TC021	0.672	37.3125	8	0	0	0	0	6.81E+02	0	0	9.70E+01	0	0	0	0	1.25E+02
8TC022	0.344	18.1875	8	0	0	0	0	3.50E+02	0	0	4.97E+01	0	0	0	0	6.42E+01
8TC023	0.484	35.3203	8	0	0	0	0	4.90E+02	0	0	6.98E+01	0	0	0	0	9.02E+01
8TC024	0.719	17.3906	8	0	0	0	0	7.30E+02	0	0	1.04E+02	0	5.47E+01	4.77E+02	0	1.34E+02
8TC025	0	30.9375	8	0	0	0	0	0	0	0	0	0	0	0	0	0
8TC026	0.641	21.7734	8	0	1.85E-01	0	0	6.51E+02	0	0	9.27E+01	0	0	0	0	1.20E+02
8TC027	0.359	29.7422	8	0	0	0	0	3.62E+02	0	0	5.15E+01	0	0	0	0	6.65E+01
8TC028	1.891	29.3438	8	0	1.96E+00	0	9.08E+01	1.85E+03	0	0	2.73E+02	1.23E+02	3.85E+02	3.36E+03	0	3.52E+02
8TC029	1.047	16.1953	8	0	3.66E-01	0	0	1.06E+03	0	0	1.51E+02	0	1.91E+02	1.66E+03	0	1.95E+02
8TC030	1.563	16.5938	8	0	7.47E-01	0	0	1.58E+03	0	0	2.25E+02	0	3.46E+02	3.02E+03	0	2.90E+02
8TC031	1.578	22.1719	8	0	1.88E+00	0	0	1.60E+03	0	0	2.28E+02	0	3.28E+02	2.86E+03	0	2.94E+02
8TC032	1.547	35.7188	8	0	1.47E+00	8.24E+01	1.18E+02	1.42E+03	0	0	2.24E+02	1.05E+02	1.36E+02	1.19E+03	0	2.89E+02
8TC033	1.313	30.5391	8	0	1.28E+00	0	0	1.33E+03	0	0	1.89E+02	0	7.02E+01	6.12E+02	0	2.45E+02
8TC034	1.672	15.3984	8	5.85E+01	7.34E-01	0	0	1.70E+03	0	0	2.41E+02	0	4.01E+02	3.49E+03	0	3.11E+02
8TC035	0.875	48.8672	8	0	0	0	0	8.89E+02	0	0	1.26E+02	6.67E+01	0	0	0	1.63E+02
8TC036	0.125	57.2344	8	0	0	0	0	1.27E+02	0	0	1.81E+01	0	0	0	0	2.33E+01
8TC037	0.797	53.6484	8	0	3.84E-02	0	0	8.05E+02	0	0	1.14E+02	7.15E+01	0	0	0	1.48E+02
8TC038	0.094	47.6719	8	0	0	0	0	9.48E+01	0	0	1.35E+01	0	0	0	0	1.75E+01
8TC039	0.625	66	8	0	5.55E-02	0	0	6.34E+02	0	0	9.02E+01	7.37E+01	0	0	0	1.16E+02
8TC040	0.266	49.6641	8	0	0	0	0	2.70E+02	0	0	3.84E+01	0	0	0	0	4.96E+01
8TC041	0.938	53.25	8	0	4.02E-01	0	0	9.53E+02	0	0	1.35E+02	9.20E+01	0	0	0	1.75E+02

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
8TC042	1.438	63.2109	8	0	1.95E+00	0	0	1.45E+03	0	0	2.07E+02	1.86E+02	0	0	0	2.67E+02
8TC043	1.953	41.6953	8	0	1.19E+00	0	0	1.99E+03	0	0	2.82E+02	2.18E+02	2.36E+02	2.06E+03	4.99E+01	3.64E+02
8TC044	1.938	54.8438	8	0	2.86E+00	0	0	1.97E+03	0	0	2.79E+02	2.43E+02	0	0	0	3.61E+02
8TC045	1.484	65.2031	8	0	2.14E+00	0	0	1.51E+03	0	0	2.14E+02	1.94E+02	0	0	0	2.77E+02
8TC046	1.719	55.2422	8	0	2.36E+00	0	0	1.75E+03	0	0	2.48E+02	2.13E+02	0	0	0	3.20E+02
8TC047	1.188	54.4453	8	0	9.28E-01	0	0	1.21E+03	0	0	1.72E+02	1.40E+02	0	0	0	2.22E+02
8TC048	1.391	48.4688	8	0	1.19E+00	0	0	1.41E+03	0	0	2.01E+02	1.41E+02	0	0	0	2.59E+02
8TC049	1.984	57.6328	8	0	3.11E+00	0	0	2.00E+03	0	0	2.85E+02	2.54E+02	0	0	4.59E+01	3.68E+02
8TC050	0.156	40.1016	8	0	0	0	0	1.58E+02	0	0	2.26E+01	0	0	0	0	2.91E+01
8TC051	0.547	16.9922	8	0	0	0	0	5.56E+02	0	0	7.91E+01	0	2.20E+01	1.92E+02	0	1.02E+02
8TC052	0.219	34.9219	8	0	0	0	0	2.21E+02	0	0	3.15E+01	0	0	0	0	4.07E+01
8TC053	0.203	22.5703	8	0	0	0	0	2.05E+02	0	0	2.93E+01	0	0	0	0	3.78E+01
8TC054	0.922	34.125	8	0	4.50E-01	0	0	9.35E+02	0	0	1.33E+02	0	0	0	0	1.72E+02
8TC055	0.828	28.5469	8	0	4.54E-01	0	0	8.40E+02	0	0	1.20E+02	0	0	0	0	1.54E+02
8TC056	0.703	39.7031	8	0	0	0	0	7.12E+02	0	0	1.01E+02	0	0	0	0	1.31E+02
8TC057	1.234	20.9766	8	0	1.47E+00	0	0	1.25E+03	0	0	1.78E+02	0	2.28E+02	1.99E+03	0	2.30E+02
8TC058	1.859	30.1406	8	0	2.05E+00	0	1.76E+02	1.74E+03	0	0	2.68E+02	1.05E+02	3.39E+02	2.95E+03	0	3.46E+02
8TC059	1.141	38.1094	8	0	9.12E-01	0	0	1.15E+03	0	0	1.64E+02	3.70E+01	0	0	0	2.11E+02
8TC060	1.109	21.375	8	0	1.26E+00	0	0	1.13E+03	0	0	1.60E+02	0	1.39E+02	1.21E+03	0	2.07E+02
8TC061	1.625	22.9688	8	0	1.89E+00	0	0	1.65E+03	0	0	2.35E+02	0	3.39E+02	2.96E+03	0	3.03E+02
8TC062	1.813	36.5156	8	0	2.18E+00	1.43E+02	7.92E+02	1.12E+03	0	0	2.62E+02	1.51E+02	2.08E+02	1.81E+03	0	3.38E+02
8TC063	1.609	31.7344	8	0	1.72E+00	7.29E+01	2.46E+01	1.55E+03	0	0	2.32E+02	3.97E+01	1.64E+02	1.43E+03	0	2.99E+02
8TC064	0.984	62.0156	8	0	8.16E-01	0	0	9.99E+02	0	0	1.42E+02	1.20E+02	0	0	0	1.84E+02
8TC065	0.078	52.0547	8	0	0	0	0	7.90E+01	0	0	1.13E+01	0	0	0	0	1.46E+01
8TC066	0.781	60.4219	8	0	2.85E-01	0	0	7.89E+02	0	0	1.12E+02	8.63E+01	0	0	0	1.45E+02
8TC067	0.734	55.6406	8	0	3.18E-02	0	0	7.45E+02	0	0	1.06E+02	6.73E+01	0	0	0	1.37E+02
8TC068	0.297	60.8203	8	0	0	0	0	3.01E+02	0	0	4.29E+01	1.92E+01	0	0	0	5.54E+01
8TC069	0.75	42.4922	8	0	0	0	0	7.61E+02	0	0	1.08E+02	1.75E+01	0	0	0	1.40E+02
8TC070	0.531	44.8828	8	0	0	0	0	5.39E+02	0	0	7.66E+01	0	0	0	0	9.89E+01
8TC071	1.766	46.4766	8	0	1.44E+00	0	0	1.79E+03	0	0	2.54E+02	2.06E+02	5.52E+01	4.82E+02	0	3.28E+02

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
8TC072	1.406	62.4141	8	0	1.87E+00	0	0	1.43E+03	0	0	2.03E+02	1.81E+02	0	0	0	2.62E+02
8TC073	1.094	44.0859	8	0	3.49E-02	0	0	1.11E+03	0	0	1.57E+02	7.26E+01	0	0	0	2.03E+02
8TC074	1.75	43.2891	8	0	1.40E+00	0	0	1.78E+03	0	0	2.53E+02	1.79E+02	3.40E+00	2.97E+01	0	3.26E+02
8TC075	1.688	56.4375	8	0	2.29E+00	0	0	1.71E+03	0	0	2.43E+02	2.13E+02	0	0	0	3.14E+02
8TC076	1.156	61.2188	8	0	1.19E+00	0	0	1.18E+03	0	0	1.67E+02	1.46E+02	0	0	0	2.16E+02
8TC077	1.531	61.6172	8	0	2.14E+00	0	0	1.55E+03	0	0	2.20E+02	1.96E+02	0	0	0	2.84E+02
8TC078	1	40.5	8	0	0	0	0	1.01E+03	0	0	1.44E+02	3.85E+01	0	0	0	1.85E+02
8TC079	1.328	43.6875	8	0	4.01E-01	0	0	1.33E+03	0	0	1.89E+02	1.09E+02	0	0	0	2.44E+02
8TC080	1.656	62.8125	8	0	2.47E+00	0	0	1.66E+03	0	0	2.36E+02	2.13E+02	0	0	0	3.05E+02
8TC081	1.516	45.6797	8	0	8.78E-01	0	0	1.52E+03	0	0	2.17E+02	1.59E+02	0	0	0	2.80E+02
8TC082	1.281	63.6094	8	0	1.55E+00	0	0	1.29E+03	0	0	1.83E+02	1.64E+02	0	0	0	2.36E+02
8TC083	2	50.0625	8	0	2.39E+00	0	0	1.99E+03	0	0	2.83E+02	2.41E+02	0	0	1.73E+01	3.65E+02
8TC084	1.359	59.2266	8	0	1.57E+00	0	0	1.36E+03	0	0	1.94E+02	1.67E+02	0	0	0	2.50E+02
8TC085	1.641	51.2578	8	0	1.75E+00	0	0	1.66E+03	0	0	2.36E+02	1.99E+02	0	0	0	3.05E+02
8TC086	0.109	51.6563	8	0	0	0	0	1.09E+02	0	0	1.56E+01	0	0	0	0	2.01E+01
8TC087	0.953	64.8047	8	0	8.03E-01	0	0	9.53E+02	0	0	1.36E+02	1.16E+02	0	0	0	1.75E+02
8TC088	0.438	64.4063	8	0	0	0	0	4.41E+02	0	0	6.28E+01	4.62E+01	0	0	0	8.11E+01
8TC089	0.422	58.8281	8	0	0	0	0	4.24E+02	0	0	6.03E+01	3.16E+01	0	0	0	7.79E+01
8TC090	0.453	45.2813	8	0	0	0	0	4.53E+02	0	0	6.45E+01	0	0	0	0	8.32E+01
8TC091	0.688	50.4609	8	0	0	0	0	6.90E+02	0	0	9.81E+01	5.04E+01	0	0	0	1.27E+02
8TC092	0.328	65.6016	8	0	0	0	0	3.29E+02	0	0	4.69E+01	3.12E+01	0	0	0	6.06E+01
8TC093	1.125	32.1328	8	0	8.78E-01	0	0	1.12E+03	0	0	1.59E+02	0	0	0	0	2.06E+02
8TC094	1.875	23.7656	8	0	2.13E+00	0	0	1.88E+03	0	0	2.68E+02	3.18E+00	4.00E+02	3.49E+03	0	3.45E+02
8TC095	1.203	27.3516	8	0	1.09E+00	0	0	1.21E+03	0	0	1.73E+02	0	1.34E+02	1.16E+03	0	2.23E+02
8TC096	1.906	33.3281	8	0	1.82E+00	9.00E+01	2.78E+02	1.63E+03	0	0	2.72E+02	1.74E+02	3.72E+02	3.24E+03	0	3.52E+02
8TC097	1.375	15	8	0	8.33E-01	0	0	1.38E+03	0	0	1.96E+02	0	3.00E+02	2.62E+03	0	2.53E+02
8TC098	1.734	31.3359	8	0	1.79E+00	0	0	1.72E+03	0	0	2.45E+02	7.27E+01	2.39E+02	2.09E+03	0	3.17E+02
8TC099	1.063	27.75	8	0	9.17E-01	0	0	1.07E+03	0	0	1.52E+02	0	7.35E+01	6.41E+02	0	1.96E+02
8TC100	0.563	17.7891	8	0	0	0	0	5.68E+02	0	0	8.07E+01	0	4.17E+00	3.64E+01	0	1.04E+02
8TC101	0.047	39.3047	8	0	0	0	0	4.62E+01	0	0	6.68E+00	0	0	0	0	8.63E+00

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
8TC102	0.063	26.1563	8	0	0	0	0	6.23E+01	0	0	8.91E+00	0	0	0	0	1.15E+01
8TC103	0.516	15.7969	8	0	0	0	0	5.18E+02	0	0	7.37E+01	0	1.72E+01	1.50E+02	0	9.51E+01
8TC104	0.281	25.7578	8	0	0	0	0	2.80E+02	0	0	3.99E+01	0	0	0	0	5.15E+01
8TC105	0.813	26.5547	8	0	4.72E-01	0	0	8.14E+02	0	0	1.16E+02	0	0	0	0	1.50E+02
