

Composite Analysis Solid Waste Release Data Reduction of Activity Flux from Waste Sites to the Vadose Zone

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

CH2MHILL
Plateau Remediation Company

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By Sarah Harrison at 7:09 am, Aug 04, 2020

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Date

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Terms

CA	Composite Analysis
CACIE	Composite Analysis/Cumulative Impact Evaluation
CASWR	Composite Analysis solid waste release
COPC	constituent of potential concern
ECF	environmental calculation file
EMMA	Environmental Modeling Management Archive
ICF	integrated computational framework
STOMP	Subsurface Transport Over Multiple Phases

1 Purpose

This environmental calculation file (ECF) describes the data reduction methodology for the solid waste release datasets generated by the Composite Analysis Solid Waste Release (CASWR) model (CP-62766, *Model Package Report: Composite Analysis Solid Waste Release Model [CASWR Model]*) and documents the resulting reduced datasets for the updated Composite Analysis (CA) baseline assessment. This ECF is in support of the updated Hanford Site CA.

The purpose of the updated Hanford Site CA is to provide an estimate of the cumulative radiological impacts from active and planned low-level radioactive waste disposals and other potentially interacting radioactive waste disposal sources that will remain following Hanford Site closure. The vadose zone modeling activities associated with the CA includes solid waste forms as contaminant sources. To support the modeling of solid waste transport from the vadose zone to the groundwater at the Hanford Site, the CASWR model was designed to generate deterministic radionuclide release rates for the Hanford Site Central Plateau solid waste disposal sites.

The complete CASWR model-generated dataset for the CA Baseline Assessment consists of 2,378,831 sets of time and release rates (1,073,869 sets for the 200 East Area and 1,304,962 sets for the 200 West Area), representing a course of the simulation from year 1953 to year 12,069, 16 radiological contaminants of potential concern (COPCs), and 237 solid waste sources as documented in ECF-HANFORD-19-0112, *Solid Waste Release Calculations for the Composite Analysis Baseline Assessment*.

For several of the STOMP vadose zone models, the number of release rate data pairs required for release at all waste sites would exceed the limitations imposed by the STOMP modelling software package used to simulate contaminant transport through the vadose zone. As a result, a data reduction of the CASWR dataset is required prior to its use as a source input for the CA vadose zone modeling activities.

2 Background

The follow provides background information for the CASWR model and the data reduction algorithm used.

2.1 Composite Analysis Solid Waste Release Model

The CASWR model was designed to generate deterministic radionuclide release rates for the Hanford Site Central Plateau solid waste disposal sites using single realizations of release model coefficients. Five generalized waste form types are used for the conceptual model of waste release: surplus reactor block, cement, soil-debris, grouted residual waste, and ancillary equipment. The surplus reactor block waste form consists of radionuclide leaching from surplus production graphite reactor core blocks via unspecified processes. The cement waste form represents solidified wastes whose permeability is much lower than that of the surrounding soil. The soil-debris waste form type is defined as unconsolidated waste mixed with soil material. Tanks and canyon complexes comprise the grouted residual waste form such that their solid waste will be grouted and capped with a surface barrier at the completion of their cleanup. Finally, the ancillary equipment waste form constitutes contaminant releases from ancillary and auxiliary waste form residues associated with tank farms at closure. The CASWR model simulates the release of COPCs from the solid waste forms (e.g., surplus reactor block, cement, soil-debris, grouted residual waste, and ancillary equipment) and the transport to the top of the vadose zone.

Additional details on sub-model calculations and implementation in GoldSim are outlined in CP-62766. The CASWR model was run in two sets: 1) waste sites located in the 200-East operational boundary and 2) waste sites located in the 200-West operational boundary. The inputs to the CASWR model,

calculation of the release rates, and the results from the CASWR model for the CA Baseline Assessment are described and documented in ECF-HANFORD-19-0112.

2.2 Ramer-Douglas-Peucker Algorithm

The Ramer-Douglas-Peucker algorithm (Ramer, 1972 and Douglas, 1973) is implemented for the data reduction of the original CASWR dataset. Inputs to the Ramer-Douglas-Peucker algorithm consist of the original dataset (ordered by time) and a distance dimension $\epsilon > 0$, which is user-defined. An illustration of the algorithm implementation is presented in Figure 1. The algorithm iteratively divides a line represented by the original dataset. Initially it is given all the points between the first and last point (Figure 1A). It automatically marks the first and last point to be kept (Figure 1B). It then finds the point that is farthest from the line segment with the first and last points as end points (Figure 1C); this point is obviously farthest on the curve from the approximating line segment between the end points. If the point is closer than ϵ to the line segment, then any points not currently marked to be kept between the end points can be discarded without the simplified curve being worse than ϵ (Figure 1E and Figure 1I).

If the point farthest from the line segment is greater than ϵ from the approximation, then that point must be kept (Figure 1C, Figure 1G, and Figure 1K). The algorithm recursively calls itself with the first point and the furthest point as end points (Figure 1D) and then with the furthest point and the last point as end points (Figure 1F), which includes the farthest point being marked as kept. When the recursion is completed, the reduced dataset is generated, which consists of all and only those points that have been marked as kept (Figure 1P).

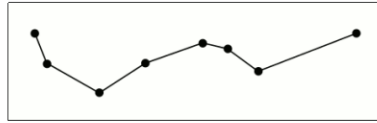


Figure 1A. Original dataset

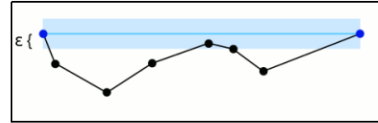


Figure 1B. First and last datapoints selected;
line drawn between them

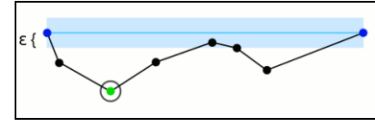


Figure 1C. Distance from furthest point to line $> \epsilon$;
therefore furthest point selected for reduced dataset

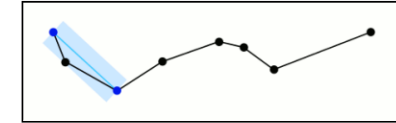


Figure 1D. Line drawn between selected datapoint and first datapoint

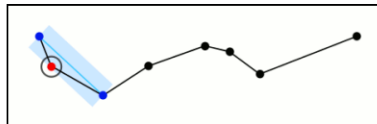


Figure 1E. Distance from furthest point to line $< \epsilon$;
therefore not selected for reduced dataset

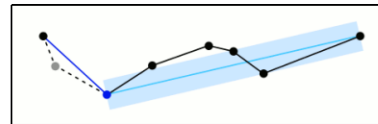


Figure 1F. Line drawn between selected datapoint and last datapoint

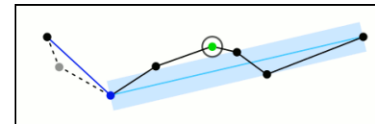


Figure 1G. Distance from furthest point from line $> \epsilon$;
therefore selected for reduced dataset

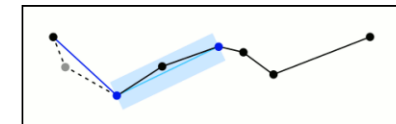


Figure 1H. Line drawn between previous selected datapoint and selected datapoint

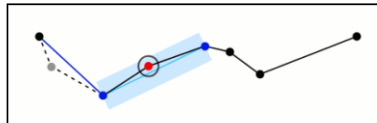


Figure 1I. Distance from furthest point to line $< \epsilon$;
therefore not selected for reduced dataset

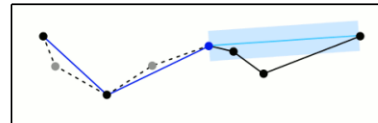


Figure 1J. Line drawn between selected datapoint and last datapoint

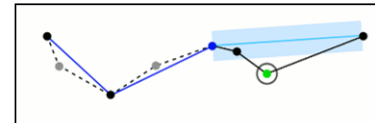


Figure 1K. Distance from furthest point to line $> \epsilon$;
therefore selected for reduced dataset

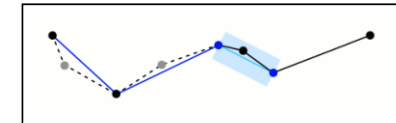


Figure 1L. Line drawn between selected datapoint and previous selected datapoint

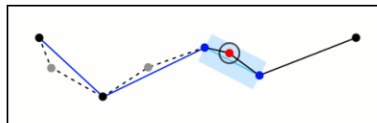


Figure 1M. Distance from furthest point to line $< \epsilon$;
therefore not selected for reduced dataset

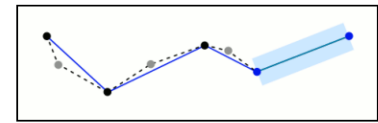


Figure 1N. Line drawn between selected datapoint and last datapoint

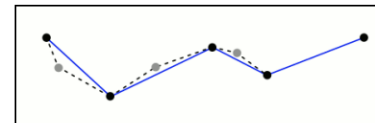


Figure 1O. Black dots represent reduced dataset; gray dots represent original datapoints not selected

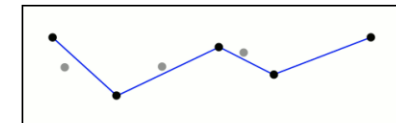


Figure 1P. Resulting curve of reduced dataset

Figure 1. An Illustrated Implementation of the Ramer-Douglas-Peucker Algorithm

3 Methodology

Data reduction of the CASWR dataset was accomplished utilizing a python script (see Section 5) that executes the following methodology:

1. Read in parameters and data to be reduced (JSON-formatted configuration file). See Section 4 for input files and details on the user-defined parameters.

For each CASWR waste site-COPC dataset:

2. If “Zero Below” value is specified by the user-defined parameters and release rate < “Zero Below” value, set release rate = 0.

If the dataset consists of release rates > 0, then reduce the dataset as follows:

3. Linearly integrate release rates to calculate accumulated mass over the time span of the dataset. The linear integration uses the SciPy library for the integration (integrate.cumtrapz)
4. Select datapoints with significant slope changes ($[y_2 - y_1]/y_2 > 0.2$ and where $y_2 > 0.05 * y_{\max}$; y = release rate)
5. Reduce dataset using the Ramer-Douglas-Peucker algorithm. The following calculation is the basis of the algorithm where the distance between a point and a line drawn between the first point and the last point of a dataset subset is calculated. The vector formulation calculates the perpendicular distance between a point and a line and uses the NumPy library for division, absolute value, vector norm (numpy.linalg.norm) and vector cross product (numpy.linalg.cross).

$$\text{perpendicular distance} = \frac{\text{abs}(\|(\text{start} - \text{last})\| \times \|\text{start} - \text{point}\|)}{\|(\text{end} - \text{start})\|}$$

The initial ϵ value is specified by the user-defined parameters and then is subsequently decreased until either the user-defined acceptance criteria for the relative error and the minimum or maximum datapoints is met or the number of reduction iterations are exceeded. Prior to the data reduction by the Ramer-Douglas-Peucker algorithm, the release rates are normalized using the following formula:

$$\text{release rate}_{\text{normalized}} = \frac{\text{release rate}}{\text{release rate}_{\text{maximum}}}$$

6. To eliminate a parabolic characteristic of the difference between the original and reduced cumulative mass values, a user-defined parameter may specify that large gaps between datapoints be reduced where release rates are linear with a slope > 0 (see Section 4). If the user-defined parameter specifies to close gaps, additional datapoints are added at an interval within the gap as follows:

If $x_2 - x_1 > \text{gap delta}$ and $y_2 - y_1 > 0$ (where x = time and y = release rate), then:

$$\text{interval}_x = \frac{x_2 - x_1}{(\text{number of additional datapoints} + 1)}$$

- a. Gap delta is user-defined (see Section 4)
 - b. Number of additional datapoints to be selected is user-defined (see Section 4)
7. Eliminate duplicate datapoints and integrate release rates linearly to calculate accumulated mass values for the reduced dataset (same calculation as Step 3 for original dataset).

8. Following reduction, an additional error check is performed if a user-defined parameter specifies (see Section 4). If, at a given time, the relative difference between the reduced accumulated mass and the original accumulated mass is greater than the error threshold, additional datapoints are added to the reduced dataset between the previous and subsequent time, following the exceedance at an interval as follows.

If maximum $(\Delta\text{mass})/(\text{total mass})$ at $x > \text{error threshold}$ (where $x = \text{time}$), then:

$$\text{interval}_x = \frac{x_{+1} - x_{-1}}{2}$$

9. For some reduced datasets, the acceptance criteria for relative error tolerance cannot be met without exceeding the user-specified maximum number of datapoints. For these reduced datasets, the difference in accumulated mass between the reduced dataset and the original dataset is rebalanced to meet the acceptance criteria by adjusting the release rates in the reduced dataset. The rebalancing methodology preserves peak release rates by adjusting the release rates at times below the points of inflection for each peak. The calculation for the release rate adjustment is as follows.
 - a. Identify subsets of reduced dataset that represent time steps and release rates below the inflection points of peaks.
 - b. Sum the total mass associated with the subsets identified in Step 9a.
 - c. For each subset, calculate the flux adjustment for that subset as follows:

$$\text{flux adjustment} = \frac{\text{segment total mass}}{\text{total mass of all segments}} \times \frac{\text{relative error}}{\text{total mass of all segments}}$$

- d. If the absolute value of the flux adjustment > 0.1 , then

$$\text{flux adjustment} = \frac{|\text{flux adjustment}|}{\text{flux adjustment}} \times 0.1$$

- e. The adjusted flux value for each time step in the segment, not including the first and the last time steps of the segment, is calculated as follows.

$$\text{adjusted flux} = \text{flux} + (\text{flux} \times \text{flux adjustment})$$

- f. If the adjusted flux is greater than the maximum flux in the subset, the adjusted flux is recalculated as follows.

$$\text{adjusted flux} = \text{flux} + ((\text{maximum flux} - \text{flux}) * 0.1)$$

4 Assumptions and Inputs

Inputs to the calculation for the reduction of the CASWR data consist of the CASWR model-generated datasets and a user-defined configuration file using the JSON format. The following documents the details of these inputs.

4.1 Solid Waste Release Dataset—Composite Analysis Baseline Assessment

Version 1.1 of the CASWR dataset for the CA Baseline Assessment was used for input into the calculation documented by this ECF. The data are stored in PSC\HANFORD\ICF\Prod\CASWR\v1.1\data under the following file names:

- 200East_CASWR_Output_20200219.csv
- 200West_CASWR_Output_20200219.csv.

These input files are the results from the CASWR model as described and documented in ECF-HANFORD-19-0112.

4.2 User-defined Configuration File

The user-defined configuration files used as input for the calculations and resulting reduced datasets documented by this ECF are provided in Appendix A of this ECF. Brief descriptions of the information contained in these configuration files is listed below.

- Source Files: location and file name of source data (CASWR dataset) to be reduced [text]
- Zero Below: release rate value below which the original release rates are assigned a value of “0” (zero) [numeric]
- Summary file name: filename for the summary file [numeric]
- Summary template: formatting template (significant figures, number formats, etc) for summary file [text]
- Summary header: column header text for the summary file
- Summary mode: flag to indicate whether to append to (“a”) or overwrite (“w”) the text if summary file is existing file [a or w]
- COPCs: specific constituents for which to perform data reduction; if none specified, data for all constituents in the source files are reduced [see input dataset for COPCs]
- Waste sites: specific waste sites for which to perform data reduction; if none specified, data for all waste sites in the source files are reduced [see input dataset for waste sites]
- Mass threshold: threshold value for total mass; used to determine which error threshold value is used for data reduction acceptance criteria [numeric]

If total mass is less than or equal to mass threshold, then acceptance criteria is less than or equal to upper error threshold.

If total mass is greater than mass threshold, then acceptance criteria is less than or equal to lower error threshold.

- Output lower error threshold: the acceptance criteria to be applied to the relative error of a reduced dataset if the total mass is greater than the mass threshold [numeric]
- Output upper error threshold: the acceptance criteria to be applied to the relative error of a reduced datasets if the total mass is less than or equal to the mass threshold [numeric]
- Lower reduced datapoint limit: the minimum number of data pairs in the reduced dataset [numeric]
- Upper reduced datapoint limit: the maximum number of data pairs in the reduced dataset (may be exceeded if additional error corrections are required) [numeric]

- n. Maximum iterations: maximum number of reduction iterations to be performed if acceptance criteria are not met [numeric]
- o. Maximum error iterations: maximum number of error iterations to be performed if acceptance criteria are not met [numeric]
- p. Epsilon: the initial distance tolerance value used in the Ramer-Douglas-Peucker algorithm [numeric]
- q. Close gaps: flag to add additional data points to close large time gaps in reduced datasets [True or False]
- r. Gap delta: minimum value of time gap to reduce [numeric]
- s. Gap steps: number of additional time steps to add when reducing gaps between time steps [numeric]
- t. Diff mass correction: flag to correct differences in accumulated mass greater than acceptance criteria in reduced dataset [True or False]

5 Software Applications

The following sections document that the utility calculation software tool used in this ECF is in compliance with requirements of CH2M HILL Plateau Remediation Company's controlled software management procedure.

5.1 Approved Software

The reduction of the CASWR model-generated datasets used an approved utility calculation software in compliance with P CH2M HILL Plateau Remediation Company's controlled software management procedure. The software is a utility code included in CHRPC-04032, *Composite Analysis/Cumulative Impact Evaluation (CACIE) Utility Codes Integrated Software Management Plan*. The utility code was tested and qualified for use in compliance with the requirements specified in CHPRC-04032 and as documented in the consolidated tool package attachment for the tool.

5.1.1 Description

The following information identifies the approved utility calculation software used for the calculations documented in this ECF.

- CACIE Utility Codes HISI Entry: 4503
- Solid Waste Release Reduction Tool (vzreducer.py)
- Software Version: v1.1
Software Git SHA-1 Hash: 79b4125e3b7bbef2b4b5d061771d2efb03d3a57e
- Git Repository Version: v1.14
Git Repository SHA-1 Hash: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d

5.1.2 Software Version Verification

Verification that the utility calculation software specified in Section 5.1.1 is qualified for use is documented in the log files provided in Appendix B. The log files document the tool used, software and repository versioning, QA status of the code, and software user, workstation, and operating platform.

5.1.3 Statement of Valid Software Application

The preparers of this calculation attest that the software identified and used for this calculation is appropriate for the application and has been used within the range of intended uses for which it was tested and accepted.

6 Calculation

The calculations documented by this ECF were performed using the methodology and inputs as documented in Section 3 and Section 4 of this ECF, respectively. Integrity of the input data as described in Section 4.1 was verified by a SHA-1 hashtag fingerprint of the input data files. The fingerprints are documented in the log files provided in Appendix B. The utility software documented in Section 5 was implemented in accordance with the information provided in the consolidated tool package attachment to CHPRC-04032.

The filenames of the logfiles documenting the calculation outputs are provided in Table 1. The files are archived electronically in the Environmental Modeling Management Archive (EMMA) under ECF-HANFORD-20-0006, Rev. 0.

Table 1. CASWR Data Reduction Output Log Files for the Composite Analysis Baseline Assessment

File Names
CASWR_Output_20200219_logfile_C-14_Cl-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238_03.09.2020.txt
CASWR_Output_20200219_logfile_I-129_Th-230_U-232_03.09.2020.txt
CASWR_Output_20200219_logfile_Ra-226_03.09.2020.txt
CASWR_Output_20200219_logfile_Tc-99_03.09.2020.txt
CASWR_Output_20200219_logfile_U-234_03.09.2020.txt

Notes:

These files are archived electronically in Environmental Modeling Management Archive (EMMA) under ECF-HANFORD-20-0006, Rev. 0

7 Results/Conclusions

The results of the CASWR data reduction for the CA Baseline Assessment are summarized in the summary table provided in Appendix C. Plots illustrating the original and reduced datasets (release rates and accumulated mass/activity versus time) are provided in PNG files, which are archived electronically with this ECF in EMMA under ECF-HANFORD-20-0006, Rev. 0. The plot files are saved using the following file naming convention: COPC_wastesite.png.

The individual reduced datasets for the CA Baseline Assessment are provided in comma-delimited files, which are archived electronically in the Integrated Computational Framework (ICF) in the following

location: S:\PSC\!HANFORD\ICF\Prod\RCASWR\v1.0\data. The individual reduced dataset files are saved using the following file naming convention: wastesite_COPC.csv.

8 References

CP-62766, 2019, *Model Package Report: Composite Analysis Solid Waste Model (CASWR Model)*, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington. Available at: <https://www.osti.gov/servlets/purl/1595469>

CHRPC-04032, *Composite Analysis/Cumulative Impact Evaluation (CACIE) Utility Codes Integrated Software Management Plan*, Rev. 0, CH2M HLL Plateau Remediation Company, Richland, Washington

ECF-HANFORD-19-0112, 2020, *Solid Waste Release Calculations for the Composite Analysis Baseline Assessment*, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington. Available at: <https://www.osti.gov/servlets/purl/1617041>

Douglas, David H, and Thomas K Peucker. 1973. "Algorithms for the Reduction of the Number of Points Required to Represent a Digitized Line or Its Caricature." *Cartographica: The International Journal for Geographic Information and Geovisualization* 10 (2): 112–122.

Ramer, Urs. 1972. "An Iterative Procedure for the Polygonal Approximation of Plane Curves." *Computer Graphics and Image Processing* 1 (3): 244–256.

Appendix A

Configuration Input Files

A.1 Configuration Input File (C-14, Cl-36, H-3, Np-237, Re-187, Sr-90, U-233, U-235, U-236, U-238)

```

{
    "Source Files":{
        "200
E":"C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200East_CASWR_Output_20200219.csv",
        "200
W":"C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200West_CASWR_Output_20200219.csv"
    },
    "Zero Below":"0",
    "SUMMARY_FILE_NAME": "CASWR_Output_20200219_summary_03.09.2020.csv",
    "SUMMARY_TEMPLATE": "{copc},{site},{N},{ix},{used_eps:.2g},{orig_total_mass:.7e},{reduced_total_mass:.7e},{unbal_mass_err:.2g},{unbal_rel_err:.2g},{bal_mass_err:.2g},{bal_rel_err:.2g}",
    "SUMMARY_HEADER":["COPC","SITE","N reduced","N Iterations","Epsilon","Original Total Mass (Ci)","Reduced/Rebalanced Total Mass (Ci)","Unbalanced Total Mass Error (Ci) (Original-Reduced)","Total Mass Relative Percent Error [before rebalance]","Rebalanced Total Mass Error(Ci) (Original-Reduced)","Total Mass Relative Percent Error [after rebalance]"],
    ],
    "SUMMARY_MODE":"a",
    "COPCs": ["C-14","Cl-36","H-3", "Np-237","Re-187", "Sr-90", "U-233", "U-235", "U-236", "U-238"],
    "Waste Sites": [],
    "Mass Threshold":"0.1",
    "Output Lower Error Threshold":"0.001",
    "Output Upper Error Threshold":"0.01",
    "Lower Reduced Datapoint Limit":"25",
    "Upper Reduced Datapoint Limit":"50",
    "Maximum Iterations":"25",
    "Maximum Error Iterations":"15",
    "Epsilon":"1",
    "Close Gaps":"False",
    "Gap Delta": "2000",
    "Gap Steps":"3",

```

"Diff Mass Correction": "True"

}

A.2 Configuration Input File (I-129, Th-230, U-232)

{

"Source Files": {

"200

E": "C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200East_CASWR_Output_20200219.csv",

"200

W": "C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200West_CASWR_Output_20200219.csv"

},

"Zero Below": "0",

"SUMMARY_FILE_NAME": "CASWR_Output_20200219_summary_03.09.2020.csv",

"SUMMARY_TEMPLATE": "{copc},{site},{N},{ix},{used_eps:.2g},{orig_total_mass:.7e},{reduced_total_mass:.7e},{unbal_mass_err:.2g},{unbal_rel_err:.2g},{bal_mass_err:.2g},{bal_rel_err:.2g}",

"SUMMARY_HEADER": ["COPC", "SITE", "N reduced", "N Iterations", "Epsilon", "Original Total Mass (Ci)", "Reduced/Rebalanced Total Mass (Ci)", "Unbalanced Total Mass Error (Ci) (Original-Reduced)", "Total Mass Relative Percent Error [before rebalance]", "Rebalanced Total Mass Error(Ci) (Original-Reduced)", "Total Mass Relative Percent Error [after rebalance]"]

],

"SUMMARY_MODE": "a",

"COPCs": ["I-129", "Th-230", "U-232"],

"Waste Sites": [],

"Mass Threshold": "0.1",

"Output Lower Error Threshold": "0.001",

"Output Upper Error Threshold": "0.01",

"Lower Reduced Datapoint Limit": "25",

"Upper Reduced Datapoint Limit": "50",

"Maximum Iterations": "25",

"Maximum Error Iterations": "15",

"Epsilon": "1",

"Close Gaps": "True",

"Gap Delta": "2000",

```

    "Gap Steps": "3",
    "Diff Mass Correction": "True"
  }

```

A.3 Configuration Input File (Ra-226)

```

{
  "Source Files": {
    "200
E": "C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200East_CASWR_Output_20200219.csv",
    "200
W": "C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200West_CASWR_Output_20200219.csv"
  },
  "Zero Below": "0",
  "SUMMARY_FILE_NAME": "CASWR_Output_20200219_summary_03.09.2020.csv",
  "SUMMARY_TEMPLATE": "{copc},{site},{N},{ix},{used_eps:.2g},{orig_total_mass:.7e},{reduced_total_mass:.7e},{unbal_mass_err:.2g},{unbal_rel_err:.2g},{bal_mass_err:.2g},{bal_rel_err:.2g}",
  "SUMMARY_HEADER": ["COPC", "SITE", "N reduced", "N Iterations", "Epsilon", "Original Total Mass (Ci)", "Reduced/Rebalanced Total Mass (Ci)", "Unbalanced Total Mass Error (Ci) (Original-Reduced)", "Total Mass Relative Percent Error [before rebalance]", "Rebalanced Total Mass Error(Ci) (Original-Reduced)", "Total Mass Relative Percent Error [after rebalance]"],
  ],
  "SUMMARY_MODE": "a",
  "COPCs": ["Ra-226"],
  "Waste Sites": [],
  "Mass Threshold": "0.1",
  "Output Lower Error Threshold": "0.001",
  "Output Upper Error Threshold": "0.01",
  "Lower Reduced Datapoint Limit": "25",
  "Upper Reduced Datapoint Limit": "50",
  "Maximum Iterations": "25",
  "Maximum Error Iterations": "15",
  "Epsilon": "1",
  "Close Gaps": "True",
  "Gap Delta": "1750",

```

```

    "Gap Steps": "4",
    "Diff Mass Correction": "True"
}

```

A.4 Configuration Input File (Tc-99)

```

{
    "Source Files": {
        "200
E": "C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200East_CASWR_Output_20200219.csv",
        "200
W": "C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200West_CASWR_Output_20200219.csv"
    },
    "Zero Below": "0",
    "SUMMARY_FILE_NAME": "CASWR_Output_20200219_summary_03.09.2020.csv",
    "SUMMARY_TEMPLATE": "{copc},{site},{N},{ix},{used_eps:.2g},{orig_total_mass:.7e},{reduced_total_mass:.7e},{unbal_mass_err:.2g},{unbal_rel_err:.2g},{bal_mass_err:.2g},{bal_rel_err:.2g}",
    "SUMMARY_HEADER": ["COPC", "SITE", "N reduced", "N Iterations", "Epsilon", "Original Total Mass (Ci)", "Reduced/Rebalanced Total Mass (Ci)", "Unbalanced Total Mass Error (Ci) (Original-Reduced)", "Total Mass Relative Percent Error [before rebalance]", "Rebalanced Total Mass Error (Ci) (Original-Reduced)", "Total Mass Relative Percent Error [after rebalance]"],
    "SUMMARY_MODE": "a",
    "COPCs": ["Tc-99"],
    "Waste Sites": [],
    "Mass Threshold": "0.1",
    "Output Lower Error Threshold": "0.001",
    "Output Upper Error Threshold": "0.01",
    "Lower Reduced Datapoint Limit": "25",
    "Upper Reduced Datapoint Limit": "50",
    "Maximum Iterations": "25",
    "Maximum Error Iterations": "15",
    "Epsilon": "1",
    "Close Gaps": "True",

```

```

"Gap Delta": "3000",
"Gap Steps": "1",
"Diff Mass Correction": "True"
}

```

A.5 Configuration Input File (U-234)

```

{
  "Source Files": {
    "200
E": "C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200East_CASWR_Output_20200219.csv",
    "200
W": "C:\\CASWR_Ouput_20200125_reduction\\v1.1\\data\\200West_CASWR_Output_20200219.csv"
  },
  "Zero Below": "0",
  "SUMMARY_FILE_NAME": "CASWR_Output_20200219_summary_03.09.2020.csv",
  "SUMMARY_TEMPLATE": "{copc},{site},{N},{ix},{used_eps:.2g},{orig_total_mass:.7e},{reduced_total_mass:.7e},{unbal_mass_err:.2g},{unbal_rel_err:.2g},{bal_mass_err:.2g},{bal_rel_err:.2g}",
  "SUMMARY_HEADER": ["COPC", "SITE", "N reduced", "N Iterations", "Epsilon", "Original Total Mass (Ci)", "Reduced/Rebalanced Total Mass (Ci)", "Unbalanced Total Mass Error (Ci) (Original-Reduced)", "Total Mass Relative Percent Error [before rebalance]", "Rebalanced Total Mass Error(Ci) (Original-Reduced)", "Total Mass Relative Percent Error [after rebalance]"],
  ],
  "SUMMARY_MODE": "a",
  "COPCs": ["U-234"],
  "Waste Sites": [],
  "Mass Threshold": "0.1",
  "Output Lower Error Threshold": "0.001",
  "Output Upper Error Threshold": "0.01",
  "Lower Reduced Datapoint Limit": "25",
  "Upper Reduced Datapoint Limit": "50",
  "Maximum Iterations": "25",
  "Maximum Error Iterations": "15",
  "Epsilon": "1",

```

```
"Close Gaps": "True",  
"Gap Delta": "3000",  
"Gap Steps": "3",  
"Diff Mass Correction": "True"  
}
```

Appendix B

Software Log Files

B.1 Log File (C-14, CI-36, H-3, Np-237, Re-187, Sr-90, U-233, U-235, U-236, U-238)

File Name: runner_CASWR_Output_20200219_logfile_C-14_CI-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238.txt

INFO--03/09/2020 08:57:14 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_C-14_CI-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238.txt"

INFO--03/09/2020 08:57:14 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 08:57:15 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 08:57:15 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 08:57:15 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 08:57:15 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_C-14_CI-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238.txt --outputmode a C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv"

INFO--03/09/2020 08:57:15 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 20:57:21.346457

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv
b483d8bf8da3fb1e0666436bd4e50cc3cc003cecc2e33f95e2c3ad2753b5d88f

INFO--03/09/2020 08:57:21 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_C-14_CI-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238.txt"

INFO--03/09/2020 08:57:21 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 08:57:21 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 08:57:22 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 08:57:22 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 08:57:22 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_C-14_Cl-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238.txt --outputmode a C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv"

INFO--03/09/2020 08:57:22 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 20:57:25.173676

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
38c43224a1eeb7ae03cd3bf663bddf07752e2c0b822e838bcc45d1e1227b085e

INFO--03/09/2020 08:57:25 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_C-14_Cl-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238.txt"

INFO--03/09/2020 08:57:25 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcbfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 08:57:25 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/vzreducer/vzreducer.py<--
79b4125e3b7bbef2b4b5d061771d2efb03d3a57e

INFO--03/09/2020 08:57:25 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 08:57:25 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/vzreducer/vzreducer.py

INFO--03/09/2020 08:57:25 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/vzreducer/vzreducer.py --logfile CASWR_Output_20200219_logfile_C-14_Cl-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238_03.09.2020.txt vz-reducer-input_03.09.2020_C-14_Cl-36_H-3_Np-237_Re-187_Sr-90_U-233_U-235_U-236_U-238.json output_CASWR_Output_20200219_03.09.2020"

INFO--03/09/2020 08:57:25 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

B.2 Log File (I-129, Th-230, U-232)

File name: runner_CASWR_Output_20200219_logfile_I-129_Th-230_U-232.txt

INFO--03/09/2020 04:53:20 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_I-129_Th-230_U-232.txt"

INFO--03/09/2020 04:53:20 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bdfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 04:53:21 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 04:53:21 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 04:53:21 PM--QA Status: QUALIFIED : ../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 04:53:21 PM--Invoking Command:"python" with Arguments:"../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_I-
129_Th-230_U-232.txt --outputmode a
C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv"

INFO--03/09/2020 04:53:21 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 16:53:22.348459

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv
b483d8bf8da3fb1e0666436bd4e50cc3cc003cecc2e33f95e2c3ad2753b5d88f

INFO--03/09/2020 04:53:22 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_I-129_Th-230_U-232.txt"

INFO--03/09/2020 04:53:22 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bdfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 04:53:23 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 04:53:23 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 04:53:23 PM--QA Status: QUALIFIED : ../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 04:53:23 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_I-129_Th-230_U-232.txt --outputmode a
C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
"

INFO--03/09/2020 04:53:23 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 16:53:24.441275

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
38c43224a1eeb7ae03cd3bf663bddf07752e2c0b822e838bcc45d1e1227b085e

INFO--03/09/2020 04:53:24 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_I-129_Th-230_U-232.txt"

INFO--03/09/2020 04:53:24 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 04:53:25 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/vzreducer/vzreducer.py<--
79b4125e3b7bbef2b4b5d061771d2efb03d3a57e

INFO--03/09/2020 04:53:25 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 04:53:25 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/vzreducer/vzreducer.py

INFO--03/09/2020 04:53:25 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/vzreducer/vzreducer.py --logfile CASWR_Output_20200219_logfile_I-129_Th-230_U-232_03.09.2020.txt vz-reducer-input_03.09.2020_I-129_Th-230_U-232.json
output_CASWR_Output_20200219_03.09.2020"

INFO--03/09/2020 04:53:25 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

B.3 Log File (Ra-226)

File name: runner_CASWR_Output_20200219_logfile_Ra-226.txt

INFO--03/09/2020 03:30:12 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_Ra-226.txt"

INFO--03/09/2020 03:30:12 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 03:30:13 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 03:30:13 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 03:30:13 PM--QA Status: QUALIFIED : ../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 03:30:13 PM--Invoking Command:"python" with Arguments:"../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_Ra-
226.txt --outputmode a
C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv"

INFO--03/09/2020 03:30:13 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 15:30:14.330883

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv
b483d8bf8da3fb1e0666436bd4e50cc3cc003cecc2e33f95e2c3ad2753b5d88f

INFO--03/09/2020 03:30:14 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_Ra-226.txt"

INFO--03/09/2020 03:30:14 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 03:30:15 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 03:30:15 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 03:30:15 PM--QA Status: QUALIFIED : ../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 03:30:15 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_Ra-226.txt --outputmode a
C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
"

INFO--03/09/2020 03:30:15 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 15:30:16.447732

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
38c43224a1eeb7ae03cd3bf663bddf07752e2c0b822e838bcc45d1e1227b085e

INFO--03/09/2020 03:30:16 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_Ra-226.txt"

INFO--03/09/2020 03:30:16 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 03:30:17 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/vzreducer/vzreducer.py<--
79b4125e3b7bbef2b4b5d061771d2efb03d3a57e

INFO--03/09/2020 03:30:17 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 03:30:17 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/vzreducer/vzreducer.py

INFO--03/09/2020 03:30:17 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/vzreducer/vzreducer.py --logfile CASWR_Output_20200219_logfile_Ra-226_03.09.2020.txt vz-reducer-input_03.09.2020_Ra-226.json
output_CASWR_Output_20200219_03.09.2020"

INFO--03/09/2020 03:30:17 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

B.4 Log File (Tc-99)

File name: runner_CASWR_Output_20200219_logfile_Tc-99.txt

INFO--03/09/2020 12:11:30 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_Tc-99.txt"

INFO--03/09/2020 12:11:30 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 12:11:30 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 12:11:30 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 12:11:30 PM--QA Status: QUALIFIED : ../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 12:11:30 PM--Invoking Command:"python" with Arguments:"../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_Tc-
99.txt --outputmode a
C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv"

INFO--03/09/2020 12:11:30 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 12:11:31.810501

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv
b483d8bf8da3fb1e0666436bd4e50cc3cc003cecc2e33f95e2c3ad2753b5d88f

INFO--03/09/2020 12:11:32 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_Tc-99.txt"

INFO--03/09/2020 12:11:32 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 12:11:32 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 12:11:32 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 12:11:32 PM--QA Status: QUALIFIED : ../CA-CIE-
Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 12:11:32 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_Tc-99.txt --outputmode a
C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
"

INFO--03/09/2020 12:11:32 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 12:11:33.875135

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
38c43224a1eeb7ae03cd3bf663bddf07752e2c0b822e838bcc45d1e1227b085e

INFO--03/09/2020 12:11:34 PM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_Tc-99.txt"

INFO--03/09/2020 12:11:34 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 12:11:34 PM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/vzreducer/vzreducer.py<--
79b4125e3b7bbef2b4b5d061771d2efb03d3a57e

INFO--03/09/2020 12:11:34 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 12:11:34 PM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/vzreducer/vzreducer.py

INFO--03/09/2020 12:11:34 PM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/vzreducer/vzreducer.py --logfile CASWR_Output_20200219_logfile_Tc-99_03.09.2020.txt vz-reducer-input_03.09.2020_Tc-99.json
output_CASWR_Output_20200219_03.09.2020"

INFO--03/09/2020 12:11:34 PM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

B.5 Log File (U-234)

File name: runner_CASWR_Output_20200219_logfile_U-234.txt

INFO--03/09/2020 10:48:13 AM--Starting CA-CIE Tool Runner. Logging to
 "runner_CASWR_Output_20200219_logfile_U-234.txt"

INFO--03/09/2020 10:48:13 AM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
 ../../CA-CIE-Tools/pylib/runner/runner.py<--1bdfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 10:48:13 AM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
 ../../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
 13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 10:48:13 AM--QA Status: QUALIFIED : ../../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 10:48:13 AM--QA Status: QUALIFIED : ../../CA-CIE-
 Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 10:48:13 AM--Invoking Command:"python" with Arguments:"../../CA-CIE-
 Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_U-
 234.txt --outputmode a
 C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv"

INFO--03/09/2020 10:48:13 AM--Username:SLindberg Computer:PSC-SELENIUM
 Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 10:48:14.706106

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200East_CASWR_Output_20200219.csv
 b483d8bf8da3fb1e0666436bd4e50cc3cc003cecc2e33f95e2c3ad2753b5d88f

INFO--03/09/2020 10:48:15 AM--Starting CA-CIE Tool Runner. Logging to
 "runner_CASWR_Output_20200219_logfile_U-234.txt"

INFO--03/09/2020 10:48:15 AM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
 ../../CA-CIE-Tools/pylib/runner/runner.py<--1bdfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 10:48:15 AM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
 ../../CA-CIE-Tools/pylib/fingerprint/fingerprint.py<--
 13a885dc11cc15aea74c14b09c0d8584ec6cfd08

INFO--03/09/2020 10:48:15 AM--QA Status: QUALIFIED : ../../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 10:48:15 AM--QA Status: QUALIFIED : ../../CA-CIE-
 Tools/pylib/fingerprint/fingerprint.py

INFO--03/09/2020 10:48:15 AM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/fingerprint/fingerprint.py -o runner_CASWR_Output_20200219_logfile_U-234.txt --outputmode a
C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
"

INFO--03/09/2020 10:48:15 AM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

Fingerprint generated at 2020-03-09 10:48:16.830605

C:\CASWR_Ouput_20200125_reduction\v1.1\data\200West_CASWR_Output_20200219.csv
38c43224a1eeb7ae03cd3bf663bddf07752e2c0b822e838bcc45d1e1227b085e

INFO--03/09/2020 10:48:17 AM--Starting CA-CIE Tool Runner. Logging to
"runner_CASWR_Output_20200219_logfile_U-234.txt"

INFO--03/09/2020 10:48:17 AM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/runner/runner.py<--1bcfd6779e9cbdb82673405873a8e5e81514ae27

INFO--03/09/2020 10:48:17 AM--Code Version: a5d4d46ef08a0d3c2db0641acb18e3f8db01f71d v1.14:
../CA-CIE-Tools/pylib/vzreducer/vzreducer.py<--
79b4125e3b7bbef2b4b5d061771d2efb03d3a57e

INFO--03/09/2020 10:48:17 AM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/runner/runner.py

INFO--03/09/2020 10:48:18 AM--QA Status: QUALIFIED : ../CA-CIE-Tools/pylib/vzreducer/vzreducer.py

INFO--03/09/2020 10:48:18 AM--Invoking Command:"python" with Arguments:"../CA-CIE-Tools/pylib/vzreducer/vzreducer.py --logfile CASWR_Output_20200219_logfile_U-234_03.09.2020.txt vz-reducer-input_03.09.2020_U-234.json
output_CASWR_Output_20200219_03.09.2020"

INFO--03/09/2020 10:48:18 AM--Username:SLindberg Computer:PSC-SELENIUM
Platform:Windows 10 10.0.18362

B.6 ICF Fingerprints of CASWR Input Files

Fingerprint generated at 2020-02-26 14:55:27.232578

Total for 2 files ed725ff9894c70e923cf6083a45147938f84b4b2fb44d9f4abf58cff9bbc3287

S:/PSC\!HANFORD\ICF\TEST\CASWR\v1.1\data\200East_CASWR_Output_20200219.csv
b483d8bf8da3fb1e0666436bd4e50cc3cc003cecc2e33f95e2c3ad2753b5d88f

S:/PSC\!HANFORD\ICF\TEST\CASWR\v1.1\data\200West_CASWR_Output_20200219.csv
38c43224a1eeb7ae03cd3bf663bddf07752e2c0b822e838bcc45d1e1227b085e

Appendix C

CASWR Data Reduction Output Summary File

Note:

Plots illustrating the original and reduced datasets (release rates and accumulated mass/activity versus time) are archived electronically with this ECF in EMMA under ECF-HANFORD-20-0006, Rev. 0.

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-234	218-E-1	29	5	6.20E-02	6.20E-04	6.18E-04	2.50E-06	0.41	2.50E-06	0.41
U-234	218-E-10	28	8	7.80E-03	7.15E-04	7.15E-04	-2.00E-07	0.03	-2.00E-07	0.03
U-234	218-E-12A	30	5	6.20E-02	1.70E-03	1.69E-03	9.40E-06	0.55	9.40E-06	0.55
U-234	218-E-12B	31	9	3.90E-03	3.31E-04	3.31E-04	4.20E-08	0.01	4.20E-08	0.01
U-234	218-E-4	29	5	6.20E-02	1.75E-06	1.74E-06	7.60E-09	0.43	7.60E-09	0.43
U-234	218-E-5	29	5	6.20E-02	2.07E-04	2.06E-04	9.00E-07	0.43	9.00E-07	0.43
U-234	218-E-5A	29	5	6.20E-02	2.10E-04	2.09E-04	9.10E-07	0.43	9.10E-07	0.43
U-234	218-E-8	30	5	6.20E-02	3.28E-06	3.26E-06	1.40E-08	0.44	1.40E-08	0.44
U-234	241-A-101	25	12	4.90E-04	2.30E-06	2.30E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-A-102	25	12	4.90E-04	2.31E-06	2.31E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-A-103	25	12	4.90E-04	2.30E-06	2.30E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-A-104	25	12	4.90E-04	2.09E-06	2.09E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-A-105	29	11	9.80E-04	1.89E-07	1.89E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-234	241-A-106	25	12	4.90E-04	2.25E-06	2.25E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-A-ANC	42	12	4.90E-04	5.83E-03	5.83E-03	-3.10E-06	0.05	-3.10E-06	0.05
U-234	241-AN-101	25	12	4.90E-04	2.79E-06	2.79E-06	-1.40E-10	0.00	-1.40E-10	0.00
U-234	241-AN-102	28	13	2.40E-04	7.23E-07	7.23E-07	-4.50E-11	0.01	-4.50E-11	0.01
U-234	241-AN-103	29	11	9.80E-04	1.14E-07	1.14E-07	-1.80E-11	0.02	-1.80E-11	0.02
U-234	241-AN-104	33	13	2.40E-04	3.83E-07	3.83E-07	-2.30E-11	0.01	-2.30E-11	0.01
U-234	241-AN-105	25	11	9.80E-04	1.90E-07	1.90E-07	-2.90E-11	0.02	-2.90E-11	0.02
U-234	241-AN-106	25	12	4.90E-04	2.06E-06	2.07E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-AN-107	25	12	4.90E-04	4.87E-07	4.87E-07	-5.20E-11	0.01	-5.20E-11	0.01
U-234	241-AN-ANC	42	12	4.90E-04	6.00E-03	6.00E-03	-4.20E-06	0.07	-4.20E-06	0.07
U-234	241-AP-101	28	11	9.80E-04	9.96E-08	9.96E-08	-1.60E-11	0.02	-1.60E-11	0.02
U-234	241-AP-102	28	13	2.40E-04	1.80E-06	1.80E-06	-6.00E-11	0.00	-6.00E-11	0.00
U-234	241-AP-103	27	11	9.80E-04	1.28E-07	1.28E-07	-2.00E-11	0.02	-2.00E-11	0.02
U-234	241-AP-104	28	12	4.90E-04	1.93E-07	1.93E-07	-2.90E-11	0.02	-2.90E-11	0.02
U-234	241-AP-105	28	11	9.80E-04	1.02E-07	1.02E-07	-1.60E-11	0.02	-1.60E-11	0.02
U-234	241-AP-106	25	10	2.00E-03	5.38E-08	5.38E-08	-2.60E-11	0.05	-2.60E-11	0.05
U-234	241-AP-107	28	11	9.80E-04	1.51E-07	1.51E-07	-2.30E-11	0.02	-2.30E-11	0.02
U-234	241-AP-108	25	10	2.00E-03	8.98E-08	8.98E-08	-4.20E-11	0.05	-4.20E-11	0.05
U-234	241-AP-ANC	38	12	4.90E-04	1.77E-04	1.77E-04	-3.00E-07	0.17	-3.00E-07	0.17
U-234	241-AW-101	27	13	2.40E-04	1.85E-06	1.85E-06	-6.30E-11	0.00	-6.30E-11	0.00
U-234	241-AW-102	25	12	4.90E-04	2.02E-06	2.02E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-AW-103	25	12	4.90E-04	2.92E-06	2.92E-06	-1.40E-10	0.00	-1.40E-10	0.00
U-234	241-AW-104	30	13	2.40E-04	2.97E-06	2.97E-06	-2.90E-11	0.00	-2.90E-11	0.00
U-234	241-AW-105	31	13	2.40E-04	2.99E-06	2.99E-06	-2.90E-11	0.00	-2.90E-11	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-234	241-AW-106	25	13	2.40E-04	1.81E-06	1.81E-06	-6.20E-11	0.00	-6.20E-11	0.00
U-234	241-AW-ANC	43	12	4.90E-04	4.49E-03	4.49E-03	-2.00E-06	0.05	-2.00E-06	0.05
U-234	241-AX-101	25	12	4.90E-04	2.24E-06	2.24E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-AX-102	30	13	2.40E-04	2.35E-06	2.35E-06	-2.60E-11	0.00	-2.60E-11	0.00
U-234	241-AX-103	26	13	2.40E-04	1.79E-06	1.79E-06	-8.00E-11	0.00	-8.00E-11	0.00
U-234	241-AX-104	25	12	4.90E-04	2.17E-06	2.17E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-AX-ANC	39	12	4.90E-04	1.28E-03	1.28E-03	-2.00E-06	0.15	-2.00E-06	0.15
U-234	241-AY-101	30	13	2.40E-04	5.15E-07	5.15E-07	-3.30E-11	0.01	-3.30E-11	0.01
U-234	241-AY-102	25	12	4.90E-04	2.11E-06	2.11E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-AY-ANC	38	12	4.90E-04	1.19E-04	1.19E-04	-2.00E-07	0.17	-2.00E-07	0.17
U-234	241-AZ-101	27	13	2.40E-04	1.84E-06	1.84E-06	-7.10E-11	0.00	-7.10E-11	0.00
U-234	241-AZ-102	25	12	4.90E-04	2.77E-06	2.77E-06	-1.40E-10	0.00	-1.40E-10	0.00
U-234	241-AZ-ANC	39	12	4.90E-04	7.86E-04	7.87E-04	-8.90E-07	0.11	-8.90E-07	0.11
U-234	241-B-101	30	13	2.40E-04	2.12E-06	2.12E-06	-2.60E-11	0.00	-2.60E-11	0.00
U-234	241-B-102	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-B-103	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-B-104	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-B-105	25	12	4.90E-04	2.03E-06	2.03E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-B-106	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-B-107	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-B-108	25	12	4.90E-04	2.09E-06	2.09E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-B-109	25	12	4.90E-04	2.26E-06	2.26E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-B-110	27	13	2.40E-04	6.42E-07	6.42E-07	-3.80E-11	0.01	-3.80E-11	0.01
U-234	241-B-111	28	13	2.40E-04	5.85E-07	5.85E-07	-3.70E-11	0.01	-3.70E-11	0.01
U-234	241-B-112	27	13	2.40E-04	1.47E-06	1.47E-06	-5.80E-11	0.00	-5.80E-11	0.00
U-234	241-B-201	25	12	4.90E-04	1.48E-07	1.48E-07	-8.10E-12	0.01	-8.10E-12	0.01
U-234	241-B-202	25	12	4.90E-04	1.92E-07	1.92E-07	-9.50E-12	0.00	-9.50E-12	0.00
U-234	241-B-203	27	13	2.40E-04	3.74E-08	3.74E-08	-2.30E-12	0.01	-2.30E-12	0.01
U-234	241-B-204	25	12	4.90E-04	4.29E-08	4.29E-08	-6.20E-12	0.02	-6.20E-12	0.02
U-234	241-B-ANC	25	10	2.00E-03	1.86E-02	1.88E-02	-1.60E-04	0.84	-1.60E-04	0.84
U-234	241-BX-101	25	12	4.90E-04	2.17E-06	2.17E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BX-102	30	13	2.40E-04	2.12E-06	2.12E-06	-2.60E-11	0.00	-2.60E-11	0.00
U-234	241-BX-103	25	12	4.90E-04	2.24E-06	2.24E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BX-104	25	12	4.90E-04	2.10E-06	2.10E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BX-105	25	12	4.90E-04	2.14E-06	2.14E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BX-106	25	12	4.90E-04	2.13E-06	2.13E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BX-107	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-234	241-BX-108	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-BX-109	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-BX-110	25	12	4.90E-04	2.17E-06	2.17E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BX-111	28	13	2.40E-04	1.58E-06	1.58E-06	-6.00E-11	0.00	-6.00E-11	0.00
U-234	241-BX-112	25	12	4.90E-04	2.03E-06	2.03E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-BX-ANC	28	10	2.00E-03	3.94E-02	3.97E-02	-2.50E-04	0.63	-2.50E-04	0.63
U-234	241-BY-101	25	12	4.90E-04	2.04E-06	2.04E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-BY-102	27	13	2.40E-04	1.81E-06	1.81E-06	-6.00E-11	0.00	-6.00E-11	0.00
U-234	241-BY-103	30	13	2.40E-04	2.35E-06	2.35E-06	-7.50E-11	0.00	-7.50E-11	0.00
U-234	241-BY-104	30	13	2.40E-04	2.12E-06	2.12E-06	-2.60E-11	0.00	-2.60E-11	0.00
U-234	241-BY-105	25	12	4.90E-04	2.09E-06	2.09E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BY-106	25	12	4.90E-04	2.06E-06	2.06E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-BY-107	25	12	4.90E-04	2.15E-06	2.15E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BY-108	25	12	4.90E-04	2.05E-06	2.05E-06	-1.10E-10	0.01	-1.10E-10	0.01
U-234	241-BY-109	25	13	2.40E-04	1.32E-06	1.32E-06	-6.00E-11	0.00	-6.00E-11	0.00
U-234	241-BY-110	25	12	4.90E-04	2.11E-06	2.11E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BY-111	28	13	2.40E-04	1.91E-06	1.91E-06	-7.30E-11	0.00	-7.30E-11	0.00
U-234	241-BY-112	25	12	4.90E-04	2.10E-06	2.10E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-BY-ANC	26	10	2.00E-03	1.21E-02	1.22E-02	-8.70E-05	0.72	-8.70E-05	0.72
U-234	218-W-1	34	5	6.20E-02	9.48E-05	9.43E-05	5.00E-07	0.52	5.00E-07	0.52
U-234	218-W-1A	28	5	6.20E-02	1.38E-03	1.38E-03	4.30E-06	0.31	4.30E-06	0.31
U-234	218-W-2	36	5	6.20E-02	1.93E-03	1.92E-03	1.00E-05	0.52	1.00E-05	0.52
U-234	218-W-3	26	10	2.00E-03	1.40E-01	1.40E-01	7.00E-05	0.05	7.00E-05	0.05
U-234	218-W-3AE	35	12	4.90E-04	8.95E-01	8.94E-01	2.20E-04	0.03	2.20E-04	0.03
U-234	218-W-4A	39	13	2.40E-04	3.19E-01	3.19E-01	4.50E-05	0.01	4.50E-05	0.01
U-234	218-W-4C	29	10	2.00E-03	7.01E-01	7.01E-01	2.50E-04	0.04	2.50E-04	0.04
U-234	218-W-5	48	25	4.70E-05	1.67E-01	1.67E-01	-3.40E-04	0.20	-1.30E-04	0.08
U-234	221-T	25	14	1.20E-04	3.00E-08	3.00E-08	2.40E-12	0.01	2.40E-12	0.01
U-234	241-S-101	27	12	4.90E-04	5.01E-06	5.01E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-S-102	27	12	4.90E-04	4.97E-06	4.97E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-S-103	27	12	4.90E-04	4.90E-06	4.90E-06	-4.40E-10	0.01	-4.40E-10	0.01
U-234	241-S-104	27	12	4.90E-04	4.99E-06	4.99E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-S-105	28	12	4.90E-04	2.28E-06	2.28E-06	-1.90E-10	0.01	-1.90E-10	0.01
U-234	241-S-106	29	12	4.90E-04	2.23E-06	2.23E-06	-1.90E-10	0.01	-1.90E-10	0.01
U-234	241-S-107	27	12	4.90E-04	5.56E-06	5.56E-06	-5.00E-10	0.01	-5.00E-10	0.01
U-234	241-S-108	27	12	4.90E-04	5.13E-06	5.13E-06	-3.60E-10	0.01	-3.60E-10	0.01
U-234	241-S-109	29	12	4.90E-04	1.67E-06	1.67E-06	-1.40E-10	0.01	-1.40E-10	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-234	241-S-110	27	12	4.90E-04	5.01E-06	5.01E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-S-111	27	12	4.90E-04	1.96E-06	1.96E-06	-1.60E-10	0.01	-1.60E-10	0.01
U-234	241-S-112	25	9	3.90E-03	1.19E-07	1.19E-07	-6.40E-11	0.05	-6.40E-11	0.05
U-234	241-S-ANC	36	11	9.80E-04	8.94E-03	8.97E-03	-3.00E-05	0.34	-3.00E-05	0.34
U-234	241-SX-101	26	12	4.90E-04	5.37E-06	5.38E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-234	241-SX-102	28	12	4.90E-04	4.52E-06	4.52E-06	-1.90E-10	0.00	-1.90E-10	0.00
U-234	241-SX-103	28	12	4.90E-04	5.13E-06	5.13E-06	-3.50E-10	0.01	-3.50E-10	0.01
U-234	241-SX-104	27	12	4.90E-04	5.00E-06	5.00E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-SX-105	26	12	4.90E-04	5.40E-06	5.40E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-234	241-SX-106	28	12	4.90E-04	3.15E-06	3.15E-06	-1.90E-10	0.01	-1.90E-10	0.01
U-234	241-SX-107	27	12	4.90E-04	5.67E-06	5.67E-06	-5.10E-10	0.01	-5.10E-10	0.01
U-234	241-SX-108	27	12	4.90E-04	5.69E-06	5.70E-06	-5.10E-10	0.01	-5.10E-10	0.01
U-234	241-SX-109	27	12	4.90E-04	5.69E-06	5.69E-06	-5.10E-10	0.01	-5.10E-10	0.01
U-234	241-SX-110	26	12	4.90E-04	7.20E-06	7.20E-06	-6.30E-10	0.01	-6.30E-10	0.01
U-234	241-SX-111	26	12	4.90E-04	6.20E-06	6.20E-06	-5.50E-10	0.01	-5.50E-10	0.01
U-234	241-SX-112	27	12	4.90E-04	6.05E-06	6.05E-06	-5.40E-10	0.01	-5.40E-10	0.01
U-234	241-SX-113	31	12	4.90E-04	8.73E-07	8.73E-07	-5.90E-11	0.01	-5.90E-11	0.01
U-234	241-SX-114	27	12	4.90E-04	5.79E-06	5.79E-06	-5.20E-10	0.01	-5.20E-10	0.01
U-234	241-SX-115	27	12	4.90E-04	7.53E-06	7.53E-06	-6.50E-10	0.01	-6.50E-10	0.01
U-234	241-SX-ANC	35	11	9.80E-04	1.01E-02	1.01E-02	-4.10E-05	0.40	-4.10E-05	0.40
U-234	241-SY-101	26	11	9.80E-04	7.02E-07	7.02E-07	-1.30E-10	0.02	-1.30E-10	0.02
U-234	241-SY-102	27	12	4.90E-04	6.63E-06	6.63E-06	-5.80E-10	0.01	-5.80E-10	0.01
U-234	241-SY-103	29	12	4.90E-04	3.16E-06	3.16E-06	-1.90E-10	0.01	-1.90E-10	0.01
U-234	241-SY-ANC	38	12	4.90E-04	7.29E-04	7.30E-04	-1.50E-06	0.20	-1.50E-06	0.20
U-234	241-T-101	27	12	4.90E-04	7.11E-06	7.11E-06	-6.20E-10	0.01	-6.20E-10	0.01
U-234	241-T-102	27	12	4.90E-04	4.93E-06	4.93E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-T-103	27	12	4.90E-04	5.06E-06	5.06E-06	-4.70E-10	0.01	-4.70E-10	0.01
U-234	241-T-104	27	12	4.90E-04	6.81E-06	6.81E-06	-6.00E-10	0.01	-6.00E-10	0.01
U-234	241-T-105	26	12	4.90E-04	5.38E-06	5.39E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-234	241-T-106	27	12	4.90E-04	6.34E-06	6.34E-06	-5.60E-10	0.01	-5.60E-10	0.01
U-234	241-T-107	27	12	4.90E-04	4.97E-06	4.97E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-T-108	27	12	4.90E-04	4.95E-06	4.95E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-T-109	28	12	4.90E-04	3.90E-06	3.90E-06	-1.90E-10	0.00	-1.90E-10	0.00
U-234	241-T-110	27	10	2.00E-03	1.49E-07	1.49E-07	-2.50E-11	0.02	-2.50E-11	0.02
U-234	241-T-111	27	12	4.90E-04	4.95E-06	4.95E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-T-112	27	12	4.90E-04	4.35E-06	4.35E-06	-3.80E-10	0.01	-3.80E-10	0.01
U-234	241-T-201	30	10	2.00E-03	4.36E-10	4.37E-10	-7.30E-14	0.02	-7.30E-14	0.02

