5552889

Sandia National Laboratories

Waste Isolation Pilot Plant

Parameter Summary Report:

CRA-2009 Performance Assessment Baseline Calculation

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WIPP:1.2.5:PA:QA-L:549013

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1.0 INTRODUCTION

The Waste Isolation Pilot Plant (WIPP), located in southeastern New Mexico, has been developed by the U.S. Department of Energy (DOE) for the geologic (deep underground) disposal of transuranic (TRU) waste. Containment of TRU waste at the WIPP is regulated by the U.S. Environmental Protection Agency (EPA) according to the regulations set forth in Title 40 of the Code of Federal Regulations (CFR), Part 191 (U.S. EPA 1993). The DOE demonstrates compliance with the containment requirements according to the Certification Criteria in Title 40 CFR Part 194 (U.S. EPA 1996) by means of performance assessment (PA) calculations performed by Sandia National Laboratories (SNL). WIPP PA calculations estimate the probability and consequence of potential radionuclide releases from the repository to the accessible environment for a regulatory period of 10,000 years after facility closure. The models are maintained and updated with new information as part of a recertification process that occurs at five-year intervals after the first waste is received at the site.

PA calculations were included in the 1996 Compliance Certification Application (CCA) (U.S. DOE 1996), and in a subsequent Performance Assessment Verification Test (PAVT) (MacKinnon and Freeze 1997a, 1997b and 1997c). Based in part on the CCA and PAVT PA calculations, the EPA certified that the WIPP met the containment criteria in the regulations and was approved for disposal of transuranic waste in May 1998 (U.S. EPA 1998). PA calculations were also an integral part of the 2004 Compliance Recertification Application (CRA-2004) (U.S. DOE 2004). During their review of the CRA-2004, the EPA requested an additional PA calculation, referred to as the CRA-2004 Performance Assessment Baseline Calculation (PABC) (Leigh et al. 2005), be conducted with modified assumptions and parameter values (Cotsworth 2005).

Since the CRA-2004 PABC, additional PA calculations were completed for and documented in the 2009 Compliance Recertification Application (CRA-2009). The CRA-2009 PA resulted from continued review of the CRA-2004 PABC, including a number of technical changes and corrections, as well as updates to parameters and improvements to the PA computer codes (Clayton et al. 2008). The EPA has requested that additional information, which was received between the commencement of the CRA-2009 PA (December 2007) and the submittal of the CRA-2009 (March 2009), be included in an additional PA calculation (Cotsworth 2009), referred to as the CRA-2009 Performance Assessment Baseline Calculation (PABC-2009). The PABC-2009 analysis is guided by AP-145 (Clayton 2009a). This report documents the parameters used for the PABC-2009.

This document contains information on the parameters used by PA codes. This document includes a listing of the added (see Table 1) and modified (see Table 2) parameters between the CRA-2009 and the PABC-2009, the sampled values for LHS sampled parameters (see Table 4), the fixed-value parameters used in the PA codes (see Table 5 through Table 38) and the parameters relating to the TRU waste inventory (see Table 39 and Table 40). For additional information regarding all parameters, readers are referred to the parameter supporting information packages, which are contained in the SNL WIPP Records Center located at the SNL office in Carlsbad, New Mexico.

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2.0 PARAMETER DEVELOPMENT PROCESS

The development of parameter values is controlled by the application of NP Parameters (NP 9-2, Chavez 2006). The process includes documentation of parameter development by those responsible for completion of a particular experimental investigation, development of a system design, or by staff involved in the PA modeling process. All of the references pertaining to parameter selection are contained within the three levels of parameter and data documentation: (1) Parameter Data Entry Form NP-9-2-1, (2) Analysis records packages, and (3) supporting data records packages.

The Parameter Data Entry Form is the highest-level record documenting parameter development that includes application of statistics and interpretations. The Parameter Data Entry Forms include a justification section, which is a pointer to supporting information including, where applicable, the Analysis plan and source document. All values provided in this attachment were derived from the WIPP PA parameter database. The numbers from the WIPP PA parameter database may differ slightly from those contained in the Parameter Data Entry Forms because of rounding.