8TC106	0.609	32.5313	8	0	0	0	0	6.09E+02	0	0	8.66E+01	0	0	0	0	1.12E+02
8TC107	0.016	23.3672	8	0	0	0	0	1.54E+01	0	0	2.25E+00	0	0	0	0	2.90E+00
8TC108	1.844	40.8984	8	0	9.23E-01	0	0	1.84E+03	0	0	2.62E+02	1.81E+02	1.22E+02	1.06E+03	0	3.38E+02
8TC109	1.453	64.0078	8	0	2.00E+00	0	0	1.45E+03	0	0	2.06E+02	1.84E+02	0	0	0	2.66E+02
8TC110	1.781	46.0781	8	0	1.32E+00	0	0	1.79E+03	0	0	2.54E+02	2.07E+02	9.43E+01	8.23E+02	0	3.28E+02
8TC111	1.797	58.4297	8	0	2.63E+00	0	0	1.81E+03	0	0	2.58E+02	2.29E+02	0	0	0	3.32E+02
8TC112	1.078	46.875	8	0	2.89E-01	0	0	1.08E+03	0	0	1.54E+02	8.25E+01	0	0	0	1.99E+02
8TC113	1.172	52.4531	8	0	6.96E-01	0	0	1.17E+03	0	0	1.67E+02	1.28E+02	0	0	0	2.15E+02
8TC114	1.297	41.2969	8	0	0	0	0	1.31E+03	0	0	1.86E+02	9.63E+01	0	0	0	2.40E+02
8TC115	0.766	60.0234	8	0	2.36E-01	0	0	7.69E+02	0	0	1.09E+02	8.18E+01	0	0	0	1.41E+02
8TC116	0.141	50.8594	8	0	0	0	0	1.41E+02	0	0	2.01E+01	0	0	0	0	2.60E+01
8TC117	0.859	42.8906	8	0	0	0	0	8.69E+02	0	0	1.24E+02	3.55E+01	0	0	0	1.60E+02
8TC118	0.891	59.625	8	0	4.50E-01	0	0	8.92E+02	0	0	1.27E+02	1.02E+02	0	0	0	1.64E+02
8TC119	0.375	58.0313	8	0	0	0	0	3.75E+02	0	0	5.33E+01	2.12E+01	0	0	0	6.89E+01
8TC120	0.188	44.4844	8	0	0	0	0	1.87E+02	0	0	2.66E+01	0	0	0	0	3.43E+01
8TC121	0.391	49.2656	8	0	0	0	0	3.94E+02	0	0	5.60E+01	2.09E+00	0	0	0	7.23E+01
8TC122	1.016	18.9844	8	0	0	0	0	1.02E+03	0	0	1.45E+02	0	1.40E+02	1.22E+03	0	1.87E+02
8TC123	1.922	28.9453	8	0	2.10E+00	0	2.54E+02	1.73E+03	0	0	2.75E+02	9.43E+01	3.63E+02	3.17E+03	0	3.54E+02
8TC124	1.219	20.5781	8	0	1.41E+00	0	0	1.23E+03	0	0	1.75E+02	0	2.16E+02	1.88E+03	0	2.26E+02
8TC125	1.266	25.3594	8	0	1.24E+00	0	0	1.27E+03	0	0	1.81E+02	0	1.89E+02	1.65E+03	0	2.33E+02
8TC126	1.703	20.1797	8	0	2.30E+00	0	0	1.70E+03	0	0	2.42E+02	0	3.61E+02	3.15E+03	0	3.12E+02
8TC127	1.25	38.5078	8	0	1.05E+00	0	0	1.26E+03	0	0	1.79E+02	5.62E+01	0	0	0	2.31E+02
8TC128	1.469	36.1172	8	0	1.35E+00	0	0	1.48E+03	0	0	2.10E+02	8.81E+01	7.95E+01	6.93E+02	0	2.71E+02
8TC129	0.234	34.5234	8	0	0	0	0	2.36E+02	0	0	3.36E+01	0	0	0	0	4.34E+01
8TC130	0.594	18.5859	8	0	0	0	0	5.96E+02	0	0	8.47E+01	0	9.09E+00	7.93E+01	0	1.09E+02
8TC131	0.906	36.9141	8	0	4.10E-01	0	0	9.14E+02	0	0	1.30E+02	0	0	0	0	1.68E+02

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROS OD	MGF2	MGOH2
8TC132	0.25	37.7109	8	0	0	0	0	2.50E+02	0	0	3.56E+01	0	0	0	0	4.59E+01
8TC133	0.313	24.5625	8	0	0	0	0	3.14E+02	0	0	4.47E+01	0	0	0	0	5.78E+01
8TC134	0.844	19.7813	8	0	0	0	0	8.47E+02	0	0	1.20E+02	0	6.39E+01	5.58E+02	0	1.55E+02
8TC135	0.469	19.3828	8	0	0	0	0	4.73E+02	0	0	6.73E+01	0	0	0	0	8.69E+01
6TC001	0	15	6	3.71E+02	0	0	0	0	0	0	0	0	0	0	0	0
6TC002	0	15	6	5.15E+02	0	0	0	0	0	0	0	0	0	0	0	0
6TC003	0	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC004	0	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC005	0	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC006	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC007	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC008	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC009	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC010	0	66	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC011	2	15	6	3.18E+03	3.82E+00	0	0	2.04E+03	0	0	2.89E+02	0	5.37E+02	4.68E+03	0	3.74E+02
6TC012	2	15	6	3.39E+03	3.80E+00	0	0	2.03E+03	0	0	2.88E+02	0	5.20E+02	4.54E+03	0	3.72E+02
6TC013	2	15	6	0	3.74E+00	0	0	2.01E+03	0	0	2.86E+02	9.38E+01	5.47E+02	4.77E+03	0	3.70E+02
6TC014	2	15	6	0	3.73E+00	0	0	1.99E+03	0	0	2.83E+02	1.77E+01	5.29E+02	4.61E+03	0	3.65E+02
6TC015	2	15	6	0	3.66E+00	0	0	2.01E+03	0	0	2.85E+02	1.36E+02	5.52E+02	4.82E+03	0	3.68E+02
6TC016	2	66	6	0	2.56E+00	0	0	2.03E+03	0	0	2.89E+02	2.71E+02	0	0	0	3.74E+02
6TC017	2	66	6	0	2.59E+00	0	0	2.03E+03	0	0	2.88E+02	2.68E+02	0	0	0	3.72E+02
6TC018	2	66	6	0	2.53E+00	0	0	2.01E+03	0	0	2.86E+02	2.69E+02	0	0	0	3.70E+02
6TC019	2	66	6	0	2.56E+00	0	0	1.99E+03	0	0	2.83E+02	2.64E+02	0	0	0	3.65E+02
6TC020	2	66	6	0	2.36E+00	0	0	2.00E+03	0	0	2.85E+02	2.69E+02	1.18E+02	1.03E+03	0	3.68E+02
6TC021	0.672	37.3125	6	0	4.71E-02	0	0	6.82E+02	0	0	9.70E+01	2.41E+00	0	0	0	1.25E+02
6TC022	0.344	18.1875	6	4.04E+02	0	0	0	3.50E+02	0	0	4.97E+01	0	5.50E+00	4.79E+01	0	6.42E+01
6TC023	0.484	35.3203	6	0	0	0	0	4.91E+02	0	0	6.98E+01	0	0	0	0	9.02E+01
6TC024	0.719	17.3906	6	1.15E+03	7.93E-01	0	0	7.30E+02	0	0	1.04E+02	0	1.14E+02	9.91E+02	0	1.34E+02
6TC025	0	30.9375	6	0	0	0	0	0	0	0	0	0	0	0	0	0
6TC026	0.641	21.7734	6	1.47E+02	4.43E-01	0	0	6.52E+02	0	0	9.27E+01	0	6.49E+01	5.67E+02	0	1.20E+02

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
6TC027	0.359	29.7422	6	0	0	0	0	3.62E+02	0	0	5.15E+01	0	0	0	0	6.65E+01
6TC028	1.891	29.3438	6	1.32E+03	2.91E+00	0	0	1.92E+03	0	0	2.73E+02	1.69E+02	4.40E+02	3.84E+03	0	3.52E+02
6TC029	1.047	16.1953	6	1.79E+03	1.60E+00	0	0	1.06E+03	0	0	1.51E+02	0	2.32E+02	2.03E+03	0	1.95E+02
6TC030	1.563	16.5938	6	1.50E+03	2.76E+00	0	0	1.58E+03	0	0	2.25E+02	0	3.85E+02	3.36E+03	0	2.90E+02
6TC031	1.578	22.1719	6	1.39E+03	2.59E+00	0	0	1.60E+03	0	0	2.28E+02	2.79E+01	3.75E+02	3.27E+03	0	2.94E+02
6TC032	1.547	35.7188	6	0	1.93E+00	0	0	1.57E+03	0	0	2.24E+02	1.45E+02	2.54E+02	2.22E+03	0	2.89E+02
6TC033	1.313	30.5391	6	0	1.70E+00	0	0	1.33E+03	0	0	1.89E+02	4.54E+01	1.90E+02	1.66E+03	0	2.45E+02
6TC034	1.672	15.3984	6	2.04E+03	3.04E+00	0	0	1.70E+03	0	0	2.41E+02	0	4.31E+02	3.76E+03	0	3.11E+02
6TC035	0.875	48.8672	6	0	2.74E-01	0	0	8.88E+02	0	0	1.26E+02	8.54E+01	0	0	0	1.63E+02
6TC036	0.125	57.2344	6	0	0	0	0	1.26E+02	0	0	1.81E+01	0	0	0	0	2.33E+01
6TC037	0.797	53.6484	6	0	1.32E-01	0	0	8.04E+02	0	0	1.14E+02	8.43E+01	0	0	0	1.48E+02
6TC038	0.094	47.6719	6	0	0	0	0	9.43E+01	0	0	1.35E+01	0	0	0	0	1.75E+01
6TC039	0.625	66	6	0	0	0	0	6.33E+02	0	0	9.02E+01	7.76E+01	0	0	0	1.16E+02
6TC040	0.266	49.6641	6	0	0	0	0	2.69E+02	0	0	3.84E+01	0	0	0	0	4.96E+01
6TC041	0.938	53.25	6	0	3.47E-01	0	0	9.52E+02	0	0	1.35E+02	1.05E+02	0	0	0	1.75E+02
6TC042	1.438	63.2109	6	0	1.44E+00	0	0	1.45E+03	0	0	2.07E+02	1.89E+02	0	0	0	2.67E+02
6TC043	1.953	41.6953	6	0	2.14E+00	0	0	1.98E+03	0	0	2.82E+02	2.36E+02	3.54E+02	3.09E+03	0	3.64E+02
6TC044	1.938	54.8438	6	0	2.01E+00	0	0	1.97E+03	0	0	2.79E+02	2.51E+02	0	0	0	3.61E+02
6TC045	1.484	65.2031	6	0	1.65E+00	0	0	1.51E+03	0	0	2.14E+02	1.97E+02	0	0	0	2.77E+02
6TC046	1.719	55.2422	6	0	1.66E+00	0	0	1.74E+03	0	0	2.48E+02	2.21E+02	0	0	0	3.20E+02
6TC047	1.188	54.4453	6	0	7.66E-01	0	0	1.21E+03	0	0	1.72E+02	1.48E+02	0	0	0	2.22E+02
6TC048	1.391	48.4688	6	0	1.18E+00	0	0	1.41E+03	0	0	2.01E+02	1.59E+02	0	0	0	2.59E+02
6TC049	1.984	57.6328	6	0	2.12E+00	0	0	2.00E+03	0	0	2.85E+02	2.59E+02	0	0	0	3.68E+02
6TC050	0.156	40.1016	6	0	0	0	0	1.58E+02	0	0	2.26E+01	0	0	0	0	2.91E+01
6TC051	0.547	16.9922	6	9.26E+02	3.74E-01	0	0	5.56E+02	0	0	7.91E+01	0	7.51E+01	6.56E+02	0	1.02E+02
6TC052	0.219	34.9219	6	0	0	0	0	2.21E+02	0	0	3.15E+01	0	0	0	0	4.07E+01
6TC053	0.203	22.5703	6	0	0	0	0	2.06E+02	0	0	2.93E+01	0	0	0	0	3.78E+01
6TC054	0.922	34.125	6	0	6.43E-01	0	0	9.36E+02	0	0	1.33E+02	3.59E+01	5.62E+01	4.90E+02	0	1.72E+02
6TC055	0.828	28.5469	6	0	6.76E-01	0	0	8.41E+02	0	0	1.20E+02	0	4.31E+01	3.76E+02	0	1.54E+02
6TC056	0.703	39.7031	6	0	3.14E-02	0	0	7.13E+02	0	0	1.01E+02	2.13E+01	0	0	0	1.31E+02

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
6TC057	1.234	20.9766	6	1.34E+03	1.87E+00	0	0	1.25E+03	0	0	1.78E+02	0	2.76E+02	2.41E+03	0	2.30E+02