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-234	241-T-202	31	12	4.90E-04	5.81E-08	5.81E-08	-3.90E-12	0.01	-3.90E-12	0.01
U-234	241-T-203	25	9	3.90E-03	2.19E-09	2.20E-09	-1.20E-12	0.05	-1.20E-12	0.05
U-234	241-T-204	25	9	3.90E-03	9.20E-10	9.20E-10	-5.00E-13	0.05	-5.00E-13	0.05
U-234	241-T-ANC	31	10	2.00E-03	1.60E-02	1.60E-02	-4.00E-05	0.25	-4.00E-05	0.25
U-234	241-TX-101	27	12	4.90E-04	4.94E-06	4.94E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-TX-102	27	12	4.90E-04	5.02E-06	5.03E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-TX-103	27	12	4.90E-04	5.57E-06	5.57E-06	-5.00E-10	0.01	-5.00E-10	0.01
U-234	241-TX-104	26	12	4.90E-04	5.43E-06	5.43E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-234	241-TX-105	27	12	4.90E-04	5.04E-06	5.04E-06	-4.70E-10	0.01	-4.70E-10	0.01
U-234	241-TX-106	27	12	4.90E-04	5.18E-06	5.18E-06	-4.80E-10	0.01	-4.80E-10	0.01
U-234	241-TX-107	27	12	4.90E-04	5.68E-06	5.68E-06	-5.10E-10	0.01	-5.10E-10	0.01
U-234	241-TX-108	27	12	4.90E-04	4.99E-06	4.99E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-TX-109	27	12	4.90E-04	4.98E-06	4.98E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-TX-110	26	12	4.90E-04	5.45E-06	5.45E-06	-5.00E-10	0.01	-5.00E-10	0.01
U-234	241-TX-111	26	12	4.90E-04	5.41E-06	5.41E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-234	241-TX-112	27	12	4.90E-04	5.54E-06	5.54E-06	-5.00E-10	0.01	-5.00E-10	0.01
U-234	241-TX-113	29	12	4.90E-04	3.89E-06	3.89E-06	-2.00E-10	0.01	-2.00E-10	0.01
U-234	241-TX-114	27	12	4.90E-04	5.48E-06	5.48E-06	-5.00E-10	0.01	-5.00E-10	0.01
U-234	241-TX-115	26	12	4.90E-04	5.43E-06	5.43E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-234	241-TX-116	26	12	4.90E-04	5.12E-06	5.12E-06	-4.70E-10	0.01	-4.70E-10	0.01
U-234	241-TX-117	26	12	4.90E-04	5.38E-06	5.38E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-234	241-TX-118	26	12	4.90E-04	5.76E-06	5.76E-06	-5.20E-10	0.01	-5.20E-10	0.01
U-234	241-TX-ANC	36	11	9.80E-04	1.08E-02	1.09E-02	-4.50E-05	0.42	-4.50E-05	0.42
U-234	241-TY-101	27	12	4.90E-04	4.96E-06	4.96E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-TY-102	28	12	4.90E-04	1.30E-06	1.30E-06	-9.40E-11	0.01	-9.40E-11	0.01
U-234	241-TY-103	26	12	4.90E-04	5.10E-06	5.10E-06	-4.70E-10	0.01	-4.70E-10	0.01
U-234	241-TY-104	27	12	4.90E-04	4.96E-06	4.96E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-TY-105	27	12	4.90E-04	4.94E-06	4.94E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-TY-106	27	12	4.90E-04	4.96E-06	4.96E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-TY-ANC	25	9	3.90E-03	1.71E-02	1.71E-02	-3.40E-05	0.20	-3.40E-05	0.20
U-234	241-U-101	27	12	4.90E-04	4.94E-06	4.94E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-U-102	26	12	4.90E-04	5.08E-06	5.08E-06	-4.70E-10	0.01	-4.70E-10	0.01
U-234	241-U-103	27	12	4.90E-04	4.84E-06	4.84E-06	-4.40E-10	0.01	-4.40E-10	0.01
U-234	241-U-104	27	12	4.90E-04	4.99E-06	4.99E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-U-105	27	12	4.90E-04	5.21E-06	5.21E-06	-4.80E-10	0.01	-4.80E-10	0.01
U-234	241-U-106	27	12	4.90E-04	5.00E-06	5.00E-06	-4.50E-10	0.01	-4.50E-10	0.01
U-234	241-U-107	29	12	4.90E-04	3.34E-06	3.34E-06	-2.00E-10	0.01	-2.00E-10	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-234	241-U-108	27	12	4.90E-04	6.96E-06	6.96E-06	-6.10E-10	0.01	-6.10E-10	0.01
U-234	241-U-109	30	12	4.90E-04	1.48E-06	1.48E-06	-1.20E-10	0.01	-1.20E-10	0.01
U-234	241-U-110	27	12	4.90E-04	4.97E-06	4.97E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-U-111	26	12	4.90E-04	5.12E-06	5.12E-06	-4.70E-10	0.01	-4.70E-10	0.01
U-234	241-U-112	27	12	4.90E-04	4.97E-06	4.97E-06	-4.60E-10	0.01	-4.60E-10	0.01
U-234	241-U-201	25	8	7.80E-03	8.84E-09	8.85E-09	-4.70E-12	0.05	-4.70E-12	0.05
U-234	241-U-202	25	8	7.80E-03	8.36E-09	8.37E-09	-4.50E-12	0.05	-4.50E-12	0.05
U-234	241-U-203	25	9	3.90E-03	4.03E-09	4.04E-09	-2.20E-12	0.05	-2.20E-12	0.05
U-234	241-U-204	27	12	4.90E-04	3.68E-07	3.68E-07	-3.40E-11	0.01	-3.40E-11	0.01
U-234	241-U-ANC	32	10	2.00E-03	1.41E-02	1.41E-02	-3.40E-05	0.24	-3.40E-05	0.24
U-234	T31	41	12	4.90E-04	1.08E+00	1.08E+00	-4.40E-04	0.04	-4.40E-04	0.04
U-234	T34	27	18	7.60E-06	1.32E+00	1.32E+00	2.70E-06	0.00	2.70E-06	0.00
Tc-99	218-E-10	30	13	2.40E-04	5.07E-03	5.12E-03	-4.80E-05	0.95	-4.80E-05	0.95
Tc-99	218-E-12B	55	25	1.70E-04	8.11E-01	8.12E-01	-1.80E-03	0.23	-5.80E-04	0.07
Tc-99	241-A-101	55	17	6.50E-04	1.54E+00	1.54E+00	-7.10E-04	0.05	-7.10E-04	0.05
Tc-99	241-A-102	55	17	6.50E-04	1.69E+00	1.69E+00	-7.70E-04	0.05	-7.70E-04	0.05
Tc-99	241-A-103	55	17	6.50E-04	1.46E+00	1.46E+00	-6.70E-04	0.05	-6.70E-04	0.05
Tc-99	241-A-104	54	17	6.50E-04	8.92E-01	8.92E-01	-2.30E-04	0.03	-2.30E-04	0.03
Tc-99	241-A-105	47	11	9.80E-04	7.29E-01	7.29E-01	-9.40E-05	0.01	-9.40E-05	0.01
Tc-99	241-A-106	55	17	6.50E-04	2.32E+00	2.32E+00	-1.10E-03	0.05	-1.10E-03	0.05
Tc-99	241-A-ANC	50	25	1.90E-04	8.43E-01	8.43E-01	-1.10E-03	0.13	-1.90E-04	0.02
Tc-99	241-AN-101	54	17	6.50E-04	3.02E-01	3.02E-01	-1.40E-04	0.05	-1.40E-04	0.05
Tc-99	241-AN-102	54	17	6.50E-04	1.06E+00	1.06E+00	-4.80E-04	0.05	-4.80E-04	0.05
Tc-99	241-AN-103	54	17	6.50E-04	1.46E+00	1.46E+00	-6.60E-04	0.05	-6.60E-04	0.05
Tc-99	241-AN-104	54	17	6.50E-04	1.49E+00	1.49E+00	-6.80E-04	0.05	-6.80E-04	0.05
Tc-99	241-AN-105	54	17	6.50E-04	1.95E+00	1.95E+00	-8.90E-04	0.05	-8.90E-04	0.05
Tc-99	241-AN-106	54	17	6.50E-04	3.93E-01	3.93E-01	-1.80E-04	0.05	-1.80E-04	0.05
Tc-99	241-AN-107	54	17	6.50E-04	7.73E-01	7.74E-01	-3.50E-04	0.05	-3.50E-04	0.05
Tc-99	241-AN-ANC	49	25	2.60E-04	7.12E-01	7.13E-01	-9.90E-04	0.14	-1.70E-04	0.02
Tc-99	241-AP-101	54	17	6.50E-04	1.19E+00	1.19E+00	-5.40E-04	0.05	-5.40E-04	0.05
Tc-99	241-AP-102	54	17	6.50E-04	4.13E-01	4.13E-01	-1.90E-04	0.05	-1.90E-04	0.05
Tc-99	241-AP-103	54	17	6.50E-04	1.22E+00	1.22E+00	-5.60E-04	0.05	-5.60E-04	0.05
Tc-99	241-AP-104	54	17	6.50E-04	1.33E+00	1.33E+00	-6.10E-04	0.05	-6.10E-04	0.05
Tc-99	241-AP-105	54	17	6.50E-04	1.34E+00	1.34E+00	-6.10E-04	0.05	-6.10E-04	0.05
Tc-99	241-AP-106	54	17	6.50E-04	6.25E-01	6.25E-01	-2.90E-04	0.05	-2.90E-04	0.05
Tc-99	241-AP-107	54	17	6.50E-04	1.21E+00	1.21E+00	-5.50E-04	0.05	-5.50E-04	0.05
Tc-99	241-AP-108	54	17	6.50E-04	1.11E+00	1.11E+00	-5.10E-04	0.05	-5.10E-04	0.05

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Tc-99	241-AP-ANC	49	25	2.60E-04	7.90E-01	7.91E-01	-1.10E-03	0.14	-1.80E-04	0.02
Tc-99	241-AW-101	54	17	6.50E-04	1.42E+00	1.42E+00	-6.50E-04	0.05	-6.50E-04	0.05
Tc-99	241-AW-102	54	17	6.50E-04	4.96E-01	4.96E-01	-2.30E-04	0.05	-2.30E-04	0.05
Tc-99	241-AW-103	54	17	6.50E-04	7.00E-01	7.00E-01	-3.20E-04	0.05	-3.20E-04	0.05
Tc-99	241-AW-104	54	17	6.50E-04	1.38E+00	1.38E+00	-6.30E-04	0.05	-6.30E-04	0.05
Tc-99	241-AW-105	54	17	6.50E-04	3.18E-01	3.18E-01	-1.50E-04	0.05	-1.50E-04	0.05
Tc-99	241-AW-106	54	17	6.50E-04	9.08E-01	9.08E-01	-4.10E-04	0.05	-4.10E-04	0.05
Tc-99	241-AW-ANC	49	25	2.60E-04	5.03E-01	5.03E-01	-7.00E-04	0.14	-1.20E-04	0.02
Tc-99	241-AX-101	55	17	6.50E-04	1.49E+00	1.49E+00	-6.80E-04	0.05	-6.80E-04	0.05
Tc-99	241-AX-102	55	17	6.50E-04	4.03E-01	4.03E-01	-1.80E-04	0.05	-1.80E-04	0.05
Tc-99	241-AX-103	55	17	6.50E-04	1.27E+00	1.27E+00	-5.80E-04	0.05	-5.80E-04	0.05
Tc-99	241-AX-104	55	17	6.50E-04	5.30E+00	5.31E+00	-2.40E-03	0.05	-2.40E-03	0.05
Tc-99	241-AX-ANC	50	25	1.90E-04	5.17E-01	5.17E-01	-6.90E-04	0.13	-1.20E-04	0.02
Tc-99	241-AY-101	54	17	6.50E-04	7.55E-01	7.55E-01	-3.40E-04	0.05	-3.40E-04	0.05
Tc-99	241-AY-102	54	17	6.50E-04	3.89E-01	3.89E-01	-1.80E-04	0.05	-1.80E-04	0.05
Tc-99	241-AY-ANC	49	25	2.60E-04	1.38E-01	1.38E-01	-1.90E-04	0.14	-3.20E-05	0.02
Tc-99	241-AZ-101	54	17	6.50E-04	3.08E+00	3.08E+00	-1.40E-03	0.05	-1.40E-03	0.05
Tc-99	241-AZ-102	54	17	6.50E-04	1.17E+00	1.17E+00	-5.30E-04	0.05	-5.30E-04	0.05
Tc-99	241-AZ-ANC	49	25	2.60E-04	3.67E-01	3.67E-01	-5.10E-04	0.14	-8.60E-05	0.02
Tc-99	241-B-101	26	9	3.90E-03	3.26E-02	3.28E-02	-1.80E-04	0.54	-1.80E-04	0.54
Tc-99	241-B-102	26	9	3.90E-03	1.29E-02	1.30E-02	-7.00E-05	0.54	-7.00E-05	0.54
Tc-99	241-B-103	26	9	3.90E-03	1.14E-02	1.15E-02	-6.20E-05	0.54	-6.20E-05	0.54
Tc-99	241-B-104	55	17	6.50E-04	1.11E-01	1.11E-01	-5.10E-05	0.05	-5.10E-05	0.05
Tc-99	241-B-105	26	9	3.90E-03	2.00E-02	2.01E-02	-1.10E-04	0.54	-1.10E-04	0.54
Tc-99	241-B-106	26	9	3.90E-03	8.05E-02	8.10E-02	-4.40E-04	0.54	-4.40E-04	0.54
Tc-99	241-B-107	55	17	6.50E-04	1.75E-01	1.75E-01	-8.00E-05	0.05	-8.00E-05	0.05
Tc-99	241-B-108	26	9	3.90E-03	8.62E-03	8.67E-03	-4.70E-05	0.54	-4.70E-05	0.54
Tc-99	241-B-109	26	9	3.90E-03	6.82E-03	6.86E-03	-3.70E-05	0.54	-3.70E-05	0.54
Tc-99	241-B-110	55	17	6.50E-04	1.63E-01	1.63E-01	-7.40E-05	0.05	-7.40E-05	0.05
Tc-99	241-B-111	55	17	6.50E-04	1.04E+00	1.04E+00	-4.80E-04	0.05	-4.80E-04	0.05
Tc-99	241-B-112	55	17	6.50E-04	6.43E-01	6.43E-01	-2.90E-04	0.05	-2.90E-04	0.05
Tc-99	241-B-201	26	9	3.90E-03	9.91E-08	9.97E-08	-5.40E-10	0.54	-5.40E-10	0.54
Tc-99	241-B-202	26	9	3.90E-03	4.33E-02	4.36E-02	-2.30E-04	0.53	-2.30E-04	0.53
Tc-99	241-B-203	28	9	3.90E-03	1.51E-07	1.52E-07	-8.20E-10	0.54	-8.20E-10	0.54
Tc-99	241-B-204	26	9	3.90E-03	2.89E-06	2.90E-06	-1.50E-08	0.53	-1.50E-08	0.53
Tc-99	241-B-ANC	50	25	1.90E-04	2.85E-01	2.85E-01	-3.80E-04	0.13	-6.40E-05	0.02
Tc-99	241-BX-101	55	17	6.50E-04	3.64E-01	3.64E-01	-1.70E-04	0.05	-1.70E-04	0.05

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Tc-99	241-BX-102	26	9	3.90E-03	3.51E-03	3.53E-03	-1.90E-05	0.54	-1.90E-05	0.54
Tc-99	241-BX-103	26	9	3.90E-03	1.85E-03	1.86E-03	-1.00E-05	0.54	-1.00E-05	0.54
Tc-99	241-BX-104	55	17	6.50E-04	8.78E-01	8.79E-01	-4.00E-04	0.05	-4.00E-04	0.05
Tc-99	241-BX-105	55	17	6.50E-04	8.21E-01	8.21E-01	-3.80E-04	0.05	-3.80E-04	0.05
Tc-99	241-BX-106	55	17	6.50E-04	6.07E-01	6.08E-01	-2.80E-04	0.05	-2.80E-04	0.05
Tc-99	241-BX-107	55	17	6.50E-04	3.85E-01	3.85E-01	-1.80E-04	0.05	-1.80E-04	0.05
Tc-99	241-BX-108	55	17	6.50E-04	1.64E-01	1.64E-01	-7.50E-05	0.05	-7.50E-05	0.05
Tc-99	241-BX-109	26	9	3.90E-03	1.08E-02	1.09E-02	-5.80E-05	0.54	-5.80E-05	0.54
Tc-99	241-BX-110	55	17	6.50E-04	6.54E-01	6.54E-01	-3.00E-04	0.05	-3.00E-04	0.05
Tc-99	241-BX-111	55	17	6.50E-04	7.07E-01	7.07E-01	-3.20E-04	0.05	-3.20E-04	0.05
Tc-99	241-BX-112	55	17	6.50E-04	1.84E-01	1.84E-01	-8.40E-05	0.05	-8.40E-05	0.05
Tc-99	241-BX-ANC	50	25	1.90E-04	4.35E-01	4.35E-01	-5.80E-04	0.13	-9.80E-05	0.02
Tc-99	241-BY-101	55	17	6.50E-04	8.42E-01	8.42E-01	-3.80E-04	0.05	-3.80E-04	0.05
Tc-99	241-BY-102	55	17	6.50E-04	7.94E-01	7.94E-01	-3.60E-04	0.05	-3.60E-04	0.05
Tc-99	241-BY-103	55	17	6.50E-04	8.00E-01	8.00E-01	-3.70E-04	0.05	-3.70E-04	0.05
Tc-99	241-BY-104	55	17	6.50E-04	8.11E-01	8.12E-01	-3.70E-04	0.05	-3.70E-04	0.05
Tc-99	241-BY-105	55	17	6.50E-04	1.99E-01	2.00E-01	-9.10E-05	0.05	-9.10E-05	0.05
Tc-99	241-BY-106	55	17	6.50E-04	7.28E-01	7.28E-01	-3.30E-04	0.05	-3.30E-04	0.05
Tc-99	241-BY-107	55	17	6.50E-04	7.43E-01	7.44E-01	-3.40E-04	0.05	-3.40E-04	0.05
Tc-99	241-BY-108	55	17	6.50E-04	6.72E-01	6.72E-01	-3.10E-04	0.05	-3.10E-04	0.05
Tc-99	241-BY-109	55	17	6.50E-04	7.53E-01	7.53E-01	-3.40E-04	0.05	-3.40E-04	0.05
Tc-99	241-BY-110	55	17	6.50E-04	6.78E-01	6.78E-01	-3.10E-04	0.05	-3.10E-04	0.05
Tc-99	241-BY-111	55	17	6.50E-04	7.56E-01	7.56E-01	-3.50E-04	0.05	-3.50E-04	0.05
Tc-99	241-BY-112	55	17	6.50E-04	8.22E-01	8.22E-01	-3.80E-04	0.05	-3.80E-04	0.05
Tc-99	241-BY-ANC	50	25	1.90E-04	7.76E-01	7.76E-01	-1.00E-03	0.13	-1.70E-04	0.02
Tc-99	218-W-3A	51	25	1.80E-05	2.55E-01	2.55E-01	-6.50E-04	0.26	-1.10E-04	0.04
Tc-99	218-W-3AE	51	25	1.80E-05	3.51E+01	3.51E+01	-9.00E-02	0.26	-1.50E-02	0.04
Tc-99	218-W-4C	50	25	1.80E-05	1.64E+01	1.65E+01	-4.40E-02	0.26	-8.20E-03	0.05
Tc-99	218-W-5	50	25	2.10E-05	3.05E-01	3.05E-01	-4.30E-04	0.14	-9.10E-05	0.03
Tc-99	218-W-REACTOR	7	25	5.00E-01	1.09E-01	1.09E-01	-1.30E-15	0.00	-1.30E-15	0.00
Tc-99	221-T	30	9	3.90E-03	3.49E-03	3.50E-03	-1.20E-05	0.34	-1.20E-05	0.34
Tc-99	241-S-101	58	25	1.20E-03	7.68E-01	7.68E-01	-1.20E-03	0.16	-3.40E-04	0.05
Tc-99	241-S-102	58	25	1.20E-03	6.44E-01	6.44E-01	-1.00E-03	0.16	-2.90E-04	0.05
Tc-99	241-S-103	58	25	1.20E-03	1.82E+00	1.82E+00	-2.90E-03	0.16	-8.20E-04	0.05
Tc-99	241-S-104	58	25	1.20E-03	4.53E-01	4.53E-01	-7.10E-04	0.16	-2.00E-04	0.05
Tc-99	241-S-105	58	25	1.20E-03	2.19E+00	2.19E+00	-3.50E-03	0.16	-9.80E-04	0.05
Tc-99	241-S-106	58	25	1.20E-03	1.60E+00	1.60E+00	-2.50E-03	0.16	-7.10E-04	0.05

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Tc-99	241-S-107	58	25	1.20E-03	2.18E-01	2.18E-01	-3.40E-04	0.16	-9.70E-05	0.05
Tc-99	241-S-108	58	25	1.20E-03	1.62E+00	1.62E+00	-2.60E-03	0.16	-7.30E-04	0.05
Tc-99	241-S-109	58	25	1.20E-03	2.00E+00	2.00E+00	-3.10E-03	0.16	-9.00E-04	0.05
Tc-99	241-S-110	58	25	1.20E-03	1.55E+00	1.55E+00	-2.40E-03	0.16	-6.90E-04	0.05
Tc-99	241-S-111	58	25	1.20E-03	1.29E+00	1.29E+00	-2.00E-03	0.16	-5.80E-04	0.05
Tc-99	241-S-112	58	25	1.20E-03	1.46E-01	1.46E-01	-2.30E-04	0.16	-6.50E-05	0.05
Tc-99	241-S-ANC	50	25	1.70E-04	1.15E+00	1.15E+00	-2.70E-03	0.24	-6.00E-04	0.05
Tc-99	241-SX-101	58	25	1.20E-03	9.96E-01	9.97E-01	-1.60E-03	0.16	-4.50E-04	0.05
Tc-99	241-SX-102	58	25	1.20E-03	1.20E+00	1.20E+00	-1.90E-03	0.16	-5.40E-04	0.05
Tc-99	241-SX-103	58	25	1.20E-03	1.41E+00	1.41E+00	-2.20E-03	0.16	-6.30E-04	0.05
Tc-99	241-SX-104	58	25	1.20E-03	1.19E+00	1.19E+00	-1.90E-03	0.16	-5.30E-04	0.05
Tc-99	241-SX-105	58	25	1.20E-03	1.34E+00	1.34E+00	-2.10E-03	0.16	-6.00E-04	0.05
Tc-99	241-SX-106	58	25	1.20E-03	1.65E+00	1.65E+00	-2.60E-03	0.16	-7.40E-04	0.05
Tc-99	241-SX-107	58	25	1.20E-03	3.71E-01	3.71E-01	-5.80E-04	0.16	-1.70E-04	0.05
Tc-99	241-SX-108	58	25	1.20E-03	4.74E-01	4.74E-01	-7.50E-04	0.16	-2.10E-04	0.05
Tc-99	241-SX-109	58	25	1.20E-03	8.13E-01	8.13E-01	-1.30E-03	0.16	-3.60E-04	0.05
Tc-99	241-SX-110	58	25	1.20E-03	7.04E-01	7.04E-01	-1.10E-03	0.16	-3.20E-04	0.05
Tc-99	241-SX-111	58	25	1.20E-03	5.32E-01	5.32E-01	-8.40E-04	0.16	-2.40E-04	0.05
Tc-99	241-SX-112	58	25	1.20E-03	4.38E-01	4.38E-01	-6.90E-04	0.16	-2.00E-04	0.05
Tc-99	241-SX-113	58	25	1.20E-03	2.08E-01	2.08E-01	-3.30E-04	0.16	-9.30E-05	0.05
Tc-99	241-SX-114	58	25	1.20E-03	5.08E-01	5.08E-01	-8.00E-04	0.16	-2.30E-04	0.05
Tc-99	241-SX-115	58	25	1.20E-03	7.52E-01	7.53E-01	-1.20E-03	0.16	-3.40E-04	0.05
Tc-99	241-SX-ANC	50	25	1.70E-04	1.15E+00	1.15E+00	-2.70E-03	0.24	-6.00E-04	0.05
Tc-99	241-SY-101	58	25	1.20E-03	7.64E-01	7.65E-01	-1.20E-03	0.16	-3.40E-04	0.05
Tc-99	241-SY-102	58	25	1.20E-03	1.49E+00	1.49E+00	-2.30E-03	0.16	-6.60E-04	0.05
Tc-99	241-SY-103	58	25	1.20E-03	3.61E+00	3.61E+00	-5.70E-03	0.16	-1.60E-03	0.05
Tc-99	241-SY-ANC	49	25	1.70E-04	3.70E-01	3.71E-01	-8.80E-04	0.24	-1.90E-04	0.05
Tc-99	241-T-101	58	25	1.20E-03	8.31E-01	8.31E-01	-1.30E-03	0.16	-3.70E-04	0.05
Tc-99	241-T-102	58	25	1.20E-03	5.44E-01	5.44E-01	-8.60E-04	0.16	-2.40E-04	0.05
Tc-99	241-T-103	58	25	1.20E-03	2.27E-01	2.27E-01	-3.60E-04	0.16	-1.00E-04	0.05
Tc-99	241-T-104	27	7	1.60E-02	7.83E-03	7.90E-03	-6.40E-05	0.82	-6.40E-05	0.82
Tc-99	241-T-105	58	25	1.20E-03	9.71E-01	9.72E-01	-1.50E-03	0.16	-4.30E-04	0.05
Tc-99	241-T-106	58	25	1.20E-03	1.80E-01	1.80E-01	-2.80E-04	0.16	-8.10E-05	0.05
Tc-99	241-T-107	58	25	1.20E-03	6.91E-01	6.91E-01	-1.10E-03	0.16	-3.10E-04	0.05
Tc-99	241-T-108	58	25	1.20E-03	1.68E-01	1.68E-01	-2.70E-04	0.16	-7.50E-05	0.05
Tc-99	241-T-109	27	7	1.60E-02	1.24E-02	1.25E-02	-1.00E-04	0.82	-1.00E-04	0.82
Tc-99	241-T-110	27	7	1.60E-02	8.39E-06	8.46E-06	-6.90E-08	0.82	-6.90E-08	0.82

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COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Tc-99	241-T-111	27	7	1.60E-02	9.61E-02	9.69E-02	-7.90E-04	0.82	-7.90E-04	0.82
Tc-99	241-T-112	27	7	1.60E-02	8.67E-02	8.74E-02	-7.10E-04	0.82	-7.10E-04	0.82
Tc-99	241-T-201	25	7	1.60E-02	7.18E-10	7.24E-10	-5.80E-12	0.81	-5.80E-12	0.81
Tc-99	241-T-202	25	7	1.60E-02	1.05E-09	1.06E-09	-8.50E-12	0.81	-8.50E-12	0.81
Tc-99	241-T-203	25	7	1.60E-02	1.32E-09	1.33E-09	-1.10E-11	0.81	-1.10E-11	0.81
Tc-99	241-T-204	29	8	7.80E-03	1.55E-09	1.56E-09	-1.20E-11	0.78	-1.20E-11	0.78
Tc-99	241-T-ANC	50	25	1.70E-04	2.20E-01	2.20E-01	-5.30E-04	0.24	-1.10E-04	0.05
Tc-99	241-TX-101	58	25	1.20E-03	4.08E-01	4.08E-01	-6.40E-04	0.16	-1.80E-04	0.05
Tc-99	241-TX-102	58	25	1.20E-03	1.25E+00	1.25E+00	-2.00E-03	0.16	-5.60E-04	0.05
Tc-99	241-TX-103	58	25	1.20E-03	1.29E+00	1.29E+00	-2.00E-03	0.16	-5.80E-04	0.05
Tc-99	241-TX-104	58	25	1.20E-03	6.91E-01	6.91E-01	-1.10E-03	0.16	-3.10E-04	0.05
Tc-99	241-TX-105	58	25	1.20E-03	1.09E+00	1.09E+00	-1.70E-03	0.16	-4.90E-04	0.05
Tc-99	241-TX-106	58	25	1.20E-03	1.20E+00	1.20E+00	-1.90E-03	0.16	-5.40E-04	0.05
Tc-99	241-TX-107	58	25	1.20E-03	1.44E+00	1.44E+00	-2.30E-03	0.16	-6.40E-04	0.05
Tc-99	241-TX-108	58	25	1.20E-03	1.02E+00	1.02E+00	-1.60E-03	0.16	-4.60E-04	0.05
Tc-99	241-TX-109	58	25	1.20E-03	3.30E-01	3.30E-01	-5.20E-04	0.16	-1.50E-04	0.05
Tc-99	241-TX-110	58	25	1.20E-03	1.07E+00	1.07E+00	-1.70E-03	0.16	-4.80E-04	0.05
Tc-99	241-TX-111	58	25	1.20E-03	1.06E+00	1.06E+00	-1.70E-03	0.16	-4.80E-04	0.05
Tc-99	241-TX-112	58	25	1.20E-03	1.15E+00	1.15E+00	-1.80E-03	0.16	-5.10E-04	0.05
Tc-99	241-TX-113	58	25	1.20E-03	1.20E+00	1.20E+00	-1.90E-03	0.16	-5.40E-04	0.05
Tc-99	241-TX-114	58	25	1.20E-03	1.00E+00	1.00E+00	-1.60E-03	0.16	-4.50E-04	0.05
Tc-99	241-TX-115	58	25	1.20E-03	1.30E+00	1.30E+00	-2.00E-03	0.16	-5.80E-04	0.05
Tc-99	241-TX-116	58	25	1.20E-03	5.88E-01	5.88E-01	-9.30E-04	0.16	-2.60E-04	0.05
Tc-99	241-TX-117	58	25	1.20E-03	7.98E-01	7.98E-01	-1.30E-03	0.16	-3.60E-04	0.05
Tc-99	241-TX-118	58	25	1.20E-03	1.11E+00	1.11E+00	-1.70E-03	0.16	-5.00E-04	0.05
Tc-99	241-TX-ANC	50	25	1.70E-04	1.24E+00	1.24E+00	-3.00E-03	0.24	-6.40E-04	0.05
Tc-99	241-TY-101	58	25	1.20E-03	1.15E-01	1.15E-01	-1.80E-04	0.16	-5.10E-05	0.05
Tc-99	241-TY-102	58	25	1.20E-03	3.00E-01	3.01E-01	-4.70E-04	0.16	-1.30E-04	0.05
Tc-99	241-TY-103	58	25	1.20E-03	5.00E-01	5.00E-01	-7.90E-04	0.16	-2.20E-04	0.05
Tc-99	241-TY-104	58	25	1.20E-03	5.09E-01	5.09E-01	-8.00E-04	0.16	-2.30E-04	0.05
Tc-99	241-TY-105	58	25	1.20E-03	4.86E-01	4.86E-01	-7.60E-04	0.16	-2.20E-04	0.05
Tc-99	241-TY-106	58	25	1.20E-03	1.68E-01	1.68E-01	-2.60E-04	0.16	-7.50E-05	0.05
Tc-99	241-TY-ANC	50	25	1.70E-04	1.66E-01	1.66E-01	-4.00E-04	0.24	-8.60E-05	0.05
Tc-99	241-U-101	58	25	1.20E-03	2.14E-01	2.14E-01	-3.40E-04	0.16	-9.60E-05	0.05
Tc-99	241-U-102	58	25	1.20E-03	1.24E+00	1.24E+00	-2.00E-03	0.16	-5.60E-04	0.05
Tc-99	241-U-103	58	25	1.20E-03	1.57E+00	1.57E+00	-2.50E-03	0.16	-7.00E-04	0.05
Tc-99	241-U-104	58	25	1.20E-03	1.25E+00	1.25E+00	-2.00E-03	0.16	-5.60E-04	0.05

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Tc-99	241-U-105	58	25	1.20E-03	1.70E+00	1.70E+00	-2.70E-03	0.16	-7.60E-04	0.05
Tc-99	241-U-106	58	25	1.20E-03	1.58E+00	1.58E+00	-2.50E-03	0.16	-7.10E-04	0.05
Tc-99	241-U-107	58	25	1.20E-03	2.04E+00	2.04E+00	-3.20E-03	0.16	-9.10E-04	0.05
Tc-99	241-U-108	58	25	1.20E-03	1.65E+00	1.65E+00	-2.60E-03	0.16	-7.40E-04	0.05
Tc-99	241-U-109	58	25	1.20E-03	1.80E+00	1.81E+00	-2.80E-03	0.16	-8.10E-04	0.05
Tc-99	241-U-110	58	25	1.20E-03	1.59E-01	1.60E-01	-2.50E-04	0.16	-7.10E-05	0.05
Tc-99	241-U-111	58	25	1.20E-03	1.43E+00	1.43E+00	-2.30E-03	0.16	-6.40E-04	0.05
Tc-99	241-U-112	58	25	1.20E-03	2.01E-01	2.01E-01	-3.20E-04	0.16	-9.00E-05	0.05
Tc-99	241-U-201	28	7	1.60E-02	5.90E-03	5.95E-03	-4.80E-05	0.81	-4.80E-05	0.81
Tc-99	241-U-202	28	7	1.60E-02	5.61E-03	5.66E-03	-4.50E-05	0.81	-4.50E-05	0.81
Tc-99	241-U-203	28	7	1.60E-02	6.14E-03	6.19E-03	-4.90E-05	0.81	-4.90E-05	0.81
Tc-99	241-U-204	28	7	1.60E-02	2.60E-03	2.62E-03	-2.10E-05	0.81	-2.10E-05	0.81
Tc-99	241-U-ANC	50	25	1.70E-04	1.63E+00	1.63E+00	-3.90E-03	0.24	-8.50E-04	0.05
Tc-99	T31	55	25	3.90E-04	2.12E+00	2.12E+00	-7.00E-03	0.33	-1.50E-03	0.07
Tc-99	T34	55	25	3.90E-04	2.85E+00	2.85E+00	-9.40E-03	0.33	-2.10E-03	0.07
Ra-226	218-E-1	26	11	9.80E-04	9.19E-07	9.18E-07	1.10E-10	0.01	1.10E-10	0.01
Ra-226	218-E-10	26	11	9.80E-04	1.05E-06	1.05E-06	8.60E-11	0.01	8.60E-11	0.01
Ra-226	218-E-12A	26	11	9.80E-04	2.49E-06	2.49E-06	2.30E-10	0.01	2.30E-10	0.01
Ra-226	218-E-12B	26	11	9.80E-04	4.83E-07	4.83E-07	3.80E-11	0.01	3.80E-11	0.01
Ra-226	218-E-4	26	11	9.80E-04	2.57E-09	2.57E-09	2.40E-13	0.01	2.40E-13	0.01
Ra-226	218-E-5	26	11	9.80E-04	3.04E-07	3.04E-07	2.90E-11	0.01	2.90E-11	0.01
Ra-226	218-E-5A	26	11	9.80E-04	3.09E-07	3.09E-07	2.90E-11	0.01	2.90E-11	0.01
Ra-226	218-E-8	26	11	9.80E-04	4.80E-09	4.80E-09	4.50E-13	0.01	4.50E-13	0.01
Ra-226	241-A-101	25	11	9.80E-04	3.16E-06	3.16E-06	-1.70E-09	0.05	-1.70E-09	0.05
Ra-226	241-A-102	31	12	4.90E-04	1.29E-04	1.29E-04	-3.40E-08	0.03	-3.40E-08	0.03
Ra-226	241-A-103	32	12	4.90E-04	6.24E-06	6.25E-06	-1.70E-09	0.03	-1.70E-09	0.03
Ra-226	241-A-104	31	12	4.90E-04	4.53E-05	4.53E-05	-1.20E-08	0.03	-1.20E-08	0.03
Ra-226	241-A-105	25	11	9.80E-04	2.26E-07	2.27E-07	-1.20E-10	0.05	-1.20E-10	0.05
Ra-226	241-A-106	31	12	4.90E-04	5.01E-06	5.02E-06	-1.30E-09	0.03	-1.30E-09	0.03
Ra-226	241-A-ANC	50	25	1.50E-04	1.88E-07	1.88E-07	-2.00E-09	1.00	-4.80E-10	0.26
Ra-226	241-AN-101	31	12	4.90E-04	6.51E-05	6.51E-05	-1.70E-08	0.03	-1.70E-08	0.03
Ra-226	241-AN-102	26	11	9.80E-04	8.73E-07	8.73E-07	-4.90E-10	0.06	-4.90E-10	0.06
Ra-226	241-AN-103	26	7	1.60E-02	1.38E-07	1.38E-07	-1.70E-10	0.12	-1.70E-10	0.12
Ra-226	241-AN-104	29	11	9.80E-04	4.61E-07	4.61E-07	-2.40E-10	0.05	-2.40E-10	0.05
Ra-226	241-AN-105	28	11	9.80E-04	2.29E-07	2.30E-07	-1.20E-10	0.05	-1.20E-10	0.05
Ra-226	241-AN-106	31	12	4.90E-04	1.80E-05	1.80E-05	-4.60E-09	0.03	-4.60E-09	0.03
Ra-226	241-AN-107	26	11	9.80E-04	5.87E-07	5.87E-07	-3.40E-10	0.06	-3.40E-10	0.06

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Ra-226	241-AN-ANC	49	25	1.30E-04	2.03E-07	2.04E-07	-2.20E-09	1.10	-5.30E-10	0.26
Ra-226	241-AP-101	25	7	1.60E-02	1.24E-07	1.24E-07	-3.30E-10	0.27	-3.30E-10	0.27
Ra-226	241-AP-102	31	12	4.90E-04	2.20E-06	2.21E-06	-5.90E-10	0.03	-5.90E-10	0.03
Ra-226	241-AP-103	25	10	2.00E-03	1.57E-07	1.58E-07	-1.70E-10	0.11	-1.70E-10	0.11
Ra-226	241-AP-104	25	7	1.60E-02	2.35E-07	2.35E-07	-2.90E-10	0.12	-2.90E-10	0.12
Ra-226	241-AP-105	27	10	2.00E-03	1.26E-07	1.26E-07	-1.40E-10	0.11	-1.40E-10	0.11
Ra-226	241-AP-106	27	6	3.10E-02	6.86E-08	6.87E-08	-1.30E-10	0.20	-1.30E-10	0.20
Ra-226	241-AP-107	25	8	7.80E-03	1.85E-07	1.86E-07	-3.60E-10	0.19	-3.60E-10	0.19
Ra-226	241-AP-108	27	6	3.10E-02	1.14E-07	1.15E-07	-2.30E-10	0.20	-2.30E-10	0.20
Ra-226	241-AP-ANC	39	12	4.90E-04	4.21E-07	4.22E-07	-1.30E-09	0.32	-1.30E-09	0.32
Ra-226	241-AW-101	25	11	9.80E-04	2.26E-06	2.26E-06	-1.20E-09	0.05	-1.20E-09	0.05
Ra-226	241-AW-102	31	12	4.90E-04	7.51E-06	7.51E-06	-1.90E-09	0.03	-1.90E-09	0.03
Ra-226	241-AW-103	31	12	4.90E-04	1.30E-05	1.30E-05	-3.30E-09	0.03	-3.30E-09	0.03
Ra-226	241-AW-104	31	12	4.90E-04	9.80E-06	9.80E-06	-2.40E-09	0.02	-2.40E-09	0.02
Ra-226	241-AW-105	30	12	4.90E-04	2.24E-05	2.24E-05	-5.70E-09	0.03	-5.70E-09	0.03
Ra-226	241-AW-106	26	11	9.80E-04	2.21E-06	2.21E-06	-1.20E-09	0.06	-1.20E-09	0.06
Ra-226	241-AW-ANC	50	25	1.10E-04	1.63E-07	1.64E-07	-1.70E-09	1.00	-4.20E-10	0.25
Ra-226	241-AX-101	26	11	9.80E-04	3.31E-06	3.31E-06	-1.80E-09	0.06	-1.80E-09	0.06
Ra-226	241-AX-102	30	12	4.90E-04	1.49E-05	1.49E-05	-3.80E-09	0.03	-3.80E-09	0.03
Ra-226	241-AX-103	26	11	9.80E-04	2.17E-06	2.17E-06	-1.20E-09	0.05	-1.20E-09	0.05
Ra-226	241-AX-104	31	12	4.90E-04	1.71E-05	1.71E-05	-4.50E-09	0.03	-4.50E-09	0.03
Ra-226	241-AX-ANC	40	12	4.90E-04	1.51E-07	1.51E-07	-8.80E-10	0.58	-8.80E-10	0.58
Ra-226	241-AY-101	29	11	9.80E-04	6.21E-07	6.22E-07	-3.00E-10	0.05	-3.00E-10	0.05
Ra-226	241-AY-102	31	12	4.90E-04	6.66E-06	6.67E-06	-1.80E-09	0.03	-1.80E-09	0.03
Ra-226	241-AY-ANC	42	12	4.90E-04	7.79E-08	7.81E-08	-2.30E-10	0.30	-2.30E-10	0.30
Ra-226	241-AZ-101	27	11	9.80E-04	2.25E-06	2.25E-06	-1.30E-09	0.06	-1.30E-09	0.06
Ra-226	241-AZ-102	31	12	4.90E-04	6.89E-06	6.89E-06	-1.80E-09	0.03	-1.80E-09	0.03
Ra-226	241-AZ-ANC	39	12	4.90E-04	1.02E-07	1.02E-07	-5.60E-10	0.55	-5.60E-10	0.55
Ra-226	241-B-101	31	12	4.90E-04	5.39E-05	5.39E-05	-1.40E-08	0.03	-1.40E-08	0.03
Ra-226	241-B-102	31	12	4.90E-04	8.78E-06	8.78E-06	-2.30E-09	0.03	-2.30E-09	0.03
Ra-226	241-B-103	31	12	4.90E-04	3.52E-05	3.52E-05	-9.40E-09	0.03	-9.40E-09	0.03
Ra-226	241-B-104	30	12	4.90E-04	8.30E-06	8.30E-06	-2.20E-09	0.03	-2.20E-09	0.03
Ra-226	241-B-105	31	12	4.90E-04	1.13E-05	1.13E-05	-3.00E-09	0.03	-3.00E-09	0.03
Ra-226	241-B-106	31	12	4.90E-04	3.92E-05	3.92E-05	-1.10E-08	0.03	-1.10E-08	0.03
Ra-226	241-B-107	31	12	4.90E-04	8.43E-06	8.43E-06	-2.20E-09	0.03	-2.20E-09	0.03
Ra-226	241-B-108	31	12	4.90E-04	1.10E-05	1.10E-05	-2.90E-09	0.03	-2.90E-09	0.03
Ra-226	241-B-109	31	12	4.90E-04	5.88E-05	5.88E-05	-1.60E-08	0.03	-1.60E-08	0.03