The parameter supporting information package includes references to related information, such as Analysis Plans, SAND reports, test plans, and related Electronic Records Management System (ERMS) file codes, and, where applicable, a summary on the experimental data collection (that is, method used, assumptions made in testing, and interpretation). The parameter supporting information packages point to the data records packages contain information such as the raw data, analysis, and data interpretation.

Each Parameter Data Entry Form and parameter supporting information package are assigned unique ERMS numbers. Copies of the Parameter Data Entry Forms and parameter supporting information packages are maintained in the SNL WIPP Records Center.

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3.0 PARAMETER DISTRIBUTIONS

Probability distributions are used to characterize the uncertainty concerning the value of a parameter. Numbers that characterize a particular distribution include the range, the mean, median, and mode (only for triangular distributions).

- ***Range***. The range of a distribution can be denoted by (a,b), a pair of numbers in which a and b are minimum and maximum values of the parameter, respectively.
- ***Mean***. The expectation of a random variable: i.e., the sum (or integral) of the product of the variable and the probability distribution function (PDF) over the range of the variable. There is sample mean and mean: The mean, μ, of a distribution is one measure of the central tendency of a distribution, analogous to the arithmetic average of a series of numbers. The sample mean, $\bar{x}$, is the arithmetic average of value in an empirical data set.
- ***Median.*** The value of a random variable at which its cumulative distribution function (CDF) takes the value 0.5; i.e., the 50th percentile point.
- ***Mode.*** The value of a random variable at which its probability distribution function (PDF) takes its maximum value. The mode of a set of data is the value in the set that occurs most often.

Distributions used to characterize uncertainty in parameters of the PA include: uniform, cumulative, triangular, Student's-t, delta, normal, loguniform, logcumulative, lognormal, and constant.

3.1 UNIFORM DISTRIBUTION

Use of the uniform distribution is appropriate when all that is known about a parameter is its range (a,b); the uniform distribution is the Maximum Entropy distribution under these circumstances (Tierney 1990).

Density Function: $$f(x)=\frac{1}{B-A} \qquad A \le x \le B \tag{1}$$

Distribution Function: $$F(x)=\frac{x-A}{B-A} \qquad A \le x \le B \tag{2}$$

Expected Value: $$E(X)=\frac{A+B}{2} \tag{3}$$

Variance: $$V(X)=\frac{(B-A)^2}{12} \tag{4}$$

Median: $$X_{0.5}=E(X) \tag{5}$$

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3.2 CUMULATIVE DISTRIBUTION

A cumulative distribution (also called a constructed distribution) is described by a set of N ordered pairs:

$$(x_1,0),(x_2,P_2),(x_3,P_3),\ldots,(x_N,1)\{i.e.,\ P_1=0\ and\ P_N=1\ always\} \tag{6}$$

where $x_1 < x_2 < x_3 < \ldots < x_N$ *and* $0 < P_2 < P_3 < \ldots < P_{N-1} < 1$.

The cumulative distribution takes its name from the fact that it closely resembles the empirical CDF obtained by plotting the empirical percentiles of the data set (x_1,x_2,x_3, ..., x_N) (Blom 1989, p. 216). The cumulative distribution used here is the result of plotting the subjectively determined percentile points (x_1,P_1), (x_2,P_2), (x_3,P_3) ... , that arise in a formal elicitation of expert opinion concerning the form of the distribution of the parameter in question.

The cumulative distribution is the Maximum Entropy distribution associated with a set of percentile points (x_1,P_1), (x_2,P_2), ..., (x_N, P_N), no matter how that set of percentile points is obtained (that is, independent of whether the points are empirically or subjectively derived) (Tierney 1990).

Because of the nature of the data, the PDF for this distribution takes the form:

$$P(\xi)=\begin{cases} 0 & \text{if } \xi < x_1 \\ \dfrac{P_n - P_{n-1}}{x_n - x_{n-1}} & \text{if } x_{n-1} \le \xi \le x_n,\ n = 2,3,\ldots,N \\ 0 & \text{if } \xi \ge x_N \end{cases} \tag{7}$$

and so the CDF takes the form:

$$P_r\,[\,X \le \xi\,] \approx \Pi(\xi)=\begin{cases} 0 & if\ \xi < x_1 \\ P_{n-1}+\dfrac{(P_n - P_{n-1})(\xi - x_{n-1})}{(x_n - x_{n-1})} & if\ \dfrac{x_{n-1} \le \xi \le x_x}{n=2,3,\ldots,N} \\ 1 & if\ \xi > x_N \end{cases} \tag{8}$$