6TC058	1.859	30.1406	6	0	2.83E+00	0	0	1.88E+03	0	0	2.68E+02	1.62E+02	4.15E+02	3.62E+03	0	3.46E+02
6TC059	1.141	38.1094	6	0	1.07E+00	0	0	1.15E+03	0	0	1.64E+02	8.13E+01	2.85E+01	2.48E+02	0	2.11E+02
6TC060	1.109	21.375	6	9.59E+02	1.60E+00	0	0	1.13E+03	0	0	1.60E+02	0	2.10E+02	1.83E+03	0	2.07E+02
6TC061	1.625	22.9688	6	1.64E+03	2.66E+00	0	0	1.65E+03	0	0	2.35E+02	4.76E+01	3.86E+02	3.36E+03	0	3.03E+02
6TC062	1.813	36.5156	6	0	2.44E+00	0	0	1.84E+03	0	0	2.62E+02	1.87E+02	3.26E+02	2.85E+03	0	3.38E+02
6TC063	1.609	31.7344	6	0	2.29E+00	0	0	1.63E+03	0	0	2.32E+02	1.08E+02	2.79E+02	2.43E+03	0	2.99E+02
6TC064	0.984	62.0156	6	0	5.72E-01	0	0	9.98E+02	0	0	1.42E+02	1.25E+02	0	0	0	1.84E+02
6TC065	0.078	52.0547	6	0	0	0	0	7.84E+01	0	0	1.13E+01	0	0	0	0	1.46E+01
6TC066	0.781	60.4219	6	0	1.19E-01	0	0	7.88E+02	0	0	1.12E+02	9.30E+01	0	0	0	1.45E+02
6TC067	0.734	55.6406	6	0	4.29E-03	0	0	7.44E+02	0	0	1.06E+02	7.86E+01	0	0	0	1.37E+02
6TC068	0.297	60.8203	6	0	0	0	0	3.00E+02	0	0	4.29E+01	2.64E+01	0	0	0	5.54E+01
6TC069	0.75	42.4922	6	0	6.14E-02	0	0	7.60E+02	0	0	1.08E+02	4.82E+01	0	0	0	1.40E+02
6TC070	0.531	44.8828	6	0	0	0	0	5.38E+02	0	0	7.66E+01	1.96E+01	0	0	0	9.89E+01
6TC071	1.766	46.4766	6	0	1.69E+00	0	0	1.79E+03	0	0	2.54E+02	2.18E+02	2.13E+02	1.86E+03	0	3.28E+02
6TC072	1.406	62.4141	6	0	1.42E+00	0	0	1.43E+03	0	0	2.03E+02	1.85E+02	0	0	0	2.62E+02
6TC073	1.094	44.0859	6	0	7.59E-01	0	0	1.11E+03	0	0	1.57E+02	1.00E+02	0	0	0	2.03E+02
6TC074	1.75	43.2891	6	0	1.83E+00	0	0	1.78E+03	0	0	2.53E+02	2.01E+02	1.81E+02	1.58E+03	0	3.26E+02
6TC075	1.688	56.4375	6	0	1.61E+00	0	0	1.71E+03	0	0	2.43E+02	2.19E+02	0	0	0	3.14E+02
6TC076	1.156	61.2188	6	0	8.43E-01	0	0	1.17E+03	0	0	1.67E+02	1.50E+02	0	0	0	2.16E+02
6TC077	1.531	61.6172	6	0	1.56E+00	0	0	1.55E+03	0	0	2.20E+02	2.00E+02	0	0	0	2.84E+02
6TC078	1	40.5	6	0	6.16E-01	0	0	1.01E+03	0	0	1.44E+02	7.40E+01	0	0	0	1.85E+02
6TC079	1.328	43.6875	6	0	1.08E+00	0	0	1.33E+03	0	0	1.89E+02	1.34E+02	0	0	0	2.44E+02
6TC080	1.656	62.8125	6	0	1.81E+00	0	0	1.66E+03	0	0	2.36E+02	2.17E+02	0	0	0	3.05E+02
6TC081	1.516	45.6797	6	0	1.32E+00	0	0	1.52E+03	0	0	2.17E+02	1.75E+02	8.51E+01	7.42E+02	0	2.80E+02
6TC082	1.281	63.6094	6	0	1.09E+00	0	0	1.29E+03	0	0	1.83E+02	1.67E+02	0	0	0	2.36E+02
6TC083	2	50.0625	6	0	2.05E+00	0	0	1.99E+03	0	0	2.83E+02	2.50E+02	1.67E+02	1.45E+03	0	3.65E+02
6TC084	1.359	59.2266	6	0	1.22E+00	0	0	1.36E+03	0	0	1.94E+02	1.73E+02	0	0	0	2.50E+02
6TC085	1.641	51.2578	6	0	1.53E+00	0	0	1.66E+03	0	0	2.36E+02	2.07E+02	5.66E+01	4.94E+02	0	3.05E+02
6TC086	0.109	51.6563	6	0	0	0	0	1.09E+02	0	0	1.56E+01	0	0	0	0	2.01E+01

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
6TC087	0.953	64.8047	6	0	5.15E-01	0	0	9.52E+02	0	0	1.36E+02	1.20E+02	0	0	0	1.75E+02
6TC088	0.438	64.4063	6	0	0	0	0	4.40E+02	0	0	6.28E+01	5.06E+01	0	0	0	8.11E+01
6TC089	0.422	58.8281	6	0	0	0	0	4.23E+02	0	0	6.03E+01	4.01E+01	0	0	0	7.79E+01
6TC090	0.453	45.2813	6	0	0	0	0	4.53E+02	0	0	6.45E+01	5.45E+00	0	0	0	8.32E+01
6TC091	0.688	50.4609	6	0	0	0	0	6.89E+02	0	0	9.81E+01	6.50E+01	0	0	0	1.27E+02
6TC092	0.328	65.6016	6	0	0	0	0	3.28E+02	0	0	4.69E+01	3.55E+01	0	0	0	6.06E+01
6TC093	1.125	32.1328	6	0	1.14E+00	0	0	1.12E+03	0	0	1.59E+02	3.31E+01	1.11E+02	9.68E+02	0	2.06E+02
6TC094	1.875	23.7656	6	0	3.11E+00	0	0	1.88E+03	0	0	2.68E+02	1.01E+02	4.54E+02	3.96E+03	0	3.45E+02
6TC095	1.203	27.3516	6	0	1.50E+00	0	0	1.22E+03	0	0	1.73E+02	2.10E+01	2.17E+02	1.90E+03	0	2.23E+02
6TC096	1.906	33.3281	6	0	2.61E+00	0	0	1.91E+03	0	0	2.72E+02	2.05E+02	4.36E+02	3.80E+03	0	3.52E+02
6TC097	1.375	15	6	0	2.37E+00	0	0	1.38E+03	0	0	1.96E+02	0	3.38E+02	2.95E+03	0	2.53E+02
6TC098	1.734	31.3359	6	0	2.47E+00	0	0	1.72E+03	0	0	2.45E+02	1.31E+02	3.31E+02	2.89E+03	0	3.17E+02
6TC099	1.063	27.75	6	0	1.19E+00	0	0	1.07E+03	0	0	1.52E+02	0	1.64E+02	1.43E+03	0	1.96E+02
6TC100	0.563	17.7891	6	0	3.75E-01	0	0	5.67E+02	0	0	8.07E+01	0	6.74E+01	5.88E+02	0	1.04E+02
6TC101	0.047	39.3047	6	0	0	0	0	4.64E+01	0	0	6.68E+00	0	0	0	0	8.63E+00
6TC102	0.063	26.1563	6	0	0	0	0	6.24E+01	0	0	8.91E+00	0	0	0	0	1.15E+01
6TC103	0.516	15.7969	6	0	3.15E-01	0	0	5.18E+02	0	0	7.37E+01	0	6.99E+01	6.10E+02	0	9.51E+01
6TC104	0.281	25.7578	6	0	0	0	0	2.81E+02	0	0	3.99E+01	0	0	0	0	5.15E+01
6TC105	0.813	26.5547	6	0	6.95E-01	0	0	8.15E+02	0	0	1.16E+02	0	5.61E+01	4.90E+02	0	1.50E+02
6TC106	0.609	32.5313	6	0	0	0	0	6.09E+02	0	0	8.66E+01	0	0	0	0	1.12E+02
6TC107	0.016	23.3672	6	0	0	0	0	1.55E+01	0	0	2.25E+00	0	0	0	0	2.90E+00
6TC108	1.844	40.8984	6	0	1.96E+00	0	0	1.84E+03	0	0	2.62E+02	2.04E+02	2.59E+02	2.26E+03	0	3.38E+02
6TC109	1.453	64.0078	6	0	1.46E+00	0	0	1.45E+03	0	0	2.06E+02	1.88E+02	0	0	0	2.66E+02
6TC110	1.781	46.0781	6	0	1.68E+00	0	0	1.79E+03	0	0	2.54E+02	2.18E+02	2.33E+02	2.03E+03	0	3.28E+02
6TC111	1.797	58.4297	6	0	1.92E+00	0	0	1.81E+03	0	0	2.58E+02	2.34E+02	0	0	0	3.32E+02
6TC112	1.078	46.875	6	0	7.14E-01	0	0	1.08E+03	0	0	1.54E+02	1.05E+02	0	0	0	1.99E+02
6TC113	1.172	52.4531	6	0	7.95E-01	0	0	1.17E+03	0	0	1.67E+02	1.38E+02	0	0	0	2.15E+02
6TC114	1.297	41.2969	6	0	1.17E+00	0	0	1.30E+03	0	0	1.86E+02	1.25E+02	5.01E+01	4.37E+02	0	2.40E+02
6TC115	0.766	60.0234	6	0	4.92E-02	0	0	7.68E+02	0	0	1.09E+02	8.90E+01	0	0	0	1.41E+02
6TC116	0.141	50.8594	6	0	0	0	0	1.41E+02	0	0	2.01E+01	0	0	0	0	2.60E+01

Table 39. Predicted Solids for Envelope C Simulations – Part 1 (cont'd)

Test ID	SBS/ Feed	Temp [°C]	Na M [mol/L]	ALOH3	BASO4	CA3PO42	CACO3	CAF2	CANC	CAOH2	CATIO3	CROH3	FEIIIOH3	HYDROSOD	MGF2	MGOH2
6TC117	0.859	42.8906	6	0	2.52E-01	0	0	8.69E+02	0	0	1.24E+02	6.49E+01	0	0	0	1.60E+02
6TC118	0.891	59.625	6	0	2.75E-01	0	0	8.91E+02	0	0	1.27E+02	1.08E+02	0	0	0	1.64E+02
6TC119	0.375	58.0313	6	0	0	0	0	3.74E+02	0	0	5.33E+01	3.09E+01	0	0	0	6.89E+01
6TC120	0.188	44.4844	6	0	0	0	0	1.86E+02	0	0	2.66E+01	0	0	0	0	3.43E+01
6TC121	0.391	49.2656	6	0	0	0	0	3.93E+02	0	0	5.60E+01	1.98E+01	0	0	0	7.23E+01
6TC122	1.016	18.9844	6	0	1.36E+00	0	0	1.02E+03	0	0	1.45E+02	0	1.99E+02	1.74E+03	0	1.87E+02
6TC123	1.922	28.9453	6	0	2.96E+00	0	0	1.93E+03	0	0	2.75E+02	1.57E+02	4.35E+02	3.80E+03	0	3.54E+02
6TC124	1.219	20.5781	6	0	1.82E+00	0	0	1.23E+03	0	0	1.75E+02	0	2.71E+02	2.37E+03	0	2.26E+02
6TC125	1.266	25.3594	6	0	1.69E+00	0	0	1.27E+03	0	0	1.81E+02	1.68E+01	2.56E+02	2.24E+03	0	2.33E+02
6TC126	1.703	20.1797	6	0	2.93E+00	0	0	1.70E+03	0	0	2.42E+02	8.53E-01	4.10E+02	3.57E+03	0	3.12E+02
6TC127	1.25	38.5078	6	0	1.28E+00	0	0	1.26E+03	0	0	1.79E+02	9.83E+01	5.31E+01	4.64E+02	0	2.31E+02
6TC128	1.469	36.1172	6	0	1.75E+00	0	0	1.48E+03	0	0	2.10E+02	1.29E+02	2.06E+02	1.80E+03	0	2.71E+02
6TC129	0.234	34.5234	6	0	0	0	0	2.36E+02	0	0	3.36E+01	0	0	0	0	4.34E+01
6TC130	0.594	18.5859	6	0	4.03E-01	0	0	5.96E+02	0	0	8.47E+01	0	7.28E+01	6.35E+02	0	1.09E+02
6TC131	0.906	36.9141	6	0	5.27E-01	0	0	9.15E+02	0	0	1.30E+02	4.52E+01	0	0	0	1.68E+02
6TC132	0.25	37.7109	6	0	0	0	0	2.50E+02	0	0	3.56E+01	0	0	0	0	4.59E+01
6TC133	0.313	24.5625	6	0	0	0	0	3.14E+02	0	0	4.47E+01	0	0	0	0	5.78E+01
6TC134	0.844	19.7813	6	0	9.72E-01	0	0	8.47E+02	0	0	1.20E+02	0	1.34E+02	1.17E+03	0	1.55E+02
6TC135	0.469	19.3828	6	0	9.74E-02	0	0	4.73E+02	0	0	6.73E+01	0	3.35E+01	2.93E+02	0	8.69E+01

Table 40. Predicted Solids for Envelope C Simulations – Part 2

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TC001	1.17E+03	0	0	0	1.69E+03	0	0	0	0	0	2.85E+03	6.29E+05	0.45%
10TC002	1.10E+03	0	0	0	1.74E+03	2.71E+03	0	0	0	0	5.55E+03	6.27E+05	0.89%