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Ra-226	241-B-110	31	12	4.90E-04	7.72E-07	7.72E-07	-2.10E-10	0.03	-2.10E-10	0.03
Ra-226	241-B-111	31	12	4.90E-04	7.03E-07	7.03E-07	-1.90E-10	0.03	-1.90E-10	0.03
Ra-226	241-B-112	26	11	9.80E-04	1.79E-06	1.79E-06	-9.70E-10	0.05	-9.70E-10	0.05
Ra-226	241-B-201	31	12	4.90E-04	5.40E-07	5.41E-07	-1.40E-10	0.03	-1.40E-10	0.03
Ra-226	241-B-202	30	12	4.90E-04	1.34E-06	1.34E-06	-3.50E-10	0.03	-3.50E-10	0.03
Ra-226	241-B-203	31	12	4.90E-04	4.49E-08	4.49E-08	-1.20E-11	0.03	-1.20E-11	0.03
Ra-226	241-B-204	31	12	4.90E-04	5.15E-08	5.15E-08	-1.30E-11	0.03	-1.30E-11	0.03
Ra-226	241-B-ANC	42	11	9.80E-04	1.03E-07	1.04E-07	-6.10E-10	0.59	-6.10E-10	0.59
Ra-226	241-BX-101	31	12	4.90E-04	1.60E-04	1.60E-04	-4.30E-08	0.03	-4.30E-08	0.03
Ra-226	241-BX-102	31	12	4.90E-04	1.73E-05	1.73E-05	-4.60E-09	0.03	-4.60E-09	0.03
Ra-226	241-BX-103	31	12	4.90E-04	1.54E-05	1.54E-05	-4.10E-09	0.03	-4.10E-09	0.03
Ra-226	241-BX-104	31	12	4.90E-04	2.72E-04	2.72E-04	-7.20E-08	0.03	-7.20E-08	0.03
Ra-226	241-BX-105	31	12	4.90E-04	6.05E-05	6.05E-05	-1.60E-08	0.03	-1.60E-08	0.03
Ra-226	241-BX-106	31	12	4.90E-04	1.28E-05	1.28E-05	-3.40E-09	0.03	-3.40E-09	0.03
Ra-226	241-BX-107	30	12	4.90E-04	8.17E-06	8.17E-06	-2.20E-09	0.03	-2.20E-09	0.03
Ra-226	241-BX-108	31	12	4.90E-04	5.59E-05	5.60E-05	-1.50E-08	0.03	-1.50E-08	0.03
Ra-226	241-BX-109	30	12	4.90E-04	6.12E-05	6.12E-05	-1.60E-08	0.03	-1.60E-08	0.03
Ra-226	241-BX-110	32	12	4.90E-04	4.14E-06	4.14E-06	-1.10E-09	0.03	-1.10E-09	0.03
Ra-226	241-BX-111	26	11	9.80E-04	1.93E-06	1.93E-06	-1.10E-09	0.06	-1.10E-09	0.06
Ra-226	241-BX-112	30	12	4.90E-04	3.68E-06	3.68E-06	-9.70E-10	0.03	-9.70E-10	0.03
Ra-226	241-BX-ANC	46	9	3.90E-03	2.35E-07	2.37E-07	-1.60E-09	0.69	-1.60E-09	0.69
Ra-226	241-BY-101	31	12	4.90E-04	1.58E-05	1.58E-05	-4.20E-09	0.03	-4.20E-09	0.03
Ra-226	241-BY-102	26	11	9.80E-04	2.21E-06	2.21E-06	-1.20E-09	0.05	-1.20E-09	0.05
Ra-226	241-BY-103	26	11	9.80E-04	2.90E-06	2.90E-06	-1.60E-09	0.05	-1.60E-09	0.05
Ra-226	241-BY-104	31	12	4.90E-04	1.84E-05	1.84E-05	-4.80E-09	0.03	-4.80E-09	0.03
Ra-226	241-BY-105	31	12	4.90E-04	1.40E-05	1.40E-05	-3.60E-09	0.03	-3.60E-09	0.03
Ra-226	241-BY-106	31	12	4.90E-04	1.16E-05	1.16E-05	-3.00E-09	0.03	-3.00E-09	0.03
Ra-226	241-BY-107	31	12	4.90E-04	1.34E-05	1.34E-05	-3.50E-09	0.03	-3.50E-09	0.03
Ra-226	241-BY-108	30	12	4.90E-04	4.40E-05	4.41E-05	-1.20E-08	0.03	-1.20E-08	0.03
Ra-226	241-BY-109	26	11	9.80E-04	1.60E-06	1.60E-06	-8.70E-10	0.05	-8.70E-10	0.05
Ra-226	241-BY-110	31	12	4.90E-04	2.26E-05	2.26E-05	-6.00E-09	0.03	-6.00E-09	0.03
Ra-226	241-BY-111	26	11	9.80E-04	2.34E-06	2.34E-06	-1.30E-09	0.05	-1.30E-09	0.05
Ra-226	241-BY-112	31	12	4.90E-04	1.43E-05	1.43E-05	-3.70E-09	0.03	-3.70E-09	0.03
Ra-226	241-BY-ANC	48	14	4.30E-04	3.68E-07	3.71E-07	-3.60E-09	0.97	-3.60E-09	0.97
Ra-226	218-W-1	28	11	9.80E-04	1.44E-07	1.44E-07	5.40E-12	0.00	5.40E-12	0.00
Ra-226	218-W-1A	29	11	9.80E-04	2.11E-06	2.11E-06	7.50E-11	0.00	7.50E-11	0.00
Ra-226	218-W-2	28	11	9.80E-04	2.93E-06	2.93E-06	1.10E-10	0.00	1.10E-10	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Ra-226	218-W-3	26	11	9.80E-04	8.10E-04	8.11E-04	-8.30E-07	0.10	-8.30E-07	0.10
Ra-226	218-W-3AE	28	11	9.80E-04	6.84E-03	6.85E-03	-6.80E-06	0.10	-6.80E-06	0.10
Ra-226	218-W-4A	31	11	9.80E-04	5.30E-03	5.30E-03	-3.90E-06	0.07	-3.90E-06	0.07
Ra-226	218-W-4C	31	12	4.90E-04	2.21E-03	2.21E-03	-5.60E-07	0.03	-5.60E-07	0.03
Ra-226	218-W-5	26	6	3.10E-02	3.23E-04	3.23E-04	3.50E-07	0.11	3.50E-07	0.11
Ra-226	221-T	25	5	6.20E-02	2.00E-08	2.00E-08	-3.30E-11	0.16	-3.30E-11	0.16
Ra-226	241-S-101	28	12	4.90E-04	4.84E-05	4.84E-05	-1.30E-08	0.03	-1.30E-08	0.03
Ra-226	241-S-102	29	12	4.90E-04	1.01E-04	1.01E-04	-2.80E-08	0.03	-2.80E-08	0.03
Ra-226	241-S-103	31	12	4.90E-04	5.97E-06	5.97E-06	-1.60E-09	0.03	-1.60E-09	0.03
Ra-226	241-S-104	28	12	4.90E-04	3.44E-05	3.44E-05	-9.50E-09	0.03	-9.50E-09	0.03
Ra-226	241-S-105	25	11	9.80E-04	2.71E-06	2.71E-06	-1.40E-09	0.05	-1.40E-09	0.05
Ra-226	241-S-106	31	12	4.90E-04	2.66E-06	2.66E-06	-7.60E-10	0.03	-7.60E-10	0.03
Ra-226	241-S-107	29	12	4.90E-04	9.00E-05	9.00E-05	-2.50E-08	0.03	-2.50E-08	0.03
Ra-226	241-S-108	29	12	4.90E-04	6.25E-06	6.25E-06	-1.70E-09	0.03	-1.70E-09	0.03
Ra-226	241-S-109	27	11	9.80E-04	1.98E-06	1.98E-06	-9.80E-10	0.05	-9.80E-10	0.05
Ra-226	241-S-110	28	12	4.90E-04	2.86E-05	2.86E-05	-7.80E-09	0.03	-7.80E-09	0.03
Ra-226	241-S-111	31	12	4.90E-04	2.32E-06	2.33E-06	-6.70E-10	0.03	-6.70E-10	0.03
Ra-226	241-S-112	27	11	9.80E-04	1.40E-07	1.40E-07	-6.90E-11	0.05	-6.90E-11	0.05
Ra-226	241-S-ANC	50	25	1.70E-04	2.27E-07	2.29E-07	-6.20E-09	2.70	-1.80E-09	0.79
Ra-226	241-SX-101	29	12	4.90E-04	1.83E-05	1.83E-05	-5.00E-09	0.03	-5.00E-09	0.03
Ra-226	241-SX-102	29	12	4.90E-04	5.47E-06	5.47E-06	-1.50E-09	0.03	-1.50E-09	0.03
Ra-226	241-SX-103	30	12	4.90E-04	6.27E-06	6.27E-06	-1.70E-09	0.03	-1.70E-09	0.03
Ra-226	241-SX-104	28	12	4.90E-04	2.03E-05	2.03E-05	-5.50E-09	0.03	-5.50E-09	0.03
Ra-226	241-SX-105	30	12	4.90E-04	7.45E-06	7.46E-06	-2.00E-09	0.03	-2.00E-09	0.03
Ra-226	241-SX-106	31	12	4.90E-04	3.76E-06	3.77E-06	-9.90E-10	0.03	-9.90E-10	0.03
Ra-226	241-SX-107	29	12	4.90E-04	6.31E-05	6.32E-05	-1.80E-08	0.03	-1.80E-08	0.03
Ra-226	241-SX-108	28	12	4.90E-04	6.83E-05	6.84E-05	-1.90E-08	0.03	-1.90E-08	0.03
Ra-226	241-SX-109	28	12	4.90E-04	1.97E-05	1.97E-05	-5.40E-09	0.03	-5.40E-09	0.03
Ra-226	241-SX-110	29	12	4.90E-04	6.77E-05	6.77E-05	-1.80E-08	0.03	-1.80E-08	0.03
Ra-226	241-SX-111	29	12	4.90E-04	6.05E-05	6.05E-05	-1.60E-08	0.03	-1.60E-08	0.03
Ra-226	241-SX-112	29	12	4.90E-04	6.73E-05	6.73E-05	-1.90E-08	0.03	-1.90E-08	0.03
Ra-226	241-SX-113	29	12	4.90E-04	1.03E-06	1.03E-06	-2.70E-10	0.03	-2.70E-10	0.03
Ra-226	241-SX-114	28	12	4.90E-04	5.21E-05	5.21E-05	-1.40E-08	0.03	-1.40E-08	0.03
Ra-226	241-SX-115	29	12	4.90E-04	9.73E-05	9.73E-05	-2.60E-08	0.03	-2.60E-08	0.03
Ra-226	241-SX-ANC	49	25	1.90E-04	2.09E-07	2.11E-07	-6.30E-09	3.00	-1.90E-09	0.93
Ra-226	241-SY-101	27	11	9.80E-04	8.29E-07	8.29E-07	-4.00E-10	0.05	-4.00E-10	0.05
Ra-226	241-SY-102	28	12	4.90E-04	2.45E-05	2.45E-05	-6.50E-09	0.03	-6.50E-09	0.03

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Ra-226	241-SY-103	31	12	4.90E-04	3.79E-06	3.79E-06	-1.10E-09	0.03	-1.10E-09	0.03
Ra-226	241-SY-ANC	45	14	4.30E-04	6.41E-08	6.47E-08	-6.30E-10	0.99	-6.30E-10	0.99
Ra-226	241-T-101	28	12	4.90E-04	1.13E-04	1.13E-04	-3.00E-08	0.03	-3.00E-08	0.03
Ra-226	241-T-102	29	12	4.90E-04	2.18E-04	2.18E-04	-6.10E-08	0.03	-6.10E-08	0.03
Ra-226	241-T-103	28	12	4.90E-04	1.56E-04	1.57E-04	-4.30E-08	0.03	-4.30E-08	0.03
Ra-226	241-T-104	28	12	4.90E-04	1.04E-05	1.04E-05	-2.80E-09	0.03	-2.80E-09	0.03
Ra-226	241-T-105	29	12	4.90E-04	2.32E-05	2.32E-05	-6.40E-09	0.03	-6.40E-09	0.03
Ra-226	241-T-106	29	12	4.90E-04	5.07E-05	5.07E-05	-1.40E-08	0.03	-1.40E-08	0.03
Ra-226	241-T-107	29	12	4.90E-04	7.66E-05	7.66E-05	-2.20E-08	0.03	-2.20E-08	0.03
Ra-226	241-T-108	29	12	4.90E-04	1.33E-05	1.33E-05	-3.60E-09	0.03	-3.60E-09	0.03
Ra-226	241-T-109	29	12	4.90E-04	4.70E-06	4.70E-06	-1.30E-09	0.03	-1.30E-09	0.03
Ra-226	241-T-110	29	12	4.90E-04	1.74E-07	1.74E-07	-4.70E-11	0.03	-4.70E-11	0.03
Ra-226	241-T-111	28	12	4.90E-04	2.89E-05	2.89E-05	-8.00E-09	0.03	-8.00E-09	0.03
Ra-226	241-T-112	29	12	4.90E-04	5.26E-06	5.26E-06	-1.50E-09	0.03	-1.50E-09	0.03
Ra-226	241-T-201	31	12	4.90E-04	5.11E-10	5.11E-10	-1.30E-13	0.03	-1.30E-13	0.03
Ra-226	241-T-202	29	12	4.90E-04	6.82E-08	6.83E-08	-1.90E-11	0.03	-1.90E-11	0.03
Ra-226	241-T-203	29	12	4.90E-04	2.56E-09	2.56E-09	-6.90E-13	0.03	-6.90E-13	0.03
Ra-226	241-T-204	29	12	4.90E-04	1.07E-09	1.07E-09	-2.80E-13	0.03	-2.80E-13	0.03
Ra-226	241-T-ANC	43	10	2.00E-03	5.56E-08	5.59E-08	-2.70E-10	0.49	-2.70E-10	0.49
Ra-226	241-TX-101	29	12	4.90E-04	1.48E-04	1.48E-04	-4.10E-08	0.03	-4.10E-08	0.03
Ra-226	241-TX-102	28	12	4.90E-04	3.65E-05	3.65E-05	-1.00E-08	0.03	-1.00E-08	0.03
Ra-226	241-TX-103	30	12	4.90E-04	8.01E-06	8.01E-06	-2.20E-09	0.03	-2.20E-09	0.03
Ra-226	241-TX-104	29	12	4.90E-04	1.01E-05	1.01E-05	-2.70E-09	0.03	-2.70E-09	0.03
Ra-226	241-TX-105	28	12	4.90E-04	5.31E-05	5.31E-05	-1.50E-08	0.03	-1.50E-08	0.03
Ra-226	241-TX-106	29	12	4.90E-04	1.74E-05	1.74E-05	-4.60E-09	0.03	-4.60E-09	0.03
Ra-226	241-TX-107	29	12	4.90E-04	7.61E-06	7.61E-06	-2.00E-09	0.03	-2.00E-09	0.03
Ra-226	241-TX-108	29	12	4.90E-04	6.54E-05	6.55E-05	-1.80E-08	0.03	-1.80E-08	0.03
Ra-226	241-TX-109	29	12	4.90E-04	1.72E-05	1.72E-05	-4.70E-09	0.03	-4.70E-09	0.03
Ra-226	241-TX-110	30	12	4.90E-04	9.89E-06	9.89E-06	-2.70E-09	0.03	-2.70E-09	0.03
Ra-226	241-TX-111	30	12	4.90E-04	1.01E-05	1.01E-05	-2.70E-09	0.03	-2.70E-09	0.03
Ra-226	241-TX-112	30	12	4.90E-04	8.74E-06	8.75E-06	-2.40E-09	0.03	-2.40E-09	0.03
Ra-226	241-TX-113	31	12	4.90E-04	4.69E-06	4.69E-06	-1.20E-09	0.03	-1.20E-09	0.03
Ra-226	241-TX-114	30	12	4.90E-04	8.91E-06	8.91E-06	-2.40E-09	0.03	-2.40E-09	0.03
Ra-226	241-TX-115	30	12	4.90E-04	9.80E-06	9.80E-06	-2.70E-09	0.03	-2.70E-09	0.03
Ra-226	241-TX-116	30	12	4.90E-04	8.59E-06	8.60E-06	-2.40E-09	0.03	-2.40E-09	0.03
Ra-226	241-TX-117	30	12	4.90E-04	9.00E-06	9.00E-06	-2.40E-09	0.03	-2.40E-09	0.03
Ra-226	241-TX-118	30	12	4.90E-04	1.04E-05	1.04E-05	-2.80E-09	0.03	-2.80E-09	0.03

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COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Ra-226	241-TX-ANC	50	25	1.30E-04	4.34E-07	4.36E-07	-7.50E-09	1.70	-2.20E-09	0.51
Ra-226	241-TY-101	29	12	4.90E-04	2.43E-05	2.43E-05	-6.80E-09	0.03	-6.80E-09	0.03
Ra-226	241-TY-102	26	11	9.80E-04	1.54E-06	1.54E-06	-7.70E-10	0.05	-7.70E-10	0.05
Ra-226	241-TY-103	28	12	4.90E-04	1.81E-04	1.81E-04	-5.00E-08	0.03	-5.00E-08	0.03
Ra-226	241-TY-104	29	12	4.90E-04	2.12E-04	2.12E-04	-6.00E-08	0.03	-6.00E-08	0.03
Ra-226	241-TY-105	29	12	4.90E-04	5.36E-05	5.36E-05	-1.50E-08	0.03	-1.50E-08	0.03
Ra-226	241-TY-106	29	12	4.90E-04	5.40E-05	5.41E-05	-1.50E-08	0.03	-1.50E-08	0.03
Ra-226	241-TY-ANC	51	11	9.80E-04	7.68E-08	7.72E-08	-3.60E-10	0.47	-3.60E-10	0.47
Ra-226	241-U-101	29	12	4.90E-04	4.99E-05	4.99E-05	-1.40E-08	0.03	-1.40E-08	0.03
Ra-226	241-U-102	30	12	4.90E-04	1.05E-05	1.05E-05	-2.90E-09	0.03	-2.90E-09	0.03
Ra-226	241-U-103	30	12	4.90E-04	5.88E-06	5.88E-06	-1.60E-09	0.03	-1.60E-09	0.03
Ra-226	241-U-104	29	12	4.90E-04	4.22E-05	4.22E-05	-1.20E-08	0.03	-1.20E-08	0.03
Ra-226	241-U-105	29	12	4.90E-04	6.46E-05	6.46E-05	-1.80E-08	0.03	-1.80E-08	0.03
Ra-226	241-U-106	30	12	4.90E-04	6.08E-06	6.08E-06	-1.60E-09	0.03	-1.60E-09	0.03
Ra-226	241-U-107	31	12	4.90E-04	4.01E-06	4.01E-06	-1.20E-09	0.03	-1.20E-09	0.03
Ra-226	241-U-108	28	12	4.90E-04	2.04E-05	2.04E-05	-5.30E-09	0.03	-5.30E-09	0.03
Ra-226	241-U-109	27	11	9.80E-04	1.76E-06	1.76E-06	-8.70E-10	0.05	-8.70E-10	0.05
Ra-226	241-U-110	29	12	4.90E-04	1.48E-04	1.48E-04	-4.10E-08	0.03	-4.10E-08	0.03
Ra-226	241-U-111	30	12	4.90E-04	7.91E-06	7.92E-06	-2.20E-09	0.03	-2.20E-09	0.03
Ra-226	241-U-112	28	12	4.90E-04	3.32E-05	3.32E-05	-9.20E-09	0.03	-9.20E-09	0.03
Ra-226	241-U-201	31	12	4.90E-04	1.04E-08	1.04E-08	-2.80E-12	0.03	-2.80E-12	0.03
Ra-226	241-U-202	31	12	4.90E-04	9.80E-09	9.80E-09	-2.70E-12	0.03	-2.70E-12	0.03
Ra-226	241-U-203	31	12	4.90E-04	4.73E-09	4.73E-09	-1.30E-12	0.03	-1.30E-12	0.03
Ra-226	241-U-204	28	12	4.90E-04	5.55E-07	5.55E-07	-1.50E-10	0.03	-1.50E-10	0.03
Ra-226	241-U-ANC	50	25	1.70E-04	3.69E-07	3.72E-07	-1.00E-08	2.80	-3.00E-09	0.81
Ra-226	T31	25	7	1.60E-02	2.18E-03	2.18E-03	1.10E-06	0.05	1.10E-06	0.05
Ra-226	T34	27	15	6.10E-05	5.42E-02	5.42E-02	2.00E-07	0.00	2.00E-07	0.00
I-129	218-E-12B	37	11	9.80E-04	2.94E-03	2.96E-03	-1.40E-05	0.46	-1.40E-05	0.46
I-129	241-A-101	27	9	3.90E-03	7.82E-04	7.82E-04	-3.00E-07	0.04	-3.00E-07	0.04
I-129	241-A-102	27	9	3.90E-03	4.53E-04	4.53E-04	-1.80E-07	0.04	-1.80E-07	0.04
I-129	241-A-103	27	9	3.90E-03	1.26E-04	1.26E-04	-4.90E-08	0.04	-4.90E-08	0.04
I-129	241-A-104	26	9	3.90E-03	2.38E-04	2.38E-04	2.30E-08	0.01	2.30E-08	0.01
I-129	241-A-105	26	9	3.90E-03	2.31E-05	2.31E-05	4.90E-09	0.02	4.90E-09	0.02
I-129	241-A-106	27	9	3.90E-03	4.74E-04	4.75E-04	-1.80E-07	0.04	-1.80E-07	0.04
I-129	241-A-ANC	38	12	4.90E-04	4.18E-04	4.19E-04	-1.10E-06	0.26	-1.10E-06	0.26
I-129	241-AN-101	27	9	3.90E-03	1.05E-03	1.05E-03	-4.10E-07	0.04	-4.10E-07	0.04
I-129	241-AN-102	27	9	3.90E-03	5.33E-04	5.33E-04	-2.10E-07	0.04	-2.10E-07	0.04

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
I-129	241-AN-103	27	9	3.90E-03	1.29E-03	1.29E-03	-5.00E-07	0.04	-5.00E-07	0.04
I-129	241-AN-104	27	9	3.90E-03	6.36E-04	6.36E-04	-2.50E-07	0.04	-2.50E-07	0.04
I-129	241-AN-105	27	9	3.90E-03	7.47E-04	7.47E-04	-2.90E-07	0.04	-2.90E-07	0.04
I-129	241-AN-106	27	9	3.90E-03	7.95E-04	7.95E-04	-3.10E-07	0.04	-3.10E-07	0.04
I-129	241-AN-107	27	9	3.90E-03	5.41E-04	5.41E-04	-2.10E-07	0.04	-2.10E-07	0.04
I-129	241-AN-ANC	38	12	4.90E-04	9.95E-04	9.98E-04	-2.60E-06	0.26	-2.60E-06	0.26
I-129	241-AP-101	27	9	3.90E-03	1.16E-03	1.16E-03	-4.50E-07	0.04	-4.50E-07	0.04
I-129	241-AP-102	27	9	3.90E-03	4.30E-04	4.30E-04	-1.70E-07	0.04	-1.70E-07	0.04
I-129	241-AP-103	27	9	3.90E-03	6.87E-04	6.87E-04	-2.70E-07	0.04	-2.70E-07	0.04
I-129	241-AP-104	27	9	3.90E-03	6.64E-04	6.64E-04	-2.60E-07	0.04	-2.60E-07	0.04
I-129	241-AP-105	27	9	3.90E-03	9.66E-04	9.66E-04	-3.80E-07	0.04	-3.80E-07	0.04
I-129	241-AP-106	27	9	3.90E-03	2.81E-04	2.81E-04	-1.10E-07	0.04	-1.10E-07	0.04
I-129	241-AP-107	27	9	3.90E-03	7.20E-04	7.20E-04	-2.80E-07	0.04	-2.80E-07	0.04
I-129	241-AP-108	27	9	3.90E-03	8.61E-04	8.61E-04	-3.30E-07	0.04	-3.30E-07	0.04
I-129	241-AP-ANC	38	12	4.90E-04	1.11E-03	1.12E-03	-2.90E-06	0.26	-2.90E-06	0.26
I-129	241-AW-101	27	9	3.90E-03	5.81E-04	5.81E-04	-2.30E-07	0.04	-2.30E-07	0.04
I-129	241-AW-102	27	9	3.90E-03	4.89E-04	4.90E-04	-1.90E-07	0.04	-1.90E-07	0.04
I-129	241-AW-103	27	9	3.90E-03	2.44E-04	2.44E-04	-9.50E-08	0.04	-9.50E-08	0.04
I-129	241-AW-104	27	9	3.90E-03	7.88E-04	7.88E-04	-3.10E-07	0.04	-3.10E-07	0.04
I-129	241-AW-105	27	9	3.90E-03	4.63E-04	4.63E-04	-1.80E-07	0.04	-1.80E-07	0.04
I-129	241-AW-106	27	9	3.90E-03	5.62E-04	5.63E-04	-2.20E-07	0.04	-2.20E-07	0.04
I-129	241-AW-ANC	38	12	4.90E-04	5.73E-04	5.75E-04	-1.50E-06	0.26	-1.50E-06	0.26
I-129	241-AX-101	27	9	3.90E-03	7.61E-04	7.61E-04	-3.00E-07	0.04	-3.00E-07	0.04
I-129	241-AX-102	27	9	3.90E-03	5.43E-04	5.43E-04	-2.10E-07	0.04	-2.10E-07	0.04
I-129	241-AX-103	27	9	3.90E-03	6.13E-04	6.13E-04	-2.40E-07	0.04	-2.40E-07	0.04
I-129	241-AX-104	27	9	3.90E-03	4.77E-05	4.78E-05	-1.90E-08	0.04	-1.90E-08	0.04
I-129	241-AX-ANC	38	12	4.90E-04	5.15E-04	5.16E-04	-1.30E-06	0.26	-1.30E-06	0.26
I-129	241-AY-101	27	9	3.90E-03	5.20E-04	5.21E-04	-2.00E-07	0.04	-2.00E-07	0.04
I-129	241-AY-102	27	9	3.90E-03	5.92E-04	5.92E-04	-2.30E-07	0.04	-2.30E-07	0.04
I-129	241-AY-ANC	38	12	4.90E-04	1.90E-04	1.91E-04	-5.00E-07	0.26	-5.00E-07	0.26
I-129	241-AZ-101	27	9	3.90E-03	4.89E-04	4.89E-04	-1.90E-07	0.04	-1.90E-07	0.04
I-129	241-AZ-102	27	9	3.90E-03	9.27E-04	9.28E-04	-3.60E-07	0.04	-3.60E-07	0.04
I-129	241-AZ-ANC	38	12	4.90E-04	2.69E-04	2.70E-04	-7.00E-07	0.26	-7.00E-07	0.26
I-129	241-B-101	27	9	3.90E-03	9.38E-06	9.38E-06	-3.60E-09	0.04	-3.60E-09	0.04
I-129	241-B-102	27	9	3.90E-03	9.00E-06	9.00E-06	-3.50E-09	0.04	-3.50E-09	0.04
I-129	241-B-103	27	9	3.90E-03	7.85E-06	7.86E-06	-3.10E-09	0.04	-3.10E-09	0.04
I-129	241-B-104	27	9	3.90E-03	2.36E-06	2.36E-06	-9.20E-10	0.04	-9.20E-10	0.04

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
I-129	241-B-105	27	9	3.90E-03	5.61E-06	5.61E-06	-2.20E-09	0.04	-2.20E-09	0.04
I-129	241-B-106	27	9	3.90E-03	4.20E-06	4.20E-06	-1.60E-09	0.04	-1.60E-09	0.04
I-129	241-B-107	27	9	3.90E-03	5.64E-05	5.64E-05	-2.20E-08	0.04	-2.20E-08	0.04
I-129	241-B-108	27	9	3.90E-03	2.86E-04	2.87E-04	-1.10E-07	0.04	-1.10E-07	0.04
I-129	241-B-109	27	9	3.90E-03	3.47E-04	3.47E-04	-1.40E-07	0.04	-1.40E-07	0.04
I-129	241-B-110	27	9	3.90E-03	2.13E-06	2.13E-06	-8.30E-10	0.04	-8.30E-10	0.04
I-129	241-B-111	27	9	3.90E-03	2.00E-06	2.01E-06	-7.80E-10	0.04	-7.80E-10	0.04
I-129	241-B-112	27	9	3.90E-03	4.48E-04	4.48E-04	-1.70E-07	0.04	-1.70E-07	0.04
I-129	241-B-201	27	9	3.90E-03	2.49E-11	2.49E-11	-9.00E-15	0.04	-9.00E-15	0.04
I-129	241-B-ANC	38	12	4.90E-04	1.47E-04	1.47E-04	-3.80E-07	0.26	-3.80E-07	0.26
I-129	241-BX-101	27	9	3.90E-03	2.47E-04	2.48E-04	-9.60E-08	0.04	-9.60E-08	0.04
I-129	241-BX-102	27	9	3.90E-03	4.00E-04	4.00E-04	-1.60E-07	0.04	-1.60E-07	0.04
I-129	241-BX-103	27	9	3.90E-03	4.62E-04	4.62E-04	-1.80E-07	0.04	-1.80E-07	0.04
I-129	241-BX-104	27	9	3.90E-03	2.88E-04	2.88E-04	-1.10E-07	0.04	-1.10E-07	0.04
I-129	241-BX-105	27	9	3.90E-03	1.41E-04	1.41E-04	-5.50E-08	0.04	-5.50E-08	0.04
I-129	241-BX-106	27	9	3.90E-03	5.12E-04	5.12E-04	-2.00E-07	0.04	-2.00E-07	0.04
I-129	241-BX-107	27	9	3.90E-03	2.90E-06	2.90E-06	-1.10E-09	0.04	-1.10E-09	0.04
I-129	241-BX-108	27	9	3.90E-03	9.10E-06	9.10E-06	-3.50E-09	0.04	-3.50E-09	0.04
I-129	241-BX-109	27	9	3.90E-03	6.98E-06	6.99E-06	-2.70E-09	0.04	-2.70E-09	0.04
I-129	241-BX-110	27	9	3.90E-03	3.86E-04	3.87E-04	-1.50E-07	0.04	-1.50E-07	0.04
I-129	241-BX-111	27	9	3.90E-03	4.44E-04	4.44E-04	-1.70E-07	0.04	-1.70E-07	0.04
I-129	241-BX-112	27	9	3.90E-03	1.96E-06	1.96E-06	-7.60E-10	0.04	-7.60E-10	0.04
I-129	241-BX-ANC	38	12	4.90E-04	4.06E-04	4.07E-04	-1.10E-06	0.26	-1.10E-06	0.26
I-129	241-BY-101	27	9	3.90E-03	5.74E-04	5.75E-04	-2.20E-07	0.04	-2.20E-07	0.04
I-129	241-BY-102	27	9	3.90E-03	5.47E-04	5.47E-04	-2.10E-07	0.04	-2.10E-07	0.04
I-129	241-BY-103	27	9	3.90E-03	5.66E-04	5.66E-04	-2.20E-07	0.04	-2.20E-07	0.04
I-129	241-BY-104	27	9	3.90E-03	5.58E-04	5.58E-04	-2.20E-07	0.04	-2.20E-07	0.04
I-129	241-BY-105	27	9	3.90E-03	6.37E-04	6.37E-04	-2.50E-07	0.04	-2.50E-07	0.04
I-129	241-BY-106	27	9	3.90E-03	3.65E-04	3.66E-04	-1.40E-07	0.04	-1.40E-07	0.04
I-129	241-BY-107	27	9	3.90E-03	6.18E-04	6.18E-04	-2.40E-07	0.04	-2.40E-07	0.04
I-129	241-BY-108	27	9	3.90E-03	5.11E-04	5.12E-04	-2.00E-07	0.04	-2.00E-07	0.04
I-129	241-BY-109	27	9	3.90E-03	6.05E-04	6.05E-04	-2.40E-07	0.04	-2.40E-07	0.04
I-129	241-BY-110	27	9	3.90E-03	5.43E-04	5.43E-04	-2.10E-07	0.04	-2.10E-07	0.04
I-129	241-BY-111	27	9	3.90E-03	5.18E-04	5.19E-04	-2.00E-07	0.04	-2.00E-07	0.04
I-129	241-BY-112	27	9	3.90E-03	5.64E-04	5.64E-04	-2.20E-07	0.04	-2.20E-07	0.04
I-129	241-BY-ANC	38	12	4.90E-04	1.20E-03	1.20E-03	-3.10E-06	0.26	-3.10E-06	0.26
Th-230	218-E-1	25	10	2.00E-03	2.80E-08	2.80E-08	1.30E-11	0.05	1.30E-11	0.05

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COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Th-230	218-E-10	25	11	9.80E-04	3.20E-08	3.20E-08	1.10E-11	0.04	1.10E-11	0.04
Th-230	218-E-12A	27	11	9.80E-04	7.63E-08	7.63E-08	3.60E-11	0.05	3.60E-11	0.05
Th-230	218-E-12B	25	11	9.80E-04	1.48E-08	1.48E-08	5.30E-12	0.04	5.30E-12	0.04
Th-230	218-E-4	30	11	9.80E-04	7.86E-11	7.85E-11	3.80E-14	0.05	3.80E-14	0.05
Th-230	218-E-5	30	11	9.80E-04	9.29E-09	9.29E-09	4.40E-12	0.05	4.40E-12	0.05
Th-230	218-E-5A	29	11	9.80E-04	9.46E-09	9.45E-09	4.50E-12	0.05	4.50E-12	0.05
Th-230	218-E-8	29	11	9.80E-04	1.47E-10	1.47E-10	7.00E-14	0.05	7.00E-14	0.05
Th-230	241-A-101	30	13	2.40E-04	7.70E-09	7.70E-09	4.50E-13	0.01	4.50E-13	0.01
Th-230	241-A-102	27	10	2.00E-03	3.30E-07	3.30E-07	2.90E-11	0.01	2.90E-11	0.01
Th-230	241-A-103	26	13	2.40E-04	1.56E-08	1.56E-08	1.20E-12	0.01	1.20E-12	0.01
Th-230	241-A-104	25	10	2.00E-03	1.14E-07	1.14E-07	1.00E-12	0.00	1.00E-12	0.00
Th-230	241-A-105	28	11	9.80E-04	5.48E-10	5.48E-10	3.40E-14	0.01	3.40E-14	0.01
Th-230	241-A-106	25	13	2.40E-04	1.25E-08	1.25E-08	1.10E-12	0.01	1.10E-12	0.01
Th-230	241-A-ANC	49	12	4.90E-04	3.74E-06	3.76E-06	-2.20E-08	0.58	-2.20E-08	0.58
Th-230	241-AN-101	26	10	2.00E-03	1.67E-07	1.67E-07	1.50E-11	0.01	1.50E-11	0.01
Th-230	241-AN-102	26	11	9.80E-04	2.11E-09	2.11E-09	5.70E-14	0.00	5.70E-14	0.00
Th-230	241-AN-103	25	12	4.90E-04	3.29E-10	3.29E-10	9.30E-14	0.03	9.30E-14	0.03
Th-230	241-AN-104	26	12	4.90E-04	1.11E-09	1.11E-09	3.00E-13	0.03	3.00E-13	0.03
Th-230	241-AN-105	25	12	4.90E-04	5.50E-10	5.50E-10	1.60E-13	0.03	1.60E-13	0.03
Th-230	241-AN-106	27	10	2.00E-03	4.58E-08	4.58E-08	4.60E-12	0.01	4.60E-12	0.01
Th-230	241-AN-107	25	12	4.90E-04	1.41E-09	1.41E-09	3.60E-13	0.03	3.60E-13	0.03
Th-230	241-AN-ANC	46	12	4.90E-04	4.75E-06	4.77E-06	-2.40E-08	0.51	-2.40E-08	0.51
Th-230	241-AP-101	25	12	4.90E-04	2.88E-10	2.88E-10	8.40E-14	0.03	8.40E-14	0.03
Th-230	241-AP-102	32	13	2.40E-04	5.34E-09	5.34E-09	2.60E-13	0.00	2.60E-13	0.00
Th-230	241-AP-103	25	12	4.90E-04	3.69E-10	3.69E-10	1.00E-13	0.03	1.00E-13	0.03
Th-230	241-AP-104	25	12	4.90E-04	5.58E-10	5.58E-10	1.60E-13	0.03	1.60E-13	0.03
Th-230	241-AP-105	25	12	4.90E-04	2.94E-10	2.94E-10	8.30E-14	0.03	8.30E-14	0.03
Th-230	241-AP-106	25	12	4.90E-04	1.56E-10	1.56E-10	4.60E-14	0.03	4.60E-14	0.03
Th-230	241-AP-107	25	12	4.90E-04	4.37E-10	4.37E-10	1.30E-13	0.03	1.30E-13	0.03
Th-230	241-AP-108	30	13	2.40E-04	2.59E-10	2.59E-10	1.90E-14	0.01	1.90E-14	0.01
Th-230	241-AP-ANC	45	12	4.90E-04	7.24E-08	7.30E-08	-6.40E-10	0.88	-6.40E-10	0.88
Th-230	241-AW-101	25	12	4.90E-04	5.47E-09	5.47E-09	1.40E-12	0.03	1.40E-12	0.03
Th-230	241-AW-102	25	11	9.80E-04	1.89E-08	1.89E-08	1.40E-12	0.01	1.40E-12	0.01
Th-230	241-AW-103	26	11	9.80E-04	3.28E-08	3.28E-08	2.90E-12	0.01	2.90E-12	0.01
Th-230	241-AW-104	27	11	9.80E-04	2.46E-08	2.46E-08	1.80E-12	0.01	1.80E-12	0.01
Th-230	241-AW-105	26	10	2.00E-03	5.70E-08	5.70E-08	6.10E-12	0.01	6.10E-12	0.01
Th-230	241-AW-106	25	12	4.90E-04	5.35E-09	5.35E-09	1.30E-12	0.03	1.30E-12	0.03

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COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Th-230	241-AW-ANC	46	12	4.90E-04	3.80E-06	3.82E-06	-1.90E-08	0.49	-1.90E-08	0.49
Th-230	241-AX-101	30	13	2.40E-04	8.09E-09	8.09E-09	4.20E-13	0.01	4.20E-13	0.01
Th-230	241-AX-102	29	11	9.80E-04	3.79E-08	3.79E-08	9.40E-13	0.00	9.40E-13	0.00
Th-230	241-AX-103	28	13	2.40E-04	5.24E-09	5.24E-09	4.10E-13	0.01	4.10E-13	0.01
Th-230	241-AX-104	26	10	2.00E-03	4.34E-08	4.34E-08	8.80E-12	0.02	8.80E-12	0.02
Th-230	241-AX-ANC	46	12	4.90E-04	5.09E-07	5.14E-07	-4.50E-09	0.89	-4.50E-09	0.89
Th-230	241-AY-101	25	12	4.90E-04	1.49E-09	1.49E-09	4.10E-13	0.03	4.10E-13	0.03
Th-230	241-AY-102	28	11	9.80E-04	1.67E-08	1.67E-08	2.20E-12	0.01	2.20E-12	0.01
Th-230	241-AY-ANC	45	12	4.90E-04	4.22E-08	4.26E-08	-4.20E-10	0.99	-4.20E-10	0.99
Th-230	241-AZ-101	25	12	4.90E-04	5.43E-09	5.43E-09	1.40E-12	0.03	1.40E-12	0.03
Th-230	241-AZ-102	27	13	2.40E-04	1.72E-08	1.72E-08	1.40E-12	0.01	1.40E-12	0.01
Th-230	241-AZ-ANC	45	12	4.90E-04	3.30E-07	3.33E-07	-2.90E-09	0.88	-2.90E-09	0.88
Th-230	241-B-101	27	10	2.00E-03	1.38E-07	1.38E-07	1.30E-11	0.01	1.30E-11	0.01
Th-230	241-B-102	26	11	9.80E-04	2.22E-08	2.22E-08	1.60E-12	0.01	1.60E-12	0.01
Th-230	241-B-103	26	10	2.00E-03	8.99E-08	8.99E-08	8.50E-12	0.01	8.50E-12	0.01
Th-230	241-B-104	25	11	9.80E-04	2.10E-08	2.10E-08	1.30E-12	0.01	1.30E-12	0.01
Th-230	241-B-105	26	11	9.80E-04	2.86E-08	2.86E-08	3.30E-12	0.01	3.30E-12	0.01
Th-230	241-B-106	26	10	2.00E-03	1.00E-07	1.00E-07	9.40E-12	0.01	9.40E-12	0.01
Th-230	241-B-107	26	11	9.80E-04	2.13E-08	2.13E-08	1.40E-12	0.01	1.40E-12	0.01
Th-230	241-B-108	27	11	9.80E-04	2.78E-08	2.78E-08	2.90E-12	0.01	2.90E-12	0.01
Th-230	241-B-109	27	10	2.00E-03	1.51E-07	1.51E-07	1.40E-11	0.01	1.40E-11	0.01
Th-230	241-B-110	26	10	2.00E-03	1.87E-09	1.87E-09	-3.90E-13	0.02	-3.90E-13	0.02
Th-230	241-B-111	30	13	2.40E-04	1.70E-09	1.70E-09	1.20E-13	0.01	1.20E-13	0.01
Th-230	241-B-112	25	12	4.90E-04	4.33E-09	4.33E-09	1.00E-12	0.02	1.00E-12	0.02
Th-230	241-B-201	26	12	4.90E-04	1.36E-09	1.36E-09	2.00E-13	0.01	2.00E-13	0.01
Th-230	241-B-202	26	10	2.00E-03	3.41E-09	3.41E-09	7.10E-13	0.02	7.10E-13	0.02
Th-230	241-B-203	26	12	4.90E-04	1.09E-10	1.08E-10	2.50E-14	0.02	2.50E-14	0.02
Th-230	241-B-204	29	11	9.80E-04	1.24E-10	1.24E-10	4.20E-15	0.00	4.20E-15	0.00
Th-230	241-B-ANC	48	12	4.90E-04	2.30E-05	2.30E-05	-7.50E-08	0.33	-7.50E-08	0.33
Th-230	241-BX-101	26	10	2.00E-03	4.10E-07	4.10E-07	3.60E-11	0.01	3.60E-11	0.01
Th-230	241-BX-102	26	10	2.00E-03	4.40E-08	4.40E-08	4.70E-12	0.01	4.70E-12	0.01
Th-230	241-BX-103	28	11	9.80E-04	3.91E-08	3.91E-08	1.10E-12	0.00	1.10E-12	0.00
Th-230	241-BX-104	27	10	2.00E-03	6.98E-07	6.98E-07	5.80E-11	0.01	5.80E-11	0.01
Th-230	241-BX-105	27	10	2.00E-03	1.55E-07	1.55E-07	1.40E-11	0.01	1.40E-11	0.01
Th-230	241-BX-106	28	14	1.20E-04	3.25E-08	3.25E-08	1.70E-12	0.01	1.70E-12	0.01
Th-230	241-BX-107	26	11	9.80E-04	2.06E-08	2.06E-08	1.90E-12	0.01	1.90E-12	0.01
Th-230	241-BX-108	28	10	2.00E-03	1.43E-07	1.43E-07	1.30E-11	0.01	1.30E-11	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Th-230	241-BX-109	28	10	2.00E-03	1.57E-07	1.57E-07	1.30E-11	0.01	1.30E-11	0.01
Th-230	241-BX-110	26	13	2.40E-04	1.02E-08	1.02E-08	7.30E-13	0.01	7.30E-13	0.01
Th-230	241-BX-111	25	12	4.90E-04	4.67E-09	4.66E-09	1.10E-12	0.02	1.10E-12	0.02
Th-230	241-BX-112	26	13	2.40E-04	9.09E-09	9.09E-09	6.10E-13	0.01	6.10E-13	0.01
Th-230	241-BX-ANC	30	10	2.00E-03	6.50E-05	6.54E-05	-4.60E-07	0.71	-4.60E-07	0.71
Th-230	241-BY-101	29	11	9.80E-04	4.01E-08	4.01E-08	1.20E-12	0.00	1.20E-12	0.00
Th-230	241-BY-102	25	12	4.90E-04	5.35E-09	5.35E-09	1.30E-12	0.03	1.30E-12	0.03
Th-230	241-BY-103	25	12	4.90E-04	7.01E-09	7.01E-09	1.70E-12	0.02	1.70E-12	0.02
Th-230	241-BY-104	26	10	2.00E-03	4.69E-08	4.69E-08	4.70E-12	0.01	4.70E-12	0.01
Th-230	241-BY-105	28	11	9.80E-04	3.55E-08	3.55E-08	8.60E-13	0.00	8.60E-13	0.00
Th-230	241-BY-106	25	11	9.80E-04	2.94E-08	2.94E-08	3.50E-12	0.01	3.50E-12	0.01
Th-230	241-BY-107	25	11	9.80E-04	3.40E-08	3.40E-08	4.40E-12	0.01	4.40E-12	0.01
Th-230	241-BY-108	27	10	2.00E-03	1.13E-07	1.13E-07	1.00E-11	0.01	1.00E-11	0.01
Th-230	241-BY-109	29	13	2.40E-04	3.86E-09	3.86E-09	2.70E-13	0.01	2.70E-13	0.01
Th-230	241-BY-110	28	10	2.00E-03	5.76E-08	5.76E-08	5.90E-12	0.01	5.90E-12	0.01
Th-230	241-BY-111	25	12	4.90E-04	5.65E-09	5.65E-09	1.40E-12	0.03	1.40E-12	0.03
Th-230	241-BY-112	28	11	9.80E-04	3.63E-08	3.63E-08	8.80E-13	0.00	8.80E-13	0.00
Th-230	241-BY-ANC	32	10	2.00E-03	1.76E-05	1.78E-05	-1.40E-07	0.78	-1.40E-07	0.78
U-232	241-A-101	44	9	3.90E-03	8.66E-11	8.69E-11	-3.50E-13	0.40	-3.50E-13	0.40
U-232	241-A-102	34	8	7.80E-03	8.88E-11	8.96E-11	-8.30E-13	0.93	-8.30E-13	0.93
U-232	241-A-103	34	8	7.80E-03	8.87E-11	8.96E-11	-8.60E-13	0.97	-8.60E-13	0.97
U-232	241-A-104	34	8	7.80E-03	5.26E-12	5.31E-12	-4.90E-14	0.94	-4.90E-14	0.94
U-232	241-A-105	32	8	7.80E-03	5.57E-15	5.60E-15	-5.70E-17	1.00	-2.40E-17	0.44
U-232	241-A-106	34	8	7.80E-03	2.12E-11	2.14E-11	-2.00E-13	0.96	-2.00E-13	0.96
U-232	241-A-ANC	45	25	4.50E-04	2.11E-04	2.11E-04	-6.80E-06	3.20	3.10E-09	0.00
U-232	241-AN-101	34	8	7.80E-03	1.85E-10	1.86E-10	-1.70E-12	0.94	-1.70E-12	0.94
U-232	241-AN-102	35	8	7.80E-03	2.15E-11	2.17E-11	-1.80E-13	0.86	-1.80E-13	0.86
U-232	241-AN-103	49	10	2.00E-03	7.91E-12	7.96E-12	-5.40E-14	0.69	-5.40E-14	0.69
U-232	241-AN-104	32	8	7.80E-03	1.75E-11	1.77E-11	-1.70E-13	0.99	-1.70E-13	0.99
U-232	241-AN-105	41	9	3.90E-03	1.17E-11	1.19E-11	-1.10E-13	0.97	-1.10E-13	0.97
U-232	241-AN-106	34	8	7.80E-03	7.07E-12	7.14E-12	-6.70E-14	0.94	-6.70E-14	0.94
U-232	241-AN-107	38	8	7.80E-03	1.92E-11	1.94E-11	-1.80E-13	0.92	-1.80E-13	0.92
U-232	241-AN-ANC	35	25	9.80E-04	3.22E-04	3.23E-04	-8.70E-06	2.70	-4.10E-07	0.13
U-232	241-AP-101	49	10	2.00E-03	5.03E-11	5.06E-11	-3.50E-13	0.70	-3.50E-13	0.70
U-232	241-AP-102	44	9	3.90E-03	6.42E-12	6.45E-12	-2.90E-14	0.44	-2.90E-14	0.44
U-232	241-AP-103	48	10	2.00E-03	3.66E-11	3.68E-11	-2.50E-13	0.70	-2.50E-13	0.70
U-232	241-AP-104	41	9	3.90E-03	3.42E-11	3.45E-11	-3.40E-13	0.99	-3.40E-13	0.99

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-232	241-AP-105	47	10	2.00E-03	3.45E-11	3.47E-11	-2.40E-13	0.69	-2.40E-13	0.69
U-232	241-AP-106	43	10	2.00E-03	1.36E-10	1.37E-10	-1.00E-12	0.74	-1.00E-12	0.74
U-232	241-AP-107	50	10	2.00E-03	5.40E-11	5.44E-11	-3.80E-13	0.70	-3.80E-13	0.70
U-232	241-AP-108	47	10	2.00E-03	9.65E-11	9.72E-11	-6.60E-13	0.68	-6.60E-13	0.68
U-232	241-AP-ANC	35	12	4.90E-04	9.26E-06	9.30E-06	-4.10E-08	0.45	-4.10E-08	0.45
U-232	241-AW-101	35	8	7.80E-03	2.34E-11	2.36E-11	-2.20E-13	0.93	-2.20E-13	0.93
U-232	241-AW-102	33	8	7.80E-03	7.84E-13	7.92E-13	-7.50E-15	0.95	-7.50E-15	0.95
U-232	241-AW-103	33	8	7.80E-03	9.52E-12	9.61E-12	-9.00E-14	0.95	-9.00E-14	0.95
U-232	241-AW-104	33	8	7.80E-03	3.13E-12	3.16E-12	-3.00E-14	0.96	-3.00E-14	0.96
U-232	241-AW-105	34	8	7.80E-03	4.42E-13	4.47E-13	-4.20E-15	0.94	-4.20E-15	0.94
U-232	241-AW-106	34	8	7.80E-03	2.39E-11	2.41E-11	-2.20E-13	0.93	-2.20E-13	0.93
U-232	241-AW-ANC	43	25	5.90E-04	8.66E-06	8.65E-06	-2.30E-07	2.60	9.20E-09	0.11
U-232	241-AX-101	46	9	3.90E-03	5.50E-11	5.52E-11	-2.00E-13	0.37	-2.00E-13	0.37
U-232	241-AX-102	33	8	7.80E-03	8.34E-11	8.42E-11	-7.90E-13	0.94	-7.90E-13	0.94
U-232	241-AX-103	35	8	7.80E-03	1.36E-10	1.38E-10	-1.30E-12	0.94	-1.30E-12	0.94
U-232	241-AX-104	34	8	7.80E-03	6.72E-14	6.79E-14	-6.30E-16	0.94	-6.30E-16	0.94
U-232	241-AX-ANC	41	12	4.90E-04	4.95E-05	4.96E-05	-7.70E-08	0.16	-7.70E-08	0.16
U-232	241-AY-101	49	9	3.90E-03	1.66E-11	1.66E-11	-5.80E-14	0.35	-5.80E-14	0.35
U-232	241-AY-102	33	8	7.80E-03	1.61E-12	1.63E-12	-1.50E-14	0.96	-1.50E-14	0.96
U-232	241-AY-ANC	35	12	4.90E-04	1.03E-06	1.03E-06	-4.60E-09	0.45	-4.60E-09	0.45
U-232	241-AZ-101	33	8	7.80E-03	3.82E-12	3.85E-12	-3.40E-14	0.89	-3.40E-14	0.89
U-232	241-AZ-102	34	8	7.80E-03	8.33E-12	8.41E-12	-8.10E-14	0.97	-8.10E-14	0.97
U-232	241-AZ-ANC	38	12	4.90E-04	3.05E-06	3.06E-06	-8.10E-09	0.26	-8.10E-09	0.26
U-232	241-B-101	34	8	7.80E-03	4.72E-14	4.77E-14	-4.40E-16	0.94	-4.40E-16	0.94
U-232	241-B-102	33	8	7.80E-03	1.12E-14	1.13E-14	-1.10E-16	0.95	-1.10E-16	0.95
U-232	241-B-103	34	8	7.80E-03	8.30E-15	8.38E-15	-7.80E-17	0.94	-7.80E-17	0.94
U-232	241-B-104	33	8	7.80E-03	1.01E-14	1.01E-14	-9.60E-17	0.95	-9.60E-17	0.95
U-232	241-B-105	33	8	7.80E-03	1.11E-14	1.12E-14	-1.00E-16	0.95	-1.00E-16	0.95
U-232	241-B-106	34	8	7.80E-03	1.03E-14	1.04E-14	-9.70E-17	0.94	-9.70E-17	0.94
U-232	241-B-107	33	8	7.80E-03	2.17E-12	2.19E-12	-2.10E-14	0.95	-2.10E-14	0.95
U-232	241-B-108	33	8	7.80E-03	2.26E-11	2.28E-11	-2.10E-13	0.95	-2.10E-13	0.95
U-232	241-B-109	34	8	7.80E-03	9.67E-11	9.76E-11	-9.10E-13	0.94	-9.10E-13	0.94
U-232	241-B-110	32	8	7.80E-03	1.24E-14	1.25E-14	-1.00E-16	0.81	-1.00E-16	0.81
U-232	241-B-111	34	8	7.80E-03	5.24E-14	5.28E-14	-4.30E-16	0.81	-4.30E-16	0.81
U-232	241-B-112	34	8	7.80E-03	1.83E-10	1.84E-10	-1.50E-12	0.84	-1.50E-12	0.84
U-232	241-B-201	34	8	7.80E-03	5.11E-16	5.16E-16	-4.90E-18	0.96	-4.90E-18	0.96
U-232	241-B-202	33	8	7.80E-03	8.92E-16	9.00E-16	-8.40E-18	0.94	-8.40E-18	0.94

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-232	241-B-203	33	8	7.80E-03	8.05E-16	8.12E-16	-7.00E-18	0.87	-7.00E-18	0.87
U-232	241-B-204	44	9	3.90E-03	5.44E-16	5.49E-16	-4.80E-18	0.89	-4.80E-18	0.89
U-232	241-B-ANC	49	25	4.30E-04	1.44E-04	1.43E-04	-2.70E-06	1.90	1.20E-07	0.09
U-232	241-BX-101	34	8	7.80E-03	3.26E-11	3.29E-11	-3.00E-13	0.93	-3.00E-13	0.93
U-232	241-BX-102	34	8	7.80E-03	3.43E-11	3.47E-11	-3.20E-13	0.94	-3.20E-13	0.94
U-232	241-BX-103	33	8	7.80E-03	8.44E-11	8.52E-11	-8.00E-13	0.94	-8.00E-13	0.94
U-232	241-BX-104	34	8	7.80E-03	1.63E-11	1.64E-11	-1.50E-13	0.93	-1.50E-13	0.93
U-232	241-BX-105	34	8	7.80E-03	5.05E-11	5.10E-11	-4.70E-13	0.94	-4.70E-13	0.94
U-232	241-BX-106	33	8	7.80E-03	4.28E-11	4.32E-11	-4.00E-13	0.95	-4.00E-13	0.95
U-232	241-BX-107	33	8	7.80E-03	1.07E-14	1.08E-14	-1.00E-16	0.95	-1.00E-16	0.95
U-232	241-BX-108	34	8	7.80E-03	1.03E-14	1.04E-14	-9.70E-17	0.94	-9.70E-17	0.94
U-232	241-BX-109	34	8	7.80E-03	1.03E-14	1.04E-14	-9.60E-17	0.94	-9.60E-17	0.94
U-232	241-BX-110	33	8	7.80E-03	7.28E-11	7.35E-11	-7.10E-13	0.98	-7.10E-13	0.98
U-232	241-BX-111	35	8	7.80E-03	1.02E-11	1.03E-11	-9.60E-14	0.94	-9.60E-14	0.94
U-232	241-BX-112	44	9	3.90E-03	1.07E-14	1.07E-14	-4.30E-17	0.41	-4.30E-17	0.41
U-232	241-BX-ANC	49	25	5.00E-04	1.81E-04	1.82E-04	-3.40E-06	1.90	-1.80E-06	0.98
U-232	241-BY-101	34	8	7.80E-03	1.98E-12	2.00E-12	-1.90E-14	0.94	-1.90E-14	0.94
U-232	241-BY-102	33	8	7.80E-03	2.61E-10	2.63E-10	-2.40E-12	0.93	-2.40E-12	0.93
U-232	241-BY-103	34	8	7.80E-03	2.38E-10	2.39E-10	-2.40E-12	1.00	-1.10E-12	0.48
U-232	241-BY-104	34	8	7.80E-03	4.44E-11	4.49E-11	-4.20E-13	0.94	-4.20E-13	0.94
U-232	241-BY-105	33	8	7.80E-03	2.94E-11	2.97E-11	-2.80E-13	0.94	-2.80E-13	0.94
U-232	241-BY-106	33	8	7.80E-03	1.34E-11	1.36E-11	-1.30E-13	0.95	-1.30E-13	0.95
U-232	241-BY-107	33	8	7.80E-03	5.82E-11	5.88E-11	-5.50E-13	0.95	-5.50E-13	0.95
U-232	241-BY-108	34	8	7.80E-03	8.10E-12	8.18E-12	-7.60E-14	0.94	-7.60E-14	0.94
U-232	241-BY-109	45	9	3.90E-03	2.44E-10	2.45E-10	-7.80E-13	0.32	-7.80E-13	0.32
U-232	241-BY-110	34	8	7.80E-03	4.04E-11	4.07E-11	-3.80E-13	0.94	-3.80E-13	0.94
U-232	241-BY-111	35	8	7.80E-03	2.61E-10	2.64E-10	-2.40E-12	0.93	-2.40E-12	0.93
U-232	241-BY-112	33	8	7.80E-03	4.08E-11	4.12E-11	-3.90E-13	0.94	-3.90E-13	0.94
U-232	241-BY-ANC	48	25	5.20E-04	1.30E-04	1.31E-04	-2.50E-06	1.90	-8.40E-07	0.65
I-129	218-W-3A	38	12	4.90E-04	1.45E-02	1.46E-02	-1.20E-04	0.80	-1.20E-04	0.80
I-129	218-W-3AE	38	12	4.90E-04	4.48E-04	4.51E-04	-3.60E-06	0.80	-3.60E-06	0.80
I-129	218-W-4B	53	25	1.40E-04	5.02E-01	5.02E-01	-2.00E-03	0.40	-3.90E-04	0.08
I-129	218-W-4C	40	13	2.40E-04	1.46E-03	1.47E-03	-1.10E-05	0.75	-1.10E-05	0.75
I-129	218-W-5	45	13	2.40E-04	3.28E-02	3.30E-02	-2.10E-04	0.64	-2.10E-04	0.64
I-129	218-W-REACTOR	7	25	5.00E-01	4.05E-05	4.05E-05	-2.00E-16	0.00	-2.00E-16	0.00
I-129	221-T	34	8	7.80E-03	8.41E-04	8.41E-04	-2.00E-07	0.02	-2.00E-07	0.02
I-129	241-S-101	35	7	1.60E-02	6.25E-04	6.26E-04	-4.80E-07	0.08	-4.80E-07	0.08