Expected Value:
$$E(X)=\sum_{n=2}^{N}(P_n - P_{n-1})\frac{(x_n + x_{n-1})}{2} \tag{9}$$

Variance:
$$V(X)=\sum_{n=2}^{N}(P_n - P_{n-1})\frac{\left(x_n^2 + x_n\,x_{n-1} + x_{n-1}^2\right)}{3} - \{E(X)\}^2 \tag{10}$$

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Median: $$x_{0.50} = x_{m-1} + (x_m - x_{m-1}) \frac{(0.50 - P_{m-1})}{(P_m - P_{m-1})} \text{ where } P_{m-1} \le 0.50 < P_m \quad (11)$$

3.3 TRIANGULAR DISTRIBUTION

The triangular distribution is defined on the range (a,c) and has mode b. The mode can equal either of the two boundary values, which may simplify the computations (Iman and Shortencarier 1984). Use of the triangular distribution is appropriate when the range, (a,c), of the parameter is known and the analyst believes that his or her best estimate value, b, is also the mode (or most probable value) of the unknown distribution.

Density Function:

$$f(x) = \frac{2(x-a)}{(c-a)(b-a)} \qquad a \le x \le b$$

$$= \frac{2(c-x)}{(c-a)(c-b)} \qquad b \le x \le c \quad (12)$$

Distribution Function:

$$F(x) = \frac{(x-a)^2}{(c-a)(b-a)} \qquad a \le x \le b$$

$$= \frac{(b-a)}{(c-a)} - \frac{(x+b-2c)(x-b)}{(c-a)(c-b)} \qquad b \le x \le c \quad (13)$$

Expected Value:

$$E(X) = \frac{a+b+c}{3} \quad (14)$$

Variance:

$$V(X) = \frac{a(a-b)+b(b-c)+c(c-a)}{18} \quad (15)$$

Median:

$$X_{0.5} = a + \sqrt{\frac{(c-a)(b-a)}{2}} \quad \text{if } b \ge \frac{a+c}{2}$$

$$= c - \sqrt{\frac{(c-b)(c-a)}{2}} \quad \text{if } b \le \frac{a+c}{2} \quad (16)$$

3.4 STUDENT'S-T DISTRIBUTION

A Student's-t distribution is a Bayesian distribution for the unknown mean value of a parameter (Tierney 1996). Its use is appropriate when one has measured values of the parameter available (in contrast to values obtained subjectively through elicitation of professional opinion). If N denotes the number of measurements available, and $X_1, X_2, X_3, \ldots, X_N$ denote the values of the measurements, then the expected value or mean of the Student's-t distribution is the sample

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mean. The standard deviation of the mean is the standard deviation divided by $\sqrt{N}$, which is also called the standard error. The median value is equal to the mean value.

The Student's-t distribution applies when there are few measurements, say $3<N<10$. For large N, say $N>20$, there is little difference between the t-distribution and a normal distribution (see below) with the same mean and standard error.

In WIPP PA data characterized by Student's-t distribution are equally weighted. In other words, each measured value X_i is assigned a weight of 1/N, where N is the number of measurements.

3.5 DELTA DISTRIBUTION

The delta distribution is used to assign probabilities to the elements of some set of objects (Martell 1996). For example, if the set consists of four alternative mathematical models of some phenomena and each model is labeled with one of the integers {1,2,3,4}, in other words,

$$M_1, M_2, M_3, M_4 \tag{17}$$

then we might assign the vector of probabilities (p1, p2, p3, p4), where each p_i is a number between 0 and 1 and

$$p_1 + p_2 + p_3 + p_4 = 1. \tag{18}$$

The CDF associated with this delta distribution can be symbolically expressed by

$$F(x) = \sum_{n=1}^{4} p_n u(x-n). \tag{19}$$

The graph of this CDF can be visualized as an ascending staircase starting at zero level for x less than one, and having steps of height p_n at the points x = 1, 2, 3, 4.