10TC003	1.14E+03	0	0	0	1.65E+03	0	0	0	0	0	2.79E+03	6.28E+05	0.44%
10TC004	1.06E+03	0	0	0	1.68E+03	0	0	0	0	0	2.75E+03	6.25E+05	0.44%
10TC005	1.14E+03	0	0	0	1.64E+03	0	0	0	0	0	2.78E+03	6.27E+05	0.44%
10TC006	6.73E+02	0	0	8.46E+03	9.86E+02	0	0	0	0	0	1.01E+04	5.91E+05	1.71%
10TC007	6.48E+02	0	0	9.84E+03	1.04E+03	0	0	0	0	0	1.15E+04	5.90E+05	1.95%
10TC008	6.29E+02	0	0	8.07E+03	9.55E+02	0	0	0	0	0	9.65E+03	5.89E+05	1.64%
10TC009	5.98E+02	0	0	7.84E+03	9.68E+02	0	0	0	0	0	9.40E+03	5.88E+05	1.60%
10TC010	6.39E+02	0	0	9.54E+03	9.48E+02	0	0	0	0	0	1.11E+04	5.87E+05	1.90%
10TC011	1.16E+03	0	0	0	1.23E+03	0	7.34E+03	5.53E+01	4.85E+00	4.48E+01	1.71E+04	7.11E+05	2.41%
10TC012	1.09E+03	0	0	0	1.28E+03	0	7.02E+03	5.40E+01	4.82E+00	4.09E+01	1.63E+04	7.10E+05	2.30%
10TC013	1.13E+03	0	0	0	1.06E+03	0	7.07E+03	5.54E+01	4.80E+00	4.72E+01	1.70E+04	7.09E+05	2.40%
10TC014	1.04E+03	0	0	0	1.19E+03	0	2.40E+03	5.40E+01	4.74E+00	4.38E+01	1.19E+04	7.06E+05	1.68%
10TC015	1.12E+03	0	0	0	7.78E+02	0	3.40E+03	5.58E+01	4.79E+00	4.93E+01	1.36E+04	7.09E+05	1.92%
10TC016	6.86E+02	0	0	2.70E+04	0	0	7.34E+03	5.80E+01	4.83E+00	5.56E+01	3.93E+04	6.46E+05	6.09%
10TC017	6.57E+02	0	0	2.82E+04	6.80E+01	0	6.96E+03	5.77E+01	4.79E+00	5.52E+01	4.00E+04	6.44E+05	6.21%
10TC018	6.37E+02	0	0	2.63E+04	0	0	7.12E+03	5.74E+01	4.77E+00	5.51E+01	3.84E+04	6.43E+05	5.97%
10TC019	5.62E+02	0	0	2.57E+04	0	0	2.53E+03	5.67E+01	4.72E+00	5.44E+01	3.29E+04	6.42E+05	5.13%
10TC020	6.09E+02	0	0	2.76E+04	0	0	3.42E+03	5.72E+01	4.77E+00	5.50E+01	3.60E+04	6.41E+05	5.62%
10TC021	9.98E+02	0	1.35E+04	0	0	0	1.01E+03	1.79E+01	1.56E+00	1.51E+01	1.66E+04	6.27E+05	2.65%
10TC022	1.15E+03	0	0	0	1.55E+03	0	0	5.31E+00	7.59E-01	0	3.17E+03	6.41E+05	0.49%
10TC023	9.95E+02	0	1.22E+04	0	0	0	0	1.21E+01	1.09E+00	8.82E+00	1.39E+04	6.23E+05	2.23%
10TC024	1.11E+03	0	0	0	1.51E+03	0	1.14E+03	1.58E+01	1.68E+00	2.97E+00	4.74E+03	6.57E+05	0.72%
10TC025	1.06E+03	0	1.01E+04	0	0	0	0	0	0	0	1.12E+04	6.10E+05	1.84%
10TC026	1.12E+03	0	1.40E+04	0	0	0	8.92E+02	1.49E+01	1.49E+00	6.74E+00	1.69E+04	6.35E+05	2.66%
10TC027	1.02E+03	0	1.21E+04	0	0	0	0	7.46E+00	7.74E-01	2.66E+00	1.36E+04	6.20E+05	2.19%
10TC028	1.08E+03	0	2.10E+04	0	0	0	6.92E+03	5.36E+01	4.57E+00	4.96E+01	3.49E+04	6.70E+05	5.20%
10TC029	1.14E+03	0	0	0	1.43E+03	0	2.90E+03	2.61E+01	2.49E+00	1.37E+01	8.00E+03	6.71E+05	1.19%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TC030	1.09E+03	0	0	0	1.33E+03	0	5.05E+03	4.13E+01	3.73E+00	2.99E+01	1.23E+04	6.91E+05	1.78%
10TC031	1.12E+03	0	1.96E+04	0	0	0	5.38E+03	4.34E+01	3.79E+00	3.70E+01	3.10E+04	6.65E+05	4.67%
10TC032	1.04E+03	0	1.90E+04	1.53E+03	0	0	5.30E+03	4.38E+01	3.72E+00	4.06E+01	2.95E+04	6.53E+05	4.52%
10TC033	1.04E+03	0	1.82E+04	0	0	0	3.88E+03	3.60E+01	3.13E+00	3.15E+01	2.53E+04	6.50E+05	3.89%
10TC034	1.14E+03	0	0	0	1.31E+03	0	5.72E+03	4.49E+01	4.03E+00	3.33E+01	1.38E+04	6.97E+05	1.98%
10TC035	8.90E+02	0	0	1.64E+04	1.16E+03	0	1.99E+03	2.46E+01	2.05E+00	2.27E+01	2.17E+04	6.24E+05	3.47%
10TC036	7.99E+02	0	0	9.10E+03	1.12E+03	0	0	3.04E+00	2.05E-01	2.02E+00	1.12E+04	5.99E+05	1.87%
10TC037	8.02E+02	0	0	1.51E+04	1.09E+03	0	1.36E+03	2.24E+01	1.84E+00	2.07E+01	1.95E+04	6.18E+05	3.16%
10TC038	8.89E+02	0	0	8.83E+03	1.31E+03	0	0	1.50E+00	1.18E-01	0	1.12E+04	6.03E+05	1.85%
10TC039	6.49E+02	0	0	1.55E+04	9.11E+02	0	9.71E+02	1.78E+01	1.43E+00	1.67E+01	1.90E+04	6.06E+05	3.14%
10TC040	8.97E+02	0	0	1.13E+04	1.23E+03	0	0	6.84E+00	5.52E-01	5.34E+00	1.38E+04	6.06E+05	2.27%
10TC041	8.46E+02	0	0	1.80E+04	1.09E+03	0	2.23E+03	2.66E+01	2.20E+00	2.48E+01	2.36E+04	6.22E+05	3.79%
10TC042	6.97E+02	0	0	2.21E+04	6.07E+02	0	4.72E+03	4.13E+01	3.42E+00	3.95E+01	3.06E+04	6.30E+05	4.87%
10TC043	9.88E+02	0	0	2.47E+04	5.73E+02	0	7.19E+03	5.61E+01	4.71E+00	5.33E+01	3.74E+04	6.60E+05	5.66%
10TC044	8.20E+02	0	0	2.63E+04	4.12E+02	0	6.84E+03	5.58E+01	4.65E+00	5.32E+01	3.81E+04	6.50E+05	5.87%
10TC045	6.79E+02	0	0	2.20E+04	5.16E+02	0	4.98E+03	4.28E+01	3.55E+00	4.09E+01	3.09E+04	6.31E+05	4.89%
10TC046	8.23E+02	0	0	2.50E+04	6.45E+02	0	5.89E+03	4.95E+01	4.12E+00	4.71E+01	3.55E+04	6.43E+05	5.52%
10TC047	8.59E+02	0	0	2.02E+04	1.01E+03	0	3.84E+03	3.41E+01	2.83E+00	3.23E+01	2.78E+04	6.28E+05	4.42%
10TC048	8.94E+02	0	0	2.16E+04	1.11E+03	0	4.30E+03	3.96E+01	3.31E+00	3.73E+01	3.00E+04	6.37E+05	4.71%
10TC049	7.74E+02	0	0	2.68E+04	2.60E+02	0	6.82E+03	5.69E+01	4.75E+00	5.44E+01	3.86E+04	6.48E+05	5.95%
10TC050	9.79E+02	0	0	9.19E+03	1.39E+03	0	0	2.88E+00	2.76E-01	5.18E-01	1.18E+04	6.10E+05	1.93%
10TC051	1.15E+03	0	0	0	1.52E+03	0	5.83E+02	1.12E+01	1.26E+00	0	4.01E+03	6.50E+05	0.62%
10TC052	9.95E+02	0	1.09E+04	0	0	0	0	3.92E+00	4.31E-01	3.57E-01	1.22E+04	6.14E+05	1.99%
10TC053	1.11E+03	0	1.10E+04	0	0	0	0	1.67E+00	4.04E-01	0	1.24E+04	6.21E+05	2.00%
10TC054	1.05E+03	0	1.59E+04	0	0	0	2.42E+03	2.53E+01	2.18E+00	2.22E+01	2.10E+04	6.36E+05	3.30%
10TC055	1.05E+03	0	1.55E+04	0	0	0	1.68E+03	2.15E+01	1.94E+00	1.64E+01	1.93E+04	6.36E+05	3.03%
10TC056	9.79E+02	0	1.45E+04	0	0	0	1.01E+03	1.90E+01	1.64E+00	1.64E+01	1.77E+04	6.25E+05	2.83%
10TC057	1.14E+03	0	1.71E+04	0	0	0	3.90E+03	3.31E+01	2.95E+00	2.60E+01	2.55E+04	6.55E+05	3.89%
10TC058	1.06E+03	0	2.07E+04	5.70E+02	0	0	6.56E+03	5.25E+01	4.48E+00	4.83E+01	3.40E+04	6.67E+05	5.09%
10TC059	9.61E+02	0	1.67E+04	0	0	0	2.94E+03	3.16E+01	2.69E+00	2.87E+01	2.25E+04	6.39E+05	3.53%
10TC060	1.10E+03	0	1.68E+04	0	0	0	3.09E+03	2.88E+01	2.64E+00	2.07E+01	2.27E+04	6.50E+05	3.50%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TC061	1.12E+03	0	1.98E+04	0	0	0	5.63E+03	4.50E+01	3.91E+00	3.90E+01	3.17E+04	6.66E+05	4.76%
10TC062	1.02E+03	0	2.01E+04	2.80E+03	0	0	6.42E+03	5.16E+01	4.38E+00	4.83E+01	3.35E+04	6.60E+05	5.07%
10TC063	1.02E+03	0	1.95E+04	7.04E+02	0	0	5.20E+03	4.48E+01	3.85E+00	4.06E+01	2.91E+04	6.58E+05	4.43%
10TC064	7.21E+02	0	0	1.76E+04	9.22E+02	0	2.73E+03	2.82E+01	2.32E+00	2.67E+01	2.35E+04	6.19E+05	3.79%
10TC065	8.65E+02	0	0	8.86E+03	1.21E+03	0	0	1.45E+00	8.74E-02	2.26E-01	1.10E+04	6.00E+05	1.84%
10TC066	7.15E+02	0	0	1.59E+04	9.84E+02	0	1.34E+03	2.21E+01	1.80E+00	2.07E+01	2.01E+04	6.13E+05	3.28%
10TC067	7.95E+02	0	0	1.50E+04	1.08E+03	0	1.16E+03	2.07E+01	1.70E+00	1.91E+01	1.91E+04	6.16E+05	3.10%
10TC068	7.44E+02	0	0	1.24E+04	1.04E+03	0	0	8.17E+00	6.25E-01	7.15E+00	1.46E+04	6.00E+05	2.43%
10TC069	9.66E+02	0	0	1.47E+04	1.24E+03	0	1.42E+03	2.07E+01	1.74E+00	1.85E+01	1.94E+04	6.24E+05	3.11%
10TC070	9.22E+02	0	0	1.32E+04	1.26E+03	0	2.93E+02	1.43E+01	1.20E+00	1.24E+01	1.64E+04	6.16E+05	2.66%
10TC071	9.28E+02	0	0	2.42E+04	1.05E+03	0	6.30E+03	5.06E+01	4.23E+00	4.81E+01	3.51E+04	6.49E+05	5.41%
10TC072	7.20E+02	0	0	2.13E+04	6.96E+02	0	4.65E+03	4.05E+01	3.36E+00	3.86E+01	2.97E+04	6.30E+05	4.72%
10TC073	9.16E+02	0	0	1.77E+04	1.20E+03	0	2.78E+03	3.06E+01	2.57E+00	2.82E+01	2.42E+04	6.32E+05	3.83%
10TC074	9.57E+02	0	0	2.38E+04	1.12E+03	0	6.08E+03	5.00E+01	4.21E+00	4.72E+01	3.46E+04	6.52E+05	5.31%
10TC075	8.07E+02	0	0	2.48E+04	9.37E+02	0	5.85E+03	4.85E+01	4.04E+00	4.63E+01	3.50E+04	6.40E+05	5.47%
10TC076	7.53E+02	0	0	1.99E+04	9.07E+02	0	3.71E+03	3.33E+01	2.75E+00	3.17E+01	2.70E+04	6.23E+05	4.34%
10TC077	7.23E+02	0	0	2.29E+04	6.01E+02	0	4.92E+03	4.39E+01	3.65E+00	4.19E+01	3.19E+04	6.33E+05	5.03%
10TC078	9.60E+02	0	0	1.66E+04	1.24E+03	0	2.34E+03	2.77E+01	2.34E+00	2.52E+01	2.25E+04	6.32E+05	3.57%