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
I-129	241-S-102	35	7	1.60E-02	1.03E-03	1.03E-03	-7.90E-07	0.08	-7.90E-07	0.08
I-129	241-S-103	35	7	1.60E-02	1.23E-03	1.23E-03	-9.50E-07	0.08	-9.50E-07	0.08
I-129	241-S-104	35	7	1.60E-02	5.19E-04	5.20E-04	-4.00E-07	0.08	-4.00E-07	0.08
I-129	241-S-105	35	7	1.60E-02	1.45E-03	1.45E-03	-1.10E-06	0.08	-1.10E-06	0.08
I-129	241-S-106	35	7	1.60E-02	1.06E-03	1.06E-03	-8.20E-07	0.08	-8.20E-07	0.08
I-129	241-S-107	35	7	1.60E-02	1.78E-04	1.78E-04	-1.40E-07	0.08	-1.40E-07	0.08
I-129	241-S-108	35	7	1.60E-02	1.07E-03	1.08E-03	-8.30E-07	0.08	-8.30E-07	0.08
I-129	241-S-109	35	7	1.60E-02	1.33E-03	1.33E-03	-1.00E-06	0.08	-1.00E-06	0.08
I-129	241-S-110	35	7	1.60E-02	1.04E-03	1.04E-03	-8.10E-07	0.08	-8.10E-07	0.08
I-129	241-S-111	35	7	1.60E-02	8.71E-04	8.72E-04	-6.70E-07	0.08	-6.70E-07	0.08
I-129	241-S-112	35	7	1.60E-02	2.50E-04	2.50E-04	-1.90E-07	0.08	-1.90E-07	0.08
I-129	241-S-ANC	39	12	4.90E-04	1.14E-03	1.15E-03	-6.20E-06	0.54	-6.20E-06	0.54
I-129	241-SX-101	35	7	1.60E-02	8.32E-04	8.32E-04	-6.40E-07	0.08	-6.40E-07	0.08
I-129	241-SX-102	35	7	1.60E-02	8.28E-04	8.29E-04	-6.40E-07	0.08	-6.40E-07	0.08
I-129	241-SX-103	35	7	1.60E-02	9.71E-04	9.72E-04	-7.50E-07	0.08	-7.50E-07	0.08
I-129	241-SX-104	35	7	1.60E-02	8.60E-04	8.60E-04	-6.70E-07	0.08	-6.70E-07	0.08
I-129	241-SX-105	35	7	1.60E-02	9.08E-04	9.09E-04	-7.00E-07	0.08	-7.00E-07	0.08
I-129	241-SX-106	35	7	1.60E-02	1.12E-03	1.12E-03	-8.70E-07	0.08	-8.70E-07	0.08
I-129	241-SX-107	35	7	1.60E-02	4.07E-04	4.07E-04	-3.20E-07	0.08	-3.20E-07	0.08
I-129	241-SX-108	35	7	1.60E-02	5.20E-04	5.20E-04	-4.00E-07	0.08	-4.00E-07	0.08
I-129	241-SX-109	35	7	1.60E-02	8.76E-04	8.77E-04	-6.80E-07	0.08	-6.80E-07	0.08
I-129	241-SX-110	35	7	1.60E-02	7.57E-04	7.57E-04	-5.90E-07	0.08	-5.90E-07	0.08
I-129	241-SX-111	35	7	1.60E-02	5.77E-04	5.77E-04	-4.50E-07	0.08	-4.50E-07	0.08
I-129	241-SX-112	35	7	1.60E-02	4.76E-04	4.77E-04	-3.70E-07	0.08	-3.70E-07	0.08
I-129	241-SX-113	35	7	1.60E-02	2.32E-04	2.32E-04	-1.80E-07	0.08	-1.80E-07	0.08
I-129	241-SX-114	35	7	1.60E-02	5.52E-04	5.53E-04	-4.30E-07	0.08	-4.30E-07	0.08
I-129	241-SX-115	35	7	1.60E-02	8.12E-04	8.13E-04	-6.30E-07	0.08	-6.30E-07	0.08
I-129	241-SX-ANC	39	12	4.90E-04	1.25E-03	1.26E-03	-6.80E-06	0.54	-6.80E-06	0.54
I-129	241-SY-101	36	7	1.60E-02	3.92E-04	3.92E-04	-3.00E-07	0.08	-3.00E-07	0.08
I-129	241-SY-102	36	7	1.60E-02	3.69E-04	3.69E-04	-2.90E-07	0.08	-2.90E-07	0.08
I-129	241-SY-103	36	7	1.60E-02	2.58E-03	2.58E-03	-2.00E-06	0.08	-2.00E-06	0.08
I-129	241-SY-ANC	39	12	4.90E-04	3.10E-04	3.12E-04	-1.70E-06	0.54	-1.70E-06	0.54
I-129	241-T-101	35	7	1.60E-02	5.99E-04	5.99E-04	-4.60E-07	0.08	-4.60E-07	0.08
I-129	241-T-102	35	7	1.60E-02	1.12E-03	1.12E-03	-8.60E-07	0.08	-8.60E-07	0.08
I-129	241-T-103	35	7	1.60E-02	9.24E-04	9.25E-04	-7.20E-07	0.08	-7.20E-07	0.08
I-129	241-T-104	35	7	1.60E-02	2.87E-06	2.87E-06	-2.20E-09	0.08	-2.20E-09	0.08
I-129	241-T-105	35	7	1.60E-02	4.02E-07	4.02E-07	-3.10E-10	0.08	-3.10E-10	0.08

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
I-129	241-T-106	35	7	1.60E-02	3.74E-06	3.75E-06	-2.90E-09	0.08	-2.90E-09	0.08
I-129	241-T-107	35	7	1.60E-02	6.19E-06	6.20E-06	-4.80E-09	0.08	-4.80E-09	0.08
I-129	241-T-108	35	7	1.60E-02	1.16E-05	1.17E-05	-9.00E-09	0.08	-9.00E-09	0.08
I-129	241-T-109	35	7	1.60E-02	1.21E-05	1.21E-05	-9.30E-09	0.08	-9.30E-09	0.08
I-129	241-T-110	35	7	1.60E-02	1.24E-09	1.24E-09	-9.60E-13	0.08	-9.60E-13	0.08
I-129	241-T-111	35	7	1.60E-02	5.95E-10	5.96E-10	-4.60E-13	0.08	-4.60E-13	0.08
I-129	241-T-112	35	7	1.60E-02	3.56E-05	3.57E-05	-2.80E-08	0.08	-2.80E-08	0.08
I-129	241-T-201	34	7	1.60E-02	3.65E-12	3.65E-12	-2.50E-15	0.07	-2.50E-15	0.07
I-129	241-T-ANC	39	12	4.90E-04	1.04E-04	1.05E-04	-5.70E-07	0.54	-5.70E-07	0.54
I-129	241-TX-101	35	7	1.60E-02	3.70E-04	3.70E-04	-2.90E-07	0.08	-2.90E-07	0.08
I-129	241-TX-102	35	7	1.60E-02	8.99E-04	9.00E-04	-7.00E-07	0.08	-7.00E-07	0.08
I-129	241-TX-103	35	7	1.60E-02	9.35E-04	9.36E-04	-7.20E-07	0.08	-7.20E-07	0.08
I-129	241-TX-104	35	7	1.60E-02	5.28E-04	5.29E-04	-4.10E-07	0.08	-4.10E-07	0.08
I-129	241-TX-105	35	7	1.60E-02	8.22E-04	8.23E-04	-6.40E-07	0.08	-6.40E-07	0.08
I-129	241-TX-106	35	7	1.60E-02	8.76E-04	8.77E-04	-6.80E-07	0.08	-6.80E-07	0.08
I-129	241-TX-107	35	7	1.60E-02	1.15E-03	1.15E-03	-8.90E-07	0.08	-8.90E-07	0.08
I-129	241-TX-108	35	7	1.60E-02	7.52E-04	7.53E-04	-5.80E-07	0.08	-5.80E-07	0.08
I-129	241-TX-109	35	7	1.60E-02	4.87E-06	4.87E-06	-3.80E-09	0.08	-3.80E-09	0.08
I-129	241-TX-110	35	7	1.60E-02	7.79E-04	7.80E-04	-6.00E-07	0.08	-6.00E-07	0.08
I-129	241-TX-111	35	7	1.60E-02	7.59E-04	7.60E-04	-5.90E-07	0.08	-5.90E-07	0.08
I-129	241-TX-112	35	7	1.60E-02	8.53E-04	8.54E-04	-6.60E-07	0.08	-6.60E-07	0.08
I-129	241-TX-113	35	7	1.60E-02	8.67E-04	8.68E-04	-6.70E-07	0.08	-6.70E-07	0.08
I-129	241-TX-114	35	7	1.60E-02	7.46E-04	7.46E-04	-5.80E-07	0.08	-5.80E-07	0.08
I-129	241-TX-115	35	7	1.60E-02	9.45E-04	9.46E-04	-7.30E-07	0.08	-7.30E-07	0.08
I-129	241-TX-116	35	7	1.60E-02	4.23E-04	4.24E-04	-3.30E-07	0.08	-3.30E-07	0.08
I-129	241-TX-117	35	7	1.60E-02	6.00E-04	6.00E-04	-4.60E-07	0.08	-4.60E-07	0.08
I-129	241-TX-118	35	7	1.60E-02	8.11E-04	8.11E-04	-6.30E-07	0.08	-6.30E-07	0.08
I-129	241-TX-ANC	39	12	4.90E-04	1.28E-03	1.29E-03	-7.00E-06	0.54	-7.00E-06	0.54
I-129	241-TY-101	35	7	1.60E-02	1.48E-05	1.48E-05	-1.10E-08	0.08	-1.10E-08	0.08
I-129	241-TY-102	35	7	1.60E-02	2.87E-04	2.87E-04	-2.20E-07	0.08	-2.20E-07	0.08
I-129	241-TY-103	35	7	1.60E-02	3.15E-04	3.15E-04	-2.40E-07	0.08	-2.40E-07	0.08
I-129	241-TY-104	35	7	1.60E-02	1.58E-05	1.58E-05	-1.20E-08	0.08	-1.20E-08	0.08
I-129	241-TY-105	35	7	1.60E-02	3.54E-04	3.55E-04	-2.70E-07	0.08	-2.70E-07	0.08
I-129	241-TY-106	35	7	1.60E-02	1.85E-05	1.85E-05	-1.40E-08	0.08	-1.40E-08	0.08
I-129	241-TY-ANC	39	12	4.90E-04	1.47E-04	1.48E-04	-8.00E-07	0.54	-8.00E-07	0.54
I-129	241-U-101	35	7	1.60E-02	2.39E-04	2.39E-04	-1.80E-07	0.08	-1.80E-07	0.08
I-129	241-U-102	35	7	1.60E-02	8.96E-04	8.97E-04	-6.90E-07	0.08	-6.90E-07	0.08

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
I-129	241-U-103	35	7	1.60E-02	1.06E-03	1.06E-03	-8.20E-07	0.08	-8.20E-07	0.08
I-129	241-U-104	35	7	1.60E-02	8.62E-04	8.62E-04	-6.70E-07	0.08	-6.70E-07	0.08
I-129	241-U-105	35	7	1.60E-02	1.17E-03	1.17E-03	-9.10E-07	0.08	-9.10E-07	0.08
I-129	241-U-106	35	7	1.60E-02	1.05E-03	1.05E-03	-8.10E-07	0.08	-8.10E-07	0.08
I-129	241-U-107	35	7	1.60E-02	1.37E-03	1.37E-03	-1.10E-06	0.08	-1.10E-06	0.08
I-129	241-U-108	35	7	1.60E-02	1.11E-03	1.11E-03	-8.60E-07	0.08	-8.60E-07	0.08
I-129	241-U-109	35	7	1.60E-02	1.21E-03	1.21E-03	-9.40E-07	0.08	-9.40E-07	0.08
I-129	241-U-110	35	7	1.60E-02	1.26E-04	1.26E-04	-9.80E-08	0.08	-9.80E-08	0.08
I-129	241-U-111	35	7	1.60E-02	9.62E-04	9.63E-04	-7.40E-07	0.08	-7.40E-07	0.08
I-129	241-U-112	35	7	1.60E-02	1.06E-04	1.06E-04	-8.20E-08	0.08	-8.20E-08	0.08
I-129	241-U-201	34	7	1.60E-02	2.14E-07	2.14E-07	-1.50E-10	0.07	-1.50E-10	0.07
I-129	241-U-202	34	7	1.60E-02	2.05E-07	2.05E-07	-1.40E-10	0.07	-1.40E-10	0.07
I-129	241-U-203	34	7	1.60E-02	1.43E-06	1.43E-06	-9.80E-10	0.07	-9.80E-10	0.07
I-129	241-U-204	34	7	1.60E-02	1.51E-07	1.51E-07	-1.00E-10	0.07	-1.00E-10	0.07
I-129	241-U-ANC	39	12	4.90E-04	1.59E-03	1.60E-03	-8.60E-06	0.54	-8.60E-06	0.54
I-129	T31	29	9	3.90E-03	4.29E-03	4.32E-03	-3.30E-05	0.76	-3.30E-05	0.76
I-129	T34	29	9	3.90E-03	1.23E-02	1.24E-02	-9.40E-05	0.76	-9.40E-05	0.76
Th-230	218-W-1	25	10	2.00E-03	4.38E-09	4.37E-09	2.40E-12	0.06	2.40E-12	0.06
Th-230	218-W-1A	30	11	9.80E-04	6.41E-08	6.40E-08	3.50E-11	0.06	3.50E-11	0.06
Th-230	218-W-2	25	10	2.00E-03	8.90E-08	8.90E-08	4.90E-11	0.06	4.90E-11	0.06
Th-230	218-W-3	35	12	4.90E-04	2.87E-05	2.87E-05	-1.10E-08	0.04	-1.10E-08	0.04
Th-230	218-W-3AE	34	12	4.90E-04	2.45E-04	2.45E-04	-8.20E-08	0.03	-8.20E-08	0.03
Th-230	218-W-4A	36	12	4.90E-04	1.92E-04	1.92E-04	-7.70E-08	0.04	-7.70E-08	0.04
Th-230	218-W-4C	30	12	4.90E-04	7.64E-05	7.64E-05	-1.50E-08	0.02	-1.50E-08	0.02
Th-230	218-W-5	28	9	3.90E-03	9.09E-06	9.08E-06	1.00E-08	0.12	1.00E-08	0.12
Th-230	221-T	29	11	9.80E-04	5.03E-11	5.04E-11	-3.70E-14	0.07	-3.70E-14	0.07
Th-230	241-S-101	26	13	2.40E-04	1.24E-07	1.24E-07	1.70E-11	0.01	1.70E-11	0.01
Th-230	241-S-102	25	11	9.80E-04	2.59E-07	2.59E-07	3.50E-11	0.01	3.50E-11	0.01
Th-230	241-S-103	26	11	9.80E-04	1.39E-08	1.39E-08	5.10E-13	0.00	5.10E-13	0.00
Th-230	241-S-104	27	13	2.40E-04	8.75E-08	8.75E-08	1.20E-11	0.01	1.20E-11	0.01
Th-230	241-S-105	25	11	9.80E-04	6.28E-09	6.28E-09	6.40E-13	0.01	6.40E-13	0.01
Th-230	241-S-106	35	12	4.90E-04	6.16E-09	6.16E-09	5.50E-13	0.01	5.50E-13	0.01
Th-230	241-S-107	25	11	9.80E-04	2.31E-07	2.31E-07	3.00E-11	0.01	3.00E-11	0.01
Th-230	241-S-108	26	11	9.80E-04	1.45E-08	1.45E-08	5.40E-13	0.00	5.40E-13	0.00
Th-230	241-S-109	25	10	2.00E-03	4.58E-09	4.58E-09	-1.10E-12	0.02	-1.10E-12	0.02
Th-230	241-S-110	25	11	9.80E-04	7.23E-08	7.23E-08	4.10E-14	0.00	4.10E-14	0.00
Th-230	241-S-111	26	11	9.80E-04	5.38E-09	5.38E-09	5.80E-13	0.01	5.80E-13	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Th-230	241-S-112	28	12	4.90E-04	3.22E-10	3.22E-10	4.70E-14	0.02	4.70E-14	0.02
Th-230	241-S-ANC	50	25	1.90E-04	6.58E-06	6.59E-06	-8.20E-08	1.20	-1.30E-08	0.19
Th-230	241-SX-101	26	12	4.90E-04	4.57E-08	4.57E-08	9.80E-12	0.02	9.80E-12	0.02
Th-230	241-SX-102	25	11	9.80E-04	1.27E-08	1.27E-08	9.70E-13	0.01	9.70E-13	0.01
Th-230	241-SX-103	26	11	9.80E-04	1.46E-08	1.46E-08	4.90E-13	0.00	4.90E-13	0.00
Th-230	241-SX-104	25	12	4.90E-04	5.10E-08	5.10E-08	1.40E-11	0.03	1.40E-11	0.03
Th-230	241-SX-105	28	12	4.90E-04	1.76E-08	1.76E-08	1.80E-12	0.01	1.80E-12	0.01
Th-230	241-SX-106	25	11	9.80E-04	8.73E-09	8.73E-09	6.50E-13	0.01	6.50E-13	0.01
Th-230	241-SX-107	26	13	2.40E-04	1.62E-07	1.62E-07	2.30E-11	0.01	2.30E-11	0.01
Th-230	241-SX-108	25	13	2.40E-04	1.75E-07	1.75E-07	2.70E-11	0.02	2.70E-11	0.02
Th-230	241-SX-109	25	12	4.90E-04	4.93E-08	4.92E-08	1.10E-11	0.02	1.10E-11	0.02
Th-230	241-SX-110	26	13	2.40E-04	1.73E-07	1.73E-07	2.30E-11	0.01	2.30E-11	0.01
Th-230	241-SX-111	26	13	2.40E-04	1.55E-07	1.54E-07	2.00E-11	0.01	2.00E-11	0.01
Th-230	241-SX-112	26	13	2.40E-04	1.72E-07	1.72E-07	2.50E-11	0.02	2.50E-11	0.02
Th-230	241-SX-113	30	12	4.90E-04	2.38E-09	2.38E-09	3.10E-13	0.01	3.10E-13	0.01
Th-230	241-SX-114	25	13	2.40E-04	1.33E-07	1.33E-07	1.90E-11	0.01	1.90E-11	0.01
Th-230	241-SX-115	25	11	9.80E-04	2.49E-07	2.49E-07	3.00E-11	0.01	3.00E-11	0.01
Th-230	241-SX-ANC	49	25	2.20E-04	6.37E-06	6.39E-06	-9.20E-08	1.40	-1.50E-08	0.23
Th-230	241-SY-101	28	12	4.90E-04	1.91E-09	1.91E-09	3.00E-13	0.02	3.00E-13	0.02
Th-230	241-SY-102	25	12	4.90E-04	6.14E-08	6.14E-08	1.70E-11	0.03	1.70E-11	0.03
Th-230	241-SY-103	25	11	9.80E-04	8.78E-09	8.78E-09	7.30E-13	0.01	7.30E-13	0.01
Th-230	241-SY-ANC	50	25	1.90E-04	3.22E-07	3.23E-07	-6.40E-09	2.00	-1.70E-09	0.54
Th-230	241-T-101	31	14	1.20E-04	2.91E-07	2.90E-07	1.60E-11	0.01	1.60E-11	0.01
Th-230	241-T-102	26	11	9.80E-04	5.62E-07	5.62E-07	8.80E-11	0.02	8.80E-11	0.02
Th-230	241-T-103	26	11	9.80E-04	4.04E-07	4.03E-07	6.10E-11	0.02	6.10E-11	0.02
Th-230	241-T-104	28	12	4.90E-04	2.47E-08	2.47E-08	3.70E-12	0.02	3.70E-12	0.02
Th-230	241-T-105	26	11	9.80E-04	5.83E-08	5.83E-08	3.30E-12	0.01	3.30E-12	0.01
Th-230	241-T-106	25	11	9.80E-04	1.29E-07	1.29E-07	7.30E-12	0.01	7.30E-12	0.01
Th-230	241-T-107	25	11	9.80E-04	1.97E-07	1.97E-07	2.30E-11	0.01	2.30E-11	0.01
Th-230	241-T-108	30	13	2.40E-04	3.29E-08	3.29E-08	2.10E-12	0.01	2.10E-12	0.01
Th-230	241-T-109	25	11	9.80E-04	1.09E-08	1.09E-08	6.20E-13	0.01	6.20E-13	0.01
Th-230	241-T-110	26	12	4.90E-04	4.04E-10	4.04E-10	6.10E-14	0.02	6.10E-14	0.02
Th-230	241-T-111	25	11	9.80E-04	7.32E-08	7.32E-08	3.50E-13	0.00	3.50E-13	0.00
Th-230	241-T-112	25	11	9.80E-04	1.22E-08	1.22E-08	9.10E-13	0.01	9.10E-13	0.01
Th-230	241-T-201	28	13	2.40E-04	1.18E-12	1.18E-12	3.30E-17	0.00	3.30E-17	0.00
Th-230	241-T-202	29	12	4.90E-04	1.58E-10	1.58E-10	2.20E-14	0.01	2.20E-14	0.01
Th-230	241-T-203	39	13	2.40E-04	5.93E-12	5.93E-12	1.80E-16	0.00	1.80E-16	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Th-230	241-T-204	33	13	2.40E-04	2.48E-12	2.48E-12	8.40E-17	0.00	8.40E-17	0.00
Th-230	241-T-ANC	52	25	1.90E-04	1.35E-05	1.35E-05	-1.50E-07	1.10	-1.90E-08	0.14
Th-230	241-TX-101	32	14	1.20E-04	3.82E-07	3.82E-07	2.40E-11	0.01	2.40E-11	0.01
Th-230	241-TX-102	27	13	2.40E-04	9.30E-08	9.30E-08	1.30E-11	0.01	1.30E-11	0.01
Th-230	241-TX-103	29	12	4.90E-04	1.90E-08	1.90E-08	2.20E-12	0.01	2.20E-12	0.01
Th-230	241-TX-104	28	12	4.90E-04	2.45E-08	2.45E-08	4.10E-12	0.02	4.10E-12	0.02
Th-230	241-TX-105	25	13	2.40E-04	1.36E-07	1.36E-07	1.70E-11	0.01	1.70E-11	0.01
Th-230	241-TX-106	25	12	4.90E-04	4.34E-08	4.34E-08	9.00E-12	0.02	9.00E-12	0.02
Th-230	241-TX-107	28	12	4.90E-04	1.79E-08	1.79E-08	1.90E-12	0.01	1.90E-12	0.01
Th-230	241-TX-108	25	13	2.40E-04	1.68E-07	1.68E-07	2.60E-11	0.02	2.60E-11	0.02
Th-230	241-TX-109	26	12	4.90E-04	4.29E-08	4.29E-08	8.90E-12	0.02	8.90E-12	0.02
Th-230	241-TX-110	27	12	4.90E-04	2.39E-08	2.39E-08	3.90E-12	0.02	3.90E-12	0.02
Th-230	241-TX-111	28	12	4.90E-04	2.43E-08	2.43E-08	4.00E-12	0.02	4.00E-12	0.02
Th-230	241-TX-112	28	12	4.90E-04	2.09E-08	2.09E-08	2.90E-12	0.01	2.90E-12	0.01
Th-230	241-TX-113	25	11	9.80E-04	1.09E-08	1.09E-08	6.80E-13	0.01	6.80E-13	0.01
Th-230	241-TX-114	28	12	4.90E-04	2.13E-08	2.13E-08	3.10E-12	0.02	3.10E-12	0.02
Th-230	241-TX-115	27	12	4.90E-04	2.36E-08	2.36E-08	3.80E-12	0.02	3.80E-12	0.02
Th-230	241-TX-116	28	12	4.90E-04	2.06E-08	2.06E-08	3.00E-12	0.01	3.00E-12	0.01
Th-230	241-TX-117	28	12	4.90E-04	2.16E-08	2.16E-08	3.30E-12	0.02	3.30E-12	0.02
Th-230	241-TX-118	28	12	4.90E-04	2.51E-08	2.51E-08	4.20E-12	0.02	4.20E-12	0.02
Th-230	241-TX-ANC	48	25	2.20E-04	6.64E-06	6.66E-06	-1.00E-07	1.50	-1.60E-08	0.25
Th-230	241-TY-101	25	12	4.90E-04	6.14E-08	6.14E-08	6.80E-12	0.01	6.80E-12	0.01
Th-230	241-TY-102	28	11	9.80E-04	3.55E-09	3.55E-09	5.10E-13	0.01	5.10E-13	0.01
Th-230	241-TY-103	30	14	1.20E-04	4.66E-07	4.66E-07	3.30E-11	0.01	3.30E-11	0.01
Th-230	241-TY-104	25	11	9.80E-04	5.48E-07	5.48E-07	8.50E-11	0.02	8.50E-11	0.02
Th-230	241-TY-105	26	13	2.40E-04	1.37E-07	1.37E-07	1.80E-11	0.01	1.80E-11	0.01
Th-230	241-TY-106	26	13	2.40E-04	1.38E-07	1.38E-07	1.80E-11	0.01	1.80E-11	0.01
Th-230	241-TY-ANC	50	12	4.90E-04	1.98E-05	1.99E-05	-1.60E-07	0.81	-1.60E-07	0.81
Th-230	241-U-101	26	13	2.40E-04	1.28E-07	1.27E-07	1.80E-11	0.01	1.80E-11	0.01
Th-230	241-U-102	27	12	4.90E-04	2.56E-08	2.56E-08	5.20E-12	0.02	5.20E-12	0.02
Th-230	241-U-103	25	11	9.80E-04	1.37E-08	1.37E-08	5.50E-13	0.00	5.50E-13	0.00
Th-230	241-U-104	27	13	2.40E-04	1.08E-07	1.08E-07	1.60E-11	0.02	1.60E-11	0.02
Th-230	241-U-105	25	13	2.40E-04	1.66E-07	1.66E-07	2.50E-11	0.02	2.50E-11	0.02
Th-230	241-U-106	26	11	9.80E-04	1.42E-08	1.42E-08	5.40E-13	0.00	5.40E-13	0.00
Th-230	241-U-107	25	11	9.80E-04	9.30E-09	9.30E-09	6.30E-13	0.01	6.30E-13	0.01
Th-230	241-U-108	26	12	4.90E-04	5.06E-08	5.06E-08	1.10E-11	0.02	1.10E-11	0.02
Th-230	241-U-109	27	11	9.80E-04	4.06E-09	4.06E-09	6.00E-13	0.02	6.00E-13	0.02

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Th-230	241-U-110	32	14	1.20E-04	3.83E-07	3.83E-07	2.40E-11	0.01	2.40E-11	0.01
Th-230	241-U-111	28	12	4.90E-04	1.89E-08	1.89E-08	2.40E-12	0.01	2.40E-12	0.01
Th-230	241-U-112	25	11	9.80E-04	8.43E-08	8.43E-08	2.30E-12	0.00	2.30E-12	0.00
Th-230	241-U-201	26	12	4.90E-04	2.39E-11	2.39E-11	3.70E-15	0.02	3.70E-15	0.02
Th-230	241-U-202	26	12	4.90E-04	2.27E-11	2.26E-11	3.50E-15	0.02	3.50E-15	0.02
Th-230	241-U-203	26	12	4.90E-04	1.09E-11	1.09E-11	1.70E-15	0.02	1.70E-15	0.02
Th-230	241-U-204	28	12	4.90E-04	1.32E-09	1.32E-09	1.60E-13	0.01	1.60E-13	0.01
Th-230	241-U-ANC	50	25	2.10E-04	1.25E-05	1.25E-05	-1.30E-07	1.00	-1.70E-08	0.14
Th-230	T31	30	11	9.80E-04	6.25E-05	6.25E-05	3.20E-08	0.05	3.20E-08	0.05
Th-230	T34	26	9	3.90E-03	1.59E-03	1.59E-03	1.10E-07	0.01	1.10E-07	0.01
U-232	218-W-5	47	25	7.20E-05	9.66E-01	9.66E-01	-1.90E-03	0.19	-7.60E-05	0.01
U-232	241-S-101	34	8	7.80E-03	7.48E-12	7.54E-12	-5.80E-14	0.77	-5.80E-14	0.77
U-232	241-S-102	34	8	7.80E-03	5.88E-12	5.93E-12	-4.70E-14	0.79	-4.70E-14	0.79
U-232	241-S-103	35	8	7.80E-03	4.97E-11	5.01E-11	-4.00E-13	0.80	-4.00E-13	0.80
U-232	241-S-104	34	8	7.80E-03	7.37E-13	7.42E-13	-5.70E-15	0.77	-5.70E-15	0.77
U-232	241-S-105	34	8	7.80E-03	6.12E-11	6.18E-11	-5.40E-13	0.88	-5.40E-13	0.88
U-232	241-S-106	34	8	7.80E-03	6.96E-11	7.02E-11	-5.90E-13	0.85	-5.90E-13	0.85
U-232	241-S-107	34	8	7.80E-03	2.86E-12	2.88E-12	-2.20E-14	0.77	-2.20E-14	0.77
U-232	241-S-108	35	8	7.80E-03	6.44E-11	6.49E-11	-5.00E-13	0.78	-5.00E-13	0.78
U-232	241-S-109	36	8	7.80E-03	2.09E-11	2.10E-11	-1.70E-13	0.80	-1.70E-13	0.80
U-232	241-S-110	35	8	7.80E-03	7.50E-12	7.56E-12	-5.80E-14	0.78	-5.80E-14	0.78
U-232	241-S-111	34	8	7.80E-03	5.64E-11	5.68E-11	-4.50E-13	0.80	-4.50E-13	0.80
U-232	241-S-112	37	9	3.90E-03	2.09E-14	2.11E-14	-1.90E-16	0.92	-1.90E-16	0.92
U-232	241-S-ANC	43	25	4.50E-04	1.41E-05	1.41E-05	-3.30E-07	2.40	1.30E-08	0.09
U-232	241-SX-101	35	8	7.80E-03	3.17E-11	3.19E-11	-2.50E-13	0.78	-2.50E-13	0.78
U-232	241-SX-102	35	8	7.80E-03	5.85E-11	5.89E-11	-4.60E-13	0.79	-4.60E-13	0.79
U-232	241-SX-103	35	8	7.80E-03	4.40E-11	4.43E-11	-3.50E-13	0.79	-3.50E-13	0.79
U-232	241-SX-104	35	8	7.80E-03	1.10E-11	1.11E-11	-8.60E-14	0.78	-8.60E-14	0.78
U-232	241-SX-105	34	8	7.80E-03	2.96E-11	2.98E-11	-2.40E-13	0.81	-2.40E-13	0.81
U-232	241-SX-106	34	8	7.80E-03	8.54E-11	8.62E-11	-7.90E-13	0.92	-7.90E-13	0.92
U-232	241-SX-107	34	8	7.80E-03	1.58E-13	1.60E-13	-1.20E-15	0.77	-1.20E-15	0.77
U-232	241-SX-108	34	8	7.80E-03	1.59E-13	1.61E-13	-1.20E-15	0.77	-1.20E-15	0.77
U-232	241-SX-109	35	8	7.80E-03	3.13E-12	3.15E-12	-2.40E-14	0.78	-2.40E-14	0.78
U-232	241-SX-110	34	8	7.80E-03	5.21E-13	5.25E-13	-4.00E-15	0.77	-4.00E-15	0.77
U-232	241-SX-111	34	8	7.80E-03	3.86E-13	3.89E-13	-3.00E-15	0.77	-3.00E-15	0.77
U-232	241-SX-112	34	8	7.80E-03	1.87E-13	1.88E-13	-1.40E-15	0.77	-1.40E-15	0.77
U-232	241-SX-113	32	8	7.80E-03	8.31E-14	8.39E-14	-8.20E-16	0.99	-8.20E-16	0.99

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-232	241-SX-114	34	8	7.80E-03	4.09E-13	4.12E-13	-3.20E-15	0.77	-3.20E-15	0.77
U-232	241-SX-115	34	8	7.80E-03	2.77E-13	2.79E-13	-2.10E-15	0.77	-2.10E-15	0.77
U-232	241-SX-ANC	50	25	4.30E-04	2.13E-05	2.13E-05	-5.70E-07	2.70	4.00E-09	0.02
U-232	241-SY-101	44	9	3.90E-03	6.90E-11	6.94E-11	-4.40E-13	0.63	-4.40E-13	0.63
U-232	241-SY-102	35	8	7.80E-03	2.61E-10	2.63E-10	-2.00E-12	0.78	-2.00E-12	0.78
U-232	241-SY-103	34	8	7.80E-03	8.14E-11	8.22E-11	-7.50E-13	0.93	-7.50E-13	0.93
U-232	241-SY-ANC	36	12	4.90E-04	2.93E-05	2.94E-05	-6.50E-08	0.22	-6.50E-08	0.22
U-232	241-T-101	34	8	7.80E-03	7.19E-12	7.24E-12	-5.60E-14	0.77	-5.60E-14	0.77
U-232	241-T-102	34	8	7.80E-03	4.72E-11	4.75E-11	-3.70E-13	0.79	-3.70E-13	0.79
U-232	241-T-103	34	8	7.80E-03	5.93E-11	5.97E-11	-4.70E-13	0.79	-4.70E-13	0.79
U-232	241-T-104	35	8	7.80E-03	3.22E-14	3.25E-14	-2.60E-16	0.81	-2.60E-16	0.81
U-232	241-T-105	35	8	7.80E-03	2.21E-14	2.23E-14	-1.70E-16	0.78	-1.70E-16	0.78
U-232	241-T-106	34	8	7.80E-03	1.36E-13	1.37E-13	-1.10E-15	0.77	-1.10E-15	0.77
U-232	241-T-107	34	8	7.80E-03	3.19E-14	3.22E-14	-2.50E-16	0.77	-2.50E-16	0.77
U-232	241-T-108	35	8	7.80E-03	3.26E-14	3.29E-14	-2.60E-16	0.78	-2.60E-16	0.78
U-232	241-T-109	36	8	7.80E-03	3.36E-14	3.39E-14	-2.80E-16	0.83	-2.80E-16	0.83
U-232	241-T-110	38	9	3.90E-03	7.20E-15	7.27E-15	-6.60E-17	0.92	-6.60E-17	0.92
U-232	241-T-111	35	8	7.80E-03	3.34E-14	3.37E-14	-2.60E-16	0.78	-2.60E-16	0.78
U-232	241-T-112	35	8	7.80E-03	8.67E-12	8.74E-12	-6.80E-14	0.79	-6.80E-14	0.79
U-232	241-T-201	37	9	3.90E-03	1.53E-19	1.55E-19	-1.40E-21	0.88	-1.40E-21	0.88
U-232	241-T-202	30	8	7.80E-03	2.16E-15	2.18E-15	-2.10E-17	0.97	-2.10E-17	0.97
U-232	241-T-203	37	9	3.90E-03	1.23E-16	1.24E-16	-1.10E-18	0.88	-1.10E-18	0.88
U-232	241-T-204	37	9	3.90E-03	4.14E-17	4.18E-17	-3.70E-19	0.88	-3.70E-19	0.88
U-232	241-T-ANC	48	25	5.00E-04	2.71E-05	2.71E-05	-5.90E-07	2.20	9.60E-09	0.04
U-232	241-TX-101	34	8	7.80E-03	1.05E-12	1.06E-12	-8.30E-15	0.79	-8.30E-15	0.79
U-232	241-TX-102	34	8	7.80E-03	2.19E-11	2.21E-11	-1.70E-13	0.77	-1.70E-13	0.77
U-232	241-TX-103	35	8	7.80E-03	1.41E-10	1.42E-10	-1.10E-12	0.81	-1.10E-12	0.81
U-232	241-TX-104	35	8	7.80E-03	1.17E-10	1.18E-10	-9.30E-13	0.79	-9.30E-13	0.79
U-232	241-TX-105	34	8	7.80E-03	2.23E-11	2.25E-11	-1.70E-13	0.77	-1.70E-13	0.77
U-232	241-TX-106	35	8	7.80E-03	5.63E-11	5.67E-11	-4.40E-13	0.78	-4.40E-13	0.78
U-232	241-TX-107	34	8	7.80E-03	1.31E-10	1.32E-10	-1.10E-12	0.81	-1.10E-12	0.81
U-232	241-TX-108	34	8	7.80E-03	1.38E-11	1.39E-11	-1.10E-13	0.77	-1.10E-13	0.77
U-232	241-TX-109	35	8	7.80E-03	3.21E-14	3.24E-14	-2.50E-16	0.78	-2.50E-16	0.78
U-232	241-TX-110	35	8	7.80E-03	1.16E-10	1.17E-10	-9.20E-13	0.79	-9.20E-13	0.79
U-232	241-TX-111	35	8	7.80E-03	1.08E-10	1.09E-10	-8.50E-13	0.79	-8.50E-13	0.79
U-232	241-TX-112	35	8	7.80E-03	1.38E-10	1.39E-10	-1.10E-12	0.80	-1.10E-12	0.80
U-232	241-TX-113	36	8	7.80E-03	5.56E-11	5.60E-11	-4.30E-13	0.77	-4.30E-13	0.77

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-232	241-TX-114	35	8	7.80E-03	1.24E-10	1.25E-10	-1.00E-12	0.80	-1.00E-12	0.80
U-232	241-TX-115	35	8	7.80E-03	1.12E-10	1.13E-10	-8.90E-13	0.79	-8.90E-13	0.79
U-232	241-TX-116	35	8	7.80E-03	4.28E-11	4.31E-11	-3.40E-13	0.79	-3.40E-13	0.79
U-232	241-TX-117	35	8	7.80E-03	1.01E-10	1.02E-10	-8.00E-13	0.79	-8.00E-13	0.79
U-232	241-TX-118	35	8	7.80E-03	1.43E-10	1.44E-10	-1.10E-12	0.79	-1.10E-12	0.79
U-232	241-TX-ANC	50	17	6.50E-04	9.21E-05	9.22E-05	-7.00E-08	0.08	-7.00E-08	0.08
U-232	241-TY-101	35	8	7.80E-03	2.85E-14	2.87E-14	-2.20E-16	0.78	-2.20E-16	0.78
U-232	241-TY-102	35	8	7.80E-03	6.92E-11	6.97E-11	-5.00E-13	0.72	-5.00E-13	0.72
U-232	241-TY-103	34	8	7.80E-03	3.61E-11	3.63E-11	-2.90E-13	0.79	-2.90E-13	0.79
U-232	241-TY-104	34	8	7.80E-03	2.68E-14	2.70E-14	-2.10E-16	0.79	-2.10E-16	0.79
U-232	241-TY-105	34	8	7.80E-03	3.10E-14	3.12E-14	-2.40E-16	0.77	-2.40E-16	0.77
U-232	241-TY-106	34	8	7.80E-03	3.11E-14	3.13E-14	-2.40E-16	0.77	-2.40E-16	0.77
U-232	241-TY-ANC	49	25	4.60E-04	3.69E-05	3.71E-05	-6.60E-07	1.80	-2.40E-07	0.66
U-232	241-U-101	34	8	7.80E-03	1.01E-13	1.02E-13	-7.80E-16	0.77	-7.80E-16	0.77
U-232	241-U-102	35	8	7.80E-03	3.40E-11	3.43E-11	-2.70E-13	0.79	-2.70E-13	0.79
U-232	241-U-103	34	8	7.80E-03	5.81E-11	5.87E-11	-5.20E-13	0.89	-5.20E-13	0.89
U-232	241-U-104	34	8	7.80E-03	1.05E-11	1.06E-11	-8.10E-14	0.77	-8.10E-14	0.77
U-232	241-U-105	34	8	7.80E-03	1.51E-11	1.52E-11	-1.20E-13	0.77	-1.20E-13	0.77
U-232	241-U-106	35	8	7.80E-03	7.12E-11	7.18E-11	-5.70E-13	0.80	-5.70E-13	0.80
U-232	241-U-107	35	8	7.80E-03	6.74E-11	6.79E-11	-4.90E-13	0.73	-4.90E-13	0.73
U-232	241-U-108	35	8	7.80E-03	9.76E-12	9.83E-12	-7.60E-14	0.78	-7.60E-14	0.78
U-232	241-U-109	33	8	7.80E-03	5.47E-11	5.51E-11	-4.20E-13	0.77	-4.20E-13	0.77
U-232	241-U-110	34	8	7.80E-03	9.83E-14	9.91E-14	-7.80E-16	0.79	-7.80E-16	0.79
U-232	241-U-111	35	8	7.80E-03	3.55E-11	3.58E-11	-2.90E-13	0.81	-2.90E-13	0.81
U-232	241-U-112	34	8	7.80E-03	9.03E-14	9.10E-14	-7.00E-16	0.77	-7.00E-16	0.77
U-232	241-U-201	38	9	3.90E-03	1.43E-15	1.45E-15	-1.30E-17	0.90	-1.30E-17	0.90
U-232	241-U-202	39	9	3.90E-03	1.37E-15	1.38E-15	-1.30E-17	0.94	-1.30E-17	0.94
U-232	241-U-203	37	9	3.90E-03	6.73E-16	6.79E-16	-6.00E-18	0.88	-6.00E-18	0.88
U-232	241-U-204	35	8	7.80E-03	7.08E-15	7.14E-15	-5.70E-17	0.81	-5.70E-17	0.81
U-232	241-U-ANC	45	25	4.90E-04	2.45E-05	2.45E-05	-5.00E-07	2.10	-8.60E-10	0.00
U-232	T31	50	18	1.10E-03	2.68E-04	2.69E-04	-1.20E-06	0.44	-1.20E-06	0.44
U-232	T34	50	18	1.10E-03	7.15E-04	7.18E-04	-3.20E-06	0.45	-3.20E-06	0.45
C-14	218-E-12B	56	25	1.50E-04	1.29E+02	1.29E+02	-2.90E-01	0.23	-9.00E-02	0.07
C-14	241-A-101	29	10	2.00E-03	2.07E-04	2.08E-04	-3.30E-07	0.16	-3.30E-07	0.16
C-14	241-A-102	29	10	2.00E-03	6.26E-05	6.27E-05	-9.90E-08	0.16	-9.90E-08	0.16
C-14	241-A-103	29	10	2.00E-03	1.44E-04	1.44E-04	-2.30E-07	0.16	-2.30E-07	0.16
C-14	241-A-104	29	10	2.00E-03	1.35E-04	1.35E-04	-1.70E-07	0.13	-1.70E-07	0.13

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
C-14	241-A-105	29	10	2.00E-03	7.64E-05	7.65E-05	-1.40E-07	0.18	-1.40E-07	0.18
C-14	241-A-106	29	10	2.00E-03	5.35E-05	5.35E-05	-8.50E-08	0.16	-8.50E-08	0.16
C-14	241-A-ANC	46	14	1.20E-04	1.52E-02	1.52E-02	-2.50E-05	0.16	-2.50E-05	0.16
C-14	241-AN-101	29	10	2.00E-03	8.24E-05	8.26E-05	-1.30E-07	0.16	-1.30E-07	0.16
C-14	241-AN-102	29	10	2.00E-03	2.82E-05	2.82E-05	-4.50E-08	0.16	-4.50E-08	0.16
C-14	241-AN-103	29	10	2.00E-03	1.76E-04	1.76E-04	-2.80E-07	0.16	-2.80E-07	0.16
C-14	241-AN-104	29	10	2.00E-03	1.26E-04	1.26E-04	-2.00E-07	0.16	-2.00E-07	0.16
C-14	241-AN-105	29	10	2.00E-03	1.30E-04	1.30E-04	-2.10E-07	0.16	-2.10E-07	0.16
C-14	241-AN-106	29	10	2.00E-03	2.99E-05	2.99E-05	-4.70E-08	0.16	-4.70E-08	0.16
C-14	241-AN-107	29	10	2.00E-03	6.86E-05	6.87E-05	-1.10E-07	0.16	-1.10E-07	0.16
C-14	241-AN-ANC	46	14	1.20E-04	1.10E-02	1.10E-02	-1.80E-05	0.16	-1.80E-05	0.16
C-14	241-AP-101	29	10	2.00E-03	8.16E-05	8.18E-05	-1.30E-07	0.16	-1.30E-07	0.16
C-14	241-AP-102	29	10	2.00E-03	4.34E-05	4.35E-05	-6.90E-08	0.16	-6.90E-08	0.16
C-14	241-AP-103	29	10	2.00E-03	6.38E-05	6.39E-05	-1.00E-07	0.16	-1.00E-07	0.16
C-14	241-AP-104	29	10	2.00E-03	1.21E-04	1.22E-04	-1.90E-07	0.16	-1.90E-07	0.16
C-14	241-AP-105	29	10	2.00E-03	5.75E-05	5.76E-05	-9.10E-08	0.16	-9.10E-08	0.16
C-14	241-AP-106	29	10	2.00E-03	3.85E-05	3.86E-05	-6.10E-08	0.16	-6.10E-08	0.16
C-14	241-AP-107	29	10	2.00E-03	8.91E-05	8.93E-05	-1.40E-07	0.16	-1.40E-07	0.16
C-14	241-AP-108	29	10	2.00E-03	9.38E-05	9.40E-05	-1.50E-07	0.16	-1.50E-07	0.16
C-14	241-AP-ANC	46	14	1.20E-04	9.72E-03	9.74E-03	-1.60E-05	0.16	-1.60E-05	0.16
C-14	241-AW-101	29	10	2.00E-03	9.94E-05	9.95E-05	-1.60E-07	0.16	-1.60E-07	0.16
C-14	241-AW-102	29	10	2.00E-03	3.90E-05	3.90E-05	-6.20E-08	0.16	-6.20E-08	0.16
C-14	241-AW-103	29	10	2.00E-03	2.29E-05	2.29E-05	-3.60E-08	0.16	-3.60E-08	0.16
C-14	241-AW-104	29	10	2.00E-03	4.73E-05	4.73E-05	-7.50E-08	0.16	-7.50E-08	0.16
C-14	241-AW-105	29	10	2.00E-03	4.27E-05	4.27E-05	-6.80E-08	0.16	-6.80E-08	0.16
C-14	241-AW-106	29	10	2.00E-03	1.15E-04	1.15E-04	-1.80E-07	0.16	-1.80E-07	0.16
C-14	241-AW-ANC	46	14	1.20E-04	6.49E-03	6.50E-03	-1.10E-05	0.16	-1.10E-05	0.16
C-14	241-AX-101	29	10	2.00E-03	2.19E-04	2.19E-04	-3.50E-07	0.16	-3.50E-07	0.16
C-14	241-AX-102	29	10	2.00E-03	2.29E-05	2.29E-05	-3.60E-08	0.16	-3.60E-08	0.16
C-14	241-AX-103	29	10	2.00E-03	1.64E-04	1.65E-04	-2.60E-07	0.16	-2.60E-07	0.16
C-14	241-AX-104	29	10	2.00E-03	1.49E-04	1.49E-04	-2.40E-07	0.16	-2.40E-07	0.16
C-14	241-AX-ANC	46	14	1.20E-04	1.31E-02	1.31E-02	-2.20E-05	0.16	-2.20E-05	0.16
C-14	241-AY-101	29	10	2.00E-03	5.38E-05	5.39E-05	-8.50E-08	0.16	-8.50E-08	0.16
C-14	241-AY-102	29	10	2.00E-03	2.18E-05	2.19E-05	-3.50E-08	0.16	-3.50E-08	0.16
C-14	241-AY-ANC	46	14	1.20E-04	1.80E-03	1.81E-03	-3.00E-06	0.16	-3.00E-06	0.16
C-14	241-AZ-101	29	10	2.00E-03	8.01E-05	8.02E-05	-1.30E-07	0.16	-1.30E-07	0.16
C-14	241-AZ-102	29	10	2.00E-03	8.92E-05	8.93E-05	-1.40E-07	0.16	-1.40E-07	0.16

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
C-14	241-AZ-ANC	46	14	1.20E-04	2.89E-03	2.89E-03	-4.80E-06	0.16	-4.80E-06	0.16
C-14	241-B-101	29	10	2.00E-03	7.50E-06	7.51E-06	-1.20E-08	0.16	-1.20E-08	0.16
C-14	241-B-102	29	10	2.00E-03	6.00E-06	6.01E-06	-9.50E-09	0.16	-9.50E-09	0.16
C-14	241-B-103	29	10	2.00E-03	5.30E-06	5.31E-06	-8.40E-09	0.16	-8.40E-09	0.16
C-14	241-B-104	29	10	2.00E-03	6.45E-06	6.46E-06	-1.00E-08	0.16	-1.00E-08	0.16
C-14	241-B-105	29	10	2.00E-03	4.28E-06	4.28E-06	-6.80E-09	0.16	-6.80E-09	0.16
C-14	241-B-106	29	10	2.00E-03	5.66E-06	5.67E-06	-9.00E-09	0.16	-9.00E-09	0.16
C-14	241-B-107	29	10	2.00E-03	1.50E-05	1.50E-05	-2.40E-08	0.16	-2.40E-08	0.16
C-14	241-B-108	29	10	2.00E-03	2.21E-05	2.21E-05	-3.50E-08	0.16	-3.50E-08	0.16
C-14	241-B-109	29	10	2.00E-03	2.52E-05	2.53E-05	-4.00E-08	0.16	-4.00E-08	0.16
C-14	241-B-110	29	10	2.00E-03	6.46E-05	6.47E-05	-1.00E-07	0.16	-1.00E-07	0.16
C-14	241-B-111	29	10	2.00E-03	7.97E-05	7.98E-05	-1.30E-07	0.16	-1.30E-07	0.16
C-14	241-B-112	29	10	2.00E-03	1.60E-04	1.60E-04	-2.50E-07	0.16	-2.50E-07	0.16
C-14	241-B-201	27	10	2.00E-03	6.64E-09	6.65E-09	-1.00E-11	0.16	-1.00E-11	0.16
C-14	241-B-202	27	10	2.00E-03	8.82E-09	8.84E-09	-1.40E-11	0.16	-1.40E-11	0.16
C-14	241-B-203	27	10	2.00E-03	9.57E-09	9.59E-09	-1.50E-11	0.16	-1.50E-11	0.16
C-14	241-B-204	27	10	2.00E-03	5.52E-08	5.53E-08	-8.60E-11	0.16	-8.60E-11	0.16
C-14	241-B-ANC	46	14	1.20E-04	7.13E-03	7.14E-03	-1.20E-05	0.16	-1.20E-05	0.16
C-14	241-BX-101	29	10	2.00E-03	1.98E-05	1.99E-05	-3.10E-08	0.16	-3.10E-08	0.16
C-14	241-BX-102	29	10	2.00E-03	2.69E-05	2.70E-05	-4.30E-08	0.16	-4.30E-08	0.16
C-14	241-BX-103	29	10	2.00E-03	3.04E-05	3.05E-05	-4.80E-08	0.16	-4.80E-08	0.16
C-14	241-BX-104	29	10	2.00E-03	1.41E-05	1.41E-05	-2.20E-08	0.16	-2.20E-08	0.16
C-14	241-BX-105	29	10	2.00E-03	4.68E-05	4.69E-05	-7.40E-08	0.16	-7.40E-08	0.16
C-14	241-BX-106	29	10	2.00E-03	1.57E-04	1.57E-04	-2.50E-07	0.16	-2.50E-07	0.16
C-14	241-BX-107	29	10	2.00E-03	1.54E-05	1.55E-05	-2.40E-08	0.16	-2.40E-08	0.16
C-14	241-BX-108	29	10	2.00E-03	1.17E-05	1.17E-05	-1.90E-08	0.16	-1.90E-08	0.16
C-14	241-BX-109	29	10	2.00E-03	3.70E-06	3.71E-06	-5.90E-09	0.16	-5.90E-09	0.16
C-14	241-BX-110	29	10	2.00E-03	1.43E-04	1.43E-04	-2.30E-07	0.16	-2.30E-07	0.16
C-14	241-BX-111	29	10	2.00E-03	1.63E-04	1.63E-04	-2.60E-07	0.16	-2.60E-07	0.16
C-14	241-BX-112	29	10	2.00E-03	9.34E-06	9.35E-06	-1.50E-08	0.16	-1.50E-08	0.16
C-14	241-BX-ANC	46	14	1.20E-04	1.02E-02	1.02E-02	-1.70E-05	0.16	-1.70E-05	0.16
C-14	241-BY-101	29	10	2.00E-03	2.09E-04	2.10E-04	-3.30E-07	0.16	-3.30E-07	0.16
C-14	241-BY-102	29	10	2.00E-03	1.97E-04	1.97E-04	-3.10E-07	0.16	-3.10E-07	0.16
C-14	241-BY-103	29	10	2.00E-03	2.00E-04	2.00E-04	-3.20E-07	0.16	-3.20E-07	0.16
C-14	241-BY-104	29	10	2.00E-03	2.01E-04	2.01E-04	-3.20E-07	0.16	-3.20E-07	0.16
C-14	241-BY-105	29	10	2.00E-03	2.31E-04	2.31E-04	-3.70E-07	0.16	-3.70E-07	0.16
C-14	241-BY-106	29	10	2.00E-03	1.82E-04	1.82E-04	-2.90E-07	0.16	-2.90E-07	0.16