The notion of mean value and variance still apply to a delta distribution, but the meanings of these quantities may require careful interpretation. If the M_n represents four different functions (say, discharge as a function of pressure), then it makes sense to talk about mean and variance functions. For the example of the four alternative mathematical models, the mean mathematical model is the linear combination

$$\overline{M} = \sum_{n=1}^{4} p_n M_n \tag{20}$$

and the variance of the models is similarly defined:

$$\Sigma^2 = \sum_{n=1}^{4} p_n \left(\overline{M} - M_n \right)^2 \tag{21}$$

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The notion of median value is meaningless for a delta distribution.

3.6 NORMAL DISTRIBUTION

Use of the normal distribution is appropriate when it is known that the parameter is the sum of independent, identically-distributed random variables (this is seldom the case in practice) and there are a sufficient number of measurements of the parameter (N > 10) to make accurate, unbiased estimates of the mean (μ) and variance (σ^2) (WIPP 1992; Tierney 1990).

Density function:
$$f(x)=\frac{1}{\sigma\sqrt{2\pi}}\exp\left\{\frac{-(x-\mu)^2}{2\sigma^2}\right\} \quad -\infty<x<\infty \tag{22}$$

Distribution function:
$$F(x)=\int_{-\infty}^{x} f(t)\,dt \quad -\infty<x<\infty \tag{23}$$

Expected value:
$$E(X)=\mu \tag{24}$$

Variance:
$$V(X)=\sigma^2 \tag{25}$$

The WIPP PA Program employs a truncated normal distribution where data are concentrated within an interval (lowrange, hirange) (Iman and Shortencarier 1984). The parameters of the truncated distribution can be expressed as follows:

$$E(X)=\mu=\frac{(lowrange+hirange)}{2} \tag{26}$$

$$V(X)=\sigma^2=\left(\frac{hirange-lowrange}{6.18}\right)^2 \tag{27}$$

Median = mean (μ) and lowrange = 0.01 quantile, hirange = 0.99 quantile. The range of the random variable is arbitrarily set to (lowrange, hirange).

3.7 LOGUNIFORM DISTRIBUTION

Use of the loguniform distribution is appropriate when all that is known about a parameter is its range (a,b) and B/A » 10; that is, the range (a,b) spans many orders of magnitude. If X has a loguniform distribution on the interval from A to B where B > A > 0, then Y = $\log_{10}$ X has a uniform distribution from $\log_{10}$ A to $\log_{10}$ B (Iman and Shortencarier 1984).

Density Function:
$$f(x)=\frac{1}{x}(\ln B-\ln A) \quad A<x<B \tag{28}$$

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Distribution Function: $$F(x)=\frac{\ln x-\ln A}{\ln B-\ln A} \quad A<x<B \tag{29}$$

Expected Value: $$E(X)=\frac{B-A}{\ln B-\ln A} \tag{30}$$

Variance: $$V(X)=(B-A)\left[\frac{(\ln B-\ln A)(B+A)-2(B-A)}{2(\ln B-\ln A)^2}\right] \tag{31}$$

Median: $$X_{0.5}=\sqrt{AB} \tag{32}$$

3.8 LOGCUMULATIVE DISTRIBUTION

In this case, the independent variable is Y, where $Y = \log_{10} X$. As with the cumulative distribution, this distribution is described by a set of N ordered pairs (Martell 1996):

$$(y_1,0),(y_2,P_2),(y_3,P_3),\ldots,(y_N,1)\{i.e.,\ P_1=0\ and\ P_N=1\ always\} \tag{33}$$

where $y_1 < y_2 < y_3 < \ldots < y_N$ *and* $0 < P_2 < P_3 < \ldots < P_{N-1} < 1$

Because of the nature of the data, the PDF for this distribution takes the form:

$$P(\xi)=\begin{cases} 0 & \text{if } \xi < x_1 \\ \dfrac{P_n-P_{n-1}}{\ln(x_n)-\ln(x_{n-1})}\dfrac{1}{\xi} & \text{if } x_{n-1}\le\xi\le x_n,\ n=2,3,\ldots,N \\ 0 & \text{if } \xi \ge x_N \end{cases} \tag{34}$$

and so the CDF takes the form:

$$Pr[X\le\xi]=\begin{cases} 0 & if\ \xi < x_1 \\ P_{n-1}+\dfrac{(P_n-P_{n-1})(\ln(\xi)-\ln(x_{n-1}))}{(\ln(x_n)-\ln(x_{n-1}))} & if\ \dfrac{x_{n-1}\le\xi\le x_x}{n=2,3,\ldots,N} \\ 1 & if\ \xi > x_N \end{cases} \tag{35}$$