10TC079	8.87E+02	0	0	2.02E+04	1.14E+03	0	2.28E+03	3.71E+01	3.11E+00	3.46E+01	2.64E+04	6.36E+05	4.15%
10TC080	6.69E+02	0	0	2.39E+04	8.29E+02	0	4.99E+03	4.72E+01	3.91E+00	4.51E+01	3.29E+04	6.34E+05	5.19%
10TC081	9.06E+02	0	0	2.20E+04	1.03E+03	0	4.23E+03	4.29E+01	3.59E+00	4.06E+01	3.05E+04	6.41E+05	4.75%
10TC082	6.67E+02	0	0	2.13E+04	7.33E+02	0	3.35E+03	3.66E+01	3.01E+00	3.49E+01	2.82E+04	6.23E+05	4.52%
10TC083	7.85E+02	0	0	2.52E+04	3.45E+02	0	2.85E+03	5.65E+01	4.72E+00	5.39E+01	3.30E+04	6.52E+05	5.06%
10TC084	7.06E+02	0	0	2.05E+04	8.71E+02	0	3.26E+03	3.86E+01	3.19E+00	3.67E+01	2.75E+04	6.28E+05	4.37%
10TC085	8.79E+02	0	0	2.32E+04	9.91E+02	0	5.67E+03	4.71E+01	3.93E+00	4.48E+01	3.32E+04	6.42E+05	5.17%
10TC086	8.11E+02	0	0	9.49E+03	1.22E+03	0	0	2.20E+00	1.53E-01	8.00E-01	1.17E+04	5.99E+05	1.95%
10TC087	6.14E+02	0	0	1.79E+04	8.64E+02	0	9.69E+02	2.70E+01	2.20E+00	2.55E+01	2.18E+04	6.13E+05	3.56%
10TC088	6.67E+02	0	0	1.33E+04	9.25E+02	0	0	1.23E+01	9.70E-01	1.13E+01	1.55E+04	6.01E+05	2.59%
10TC089	7.26E+02	0	0	1.17E+04	1.04E+03	0	0	1.16E+01	9.21E-01	1.04E+01	1.41E+04	6.05E+05	2.33%
10TC090	8.66E+02	0	0	1.16E+04	1.25E+03	0	0	1.18E+01	9.86E-01	9.83E+00	1.44E+04	6.12E+05	2.35%
10TC091	8.31E+02	0	0	1.38E+04	1.10E+03	0	5.34E+00	1.91E+01	1.57E+00	1.75E+01	1.68E+04	6.16E+05	2.72%
10TC092	6.24E+02	0	0	1.15E+04	9.29E+02	0	0	9.10E+00	6.89E-01	8.20E+00	1.35E+04	5.98E+05	2.26%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TC093	9.55E+02	0	1.67E+04	0	0	0	0	3.03E+01	2.62E+00	2.64E+01	1.96E+04	6.40E+05	3.06%
10TC094	1.06E+03	0	2.09E+04	0	0	0	5.84E+03	5.17E+01	4.47E+00	4.60E+01	3.39E+04	6.71E+05	5.06%
10TC095	1.08E+03	0	1.75E+04	0	0	0	3.26E+03	3.27E+01	2.86E+00	2.80E+01	2.39E+04	6.48E+05	3.68%
10TC096	1.02E+03	0	2.06E+04	1.68E+03	0	0	5.84E+03	5.39E+01	4.56E+00	5.08E+01	3.51E+04	6.64E+05	5.29%
10TC097	1.09E+03	0	0	0	1.36E+03	0	3.16E+03	3.53E+01	3.26E+00	2.25E+01	9.81E+03	6.82E+05	1.44%
10TC098	9.43E+02	0	1.99E+04	0	0	0	1.99E+03	4.78E+01	4.08E+00	4.38E+01	2.66E+04	6.59E+05	4.03%
10TC099	1.04E+03	0	1.58E+04	0	0	0	2.13E+03	2.84E+01	2.49E+00	2.39E+01	2.07E+04	6.43E+05	3.22%
10TC100	1.10E+03	0	0	0	1.51E+03	0	0	1.14E+01	1.28E+00	0	3.37E+03	6.49E+05	0.52%
10TC101	9.35E+02	0	1.00E+04	0	0	0	0	0	5.99E-03	0	1.10E+04	6.04E+05	1.82%
10TC102	1.06E+03	0	9.99E+03	0	0	0	0	0	5.58E-02	0	1.11E+04	6.13E+05	1.82%
10TC103	1.10E+03	0	0	0	1.54E+03	0	0	9.55E+00	1.16E+00	0	3.33E+03	6.48E+05	0.51%
10TC104	1.03E+03	0	1.08E+04	0	0	0	0	4.50E+00	5.82E-01	0	1.22E+04	6.20E+05	1.97%
10TC105	1.01E+03	0	1.44E+04	0	0	0	6.45E+02	2.04E+01	1.87E+00	1.46E+01	1.72E+04	6.36E+05	2.70%
10TC106	9.86E+02	0	1.26E+04	0	0	0	0	1.54E+01	1.38E+00	1.18E+01	1.45E+04	6.26E+05	2.31%
10TC107	1.11E+03	0	9.81E+03	0	0	0	0	0	0	0	1.09E+04	6.14E+05	1.78%
10TC108	9.05E+02	0	0	2.37E+04	8.45E+02	0	3.75E+03	5.18E+01	4.36E+00	4.89E+01	3.23E+04	6.53E+05	4.94%
10TC109	6.26E+02	0	0	2.25E+04	6.90E+02	0	3.15E+03	4.12E+01	3.40E+00	3.93E+01	2.94E+04	6.26E+05	4.69%
10TC110	8.93E+02	0	0	2.39E+04	1.01E+03	0	4.56E+03	5.06E+01	4.23E+00	4.82E+01	3.30E+04	6.48E+05	5.10%
10TC111	7.55E+02	0	0	2.46E+04	3.84E+02	0	6.01E+03	5.14E+01	4.28E+00	4.92E+01	3.52E+04	6.43E+05	5.47%
10TC112	8.61E+02	0	0	1.72E+04	1.15E+03	0	2.15E+03	3.01E+01	2.51E+00	2.78E+01	2.29E+04	6.29E+05	3.63%
10TC113	7.87E+02	0	0	1.83E+04	1.00E+03	0	1.20E+03	3.30E+01	2.74E+00	3.11E+01	2.30E+04	6.27E+05	3.67%
10TC114	9.34E+02	0	0	1.86E+04	1.18E+03	0	3.54E+03	3.63E+01	3.06E+00	3.38E+01	2.61E+04	6.40E+05	4.07%
10TC115	7.02E+02	0	0	1.63E+04	9.86E+02	0	5.51E+02	2.15E+01	1.75E+00	2.01E+01	1.97E+04	6.11E+05	3.22%
10TC116	8.45E+02	0	0	9.95E+03	1.22E+03	0	0	3.17E+00	2.32E-01	1.82E+00	1.22E+04	6.01E+05	2.03%
10TC117	9.50E+02	0	0	1.62E+04	1.22E+03	0	1.69E+03	2.38E+01	2.01E+00	2.16E+01	2.12E+04	6.26E+05	3.39%
10TC118	6.99E+02	0	0	1.71E+04	9.38E+02	0	4.27E+02	2.51E+01	2.06E+00	2.37E+01	2.05E+04	6.14E+05	3.34%
10TC119	7.21E+02	0	0	1.13E+04	1.06E+03	0	0	1.02E+01	8.00E-01	8.91E+00	1.36E+04	6.03E+05	2.26%
10TC120	8.72E+02	0	0	9.39E+03	1.30E+03	0	0	4.04E+00	3.39E-01	2.13E+00	1.18E+04	6.05E+05	1.95%
10TC121	8.76E+02	0	0	1.15E+04	1.17E+03	0	0	1.05E+01	8.55E-01	9.04E+00	1.41E+04	6.09E+05	2.32%
10TC122	1.05E+03	0	0	0	1.39E+03	0	1.07E+03	2.52E+01	2.37E+00	1.50E+01	5.31E+03	6.65E+05	0.80%
10TC123	1.03E+03	0	2.11E+04	0	0	0	6.21E+03	5.37E+01	4.59E+00	4.93E+01	3.39E+04	6.69E+05	5.07%
10TC124	1.12E+03	0	1.74E+04	0	0	0	3.32E+03	3.22E+01	2.90E+00	2.46E+01	2.51E+04	6.53E+05	3.84%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
10TC125	1.06E+03	0	1.77E+04	0	0	0	2.49E+03	3.42E+01	2.99E+00	2.92E+01	2.41E+04	6.50E+05	3.71%
10TC126	1.05E+03	0	1.97E+04	0	0	0	3.32E+03	4.58E+01	4.03E+00	3.80E+01	2.96E+04	6.67E+05	4.44%
10TC127	9.45E+02	0	1.74E+04	1.43E+02	0	0	3.18E+03	3.47E+01	2.95E+00	3.17E+01	2.38E+04	6.42E+05	3.71%
10TC128	9.86E+02	0	1.85E+04	2.78E+02	0	0	4.10E+03	4.11E+01	3.49E+00	3.79E+01	2.64E+04	6.50E+05	4.06%
10TC129	9.91E+02	0	1.07E+04	0	0	0	0	4.39E+00	4.70E-01	8.05E-01	1.20E+04	6.14E+05	1.96%
10TC130	1.07E+03	0	0	0	1.49E+03	0	0	1.25E+01	1.35E+00	1.49E+00	3.37E+03	6.49E+05	0.52%
10TC131	9.97E+02	0	1.55E+04	0	0	0	1.78E+03	2.48E+01	2.13E+00	2.20E+01	1.99E+04	6.32E+05	3.14%
10TC132	9.51E+02	0	1.08E+04	0	0	0	0	5.36E+00	5.04E-01	2.65E+00	1.21E+04	6.12E+05	1.97%
10TC133	1.07E+03	0	1.09E+04	0	0	0	0	5.31E+00	6.67E-01	0	1.24E+04	6.23E+05	1.98%
10TC134	1.05E+03	0	0	0	1.44E+03	0	7.57E+02	2.00E+01	1.95E+00	9.77E+00	4.39E+03	6.58E+05	0.67%
10TC135	1.10E+03	0	0	0	1.51E+03	0	0	9.20E+00	1.05E+00	0	3.24E+03	6.45E+05	0.50%
8TC001	1.02E+03	0	0	0	3.64E+02	0	0	0	0	0	1.38E+03	7.56E+05	0.18%
8TC002	9.60E+02	0	0	0	4.41E+02	0	0	0	0	0	1.40E+03	7.55E+05	0.19%
8TC003	9.87E+02	0	0	0	3.04E+02	0	0	0	0	0	1.29E+03	7.54E+05	0.17%
8TC004	9.20E+02	0	0	0	3.81E+02	0	0	0	0	0	1.30E+03	7.52E+05	0.17%
8TC005	9.90E+02	0	0	0	2.84E+02	0	0	0	0	0	1.27E+03	7.54E+05	0.17%
8TC006	2.46E+02	0	0	3.10E+02	0	0	0	0	0	0	5.55E+02	7.22E+05	0.08%
8TC007	2.38E+02	0	0	1.98E+03	0	0	0	0	0	0	2.22E+03	7.19E+05	0.31%
8TC008	2.05E+02	0	0	0	0	0	0	0	0	0	2.05E+02	7.20E+05	0.03%
8TC009	1.81E+02	0	0	0	0	0	0	0	0	0	1.81E+02	7.18E+05	0.03%
8TC010	2.08E+02	0	0	1.00E+03	0	0	0	0	0	0	1.21E+03	7.18E+05	0.17%
8TC011	9.85E+02	0	0	0	0	0	7.59E+03	5.63E+01	4.85E+00	4.36E+01	1.79E+04	8.47E+05	2.11%
8TC012	9.29E+02	0	0	0	0	0	7.48E+03	5.55E+01	4.82E+00	3.97E+01	1.71E+04	8.46E+05	2.02%
8TC013	9.47E+02	0	0	0	0	0	7.47E+03	5.62E+01	4.80E+00	4.70E+01	1.63E+04	8.44E+05	1.94%
8TC014	8.64E+02	0	0	0	0	0	3.15E+03	5.51E+01	4.74E+00	4.31E+01	1.16E+04	8.41E+05	1.38%
8TC015	9.32E+02	0	0	0	0	0	3.61E+03	5.64E+01	4.79E+00	4.90E+01	1.27E+04	8.44E+05	1.51%
8TC016	2.50E+02	0	0	1.85E+04	0	0	7.64E+03	5.80E+01	4.83E+00	5.56E+01	2.97E+04	7.77E+05	3.83%
8TC017	2.40E+02	0	0	2.00E+04	0	0	7.51E+03	5.78E+01	4.79E+00	5.52E+01	3.09E+04	7.74E+05	3.99%
8TC018	1.99E+02	0	0	1.71E+04	0	0	7.43E+03	5.74E+01	4.77E+00	5.51E+01	2.81E+04	7.76E+05	3.62%
8TC019	1.33E+02	0	0	1.70E+04	0	0	3.09E+03	5.67E+01	4.72E+00	5.43E+01	2.34E+04	7.74E+05	3.02%
8TC020	1.67E+02	0	0	1.82E+04	0	0	3.56E+03	5.72E+01	4.77E+00	5.50E+01	2.54E+04	7.73E+05	3.28%
8TC021	7.55E+02	0	8.02E+03	0	0	0	2.09E+03	1.86E+01	1.56E+00	1.48E+01	1.18E+04	7.56E+05	1.56%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
8TC022	9.84E+02	0	0	0	1.51E+02	0	7.62E+02	7.28E+00	7.65E-01	0	2.37E+03	7.70E+05	0.31%