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COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
C-14	241-BY-107	29	10	2.00E-03	1.85E-04	1.85E-04	-2.90E-07	0.16	-2.90E-07	0.16
C-14	241-BY-108	29	10	2.00E-03	1.67E-04	1.68E-04	-2.70E-07	0.16	-2.70E-07	0.16
C-14	241-BY-109	29	10	2.00E-03	1.92E-04	1.93E-04	-3.10E-07	0.16	-3.10E-07	0.16
C-14	241-BY-110	29	10	2.00E-03	1.69E-04	1.69E-04	-2.70E-07	0.16	-2.70E-07	0.16
C-14	241-BY-111	29	10	2.00E-03	1.88E-04	1.88E-04	-3.00E-07	0.16	-3.00E-07	0.16
C-14	241-BY-112	29	10	2.00E-03	2.05E-04	2.05E-04	-3.20E-07	0.16	-3.20E-07	0.16
C-14	241-BY-ANC	46	14	1.20E-04	3.98E-02	3.98E-02	-6.60E-05	0.16	-6.60E-05	0.16
H-3	218-E-10	25	13	2.40E-04	8.88E-08	8.91E-08	-2.20E-10	0.25	-2.20E-10	0.25
H-3	218-E-12B	47	25	1.50E-05	1.74E+02	1.74E+02	-2.20E-01	0.13	-9.30E-03	0.01
H-3	241-A-101	38	11	9.80E-04	1.62E-04	1.63E-04	-1.10E-06	0.67	-1.10E-06	0.67
H-3	241-A-102	38	11	9.80E-04	1.44E-04	1.45E-04	-9.70E-07	0.67	-9.70E-07	0.67
H-3	241-A-103	38	11	9.80E-04	1.35E-04	1.36E-04	-9.10E-07	0.67	-9.10E-07	0.67
H-3	241-A-104	36	11	9.80E-04	3.70E-05	3.72E-05	-1.40E-07	0.39	-1.40E-07	0.39
H-3	241-A-105	37	11	9.80E-04	1.07E-05	1.07E-05	-2.20E-08	0.21	-2.20E-08	0.21
H-3	241-A-106	38	11	9.80E-04	1.15E-04	1.16E-04	-7.70E-07	0.67	-7.70E-07	0.67
H-3	241-A-ANC	27	12	4.90E-04	4.25E-03	4.27E-03	-1.80E-05	0.42	-1.80E-05	0.42
H-3	241-AN-101	38	11	9.80E-04	2.26E-04	2.28E-04	-1.50E-06	0.67	-1.50E-06	0.67
H-3	241-AN-102	38	11	9.80E-04	3.32E-06	3.35E-06	-2.20E-08	0.67	-2.20E-08	0.67
H-3	241-AN-103	38	11	9.80E-04	1.33E-05	1.34E-05	-9.00E-08	0.67	-9.00E-08	0.67
H-3	241-AN-104	38	11	9.80E-04	3.33E-05	3.36E-05	-2.20E-07	0.67	-2.20E-07	0.67
H-3	241-AN-105	38	11	9.80E-04	6.20E-06	6.24E-06	-4.20E-08	0.67	-4.20E-08	0.67
H-3	241-AN-106	38	11	9.80E-04	1.24E-04	1.25E-04	-8.30E-07	0.67	-8.30E-07	0.67
H-3	241-AN-107	38	11	9.80E-04	1.45E-05	1.46E-05	-9.80E-08	0.67	-9.80E-08	0.67
H-3	241-AN-ANC	27	12	4.90E-04	1.88E-03	1.89E-03	-7.80E-06	0.42	-7.80E-06	0.42
H-3	241-AP-101	38	11	9.80E-04	1.60E-05	1.61E-05	-1.10E-07	0.67	-1.10E-07	0.67
H-3	241-AP-102	38	11	9.80E-04	3.41E-05	3.43E-05	-2.30E-07	0.67	-2.30E-07	0.67
H-3	241-AP-103	38	11	9.80E-04	3.46E-05	3.48E-05	-2.30E-07	0.67	-2.30E-07	0.67
H-3	241-AP-104	38	11	9.80E-04	2.59E-05	2.61E-05	-1.70E-07	0.67	-1.70E-07	0.67
H-3	241-AP-105	38	11	9.80E-04	1.30E-05	1.31E-05	-8.70E-08	0.67	-8.70E-08	0.67
H-3	241-AP-106	38	11	9.80E-04	9.69E-05	9.75E-05	-6.50E-07	0.67	-6.50E-07	0.67
H-3	241-AP-107	38	11	9.80E-04	6.90E-05	6.95E-05	-4.60E-07	0.67	-4.60E-07	0.67
H-3	241-AP-108	38	11	9.80E-04	7.37E-05	7.42E-05	-5.00E-07	0.67	-5.00E-07	0.67
H-3	241-AP-ANC	27	12	4.90E-04	1.97E-03	1.98E-03	-8.20E-06	0.42	-8.20E-06	0.42
H-3	241-AW-101	38	11	9.80E-04	4.24E-05	4.27E-05	-2.90E-07	0.67	-2.90E-07	0.67
H-3	241-AW-102	38	11	9.80E-04	1.36E-04	1.37E-04	-9.20E-07	0.67	-9.20E-07	0.67
H-3	241-AW-103	38	11	9.80E-04	9.81E-06	9.88E-06	-6.60E-08	0.67	-6.60E-08	0.67
H-3	241-AW-104	38	11	9.80E-04	9.03E-06	9.09E-06	-6.10E-08	0.67	-6.10E-08	0.67

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
H-3	241-AW-105	38	11	9.80E-04	4.11E-04	4.14E-04	-2.80E-06	0.67	-2.80E-06	0.67
H-3	241-AW-106	38	11	9.80E-04	2.08E-05	2.10E-05	-1.40E-07	0.67	-1.40E-07	0.67
H-3	241-AW-ANC	27	12	4.90E-04	2.87E-03	2.88E-03	-1.20E-05	0.42	-1.20E-05	0.42
H-3	241-AX-101	38	11	9.80E-04	1.71E-04	1.73E-04	-1.20E-06	0.67	-1.20E-06	0.67
H-3	241-AX-102	38	11	9.80E-04	1.67E-04	1.68E-04	-1.10E-06	0.67	-1.10E-06	0.67
H-3	241-AX-103	38	11	9.80E-04	1.29E-04	1.30E-04	-8.70E-07	0.67	-8.70E-07	0.67
H-3	241-AX-104	38	11	9.80E-04	1.31E-04	1.32E-04	-8.80E-07	0.67	-8.80E-07	0.67
H-3	241-AX-ANC	27	12	4.90E-04	3.26E-03	3.27E-03	-1.40E-05	0.42	-1.40E-05	0.42
H-3	241-AY-101	38	11	9.80E-04	3.01E-05	3.03E-05	-2.00E-07	0.67	-2.00E-07	0.67
H-3	241-AY-102	38	11	9.80E-04	4.86E-05	4.90E-05	-3.30E-07	0.67	-3.30E-07	0.67
H-3	241-AY-ANC	27	12	4.90E-04	3.08E-04	3.09E-04	-1.30E-06	0.42	-1.30E-06	0.42
H-3	241-AZ-101	38	11	9.80E-04	1.01E-04	1.01E-04	-6.80E-07	0.67	-6.80E-07	0.67
H-3	241-AZ-102	38	11	9.80E-04	8.15E-05	8.21E-05	-5.50E-07	0.67	-5.50E-07	0.67
H-3	241-AZ-ANC	27	12	4.90E-04	9.08E-04	9.12E-04	-3.80E-06	0.42	-3.80E-06	0.42
H-3	241-B-101	38	11	9.80E-04	2.78E-05	2.79E-05	-1.90E-07	0.67	-1.90E-07	0.67
H-3	241-B-102	38	11	9.80E-04	2.27E-05	2.29E-05	-1.50E-07	0.67	-1.50E-07	0.67
H-3	241-B-103	38	11	9.80E-04	2.02E-05	2.03E-05	-1.40E-07	0.67	-1.40E-07	0.67
H-3	241-B-104	38	11	9.80E-04	5.39E-06	5.43E-06	-3.60E-08	0.67	-3.60E-08	0.67
H-3	241-B-105	38	11	9.80E-04	1.41E-05	1.42E-05	-9.50E-08	0.67	-9.50E-08	0.67
H-3	241-B-106	38	11	9.80E-04	1.19E-05	1.20E-05	-8.00E-08	0.67	-8.00E-08	0.67
H-3	241-B-107	38	11	9.80E-04	1.92E-05	1.93E-05	-1.30E-07	0.67	-1.30E-07	0.67
H-3	241-B-108	38	11	9.80E-04	3.38E-05	3.40E-05	-2.30E-07	0.67	-2.30E-07	0.67
H-3	241-B-109	38	11	9.80E-04	3.47E-05	3.49E-05	-2.30E-07	0.67	-2.30E-07	0.67
H-3	241-B-110	38	11	9.80E-04	1.39E-05	1.40E-05	-9.40E-08	0.67	-9.40E-08	0.67
H-3	241-B-111	38	11	9.80E-04	2.02E-05	2.04E-05	-1.40E-07	0.67	-1.40E-07	0.67
H-3	241-B-112	38	11	9.80E-04	3.00E-04	3.02E-04	-2.00E-06	0.67	-2.00E-06	0.67
H-3	241-B-201	40	11	9.80E-04	1.78E-04	1.79E-04	-1.10E-06	0.62	-1.10E-06	0.62
H-3	241-B-202	40	11	9.80E-04	4.40E-11	4.43E-11	-2.70E-13	0.62	-2.70E-13	0.62
H-3	241-B-203	40	11	9.80E-04	4.78E-11	4.81E-11	-3.00E-13	0.62	-3.00E-13	0.62
H-3	241-B-204	40	11	9.80E-04	4.49E-11	4.52E-11	-2.80E-13	0.62	-2.80E-13	0.62
H-3	241-B-ANC	27	12	4.90E-04	1.89E-03	1.90E-03	-7.90E-06	0.42	-7.90E-06	0.42
H-3	241-BX-101	38	11	9.80E-04	3.48E-05	3.50E-05	-2.30E-07	0.67	-2.30E-07	0.67
H-3	241-BX-102	38	11	9.80E-04	4.64E-04	4.68E-04	-3.10E-06	0.67	-3.10E-06	0.67
H-3	241-BX-103	38	11	9.80E-04	1.20E-04	1.21E-04	-8.10E-07	0.67	-8.10E-07	0.67
H-3	241-BX-104	38	11	9.80E-04	3.61E-04	3.64E-04	-2.40E-06	0.67	-2.40E-06	0.67
H-3	241-BX-105	38	11	9.80E-04	1.04E-04	1.05E-04	-7.00E-07	0.67	-7.00E-07	0.67
H-3	241-BX-106	38	11	9.80E-04	2.93E-04	2.95E-04	-2.00E-06	0.67	-2.00E-06	0.67

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
H-3	241-BX-107	38	11	9.80E-04	4.50E-06	4.53E-06	-3.00E-08	0.67	-3.00E-08	0.67
H-3	241-BX-108	38	11	9.80E-04	2.60E-05	2.62E-05	-1.80E-07	0.67	-1.80E-07	0.67
H-3	241-BX-109	38	11	9.80E-04	2.12E-05	2.13E-05	-1.40E-07	0.67	-1.40E-07	0.67
H-3	241-BX-110	38	11	9.80E-04	2.62E-04	2.63E-04	-1.80E-06	0.67	-1.80E-06	0.67
H-3	241-BX-111	38	11	9.80E-04	3.01E-04	3.03E-04	-2.00E-06	0.67	-2.00E-06	0.67
H-3	241-BX-112	38	11	9.80E-04	4.01E-06	4.04E-06	-2.70E-08	0.67	-2.70E-08	0.67
H-3	241-BX-ANC	27	12	4.90E-04	8.18E-03	8.21E-03	-3.40E-05	0.42	-3.40E-05	0.42
H-3	241-BY-101	38	11	9.80E-04	3.94E-04	3.97E-04	-2.70E-06	0.67	-2.70E-06	0.67
H-3	241-BY-102	38	11	9.80E-04	3.70E-04	3.72E-04	-2.50E-06	0.67	-2.50E-06	0.67
H-3	241-BY-103	38	11	9.80E-04	3.75E-04	3.78E-04	-2.50E-06	0.67	-2.50E-06	0.67
H-3	241-BY-104	38	11	9.80E-04	3.79E-04	3.82E-04	-2.60E-06	0.67	-2.60E-06	0.67
H-3	241-BY-105	38	11	9.80E-04	4.34E-04	4.37E-04	-2.90E-06	0.67	-2.90E-06	0.67
H-3	241-BY-106	38	11	9.80E-04	3.41E-04	3.43E-04	-2.30E-06	0.67	-2.30E-06	0.67
H-3	241-BY-107	38	11	9.80E-04	3.47E-04	3.50E-04	-2.30E-06	0.67	-2.30E-06	0.67
H-3	241-BY-108	38	11	9.80E-04	3.17E-04	3.19E-04	-2.10E-06	0.67	-2.10E-06	0.67
H-3	241-BY-109	38	11	9.80E-04	3.57E-04	3.60E-04	-2.40E-06	0.67	-2.40E-06	0.67
H-3	241-BY-110	38	11	9.80E-04	3.19E-04	3.21E-04	-2.20E-06	0.67	-2.20E-06	0.67
H-3	241-BY-111	38	11	9.80E-04	3.53E-04	3.55E-04	-2.40E-06	0.67	-2.40E-06	0.67
H-3	241-BY-112	38	11	9.80E-04	3.83E-04	3.86E-04	-2.60E-06	0.67	-2.60E-06	0.67
H-3	241-BY-ANC	27	12	4.90E-04	2.23E-02	2.24E-02	-9.30E-05	0.42	-9.30E-05	0.42
Np-237	200-E-136	29	11	9.80E-04	1.35E-04	1.35E-04	2.60E-08	0.02	2.60E-08	0.02
Np-237	201-C	50	13	2.40E-04	7.93E-08	7.99E-08	-6.10E-10	0.77	-6.10E-10	0.77
Np-237	218-E-10	29	18	7.60E-06	8.59E-09	8.59E-09	-2.90E-13	0.00	-2.90E-13	0.00
Np-237	218-E-12B	26	15	6.10E-05	1.11E-05	1.11E-05	-3.80E-10	0.00	-3.80E-10	0.00
Np-237	224-B	50	13	2.40E-04	2.75E-06	2.77E-06	-2.10E-08	0.77	-2.10E-08	0.77
Np-237	241-A-101	25	12	4.90E-04	1.51E-04	1.51E-04	-1.30E-08	0.01	-1.30E-08	0.01
Np-237	241-A-102	25	12	4.90E-04	1.38E-04	1.38E-04	-1.20E-08	0.01	-1.20E-08	0.01
Np-237	241-A-103	25	12	4.90E-04	1.27E-04	1.27E-04	-1.10E-08	0.01	-1.10E-08	0.01
Np-237	241-A-104	26	11	9.80E-04	9.29E-05	9.29E-05	5.20E-09	0.01	5.20E-09	0.01
Np-237	241-A-105	25	11	9.80E-04	9.40E-05	9.40E-05	2.60E-08	0.03	2.60E-08	0.03
Np-237	241-A-106	25	12	4.90E-04	8.77E-05	8.77E-05	-7.70E-09	0.01	-7.70E-09	0.01
Np-237	241-A-ANC	34	12	4.90E-04	3.70E-03	3.71E-03	-8.60E-06	0.23	-8.60E-06	0.23
Np-237	241-AN-101	25	12	4.90E-04	1.58E-04	1.58E-04	-1.40E-08	0.01	-1.40E-08	0.01
Np-237	241-AN-102	25	12	4.90E-04	1.97E-05	1.97E-05	-1.70E-09	0.01	-1.70E-09	0.01
Np-237	241-AN-103	25	12	4.90E-04	2.27E-05	2.27E-05	-2.00E-09	0.01	-2.00E-09	0.01
Np-237	241-AN-104	25	12	4.90E-04	1.54E-05	1.54E-05	-1.40E-09	0.01	-1.40E-09	0.01
Np-237	241-AN-105	25	12	4.90E-04	1.70E-05	1.70E-05	-1.50E-09	0.01	-1.50E-09	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Np-237	241-AN-106	25	12	4.90E-04	3.61E-05	3.61E-05	-3.20E-09	0.01	-3.20E-09	0.01
Np-237	241-AN-107	25	12	4.90E-04	1.61E-05	1.61E-05	-1.40E-09	0.01	-1.40E-09	0.01
Np-237	241-AN-ANC	34	12	4.90E-04	1.26E-03	1.27E-03	-2.90E-06	0.23	-2.90E-06	0.23
Np-237	241-AP-101	25	12	4.90E-04	9.49E-06	9.49E-06	-8.30E-10	0.01	-8.30E-10	0.01
Np-237	241-AP-102	25	12	4.90E-04	2.41E-04	2.41E-04	-2.10E-08	0.01	-2.10E-08	0.01
Np-237	241-AP-103	25	12	4.90E-04	5.69E-06	5.69E-06	-5.00E-10	0.01	-5.00E-10	0.01
Np-237	241-AP-104	25	12	4.90E-04	9.40E-06	9.40E-06	-8.30E-10	0.01	-8.30E-10	0.01
Np-237	241-AP-105	25	12	4.90E-04	3.96E-06	3.96E-06	-3.50E-10	0.01	-3.50E-10	0.01
Np-237	241-AP-106	25	12	4.90E-04	2.20E-07	2.20E-07	-1.90E-11	0.01	-1.90E-11	0.01
Np-237	241-AP-107	25	12	4.90E-04	2.13E-05	2.13E-05	-1.90E-09	0.01	-1.90E-09	0.01
Np-237	241-AP-108	25	12	4.90E-04	7.17E-06	7.17E-06	-6.30E-10	0.01	-6.30E-10	0.01
Np-237	241-AP-ANC	34	12	4.90E-04	9.45E-04	9.47E-04	-2.20E-06	0.23	-2.20E-06	0.23
Np-237	241-AW-101	25	12	4.90E-04	1.16E-05	1.16E-05	-1.00E-09	0.01	-1.00E-09	0.01
Np-237	241-AW-102	25	12	4.90E-04	6.62E-06	6.63E-06	-5.80E-10	0.01	-5.80E-10	0.01
Np-237	241-AW-103	25	12	4.90E-04	6.59E-06	6.59E-06	-5.80E-10	0.01	-5.80E-10	0.01
Np-237	241-AW-104	25	12	4.90E-04	2.82E-05	2.82E-05	-2.50E-09	0.01	-2.50E-09	0.01
Np-237	241-AW-105	25	12	4.90E-04	4.51E-06	4.51E-06	-4.00E-10	0.01	-4.00E-10	0.01
Np-237	241-AW-106	25	12	4.90E-04	1.24E-05	1.24E-05	-1.10E-09	0.01	-1.10E-09	0.01
Np-237	241-AW-ANC	34	12	4.90E-04	3.47E-04	3.48E-04	-8.00E-07	0.23	-8.00E-07	0.23
Np-237	241-AX-101	25	12	4.90E-04	1.61E-04	1.61E-04	-1.40E-08	0.01	-1.40E-08	0.01
Np-237	241-AX-102	25	12	4.90E-04	3.77E-04	3.78E-04	-3.30E-08	0.01	-3.30E-08	0.01
Np-237	241-AX-103	25	12	4.90E-04	2.10E-05	2.10E-05	-1.80E-09	0.01	-1.80E-09	0.01
Np-237	241-AX-104	25	12	4.90E-04	1.61E-04	1.61E-04	-1.40E-08	0.01	-1.40E-08	0.01
Np-237	241-AX-ANC	34	12	4.90E-04	2.75E-03	2.76E-03	-6.40E-06	0.23	-6.40E-06	0.23
Np-237	241-AY-101	25	12	4.90E-04	1.20E-04	1.20E-04	-1.10E-08	0.01	-1.10E-08	0.01
Np-237	241-AY-102	25	12	4.90E-04	6.49E-04	6.50E-04	-5.70E-08	0.01	-5.70E-08	0.01
Np-237	241-AY-ANC	34	12	4.90E-04	1.24E-03	1.25E-03	-2.90E-06	0.23	-2.90E-06	0.23
Np-237	241-AZ-101	25	12	4.90E-04	6.39E-04	6.39E-04	-5.60E-08	0.01	-5.60E-08	0.01
Np-237	241-AZ-102	25	12	4.90E-04	7.59E-04	7.59E-04	-6.70E-08	0.01	-6.70E-08	0.01
Np-237	241-AZ-ANC	34	12	4.90E-04	6.74E-03	6.76E-03	-1.60E-05	0.23	-1.60E-05	0.23
Np-237	241-B-101	25	12	4.90E-04	1.16E-05	1.16E-05	-1.00E-09	0.01	-1.00E-09	0.01
Np-237	241-B-102	25	12	4.90E-04	2.12E-06	2.12E-06	-1.90E-10	0.01	-1.90E-10	0.01
Np-237	241-B-103	25	12	4.90E-04	1.87E-06	1.87E-06	-1.60E-10	0.01	-1.60E-10	0.01
Np-237	241-B-104	25	12	4.90E-04	5.52E-07	5.52E-07	-4.90E-11	0.01	-4.90E-11	0.01
Np-237	241-B-105	25	12	4.90E-04	1.32E-06	1.32E-06	-1.20E-10	0.01	-1.20E-10	0.01
Np-237	241-B-106	25	12	4.90E-04	9.70E-07	9.70E-07	-8.50E-11	0.01	-8.50E-11	0.01
Np-237	241-B-107	25	12	4.90E-04	1.45E-06	1.45E-06	-1.30E-10	0.01	-1.30E-10	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Np-237	241-B-108	25	12	4.90E-04	1.39E-06	1.39E-06	-1.20E-10	0.01	-1.20E-10	0.01
Np-237	241-B-109	25	12	4.90E-04	1.10E-06	1.10E-06	-9.70E-11	0.01	-9.70E-11	0.01
Np-237	241-B-110	25	12	4.90E-04	2.10E-05	2.10E-05	-1.80E-09	0.01	-1.80E-09	0.01
Np-237	241-B-111	25	12	4.90E-04	1.31E-05	1.31E-05	-1.20E-09	0.01	-1.20E-09	0.01
Np-237	241-B-112	25	12	4.90E-04	5.18E-05	5.18E-05	-4.60E-09	0.01	-4.60E-09	0.01
Np-237	241-B-201	27	13	2.40E-04	1.08E-07	1.08E-07	-9.30E-12	0.01	-9.30E-12	0.01
Np-237	241-B-202	27	13	2.40E-04	2.16E-07	2.16E-07	-1.90E-11	0.01	-1.90E-11	0.01
Np-237	241-B-203	27	13	2.40E-04	2.28E-07	2.28E-07	-2.00E-11	0.01	-2.00E-11	0.01
Np-237	241-B-204	27	13	2.40E-04	1.40E-07	1.40E-07	-1.20E-11	0.01	-1.20E-11	0.01
Np-237	241-B-ANC	34	12	4.90E-04	4.80E-04	4.81E-04	-1.10E-06	0.23	-1.10E-06	0.23
Np-237	241-BX-101	25	12	4.90E-04	2.90E-06	2.90E-06	-2.60E-10	0.01	-2.60E-10	0.01
Np-237	241-BX-102	25	12	4.90E-04	5.30E-07	5.30E-07	-4.70E-11	0.01	-4.70E-11	0.01
Np-237	241-BX-103	25	12	4.90E-04	1.11E-06	1.11E-06	-9.70E-11	0.01	-9.70E-11	0.01
Np-237	241-BX-104	25	12	4.90E-04	3.25E-06	3.25E-06	-2.90E-10	0.01	-2.90E-10	0.01
Np-237	241-BX-105	25	12	4.90E-04	2.04E-05	2.04E-05	-1.80E-09	0.01	-1.80E-09	0.01
Np-237	241-BX-106	25	12	4.90E-04	5.08E-05	5.08E-05	-4.50E-09	0.01	-4.50E-09	0.01
Np-237	241-BX-107	25	12	4.90E-04	5.22E-07	5.22E-07	-4.60E-11	0.01	-4.60E-11	0.01
Np-237	241-BX-108	25	12	4.90E-04	2.10E-06	2.11E-06	-1.90E-10	0.01	-1.90E-10	0.01
Np-237	241-BX-109	25	12	4.90E-04	1.67E-06	1.67E-06	-1.50E-10	0.01	-1.50E-10	0.01
Np-237	241-BX-110	25	12	4.90E-04	4.82E-05	4.82E-05	-4.20E-09	0.01	-4.20E-09	0.01
Np-237	241-BX-111	25	12	4.90E-04	5.82E-05	5.83E-05	-5.10E-09	0.01	-5.10E-09	0.01
Np-237	241-BX-112	25	12	4.90E-04	3.96E-07	3.96E-07	-3.50E-11	0.01	-3.50E-11	0.01
Np-237	241-BX-ANC	34	12	4.90E-04	8.50E-04	8.52E-04	-2.00E-06	0.23	-2.00E-06	0.23
Np-237	241-BY-101	25	12	4.90E-04	8.69E-05	8.69E-05	-7.60E-09	0.01	-7.60E-09	0.01
Np-237	241-BY-102	25	12	4.90E-04	7.39E-05	7.40E-05	-6.50E-09	0.01	-6.50E-09	0.01
Np-237	241-BY-103	25	12	4.90E-04	7.85E-05	7.85E-05	-6.90E-09	0.01	-6.90E-09	0.01
Np-237	241-BY-104	25	12	4.90E-04	7.87E-05	7.87E-05	-6.90E-09	0.01	-6.90E-09	0.01
Np-237	241-BY-105	25	12	4.90E-04	1.54E-05	1.54E-05	-1.40E-09	0.01	-1.40E-09	0.01
Np-237	241-BY-106	25	12	4.90E-04	7.29E-05	7.29E-05	-6.40E-09	0.01	-6.40E-09	0.01
Np-237	241-BY-107	25	12	4.90E-04	6.76E-05	6.76E-05	-5.90E-09	0.01	-5.90E-09	0.01
Np-237	241-BY-108	25	12	4.90E-04	5.97E-05	5.97E-05	-5.20E-09	0.01	-5.20E-09	0.01
Np-237	241-BY-109	25	12	4.90E-04	5.88E-05	5.88E-05	-5.20E-09	0.01	-5.20E-09	0.01
Np-237	241-BY-110	25	12	4.90E-04	6.58E-05	6.58E-05	-5.80E-09	0.01	-5.80E-09	0.01
Np-237	241-BY-111	25	12	4.90E-04	7.45E-05	7.45E-05	-6.60E-09	0.01	-6.60E-09	0.01
Np-237	241-BY-112	25	12	4.90E-04	8.36E-05	8.36E-05	-7.40E-09	0.01	-7.40E-09	0.01
Np-237	241-BY-ANC	34	12	4.90E-04	3.84E-03	3.85E-03	-8.90E-06	0.23	-8.90E-06	0.23
Sr-90	200-E-136	57	25	5.10E-04	2.48E+00	2.48E+00	-5.90E-03	0.24	-2.10E-03	0.09

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Sr-90	200-E-30	48	25	7.30E-05	1.68E+01	1.68E+01	-3.70E-02	0.22	-6.70E-04	0.00
Sr-90	201-C	50	25	6.20E-05	3.04E+01	3.04E+01	-4.00E-01	1.30	1.20E-03	0.00
Sr-90	212-B	57	25	5.10E-04	2.41E-01	2.41E-01	-5.70E-04	0.24	-2.00E-04	0.09
Sr-90	218-C-9	47	25	9.30E-05	1.25E-01	1.25E-01	-2.30E-04	0.18	-5.00E-06	0.00
Sr-90	218-E-1	35	12	4.90E-04	3.64E-02	3.65E-02	-9.00E-05	0.25	-9.00E-05	0.25
Sr-90	218-E-10	48	25	2.30E-05	4.00E+03	4.00E+03	-1.10E+01	0.29	-5.70E-01	0.01
Sr-90	218-E-12A	49	25	1.10E-04	2.06E-01	2.06E-01	-2.60E-04	0.12	-5.00E-06	0.00
Sr-90	218-E-12B	44	25	1.10E-04	1.73E+01	1.74E+01	-6.70E-02	0.39	-3.40E-03	0.02
Sr-90	218-E-14	57	25	5.10E-04	1.72E-01	1.72E-01	-4.10E-04	0.24	-1.50E-04	0.09
Sr-90	218-E-2	46	16	3.70E-04	8.49E+00	8.50E+00	-7.80E-03	0.09	-7.80E-03	0.09
Sr-90	218-E-4	34	12	4.90E-04	3.09E-03	3.10E-03	-8.00E-06	0.26	-8.00E-06	0.26
Sr-90	218-E-5	49	25	1.10E-04	2.33E+00	2.33E+00	-2.30E-03	0.10	-4.40E-05	0.00
Sr-90	218-E-5A	47	25	1.10E-04	4.63E+00	4.63E+00	-5.10E-03	0.11	-1.00E-04	0.00
Sr-90	218-E-8	35	12	4.90E-04	2.99E-03	3.00E-03	-8.30E-06	0.28	-8.30E-06	0.28
Sr-90	221-B	57	25	5.10E-04	2.77E+01	2.77E+01	-6.60E-02	0.24	-2.40E-02	0.09
Sr-90	241-A-101	47	25	3.80E-04	1.20E+00	1.20E+00	-6.60E-03	0.55	-2.10E-04	0.02
Sr-90	241-A-102	47	25	3.80E-04	5.88E+00	5.88E+00	-3.20E-02	0.55	-1.00E-03	0.02
Sr-90	241-A-103	47	25	3.80E-04	1.22E+00	1.22E+00	-6.70E-03	0.55	-2.20E-04	0.02
Sr-90	241-A-104	57	25	4.90E-04	9.45E+01	9.46E+01	-2.60E-01	0.28	-8.00E-02	0.09
Sr-90	241-A-105	58	25	5.00E-04	6.70E+01	6.71E+01	-2.10E-01	0.32	-6.40E-02	0.10
Sr-90	241-A-106	47	25	3.80E-04	1.05E+02	1.05E+02	-5.80E-01	0.55	-1.90E-02	0.02
Sr-90	241-A-ANC	50	16	3.10E-05	3.16E+03	3.16E+03	-2.20E+00	0.07	-2.20E+00	0.07
Sr-90	241-AN-101	47	25	3.80E-04	3.66E+00	3.66E+00	-2.00E-02	0.55	-6.50E-04	0.02
Sr-90	241-AN-102	47	25	3.80E-04	8.30E-01	8.30E-01	-4.60E-03	0.55	-1.50E-04	0.02
Sr-90	241-AN-103	32	10	2.00E-03	1.85E-02	1.86E-02	-1.40E-04	0.76	-1.40E-04	0.76
Sr-90	241-AN-104	47	25	3.80E-04	2.01E-01	2.01E-01	-1.10E-03	0.55	-3.60E-05	0.02
Sr-90	241-AN-105	32	10	2.00E-03	6.72E-02	6.77E-02	-5.10E-04	0.76	-5.10E-04	0.76
Sr-90	241-AN-106	47	25	3.80E-04	1.02E+01	1.02E+01	-5.60E-02	0.55	-1.80E-03	0.02
Sr-90	241-AN-107	47	25	3.80E-04	1.18E+00	1.18E+00	-6.50E-03	0.55	-2.10E-04	0.02
Sr-90	241-AN-ANC	50	16	3.10E-05	2.47E+02	2.48E+02	-1.70E-01	0.07	-1.70E-01	0.07
Sr-90	241-AP-101	32	10	2.00E-03	1.01E-02	1.02E-02	-7.70E-05	0.76	-7.70E-05	0.76
Sr-90	241-AP-102	47	25	3.80E-04	2.01E+01	2.01E+01	-1.10E-01	0.55	-3.60E-03	0.02
Sr-90	241-AP-103	32	10	2.00E-03	1.65E-02	1.67E-02	-1.30E-04	0.76	-1.30E-04	0.76
Sr-90	241-AP-104	32	10	2.00E-03	1.77E-02	1.78E-02	-1.30E-04	0.76	-1.30E-04	0.76
Sr-90	241-AP-105	32	10	2.00E-03	5.77E-02	5.82E-02	-4.40E-04	0.76	-4.40E-04	0.76
Sr-90	241-AP-106	32	10	2.00E-03	3.80E-04	3.83E-04	-2.90E-06	0.76	-2.90E-06	0.76
Sr-90	241-AP-107	32	10	2.00E-03	2.90E-02	2.92E-02	-2.20E-04	0.76	-2.20E-04	0.76

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Sr-90	241-AP-108	32	10	2.00E-03	9.67E-03	9.75E-03	-7.40E-05	0.76	-7.40E-05	0.76
Sr-90	241-AP-ANC	50	16	3.10E-05	2.08E+02	2.08E+02	-1.40E-01	0.07	-1.40E-01	0.07
Sr-90	241-AW-101	47	25	3.80E-04	1.93E-01	1.93E-01	-1.10E-03	0.55	-3.40E-05	0.02
Sr-90	241-AW-102	47	25	3.80E-04	7.20E-01	7.20E-01	-4.00E-03	0.55	-1.30E-04	0.02
Sr-90	241-AW-103	32	10	2.00E-03	3.08E-02	3.11E-02	-2.30E-04	0.76	-2.30E-04	0.76
Sr-90	241-AW-104	32	10	2.00E-03	1.42E-02	1.43E-02	-1.10E-04	0.76	-1.10E-04	0.76
Sr-90	241-AW-105	47	25	3.80E-04	1.65E-01	1.65E-01	-9.10E-04	0.55	-2.90E-05	0.02
Sr-90	241-AW-106	47	25	3.80E-04	1.00E-01	1.00E-01	-5.50E-04	0.55	-1.80E-05	0.02
Sr-90	241-AW-ANC	50	16	3.10E-05	1.78E+01	1.79E+01	-1.20E-02	0.07	-1.20E-02	0.07
Sr-90	241-AX-101	47	25	3.80E-04	1.95E+00	1.95E+00	-1.10E-02	0.55	-3.50E-04	0.02
Sr-90	241-AX-102	47	25	3.80E-04	2.46E+01	2.46E+01	-1.40E-01	0.55	-4.40E-03	0.02
Sr-90	241-AX-103	47	25	3.80E-04	1.40E+01	1.41E+01	-7.80E-02	0.55	-2.50E-03	0.02
Sr-90	241-AX-104	47	25	3.80E-04	8.83E+02	8.83E+02	-4.90E+00	0.55	-1.60E-01	0.02
Sr-90	241-AX-ANC	50	16	3.10E-05	1.11E+03	1.11E+03	-7.50E-01	0.07	-7.50E-01	0.07
Sr-90	241-AY-101	47	25	3.80E-04	6.40E+00	6.40E+00	-3.50E-02	0.55	-1.10E-03	0.02
Sr-90	241-AY-102	47	25	3.80E-04	6.38E+01	6.38E+01	-3.50E-01	0.55	-1.10E-02	0.02
Sr-90	241-AY-ANC	50	16	3.10E-05	2.72E+02	2.72E+02	-1.80E-01	0.07	-1.80E-01	0.07
Sr-90	241-AZ-101	47	25	3.80E-04	1.78E+01	1.78E+01	-9.80E-02	0.55	-3.20E-03	0.02
Sr-90	241-AZ-102	47	25	3.80E-04	9.96E+00	9.96E+00	-5.50E-02	0.55	-1.80E-03	0.02
Sr-90	241-AZ-ANC	50	16	3.10E-05	4.82E+02	4.82E+02	-3.30E-01	0.07	-3.30E-01	0.07
Sr-90	241-B-101	47	25	3.80E-04	6.15E+00	6.15E+00	-3.40E-02	0.55	-1.10E-03	0.02
Sr-90	241-B-102	32	10	2.00E-03	1.33E-02	1.34E-02	-1.00E-04	0.76	-1.00E-04	0.76
Sr-90	241-B-103	32	10	2.00E-03	2.80E-02	2.82E-02	-2.10E-04	0.76	-2.10E-04	0.76
Sr-90	241-B-104	32	10	2.00E-03	3.80E-02	3.83E-02	-2.90E-04	0.76	-2.90E-04	0.76
Sr-90	241-B-105	32	10	2.00E-03	1.17E-02	1.18E-02	-8.90E-05	0.76	-8.90E-05	0.76
Sr-90	241-B-106	47	25	3.80E-04	8.45E-01	8.45E-01	-4.70E-03	0.55	-1.50E-04	0.02
Sr-90	241-B-107	32	10	2.00E-03	6.30E-02	6.35E-02	-4.80E-04	0.76	-4.80E-04	0.76
Sr-90	241-B-108	32	10	2.00E-03	3.20E-02	3.22E-02	-2.40E-04	0.76	-2.40E-04	0.76
Sr-90	241-B-109	32	10	2.00E-03	9.26E-03	9.33E-03	-7.00E-05	0.76	-7.00E-05	0.76
Sr-90	241-B-110	47	25	3.80E-04	1.27E+00	1.27E+00	-7.00E-03	0.55	-2.30E-04	0.02
Sr-90	241-B-111	47	25	3.80E-04	2.91E+00	2.92E+00	-1.60E-02	0.55	-5.20E-04	0.02
Sr-90	241-B-112	47	25	3.80E-04	1.21E-01	1.21E-01	-6.70E-04	0.55	-2.10E-05	0.02
Sr-90	241-B-201	31	10	2.00E-03	2.47E-02	2.49E-02	-1.70E-04	0.69	-1.70E-04	0.69
Sr-90	241-B-202	31	10	2.00E-03	4.01E-02	4.04E-02	-2.80E-04	0.69	-2.80E-04	0.69
Sr-90	241-B-203	31	10	2.00E-03	9.28E-04	9.34E-04	-6.40E-06	0.69	-6.40E-06	0.69
Sr-90	241-B-204	31	10	2.00E-03	3.60E-05	3.62E-05	-2.50E-07	0.69	-2.50E-07	0.69
Sr-90	241-B-361	57	25	5.10E-04	8.51E-01	8.52E-01	-2.00E-03	0.24	-7.20E-04	0.09

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Sr-90	241-B-ANC	50	16	3.10E-05	2.56E+02	2.56E+02	-1.70E-01	0.07	-1.70E-01	0.07
Sr-90	241-BX-101	47	25	3.80E-04	4.67E+00	4.67E+00	-2.60E-02	0.55	-8.30E-04	0.02
Sr-90	241-BX-102	47	25	3.80E-04	4.50E+00	4.50E+00	-2.50E-02	0.55	-8.00E-04	0.02
Sr-90	241-BX-103	47	25	3.80E-04	7.92E+00	7.93E+00	-4.40E-02	0.55	-1.40E-03	0.02
Sr-90	241-BX-104	47	25	3.80E-04	3.78E+00	3.78E+00	-2.10E-02	0.55	-6.70E-04	0.02
Sr-90	241-BX-105	47	25	3.80E-04	1.86E+00	1.86E+00	-1.00E-02	0.55	-3.30E-04	0.02
Sr-90	241-BX-106	47	25	3.80E-04	6.11E+00	6.11E+00	-3.40E-02	0.55	-1.10E-03	0.02
Sr-90	241-BX-107	47	25	3.80E-04	1.30E-01	1.30E-01	-7.20E-04	0.55	-2.30E-05	0.02
Sr-90	241-BX-108	47	25	3.80E-04	2.22E+00	2.22E+00	-1.20E-02	0.55	-3.90E-04	0.02
Sr-90	241-BX-109	47	25	3.80E-04	1.96E+00	1.96E+00	-1.10E-02	0.55	-3.50E-04	0.02
Sr-90	241-BX-110	47	25	3.80E-04	1.52E-01	1.52E-01	-8.40E-04	0.55	-2.70E-05	0.02
Sr-90	241-BX-111	47	25	3.80E-04	1.73E-01	1.73E-01	-9.50E-04	0.55	-3.10E-05	0.02
Sr-90	241-BX-112	32	10	2.00E-03	9.19E-02	9.26E-02	-7.00E-04	0.76	-7.00E-04	0.76
Sr-90	241-BX-ANC	50	16	3.10E-05	3.63E+02	3.63E+02	-2.50E-01	0.07	-2.50E-01	0.07
Sr-90	241-BY-101	47	25	3.80E-04	1.30E+00	1.30E+00	-7.20E-03	0.55	-2.30E-04	0.02
Sr-90	241-BY-102	47	25	3.80E-04	1.97E-01	1.97E-01	-1.10E-03	0.55	-3.50E-05	0.02
Sr-90	241-BY-103	47	25	3.80E-04	2.16E-01	2.16E-01	-1.20E-03	0.55	-3.80E-05	0.02
Sr-90	241-BY-104	47	25	3.80E-04	2.85E+00	2.85E+00	-1.60E-02	0.55	-5.10E-04	0.02
Sr-90	241-BY-105	47	25	3.80E-04	9.50E-01	9.50E-01	-5.20E-03	0.55	-1.70E-04	0.02
Sr-90	241-BY-106	47	25	3.80E-04	1.06E+00	1.06E+00	-5.80E-03	0.55	-1.90E-04	0.02
Sr-90	241-BY-107	47	25	3.80E-04	9.27E-01	9.28E-01	-5.10E-03	0.55	-1.70E-04	0.02
Sr-90	241-BY-108	47	25	3.80E-04	2.18E+00	2.18E+00	-1.20E-02	0.55	-3.90E-04	0.02
Sr-90	241-BY-109	47	25	3.80E-04	1.33E-01	1.33E-01	-7.30E-04	0.55	-2.40E-05	0.02
Sr-90	241-BY-110	47	25	3.80E-04	1.48E+00	1.48E+00	-8.20E-03	0.55	-2.60E-04	0.02
Sr-90	241-BY-111	47	25	3.80E-04	2.07E-01	2.07E-01	-1.10E-03	0.55	-3.70E-05	0.02
Sr-90	241-BY-112	47	25	3.80E-04	2.53E-01	2.53E-01	-1.40E-03	0.55	-4.50E-05	0.02
Sr-90	241-BY-ANC	50	16	3.10E-05	2.15E+02	2.15E+02	-1.50E-01	0.07	-1.50E-01	0.07
Sr-90	WESF	57	25	5.10E-04	1.45E+02	1.45E+02	-3.50E-01	0.24	-1.20E-01	0.09
U-233	200-E-136	26	13	2.40E-04	1.04E-07	1.04E-07	1.20E-11	0.01	1.20E-11	0.01
U-233	201-C	31	11	9.80E-04	1.74E-10	1.74E-10	1.10E-13	0.06	1.10E-13	0.06
U-233	218-E-10	31	10	2.00E-03	8.65E-10	8.65E-10	7.10E-13	0.08	7.10E-13	0.08
U-233	218-E-12B	27	10	2.00E-03	1.15E-06	1.15E-06	9.40E-10	0.08	9.40E-10	0.08
U-233	224-B	31	11	9.80E-04	6.02E-09	6.01E-09	3.70E-12	0.06	3.70E-12	0.06
U-233	241-A-101	29	13	2.40E-04	1.25E-05	1.25E-05	-7.60E-11	0.00	-7.60E-11	0.00
U-233	241-A-102	29	13	2.40E-04	1.30E-05	1.30E-05	-7.80E-11	0.00	-7.80E-11	0.00
U-233	241-A-103	27	13	2.40E-04	1.29E-05	1.29E-05	-7.00E-11	0.00	-7.00E-11	0.00
U-233	241-A-104	25	13	2.40E-04	8.43E-07	8.43E-07	4.40E-11	0.01	4.40E-11	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-233	241-A-105	26	13	2.40E-04	7.13E-08	7.13E-08	7.70E-12	0.01	7.70E-12	0.01
U-233	241-A-106	29	13	2.40E-04	3.09E-06	3.09E-06	1.40E-11	0.00	1.40E-11	0.00
U-233	241-A-ANC	38	12	4.90E-04	2.87E-02	2.87E-02	-1.60E-05	0.06	-1.60E-05	0.06
U-233	241-AN-101	26	13	2.40E-04	4.01E-05	4.01E-05	3.00E-09	0.01	3.00E-09	0.01
U-233	241-AN-102	26	13	2.40E-04	1.01E-06	1.01E-06	-8.20E-11	0.01	-8.20E-11	0.01
U-233	241-AN-103	29	12	4.90E-04	1.74E-07	1.74E-07	1.30E-11	0.01	1.30E-11	0.01
U-233	241-AN-104	29	13	2.40E-04	5.41E-07	5.41E-07	-3.80E-11	0.01	-3.80E-11	0.01
U-233	241-AN-105	25	12	4.90E-04	2.76E-07	2.76E-07	-6.00E-11	0.02	-6.00E-11	0.02
U-233	241-AN-106	29	13	2.40E-04	1.16E-06	1.16E-06	7.70E-12	0.00	7.70E-12	0.00
U-233	241-AN-107	27	13	2.40E-04	7.22E-07	7.22E-07	-5.60E-11	0.01	-5.60E-11	0.01
U-233	241-AN-ANC	38	12	4.90E-04	6.93E-02	6.93E-02	-5.10E-05	0.07	-5.10E-05	0.07
U-233	241-AP-101	30	12	4.90E-04	1.60E-07	1.60E-07	-3.30E-11	0.02	-3.30E-11	0.02
U-233	241-AP-102	33	13	2.40E-04	4.87E-07	4.87E-07	3.50E-11	0.01	3.50E-11	0.01
U-233	241-AP-103	27	12	4.90E-04	1.18E-07	1.18E-07	-3.20E-11	0.03	-3.20E-11	0.03
U-233	241-AP-104	25	12	4.90E-04	1.85E-07	1.85E-07	-4.80E-11	0.03	-4.80E-11	0.03
U-233	241-AP-105	30	12	4.90E-04	1.53E-07	1.53E-07	-5.20E-11	0.03	-5.20E-11	0.03
U-233	241-AP-106	26	11	9.80E-04	1.92E-07	1.92E-07	-8.40E-11	0.04	-8.40E-11	0.04
U-233	241-AP-107	27	12	4.90E-04	4.98E-07	4.98E-07	-1.50E-10	0.03	-1.50E-10	0.03
U-233	241-AP-108	29	12	4.90E-04	1.38E-07	1.38E-07	-3.20E-11	0.02	-3.20E-11	0.02
U-233	241-AP-ANC	34	12	4.90E-04	1.70E-04	1.71E-04	-3.90E-07	0.23	-3.90E-07	0.23
U-233	241-AW-101	30	14	1.20E-04	2.57E-06	2.57E-06	-1.40E-10	0.01	-1.40E-10	0.01
U-233	241-AW-102	29	13	2.40E-04	2.80E-08	2.80E-08	1.00E-12	0.00	1.00E-12	0.00
U-233	241-AW-103	26	13	2.40E-04	1.28E-06	1.27E-06	9.80E-11	0.01	9.80E-11	0.01
U-233	241-AW-104	27	13	2.40E-04	1.96E-07	1.96E-07	1.70E-11	0.01	1.70E-11	0.01
U-233	241-AW-105	27	13	2.40E-04	4.29E-08	4.29E-08	2.30E-12	0.01	2.30E-12	0.01
U-233	241-AW-106	30	14	1.20E-04	2.38E-06	2.38E-06	-1.30E-10	0.01	-1.30E-10	0.01
U-233	241-AW-ANC	39	12	4.90E-04	1.14E-03	1.14E-03	-5.40E-07	0.05	-5.40E-07	0.05
U-233	241-AX-101	29	13	2.40E-04	7.95E-06	7.95E-06	-6.80E-12	0.00	-6.80E-12	0.00
U-233	241-AX-102	29	13	2.40E-04	1.23E-05	1.23E-05	7.80E-11	0.00	7.80E-11	0.00
U-233	241-AX-103	29	14	1.20E-04	1.50E-06	1.50E-06	-8.70E-11	0.01	-8.70E-11	0.01
U-233	241-AX-104	25	13	2.40E-04	1.19E-07	1.19E-07	1.40E-11	0.01	1.40E-11	0.01
U-233	241-AX-ANC	35	12	4.90E-04	4.47E-03	4.48E-03	-7.60E-06	0.17	-7.60E-06	0.17
U-233	241-AY-101	28	13	2.40E-04	5.06E-06	5.06E-06	-3.90E-10	0.01	-3.90E-10	0.01
U-233	241-AY-102	30	13	2.40E-04	1.68E-06	1.68E-06	2.60E-10	0.02	2.60E-10	0.02
U-233	241-AY-ANC	34	12	4.90E-04	9.72E-04	9.74E-04	-2.20E-06	0.23	-2.20E-06	0.23
U-233	241-AZ-101	32	13	2.40E-04	8.14E-07	8.14E-07	8.30E-11	0.01	8.30E-11	0.01
U-233	241-AZ-102	31	13	2.40E-04	8.95E-07	8.95E-07	1.20E-10	0.01	1.20E-10	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-233	241-AZ-ANC	35	12	4.90E-04	1.07E-04	1.07E-04	-3.20E-07	0.30	-3.20E-07	0.30
U-233	241-B-101	26	13	2.40E-04	8.64E-09	8.63E-09	1.00E-12	0.01	1.00E-12	0.01
U-233	241-B-102	25	13	2.40E-04	1.58E-09	1.58E-09	1.90E-13	0.01	1.90E-13	0.01
U-233	241-B-103	25	13	2.40E-04	1.38E-09	1.38E-09	1.60E-13	0.01	1.60E-13	0.01
U-233	241-B-104	26	13	2.40E-04	4.12E-10	4.11E-10	4.80E-14	0.01	4.80E-14	0.01
U-233	241-B-105	26	13	2.40E-04	9.79E-10	9.79E-10	1.10E-13	0.01	1.10E-13	0.01
U-233	241-B-106	25	13	2.40E-04	7.20E-10	7.20E-10	8.60E-14	0.01	8.60E-14	0.01
U-233	241-B-107	26	13	2.40E-04	3.12E-07	3.12E-07	2.40E-11	0.01	2.40E-11	0.01
U-233	241-B-108	27	13	2.40E-04	3.27E-06	3.27E-06	2.00E-10	0.01	2.00E-10	0.01
U-233	241-B-109	27	13	2.40E-04	1.40E-05	1.40E-05	8.70E-10	0.01	8.70E-10	0.01
U-233	241-B-110	25	13	2.40E-04	1.58E-08	1.58E-08	2.40E-12	0.02	2.40E-12	0.02
U-233	241-B-111	26	13	2.40E-04	1.04E-08	1.04E-08	1.90E-12	0.02	1.90E-12	0.02
U-233	241-B-112	30	14	1.20E-04	1.64E-05	1.65E-05	-1.10E-09	0.01	-1.10E-09	0.01
U-233	241-B-201	25	13	2.40E-04	7.99E-11	7.99E-11	9.40E-15	0.01	9.40E-15	0.01
U-233	241-B-202	25	13	2.40E-04	1.60E-10	1.60E-10	1.90E-14	0.01	1.90E-14	0.01
U-233	241-B-203	25	13	2.40E-04	1.70E-10	1.70E-10	1.80E-14	0.01	1.80E-14	0.01
U-233	241-B-204	25	13	2.40E-04	1.04E-10	1.04E-10	1.10E-14	0.01	1.10E-14	0.01
U-233	241-B-ANC	31	11	9.80E-04	3.17E-02	3.18E-02	-3.60E-05	0.11	-3.60E-05	0.11
U-233	241-BX-101	27	13	2.40E-04	4.73E-06	4.73E-06	3.00E-10	0.01	3.00E-10	0.01
U-233	241-BX-102	27	13	2.40E-04	4.95E-06	4.95E-06	3.10E-10	0.01	3.10E-10	0.01
U-233	241-BX-103	27	13	2.40E-04	1.22E-05	1.22E-05	7.50E-10	0.01	7.50E-10	0.01
U-233	241-BX-104	27	13	2.40E-04	2.36E-06	2.36E-06	1.50E-10	0.01	1.50E-10	0.01
U-233	241-BX-105	27	13	2.40E-04	7.36E-06	7.36E-06	4.90E-10	0.01	4.90E-10	0.01
U-233	241-BX-106	26	13	2.40E-04	6.24E-06	6.24E-06	5.10E-10	0.01	5.10E-10	0.01
U-233	241-BX-107	26	13	2.40E-04	3.89E-10	3.89E-10	4.60E-14	0.01	4.60E-14	0.01
U-233	241-BX-108	25	13	2.40E-04	1.56E-09	1.56E-09	1.90E-13	0.01	1.90E-13	0.01
U-233	241-BX-109	25	13	2.40E-04	1.24E-09	1.24E-09	1.50E-13	0.01	1.50E-13	0.01
U-233	241-BX-110	26	13	2.40E-04	1.05E-05	1.05E-05	7.80E-10	0.01	7.80E-10	0.01
U-233	241-BX-111	27	13	2.40E-04	1.17E-06	1.17E-06	-2.30E-11	0.00	-2.30E-11	0.00
U-233	241-BX-112	26	13	2.40E-04	2.97E-10	2.97E-10	3.40E-14	0.01	3.40E-14	0.01
U-233	241-BX-ANC	32	11	9.80E-04	5.21E-02	5.22E-02	-3.80E-05	0.07	-3.80E-05	0.07
U-233	241-BY-101	29	13	2.40E-04	3.50E-07	3.50E-07	1.50E-11	0.00	1.50E-11	0.00
U-233	241-BY-102	30	14	1.20E-04	2.72E-05	2.72E-05	-1.60E-09	0.01	-1.60E-09	0.01
U-233	241-BY-103	27	13	2.40E-04	3.24E-05	3.24E-05	-2.40E-09	0.01	-2.40E-09	0.01
U-233	241-BY-104	29	13	2.40E-04	6.56E-06	6.56E-06	-3.50E-11	0.00	-3.50E-11	0.00
U-233	241-BY-105	26	13	2.40E-04	4.29E-06	4.29E-06	3.20E-10	0.01	3.20E-10	0.01
U-233	241-BY-106	30	13	2.40E-04	2.00E-06	2.00E-06	2.10E-11	0.00	2.10E-11	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-233	241-BY-107	26	13	2.40E-04	8.52E-06	8.52E-06	7.00E-10	0.01	7.00E-10	0.01
U-233	241-BY-108	29	13	2.40E-04	1.22E-06	1.22E-06	2.30E-11	0.00	2.30E-11	0.00
U-233	241-BY-109	27	14	1.20E-04	1.88E-05	1.88E-05	-1.40E-09	0.01	-1.40E-09	0.01
U-233	241-BY-110	29	13	2.40E-04	5.91E-06	5.91E-06	-3.50E-11	0.00	-3.50E-11	0.00
U-233	241-BY-111	25	13	2.40E-04	2.87E-05	2.87E-05	-2.40E-09	0.01	-2.40E-09	0.01
U-233	241-BY-112	29	13	2.40E-04	5.99E-06	5.99E-06	-2.40E-11	0.00	-2.40E-11	0.00
U-233	241-BY-ANC	33	11	9.80E-04	3.34E-02	3.34E-02	-2.90E-05	0.09	-2.90E-05	0.09
U-235	200-E-136	28	11	9.80E-04	2.11E-08	2.11E-08	-6.70E-12	0.03	-6.70E-12	0.03
U-235	200-E-30	29	13	2.40E-04	1.43E-07	1.44E-07	-8.70E-10	0.61	-8.70E-10	0.61
U-235	201-C	50	13	2.40E-04	2.00E-09	2.01E-09	-1.50E-11	0.77	-1.50E-11	0.77
U-235	218-E-1	29	12	4.90E-04	5.34E-06	5.39E-06	-4.60E-08	0.87	-4.60E-08	0.87
U-235	218-E-10	29	13	2.40E-04	2.56E-10	2.57E-10	-1.30E-12	0.51	-1.30E-12	0.51
U-235	218-E-12A	26	12	4.90E-04	5.29E-05	5.34E-05	-5.00E-07	0.94	-5.00E-07	0.94
U-235	218-E-12B	28	11	9.80E-04	2.03E-08	2.03E-08	-6.10E-11	0.30	-6.10E-11	0.30
U-235	218-E-15	28	11	9.80E-04	2.50E-09	2.50E-09	-7.90E-13	0.03	-7.90E-13	0.03
U-235	218-E-2	29	12	4.90E-04	4.74E-06	4.78E-06	-4.30E-08	0.91	-4.30E-08	0.91
U-235	218-E-4	29	12	4.90E-04	5.92E-08	5.98E-08	-5.50E-10	0.93	-5.50E-10	0.93
U-235	218-E-5	29	12	4.90E-04	3.68E-06	3.71E-06	-3.40E-08	0.93	-3.40E-08	0.93
U-235	218-E-5A	27	12	4.90E-04	8.16E-06	8.24E-06	-7.80E-08	0.95	-7.80E-08	0.95
U-235	218-E-8	27	12	4.90E-04	1.18E-07	1.20E-07	-1.10E-09	0.89	-1.10E-09	0.89
U-235	221-B	28	11	9.80E-04	1.01E-10	1.01E-10	-3.20E-14	0.03	-3.20E-14	0.03
U-235	224-B	50	13	2.40E-04	2.19E-08	2.21E-08	-1.70E-10	0.76	-1.70E-10	0.76
U-235	241-A-101	27	13	2.40E-04	9.35E-08	9.35E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-A-102	27	13	2.40E-04	9.35E-08	9.35E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-A-103	27	13	2.40E-04	9.35E-08	9.35E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-A-104	27	13	2.40E-04	8.79E-08	8.79E-08	-2.40E-12	0.00	-2.40E-12	0.00
U-235	241-A-105	26	11	9.80E-04	3.29E-09	3.29E-09	-6.20E-13	0.02	-6.20E-13	0.02
U-235	241-A-106	27	13	2.40E-04	9.09E-08	9.09E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-A-ANC	38	12	4.90E-04	2.37E-04	2.37E-04	-1.30E-07	0.06	-1.30E-07	0.06
U-235	241-AN-101	27	13	2.40E-04	9.15E-08	9.15E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-AN-102	25	13	2.40E-04	2.84E-08	2.84E-08	-2.30E-12	0.01	-2.30E-12	0.01
U-235	241-AN-103	25	11	9.80E-04	4.49E-09	4.49E-09	-1.80E-12	0.04	-1.80E-12	0.04
U-235	241-AN-104	29	13	2.40E-04	1.52E-08	1.52E-08	-1.20E-12	0.01	-1.20E-12	0.01
U-235	241-AN-105	32	13	2.40E-04	7.57E-09	7.57E-09	-5.40E-13	0.01	-5.40E-13	0.01
U-235	241-AN-106	27	13	2.40E-04	8.75E-08	8.75E-08	-2.40E-12	0.00	-2.40E-12	0.00
U-235	241-AN-107	25	13	2.40E-04	1.85E-08	1.85E-08	-1.50E-12	0.01	-1.50E-12	0.01
U-235	241-AN-ANC	38	12	4.90E-04	2.08E-04	2.08E-04	-1.50E-07	0.07	-1.50E-07	0.07