Expected Value: $$E(X)=\sum_{n=2}^{N}(P_n-P_{n-1})\frac{(x_n-x_{n-1})}{\ln(x_n)-\ln(x_{n-1})} \tag{36}$$

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Variance: $$V(X)=\sum_{n=2}^{N}\frac{1}{2}(P_n-P_{n-1})\frac{\left(x_n^2-x_{n-1}^2\right)}{\ln(x_n)-\ln(x_{n-1})}-\{E(X)\}^2 \quad (37)$$

Median: $$X_{0.5}=10^{\left[x_{m-1}+(x_m-x_{m-1})\frac{0.5-P_{m-1}}{P_m-P_{m-1}}\right]} \quad \text{where } P_{m-1}\le 0.5\le P_m \quad (38)$$

3.9 LOGNORMAL DISTRIBUTION

If X ~ normal distribution with mean, μ, and variance, σ^2, and $Y = e^X$, the Y has a lognormal distribution.

Density function: $$f(y)=\frac{1}{y\sigma\sqrt{2\pi}}\exp\left\{\frac{-(\ln y-\mu)^2}{2\sigma^2}\right\} \quad y>0 \quad (39)$$

Distribution function: $$F(x)=\int_0^y f(t)\,dt \quad y>0 \quad (40)$$

Expected value: $$E(Y)=\exp\left(\mu+\frac{\sigma^2}{2}\right) \quad (41)$$

Variance: $$V(Y)=\exp\left(2\mu+\sigma^2\right)\left[\exp\left(\sigma^2\right)-1\right] \quad (42)$$

Median: $$X_{0.5}=e^{\mu} \quad (43)$$

As with the truncated normal distribution, the truncated lognormal distribution requires lowrange and hirange values. These values are in logarithmic form and are utilized in a normal distribution to determine a mean (μ) and a variance (σ^2), which in turn are used to identify the expected value and variance for the lognormal distribution (Iman and Shortencarier 1984).

3.10 CONSTANTS

Parameters may also be assigned a constant value in the PA parameter database.

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4.0 PARAMETER CORRELATION

Parameter correlations used in PA are exclusively in the code LHS. Consequently, parameter correlations affect only sampled parameters. Two types of parameter correlations are used. They are defined as explicit parameter correlation and induced parameter correlation. This section addresses the following criteria concerning parameter correlations, as specified in 40 CFR § 194.23(c)(6):

> (c) Documentation of all models and computer codes included, as part of any compliance application performance assessment calculation shall be provided. Such documentation shall include, but shall not be limited to:
>
> (6) An explanation of the manner in which models and computer codes incorporate the effects of parameter correlation.

Explicit parameter correlations are introduced or prohibited in the LHS code by the restricted pairing technique of Iman and Conover (1982). Two parameter correlations are specified in this PA through this technique. These correlations are all related to rock compressibility and permeability. In the impure halite material region in BRAGFLO, rock compressibility (S_HALITE:COMP_RCK) and intrinsic permeability (S_HALITE:PRMX_LOG) are inverse correlated with a correlation coefficient of -0.99. In the Castile brine reservoir material region in BRAGFLO, rock compressibility (CASTILER:COMP_RCK) and intrinsic permeability (CASTILER:PRMX_LOG) are inverse correlated with a correlation coefficient of -0.75. Explicit parameter correlation is not used to correlate any other sampled parameters.

Rock compressibilities and intrinsic permeabilities are correlated to be most consistent with interpretations of the hydraulic tests that have been performed in these units. In hydraulic testing, hydraulic diffusivity (the ratio of permeability to compressibility) is determined more precisely than either permeability or compressibility alone. Introducing the correlation of the permeability and compressibility parameters in PA better represents the knowledge of the formation gained from hydraulic testing than specifying no correlation whatsoever.