8TC023	7.73E+02	0	7.65E+03	0	0	0	1.24E+03	1.28E+01	1.09E+00	8.40E+00	1.03E+04	7.50E+05	1.38%
8TC024	9.50E+02	0	0	0	1.14E+02	0	2.24E+03	1.79E+01	1.68E+00	2.19E+00	4.83E+03	7.86E+05	0.61%
8TC025	8.57E+02	0	6.46E+03	0	0	0	0	0	0	0	7.32E+03	7.34E+05	1.00%
8TC026	9.51E+02	0	8.71E+03	0	0	0	1.94E+03	1.64E+01	1.50E+00	5.80E+00	1.25E+04	7.65E+05	1.63%
8TC027	8.18E+02	0	7.67E+03	0	0	0	4.53E+02	8.65E+00	7.79E-01	2.23E+00	9.43E+03	7.47E+05	1.26%
8TC028	8.37E+02	0	1.05E+04	0	0	0	7.22E+03	5.41E+01	4.57E+00	4.94E+01	2.51E+04	8.11E+05	3.09%
8TC029	9.75E+02	0	0	0	0	0	3.69E+03	2.79E+01	2.50E+00	1.31E+01	7.97E+03	8.03E+05	0.99%
8TC030	9.21E+02	0	0	0	0	0	5.72E+03	4.29E+01	3.74E+00	2.94E+01	1.22E+04	8.24E+05	1.48%
8TC031	9.23E+02	0	1.02E+04	0	0	0	5.90E+03	4.44E+01	3.80E+00	3.66E+01	2.24E+04	8.03E+05	2.79%
8TC032	7.67E+02	0	1.05E+04	0	0	0	5.79E+03	4.43E+01	3.73E+00	4.04E+01	2.07E+04	7.91E+05	2.61%
8TC033	8.15E+02	0	9.91E+03	0	0	0	4.71E+03	3.68E+01	3.13E+00	3.11E+01	1.80E+04	7.85E+05	2.29%
8TC034	9.63E+02	0	0	0	0	0	6.24E+03	4.64E+01	4.03E+00	3.28E+01	1.35E+04	8.31E+05	1.62%
8TC035	5.50E+02	0	0	4.47E+03	0	0	2.94E+03	2.49E+01	2.05E+00	2.25E+01	9.25E+03	7.63E+05	1.21%
8TC036	4.18E+02	0	0	0	0	0	0	3.27E+00	2.10E-01	1.91E+00	5.91E+02	7.33E+05	0.08%
8TC037	4.45E+02	0	0	4.41E+03	0	0	2.47E+03	2.26E+01	1.84E+00	2.05E+01	8.51E+03	7.56E+05	1.13%
8TC038	5.78E+02	0	0	0	0	0	0	1.99E+00	1.25E-01	0	7.06E+02	7.38E+05	0.10%
8TC039	2.32E+02	0	0	6.99E+03	0	0	1.92E+03	1.79E+01	1.43E+00	1.66E+01	1.01E+04	7.37E+05	1.37%
8TC040	5.54E+02	0	0	0	0	0	3.94E+02	7.19E+00	5.58E-01	5.17E+00	1.32E+03	7.45E+05	0.18%
8TC041	4.89E+02	0	0	7.50E+03	0	0	3.17E+03	2.68E+01	2.21E+00	2.46E+01	1.26E+04	7.58E+05	1.66%
8TC042	2.80E+02	0	0	1.28E+04	0	0	5.25E+03	4.14E+01	3.42E+00	3.94E+01	2.06E+04	7.63E+05	2.70%
8TC043	6.53E+02	0	0	8.79E+03	0	0	7.48E+03	5.63E+01	4.72E+00	5.31E+01	2.22E+04	8.08E+05	2.75%
8TC044	4.46E+02	0	0	1.58E+04	0	0	7.31E+03	5.59E+01	4.66E+00	5.31E+01	2.65E+04	7.86E+05	3.37%
8TC045	2.52E+02	0	0	1.34E+04	0	0	5.49E+03	4.29E+01	3.55E+00	4.09E+01	2.14E+04	7.63E+05	2.81%
8TC046	4.48E+02	0	0	1.46E+04	0	0	6.43E+03	4.96E+01	4.13E+00	4.70E+01	2.41E+04	7.78E+05	3.10%
8TC047	4.77E+02	0	0	9.14E+03	0	0	4.35E+03	3.43E+01	2.84E+00	3.22E+01	1.58E+04	7.65E+05	2.06%
8TC048	5.56E+02	0	0	9.72E+03	0	0	5.05E+03	3.99E+01	3.32E+00	3.71E+01	1.74E+04	7.77E+05	2.24%
8TC049	3.88E+02	0	0	1.70E+04	0	0	7.36E+03	5.70E+01	4.75E+00	5.43E+01	2.79E+04	7.82E+05	3.56%
8TC050	7.01E+02	0	0	0	0	0	0	3.57E+00	2.85E-01	3.01E-01	9.15E+02	7.46E+05	0.12%
8TC051	9.90E+02	0	0	0	1.19E+02	0	1.61E+03	1.31E+01	1.27E+00	0	3.69E+03	7.80E+05	0.47%
8TC052	7.76E+02	0	6.91E+03	0	0	0	5.44E+01	4.93E+00	4.37E-01	6.83E-02	8.04E+03	7.40E+05	1.09%
8TC053	9.34E+02	0	7.28E+03	0	0	0	0	3.51E+00	4.10E-01	0	8.49E+03	7.47E+05	1.14%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
8TC054	8.08E+02	0	9.00E+03	0	0	0	3.19E+03	2.59E+01	2.18E+00	2.19E+01	1.43E+04	7.67E+05	1.86%
8TC055	8.53E+02	0	9.19E+03	0	0	0	2.68E+03	2.24E+01	1.95E+00	1.56E+01	1.39E+04	7.67E+05	1.81%
8TC056	7.22E+02	0	8.38E+03	0	0	0	2.15E+03	1.96E+01	1.64E+00	1.62E+01	1.22E+04	7.55E+05	1.62%
8TC057	9.53E+02	0	9.46E+03	0	0	0	4.51E+03	3.42E+01	2.96E+00	2.56E+01	1.89E+04	7.90E+05	2.39%
8TC058	8.15E+02	0	1.07E+04	0	0	0	7.00E+03	5.30E+01	4.48E+00	4.81E+01	2.45E+04	8.08E+05	3.04%
8TC059	7.03E+02	0	9.07E+03	0	0	0	3.89E+03	3.21E+01	2.69E+00	2.84E+01	1.53E+04	7.72E+05	1.98%
8TC060	9.24E+02	0	9.54E+03	0	0	0	3.86E+03	3.00E+01	2.64E+00	1.94E+01	1.72E+04	7.84E+05	2.20%
8TC061	9.16E+02	0	1.02E+04	0	0	0	6.11E+03	4.59E+01	3.92E+00	3.86E+01	2.28E+04	8.05E+05	2.83%
8TC062	7.53E+02	0	1.30E+04	0	0	0	6.86E+03	5.20E+01	4.38E+00	4.80E+01	2.55E+04	7.98E+05	3.20%
8TC063	7.80E+02	0	1.04E+04	0	0	0	5.90E+03	4.55E+01	3.85E+00	4.02E+01	2.10E+04	7.96E+05	2.64%
8TC064	3.13E+02	0	0	8.31E+03	0	0	3.44E+03	2.84E+01	2.32E+00	2.66E+01	1.36E+04	7.53E+05	1.80%
8TC065	5.19E+02	0	0	0	0	0	0	1.78E+00	9.29E-02	9.20E-02	6.26E+02	7.35E+05	0.09%
8TC066	3.27E+02	0	0	6.66E+03	0	0	2.41E+03	2.23E+01	1.80E+00	2.06E+01	1.06E+04	7.47E+05	1.42%
8TC067	4.32E+02	0	0	5.07E+03	0	0	2.30E+03	2.09E+01	1.70E+00	1.89E+01	8.90E+03	7.52E+05	1.18%
8TC068	3.48E+02	0	0	3.22E+03	0	0	5.39E+02	8.34E+00	6.29E-01	7.04E+00	4.54E+03	7.33E+05	0.62%
8TC069	6.46E+02	0	0	2.58E+02	0	0	2.40E+03	2.11E+01	1.75E+00	1.83E+01	4.37E+03	7.69E+05	0.57%
8TC070	6.05E+02	0	0	1.94E+01	0	0	1.49E+03	1.47E+01	1.20E+00	1.21E+01	2.85E+03	7.59E+05	0.38%
8TC071	5.75E+02	0	0	1.01E+04	0	0	6.65E+03	5.08E+01	4.24E+00	4.80E+01	2.05E+04	7.93E+05	2.58%
8TC072	3.07E+02	0	0	1.21E+04	0	0	5.18E+03	4.06E+01	3.36E+00	3.86E+01	1.97E+04	7.64E+05	2.58%
8TC073	5.97E+02	0	0	4.12E+03	0	0	3.74E+03	3.10E+01	2.58E+00	2.80E+01	1.01E+04	7.76E+05	1.30%
8TC074	6.30E+02	0	0	9.56E+03	0	0	6.58E+03	5.03E+01	4.21E+00	4.70E+01	1.94E+04	7.97E+05	2.44%
8TC075	4.21E+02	0	0	1.43E+04	0	0	6.31E+03	4.87E+01	4.04E+00	4.62E+01	2.36E+04	7.76E+05	3.04%
8TC076	3.41E+02	0	0	1.02E+04	0	0	4.22E+03	3.34E+01	2.75E+00	3.16E+01	1.65E+04	7.58E+05	2.18%
8TC077	3.16E+02	0	0	1.38E+04	0	0	5.53E+03	4.40E+01	3.65E+00	4.18E+01	2.20E+04	7.66E+05	2.87%
8TC078	6.51E+02	0	0	1.28E+03	0	0	3.32E+03	2.82E+01	2.35E+00	2.49E+01	6.69E+03	7.79E+05	0.86%
8TC079	5.67E+02	0	0	6.20E+03	0	0	3.70E+03	3.74E+01	3.12E+00	3.43E+01	1.24E+04	7.80E+05	1.59%
8TC080	2.62E+02	0	0	1.48E+04	0	0	5.75E+03	4.73E+01	3.92E+00	4.50E+01	2.34E+04	7.67E+05	3.05%
8TC081	5.64E+02	0	0	8.11E+03	0	0	5.11E+03	4.32E+01	3.60E+00	4.04E+01	1.60E+04	7.85E+05	2.05%
8TC082	2.51E+02	0	0	1.20E+04	0	0	4.15E+03	3.66E+01	3.02E+00	3.48E+01	1.84E+04	7.55E+05	2.44%
8TC083	4.24E+02	0	0	1.26E+04	0	0	3.57E+03	5.66E+01	4.72E+00	5.37E+01	1.97E+04	7.92E+05	2.48%
8TC084	3.15E+02	0	0	1.06E+04	0	0	4.27E+03	3.87E+01	3.19E+00	3.66E+01	1.72E+04	7.63E+05	2.26%
8TC085	5.07E+02	0	0	1.11E+04	0	0	6.10E+03	4.72E+01	3.93E+00	4.47E+01	2.02E+04	7.83E+05	2.58%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
8TC086	4.71E+02	0	0	0	0	0	0	2.57E+00	1.60E-01	6.30E-01	6.20E+02	7.34E+05	0.08%
8TC087	2.07E+02	0	0	9.34E+03	0	0	2.31E+03	2.71E+01	2.20E+00	2.54E+01	1.33E+04	7.45E+05	1.78%
8TC088	2.50E+02	0	0	4.52E+03	0	0	8.58E+02	1.24E+01	9.72E-01	1.12E+01	6.28E+03	7.33E+05	0.86%
8TC089	3.40E+02	0	0	2.21E+03	0	0	6.13E+02	1.18E+01	9.25E-01	1.03E+01	3.78E+03	7.39E+05	0.51%
8TC090	5.49E+02	0	0	0	0	0	2.91E+02	1.23E+01	9.94E-01	9.62E+00	1.46E+03	7.52E+05	0.19%
8TC091	4.80E+02	0	0	1.79E+03	0	0	1.42E+03	1.93E+01	1.58E+00	1.73E+01	4.70E+03	7.56E+05	0.62%
8TC092	2.01E+02	0	0	2.83E+03	0	0	3.12E+02	9.22E+00	6.92E-01	8.11E+00	3.83E+03	7.30E+05	0.52%
8TC093	7.22E+02	0	9.23E+03	0	0	0	9.17E+02	3.09E+01	2.62E+00	2.60E+01	1.24E+04	7.73E+05	1.60%
8TC094	8.47E+02	0	1.04E+04	0	0	0	6.67E+03	5.25E+01	4.47E+00	4.55E+01	2.44E+04	8.12E+05	3.00%
8TC095	8.65E+02	0	9.62E+03	0	0	0	4.15E+03	3.35E+01	2.86E+00	2.76E+01	1.76E+04	7.82E+05	2.25%
8TC096	7.51E+02	0	1.12E+04	0	0	0	6.52E+03	5.42E+01	4.56E+00	5.05E+01	2.50E+04	8.04E+05	3.11%
8TC097	9.30E+02	0	0	0	0	0	4.40E+03	3.70E+01	3.26E+00	2.17E+01	1.01E+04	8.15E+05	1.24%
8TC098	7.02E+02	0	9.95E+03	0	0	0	3.22E+03	4.84E+01	4.08E+00	4.34E+01	1.87E+04	7.98E+05	2.34%
8TC099	8.31E+02	0	9.03E+03	0	0	0	3.32E+03	2.92E+01	2.50E+00	2.34E+01	1.54E+04	7.76E+05	1.98%
8TC100	9.34E+02	0	0	0	1.23E+02	0	1.35E+03	1.33E+01	1.29E+00	0	3.22E+03	7.78E+05	0.41%