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-235	241-AP-101	30	12	4.90E-04	3.45E-09	3.45E-09	-1.30E-12	0.04	-1.30E-12	0.04
U-235	241-AP-102	31	14	1.20E-04	7.66E-08	7.66E-08	-2.70E-12	0.00	-2.70E-12	0.00
U-235	241-AP-103	27	12	4.90E-04	4.56E-09	4.56E-09	-1.80E-12	0.04	-1.80E-12	0.04
U-235	241-AP-104	34	13	2.40E-04	6.97E-09	6.97E-09	-4.90E-13	0.01	-4.90E-13	0.01
U-235	241-AP-105	30	12	4.90E-04	3.97E-09	3.97E-09	-1.50E-12	0.04	-1.50E-12	0.04
U-235	241-AP-106	26	11	9.80E-04	1.76E-09	1.76E-09	-6.60E-13	0.04	-6.60E-13	0.04
U-235	241-AP-107	27	12	4.90E-04	5.29E-09	5.29E-09	-2.10E-12	0.04	-2.10E-12	0.04
U-235	241-AP-108	29	12	4.90E-04	3.50E-09	3.50E-09	-1.30E-12	0.04	-1.30E-12	0.04
U-235	241-AP-ANC	34	12	4.90E-04	7.04E-06	7.05E-06	-1.60E-08	0.23	-1.60E-08	0.23
U-235	241-AW-101	29	14	1.20E-04	7.36E-08	7.36E-08	-2.90E-12	0.00	-2.90E-12	0.00
U-235	241-AW-102	27	13	2.40E-04	8.60E-08	8.60E-08	-2.30E-12	0.00	-2.30E-12	0.00
U-235	241-AW-103	27	13	2.40E-04	1.13E-07	1.13E-07	-3.10E-12	0.00	-3.10E-12	0.00
U-235	241-AW-104	27	13	2.40E-04	1.14E-07	1.14E-07	-3.10E-12	0.00	-3.10E-12	0.00
U-235	241-AW-105	27	13	2.40E-04	1.15E-07	1.15E-07	-3.10E-12	0.00	-3.10E-12	0.00
U-235	241-AW-106	29	14	1.20E-04	7.23E-08	7.23E-08	-2.90E-12	0.00	-2.90E-12	0.00
U-235	241-AW-ANC	39	12	4.90E-04	1.74E-04	1.74E-04	-8.30E-08	0.05	-8.30E-08	0.05
U-235	241-AX-101	27	13	2.40E-04	9.21E-08	9.21E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-AX-102	27	13	2.40E-04	9.51E-08	9.52E-08	-2.60E-12	0.00	-2.60E-12	0.00
U-235	241-AX-103	28	14	1.20E-04	4.81E-08	4.81E-08	-2.40E-12	0.01	-2.40E-12	0.01
U-235	241-AX-104	27	13	2.40E-04	8.93E-08	8.93E-08	-2.40E-12	0.00	-2.40E-12	0.00
U-235	241-AX-ANC	35	12	4.90E-04	5.02E-05	5.03E-05	-8.50E-08	0.17	-8.50E-08	0.17
U-235	241-AY-101	26	13	2.40E-04	1.62E-08	1.62E-08	-1.30E-12	0.01	-1.30E-12	0.01
U-235	241-AY-102	27	13	2.40E-04	9.08E-08	9.08E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-AY-ANC	34	12	4.90E-04	3.95E-06	3.96E-06	-9.10E-09	0.23	-9.10E-09	0.23
U-235	241-AZ-101	29	14	1.20E-04	7.26E-08	7.26E-08	-3.10E-12	0.00	-3.10E-12	0.00
U-235	241-AZ-102	27	13	2.40E-04	1.11E-07	1.11E-07	-3.00E-12	0.00	-3.00E-12	0.00
U-235	241-AZ-ANC	36	12	4.90E-04	3.13E-05	3.14E-05	-4.60E-08	0.15	-4.60E-08	0.15
U-235	241-B-101	27	13	2.40E-04	9.44E-08	9.44E-08	-2.60E-12	0.00	-2.60E-12	0.00
U-235	241-B-102	27	13	2.40E-04	9.10E-08	9.10E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-B-103	27	13	2.40E-04	9.17E-08	9.17E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-B-104	27	13	2.40E-04	9.10E-08	9.10E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-B-105	27	13	2.40E-04	9.08E-08	9.08E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-B-106	27	13	2.40E-04	9.10E-08	9.10E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-B-107	27	13	2.40E-04	9.07E-08	9.07E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-B-108	27	13	2.40E-04	9.05E-08	9.05E-08	-2.40E-12	0.00	-2.40E-12	0.00
U-235	241-B-109	27	13	2.40E-04	8.94E-08	8.94E-08	-2.40E-12	0.00	-2.40E-12	0.00
U-235	241-B-110	30	14	1.20E-04	2.86E-08	2.86E-08	-2.10E-12	0.01	-2.10E-12	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-235	241-B-111	31	14	1.20E-04	2.60E-08	2.60E-08	-1.80E-12	0.01	-1.80E-12	0.01
U-235	241-B-112	30	14	1.20E-04	5.77E-08	5.77E-08	-2.60E-12	0.00	-2.60E-12	0.00
U-235	241-B-201	27	13	2.40E-04	6.58E-09	6.58E-09	-1.80E-13	0.00	-1.80E-13	0.00
U-235	241-B-202	27	13	2.40E-04	6.59E-09	6.59E-09	-1.80E-13	0.00	-1.80E-13	0.00
U-235	241-B-203	31	14	1.20E-04	1.68E-09	1.68E-09	-1.20E-13	0.01	-1.20E-13	0.01
U-235	241-B-204	29	13	2.40E-04	7.36E-10	7.36E-10	-5.70E-14	0.01	-5.70E-14	0.01
U-235	241-B-361	28	11	9.80E-04	6.75E-09	6.75E-09	-2.10E-12	0.03	-2.10E-12	0.03
U-235	241-B-ANC	31	11	9.80E-04	8.05E-04	8.06E-04	-9.20E-07	0.11	-9.20E-07	0.11
U-235	241-BX-101	27	13	2.40E-04	9.13E-08	9.13E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-102	27	13	2.40E-04	9.06E-08	9.06E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-103	27	13	2.40E-04	9.02E-08	9.03E-08	-2.40E-12	0.00	-2.40E-12	0.00
U-235	241-BX-104	27	13	2.40E-04	9.11E-08	9.11E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-105	27	13	2.40E-04	9.17E-08	9.17E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-106	27	13	2.40E-04	9.12E-08	9.12E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-107	27	13	2.40E-04	9.09E-08	9.09E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-108	27	13	2.40E-04	9.08E-08	9.08E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-109	27	13	2.40E-04	9.08E-08	9.08E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-110	27	13	2.40E-04	9.18E-08	9.18E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-111	29	14	1.20E-04	6.98E-08	6.98E-08	-2.60E-12	0.00	-2.60E-12	0.00
U-235	241-BX-112	27	13	2.40E-04	9.07E-08	9.07E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BX-ANC	32	11	9.80E-04	1.71E-03	1.71E-03	-1.20E-06	0.07	-1.20E-06	0.07
U-235	241-BY-101	27	13	2.40E-04	9.05E-08	9.05E-08	-2.40E-12	0.00	-2.40E-12	0.00
U-235	241-BY-102	29	14	1.20E-04	6.75E-08	6.75E-08	-2.60E-12	0.00	-2.60E-12	0.00
U-235	241-BY-103	25	13	2.40E-04	8.83E-08	8.83E-08	-3.60E-12	0.00	-3.60E-12	0.00
U-235	241-BY-104	27	13	2.40E-04	9.11E-08	9.11E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BY-105	27	13	2.40E-04	9.14E-08	9.14E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BY-106	27	13	2.40E-04	9.08E-08	9.08E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BY-107	27	13	2.40E-04	9.15E-08	9.15E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BY-108	27	13	2.40E-04	9.09E-08	9.09E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BY-109	27	14	1.20E-04	4.92E-08	4.92E-08	-2.60E-12	0.01	-2.60E-12	0.01
U-235	241-BY-110	27	13	2.40E-04	9.13E-08	9.13E-08	-2.50E-12	0.00	-2.50E-12	0.00
U-235	241-BY-111	29	14	1.20E-04	7.09E-08	7.09E-08	-2.60E-12	0.00	-2.60E-12	0.00
U-235	241-BY-112	27	13	2.40E-04	9.03E-08	9.03E-08	-2.40E-12	0.00	-2.40E-12	0.00
U-235	241-BY-ANC	33	11	9.80E-04	5.24E-04	5.25E-04	-4.60E-07	0.09	-4.60E-07	0.09
U-235	241-CX-72	50	13	2.40E-04	4.66E-10	4.70E-10	-3.60E-12	0.76	-3.60E-12	0.76
U-235	291-C-1	34	13	2.40E-04	6.59E-06	6.64E-06	-4.50E-08	0.68	-4.50E-08	0.68
U-236	241-A-101	27	13	2.40E-04	6.04E-08	6.04E-08	-1.60E-12	0.00	-1.60E-12	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-236	241-A-102	27	13	2.40E-04	6.06E-08	6.06E-08	-1.60E-12	0.00	-1.60E-12	0.00
U-236	241-A-103	27	13	2.40E-04	6.06E-08	6.06E-08	-1.60E-12	0.00	-1.60E-12	0.00
U-236	241-A-104	27	13	2.40E-04	5.10E-08	5.10E-08	-1.30E-12	0.00	-1.30E-12	0.00
U-236	241-A-105	26	11	9.80E-04	1.19E-08	1.19E-08	-2.20E-12	0.02	-2.20E-12	0.02
U-236	241-A-106	27	13	2.40E-04	6.32E-08	6.32E-08	-1.70E-12	0.00	-1.70E-12	0.00
U-236	241-A-ANC	38	12	4.90E-04	1.52E-04	1.52E-04	-8.60E-08	0.06	-8.60E-08	0.06
U-236	241-AN-101	27	13	2.40E-04	7.03E-08	7.03E-08	-1.90E-12	0.00	-1.90E-12	0.00
U-236	241-AN-102	25	13	2.40E-04	4.89E-08	4.89E-08	-4.00E-12	0.01	-4.00E-12	0.01
U-236	241-AN-103	25	11	9.80E-04	7.72E-09	7.72E-09	-3.10E-12	0.04	-3.10E-12	0.04
U-236	241-AN-104	29	13	2.40E-04	2.60E-08	2.60E-08	-2.00E-12	0.01	-2.00E-12	0.01
U-236	241-AN-105	32	13	2.40E-04	1.30E-08	1.30E-08	-9.20E-13	0.01	-9.20E-13	0.01
U-236	241-AN-106	27	13	2.40E-04	3.46E-08	3.46E-08	-9.20E-13	0.00	-9.20E-13	0.00
U-236	241-AN-107	25	13	2.40E-04	2.90E-08	2.90E-08	-2.30E-12	0.01	-2.30E-12	0.01
U-236	241-AN-ANC	38	12	4.90E-04	1.49E-04	1.49E-04	-1.10E-07	0.07	-1.10E-07	0.07
U-236	241-AP-101	30	12	4.90E-04	4.47E-09	4.48E-09	-1.70E-12	0.04	-1.70E-12	0.04
U-236	241-AP-102	31	14	1.20E-04	4.44E-08	4.44E-08	-1.60E-12	0.00	-1.60E-12	0.00
U-236	241-AP-103	27	12	4.90E-04	3.98E-09	3.98E-09	-1.60E-12	0.04	-1.60E-12	0.04
U-236	241-AP-104	34	13	2.40E-04	8.30E-09	8.30E-09	-5.90E-13	0.01	-5.90E-13	0.01
U-236	241-AP-105	30	12	4.90E-04	6.16E-09	6.16E-09	-2.30E-12	0.04	-2.30E-12	0.04
U-236	241-AP-106	26	11	9.80E-04	1.57E-09	1.57E-09	-5.90E-13	0.04	-5.90E-13	0.04
U-236	241-AP-107	27	12	4.90E-04	6.93E-09	6.93E-09	-2.70E-12	0.04	-2.70E-12	0.04
U-236	241-AP-108	29	12	4.90E-04	5.59E-09	5.59E-09	-2.10E-12	0.04	-2.10E-12	0.04
U-236	241-AP-ANC	34	12	4.90E-04	6.08E-06	6.09E-06	-1.40E-08	0.23	-1.40E-08	0.23
U-236	241-AW-101	29	14	1.20E-04	1.26E-07	1.26E-07	-5.00E-12	0.00	-5.00E-12	0.00
U-236	241-AW-102	27	13	2.40E-04	4.61E-08	4.62E-08	-1.20E-12	0.00	-1.20E-12	0.00
U-236	241-AW-103	27	13	2.40E-04	2.66E-07	2.66E-07	-7.10E-12	0.00	-7.10E-12	0.00
U-236	241-AW-104	27	13	2.40E-04	2.84E-07	2.84E-07	-7.50E-12	0.00	-7.50E-12	0.00
U-236	241-AW-105	27	13	2.40E-04	2.89E-07	2.89E-07	-7.70E-12	0.00	-7.70E-12	0.00
U-236	241-AW-106	29	14	1.20E-04	1.17E-07	1.17E-07	-4.60E-12	0.00	-4.60E-12	0.00
U-236	241-AW-ANC	39	12	4.90E-04	3.85E-04	3.85E-04	-1.80E-07	0.05	-1.80E-07	0.05
U-236	241-AX-101	27	13	2.40E-04	5.90E-08	5.90E-08	-1.60E-12	0.00	-1.60E-12	0.00
U-236	241-AX-102	27	13	2.40E-04	6.62E-08	6.62E-08	-1.80E-12	0.00	-1.80E-12	0.00
U-236	241-AX-103	28	14	1.20E-04	6.30E-08	6.30E-08	-3.20E-12	0.01	-3.20E-12	0.01
U-236	241-AX-104	27	13	2.40E-04	5.85E-08	5.85E-08	-1.50E-12	0.00	-1.50E-12	0.00
U-236	241-AX-ANC	35	12	4.90E-04	3.57E-05	3.57E-05	-6.00E-08	0.17	-6.00E-08	0.17
U-236	241-AY-101	26	13	2.40E-04	3.07E-08	3.07E-08	-2.50E-12	0.01	-2.50E-12	0.01
U-236	241-AY-102	27	13	2.40E-04	5.06E-08	5.06E-08	-1.30E-12	0.00	-1.30E-12	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-236	241-AY-ANC	34	12	4.90E-04	6.30E-06	6.31E-06	-1.50E-08	0.23	-1.50E-08	0.23
U-236	241-AZ-101	29	14	1.20E-04	2.10E-07	2.10E-07	-9.10E-12	0.00	-9.10E-12	0.00
U-236	241-AZ-102	27	13	2.40E-04	2.31E-07	2.31E-07	-6.10E-12	0.00	-6.10E-12	0.00
U-236	241-AZ-ANC	36	12	4.90E-04	7.00E-05	7.01E-05	-1.00E-07	0.15	-1.00E-07	0.15
U-236	241-B-101	27	13	2.40E-04	3.40E-08	3.40E-08	-9.00E-13	0.00	-9.00E-13	0.00
U-236	241-B-102	27	13	2.40E-04	2.39E-08	2.39E-08	-6.30E-13	0.00	-6.30E-13	0.00
U-236	241-B-103	27	13	2.40E-04	1.92E-08	1.92E-08	-5.10E-13	0.00	-5.10E-13	0.00
U-236	241-B-104	27	13	2.40E-04	2.22E-08	2.22E-08	-5.90E-13	0.00	-5.90E-13	0.00
U-236	241-B-105	27	13	2.40E-04	2.37E-08	2.37E-08	-6.30E-13	0.00	-6.30E-13	0.00
U-236	241-B-106	27	13	2.40E-04	2.33E-08	2.33E-08	-6.20E-13	0.00	-6.20E-13	0.00
U-236	241-B-107	27	13	2.40E-04	2.40E-08	2.40E-08	-6.30E-13	0.00	-6.30E-13	0.00
U-236	241-B-108	27	13	2.40E-04	3.04E-08	3.04E-08	-8.00E-13	0.00	-8.00E-13	0.00
U-236	241-B-109	27	13	2.40E-04	5.21E-08	5.21E-08	-1.40E-12	0.00	-1.40E-12	0.00
U-236	241-B-110	30	14	1.20E-04	7.31E-09	7.31E-09	-5.40E-13	0.01	-5.40E-13	0.01
U-236	241-B-111	31	14	1.20E-04	9.55E-09	9.55E-09	-6.50E-13	0.01	-6.50E-13	0.01
U-236	241-B-112	30	14	1.20E-04	3.18E-08	3.18E-08	-1.40E-12	0.00	-1.40E-12	0.00
U-236	241-B-201	27	13	2.40E-04	1.71E-09	1.71E-09	-4.50E-14	0.00	-4.50E-14	0.00
U-236	241-B-202	27	13	2.40E-04	2.12E-09	2.12E-09	-5.60E-14	0.00	-5.60E-14	0.00
U-236	241-B-203	31	14	1.20E-04	8.59E-10	8.59E-10	-6.10E-14	0.01	-6.10E-14	0.01
U-236	241-B-204	29	13	2.40E-04	6.94E-10	6.94E-10	-5.40E-14	0.01	-5.40E-14	0.01
U-236	241-B-ANC	31	11	9.80E-04	2.85E-04	2.85E-04	-3.30E-07	0.11	-3.30E-07	0.11
U-236	241-BX-101	27	13	2.40E-04	4.78E-08	4.78E-08	-1.30E-12	0.00	-1.30E-12	0.00
U-236	241-BX-102	27	13	2.40E-04	3.34E-08	3.35E-08	-8.90E-13	0.00	-8.90E-13	0.00
U-236	241-BX-103	27	13	2.40E-04	4.94E-08	4.94E-08	-1.30E-12	0.00	-1.30E-12	0.00
U-236	241-BX-104	27	13	2.40E-04	3.09E-08	3.09E-08	-8.20E-13	0.00	-8.20E-13	0.00
U-236	241-BX-105	27	13	2.40E-04	2.93E-08	2.93E-08	-7.80E-13	0.00	-7.80E-13	0.00
U-236	241-BX-106	27	13	2.40E-04	3.30E-08	3.30E-08	-8.70E-13	0.00	-8.70E-13	0.00
U-236	241-BX-107	27	13	2.40E-04	2.28E-08	2.28E-08	-6.00E-13	0.00	-6.00E-13	0.00
U-236	241-BX-108	27	13	2.40E-04	2.32E-08	2.32E-08	-6.20E-13	0.00	-6.20E-13	0.00
U-236	241-BX-109	27	13	2.40E-04	2.33E-08	2.33E-08	-6.20E-13	0.00	-6.20E-13	0.00
U-236	241-BX-110	27	13	2.40E-04	3.42E-08	3.42E-08	-9.10E-13	0.00	-9.10E-13	0.00
U-236	241-BX-111	29	14	1.20E-04	1.87E-08	1.87E-08	-6.90E-13	0.00	-6.90E-13	0.00
U-236	241-BX-112	27	13	2.40E-04	2.28E-08	2.28E-08	-6.00E-13	0.00	-6.00E-13	0.00
U-236	241-BX-ANC	32	11	9.80E-04	5.88E-04	5.88E-04	-4.30E-07	0.07	-4.30E-07	0.07
U-236	241-BY-101	27	13	2.40E-04	2.37E-08	2.37E-08	-6.30E-13	0.00	-6.30E-13	0.00
U-236	241-BY-102	29	14	1.20E-04	4.62E-08	4.62E-08	-1.80E-12	0.00	-1.80E-12	0.00
U-236	241-BY-103	25	13	2.40E-04	5.95E-08	5.95E-08	-2.40E-12	0.00	-2.40E-12	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-236	241-BY-104	27	13	2.40E-04	3.03E-08	3.03E-08	-8.00E-13	0.00	-8.00E-13	0.00
U-236	241-BY-105	27	13	2.40E-04	2.80E-08	2.80E-08	-7.40E-13	0.00	-7.40E-13	0.00
U-236	241-BY-106	27	13	2.40E-04	2.54E-08	2.54E-08	-6.70E-13	0.00	-6.70E-13	0.00
U-236	241-BY-107	27	13	2.40E-04	3.25E-08	3.25E-08	-8.60E-13	0.00	-8.60E-13	0.00
U-236	241-BY-108	27	13	2.40E-04	2.47E-08	2.47E-08	-6.50E-13	0.00	-6.50E-13	0.00
U-236	241-BY-109	27	14	1.20E-04	3.34E-08	3.34E-08	-1.70E-12	0.01	-1.70E-12	0.01
U-236	241-BY-110	27	13	2.40E-04	2.97E-08	2.97E-08	-7.90E-13	0.00	-7.90E-13	0.00
U-236	241-BY-111	29	14	1.20E-04	4.87E-08	4.87E-08	-1.80E-12	0.00	-1.80E-12	0.00
U-236	241-BY-112	27	13	2.40E-04	3.32E-08	3.32E-08	-8.80E-13	0.00	-8.80E-13	0.00
U-236	241-BY-ANC	33	11	9.80E-04	1.71E-04	1.72E-04	-1.50E-07	0.09	-1.50E-07	0.09
U-238	218-E-1	50	25	8.30E-05	1.33E-01	1.33E-01	-4.30E-04	0.33	-1.10E-04	0.09
U-238	218-E-10	50	21	4.10E-05	1.08E-01	1.08E-01	-9.50E-05	0.09	-9.50E-05	0.09
U-238	218-E-12A	54	25	6.40E-05	3.28E-01	3.28E-01	-8.50E-04	0.26	-1.80E-04	0.06
U-238	218-E-12B	28	11	9.80E-04	4.51E-02	4.52E-02	-1.40E-04	0.30	-1.40E-04	0.30
U-238	218-E-4	29	12	4.90E-04	3.36E-04	3.39E-04	-3.10E-06	0.93	-3.10E-06	0.93
U-238	218-E-5	29	12	4.90E-04	3.97E-02	4.01E-02	-3.70E-04	0.93	-3.70E-04	0.93
U-238	218-E-5A	27	12	4.90E-04	3.97E-02	4.01E-02	-3.80E-04	0.95	-3.80E-04	0.95
U-238	218-E-8	27	12	4.90E-04	6.63E-04	6.69E-04	-5.90E-06	0.89	-5.90E-06	0.89
U-238	241-A-101	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-A-102	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-A-103	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-A-104	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-A-105	26	11	9.80E-04	4.23E-08	4.24E-08	-8.00E-12	0.02	-8.00E-12	0.02
U-238	241-A-106	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-A-ANC	38	12	4.90E-04	5.29E-03	5.29E-03	-3.00E-06	0.06	-3.00E-06	0.06
U-238	241-AN-101	27	13	2.40E-04	2.07E-06	2.07E-06	-5.70E-11	0.00	-5.70E-11	0.00
U-238	241-AN-102	25	13	2.40E-04	5.66E-07	5.66E-07	-4.60E-11	0.01	-4.60E-11	0.01
U-238	241-AN-103	25	11	9.80E-04	8.92E-08	8.92E-08	-3.50E-11	0.04	-3.50E-11	0.04
U-238	241-AN-104	29	13	2.40E-04	3.00E-07	3.00E-07	-2.40E-11	0.01	-2.40E-11	0.01
U-238	241-AN-105	32	13	2.40E-04	1.50E-07	1.50E-07	-1.10E-11	0.01	-1.10E-11	0.01
U-238	241-AN-106	27	13	2.40E-04	2.07E-06	2.07E-06	-5.70E-11	0.00	-5.70E-11	0.00
U-238	241-AN-107	25	13	2.40E-04	3.83E-07	3.83E-07	-3.10E-11	0.01	-3.10E-11	0.01
U-238	241-AN-ANC	38	12	4.90E-04	4.73E-03	4.74E-03	-3.50E-06	0.07	-3.50E-06	0.07
U-238	241-AP-101	30	12	4.90E-04	7.24E-08	7.25E-08	-2.70E-11	0.04	-2.70E-11	0.04
U-238	241-AP-102	31	14	1.20E-04	1.78E-06	1.78E-06	-6.30E-11	0.00	-6.30E-11	0.00
U-238	241-AP-103	27	12	4.90E-04	1.00E-07	1.00E-07	-4.00E-11	0.04	-4.00E-11	0.04
U-238	241-AP-104	34	13	2.40E-04	1.45E-07	1.45E-07	-1.00E-11	0.01	-1.00E-11	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-238	241-AP-105	30	12	4.90E-04	7.98E-08	7.99E-08	-3.00E-11	0.04	-3.00E-11	0.04
U-238	241-AP-106	26	11	9.80E-04	3.87E-08	3.87E-08	-1.40E-11	0.04	-1.40E-11	0.04
U-238	241-AP-107	27	12	4.90E-04	1.12E-07	1.12E-07	-4.40E-11	0.04	-4.40E-11	0.04
U-238	241-AP-108	29	12	4.90E-04	6.93E-08	6.93E-08	-2.60E-11	0.04	-2.60E-11	0.04
U-238	241-AP-ANC	34	12	4.90E-04	1.57E-04	1.57E-04	-3.60E-07	0.23	-3.60E-07	0.23
U-238	241-AW-101	29	14	1.20E-04	1.46E-06	1.46E-06	-5.80E-11	0.00	-5.80E-11	0.00
U-238	241-AW-102	27	13	2.40E-04	2.07E-06	2.07E-06	-5.70E-11	0.00	-5.70E-11	0.00
U-238	241-AW-103	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-AW-104	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-AW-105	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-AW-106	29	14	1.20E-04	1.45E-06	1.45E-06	-5.80E-11	0.00	-5.80E-11	0.00
U-238	241-AW-ANC	39	12	4.90E-04	3.28E-03	3.28E-03	-1.60E-06	0.05	-1.60E-06	0.05
U-238	241-AX-101	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-AX-102	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-AX-103	28	14	1.20E-04	1.12E-06	1.12E-06	-5.70E-11	0.01	-5.70E-11	0.01
U-238	241-AX-104	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-AX-ANC	35	12	4.90E-04	1.13E-03	1.13E-03	-1.90E-06	0.17	-1.90E-06	0.17
U-238	241-AY-101	26	13	2.40E-04	3.60E-07	3.60E-07	-2.90E-11	0.01	-2.90E-11	0.01
U-238	241-AY-102	27	13	2.40E-04	2.07E-06	2.07E-06	-5.70E-11	0.00	-5.70E-11	0.00
U-238	241-AY-ANC	34	12	4.90E-04	8.83E-05	8.85E-05	-2.00E-07	0.23	-2.00E-07	0.23
U-238	241-AZ-101	29	14	1.20E-04	1.29E-06	1.29E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-AZ-102	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-AZ-ANC	36	12	4.90E-04	5.76E-04	5.77E-04	-8.50E-07	0.15	-8.50E-07	0.15
U-238	241-B-101	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-102	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-103	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-104	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-105	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-106	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-107	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-108	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-109	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-B-110	30	14	1.20E-04	6.48E-07	6.48E-07	-4.70E-11	0.01	-4.70E-11	0.01
U-238	241-B-111	31	14	1.20E-04	5.71E-07	5.71E-07	-3.90E-11	0.01	-3.90E-11	0.01
U-238	241-B-112	30	14	1.20E-04	1.28E-06	1.28E-06	-5.70E-11	0.00	-5.70E-11	0.00
U-238	241-B-201	27	13	2.40E-04	1.47E-07	1.47E-07	-4.00E-12	0.00	-4.00E-12	0.00
U-238	241-B-202	27	13	2.40E-04	1.47E-07	1.47E-07	-4.00E-12	0.00	-4.00E-12	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-238	241-B-203	31	14	1.20E-04	3.64E-08	3.64E-08	-2.60E-12	0.01	-2.60E-12	0.01
U-238	241-B-204	29	13	2.40E-04	1.45E-08	1.45E-08	-1.10E-12	0.01	-1.10E-12	0.01
U-238	241-B-ANC	31	11	9.80E-04	1.83E-02	1.83E-02	-2.10E-05	0.11	-2.10E-05	0.11
U-238	241-BX-101	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-102	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-103	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-104	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-105	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-106	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-107	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-108	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-109	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-110	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-111	29	14	1.20E-04	1.59E-06	1.59E-06	-5.80E-11	0.00	-5.80E-11	0.00
U-238	241-BX-112	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BX-ANC	32	11	9.80E-04	3.90E-02	3.90E-02	-2.80E-05	0.07	-2.80E-05	0.07
U-238	241-BY-101	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BY-102	29	14	1.20E-04	1.49E-06	1.49E-06	-5.80E-11	0.00	-5.80E-11	0.00
U-238	241-BY-103	25	13	2.40E-04	1.96E-06	1.96E-06	-7.90E-11	0.00	-7.90E-11	0.00
U-238	241-BY-104	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BY-105	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BY-106	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BY-107	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BY-108	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BY-109	27	14	1.20E-04	1.09E-06	1.09E-06	-5.60E-11	0.01	-5.60E-11	0.01
U-238	241-BY-110	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BY-111	29	14	1.20E-04	1.56E-06	1.56E-06	-5.80E-11	0.00	-5.80E-11	0.00
U-238	241-BY-112	27	13	2.40E-04	2.07E-06	2.07E-06	-5.60E-11	0.00	-5.60E-11	0.00
U-238	241-BY-ANC	33	11	9.80E-04	1.19E-02	1.19E-02	-1.10E-05	0.09	-1.10E-05	0.09
C-14	218-W-3A	50	25	1.20E-05	2.91E+02	2.91E+02	-1.20E+00	0.41	-2.00E-01	0.07
C-14	218-W-3AE	50	25	1.20E-05	1.46E+01	1.46E+01	-6.00E-02	0.41	-9.90E-03	0.07
C-14	218-W-4B	50	25	1.40E-05	1.14E+01	1.14E+01	-7.00E-02	0.61	-4.10E-03	0.04
C-14	218-W-4C	50	25	1.60E-05	2.63E+00	2.63E+00	-8.30E-03	0.32	-1.50E-03	0.06
C-14	218-W-5	50	25	1.80E-05	4.76E+00	4.77E+00	-8.70E-03	0.18	-1.80E-03	0.04
C-14	218-W-REACTOR	7	25	5.00E-01	2.42E+04	2.42E+04	-2.40E-07	0.00	-2.40E-07	0.00
C-14	221-T	32	9	3.90E-03	6.02E-05	6.03E-05	-4.00E-08	0.07	-4.00E-08	0.07
C-14	241-S-101	25	8	7.80E-03	2.34E-04	2.36E-04	-1.40E-06	0.60	-1.40E-06	0.60

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
C-14	241-S-102	25	8	7.80E-03	4.95E-04	4.98E-04	-3.00E-06	0.60	-3.00E-06	0.60
C-14	241-S-103	25	8	7.80E-03	4.04E-04	4.06E-04	-2.40E-06	0.60	-2.40E-06	0.60
C-14	241-S-104	25	8	7.80E-03	1.58E-04	1.58E-04	-9.40E-07	0.60	-9.40E-07	0.60
C-14	241-S-105	25	8	7.80E-03	6.16E-04	6.20E-04	-3.70E-06	0.60	-3.70E-06	0.60
C-14	241-S-106	25	8	7.80E-03	4.68E-04	4.70E-04	-2.80E-06	0.60	-2.80E-06	0.60
C-14	241-S-107	25	8	7.80E-03	1.77E-04	1.78E-04	-1.10E-06	0.60	-1.10E-06	0.60
C-14	241-S-108	25	8	7.80E-03	4.69E-04	4.72E-04	-2.80E-06	0.60	-2.80E-06	0.60
C-14	241-S-109	25	8	7.80E-03	6.13E-04	6.17E-04	-3.70E-06	0.60	-3.70E-06	0.60
C-14	241-S-110	25	8	7.80E-03	4.44E-04	4.47E-04	-2.70E-06	0.60	-2.70E-06	0.60
C-14	241-S-111	25	8	7.80E-03	3.45E-04	3.47E-04	-2.10E-06	0.60	-2.10E-06	0.60
C-14	241-S-112	25	8	7.80E-03	1.16E-05	1.16E-05	-6.90E-08	0.60	-6.90E-08	0.60
C-14	241-S-ANC	36	12	4.90E-04	3.46E-02	3.47E-02	-1.60E-04	0.48	-1.60E-04	0.48
C-14	241-SX-101	25	8	7.80E-03	3.06E-04	3.08E-04	-1.80E-06	0.60	-1.80E-06	0.60
C-14	241-SX-102	25	8	7.80E-03	3.37E-04	3.39E-04	-2.00E-06	0.60	-2.00E-06	0.60
C-14	241-SX-103	25	8	7.80E-03	4.16E-04	4.18E-04	-2.50E-06	0.60	-2.50E-06	0.60
C-14	241-SX-104	25	8	7.80E-03	3.38E-04	3.40E-04	-2.00E-06	0.60	-2.00E-06	0.60
C-14	241-SX-105	25	8	7.80E-03	3.53E-04	3.55E-04	-2.10E-06	0.60	-2.10E-06	0.60
C-14	241-SX-106	25	8	7.80E-03	4.51E-04	4.54E-04	-2.70E-06	0.60	-2.70E-06	0.60
C-14	241-SX-107	25	8	7.80E-03	1.15E-04	1.16E-04	-6.90E-07	0.60	-6.90E-07	0.60
C-14	241-SX-108	25	8	7.80E-03	1.45E-04	1.46E-04	-8.70E-07	0.60	-8.70E-07	0.60
C-14	241-SX-109	25	8	7.80E-03	2.34E-04	2.35E-04	-1.40E-06	0.60	-1.40E-06	0.60
C-14	241-SX-110	25	8	7.80E-03	1.12E-04	1.12E-04	-6.70E-07	0.60	-6.70E-07	0.60
C-14	241-SX-111	25	8	7.80E-03	1.25E-04	1.26E-04	-7.50E-07	0.60	-7.50E-07	0.60
C-14	241-SX-112	25	8	7.80E-03	1.06E-04	1.07E-04	-6.30E-07	0.60	-6.30E-07	0.60
C-14	241-SX-113	25	8	7.80E-03	1.16E-04	1.17E-04	-6.90E-07	0.60	-6.90E-07	0.60
C-14	241-SX-114	25	8	7.80E-03	1.45E-04	1.46E-04	-8.70E-07	0.60	-8.70E-07	0.60
C-14	241-SX-115	25	8	7.80E-03	9.20E-05	9.26E-05	-5.50E-07	0.60	-5.50E-07	0.60
C-14	241-SX-ANC	36	12	4.90E-04	3.27E-02	3.28E-02	-1.60E-04	0.48	-1.60E-04	0.48
C-14	241-SY-101	25	8	7.80E-03	5.85E-05	5.88E-05	-3.50E-07	0.60	-3.50E-07	0.60
C-14	241-SY-102	25	8	7.80E-03	9.53E-05	9.59E-05	-5.70E-07	0.60	-5.70E-07	0.60
C-14	241-SY-103	25	8	7.80E-03	1.38E-04	1.39E-04	-8.20E-07	0.60	-8.20E-07	0.60
C-14	241-SY-ANC	36	12	4.90E-04	1.90E-03	1.91E-03	-9.00E-06	0.48	-9.00E-06	0.48
C-14	241-T-101	25	8	7.80E-03	2.17E-04	2.18E-04	-1.30E-06	0.60	-1.30E-06	0.60
C-14	241-T-102	25	8	7.80E-03	3.34E-03	3.36E-03	-2.00E-05	0.60	-2.00E-05	0.60
C-14	241-T-103	25	8	7.80E-03	1.39E-04	1.39E-04	-8.30E-07	0.60	-8.30E-07	0.60
C-14	241-T-104	25	8	7.80E-03	5.47E-06	5.51E-06	-3.30E-08	0.60	-3.30E-08	0.60
C-14	241-T-105	25	8	7.80E-03	4.73E-05	4.76E-05	-2.80E-07	0.60	-2.80E-07	0.60

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
C-14	241-T-106	25	8	7.80E-03	4.90E-05	4.93E-05	-2.90E-07	0.60	-2.90E-07	0.60
C-14	241-T-107	25	8	7.80E-03	2.58E-05	2.60E-05	-1.50E-07	0.60	-1.50E-07	0.60
C-14	241-T-108	25	8	7.80E-03	2.30E-05	2.31E-05	-1.40E-07	0.60	-1.40E-07	0.60
C-14	241-T-109	25	8	7.80E-03	1.06E-05	1.07E-05	-6.30E-08	0.60	-6.30E-08	0.60
C-14	241-T-110	25	8	7.80E-03	1.54E-07	1.55E-07	-9.20E-10	0.60	-9.20E-10	0.60
C-14	241-T-111	25	8	7.80E-03	8.66E-08	8.71E-08	-5.20E-10	0.60	-5.20E-10	0.60
C-14	241-T-112	25	8	7.80E-03	2.26E-05	2.28E-05	-1.40E-07	0.60	-1.40E-07	0.60
C-14	241-T-201	34	9	3.90E-03	1.28E-09	1.29E-09	-1.80E-12	0.14	-1.80E-12	0.14
C-14	241-T-202	34	9	3.90E-03	1.84E-09	1.85E-09	-2.60E-12	0.14	-2.60E-12	0.14
C-14	241-T-203	34	9	3.90E-03	1.88E-09	1.88E-09	-2.70E-12	0.14	-2.70E-12	0.14
C-14	241-T-204	34	9	3.90E-03	1.91E-09	1.91E-09	-2.70E-12	0.14	-2.70E-12	0.14
C-14	241-T-ANC	36	12	4.90E-04	8.52E-03	8.56E-03	-4.10E-05	0.48	-4.10E-05	0.48
C-14	241-TX-101	25	8	7.80E-03	1.53E-04	1.54E-04	-9.10E-07	0.60	-9.10E-07	0.60
C-14	241-TX-102	25	8	7.80E-03	2.35E-04	2.36E-04	-1.40E-06	0.60	-1.40E-06	0.60
C-14	241-TX-103	25	8	7.80E-03	2.89E-04	2.90E-04	-1.70E-06	0.60	-1.70E-06	0.60
C-14	241-TX-104	25	8	7.80E-03	1.56E-04	1.56E-04	-9.30E-07	0.60	-9.30E-07	0.60
C-14	241-TX-105	25	8	7.80E-03	3.30E-04	3.32E-04	-2.00E-06	0.60	-2.00E-06	0.60
C-14	241-TX-106	25	8	7.80E-03	2.73E-04	2.75E-04	-1.60E-06	0.60	-1.60E-06	0.60
C-14	241-TX-107	25	8	7.80E-03	3.29E-04	3.31E-04	-2.00E-06	0.60	-2.00E-06	0.60
C-14	241-TX-108	25	8	7.80E-03	2.59E-04	2.60E-04	-1.50E-06	0.60	-1.50E-06	0.60
C-14	241-TX-109	25	8	7.80E-03	3.08E-05	3.10E-05	-1.80E-07	0.60	-1.80E-07	0.60
C-14	241-TX-110	25	8	7.80E-03	2.99E-04	3.00E-04	-1.80E-06	0.60	-1.80E-06	0.60
C-14	241-TX-111	25	8	7.80E-03	2.86E-04	2.87E-04	-1.70E-06	0.60	-1.70E-06	0.60
C-14	241-TX-112	25	8	7.80E-03	3.06E-04	3.08E-04	-1.80E-06	0.60	-1.80E-06	0.60
C-14	241-TX-113	25	8	7.80E-03	3.64E-04	3.66E-04	-2.20E-06	0.60	-2.20E-06	0.60
C-14	241-TX-114	25	8	7.80E-03	2.85E-04	2.86E-04	-1.70E-06	0.60	-1.70E-06	0.60
C-14	241-TX-115	25	8	7.80E-03	2.89E-04	2.91E-04	-1.70E-06	0.60	-1.70E-06	0.60
C-14	241-TX-116	25	8	7.80E-03	1.15E-04	1.15E-04	-6.80E-07	0.60	-6.80E-07	0.60
C-14	241-TX-117	25	8	7.80E-03	2.39E-04	2.41E-04	-1.40E-06	0.60	-1.40E-06	0.60
C-14	241-TX-118	25	8	7.80E-03	2.54E-04	2.55E-04	-1.50E-06	0.60	-1.50E-06	0.60
C-14	241-TX-ANC	36	12	4.90E-04	3.23E-02	3.25E-02	-1.50E-04	0.48	-1.50E-04	0.48
C-14	241-TY-101	25	8	7.80E-03	8.11E-05	8.16E-05	-4.80E-07	0.60	-4.80E-07	0.60
C-14	241-TY-102	25	8	7.80E-03	6.86E-05	6.90E-05	-4.10E-07	0.60	-4.10E-07	0.60
C-14	241-TY-103	25	8	7.80E-03	9.26E-05	9.32E-05	-5.50E-07	0.60	-5.50E-07	0.60
C-14	241-TY-104	25	8	7.80E-03	4.42E-04	4.44E-04	-2.60E-06	0.60	-2.60E-06	0.60
C-14	241-TY-105	25	8	7.80E-03	1.11E-05	1.12E-05	-6.60E-08	0.60	-6.60E-08	0.60
C-14	241-TY-106	25	8	7.80E-03	1.29E-05	1.30E-05	-7.70E-08	0.60	-7.70E-08	0.60

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
C-14	241-TY-ANC	36	12	4.90E-04	3.31E-03	3.33E-03	-1.60E-05	0.48	-1.60E-05	0.48
C-14	241-U-101	25	8	7.80E-03	1.21E-04	1.21E-04	-7.20E-07	0.60	-7.20E-07	0.60
C-14	241-U-102	25	8	7.80E-03	3.32E-04	3.34E-04	-2.00E-06	0.60	-2.00E-06	0.60
C-14	241-U-103	25	8	7.80E-03	4.36E-04	4.39E-04	-2.60E-06	0.60	-2.60E-06	0.60
C-14	241-U-104	25	8	7.80E-03	1.44E-04	1.45E-04	-8.60E-07	0.60	-8.60E-07	0.60
C-14	241-U-105	25	8	7.80E-03	4.67E-04	4.70E-04	-2.80E-06	0.60	-2.80E-06	0.60
C-14	241-U-106	25	8	7.80E-03	3.26E-04	3.28E-04	-1.90E-06	0.60	-1.90E-06	0.60
C-14	241-U-107	25	8	7.80E-03	5.58E-04	5.61E-04	-3.30E-06	0.60	-3.30E-06	0.60
C-14	241-U-108	25	8	7.80E-03	4.67E-04	4.70E-04	-2.80E-06	0.60	-2.80E-06	0.60
C-14	241-U-109	25	8	7.80E-03	4.66E-04	4.69E-04	-2.80E-06	0.60	-2.80E-06	0.60
C-14	241-U-110	25	8	7.80E-03	4.90E-05	4.93E-05	-2.90E-07	0.60	-2.90E-07	0.60
C-14	241-U-111	25	8	7.80E-03	4.04E-04	4.06E-04	-2.40E-06	0.60	-2.40E-06	0.60
C-14	241-U-112	25	8	7.80E-03	7.50E-05	7.54E-05	-4.50E-07	0.60	-4.50E-07	0.60
C-14	241-U-201	34	9	3.90E-03	4.35E-06	4.36E-06	-6.20E-09	0.14	-6.20E-09	0.14
C-14	241-U-202	34	9	3.90E-03	2.97E-06	2.97E-06	-4.20E-09	0.14	-4.20E-09	0.14
C-14	241-U-203	34	9	3.90E-03	3.07E-06	3.07E-06	-4.30E-09	0.14	-4.30E-09	0.14
C-14	241-U-204	34	9	3.90E-03	2.54E-06	2.54E-06	-3.60E-09	0.14	-3.60E-09	0.14
C-14	241-U-ANC	36	12	4.90E-04	4.38E-02	4.40E-02	-2.10E-04	0.48	-2.10E-04	0.48
C-14	T31	58	25	3.30E-04	8.07E-01	8.07E-01	-4.20E-03	0.52	-4.20E-04	0.05
C-14	T34	58	25	3.30E-04	8.07E-01	8.07E-01	-4.20E-03	0.52	-4.20E-04	0.05
CI-36	218-W-5	43	17	1.90E-04	1.04E-03	1.05E-03	-7.70E-06	0.74	-7.70E-06	0.74
CI-36	218-W-REACTOR	7	25	5.00E-01	3.02E+02	3.02E+02	-1.30E-10	0.00	-1.30E-10	0.00
CI-36	T31	32	10	2.00E-03	1.96E-02	1.96E-02	-6.50E-05	0.33	-6.50E-05	0.33
CI-36	T34	32	10	2.00E-03	3.54E-03	3.55E-03	-1.20E-05	0.33	-1.20E-05	0.33
H-3	218-W-3A	41	16	3.10E-05	3.04E+04	3.04E+04	-9.80E+00	0.03	-9.80E+00	0.03
H-3	218-W-3AE	41	16	3.10E-05	1.58E+04	1.59E+04	-5.10E+00	0.03	-5.10E+00	0.03
H-3	218-W-4B	35	14	1.20E-04	4.96E+04	4.96E+04	-2.40E+01	0.05	-2.40E+01	0.05
H-3	218-W-4C	45	17	1.50E-05	9.45E+03	9.45E+03	-1.50E+00	0.02	-1.50E+00	0.02
H-3	218-W-5	41	15	6.10E-05	2.60E+04	2.60E+04	-5.80E+00	0.02	-5.80E+00	0.02
H-3	218-W-REACTOR	7	25	5.00E-01	6.13E+01	6.13E+01	-1.90E-12	0.00	-1.90E-12	0.00
H-3	241-S-101	39	11	9.80E-04	7.50E-04	7.53E-04	-3.00E-06	0.40	-3.00E-06	0.40
H-3	241-S-102	39	11	9.80E-04	5.06E-04	5.08E-04	-2.00E-06	0.40	-2.00E-06	0.40
H-3	241-S-103	39	11	9.80E-04	3.47E-04	3.48E-04	-1.40E-06	0.40	-1.40E-06	0.40
H-3	241-S-104	39	11	9.80E-04	2.14E-04	2.15E-04	-8.50E-07	0.40	-8.50E-07	0.40
H-3	241-S-105	39	11	9.80E-04	5.19E-04	5.21E-04	-2.10E-06	0.40	-2.10E-06	0.40
H-3	241-S-106	39	11	9.80E-04	3.94E-04	3.96E-04	-1.60E-06	0.40	-1.60E-06	0.40
H-3	241-S-107	39	11	9.80E-04	2.44E-03	2.45E-03	-9.70E-06	0.40	-9.70E-06	0.40