An induced correlation in PA is created when a parameter sampled in the LHS code (the underlying variable) is used to define the values of other parameters (defined variables). This is a prevalent method of correlation in this PA. For example, uncertainty in dissolved actinide oxidation states is represented in the LHS code by sampling the OXSTAT parameter (GLOBAL:OXSTAT). The results of this sampling are used in part to determine actinide solubilities, colloidal actinide concentrations, and K_d values used for a particular vector. Selected examples of other induced parameter correlations include:

- the underlying variable x-direction permeability and the defined variables y- and z-direction permeabilities in many materials,
- the underlying variable x-direction permeability and defined variable threshold pressure in many materials,
- the underlying variable Lower Salado Clay permeability and the defined variable permeabilities of other clay members,

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- the underlying variable residual gas saturation (or other two-phase flow parameters) in many materials and the defined variable residual gas saturation (or other two-phase flow parameters) in other materials.

There are four additional ways in which parameter correlations may be considered to be used in this PA, although they are not typically discussed as correlations per se. In a given LHS sample element, there is a correlation of 1 (100 percent) between the single observation of subjective uncertainty (the LHS sample for a complementary cumulative distribution function (CCDF)) with all of the sequences of random future events (scenarios) used to construct a CCDF.

A correlation is made between the scenario being considered and the chemical properties (chemical composition) of brine in the repository (the physical properties viscosity and density are assumed to be the same for all scenarios). Brine composition affects actinide solubility. For undisturbed performance and E2 scenarios, brine composition is considered to be that of Salado brine. For the E1 and E2 scenarios, the brine composition is considered to be that of Castile brine.

There are some correlations made in the construction of a CCDF regarding the similarity of events in a sequence of random future events. For example, the direct releases resulting from a third or later intrusion are determined from the calculated conditions following the second intrusion.

Finally, there are also correlations among model parameters developed explicitly by the governing equations of computational models used. For example, the porosity of nodal blocks in BRAGFLO is a function of the initial porosity, pressure change, and compressibility.

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5.0 PABC-2009 PARAMETER VALUES

A number of parameters were updated or added since the CRA-2009 PA (Section 5.1). The parameter values for the sampled parameters (Section 5.2) and constant parameters (Section 5.3) are also discussed in this section.

5.1 CHANGES TO PARAMETERS BETWEEN THE CRA-2009 PA AND THE PABC-2009

Nineteen parameters have been added since the CRA-2009 PA and are listed in Table 1. These parameters have been added to remove the numerical values that were typed in the PA input files (Clayton 2009a, Clayton 2009b, and Nemer 2009). For the PABC-2009, 130 parameters were modified from the values used in the CRA-2009 PA and are shown in Table 2. The majority of the parameters were modified to include the updated information in the PA inventory report (Fox, Clayton and Kirchner 2009, Brush, Xiong and Long 2009 and Xiong et al. 2009), drilling report (Clayton 2009a) and groundwater data (Beauheim 2009). Seventeen parameters were modified to remove the numerical values that were typed in the PA input files (Nemer 2009). Seven parameters were modified in response to an EPA completeness comment (Clayton 2009c).

Table 1. Parameters Added for the PABC-2009

Material Name	Property Name	Code	Distribution	Reference
DRZ_0	ADDPOR	BRAGFLO	Constant	Nemer 2009
DRZ_0	DPHIMAX	BRAGFLO	Constant	Nemer 2009
DRZ_0	IFRX	BRAGFLO	Constant	Nemer 2009
DRZ_0	IFRY	BRAGFLO	Constant	Nemer 2009
DRZ_0	IFRZ	BRAGFLO	Constant	Nemer 2009
DRZ_0	KMAXLOG	BRAGFLO	Constant	Nemer 2009
DRZ_0	PF_DELTA	BRAGFLO	Constant	Nemer 2009
DRZ_0	PI_DELTA	BRAGFLO	Constant	Nemer 2009
REFCON	DIP2	BRAGFLO	Constant	Nemer 2009
REFCON	PLASFAC	BRAGFLO	Constant	Nemer 2009
SHFTL_T1	CAP_MOD	BRAGFLO	Constant	Nemer 2009
SHFTL_T2	CAP_MOD	BRAGFLO	Constant	Nemer 2009
SHFTU	CAP_MOD	BRAGFLO	Constant	Nemer 2009
WAS_AREA	SMIC_CO2	BRAGFLO	Constant	Nemer 2009
REFCON	DIP1	BRAGFLO/DBR	Constant	Nemer 2009
CONC_PCS	THKCONC	DBR	Constant	Clayton 2009b
CONC_PCS	THKOPEN	DBR	Constant	Clayton 2009b
DRZ_1	EHEIGHT	DBR	Constant	Clayton 2009b
GLOBAL	DBRMINBV	PANEL	Constant	Clayton 2009a