8TC101	6.97E+02	0	6.18E+03	0	0	0	0	2.08E-01	1.15E-02	0	6.94E+03	7.29E+05	0.95%
8TC102	8.74E+02	0	6.31E+03	0	0	0	0	0	6.21E-02	0	7.27E+03	7.38E+05	0.98%
8TC103	9.43E+02	0	0	0	1.53E+02	0	9.60E+02	1.17E+01	1.17E+00	0	2.92E+03	7.77E+05	0.38%
8TC104	8.44E+02	0	6.99E+03	0	0	0	0	6.01E+00	5.89E-01	0	8.21E+03	7.46E+05	1.10%
8TC105	8.23E+02	0	8.75E+03	0	0	0	2.13E+03	2.15E+01	1.88E+00	1.37E+01	1.28E+04	7.66E+05	1.67%
8TC106	7.59E+02	0	7.81E+03	0	0	0	1.30E+02	1.63E+01	1.38E+00	1.17E+01	9.54E+03	7.54E+05	1.26%
8TC107	9.33E+02	0	6.19E+03	0	0	0	0	0	0	0	7.15E+03	7.40E+05	0.97%
8TC108	5.86E+02	0	0	7.88E+03	0	0	4.86E+03	5.21E+01	4.37E+00	4.87E+01	1.72E+04	8.01E+05	2.15%
8TC109	2.22E+02	0	0	1.38E+04	0	0	4.32E+03	4.13E+01	3.40E+00	3.92E+01	2.05E+04	7.59E+05	2.71%
8TC110	5.41E+02	0	0	9.51E+03	0	0	5.33E+03	5.08E+01	4.24E+00	4.80E+01	1.90E+04	7.93E+05	2.39%
8TC111	3.61E+02	0	0	1.46E+04	0	0	6.57E+03	5.16E+01	4.29E+00	4.91E+01	2.43E+04	7.77E+05	3.12%
8TC112	5.35E+02	0	0	4.76E+03	0	0	3.38E+03	3.04E+01	2.52E+00	2.76E+01	1.03E+04	7.71E+05	1.33%
8TC113	4.23E+02	0	0	6.61E+03	0	0	2.51E+03	3.32E+01	2.74E+00	3.10E+01	1.13E+04	7.66E+05	1.47%
8TC114	6.16E+02	0	0	2.95E+03	0	0	4.44E+03	3.67E+01	3.06E+00	3.35E+01	9.91E+03	7.87E+05	1.26%
8TC115	3.21E+02	0	0	7.23E+03	0	0	1.95E+03	2.17E+01	1.76E+00	1.99E+01	1.06E+04	7.45E+05	1.43%
8TC116	5.04E+02	0	0	0	0	0	0	3.52E+00	2.39E-01	1.67E+00	6.97E+02	7.37E+05	0.09%
8TC117	6.31E+02	0	0	1.99E+03	0	0	2.73E+03	2.42E+01	2.01E+00	2.13E+01	6.58E+03	7.70E+05	0.85%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
8TC118	3.09E+02	0	0	7.32E+03	0	0	1.78E+03	2.52E+01	2.06E+00	2.36E+01	1.07E+04	7.49E+05	1.43%
8TC119	3.36E+02	0	0	1.81E+03	0	0	0	1.04E+01	8.04E-01	8.78E+00	2.69E+03	7.37E+05	0.36%
8TC120	5.72E+02	0	0	0	0	0	0	4.57E+00	3.47E-01	1.93E+00	8.26E+02	7.41E+05	0.11%
8TC121	5.28E+02	0	0	0	0	0	5.64E+02	1.08E+01	8.60E-01	8.89E+00	1.64E+03	7.48E+05	0.22%
8TC122	8.82E+02	0	0	0	0	0	2.68E+03	2.67E+01	2.38E+00	1.41E+01	6.32E+03	7.96E+05	0.79%
8TC123	7.94E+02	0	1.11E+04	0	0	0	6.93E+03	5.43E+01	4.59E+00	4.90E+01	2.52E+04	8.09E+05	3.11%
8TC124	9.38E+02	0	9.57E+03	0	0	0	4.22E+03	3.34E+01	2.90E+00	2.41E+01	1.85E+04	7.88E+05	2.35%
8TC125	8.56E+02	0	9.64E+03	0	0	0	3.76E+03	3.50E+01	2.99E+00	2.87E+01	1.78E+04	7.85E+05	2.27%
8TC126	8.60E+02	0	1.00E+04	0	0	0	4.78E+03	4.68E+01	4.03E+00	3.72E+01	2.15E+04	8.06E+05	2.67%
8TC127	6.83E+02	0	9.36E+03	0	0	0	4.21E+03	3.52E+01	2.95E+00	3.14E+01	1.61E+04	7.76E+05	2.07%
8TC128	7.21E+02	0	9.56E+03	0	0	0	5.02E+03	4.15E+01	3.49E+00	3.77E+01	1.82E+04	7.86E+05	2.32%
8TC129	7.69E+02	0	6.82E+03	0	0	0	0	5.38E+00	4.76E-01	5.75E-01	7.91E+03	7.40E+05	1.07%
8TC130	9.07E+02	0	0	0	7.85E+01	0	1.09E+03	1.44E+01	1.36E+00	8.24E-01	2.97E+03	7.78E+05	0.38%
8TC131	7.44E+02	0	8.69E+03	0	0	0	2.86E+03	2.53E+01	2.13E+00	2.17E+01	1.36E+04	7.64E+05	1.77%
8TC132	7.10E+02	0	6.74E+03	0	0	0	0	6.11E+00	5.08E-01	2.48E+00	7.79E+03	7.37E+05	1.06%
8TC133	8.86E+02	0	7.08E+03	0	0	0	1.39E+02	6.89E+00	6.73E-01	0	8.53E+03	7.50E+05	1.14%
8TC134	8.76E+02	0	0	0	1.63E+01	0	2.29E+03	2.17E+01	1.96E+00	8.92E+00	4.96E+03	7.88E+05	0.63%
8TC135	9.28E+02	0	0	0	9.66E+01	0	1.09E+03	1.10E+01	1.06E+00	0	2.76E+03	7.73E+05	0.36%
6TC001	6.87E+02	0	0	0	0	0	0	0	0	0	1.06E+03	9.55E+05	0.11%
6TC002	6.47E+02	0	0	0	0	0	0	0	0	0	1.16E+03	9.54E+05	0.12%
6TC003	6.51E+02	0	0	0	0	0	0	0	0	0	6.51E+02	9.53E+05	0.07%
6TC004	5.97E+02	0	0	0	0	0	0	0	0	0	5.97E+02	9.51E+05	0.06%
6TC005	6.49E+02	0	0	0	0	0	0	0	0	0	6.49E+02	9.52E+05	0.07%
6TC006	0	0	0	0	0	0	0	0	0	0	0	9.16E+05	0.00%
6TC007	0	0	0	0	0	0	0	0	0	0	0	9.16E+05	0.00%
6TC008	0	0	0	0	0	0	0	0	0	0	0	9.14E+05	0.00%
6TC009	0	0	0	0	0	0	0	0	0	0	0	9.12E+05	0.00%
6TC010	0	0	0	0	0	0	0	0	0	0	0	9.13E+05	0.00%
6TC011	6.09E+02	0	0	0	0	0	7.67E+03	5.69E+01	4.82E+00	4.32E+01	1.95E+04	1.06E+06	1.84%
6TC012	5.72E+02	0	0	0	0	0	7.60E+03	5.63E+01	4.78E+00	3.90E+01	1.94E+04	1.06E+06	1.83%
6TC013	5.59E+02	0	0	0	0	0	7.61E+03	5.67E+01	4.76E+00	4.73E+01	1.64E+04	1.06E+06	1.55%
6TC014	4.83E+02	0	0	0	0	0	3.43E+03	5.58E+01	4.71E+00	4.32E+01	1.18E+04	1.05E+06	1.12%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
6TC015	5.31E+02	0	0	0	0	0	3.68E+03	5.67E+01	4.76E+00	4.90E+01	1.25E+04	1.06E+06	1.18%
6TC016	0	0	0	0	0	0	7.70E+03	5.81E+01	4.83E+00	5.55E+01	1.08E+04	1.01E+06	1.06%
6TC017	0	0	0	1.04E+03	0	0	7.61E+03	5.78E+01	4.79E+00	5.51E+01	1.17E+04	1.01E+06	1.16%
6TC018	0	0	0	0	0	0	7.49E+03	5.75E+01	4.77E+00	5.51E+01	1.05E+04	1.01E+06	1.04%
6TC019	0	0	0	0	0	0	3.21E+03	5.68E+01	4.71E+00	5.42E+01	6.23E+03	1.01E+06	0.62%
6TC020	0	0	0	0	0	0	3.57E+03	5.73E+01	4.76E+00	5.50E+01	7.77E+03	1.01E+06	0.77%
6TC021	1.57E+02	0	0	0	0	0	2.37E+03	1.89E+01	1.56E+00	1.47E+01	3.47E+03	9.72E+05	0.36%
6TC022	6.14E+02	0	0	0	0	0	1.09E+03	8.35E+00	7.51E-01	0	2.63E+03	9.70E+05	0.27%
6TC023	2.15E+02	0	0	0	0	0	1.60E+03	1.33E+01	1.09E+00	8.33E+00	2.48E+03	9.64E+05	0.26%
6TC024	5.93E+02	0	0	0	0	0	2.53E+03	1.90E+01	1.66E+00	2.17E+00	6.38E+03	9.90E+05	0.64%
6TC025	3.63E+02	0	0	0	0	0	0	0	0	0	3.63E+02	9.43E+05	0.04%
6TC026	5.25E+02	0	6.17E+02	0	0	0	2.27E+03	1.73E+01	1.49E+00	6.02E+00	5.08E+03	9.81E+05	0.52%
6TC027	3.31E+02	0	0	0	0	0	9.79E+02	9.31E+00	7.76E-01	2.19E+00	1.80E+03	9.61E+05	0.19%
6TC028	3.02E+02	0	3.22E+03	0	0	0	7.28E+03	5.44E+01	4.56E+00	4.91E+01	1.92E+04	1.03E+06	1.86%
6TC029	6.15E+02	0	0	0	0	0	3.86E+03	2.88E+01	2.47E+00	1.28E+01	9.99E+03	1.01E+06	0.99%
6TC030	5.52E+02	0	0	0	0	0	5.88E+03	4.37E+01	3.72E+00	2.91E+01	1.38E+04	1.03E+06	1.34%
6TC031	4.77E+02	0	2.92E+03	0	0	0	6.01E+03	4.49E+01	3.79E+00	3.63E+01	1.67E+04	1.02E+06	1.63%
6TC032	1.56E+02	0	2.62E+03	0	0	0	5.92E+03	4.45E+01	3.72E+00	4.03E+01	1.35E+04	1.01E+06	1.33%
6TC033	2.90E+02	0	2.56E+03	0	0	0	4.94E+03	3.73E+01	3.13E+00	3.11E+01	1.15E+04	1.00E+06	1.15%
6TC034	5.96E+02	0	0	0	0	0	6.34E+03	4.71E+01	4.00E+00	3.23E+01	1.55E+04	1.04E+06	1.49%
6TC035	0	0	0	0	0	0	3.16E+03	2.51E+01	2.05E+00	2.24E+01	4.47E+03	9.73E+05	0.46%
6TC036	0	0	0	0	0	0	1.19E+02	3.39E+00	2.04E-01	1.82E+00	2.92E+02	9.29E+05	0.03%
6TC037	0	0	0	0	0	0	2.75E+03	2.27E+01	1.84E+00	2.04E+01	3.94E+03	9.64E+05	0.41%
6TC038	0	0	0	0	0	0	0	2.25E+00	1.22E-01	0	1.28E+02	9.35E+05	0.01%
6TC039	0	0	0	0	0	0	2.12E+03	1.80E+01	1.42E+00	1.65E+01	3.08E+03	9.46E+05	0.33%
6TC040	0	0	0	0	0	0	7.02E+02	7.37E+00	5.54E-01	5.08E+00	1.07E+03	9.43E+05	0.11%
6TC041	0	0	0	0	0	0	3.39E+03	2.70E+01	2.20E+00	2.45E+01	4.81E+03	9.73E+05	0.49%
6TC042	0	0	0	0	0	0	5.36E+03	4.15E+01	3.42E+00	3.93E+01	7.56E+03	9.87E+05	0.77%
6TC043	0	0	0	0	0	0	7.55E+03	5.65E+01	4.71E+00	5.31E+01	1.40E+04	1.03E+06	1.35%
6TC044	0	0	0	0	0	0	7.41E+03	5.60E+01	4.66E+00	5.30E+01	1.04E+04	1.02E+06	1.02%
6TC045	0	0	0	0	0	0	5.60E+03	4.30E+01	3.55E+00	4.08E+01	7.88E+03	9.89E+05	0.80%
6TC046	0	0	0	0	0	0	6.54E+03	4.97E+01	4.12E+00	4.69E+01	9.18E+03	1.01E+06	0.91%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
6TC047	0	0	0	0	0	0	4.47E+03	3.44E+01	2.83E+00	3.22E+01	6.29E+03	9.84E+05	0.64%
6TC048	0	0	0	0	0	0	5.22E+03	4.01E+01	3.32E+00	3.70E+01	7.34E+03	9.99E+05	0.73%
6TC049	0	0	0	0	0	0	7.49E+03	5.71E+01	4.75E+00	5.42E+01	1.05E+04	1.02E+06	1.03%
6TC050	1.24E+02	0	0	0	0	0	2.69E+02	3.93E+00	2.83E-01	2.19E-01	6.07E+02	9.44E+05	0.06%
6TC051	6.29E+02	0	0	0	0	0	1.89E+03	1.42E+01	1.25E+00	0	4.92E+03	9.82E+05	0.50%
6TC052	2.42E+02	0	0	0	0	0	5.00E+02	5.47E+00	4.34E-01	0	1.04E+03	9.51E+05	0.11%