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COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
H-3	241-S-108	39	11	9.80E-04	3.97E-04	3.99E-04	-1.60E-06	0.40	-1.60E-06	0.40
H-3	241-S-109	39	11	9.80E-04	5.25E-04	5.28E-04	-2.10E-06	0.40	-2.10E-06	0.40
H-3	241-S-110	39	11	9.80E-04	5.49E-04	5.51E-04	-2.20E-06	0.40	-2.20E-06	0.40
H-3	241-S-111	39	11	9.80E-04	4.13E-04	4.15E-04	-1.60E-06	0.40	-1.60E-06	0.40
H-3	241-S-112	39	11	9.80E-04	4.14E-06	4.16E-06	-1.60E-08	0.40	-1.60E-08	0.40
H-3	241-S-ANC	26	12	4.90E-04	1.82E-02	1.83E-02	-7.90E-05	0.43	-7.90E-05	0.43
H-3	241-SX-101	39	11	9.80E-04	7.58E-04	7.61E-04	-3.00E-06	0.40	-3.00E-06	0.40
H-3	241-SX-102	39	11	9.80E-04	3.87E-04	3.88E-04	-1.50E-06	0.40	-1.50E-06	0.40
H-3	241-SX-103	39	11	9.80E-04	4.63E-04	4.65E-04	-1.80E-06	0.40	-1.80E-06	0.40
H-3	241-SX-104	39	11	9.80E-04	5.08E-04	5.10E-04	-2.00E-06	0.40	-2.00E-06	0.40
H-3	241-SX-105	39	11	9.80E-04	4.22E-04	4.23E-04	-1.70E-06	0.40	-1.70E-06	0.40
H-3	241-SX-106	39	11	9.80E-04	3.73E-04	3.74E-04	-1.50E-06	0.40	-1.50E-06	0.40
H-3	241-SX-107	39	11	9.80E-04	1.15E-03	1.15E-03	-4.60E-06	0.40	-4.60E-06	0.40
H-3	241-SX-108	39	11	9.80E-04	1.47E-03	1.48E-03	-5.80E-06	0.40	-5.80E-06	0.40
H-3	241-SX-109	39	11	9.80E-04	1.34E-03	1.35E-03	-5.30E-06	0.40	-5.30E-06	0.40
H-3	241-SX-110	39	11	9.80E-04	2.32E-03	2.33E-03	-9.20E-06	0.40	-9.20E-06	0.40
H-3	241-SX-111	39	11	9.80E-04	1.59E-03	1.59E-03	-6.30E-06	0.40	-6.30E-06	0.40
H-3	241-SX-112	39	11	9.80E-04	1.48E-03	1.48E-03	-5.90E-06	0.40	-5.90E-06	0.40
H-3	241-SX-113	39	11	9.80E-04	4.23E-04	4.25E-04	-1.70E-06	0.40	-1.70E-06	0.40
H-3	241-SX-114	39	11	9.80E-04	1.28E-03	1.28E-03	-5.10E-06	0.40	-5.10E-06	0.40
H-3	241-SX-115	39	11	9.80E-04	2.93E-03	2.94E-03	-1.20E-05	0.40	-1.20E-05	0.40
H-3	241-SX-ANC	26	12	4.90E-04	2.56E-02	2.57E-02	-1.10E-04	0.43	-1.10E-04	0.43
H-3	241-SY-101	39	11	9.80E-04	5.09E-05	5.11E-05	-2.00E-07	0.40	-2.00E-07	0.40
H-3	241-SY-102	39	11	9.80E-04	1.27E-05	1.27E-05	-5.00E-08	0.40	-5.00E-08	0.40
H-3	241-SY-103	39	11	9.80E-04	9.34E-06	9.38E-06	-3.70E-08	0.40	-3.70E-08	0.40
H-3	241-SY-ANC	26	12	4.90E-04	2.07E-04	2.08E-04	-9.00E-07	0.43	-9.00E-07	0.43
H-3	241-T-101	39	11	9.80E-04	1.80E-03	1.81E-03	-7.10E-06	0.40	-7.10E-06	0.40
H-3	241-T-102	39	11	9.80E-04	1.81E-04	1.82E-04	-7.20E-07	0.40	-7.20E-07	0.40
H-3	241-T-103	39	11	9.80E-04	6.03E-04	6.05E-04	-2.40E-06	0.40	-2.40E-06	0.40
H-3	241-T-104	39	11	9.80E-04	6.97E-06	7.00E-06	-2.80E-08	0.40	-2.80E-08	0.40
H-3	241-T-105	39	11	9.80E-04	5.72E-05	5.74E-05	-2.30E-07	0.40	-2.30E-07	0.40
H-3	241-T-106	39	11	9.80E-04	1.50E-03	1.50E-03	-5.90E-06	0.40	-5.90E-06	0.40
H-3	241-T-107	39	11	9.80E-04	1.86E-05	1.87E-05	-7.40E-08	0.40	-7.40E-08	0.40
H-3	241-T-108	39	11	9.80E-04	3.35E-05	3.36E-05	-1.30E-07	0.40	-1.30E-07	0.40
H-3	241-T-109	39	11	9.80E-04	3.61E-05	3.63E-05	-1.40E-07	0.40	-1.40E-07	0.40
H-3	241-T-110	39	11	9.80E-04	5.25E-09	5.27E-09	-2.10E-11	0.40	-2.10E-11	0.40
H-3	241-T-111	39	11	9.80E-04	2.60E-09	2.61E-09	-1.00E-11	0.40	-1.00E-11	0.40

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
H-3	241-T-112	39	11	9.80E-04	2.33E-05	2.34E-05	-9.20E-08	0.40	-9.20E-08	0.40
H-3	241-T-201	41	11	9.80E-04	1.07E-13	1.07E-13	-3.80E-16	0.35	-3.80E-16	0.35
H-3	241-T-202	41	11	9.80E-04	8.28E-12	8.31E-12	-2.90E-14	0.35	-2.90E-14	0.35
H-3	241-T-203	41	11	9.80E-04	8.40E-12	8.43E-12	-3.00E-14	0.35	-3.00E-14	0.35
H-3	241-T-204	41	11	9.80E-04	8.53E-12	8.56E-12	-3.00E-14	0.35	-3.00E-14	0.35
H-3	241-T-ANC	26	12	4.90E-04	4.91E-03	4.93E-03	-2.10E-05	0.43	-2.10E-05	0.43
H-3	241-TX-101	39	11	9.80E-04	4.55E-04	4.56E-04	-1.80E-06	0.40	-1.80E-06	0.40
H-3	241-TX-102	39	11	9.80E-04	3.40E-04	3.41E-04	-1.30E-06	0.40	-1.30E-06	0.40
H-3	241-TX-103	39	11	9.80E-04	4.25E-04	4.27E-04	-1.70E-06	0.40	-1.70E-06	0.40
H-3	241-TX-104	39	11	9.80E-04	3.34E-04	3.36E-04	-1.30E-06	0.40	-1.30E-06	0.40
H-3	241-TX-105	39	11	9.80E-04	4.94E-04	4.96E-04	-2.00E-06	0.40	-2.00E-06	0.40
H-3	241-TX-106	39	11	9.80E-04	4.04E-04	4.06E-04	-1.60E-06	0.40	-1.60E-06	0.40
H-3	241-TX-107	39	11	9.80E-04	7.82E-04	7.85E-04	-3.10E-06	0.40	-3.10E-06	0.40
H-3	241-TX-108	39	11	9.80E-04	3.84E-04	3.86E-04	-1.50E-06	0.40	-1.50E-06	0.40
H-3	241-TX-109	39	11	9.80E-04	1.19E-05	1.19E-05	-4.70E-08	0.40	-4.70E-08	0.40
H-3	241-TX-110	39	11	9.80E-04	4.41E-04	4.43E-04	-1.80E-06	0.40	-1.80E-06	0.40
H-3	241-TX-111	39	11	9.80E-04	4.21E-04	4.22E-04	-1.70E-06	0.40	-1.70E-06	0.40
H-3	241-TX-112	39	11	9.80E-04	4.56E-04	4.58E-04	-1.80E-06	0.40	-1.80E-06	0.40
H-3	241-TX-113	39	11	9.80E-04	5.41E-04	5.44E-04	-2.10E-06	0.40	-2.10E-06	0.40
H-3	241-TX-114	39	11	9.80E-04	4.27E-04	4.29E-04	-1.70E-06	0.40	-1.70E-06	0.40
H-3	241-TX-115	39	11	9.80E-04	4.26E-04	4.28E-04	-1.70E-06	0.40	-1.70E-06	0.40
H-3	241-TX-116	39	11	9.80E-04	1.84E-04	1.85E-04	-7.30E-07	0.40	-7.30E-07	0.40
H-3	241-TX-117	39	11	9.80E-04	3.64E-04	3.66E-04	-1.40E-06	0.40	-1.40E-06	0.40
H-3	241-TX-118	39	11	9.80E-04	3.73E-04	3.74E-04	-1.50E-06	0.40	-1.50E-06	0.40
H-3	241-TX-ANC	26	12	4.90E-04	1.64E-02	1.65E-02	-7.10E-05	0.43	-7.10E-05	0.43
H-3	241-TY-101	39	11	9.80E-04	1.73E-05	1.74E-05	-6.90E-08	0.40	-6.90E-08	0.40
H-3	241-TY-102	39	11	9.80E-04	2.40E-04	2.41E-04	-9.50E-07	0.40	-9.50E-07	0.40
H-3	241-TY-103	39	11	9.80E-04	1.06E-04	1.07E-04	-4.20E-07	0.40	-4.20E-07	0.40
H-3	241-TY-104	39	11	9.80E-04	2.02E-05	2.03E-05	-8.00E-08	0.40	-8.00E-08	0.40
H-3	241-TY-105	39	11	9.80E-04	5.71E-05	5.73E-05	-2.30E-07	0.40	-2.30E-07	0.40
H-3	241-TY-106	39	11	9.80E-04	6.63E-05	6.65E-05	-2.60E-07	0.40	-2.60E-07	0.40
H-3	241-TY-ANC	26	12	4.90E-04	1.14E-03	1.14E-03	-4.90E-06	0.43	-4.90E-06	0.43
H-3	241-U-101	39	11	9.80E-04	4.37E-04	4.39E-04	-1.70E-06	0.40	-1.70E-06	0.40
H-3	241-U-102	39	11	9.80E-04	4.36E-04	4.37E-04	-1.70E-06	0.40	-1.70E-06	0.40
H-3	241-U-103	39	11	9.80E-04	3.73E-04	3.74E-04	-1.50E-06	0.40	-1.50E-06	0.40
H-3	241-U-104	39	11	9.80E-04	1.96E-04	1.96E-04	-7.80E-07	0.40	-7.80E-07	0.40
H-3	241-U-105	39	11	9.80E-04	6.53E-04	6.56E-04	-2.60E-06	0.40	-2.60E-06	0.40

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
H-3	241-U-106	39	11	9.80E-04	2.69E-04	2.70E-04	-1.10E-06	0.40	-1.10E-06	0.40
H-3	241-U-107	39	11	9.80E-04	5.93E-04	5.96E-04	-2.40E-06	0.40	-2.40E-06	0.40
H-3	241-U-108	39	11	9.80E-04	6.46E-04	6.49E-04	-2.60E-06	0.40	-2.60E-06	0.40
H-3	241-U-109	39	11	9.80E-04	5.88E-04	5.91E-04	-2.30E-06	0.40	-2.30E-06	0.40
H-3	241-U-110	39	11	9.80E-04	3.12E-05	3.13E-05	-1.20E-07	0.40	-1.20E-07	0.40
H-3	241-U-111	39	11	9.80E-04	3.56E-04	3.58E-04	-1.40E-06	0.40	-1.40E-06	0.40
H-3	241-U-112	39	11	9.80E-04	1.04E-03	1.04E-03	-4.10E-06	0.40	-4.10E-06	0.40
H-3	241-U-201	41	11	9.80E-04	1.97E-04	1.97E-04	-6.90E-07	0.35	-6.90E-07	0.35
H-3	241-U-202	41	11	9.80E-04	1.89E-04	1.89E-04	-6.60E-07	0.35	-6.60E-07	0.35
H-3	241-U-203	41	11	9.80E-04	1.89E-04	1.90E-04	-6.70E-07	0.35	-6.70E-07	0.35
H-3	241-U-204	41	11	9.80E-04	1.39E-04	1.39E-04	-4.90E-07	0.35	-4.90E-07	0.35
H-3	241-U-ANC	26	12	4.90E-04	1.85E-02	1.86E-02	-8.00E-05	0.43	-8.00E-05	0.43
H-3	T31	49	25	1.70E-04	2.12E-01	2.12E-01	-3.80E-04	0.18	4.70E-08	0.00
H-3	T34	49	25	1.70E-04	6.38E-01	6.38E-01	-1.20E-03	0.18	1.40E-07	0.00
Np-237	218-W-3AE	29	17	1.50E-05	7.85E-04	7.85E-04	-3.00E-08	0.00	-3.00E-08	0.00
Np-237	218-W-4C	41	18	7.60E-06	1.14E-01	1.14E-01	-4.40E-06	0.00	-4.40E-06	0.00
Np-237	218-W-5	25	17	1.50E-05	7.04E-03	7.05E-03	-1.10E-06	0.02	-1.10E-06	0.02
Np-237	218-W-REACTOR	4	25	3.00E-08	7.28E-05	7.28E-05	0.00E+00	0.00	0.00E+00	0.00
Np-237	221-T	28	10	2.00E-03	4.21E-09	4.21E-09	7.80E-13	0.02	7.80E-13	0.02
Np-237	221-U	28	10	2.00E-03	1.82E-05	1.82E-05	3.40E-09	0.02	3.40E-09	0.02
Np-237	222-S	25	21	9.50E-07	2.79E-05	2.79E-05	-9.60E-11	0.00	-9.60E-11	0.00
Np-237	224-T	50	13	2.40E-04	3.58E-06	3.61E-06	-2.80E-08	0.77	-2.80E-08	0.77
Np-237	232-Z	49	13	2.40E-04	3.29E-06	3.32E-06	-2.50E-08	0.77	-2.50E-08	0.77
Np-237	233-S	49	13	2.40E-04	9.77E-05	9.84E-05	-7.50E-07	0.77	-7.50E-07	0.77
Np-237	236-Z	28	10	2.00E-03	3.11E-03	3.10E-03	5.80E-07	0.02	5.80E-07	0.02
Np-237	241-S-101	25	10	2.00E-03	1.41E-04	1.41E-04	-1.60E-08	0.01	-1.60E-08	0.01
Np-237	241-S-102	25	10	2.00E-03	2.87E-04	2.87E-04	-3.20E-08	0.01	-3.20E-08	0.01
Np-237	241-S-103	25	10	2.00E-03	2.69E-04	2.69E-04	-3.00E-08	0.01	-3.00E-08	0.01
Np-237	241-S-104	25	10	2.00E-03	7.87E-05	7.87E-05	-8.80E-09	0.01	-8.80E-09	0.01
Np-237	241-S-105	25	10	2.00E-03	5.68E-04	5.68E-04	-6.30E-08	0.01	-6.30E-08	0.01
Np-237	241-S-106	25	10	2.00E-03	4.32E-04	4.32E-04	-4.80E-08	0.01	-4.80E-08	0.01
Np-237	241-S-107	25	10	2.00E-03	4.87E-05	4.87E-05	-5.40E-09	0.01	-5.40E-09	0.01
Np-237	241-S-108	25	10	2.00E-03	4.33E-04	4.33E-04	-4.80E-08	0.01	-4.80E-08	0.01
Np-237	241-S-109	25	10	2.00E-03	5.66E-04	5.66E-04	-6.30E-08	0.01	-6.30E-08	0.01
Np-237	241-S-110	25	10	2.00E-03	3.98E-04	3.98E-04	-4.40E-08	0.01	-4.40E-08	0.01
Np-237	241-S-111	25	10	2.00E-03	3.06E-04	3.06E-04	-3.40E-08	0.01	-3.40E-08	0.01
Np-237	241-S-112	25	10	2.00E-03	1.73E-06	1.73E-06	-1.90E-10	0.01	-1.90E-10	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Np-237	241-S-ANC	31	12	4.90E-04	8.03E-03	8.07E-03	-3.80E-05	0.47	-3.80E-05	0.47
Np-237	241-SX-101	25	10	2.00E-03	1.91E-04	1.91E-04	-2.10E-08	0.01	-2.10E-08	0.01
Np-237	241-SX-102	25	10	2.00E-03	2.76E-04	2.76E-04	-3.10E-08	0.01	-3.10E-08	0.01
Np-237	241-SX-103	25	10	2.00E-03	3.72E-04	3.72E-04	-4.10E-08	0.01	-4.10E-08	0.01
Np-237	241-SX-104	25	10	2.00E-03	2.83E-04	2.83E-04	-3.20E-08	0.01	-3.20E-08	0.01
Np-237	241-SX-105	25	10	2.00E-03	3.18E-04	3.18E-04	-3.50E-08	0.01	-3.50E-08	0.01
Np-237	241-SX-106	25	10	2.00E-03	2.27E-04	2.27E-04	-2.50E-08	0.01	-2.50E-08	0.01
Np-237	241-SX-107	25	10	2.00E-03	6.93E-05	6.93E-05	-7.70E-09	0.01	-7.70E-09	0.01
Np-237	241-SX-108	25	10	2.00E-03	9.33E-05	9.33E-05	-1.00E-08	0.01	-1.00E-08	0.01
Np-237	241-SX-109	25	10	2.00E-03	1.21E-04	1.21E-04	-1.30E-08	0.01	-1.30E-08	0.01
Np-237	241-SX-110	25	10	2.00E-03	8.95E-05	8.95E-05	-1.00E-08	0.01	-1.00E-08	0.01
Np-237	241-SX-111	25	10	2.00E-03	8.15E-05	8.15E-05	-9.10E-09	0.01	-9.10E-09	0.01
Np-237	241-SX-112	25	10	2.00E-03	7.18E-05	7.18E-05	-8.00E-09	0.01	-8.00E-09	0.01
Np-237	241-SX-113	25	10	2.00E-03	5.48E-05	5.48E-05	-6.10E-09	0.01	-6.10E-09	0.01
Np-237	241-SX-114	25	10	2.00E-03	8.40E-05	8.40E-05	-9.40E-09	0.01	-9.40E-09	0.01
Np-237	241-SX-115	25	10	2.00E-03	2.14E-04	2.14E-04	-2.40E-08	0.01	-2.40E-08	0.01
Np-237	241-SX-ANC	31	12	4.90E-04	6.71E-03	6.74E-03	-3.20E-05	0.47	-3.20E-05	0.47
Np-237	241-SY-101	25	10	2.00E-03	4.29E-05	4.29E-05	-4.80E-09	0.01	-4.80E-09	0.01
Np-237	241-SY-102	25	10	2.00E-03	3.85E-04	3.85E-04	-4.30E-08	0.01	-4.30E-08	0.01
Np-237	241-SY-103	25	10	2.00E-03	1.26E-04	1.26E-04	-1.40E-08	0.01	-1.40E-08	0.01
Np-237	241-SY-ANC	31	12	4.90E-04	8.52E-04	8.56E-04	-4.00E-06	0.47	-4.00E-06	0.47
Np-237	241-T-101	25	10	2.00E-03	8.89E-05	8.89E-05	-9.90E-09	0.01	-9.90E-09	0.01
Np-237	241-T-102	25	10	2.00E-03	1.86E-04	1.86E-04	-2.10E-08	0.01	-2.10E-08	0.01
Np-237	241-T-103	25	10	2.00E-03	2.57E-05	2.57E-05	-2.90E-09	0.01	-2.90E-09	0.01
Np-237	241-T-104	25	10	2.00E-03	7.72E-07	7.72E-07	-8.60E-11	0.01	-8.60E-11	0.01
Np-237	241-T-105	25	10	2.00E-03	8.32E-07	8.32E-07	-9.30E-11	0.01	-9.30E-11	0.01
Np-237	241-T-106	25	10	2.00E-03	1.02E-06	1.02E-06	-1.10E-10	0.01	-1.10E-10	0.01
Np-237	241-T-107	25	10	2.00E-03	1.82E-06	1.83E-06	-2.00E-10	0.01	-2.00E-10	0.01
Np-237	241-T-108	25	10	2.00E-03	3.51E-06	3.51E-06	-3.90E-10	0.01	-3.90E-10	0.01
Np-237	241-T-109	25	10	2.00E-03	3.81E-06	3.81E-06	-4.30E-10	0.01	-4.30E-10	0.01
Np-237	241-T-110	25	10	2.00E-03	1.35E-05	1.35E-05	-1.50E-09	0.01	-1.50E-09	0.01
Np-237	241-T-111	25	10	2.00E-03	5.01E-07	5.01E-07	-5.60E-11	0.01	-5.60E-11	0.01
Np-237	241-T-112	25	10	2.00E-03	1.04E-05	1.04E-05	-1.20E-09	0.01	-1.20E-09	0.01
Np-237	241-T-201	29	11	9.80E-04	2.80E-08	2.81E-08	-3.10E-12	0.01	-3.10E-12	0.01
Np-237	241-T-202	29	11	9.80E-04	2.60E-08	2.60E-08	-2.80E-12	0.01	-2.80E-12	0.01
Np-237	241-T-203	29	11	9.80E-04	4.66E-08	4.66E-08	-5.10E-12	0.01	-5.10E-12	0.01
Np-237	241-T-204	29	11	9.80E-04	3.36E-08	3.36E-08	-3.70E-12	0.01	-3.70E-12	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Np-237	241-T-361	28	10	2.00E-03	9.40E-04	9.39E-04	9.10E-07	0.10	9.10E-07	0.10
Np-237	241-T-ANC	31	12	4.90E-04	3.65E-04	3.67E-04	-1.70E-06	0.47	-1.70E-06	0.47
Np-237	241-TX-101	25	10	2.00E-03	7.67E-05	7.67E-05	-8.60E-09	0.01	-8.60E-09	0.01
Np-237	241-TX-102	25	10	2.00E-03	1.26E-04	1.26E-04	-1.40E-08	0.01	-1.40E-08	0.01
Np-237	241-TX-103	25	10	2.00E-03	1.57E-04	1.57E-04	-1.80E-08	0.01	-1.80E-08	0.01
Np-237	241-TX-104	25	10	2.00E-03	8.12E-05	8.12E-05	-9.10E-09	0.01	-9.10E-09	0.01
Np-237	241-TX-105	25	10	2.00E-03	1.83E-04	1.83E-04	-2.00E-08	0.01	-2.00E-08	0.01
Np-237	241-TX-106	25	10	2.00E-03	1.48E-04	1.48E-04	-1.70E-08	0.01	-1.70E-08	0.01
Np-237	241-TX-107	25	10	2.00E-03	1.91E-04	1.91E-04	-2.10E-08	0.01	-2.10E-08	0.01
Np-237	241-TX-108	25	10	2.00E-03	1.41E-04	1.41E-04	-1.60E-08	0.01	-1.60E-08	0.01
Np-237	241-TX-109	25	10	2.00E-03	4.07E-06	4.07E-06	-4.50E-10	0.01	-4.50E-10	0.01
Np-237	241-TX-110	25	10	2.00E-03	1.62E-04	1.62E-04	-1.80E-08	0.01	-1.80E-08	0.01
Np-237	241-TX-111	25	10	2.00E-03	1.54E-04	1.54E-04	-1.70E-08	0.01	-1.70E-08	0.01
Np-237	241-TX-112	25	10	2.00E-03	1.68E-04	1.68E-04	-1.90E-08	0.01	-1.90E-08	0.01
Np-237	241-TX-113	25	10	2.00E-03	1.97E-04	1.97E-04	-2.20E-08	0.01	-2.20E-08	0.01
Np-237	241-TX-114	25	10	2.00E-03	1.56E-04	1.56E-04	-1.70E-08	0.01	-1.70E-08	0.01
Np-237	241-TX-115	25	10	2.00E-03	1.57E-04	1.57E-04	-1.80E-08	0.01	-1.80E-08	0.01
Np-237	241-TX-116	25	10	2.00E-03	5.98E-05	5.98E-05	-6.70E-09	0.01	-6.70E-09	0.01
Np-237	241-TX-117	25	10	2.00E-03	1.31E-04	1.31E-04	-1.50E-08	0.01	-1.50E-08	0.01
Np-237	241-TX-118	25	10	2.00E-03	1.77E-04	1.77E-04	-2.00E-08	0.01	-2.00E-08	0.01
Np-237	241-TX-ANC	31	12	4.90E-04	4.89E-03	4.91E-03	-2.30E-05	0.47	-2.30E-05	0.47
Np-237	241-TY-101	25	10	2.00E-03	2.79E-06	2.79E-06	-3.10E-10	0.01	-3.10E-10	0.01
Np-237	241-TY-102	25	10	2.00E-03	8.27E-05	8.27E-05	-9.20E-09	0.01	-9.20E-09	0.01
Np-237	241-TY-103	25	10	2.00E-03	3.45E-05	3.45E-05	-3.80E-09	0.01	-3.80E-09	0.01
Np-237	241-TY-104	25	10	2.00E-03	3.53E-06	3.53E-06	-3.90E-10	0.01	-3.90E-10	0.01
Np-237	241-TY-105	25	10	2.00E-03	5.13E-06	5.13E-06	-5.70E-10	0.01	-5.70E-10	0.01
Np-237	241-TY-106	25	10	2.00E-03	1.32E-04	1.32E-04	-1.50E-08	0.01	-1.50E-08	0.01
Np-237	241-TY-ANC	31	12	4.90E-04	2.69E-04	2.70E-04	-1.30E-06	0.47	-1.30E-06	0.47
Np-237	241-U-101	25	10	2.00E-03	5.65E-05	5.65E-05	-6.30E-09	0.01	-6.30E-09	0.01
Np-237	241-U-102	25	10	2.00E-03	1.62E-04	1.62E-04	-1.80E-08	0.01	-1.80E-08	0.01
Np-237	241-U-103	25	10	2.00E-03	3.26E-04	3.26E-04	-3.60E-08	0.01	-3.60E-08	0.01
Np-237	241-U-104	25	10	2.00E-03	7.43E-05	7.43E-05	-8.30E-09	0.01	-8.30E-09	0.01
Np-237	241-U-105	25	10	2.00E-03	2.07E-04	2.07E-04	-2.30E-08	0.01	-2.30E-08	0.01
Np-237	241-U-106	25	10	2.00E-03	3.01E-04	3.01E-04	-3.40E-08	0.01	-3.40E-08	0.01
Np-237	241-U-107	25	10	2.00E-03	2.39E-04	2.39E-04	-2.70E-08	0.01	-2.70E-08	0.01
Np-237	241-U-108	25	10	2.00E-03	3.07E-04	3.07E-04	-3.40E-08	0.01	-3.40E-08	0.01
Np-237	241-U-109	25	10	2.00E-03	2.91E-04	2.91E-04	-3.20E-08	0.01	-3.20E-08	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Np-237	241-U-110	25	10	2.00E-03	3.04E-05	3.04E-05	-3.40E-09	0.01	-3.40E-09	0.01
Np-237	241-U-111	25	10	2.00E-03	2.36E-04	2.36E-04	-2.60E-08	0.01	-2.60E-08	0.01
Np-237	241-U-112	25	10	2.00E-03	2.47E-05	2.47E-05	-2.80E-09	0.01	-2.80E-09	0.01
Np-237	241-U-201	29	11	9.80E-04	4.03E-08	4.03E-08	-4.40E-12	0.01	-4.40E-12	0.01
Np-237	241-U-202	29	11	9.80E-04	3.73E-08	3.73E-08	-4.10E-12	0.01	-4.10E-12	0.01
Np-237	241-U-203	29	11	9.80E-04	3.17E-08	3.17E-08	-3.50E-12	0.01	-3.50E-12	0.01
Np-237	241-U-204	29	11	9.80E-04	6.17E-07	6.17E-07	-6.70E-11	0.01	-6.70E-11	0.01
Np-237	241-U-ANC	31	12	4.90E-04	7.12E-03	7.15E-03	-3.40E-05	0.47	-3.40E-05	0.47
Np-237	242-Z	28	10	2.00E-03	2.39E-03	2.39E-03	4.40E-07	0.02	4.40E-07	0.02
Np-237	2706-T	28	10	2.00E-03	1.15E-07	1.15E-07	2.10E-11	0.02	2.10E-11	0.02
Np-237	2736-Z	28	10	2.00E-03	1.31E-04	1.31E-04	2.40E-08	0.02	2.40E-08	0.02
Np-237	291-Z	28	10	2.00E-03	7.01E-06	7.01E-06	1.30E-09	0.02	1.30E-09	0.02
Np-237	T31	40	17	1.50E-05	2.05E-02	2.05E-02	-6.60E-08	0.00	-6.60E-08	0.00
Np-237	T34	40	17	1.50E-05	7.25E-03	7.25E-03	-2.30E-08	0.00	-2.30E-08	0.00
Np-237	TRUSAF	41	18	7.60E-06	3.32E-05	3.32E-05	-7.90E-10	0.00	-7.90E-10	0.00
Re-187	218-W-5	25	16	3.10E-05	1.19E-06	1.19E-06	-3.10E-10	0.03	-3.10E-10	0.03
Re-187	T31	40	16	3.10E-05	5.49E-08	5.49E-08	-3.10E-13	0.00	-3.10E-13	0.00
Sr-90	200-W-44	50	25	3.20E-05	2.56E+00	2.56E+00	-8.80E-03	0.34	-1.90E-04	0.01
Sr-90	200-W-45	47	25	7.30E-05	3.20E-01	3.20E-01	-6.30E-04	0.20	-1.40E-05	0.00
Sr-90	202-S	53	25	7.70E-04	6.43E+00	6.44E+00	-1.60E-02	0.25	-6.30E-03	0.10
Sr-90	218-W-1	41	12	4.90E-04	8.16E-02	8.17E-02	-1.70E-04	0.21	-1.70E-04	0.21
Sr-90	218-W-1A	50	25	1.10E-04	2.26E+01	2.26E+01	-2.30E-02	0.10	-4.10E-04	0.00
Sr-90	218-W-2	44	16	3.70E-04	1.88E-01	1.88E-01	-1.70E-04	0.09	-1.70E-04	0.09
Sr-90	218-W-2A	50	25	9.70E-05	3.57E+01	3.57E+01	-5.50E-02	0.16	8.00E-05	0.00
Sr-90	218-W-3	48	13	2.40E-04	4.42E-01	4.42E-01	-4.20E-04	0.09	-4.20E-04	0.09
Sr-90	218-W-3A	50	25	2.30E-05	2.95E+02	2.95E+02	-1.00E+00	0.35	-2.40E-02	0.01
Sr-90	218-W-3AE	50	25	2.30E-05	2.59E+02	2.59E+02	-9.10E-01	0.35	-2.10E-02	0.01
Sr-90	218-W-4A	50	25	1.10E-04	7.98E-01	7.98E-01	-9.20E-04	0.12	-1.60E-05	0.00
Sr-90	218-W-4B	47	25	9.30E-05	1.23E+02	1.23E+02	-2.30E-01	0.19	-5.00E-03	0.00
Sr-90	218-W-4C	50	25	5.50E-05	2.60E+01	2.60E+01	-9.00E-02	0.34	-1.90E-03	0.01
Sr-90	218-W-5	50	25	6.40E-05	8.75E+00	8.75E+00	-2.40E-02	0.27	-4.50E-04	0.01
Sr-90	218-W-REACTOR	8	25	3.00E-08	6.26E+00	6.26E+00	-2.30E-13	0.00	-2.30E-13	0.00
Sr-90	221-T	36	9	3.90E-03	1.01E-03	1.02E-03	-6.60E-06	0.65	-6.60E-06	0.65
Sr-90	221-U	53	25	7.70E-04	7.20E+01	7.20E+01	-1.80E-01	0.25	-7.00E-02	0.10
Sr-90	222-S	29	17	1.50E-05	4.82E-01	4.82E-01	-2.50E-04	0.05	-2.50E-04	0.05
Sr-90	241-S-101	52	25	5.80E-04	1.11E+01	1.11E+01	-4.00E-02	0.36	-4.50E-03	0.04
Sr-90	241-S-102	52	25	5.80E-04	6.81E+00	6.81E+00	-2.50E-02	0.36	-2.80E-03	0.04

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Sr-90	241-S-103	52	25	5.80E-04	1.52E+00	1.52E+00	-5.50E-03	0.36	-6.20E-04	0.04
Sr-90	241-S-104	52	25	5.80E-04	1.17E+01	1.17E+01	-4.20E-02	0.36	-4.70E-03	0.04
Sr-90	241-S-105	52	25	5.80E-04	1.46E-01	1.46E-01	-5.30E-04	0.36	-5.90E-05	0.04
Sr-90	241-S-106	52	25	5.80E-04	6.90E-01	6.91E-01	-2.50E-03	0.36	-2.80E-04	0.04
Sr-90	241-S-107	52	25	5.80E-04	7.53E+00	7.53E+00	-2.70E-02	0.36	-3.10E-03	0.04
Sr-90	241-S-108	52	25	5.80E-04	1.14E+00	1.14E+00	-4.10E-03	0.36	-4.60E-04	0.04
Sr-90	241-S-109	52	25	5.80E-04	8.04E-01	8.04E-01	-2.90E-03	0.36	-3.30E-04	0.04
Sr-90	241-S-110	52	25	5.80E-04	5.11E+00	5.11E+00	-1.80E-02	0.36	-2.10E-03	0.04
Sr-90	241-S-111	52	25	5.80E-04	9.06E+00	9.06E+00	-3.30E-02	0.36	-3.70E-03	0.04
Sr-90	241-S-112	52	25	5.80E-04	1.96E-01	1.96E-01	-7.10E-04	0.36	-8.00E-05	0.04
Sr-90	241-S-ANC	42	15	6.10E-05	3.56E+02	3.57E+02	-3.20E-01	0.09	-3.20E-01	0.09
Sr-90	241-SX-101	52	25	5.80E-04	6.24E+00	6.24E+00	-2.30E-02	0.36	-2.50E-03	0.04
Sr-90	241-SX-102	52	25	5.80E-04	3.99E+00	3.99E+00	-1.40E-02	0.36	-1.60E-03	0.04
Sr-90	241-SX-103	52	25	5.80E-04	8.72E+00	8.72E+00	-3.10E-02	0.36	-3.50E-03	0.04
Sr-90	241-SX-104	52	25	5.80E-04	7.86E+00	7.86E+00	-2.80E-02	0.36	-3.20E-03	0.04
Sr-90	241-SX-105	52	25	5.80E-04	1.35E+01	1.35E+01	-4.90E-02	0.36	-5.50E-03	0.04
Sr-90	241-SX-106	52	25	5.80E-04	6.05E-01	6.06E-01	-2.20E-03	0.36	-2.50E-04	0.04
Sr-90	241-SX-107	52	25	5.80E-04	1.16E+02	1.16E+02	-4.20E-01	0.36	-4.70E-02	0.04
Sr-90	241-SX-108	52	25	5.80E-04	1.49E+02	1.49E+02	-5.40E-01	0.36	-6.10E-02	0.04
Sr-90	241-SX-109	52	25	5.80E-04	3.20E+01	3.20E+01	-1.20E-01	0.36	-1.30E-02	0.04
Sr-90	241-SX-110	52	25	5.80E-04	2.53E+02	2.53E+02	-9.10E-01	0.36	-1.00E-01	0.04
Sr-90	241-SX-111	52	25	5.80E-04	1.56E+02	1.56E+02	-5.60E-01	0.36	-6.30E-02	0.04
Sr-90	241-SX-112	52	25	5.80E-04	1.62E+02	1.62E+02	-5.80E-01	0.36	-6.60E-02	0.04
Sr-90	241-SX-113	52	25	5.80E-04	1.04E+00	1.04E+00	-3.80E-03	0.36	-4.20E-04	0.04
Sr-90	241-SX-114	52	25	5.80E-04	1.04E+02	1.04E+02	-3.70E-01	0.36	-4.20E-02	0.04
Sr-90	241-SX-115	52	25	5.80E-04	7.86E+02	7.86E+02	-2.80E+00	0.36	-3.20E-01	0.04
Sr-90	241-SX-ANC	42	15	6.10E-05	3.40E+03	3.40E+03	-3.10E+00	0.09	-3.10E+00	0.09
Sr-90	241-SY-101	52	25	5.80E-04	4.63E-01	4.63E-01	-1.70E-03	0.36	-1.90E-04	0.04
Sr-90	241-SY-102	52	25	5.80E-04	2.38E+00	2.38E+00	-8.60E-03	0.36	-9.70E-04	0.04
Sr-90	241-SY-103	52	25	5.80E-04	6.91E-01	6.91E-01	-2.50E-03	0.36	-2.80E-04	0.04
Sr-90	241-SY-ANC	42	15	6.10E-05	1.97E+01	1.97E+01	-1.80E-02	0.09	-1.80E-02	0.09
Sr-90	241-T-101	38	10	2.00E-03	3.33E-02	3.35E-02	-1.60E-04	0.47	-1.60E-04	0.47
Sr-90	241-T-102	52	25	5.80E-04	4.76E+00	4.77E+00	-1.70E-02	0.36	-1.90E-03	0.04
Sr-90	241-T-103	52	25	5.80E-04	2.28E-01	2.28E-01	-8.20E-04	0.36	-9.30E-05	0.04
Sr-90	241-T-104	38	10	2.00E-03	8.57E-02	8.61E-02	-4.00E-04	0.47	-4.00E-04	0.47
Sr-90	241-T-105	52	25	5.80E-04	2.65E+00	2.65E+00	-9.60E-03	0.36	-1.10E-03	0.04
Sr-90	241-T-106	52	25	5.80E-04	1.54E-01	1.54E-01	-5.60E-04	0.36	-6.30E-05	0.04

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Sr-90	241-T-107	52	25	5.80E-04	4.99E+00	4.99E+00	-1.80E-02	0.36	-2.00E-03	0.04
Sr-90	241-T-108	52	25	5.80E-04	1.18E-01	1.18E-01	-4.20E-04	0.36	-4.80E-05	0.04
Sr-90	241-T-109	38	10	2.00E-03	1.42E-02	1.43E-02	-6.70E-05	0.47	-6.70E-05	0.47
Sr-90	241-T-110	38	10	2.00E-03	1.11E-03	1.12E-03	-5.20E-06	0.47	-5.20E-06	0.47
Sr-90	241-T-111	52	25	5.80E-04	1.68E-01	1.68E-01	-6.10E-04	0.36	-6.80E-05	0.04
Sr-90	241-T-112	38	10	2.00E-03	4.81E-03	4.83E-03	-2.20E-05	0.47	-2.20E-05	0.47
Sr-90	241-T-201	40	10	2.00E-03	3.70E-04	3.72E-04	-1.60E-06	0.44	-1.60E-06	0.44
Sr-90	241-T-202	40	10	2.00E-03	6.94E-06	6.97E-06	-3.10E-08	0.44	-3.10E-08	0.44
Sr-90	241-T-203	40	10	2.00E-03	7.09E-06	7.12E-06	-3.10E-08	0.44	-3.10E-08	0.44
Sr-90	241-T-204	40	10	2.00E-03	1.25E-05	1.26E-05	-5.50E-08	0.44	-5.50E-08	0.44
Sr-90	241-T-361	51	25	1.00E-03	1.27E-01	1.27E-01	-3.10E-04	0.24	-1.20E-04	0.09
Sr-90	241-T-ANC	42	15	6.10E-05	7.92E+01	7.92E+01	-7.20E-02	0.09	-7.20E-02	0.09
Sr-90	241-TX-101	52	25	5.80E-04	1.93E+01	1.93E+01	-7.00E-02	0.36	-7.80E-03	0.04
Sr-90	241-TX-102	38	10	2.00E-03	7.85E-02	7.89E-02	-3.70E-04	0.47	-3.70E-04	0.47
Sr-90	241-TX-103	38	10	2.00E-03	3.82E-02	3.84E-02	-1.80E-04	0.47	-1.80E-04	0.47
Sr-90	241-TX-104	52	25	5.80E-04	9.05E+00	9.05E+00	-3.30E-02	0.36	-3.70E-03	0.04
Sr-90	241-TX-105	52	25	5.80E-04	1.05E-01	1.05E-01	-3.80E-04	0.36	-4.30E-05	0.04
Sr-90	241-TX-106	52	25	5.80E-04	3.24E-01	3.24E-01	-1.20E-03	0.36	-1.30E-04	0.04
Sr-90	241-TX-107	52	25	5.80E-04	3.40E-01	3.40E-01	-1.20E-03	0.36	-1.40E-04	0.04
Sr-90	241-TX-108	52	25	5.80E-04	2.92E-01	2.92E-01	-1.10E-03	0.36	-1.20E-04	0.04
Sr-90	241-TX-109	52	25	5.80E-04	2.22E-01	2.22E-01	-8.00E-04	0.36	-9.00E-05	0.04
Sr-90	241-TX-110	38	10	2.00E-03	5.77E-02	5.80E-02	-2.70E-04	0.47	-2.70E-04	0.47
Sr-90	241-TX-111	38	10	2.00E-03	6.38E-02	6.41E-02	-3.00E-04	0.47	-3.00E-04	0.47
Sr-90	241-TX-112	38	10	2.00E-03	3.82E-02	3.84E-02	-1.80E-04	0.47	-1.80E-04	0.47
Sr-90	241-TX-113	38	10	2.00E-03	7.55E-02	7.59E-02	-3.50E-04	0.47	-3.50E-04	0.47
Sr-90	241-TX-114	38	10	2.00E-03	3.83E-02	3.85E-02	-1.80E-04	0.47	-1.80E-04	0.47
Sr-90	241-TX-115	52	25	5.80E-04	1.30E-01	1.30E-01	-4.70E-04	0.36	-5.30E-05	0.04
Sr-90	241-TX-116	38	10	2.00E-03	1.56E-02	1.56E-02	-7.30E-05	0.47	-7.30E-05	0.47
Sr-90	241-TX-117	38	10	2.00E-03	3.08E-02	3.09E-02	-1.40E-04	0.47	-1.40E-04	0.47
Sr-90	241-TX-118	52	25	5.80E-04	6.73E+00	6.74E+00	-2.40E-02	0.36	-2.70E-03	0.04
Sr-90	241-TX-ANC	42	15	6.10E-05	8.93E+01	8.94E+01	-8.10E-02	0.09	-8.10E-02	0.09
Sr-90	241-TY-101	52	25	5.80E-04	5.13E-01	5.13E-01	-1.90E-03	0.36	-2.10E-04	0.04
Sr-90	241-TY-102	52	25	5.80E-04	1.31E-01	1.31E-01	-4.70E-04	0.36	-5.30E-05	0.04
Sr-90	241-TY-103	52	25	5.80E-04	3.56E+00	3.57E+00	-1.30E-02	0.36	-1.50E-03	0.04
Sr-90	241-TY-104	52	25	5.80E-04	4.54E+00	4.54E+00	-1.60E-02	0.36	-1.80E-03	0.04
Sr-90	241-TY-105	52	25	5.80E-04	7.41E+00	7.41E+00	-2.70E-02	0.36	-3.00E-03	0.04
Sr-90	241-TY-106	52	25	5.80E-04	5.55E+00	5.55E+00	-2.00E-02	0.36	-2.30E-03	0.04

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
Sr-90	241-TY-ANC	42	15	6.10E-05	1.70E+02	1.70E+02	-1.50E-01	0.09	-1.50E-01	0.09
Sr-90	241-U-101	52	25	5.80E-04	2.15E+01	2.15E+01	-7.80E-02	0.36	-8.80E-03	0.04
Sr-90	241-U-102	52	25	5.80E-04	4.65E+00	4.65E+00	-1.70E-02	0.36	-1.90E-03	0.04
Sr-90	241-U-103	52	25	5.80E-04	1.31E+00	1.32E+00	-4.70E-03	0.36	-5.30E-04	0.04
Sr-90	241-U-104	38	10	2.00E-03	8.36E-02	8.40E-02	-3.90E-04	0.47	-3.90E-04	0.47
Sr-90	241-U-105	52	25	5.80E-04	6.04E-01	6.05E-01	-2.20E-03	0.36	-2.50E-04	0.04
Sr-90	241-U-106	52	25	5.80E-04	3.01E+00	3.01E+00	-1.10E-02	0.36	-1.20E-03	0.04
Sr-90	241-U-107	52	25	5.80E-04	1.19E-01	1.19E-01	-4.30E-04	0.36	-4.80E-05	0.04
Sr-90	241-U-108	52	25	5.80E-04	4.16E-01	4.16E-01	-1.50E-03	0.36	-1.70E-04	0.04
Sr-90	241-U-109	52	25	5.80E-04	3.58E-01	3.58E-01	-1.30E-03	0.36	-1.50E-04	0.04
Sr-90	241-U-110	52	25	5.80E-04	9.11E+00	9.11E+00	-3.30E-02	0.36	-3.70E-03	0.04
Sr-90	241-U-111	52	25	5.80E-04	2.01E+00	2.01E+00	-7.30E-03	0.36	-8.20E-04	0.04
Sr-90	241-U-112	52	25	5.80E-04	9.40E+00	9.40E+00	-3.40E-02	0.36	-3.80E-03	0.04
Sr-90	241-U-201	40	10	2.00E-03	4.96E-04	4.98E-04	-2.20E-06	0.44	-2.20E-06	0.44
Sr-90	241-U-202	40	10	2.00E-03	1.91E-04	1.92E-04	-8.40E-07	0.44	-8.40E-07	0.44
Sr-90	241-U-203	40	10	2.00E-03	3.66E-04	3.67E-04	-1.60E-06	0.44	-1.60E-06	0.44
Sr-90	241-U-204	40	10	2.00E-03	9.39E-03	9.44E-03	-4.10E-05	0.44	-4.10E-05	0.44
Sr-90	241-U-361	53	25	7.70E-04	3.00E-01	3.00E-01	-7.50E-04	0.25	-2.90E-04	0.10
Sr-90	241-U-ANC	42	15	6.10E-05	2.32E+02	2.32E+02	-2.10E-01	0.09	-2.10E-01	0.09
Sr-90	241-WR VAULT	36	9	3.90E-03	2.37E-02	2.38E-02	-1.50E-04	0.65	-1.50E-04	0.65
Sr-90	2706-T	36	9	3.90E-03	9.12E-03	9.18E-03	-5.90E-05	0.65	-5.90E-05	0.65
Sr-90	291-S	53	25	7.70E-04	5.36E+00	5.36E+00	-1.30E-02	0.25	-5.20E-03	0.10
Sr-90	T31	38	11	9.80E-04	5.27E-03	5.31E-03	-4.10E-05	0.78	-4.10E-05	0.78
Sr-90	T34	49	25	2.90E-04	1.39E-01	1.39E-01	-9.00E-04	0.65	3.00E-05	0.02
Sr-90	TRUSAF	50	25	6.40E-05	1.13E-01	1.13E-01	-2.70E-04	0.24	-7.00E-06	0.01
U-233	218-W-3AE	39	12	4.90E-04	1.88E-05	1.87E-05	4.70E-09	0.03	4.70E-09	0.03
U-233	218-W-4C	27	10	2.00E-03	6.43E-03	6.43E-03	-9.90E-07	0.02	-9.90E-07	0.02
U-233	218-W-5	31	13	2.40E-04	1.22E-02	1.23E-02	-7.00E-05	0.57	-7.00E-05	0.57
U-233	221-T	27	11	9.80E-04	1.49E-12	1.49E-12	9.00E-16	0.06	9.00E-16	0.06
U-233	221-U	27	11	9.80E-04	6.43E-09	6.43E-09	3.90E-12	0.06	3.90E-12	0.06
U-233	222-S	26	11	9.80E-04	5.18E-06	5.18E-06	2.90E-09	0.06	2.90E-09	0.06
U-233	224-T	31	11	9.80E-04	7.87E-09	7.87E-09	4.80E-12	0.06	4.80E-12	0.06
U-233	232-Z	31	11	9.80E-04	7.21E-09	7.21E-09	4.40E-12	0.06	4.40E-12	0.06
U-233	233-S	31	11	9.80E-04	2.14E-07	2.14E-07	1.30E-10	0.06	1.30E-10	0.06
U-233	236-Z	27	11	9.80E-04	1.10E-06	1.10E-06	6.60E-10	0.06	6.60E-10	0.06
U-233	241-S-101	29	13	2.40E-04	9.07E-07	9.07E-07	-1.20E-11	0.00	-1.20E-11	0.00
U-233	241-S-102	27	13	2.40E-04	7.66E-07	7.66E-07	1.60E-11	0.00	1.60E-11	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-233	241-S-103	29	13	2.40E-04	5.45E-06	5.45E-06	-4.10E-10	0.01	-4.10E-10	0.01
U-233	241-S-104	28	12	4.90E-04	9.86E-08	9.86E-08	1.50E-11	0.02	1.50E-11	0.02
U-233	241-S-105	27	13	2.40E-04	3.31E-06	3.31E-06	-2.40E-10	0.01	-2.40E-10	0.01
U-233	241-S-106	27	13	2.40E-04	3.58E-06	3.58E-06	-3.30E-10	0.01	-3.30E-10	0.01
U-233	241-S-107	29	13	2.40E-04	3.28E-07	3.28E-07	-5.50E-12	0.00	-5.50E-12	0.00
U-233	241-S-108	30	13	2.40E-04	7.33E-06	7.33E-06	-5.00E-10	0.01	-5.00E-10	0.01
U-233	241-S-109	29	12	4.90E-04	1.02E-06	1.02E-06	2.00E-10	0.02	2.00E-10	0.02
U-233	241-S-110	27	13	2.40E-04	9.92E-07	9.92E-07	9.00E-11	0.01	9.00E-11	0.01
U-233	241-S-111	28	13	2.40E-04	2.62E-06	2.62E-06	-2.40E-10	0.01	-2.40E-10	0.01
U-233	241-S-112	26	11	9.80E-04	5.77E-10	5.76E-10	3.90E-13	0.07	3.90E-13	0.07
U-233	241-S-ANC	32	11	9.80E-04	1.95E-03	1.95E-03	-6.50E-06	0.33	-6.50E-06	0.33
U-233	241-SX-101	29	13	2.40E-04	3.73E-06	3.73E-06	1.10E-10	0.00	1.10E-10	0.00
U-233	241-SX-102	30	13	2.40E-04	5.88E-06	5.88E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-233	241-SX-103	27	13	2.40E-04	5.07E-06	5.07E-06	-6.60E-10	0.01	-6.60E-10	0.01
U-233	241-SX-104	28	13	2.40E-04	1.36E-06	1.36E-06	1.50E-11	0.00	1.50E-11	0.00
U-233	241-SX-105	28	13	2.40E-04	3.52E-06	3.52E-06	1.30E-10	0.00	1.30E-10	0.00
U-233	241-SX-106	25	12	4.90E-04	5.89E-06	5.89E-06	-7.10E-10	0.01	-7.10E-10	0.01
U-233	241-SX-107	25	11	9.80E-04	2.25E-08	2.25E-08	1.40E-11	0.06	1.40E-11	0.06
U-233	241-SX-108	25	11	9.80E-04	2.99E-08	2.98E-08	1.80E-11	0.06	1.80E-11	0.06
U-233	241-SX-109	26	13	2.40E-04	3.80E-07	3.80E-07	1.60E-11	0.00	1.60E-11	0.00
U-233	241-SX-110	32	12	4.90E-04	5.74E-08	5.74E-08	1.30E-11	0.02	1.30E-11	0.02
U-233	241-SX-111	33	12	4.90E-04	4.80E-08	4.80E-08	1.10E-11	0.02	1.10E-11	0.02
U-233	241-SX-112	25	11	9.80E-04	2.33E-08	2.33E-08	1.40E-11	0.06	1.40E-11	0.06
U-233	241-SX-113	39	12	4.90E-04	1.76E-08	1.76E-08	3.50E-12	0.02	3.50E-12	0.02
U-233	241-SX-114	32	12	4.90E-04	5.49E-08	5.49E-08	1.30E-11	0.02	1.30E-11	0.02
U-233	241-SX-115	25	11	9.80E-04	6.72E-08	6.71E-08	4.10E-11	0.06	4.10E-11	0.06
U-233	241-SX-ANC	31	11	9.80E-04	2.75E-03	2.76E-03	-1.10E-05	0.40	-1.10E-05	0.40
U-233	241-SY-101	28	12	4.90E-04	2.93E-06	2.93E-06	-3.50E-10	0.01	-3.50E-10	0.01
U-233	241-SY-102	29	13	2.40E-04	1.05E-05	1.05E-05	2.10E-10	0.00	2.10E-10	0.00
U-233	241-SY-103	25	12	4.90E-04	6.16E-06	6.16E-06	-8.10E-10	0.01	-8.10E-10	0.01
U-233	241-SY-ANC	34	12	4.90E-04	1.31E-03	1.31E-03	-3.00E-06	0.23	-3.00E-06	0.23
U-233	241-T-101	29	13	2.40E-04	8.40E-07	8.40E-07	5.60E-11	0.01	5.60E-11	0.01
U-233	241-T-102	29	13	2.40E-04	5.61E-06	5.61E-06	1.00E-10	0.00	1.00E-10	0.00
U-233	241-T-103	26	13	2.40E-04	6.97E-06	6.97E-06	1.80E-11	0.00	1.80E-11	0.00
U-233	241-T-104	25	11	9.80E-04	2.46E-10	2.46E-10	1.40E-13	0.06	1.40E-13	0.06
U-233	241-T-105	26	11	9.80E-04	2.58E-10	2.58E-10	1.60E-13	0.06	1.60E-13	0.06
U-233	241-T-106	25	11	9.80E-04	3.24E-10	3.23E-10	2.00E-13	0.06	2.00E-13	0.06

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COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-233	241-T-107	26	11	9.80E-04	5.66E-10	5.66E-10	3.40E-13	0.06	3.40E-13	0.06
U-233	241-T-108	25	11	9.80E-04	1.09E-09	1.09E-09	6.70E-13	0.06	6.70E-13	0.06
U-233	241-T-109	37	12	4.90E-04	1.22E-09	1.22E-09	2.50E-13	0.02	2.50E-13	0.02
U-233	241-T-110	39	12	4.90E-04	4.30E-09	4.30E-09	9.00E-13	0.02	9.00E-13	0.02
U-233	241-T-111	25	11	9.80E-04	1.59E-10	1.59E-10	9.80E-14	0.06	9.80E-14	0.06
U-233	241-T-112	25	12	4.90E-04	8.93E-07	8.93E-07	-1.00E-10	0.01	-1.00E-10	0.01
U-233	241-T-201	37	12	4.90E-04	8.78E-12	8.78E-12	1.80E-15	0.02	1.80E-15	0.02
U-233	241-T-202	37	12	4.90E-04	8.15E-12	8.15E-12	1.70E-15	0.02	1.70E-15	0.02
U-233	241-T-203	37	12	4.90E-04	1.46E-11	1.46E-11	3.00E-15	0.02	3.00E-15	0.02
U-233	241-T-204	37	12	4.90E-04	1.06E-11	1.06E-11	2.20E-15	0.02	2.20E-15	0.02
U-233	241-T-361	34	12	4.90E-04	3.30E-07	3.30E-07	7.10E-11	0.02	7.10E-11	0.02
U-233	241-T-ANC	27	10	2.00E-03	4.35E-03	4.36E-03	-1.10E-05	0.26	-1.10E-05	0.26
U-233	241-TX-101	32	13	2.40E-04	1.39E-07	1.39E-07	9.80E-12	0.01	9.80E-12	0.01
U-233	241-TX-102	29	13	2.40E-04	2.57E-06	2.57E-06	7.70E-11	0.00	7.70E-11	0.00
U-233	241-TX-103	26	13	2.40E-04	1.62E-05	1.62E-05	7.90E-11	0.00	7.90E-11	0.00
U-233	241-TX-104	26	13	2.40E-04	1.35E-05	1.35E-05	2.40E-11	0.00	2.40E-11	0.00
U-233	241-TX-105	28	13	2.40E-04	2.64E-06	2.64E-06	9.80E-11	0.00	9.80E-11	0.00
U-233	241-TX-106	27	13	2.40E-04	6.52E-06	6.52E-06	1.10E-10	0.00	1.10E-10	0.00
U-233	241-TX-107	26	13	2.40E-04	1.51E-05	1.51E-05	8.00E-11	0.00	8.00E-11	0.00
U-233	241-TX-108	28	13	2.40E-04	1.64E-06	1.64E-06	8.40E-11	0.01	8.40E-11	0.01
U-233	241-TX-109	26	11	9.80E-04	1.25E-09	1.25E-09	7.50E-13	0.06	7.50E-13	0.06
U-233	241-TX-110	26	13	2.40E-04	1.34E-05	1.34E-05	7.20E-11	0.00	7.20E-11	0.00
U-233	241-TX-111	26	13	2.40E-04	1.24E-05	1.24E-05	7.00E-11	0.00	7.00E-11	0.00
U-233	241-TX-112	26	13	2.40E-04	1.59E-05	1.59E-05	9.00E-11	0.00	9.00E-11	0.00
U-233	241-TX-113	33	13	2.40E-04	4.88E-06	4.88E-06	-4.30E-10	0.01	-4.30E-10	0.01
U-233	241-TX-114	26	13	2.40E-04	1.43E-05	1.43E-05	8.50E-11	0.00	8.50E-11	0.00
U-233	241-TX-115	26	13	2.40E-04	1.30E-05	1.30E-05	6.90E-11	0.00	6.90E-11	0.00
U-233	241-TX-116	26	13	2.40E-04	4.91E-06	4.91E-06	3.20E-11	0.00	3.20E-11	0.00
U-233	241-TX-117	26	13	2.40E-04	1.17E-05	1.17E-05	6.90E-11	0.00	6.90E-11	0.00
U-233	241-TX-118	26	13	2.40E-04	1.65E-05	1.65E-05	7.50E-11	0.00	7.50E-11	0.00
U-233	241-TX-ANC	32	11	9.80E-04	1.16E-02	1.17E-02	-4.90E-05	0.42	-4.90E-05	0.42
U-233	241-TY-101	25	11	9.80E-04	8.65E-10	8.64E-10	5.30E-13	0.06	5.30E-13	0.06
U-233	241-TY-102	27	12	4.90E-04	2.20E-06	2.20E-06	-2.50E-10	0.01	-2.50E-10	0.01
U-233	241-TY-103	26	13	2.40E-04	4.19E-06	4.19E-06	2.30E-11	0.00	2.30E-11	0.00
U-233	241-TY-104	26	11	9.80E-04	1.09E-09	1.09E-09	6.60E-13	0.06	6.60E-13	0.06
U-233	241-TY-105	26	11	9.80E-04	1.58E-09	1.58E-09	9.60E-13	0.06	9.60E-13	0.06
U-233	241-TY-106	25	11	9.80E-04	4.07E-08	4.07E-08	2.50E-11	0.06	2.50E-11	0.06

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-233	241-TY-ANC	26	10	2.00E-03	7.62E-03	7.63E-03	-1.30E-05	0.17	-1.30E-05	0.17
U-233	241-U-101	25	11	9.80E-04	1.84E-08	1.83E-08	1.10E-11	0.06	1.10E-11	0.06
U-233	241-U-102	29	13	2.40E-04	3.94E-06	3.94E-06	8.50E-11	0.00	8.50E-11	0.00
U-233	241-U-103	30	13	2.40E-04	6.28E-06	6.28E-06	-4.80E-10	0.01	-4.80E-10	0.01
U-233	241-U-104	28	13	2.40E-04	1.24E-06	1.24E-06	3.70E-11	0.00	3.70E-11	0.00
U-233	241-U-105	30	13	2.40E-04	1.81E-06	1.81E-06	-1.70E-11	0.00	-1.70E-11	0.00
U-233	241-U-106	30	13	2.40E-04	7.79E-06	7.79E-06	-6.20E-10	0.01	-6.20E-10	0.01
U-233	241-U-107	33	13	2.40E-04	4.94E-06	4.94E-06	-4.40E-10	0.01	-4.40E-10	0.01
U-233	241-U-108	27	13	2.40E-04	1.21E-06	1.21E-06	4.60E-11	0.00	4.60E-11	0.00
U-233	241-U-109	26	12	4.90E-04	2.00E-06	2.00E-06	-1.60E-10	0.01	-1.60E-10	0.01
U-233	241-U-110	26	11	9.80E-04	1.01E-08	1.01E-08	6.30E-12	0.06	6.30E-12	0.06
U-233	241-U-111	29	13	2.40E-04	4.17E-06	4.17E-06	1.30E-10	0.00	1.30E-10	0.00
U-233	241-U-112	26	11	9.80E-04	8.25E-09	8.24E-09	5.10E-12	0.06	5.10E-12	0.06
U-233	241-U-201	39	12	4.90E-04	1.29E-11	1.28E-11	2.70E-15	0.02	2.70E-15	0.02
U-233	241-U-202	26	11	9.80E-04	1.19E-11	1.19E-11	7.70E-15	0.07	7.70E-15	0.07
U-233	241-U-203	26	11	9.80E-04	1.01E-11	1.01E-11	6.50E-15	0.07	6.50E-15	0.07
U-233	241-U-204	25	11	9.80E-04	1.94E-10	1.94E-10	1.10E-13	0.06	1.10E-13	0.06
U-233	241-U-ANC	28	10	2.00E-03	3.97E-03	3.98E-03	-9.60E-06	0.24	-9.60E-06	0.24
U-233	242-Z	27	11	9.80E-04	8.44E-07	8.44E-07	5.10E-10	0.06	5.10E-10	0.06
U-233	2706-T	27	11	9.80E-04	4.06E-11	4.06E-11	2.50E-14	0.06	2.50E-14	0.06
U-233	2736-Z	27	11	9.80E-04	4.62E-08	4.62E-08	2.80E-11	0.06	2.80E-11	0.06
U-233	291-Z	27	11	9.80E-04	2.48E-09	2.48E-09	1.50E-12	0.06	1.50E-12	0.06
U-233	T31	41	12	4.90E-04	7.11E+00	7.11E+00	-3.00E-03	0.04	-3.00E-03	0.04
U-233	T34	27	18	7.60E-06	1.19E+02	1.19E+02	-2.80E-04	0.00	-2.80E-04	0.00
U-233	TRUSAF	29	10	2.00E-03	3.60E-06	3.60E-06	3.30E-09	0.09	3.30E-09	0.09
U-235	200-W-44	28	13	2.40E-04	2.63E-06	2.64E-06	-8.40E-09	0.32	-8.40E-09	0.32
U-235	200-W-45	34	13	2.40E-04	3.05E-07	3.07E-07	-1.90E-09	0.61	-1.90E-09	0.61
U-235	202-S	28	10	2.00E-03	1.92E-07	1.92E-07	-3.70E-12	0.00	-3.70E-12	0.00
U-235	218-W-1	39	13	2.40E-04	5.60E-04	5.63E-04	-3.30E-06	0.58	-3.30E-06	0.58
U-235	218-W-1A	27	12	4.90E-04	9.49E-06	9.58E-06	-9.10E-08	0.96	-9.10E-08	0.96
U-235	218-W-2	39	13	2.40E-04	7.49E-04	7.53E-04	-3.80E-06	0.51	-3.80E-06	0.51
U-235	218-W-3	13	25	3.00E-08	1.47E-04	1.47E-04	-8.20E-14	0.00	-8.20E-14	0.00
U-235	218-W-3AE	10	25	3.00E-08	9.30E-07	9.30E-07	-8.60E-15	0.00	-8.60E-15	0.00
U-235	218-W-4A	14	25	3.00E-08	3.86E-05	3.86E-05	-1.10E-13	0.00	-1.10E-13	0.00
U-235	218-W-4C	12	25	3.00E-08	8.73E-04	8.73E-04	-1.00E-12	0.00	-1.00E-12	0.00
U-235	218-W-5	31	13	2.40E-04	2.91E-02	2.93E-02	-1.80E-04	0.61	-1.80E-04	0.61
U-235	218-W-REACTOR	4	25	3.00E-08	7.78E-07	7.78E-07	0.00E+00	0.00	0.00E+00	0.00

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-235	221-T	28	10	2.00E-03	9.15E-09	9.15E-09	-1.80E-13	0.00	-1.80E-13	0.00
U-235	221-U	28	10	2.00E-03	7.98E-09	7.98E-09	-1.60E-13	0.00	-1.60E-13	0.00
U-235	222-S	25	15	6.10E-05	8.79E-07	8.79E-07	-4.10E-10	0.05	-4.10E-10	0.05
U-235	224-T	50	13	2.40E-04	3.33E-10	3.35E-10	-2.50E-12	0.76	-2.50E-12	0.76
U-235	231-Z	50	13	2.40E-04	5.87E-09	5.92E-09	-4.50E-11	0.77	-4.50E-11	0.77
U-235	232-Z	50	13	2.40E-04	4.68E-08	4.72E-08	-3.60E-10	0.77	-3.60E-10	0.77
U-235	233-S	50	13	2.40E-04	7.10E-09	7.15E-09	-5.50E-11	0.77	-5.50E-11	0.77
U-235	236-Z	28	10	2.00E-03	5.08E-07	5.08E-07	-9.90E-12	0.00	-9.90E-12	0.00
U-235	241-S-101	26	13	2.40E-04	2.14E-07	2.14E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-S-102	26	13	2.40E-04	2.13E-07	2.13E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-S-103	29	13	2.40E-04	2.06E-07	2.06E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-S-104	26	13	2.40E-04	2.14E-07	2.14E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-S-105	32	13	2.40E-04	9.57E-08	9.57E-08	-6.50E-12	0.01	-6.50E-12	0.01
U-235	241-S-106	25	12	4.90E-04	9.32E-08	9.32E-08	-1.10E-11	0.01	-1.10E-11	0.01
U-235	241-S-107	26	13	2.40E-04	2.34E-07	2.34E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-235	241-S-108	29	13	2.40E-04	2.15E-07	2.15E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-S-109	25	12	4.90E-04	7.12E-08	7.12E-08	-8.10E-12	0.01	-8.10E-12	0.01
U-235	241-S-110	26	13	2.40E-04	2.15E-07	2.15E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-S-111	31	13	2.40E-04	8.23E-08	8.23E-08	-5.50E-12	0.01	-5.50E-12	0.01
U-235	241-S-112	26	10	2.00E-03	5.14E-09	5.14E-09	-2.60E-12	0.05	-2.60E-12	0.05
U-235	241-S-ANC	32	11	9.80E-04	3.80E-04	3.81E-04	-1.30E-06	0.34	-1.30E-06	0.34
U-235	241-SX-101	26	13	2.40E-04	2.24E-07	2.24E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-SX-102	30	13	2.40E-04	1.90E-07	1.90E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-SX-103	27	13	2.40E-04	2.16E-07	2.16E-07	-2.10E-11	0.01	-2.10E-11	0.01
U-235	241-SX-104	26	13	2.40E-04	2.14E-07	2.14E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-SX-105	26	13	2.40E-04	2.25E-07	2.25E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-SX-106	25	12	4.90E-04	1.31E-07	1.31E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-SX-107	26	13	2.40E-04	2.32E-07	2.32E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-SX-108	26	13	2.40E-04	2.33E-07	2.33E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-SX-109	26	13	2.40E-04	2.33E-07	2.33E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-SX-110	26	13	2.40E-04	2.74E-07	2.74E-07	-1.80E-11	0.01	-1.80E-11	0.01
U-235	241-SX-111	26	13	2.40E-04	2.47E-07	2.47E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-235	241-SX-112	26	13	2.40E-04	2.42E-07	2.42E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-235	241-SX-113	27	12	4.90E-04	3.77E-08	3.77E-08	-3.70E-12	0.01	-3.70E-12	0.01
U-235	241-SX-114	26	13	2.40E-04	2.35E-07	2.35E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-235	241-SX-115	26	13	2.40E-04	2.76E-07	2.76E-07	-1.80E-11	0.01	-1.80E-11	0.01
U-235	241-SX-ANC	31	11	9.80E-04	4.13E-04	4.15E-04	-1.70E-06	0.41	-1.70E-06	0.41

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-235	241-SY-101	28	12	4.90E-04	2.63E-08	2.63E-08	-2.60E-12	0.01	-2.60E-12	0.01
U-235	241-SY-102	26	13	2.40E-04	2.16E-07	2.16E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-SY-103	25	12	4.90E-04	1.31E-07	1.31E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-SY-ANC	34	12	4.90E-04	2.49E-05	2.50E-05	-5.80E-08	0.23	-5.80E-08	0.23
U-235	241-T-101	26	13	2.40E-04	2.72E-07	2.72E-07	-1.80E-11	0.01	-1.80E-11	0.01
U-235	241-T-102	26	13	2.40E-04	2.18E-07	2.18E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-T-103	26	13	2.40E-04	2.18E-07	2.18E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-T-104	26	13	2.40E-04	2.20E-07	2.20E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-T-105	26	13	2.40E-04	2.23E-07	2.23E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-T-106	26	13	2.40E-04	2.53E-07	2.53E-07	-1.70E-11	0.01	-1.70E-11	0.01
U-235	241-T-107	26	13	2.40E-04	2.22E-07	2.22E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-T-108	26	13	2.40E-04	2.21E-07	2.21E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-T-109	30	13	2.40E-04	1.75E-07	1.75E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-T-110	29	11	9.80E-04	6.71E-09	6.71E-09	-3.40E-12	0.05	-3.40E-12	0.05
U-235	241-T-111	26	13	2.40E-04	2.20E-07	2.20E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-T-112	30	13	2.40E-04	1.92E-07	1.92E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-T-201	27	10	2.00E-03	6.11E-11	6.12E-11	-3.10E-14	0.05	-3.10E-14	0.05
U-235	241-T-202	28	12	4.90E-04	2.58E-09	2.58E-09	-2.50E-13	0.01	-2.50E-13	0.01
U-235	241-T-203	27	10	2.00E-03	1.01E-10	1.01E-10	-5.10E-14	0.05	-5.10E-14	0.05
U-235	241-T-204	27	10	2.00E-03	4.41E-11	4.41E-11	-2.20E-14	0.05	-2.20E-14	0.05
U-235	241-T-361	30	12	4.90E-04	8.08E-07	8.08E-07	-6.00E-11	0.01	-6.00E-11	0.01
U-235	241-T-ANC	27	10	2.00E-03	6.74E-04	6.75E-04	-1.70E-06	0.26	-1.70E-06	0.26
U-235	241-TX-101	26	13	2.40E-04	2.17E-07	2.17E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-TX-102	26	13	2.40E-04	2.20E-07	2.20E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-103	26	13	2.40E-04	2.31E-07	2.31E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-104	26	13	2.40E-04	2.28E-07	2.28E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-105	26	13	2.40E-04	2.21E-07	2.21E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-106	26	13	2.40E-04	2.23E-07	2.23E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-107	26	13	2.40E-04	2.33E-07	2.33E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-235	241-TX-108	26	13	2.40E-04	2.20E-07	2.20E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-109	26	13	2.40E-04	2.21E-07	2.21E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-110	26	13	2.40E-04	2.29E-07	2.29E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-111	26	13	2.40E-04	2.28E-07	2.28E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-112	26	13	2.40E-04	2.31E-07	2.31E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-113	25	12	4.90E-04	1.69E-07	1.69E-07	-1.70E-11	0.01	-1.70E-11	0.01
U-235	241-TX-114	26	13	2.40E-04	2.30E-07	2.30E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-115	26	13	2.40E-04	2.29E-07	2.29E-07	-1.50E-11	0.01	-1.50E-11	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-235	241-TX-116	26	13	2.40E-04	2.24E-07	2.24E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-117	26	13	2.40E-04	2.28E-07	2.28E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TX-118	26	13	2.40E-04	2.34E-07	2.34E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-235	241-TX-ANC	32	11	9.80E-04	4.67E-04	4.69E-04	-2.00E-06	0.42	-2.00E-06	0.42
U-235	241-TY-101	26	13	2.40E-04	2.23E-07	2.23E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TY-102	35	13	2.40E-04	5.58E-08	5.58E-08	-4.00E-12	0.01	-4.00E-12	0.01
U-235	241-TY-103	26	13	2.40E-04	2.24E-07	2.24E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TY-104	26	13	2.40E-04	2.22E-07	2.22E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TY-105	26	13	2.40E-04	2.22E-07	2.22E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TY-106	26	13	2.40E-04	2.21E-07	2.21E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-TY-ANC	26	10	2.00E-03	7.59E-04	7.61E-04	-1.30E-06	0.17	-1.30E-06	0.17
U-235	241-U-101	26	13	2.40E-04	2.12E-07	2.12E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-U-102	26	13	2.40E-04	2.17E-07	2.17E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-U-103	30	13	2.40E-04	2.04E-07	2.04E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-U-104	26	13	2.40E-04	2.19E-07	2.19E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-U-105	26	13	2.40E-04	2.21E-07	2.21E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-U-106	29	13	2.40E-04	2.09E-07	2.09E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-235	241-U-107	25	12	4.90E-04	1.39E-07	1.39E-07	-1.60E-11	0.01	-1.60E-11	0.01
U-235	241-U-108	26	13	2.40E-04	2.68E-07	2.68E-07	-1.80E-11	0.01	-1.80E-11	0.01
U-235	241-U-109	26	12	4.90E-04	6.23E-08	6.23E-08	-6.90E-12	0.01	-6.90E-12	0.01
U-235	241-U-110	26	13	2.40E-04	2.14E-07	2.14E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-U-111	26	13	2.40E-04	2.19E-07	2.19E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-235	241-U-112	26	13	2.40E-04	2.15E-07	2.15E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-235	241-U-201	26	10	2.00E-03	3.75E-10	3.75E-10	-1.90E-13	0.05	-1.90E-13	0.05
U-235	241-U-202	26	10	2.00E-03	3.56E-10	3.56E-10	-1.80E-13	0.05	-1.80E-13	0.05
U-235	241-U-203	27	10	2.00E-03	1.71E-10	1.71E-10	-8.60E-14	0.05	-8.60E-14	0.05
U-235	241-U-204	26	13	2.40E-04	1.57E-08	1.57E-08	-1.00E-12	0.01	-1.00E-12	0.01
U-235	241-U-ANC	28	10	2.00E-03	5.94E-04	5.95E-04	-1.50E-06	0.25	-1.50E-06	0.25
U-235	241-Z-361	28	10	2.00E-03	5.03E-07	5.03E-07	-7.80E-12	0.00	-7.80E-12	0.00
U-235	242-Z	28	10	2.00E-03	9.23E-09	9.23E-09	-1.80E-13	0.00	-1.80E-13	0.00
U-235	2706-T	28	10	2.00E-03	3.05E-10	3.05E-10	-5.90E-15	0.00	-5.90E-15	0.00
U-235	2736-Z	28	10	2.00E-03	2.13E-08	2.13E-08	-4.10E-13	0.00	-4.10E-13	0.00
U-235	291-S	28	10	2.00E-03	3.93E-08	3.93E-08	-7.60E-13	0.00	-7.60E-13	0.00
U-235	291-Z	28	10	2.00E-03	1.15E-09	1.15E-09	-2.20E-14	0.00	-2.20E-14	0.00
U-235	T31	25	10	2.00E-03	4.89E-02	4.90E-02	-8.00E-05	0.16	-8.00E-05	0.16
U-235	T34	10	25	3.00E-08	1.37E-01	1.37E-01	5.10E-09	0.00	5.10E-09	0.00
U-235	TRUSAF	29	13	2.40E-04	2.52E-06	2.54E-06	-1.20E-08	0.46	-1.20E-08	0.46

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-236	218-W-5	31	13	2.40E-04	1.75E-03	1.76E-03	-1.10E-05	0.61	-1.10E-05	0.61
U-236	241-S-101	26	13	2.40E-04	1.06E-07	1.06E-07	-7.00E-12	0.01	-7.00E-12	0.01
U-236	241-S-102	26	13	2.40E-04	1.04E-07	1.04E-07	-6.90E-12	0.01	-6.90E-12	0.01
U-236	241-S-103	29	13	2.40E-04	1.14E-07	1.14E-07	-7.80E-12	0.01	-7.80E-12	0.01
U-236	241-S-104	26	13	2.40E-04	1.04E-07	1.04E-07	-6.90E-12	0.01	-6.90E-12	0.01
U-236	241-S-105	32	13	2.40E-04	5.55E-08	5.55E-08	-3.80E-12	0.01	-3.80E-12	0.01
U-236	241-S-106	25	12	4.90E-04	5.53E-08	5.53E-08	-6.40E-12	0.01	-6.40E-12	0.01
U-236	241-S-107	26	13	2.40E-04	1.51E-07	1.51E-07	-1.00E-11	0.01	-1.00E-11	0.01
U-236	241-S-108	29	13	2.40E-04	1.25E-07	1.25E-07	-8.50E-12	0.01	-8.50E-12	0.01
U-236	241-S-109	25	12	4.90E-04	3.69E-08	3.69E-08	-4.20E-12	0.01	-4.20E-12	0.01
U-236	241-S-110	26	13	2.40E-04	1.06E-07	1.06E-07	-7.00E-12	0.01	-7.00E-12	0.01
U-236	241-S-111	31	13	2.40E-04	4.72E-08	4.72E-08	-3.20E-12	0.01	-3.20E-12	0.01
U-236	241-S-112	26	10	2.00E-03	2.47E-09	2.47E-09	-1.20E-12	0.05	-1.20E-12	0.05
U-236	241-S-ANC	32	11	9.80E-04	2.11E-04	2.12E-04	-7.20E-07	0.34	-7.20E-07	0.34
U-236	241-SX-101	26	13	2.40E-04	1.27E-07	1.27E-07	-8.40E-12	0.01	-8.40E-12	0.01
U-236	241-SX-102	30	13	2.40E-04	1.09E-07	1.09E-07	-8.10E-12	0.01	-8.10E-12	0.01
U-236	241-SX-103	27	13	2.40E-04	1.21E-07	1.21E-07	-1.20E-11	0.01	-1.20E-11	0.01
U-236	241-SX-104	26	13	2.40E-04	1.07E-07	1.07E-07	-7.10E-12	0.01	-7.10E-12	0.01
U-236	241-SX-105	26	13	2.40E-04	1.30E-07	1.30E-07	-8.60E-12	0.01	-8.60E-12	0.01
U-236	241-SX-106	25	12	4.90E-04	7.75E-08	7.75E-08	-9.00E-12	0.01	-9.00E-12	0.01
U-236	241-SX-107	26	13	2.40E-04	1.37E-07	1.37E-07	-9.10E-12	0.01	-9.10E-12	0.01
U-236	241-SX-108	26	13	2.40E-04	1.39E-07	1.39E-07	-9.20E-12	0.01	-9.20E-12	0.01
U-236	241-SX-109	26	13	2.40E-04	1.38E-07	1.39E-07	-9.10E-12	0.01	-9.10E-12	0.01
U-236	241-SX-110	26	13	2.40E-04	2.09E-07	2.09E-07	-1.40E-11	0.01	-1.40E-11	0.01
U-236	241-SX-111	26	13	2.40E-04	1.62E-07	1.62E-07	-1.10E-11	0.01	-1.10E-11	0.01
U-236	241-SX-112	26	13	2.40E-04	1.55E-07	1.55E-07	-1.00E-11	0.01	-1.00E-11	0.01
U-236	241-SX-113	27	12	4.90E-04	1.83E-08	1.83E-08	-1.80E-12	0.01	-1.80E-12	0.01
U-236	241-SX-114	26	13	2.40E-04	1.42E-07	1.42E-07	-9.40E-12	0.01	-9.40E-12	0.01
U-236	241-SX-115	26	13	2.40E-04	2.26E-07	2.26E-07	-1.50E-11	0.01	-1.50E-11	0.01
U-236	241-SX-ANC	31	11	9.80E-04	2.46E-04	2.47E-04	-1.00E-06	0.41	-1.00E-06	0.41
U-236	241-SY-101	28	12	4.90E-04	1.51E-08	1.51E-08	-1.50E-12	0.01	-1.50E-12	0.01
U-236	241-SY-102	26	13	2.40E-04	1.53E-07	1.53E-07	-1.00E-11	0.01	-1.00E-11	0.01
U-236	241-SY-103	25	12	4.90E-04	7.65E-08	7.65E-08	-8.90E-12	0.01	-8.90E-12	0.01
U-236	241-SY-ANC	34	12	4.90E-04	1.68E-05	1.69E-05	-3.90E-08	0.23	-3.90E-08	0.23
U-236	241-T-101	26	13	2.40E-04	2.00E-07	2.00E-07	-1.30E-11	0.01	-1.30E-11	0.01
U-236	241-T-102	26	13	2.40E-04	6.78E-08	6.78E-08	-4.50E-12	0.01	-4.50E-12	0.01
U-236	241-T-103	26	13	2.40E-04	8.04E-08	8.04E-08	-5.30E-12	0.01	-5.30E-12	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-236	241-T-104	26	13	2.40E-04	6.64E-08	6.64E-08	-4.40E-12	0.01	-4.40E-12	0.01
U-236	241-T-105	26	13	2.40E-04	5.67E-08	5.67E-08	-3.70E-12	0.01	-3.70E-12	0.01
U-236	241-T-106	26	13	2.40E-04	1.54E-07	1.54E-07	-1.00E-11	0.01	-1.00E-11	0.01
U-236	241-T-107	26	13	2.40E-04	5.55E-08	5.55E-08	-3.70E-12	0.01	-3.70E-12	0.01
U-236	241-T-108	26	13	2.40E-04	5.65E-08	5.66E-08	-3.70E-12	0.01	-3.70E-12	0.01
U-236	241-T-109	30	13	2.40E-04	4.58E-08	4.58E-08	-3.50E-12	0.01	-3.50E-12	0.01
U-236	241-T-110	29	11	9.80E-04	1.78E-09	1.78E-09	-9.10E-13	0.05	-9.10E-13	0.05
U-236	241-T-111	26	13	2.40E-04	6.05E-08	6.05E-08	-4.00E-12	0.01	-4.00E-12	0.01
U-236	241-T-112	30	13	2.40E-04	5.70E-08	5.70E-08	-4.20E-12	0.01	-4.20E-12	0.01
U-236	241-T-201	27	10	2.00E-03	1.23E-10	1.23E-10	-6.20E-14	0.05	-6.20E-14	0.05
U-236	241-T-202	28	12	4.90E-04	8.43E-10	8.43E-10	-8.20E-14	0.01	-8.20E-14	0.01
U-236	241-T-203	27	10	2.00E-03	1.03E-10	1.03E-10	-5.10E-14	0.05	-5.10E-14	0.05
U-236	241-T-204	27	10	2.00E-03	7.23E-11	7.24E-11	-3.60E-14	0.05	-3.60E-14	0.05
U-236	241-T-ANC	27	10	2.00E-03	2.49E-04	2.49E-04	-6.40E-07	0.26	-6.40E-07	0.26
U-236	241-TX-101	26	13	2.40E-04	7.83E-08	7.83E-08	-5.20E-12	0.01	-5.20E-12	0.01
U-236	241-TX-102	26	13	2.40E-04	7.66E-08	7.66E-08	-5.10E-12	0.01	-5.10E-12	0.01
U-236	241-TX-103	26	13	2.40E-04	1.29E-07	1.29E-07	-8.50E-12	0.01	-8.50E-12	0.01
U-236	241-TX-104	26	13	2.40E-04	1.25E-07	1.25E-07	-8.30E-12	0.01	-8.30E-12	0.01
U-236	241-TX-105	26	13	2.40E-04	7.71E-08	7.71E-08	-5.10E-12	0.01	-5.10E-12	0.01
U-236	241-TX-106	26	13	2.40E-04	9.32E-08	9.32E-08	-6.20E-12	0.01	-6.20E-12	0.01
U-236	241-TX-107	26	13	2.40E-04	1.39E-07	1.39E-07	-9.20E-12	0.01	-9.20E-12	0.01
U-236	241-TX-108	26	13	2.40E-04	7.24E-08	7.24E-08	-4.80E-12	0.01	-4.80E-12	0.01
U-236	241-TX-109	26	13	2.40E-04	5.63E-08	5.63E-08	-3.70E-12	0.01	-3.70E-12	0.01
U-236	241-TX-110	26	13	2.40E-04	1.16E-07	1.16E-07	-7.70E-12	0.01	-7.70E-12	0.01
U-236	241-TX-111	26	13	2.40E-04	1.12E-07	1.12E-07	-7.40E-12	0.01	-7.40E-12	0.01
U-236	241-TX-112	26	13	2.40E-04	1.27E-07	1.27E-07	-8.40E-12	0.01	-8.40E-12	0.01
U-236	241-TX-113	25	12	4.90E-04	6.33E-08	6.33E-08	-6.50E-12	0.01	-6.50E-12	0.01
U-236	241-TX-114	26	13	2.40E-04	1.20E-07	1.20E-07	-7.90E-12	0.01	-7.90E-12	0.01
U-236	241-TX-115	26	13	2.40E-04	1.14E-07	1.14E-07	-7.50E-12	0.01	-7.50E-12	0.01
U-236	241-TX-116	26	13	2.40E-04	7.95E-08	7.95E-08	-5.20E-12	0.01	-5.20E-12	0.01
U-236	241-TX-117	26	13	2.40E-04	1.09E-07	1.09E-07	-7.20E-12	0.01	-7.20E-12	0.01
U-236	241-TX-118	26	13	2.40E-04	1.46E-07	1.46E-07	-9.70E-12	0.01	-9.70E-12	0.01
U-236	241-TX-ANC	32	11	9.80E-04	1.85E-04	1.86E-04	-7.80E-07	0.42	-7.80E-07	0.42
U-236	241-TY-101	26	13	2.40E-04	5.04E-08	5.04E-08	-3.30E-12	0.01	-3.30E-12	0.01
U-236	241-TY-102	35	13	2.40E-04	2.37E-08	2.37E-08	-1.70E-12	0.01	-1.70E-12	0.01
U-236	241-TY-103	26	13	2.40E-04	7.12E-08	7.12E-08	-4.70E-12	0.01	-4.70E-12	0.01
U-236	241-TY-104	26	13	2.40E-04	4.84E-08	4.84E-08	-3.20E-12	0.01	-3.20E-12	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-236	241-TY-105	26	13	2.40E-04	5.65E-08	5.65E-08	-3.70E-12	0.01	-3.70E-12	0.01
U-236	241-TY-106	26	13	2.40E-04	5.68E-08	5.68E-08	-3.70E-12	0.01	-3.70E-12	0.01
U-236	241-TY-ANC	26	10	2.00E-03	2.13E-04	2.13E-04	-3.60E-07	0.17	-3.60E-07	0.17
U-236	241-U-101	26	13	2.40E-04	1.02E-07	1.02E-07	-6.70E-12	0.01	-6.70E-12	0.01
U-236	241-U-102	26	13	2.40E-04	1.10E-07	1.10E-07	-7.30E-12	0.01	-7.30E-12	0.01
U-236	241-U-103	30	13	2.40E-04	1.15E-07	1.15E-07	-8.10E-12	0.01	-8.10E-12	0.01
U-236	241-U-104	26	13	2.40E-04	7.18E-08	7.18E-08	-4.70E-12	0.01	-4.70E-12	0.01
U-236	241-U-105	26	13	2.40E-04	1.10E-07	1.10E-07	-7.20E-12	0.01	-7.20E-12	0.01
U-236	241-U-106	29	13	2.40E-04	1.25E-07	1.25E-07	-9.70E-12	0.01	-9.70E-12	0.01
U-236	241-U-107	25	12	4.90E-04	7.86E-08	7.86E-08	-8.90E-12	0.01	-8.90E-12	0.01
U-236	241-U-108	26	13	2.40E-04	1.94E-07	1.94E-07	-1.30E-11	0.01	-1.30E-11	0.01
U-236	241-U-109	26	12	4.90E-04	3.48E-08	3.48E-08	-3.90E-12	0.01	-3.90E-12	0.01
U-236	241-U-110	26	13	2.40E-04	1.01E-07	1.01E-07	-6.70E-12	0.01	-6.70E-12	0.01
U-236	241-U-111	26	13	2.40E-04	1.09E-07	1.09E-07	-7.20E-12	0.01	-7.20E-12	0.01
U-236	241-U-112	26	13	2.40E-04	9.60E-08	9.60E-08	-6.30E-12	0.01	-6.30E-12	0.01
U-236	241-U-201	26	10	2.00E-03	1.81E-10	1.81E-10	-9.10E-14	0.05	-9.10E-14	0.05
U-236	241-U-202	26	10	2.00E-03	1.72E-10	1.73E-10	-8.60E-14	0.05	-8.60E-14	0.05
U-236	241-U-203	27	10	2.00E-03	8.31E-11	8.32E-11	-4.20E-14	0.05	-4.20E-14	0.05
U-236	241-U-204	26	13	2.40E-04	7.54E-09	7.54E-09	-5.00E-13	0.01	-5.00E-13	0.01
U-236	241-U-ANC	28	10	2.00E-03	3.03E-04	3.03E-04	-7.50E-07	0.25	-7.50E-07	0.25
U-236	T31	25	10	2.00E-03	3.56E-03	3.57E-03	-5.80E-06	0.16	-5.80E-06	0.16
U-236	T34	20	25	3.00E-08	1.67E-02	1.67E-02	1.10E-10	0.00	1.10E-10	0.00
U-238	218-W-1	39	13	2.40E-04	2.34E-02	2.35E-02	-1.40E-04	0.58	-1.40E-04	0.58
U-238	218-W-1A	51	25	8.30E-05	3.00E-01	3.00E-01	-1.10E-03	0.36	-2.80E-04	0.09
U-238	218-W-2	54	25	8.20E-05	4.66E-01	4.66E-01	-1.50E-03	0.32	-4.10E-04	0.09
U-238	218-W-3	13	25	3.00E-08	1.06E+01	1.06E+01	-2.70E-08	0.00	-2.70E-08	0.00
U-238	218-W-3AE	10	25	3.00E-08	6.32E+01	6.32E+01	-2.60E-07	0.00	-2.60E-07	0.00
U-238	218-W-4A	14	25	3.00E-08	2.40E+01	2.40E+01	-6.90E-08	0.00	-6.90E-08	0.00
U-238	218-W-4C	12	25	3.00E-08	4.98E+01	4.98E+01	-1.10E-07	0.00	-1.10E-07	0.00
U-238	218-W-5	48	25	4.80E-05	5.90E-01	5.91E-01	-1.20E-03	0.21	-4.70E-04	0.08
U-238	221-T	28	10	2.00E-03	2.06E-06	2.06E-06	-4.00E-11	0.00	-4.00E-11	0.00
U-238	241-S-101	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-S-102	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-S-103	29	13	2.40E-04	4.73E-06	4.73E-06	-3.20E-10	0.01	-3.20E-10	0.01
U-238	241-S-104	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-S-105	32	13	2.40E-04	2.17E-06	2.17E-06	-1.50E-10	0.01	-1.50E-10	0.01
U-238	241-S-106	25	12	4.90E-04	2.10E-06	2.10E-06	-2.40E-10	0.01	-2.40E-10	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-238	241-S-107	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-S-108	29	13	2.40E-04	4.87E-06	4.87E-06	-3.30E-10	0.01	-3.30E-10	0.01
U-238	241-S-109	25	12	4.90E-04	1.67E-06	1.67E-06	-1.90E-10	0.01	-1.90E-10	0.01
U-238	241-S-110	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-S-111	31	13	2.40E-04	1.87E-06	1.87E-06	-1.30E-10	0.01	-1.30E-10	0.01
U-238	241-S-112	26	10	2.00E-03	1.22E-07	1.22E-07	-6.10E-11	0.05	-6.10E-11	0.05
U-238	241-S-ANC	32	11	9.80E-04	8.64E-03	8.67E-03	-2.90E-05	0.34	-2.90E-05	0.34
U-238	241-SX-101	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-102	30	13	2.40E-04	4.32E-06	4.32E-06	-3.20E-10	0.01	-3.20E-10	0.01
U-238	241-SX-103	27	13	2.40E-04	4.91E-06	4.91E-06	-4.90E-10	0.01	-4.90E-10	0.01
U-238	241-SX-104	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-105	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-106	25	12	4.90E-04	2.94E-06	2.94E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-107	26	13	2.40E-04	5.04E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-108	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-109	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-110	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-111	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-112	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-113	27	12	4.90E-04	8.93E-07	8.93E-07	-8.80E-11	0.01	-8.80E-11	0.01
U-238	241-SX-114	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-115	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SX-ANC	31	11	9.80E-04	9.00E-03	9.03E-03	-3.70E-05	0.41	-3.70E-05	0.41
U-238	241-SY-101	28	12	4.90E-04	6.09E-07	6.10E-07	-6.10E-11	0.01	-6.10E-11	0.01
U-238	241-SY-102	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SY-103	25	12	4.90E-04	2.95E-06	2.95E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-SY-ANC	34	12	4.90E-04	5.77E-04	5.78E-04	-1.30E-06	0.23	-1.30E-06	0.23
U-238	241-T-101	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-102	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-103	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-104	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-105	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-106	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-107	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-108	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-109	30	13	2.40E-04	3.98E-06	3.98E-06	-3.10E-10	0.01	-3.10E-10	0.01
U-238	241-T-110	29	11	9.80E-04	1.51E-07	1.51E-07	-7.70E-11	0.05	-7.70E-11	0.05

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-238	241-T-111	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-T-112	30	13	2.40E-04	4.37E-06	4.37E-06	-3.20E-10	0.01	-3.20E-10	0.01
U-238	241-T-201	27	10	2.00E-03	4.03E-12	4.03E-12	-2.00E-15	0.05	-2.00E-15	0.05
U-238	241-T-202	28	12	4.90E-04	5.91E-08	5.91E-08	-5.70E-12	0.01	-5.70E-12	0.01
U-238	241-T-203	27	10	2.00E-03	1.86E-09	1.86E-09	-9.30E-13	0.05	-9.30E-13	0.05
U-238	241-T-204	27	10	2.00E-03	6.27E-10	6.27E-10	-3.10E-13	0.05	-3.10E-13	0.05
U-238	241-T-ANC	27	10	2.00E-03	1.49E-02	1.49E-02	-3.80E-05	0.26	-3.80E-05	0.26
U-238	241-TX-101	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-102	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-103	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-104	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-105	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-106	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-107	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-108	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-109	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-110	26	13	2.40E-04	5.04E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-111	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-112	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-113	25	12	4.90E-04	3.79E-06	3.79E-06	-3.90E-10	0.01	-3.90E-10	0.01
U-238	241-TX-114	26	13	2.40E-04	5.04E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-115	26	13	2.40E-04	5.04E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-116	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-117	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-118	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TX-ANC	32	11	9.80E-04	1.06E-02	1.06E-02	-4.50E-05	0.42	-4.50E-05	0.42
U-238	241-TY-101	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TY-102	35	13	2.40E-04	1.25E-06	1.25E-06	-8.90E-11	0.01	-8.90E-11	0.01
U-238	241-TY-103	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TY-104	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TY-105	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TY-106	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-TY-ANC	26	10	2.00E-03	1.72E-02	1.72E-02	-2.90E-05	0.17	-2.90E-05	0.17
U-238	241-U-101	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-U-102	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-U-103	30	13	2.40E-04	4.63E-06	4.63E-06	-3.30E-10	0.01	-3.30E-10	0.01
U-238	241-U-104	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01

Table C-1. Output Summary File for the CASWR Data Reduction—Composite Analysis Baseline Assessment

COPC	SITE	N reduced	N Iterations	Epsilon	Original Total Mass (Ci)	Reduced/Rebalanced Total Mass (Ci)	Unbalanced Total Mass Error (Ci) (Original-Reduced)	Total Mass Relative Percent Error [before rebalance]	Rebalanced Total Mass Error(Ci) (Original-Reduced)	Total Mass Relative Percent Error [after rebalance]
U-238	241-U-105	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-U-106	29	13	2.40E-04	4.70E-06	4.70E-06	-3.60E-10	0.01	-3.60E-10	0.01
U-238	241-U-107	25	12	4.90E-04	3.13E-06	3.13E-06	-3.60E-10	0.01	-3.60E-10	0.01
U-238	241-U-108	26	13	2.40E-04	5.04E-06	5.04E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-U-109	26	12	4.90E-04	1.41E-06	1.41E-06	-1.60E-10	0.01	-1.60E-10	0.01
U-238	241-U-110	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-U-111	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-U-112	26	13	2.40E-04	5.05E-06	5.05E-06	-3.40E-10	0.01	-3.40E-10	0.01
U-238	241-U-201	26	10	2.00E-03	8.53E-09	8.53E-09	-4.30E-12	0.05	-4.30E-12	0.05
U-238	241-U-202	26	10	2.00E-03	8.12E-09	8.12E-09	-4.10E-12	0.05	-4.10E-12	0.05
U-238	241-U-203	27	10	2.00E-03	3.91E-09	3.91E-09	-2.00E-12	0.05	-2.00E-12	0.05
U-238	241-U-204	26	13	2.40E-04	3.59E-07	3.59E-07	-2.40E-11	0.01	-2.40E-11	0.01
U-238	241-U-ANC	28	10	2.00E-03	1.35E-02	1.35E-02	-3.30E-05	0.25	-3.30E-05	0.25
U-238	T31	41	12	4.90E-04	1.44E+00	1.45E+00	-5.90E-04	0.04	-5.90E-04	0.04
U-238	T34	10	25	3.00E-08	3.84E+00	3.84E+00	1.40E-07	0.00	1.40E-07	0.00

Appendix D

Copy of EMDT-GR-0036, Hanford Site Disposition Baseline (HSDB) Waste Site List

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Environmental Modeling Data Transmittal Cover Page

No.: EMDT-GR-0036

Revision No.: 0

Title: Hanford Site Disposition Baseline (HSDB) Waste Site List

Date: 08/28/2019

1. Data Description

This data transmittal cover page documents the waste site list of the Hanford Site Disposition Baseline (HSDB) database. The HSDB was developed in support of the modeling and health impact assessment efforts of the updated Hanford Site Composite Analysis (CA) and the Hanford Site Cumulative Impact Evaluation (CIE). The list currently includes only waste sites from operable units (OUs) and waste management areas (WMAs) located on the Central Plateau.

The list was compiled by combining:

- All waste sites from Appendix F in the CA inventory data package (CP-61786, 2019, *Inventory Data Package for the Hanford Site Composite Analysis*, available at: <https://www.osti.gov/servlets/purl/1524617>.)
- Additional sites needed for solid waste release modeling purposes
- Several sites with liquid discharge volumes that have no chemical or radionuclide inventory but that could influence the fate and transport of contaminants in the vadose zone and groundwater.

Appendix F in CP-61786 includes the CA and the CIE waste sites and was developed using information and site lists from several previous site-wide studies. The liquid and/or solid waste sites from those studies were further evaluated and filtered to retain sites that have the potential to contribute significantly to cumulative impacts at the Hanford Site. The following two documents describe how waste sites from the Waste Information Data System (WIDS) were evaluated for inclusion in the CA or exclusion:

- CA inventory data package (CP-61786, 2019, *Inventory Data Package for the Hanford Site Composite Analysis*)
- Technical approach description document (CP-60195, *Hanford Site Composite Analysis Technical Approach Description: Radionuclide Inventory and Waste Site Selection Process*, available at: <https://www.osti.gov/servlets/purl/1434495>.)

The source of the liquid waste sites in Appendix F of CP-61786 is the Hanford Soil Inventory Model, Appendix J (ECF-Hanford-17-0079, *Hanford Soil Inventory Model (SIM-v2) Calculated Inventory of Direct Liquid Discharges to Soil in the Hanford Site's 200 Area*, available at: <https://www.osti.gov/servlets/purl/1441375>). The SIM-v2 estimated the radionuclide and chemical soil inventories from historical liquid discharges to 388 sites, including direct liquid discharges, unplanned releases and tank leaks located on the Central Plateau of the Hanford Site. The CIE waste sites are currently limited to the 388 SIM-v2 waste sites. The solid waste sites may be added to the CIE list in the future but are included in the CA list.

Table 1 presents the final waste site list and includes the following information for each waste site: the site name, the updated site name, WIDS site code, whether it is part of the CA or the CIE or both (CA / CIE), the waste type (liquid or solid waste), a description of each site, the OU or WMA of each site (if applicable), and a comment column.



Environmental Modeling Data Transmittal Cover Page

No.: EMDT-GR-0036

Revision No.: 0

Title: Hanford Site Disposition Baseline (HSDB) Waste Site List

Date: 08/28/2019

2. Data Intended Use

Identify the data's intended use. Describe the rationale for its selection and how the data will be incorporated into a model, report, or database. Include discussion of the extent to which the data demonstrate the properties of interest.

The waste site list is the basis for the development of the HSDB database because it identifies the waste sites with sufficient inventory or release volumes to currently impact or have the potential to impact groundwater or atmospheric pathways in the future.

The HSDB database is intended to store, maintain, and report information for each of the waste sites in this list relating to the compilation of actions, and the dates the actions have or are predicted to occur. The waste site list will act as the primary key in the data table allowing other databases to interact with the HSDB on this primary key. The HSDB interfaces on this waste list with the Recharge Evolution Tool (RET) (ECF-HANFORD-15-0019 Rev. 1, *Hanford Site-wide Natural Recharge Boundary Condition for Groundwater Models*, currently in development), in order for the RET to assign recharge rates for each action, and then provide spatiotemporal recharge map for current and future modeling activities including the vadose zone model (CP-63515, *Model Package Report: Central Plateau Vadose Zone Models*, currently in development) and the solid waste release model (CP-62766, *Hanford Vadose Zone Solid Waste Release Model (HVZSWR Model)*, currently in development).

Examples of actions that have the potential to impact groundwater in the future include:

- Actions that change recharge rates surface soil type and vegetation levels)
- Actions that remove or immobilize contaminant mass (removal actions, in situ treatments, etc.)

The HSDB waste site list can interface with the inventory database (Appendix F in CP-61786) to develop source terms for use in other CA and CIE tools to predict groundwater concentrations in the unconfined aquifer.

3. Data Sources

List databases, documents, etc. – provide sufficient detail to enable data to be located by independent reviewer

The sources of the CA and CIE Waste Sites list are as follows:

- Appendices F and G of CP-61786, 2019, *Inventory Data Package for the Hanford Site Composite Analysis*, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington. Available at: <https://www.osti.gov/servlets/purl/1524617>.
- Solid waste sites names were obtained from ehsit or bggenexs ArcGIS* shape files (EMDT-GR-0035, *Waste Site and Structure Footprint Shapefiles for Inclusion in Updated Composite Analysis*).
- Waste Information Data System (WIDS).
- Ecology, EPA, and DOE, 2015, *Waste Information Data System database 'WIDSOut.accdb' and Excel spreadsheet 'WasteSite.xlsx', obtained via e-mail from the WIDS administrator, Jeffrey Shearer, March 26, 2015*
- PNNL-14725, 2006, *Geographic and Operational Site Parameters List (GOSPL) for Hanford Assessments*, Rev. 1, Pacific Northwest National Laboratory, Richland, Washington. Available at: http://www.pnl.gov/main/publications/external/technical_reports/PNNL-14725rev1.pdf.

* ArcGIS is a registered trademark and is a geographic information system software package produced by the Environmental Systems Research Institute (Esri)



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4. Impact of Use or Nonuse of Data

Describe the importance of the data to the model, report, and/or conclusions which they support. Identify the value added and discuss the impacts of not using the data.

As discussed in Section 2, the waste site list is required for the development of the HSDB database and will be the primary key that will allow other databases (modeling, RET, or inventory databases) to interact with the HSDB on this primary key.

The HSDB waste site list will streamline and normalize the waste site naming convention, hence ensure data quality and integrity is maintained across all project databases used in the current and future modeling facets of the CA and CIE.

5. Prior Uses

Identify the data's prior uses. Describe whether the data have been used in similar applications by the scientific or regulatory community. Include the associated verification processes and prior reviews and review results.

This data transfer provides the first list of waste site names prepared to serve the needs for an updated Hanford Site CA and a Hanford Site CIE. Prior site-wide assessments generated similar waste site lists, which vary from this one, based on the respective objectives and data sources for these prior assessments:

- The waste site list for Hanford site-wide assessments was developed in this document:
 - PNNL-14725, 2006, *Geographic and Operational Site Parameters List (GOSPL) for Hanford Assessments*, Rev. 1, Pacific Northwest National Laboratory, Richland, Washington. Available at: http://www.pnl.gov/main/publications/external/technical_reports/PNNL-14725rev1.pdf.
- The Final Tank Closure and Waste Management Environmental Impact Statement waste site list was developed and applied in this document:
 - DOE/EIS-0391, 2012, *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site*, Richland, Washington (TC & WM EIS), U.S. Department of Energy, Office of River Protection, Richland, Washington. Available at: <http://energy.gov/nepa/downloads/eis-0391-final-environmental-impact-statement>.



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6. Data Acquisition Method(s)

Describe the data acquisition method and associated QA/QC, considering the following:

- a. Qualifications of personnel or organizations generating the data;
- b. Technical adequacy of equipment and procedures used;
- c. Environmental and programmatic conditions if germane to the data quality;
- d. The extent to which acquisition processes reflect modeling requirements;
- e. The quality and reliability of the measurement control program;
- f. The degree to which independent audits of the process were conducted;
- g. Extent and reliability of the associated documentation.

Data acquisition for each element of the waste site list is described below:

1. Site Name - As described in section 2, the waste site list was developed from various sources and contains 636 site names:
 - a) A total of 580 solid and liquid CA/CIE waste sites were obtained from Appendix F of CP-61786
 - b) A total of 54 liquid waste sites with liquid discharge volumes that have no contaminants inventory were included from the waste site list developed in PNNL-14725
 - c) Three sites were added from WIDS or the facilities database (Caretaker II) for solid waste modeling purposes. The wastes site names appear in WIDS as an alias name for another waste site
 - o T31 and T34 wastes sites were added to account for and model active trenches T31 and T34 separately from the 218-W-5 burial ground (200-W-254 split into two sites) based on recommendation of the Low Level Burial Ground (LLBG) Performance Assessment (PA) team.
 - o 2706T was added in order to model only the equipment decontamination building instead of entire T Plant (200-W-20).
2. Updated Site Name - The waste site names used in the ehsit or bggenexs shape files (EMDT-GR-0035) may differ from the names in the Appendix F of CP-61786 and from the WIDS site names, and were corrected to follow the WIDS site naming convention in the "Update Waste Site Name" column in Table 1.
3. CA / CIE - out of 579 CA sites, 388 liquid waste sites are considered in the CIE (Appendix G of CP-61786)
4. Liquid Waste and Solid Waste - the information relating to the type of waste at each site (solid or liquid) that will be included in the modeling efforts
5. Description - obtained from WIDS and/or the ehsit or bggenexs shape files (EMDT-GR-0035)
6. OU / WMA - the information related to the waste site OU or WMA designation was obtained from WIDS
7. Comment - when applicable

For databases, identify query language used to obtain data from database (SQL, etc.), briefly describe the query description and attach copy

Not Applicable

7. Corroborating Data

Identify and discuss any corroborating datasets. Provide any documentation that confirms the corroborating data substantiate existing parameter values, distributions, or data quality.

Not applicable



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8. Data Quality Considerations

Discuss data quality considerations not identified in other sections. Include discussion of data quality indicators (i.e., accuracy, precision, representativeness, completeness, and comparability).

The HSDB waste sites were obtained from Appendix F and Appendix G of CP-61786, which are based on the evaluation performed on waste site information from previous studies. The list was checked and Appendix H of CP-61786 documents the QC for inclusion of waste site in the CA.

9. Assumptions and Limitations on Data Use

Document known uncertainties, assumptions, constraints or limits on data.

- The waste site list and related information is based on information available to date and will not contain any future unplanned release waste sites.
- WIDS names and Operable Unit groupings have gone through changes in the past and may be changed again in the future. A previous version of WIDS (Ecology, EPA, and DOE, 2015) was used. Any changes in the 2019 WIDS updates will be captured in the next version of the HSDB waste site list.

Data Configuration Item Submittal:

Data Wafa Batal/Senior Environmental Scientist; Mahmudur Rahman/Senior Environmental Scientist/Engineer

Provider NAME/POSITION

Submittal

Wafa Batal *M. Rahman*
SIGNATURE

10/21/19
DATE

Data Configuration Item Review and Verification:

10. Verification Process

Describe steps taken to verify that these data are appropriate for intended use, noting any limitations

- Reviewed EMDT-MO-0182 to verify that solid waste sites are consistent between EMDTs.
- Reviewed Appendix F of CP-61786 to verify completeness of waste sites listed in Table 1 with solid inventory.
- Reviewed Appendix G of CP-61786 to verify completeness of waste sites listed in Table 1 with liquid discharge inventory.
- Reviewed Appendix E of CP-61786 to verify consistency with Appendix F and Appendix G.
- Reviewed HNF-EP-0182, Rev 362 to confirm status of SSTs and DSTs as assumed leakers, sound, or retrieval completeness.
- Reviewed Appendix G of ECF-HANFORD-17-0079, to verify site other than tank leaks and unplanned releases.
- Reviewed PNNL-14725 to verify completeness of sites that have release volumes without solid or liquid discharge inventory.

11. Summary of Data Review

The review shall ensure that the report meets the listed criteria. Consideration includes ensuring that the data collection method employed was appropriate for the type of data being considered and confidence in the data acquisition and subsequent processing methodology is warranted.



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Is documentation technically adequate, complete, and correct?

☒ Yes ☐ No

Are uncertainties and limitations on appropriate use of data discussed?

☒ Yes ☐ No

Are the assumptions, constraints, bounds, or limits on the data identified?

☒ Yes ☐ No

Data

Approval of Data Configuration Item

Reviewer

Approval

DONNA MORGANS / SENIOR HUMAN HEALTH RISK ASSESSMENT SPECIALIST

NAME/POSITION

Donna L. Morgans

SIGNATURE

10/22/19

DATE

**EMDT accepted for Composite Analysis input in
Data Readiness Review on 1/9/2020.**