6TC053	5.15E+02	0	0	0	0	0	4.59E+02	4.47E+00	4.04E-01	0	1.25E+03	9.59E+05	0.13%
6TC054	2.31E+02	0	1.13E+03	0	0	0	3.41E+03	2.62E+01	2.18E+00	2.19E+01	6.64E+03	9.85E+05	0.67%
6TC055	3.62E+02	0	1.39E+03	0	0	0	2.99E+03	2.31E+01	1.94E+00	1.57E+01	6.32E+03	9.83E+05	0.64%
6TC056	9.24E+01	0	4.00E+02	0	0	0	2.45E+03	1.99E+01	1.63E+00	1.61E+01	3.95E+03	9.71E+05	0.41%
6TC057	5.21E+02	0	1.60E+03	0	0	0	4.65E+03	3.48E+01	2.95E+00	2.54E+01	1.25E+04	1.01E+06	1.24%
6TC058	2.66E+02	0	3.08E+03	0	0	0	7.13E+03	5.33E+01	4.47E+00	4.80E+01	1.73E+04	1.03E+06	1.68%
6TC059	8.96E+01	0	1.41E+03	0	0	0	4.16E+03	3.24E+01	2.69E+00	2.83E+01	7.61E+03	9.90E+05	0.77%
6TC060	5.03E+02	0	1.77E+03	0	0	0	4.11E+03	3.09E+01	2.63E+00	1.93E+01	1.09E+04	1.00E+06	1.09%
6TC061	4.62E+02	0	3.04E+03	0	0	0	6.20E+03	4.63E+01	3.91E+00	3.82E+01	1.74E+04	1.03E+06	1.70%
6TC062	1.18E+02	0	3.17E+03	0	0	0	6.97E+03	5.23E+01	4.37E+00	4.80E+01	1.62E+04	1.02E+06	1.58%
6TC063	2.36E+02	0	3.08E+03	0	0	0	6.10E+03	4.59E+01	3.85E+00	4.02E+01	1.45E+04	1.02E+06	1.43%
6TC064	0	0	0	0	0	0	3.60E+03	2.84E+01	2.31E+00	2.66E+01	5.10E+03	9.67E+05	0.53%
6TC065	0	0	0	0	0	0	0	1.95E+00	8.84E-02	7.64E-03	1.06E+02	9.31E+05	0.01%
6TC066	0	0	0	0	0	0	2.66E+03	2.24E+01	1.80E+00	2.05E+01	3.85E+03	9.58E+05	0.40%
6TC067	0	0	0	0	0	0	2.56E+03	2.10E+01	1.70E+00	1.88E+01	3.66E+03	9.60E+05	0.38%
6TC068	0	0	0	0	0	0	8.06E+02	8.43E+00	6.22E-01	6.94E+00	1.25E+03	9.35E+05	0.13%
6TC069	7.42E+00	0	0	0	0	0	2.65E+03	2.13E+01	1.75E+00	1.82E+01	3.75E+03	9.72E+05	0.39%
6TC070	0	0	0	0	0	0	1.77E+03	1.50E+01	1.20E+00	1.20E+01	2.54E+03	9.59E+05	0.26%
6TC071	0	0	0	0	0	0	6.74E+03	5.09E+01	4.23E+00	4.79E+01	1.15E+04	1.02E+06	1.13%
6TC072	0	0	0	0	0	0	5.29E+03	4.07E+01	3.35E+00	3.85E+01	7.45E+03	9.87E+05	0.75%
6TC073	0	0	0	0	0	0	3.98E+03	3.12E+01	2.57E+00	2.79E+01	5.61E+03	9.87E+05	0.57%
6TC074	0	0	0	0	0	0	6.70E+03	5.05E+01	4.21E+00	4.69E+01	1.11E+04	1.02E+06	1.09%
6TC075	0	0	0	0	0	0	6.41E+03	4.87E+01	4.04E+00	4.61E+01	9.00E+03	1.01E+06	0.89%
6TC076	0	0	0	0	0	0	4.33E+03	3.35E+01	2.75E+00	3.16E+01	6.10E+03	9.76E+05	0.62%
6TC077	0	0	0	0	0	0	5.68E+03	4.41E+01	3.65E+00	4.18E+01	8.02E+03	9.93E+05	0.81%
6TC078	3.01E+01	0	0	0	0	0	3.59E+03	2.84E+01	2.35E+00	2.48E+01	5.09E+03	9.85E+05	0.52%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
6TC079	0	0	0	0	0	0	4.23E+03	3.76E+01	3.12E+00	3.42E+01	6.20E+03	9.97E+05	0.62%
6TC080	0	0	0	0	0	0	5.95E+03	4.74E+01	3.91E+00	4.49E+01	8.47E+03	9.96E+05	0.85%
6TC081	0	0	0	0	0	0	5.39E+03	4.33E+01	3.60E+00	4.03E+01	8.50E+03	1.01E+06	0.85%
6TC082	0	0	0	0	0	0	4.37E+03	3.67E+01	3.01E+00	3.47E+01	6.32E+03	9.77E+05	0.65%
6TC083	0	0	0	0	0	0	3.78E+03	5.67E+01	4.72E+00	5.36E+01	8.41E+03	1.02E+06	0.82%
6TC084	0	0	0	0	0	0	4.58E+03	3.87E+01	3.19E+00	3.65E+01	6.63E+03	9.84E+05	0.67%
6TC085	0	0	0	0	0	0	6.21E+03	4.73E+01	3.93E+00	4.47E+01	9.27E+03	1.01E+06	0.92%
6TC086	0	0	0	0	0	0	0	2.76E+00	1.56E-01	5.27E-01	1.48E+02	9.30E+05	0.02%
6TC087	0	0	0	0	0	0	2.72E+03	2.71E+01	2.19E+00	2.53E+01	4.15E+03	9.60E+05	0.43%
6TC088	0	0	0	0	0	0	1.15E+03	1.25E+01	9.65E-01	1.11E+01	1.81E+03	9.37E+05	0.19%
6TC089	0	0	0	0	0	0	1.02E+03	1.19E+01	9.19E-01	1.02E+01	1.65E+03	9.40E+05	0.18%
6TC090	0	0	0	0	0	0	9.41E+02	1.25E+01	9.91E-01	9.49E+00	1.57E+03	9.52E+05	0.16%
6TC091	0	0	0	0	0	0	1.89E+03	1.95E+01	1.57E+00	1.72E+01	2.91E+03	9.60E+05	0.30%
6TC092	0	0	0	0	0	0	6.59E+02	9.29E+00	6.84E-01	8.02E+00	1.15E+03	9.30E+05	0.12%
6TC093	1.81E+02	0	1.57E+03	0	0	0	1.71E+03	3.13E+01	2.62E+00	2.59E+01	6.12E+03	9.92E+05	0.62%
6TC094	3.79E+02	0	3.41E+03	0	0	0	6.96E+03	5.30E+01	4.47E+00	4.55E+01	1.79E+04	1.03E+06	1.73%
6TC095	3.62E+02	0	1.97E+03	0	0	0	4.43E+03	3.40E+01	2.86E+00	2.76E+01	1.06E+04	1.00E+06	1.06%
6TC096	1.55E+02	0	3.08E+03	0	0	0	6.79E+03	5.44E+01	4.55E+00	5.05E+01	1.71E+04	1.03E+06	1.67%
6TC097	5.68E+02	0	0	0	0	0	4.88E+03	3.79E+01	3.23E+00	2.22E+01	1.06E+04	1.02E+06	1.04%
6TC098	1.59E+02	0	2.85E+03	0	0	0	3.74E+03	4.87E+01	4.08E+00	4.32E+01	1.25E+04	1.02E+06	1.23%
6TC099	3.33E+02	0	1.15E+03	0	0	0	3.72E+03	2.97E+01	2.49E+00	2.34E+01	8.27E+03	9.94E+05	0.83%
6TC100	5.70E+02	0	0	0	0	0	1.83E+03	1.45E+01	1.27E+00	0	3.82E+03	9.80E+05	0.39%
6TC101	1.16E+02	0	0	0	0	0	0	6.41E-01	8.62E-03	0	1.79E+02	9.37E+05	0.02%
6TC102	4.22E+02	0	0	0	0	0	0	5.94E-01	5.85E-02	0	5.05E+02	9.47E+05	0.05%
6TC103	5.96E+02	0	0	0	0	0	1.54E+03	1.30E+01	1.14E+00	0	3.52E+03	9.78E+05	0.36%
6TC104	3.91E+02	0	0	0	0	0	0	6.82E+00	5.85E-01	0	7.70E+02	9.58E+05	0.08%
6TC105	3.59E+02	0	8.75E+02	0	0	0	2.68E+03	2.22E+01	1.87E+00	1.37E+01	5.58E+03	9.83E+05	0.57%
6TC106	2.23E+02	0	0	0	0	0	1.03E+03	1.67E+01	1.38E+00	1.15E+01	2.09E+03	9.70E+05	0.22%
6TC107	5.09E+02	0	0	0	0	0	0	0	0	0	5.29E+02	9.48E+05	0.06%
6TC108	0	0	0	0	0	0	5.31E+03	5.23E+01	4.36E+00	4.85E+01	1.06E+04	1.02E+06	1.03%
6TC109	0	0	0	0	0	0	4.67E+03	4.13E+01	3.40E+00	3.91E+01	6.87E+03	9.84E+05	0.70%
6TC110	0	0	0	0	0	0	5.62E+03	5.08E+01	4.23E+00	4.79E+01	1.06E+04	1.02E+06	1.04%

Table 40. Predicted Solids for Envelope C Simulations – Part 2 (cont'd)

Test ID	NA2C2O4	NA2U2O7	NA3FSO4	NA6SO42 CO3	NAF	NANO3	NASGEL.1 5.5H2O	NIOH2	SRCO3	ZRO2	Total Solids	Total Soln Mass	Solids % of Total Soln
6TC111	0	0	0	0	0	0	6.70E+03	5.16E+01	4.28E+00	4.90E+01	9.44E+03	1.01E+06	0.94%
6TC112	0	0	0	0	0	0	3.73E+03	3.06E+01	2.52E+00	2.75E+01	5.34E+03	9.82E+05	0.54%
6TC113	0	0	0	0	0	0	3.01E+03	3.33E+01	2.74E+00	3.09E+01	4.76E+03	9.81E+05	0.49%
6TC114	0	0	0	0	0	0	4.70E+03	3.69E+01	3.06E+00	3.34E+01	7.12E+03	9.98E+05	0.71%
6TC115	0	0	0	0	0	0	2.34E+03	2.18E+01	1.75E+00	1.98E+01	3.49E+03	9.56E+05	0.37%
6TC116	0	0	0	0	0	0	0	3.71E+00	2.35E-01	1.58E+00	1.92E+02	9.34E+05	0.02%
6TC117	0	0	0	0	0	0	3.02E+03	2.44E+01	2.01E+00	2.13E+01	4.28E+03	9.76E+05	0.44%
6TC118	0	0	0	0	0	0	2.25E+03	2.53E+01	2.05E+00	2.35E+01	3.59E+03	9.61E+05	0.37%
6TC119	0	0	0	0	0	0	4.35E+02	1.05E+01	7.98E-01	8.67E+00	9.82E+02	9.38E+05	0.10%
6TC120	0	0	0	0	0	0	0	4.85E+00	3.44E-01	1.85E+00	2.54E+02	9.39E+05	0.03%
6TC121	0	0	0	0	0	0	9.69E+02	1.10E+01	8.56E-01	8.81E+00	1.53E+03	9.47E+05	0.16%
6TC122	4.99E+02	0	0	0	0	0	3.33E+03	2.76E+01	2.37E+00	1.44E+01	7.15E+03	1.00E+06	0.71%
6TC123	2.63E+02	0	3.42E+03	0	0	0	7.17E+03	5.46E+01	4.59E+00	4.89E+01	1.79E+04	1.03E+06	1.74%
6TC124	5.05E+02	0	1.70E+03	0	0	0	4.51E+03	3.41E+01	2.90E+00	2.43E+01	1.11E+04	1.01E+06	1.10%
6TC125	3.76E+02	0	2.00E+03	0	0	0	4.29E+03	3.55E+01	2.99E+00	2.87E+01	1.09E+04	1.00E+06	1.09%
6TC126	4.34E+02	0	2.59E+03	0	0	0	5.49E+03	4.75E+01	4.02E+00	3.72E+01	1.48E+04	1.03E+06	1.44%
6TC127	6.53E+01	0	1.89E+03	0	0	0	4.52E+03	3.55E+01	2.95E+00	3.14E+01	8.83E+03	9.94E+05	0.89%
6TC128	1.15E+02	0	2.16E+03	0	0	0	5.33E+03	4.18E+01	3.49E+00	3.76E+01	1.18E+04	1.01E+06	1.17%
6TC129	2.33E+02	0	0	0	0	0	4.22E+02	5.90E+00	4.73E-01	4.99E-01	9.75E+02	9.51E+05	0.10%
6TC130	5.36E+02	0	0	0	0	0	1.75E+03	1.54E+01	1.34E+00	1.15E+00	3.80E+03	9.80E+05	0.39%
6TC131	1.38E+02	0	7.86E+02	0	0	0	3.18E+03	2.56E+01	2.13E+00	2.17E+01	5.42E+03	9.81E+05	0.55%
6TC132	1.29E+02	0	0	0	0	0	1.04E+01	6.51E+00	5.05E-01	2.44E+00	4.81E+02	9.48E+05	0.05%
6TC133	4.46E+02	0	0	0	0	0	7.40E+02	7.72E+00	6.68E-01	0	1.61E+03	9.62E+05	0.17%
6TC134	4.94E+02	0	0	0	0	0	2.83E+03	2.27E+01	1.95E+00	9.17E+00	5.78E+03	9.92E+05	0.58%
6TC135	5.50E+02	0	0	0	0	0	1.51E+03	1.20E+01	1.05E+00	0	3.02E+03	9.74E+05	0.31%

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