The tables identify the Material Name, Property Name, Code(s) that utilize the parameter and distribution type. Details and justification of parameter changes are documented the individual parameter's data entry form and supporting justification document(s). The references for the

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supporting justification documents for the new and updated parameters are shown in Table 1 and Table 2

Table 2. Parameters Changed for the PABC-2009

Material Name	Property Name	Code	Distribution	Reference
CAVITY_1	PRESSURE	BRAGFLO	Constant	Nemer 2009
CAVITY_2	PRESSURE	BRAGFLO	Constant	Nemer 2009
CONC_MON	CAP_MOD	BRAGFLO	Constant	Nemer 2009
CONC_MON	PCT_A	BRAGFLO	Constant	Nemer 2009
CONC_MON	PCT_EXP	BRAGFLO	Constant	Nemer 2009
CONC_PCS	CAP_MOD	BRAGFLO	Constant	Nemer 2009
CONC_PCS	PCT_A	BRAGFLO	Constant	Nemer 2009
CONC_PCS	PCT_EXP	BRAGFLO	Constant	Nemer 2009
CULEBRA	PRESSURE	BRAGFLO	Constant	Beauheim 2009
CULEBRA	PRMX_LOG	BRAGFLO	Constant	Beauheim 2009
CULEBRA	PRMY_LOG	BRAGFLO	Constant	Beauheim 2009
CULEBRA	PRMZ_LOG	BRAGFLO	Constant	Beauheim 2009
DEWYLAKE	CAP_MOD	BRAGFLO	Constant	Nemer 2009
DEWYLAKE	PCT_A	BRAGFLO	Constant	Nemer 2009
DEWYLAKE	PCT_EXP	BRAGFLO	Constant	Nemer 2009
MAGENTA	PRESSURE	BRAGFLO	Constant	Beauheim 2009
MAGENTA	PRMX_LOG	BRAGFLO	Constant	Beauheim 2009
MAGENTA	PRMY_LOG	BRAGFLO	Constant	Beauheim 2009
MAGENTA	PRMZ_LOG	BRAGFLO	Constant	Beauheim 2009
NITRATE	QINIT	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
SHFTL_T1	PCT_A	BRAGFLO	Constant	Nemer 2009
SHFTL_T1	PCT_EXP	BRAGFLO	Constant	Nemer 2009
SHFTL_T2	PCT_A	BRAGFLO	Constant	Nemer 2009
SHFTL_T2	PCT_EXP	BRAGFLO	Constant	Nemer 2009
SHFTU	PCT_A	BRAGFLO	Constant	Nemer 2009
SHFTU	PCT_EXP	BRAGFLO	Constant	Nemer 2009
SULFATE	QINIT	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DCELCCHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DCELECHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DCELLCHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009

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Table 2. Parameters Changed for the PABC-2009 — Continued

Material Name	Property Name	Code	Distribution	ERMS
WAS_AREA	DCELLRHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DIRNCCHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DIRNCRHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DIRONCHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DIRONRHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DPLASCHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DPLASRHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DPLSCCHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DPLSCRHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DPLSECHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DRUBBCHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
WAS_AREA	DRUBBRHW	BRAGFLO	Constant	Fox, Clayton and Kirchner 2009
AM241	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
AM241	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
AM241L	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
AM241L	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
AM243	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
AM243	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CF252	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CF252	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CM243	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009

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Table 2. Parameters Changed for the PABC-2009 — Continued

Material Name	Property Name	Code	Distribution	ERMS
CM243	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CM244	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CM244	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CM245	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CM245	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CM248	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CM248	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CS137	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
CS137	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
NP237	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
NP237	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PA231	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PA231	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PB210	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PB210	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PM147	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PM147	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU238	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU238	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU238L	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU238L	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009

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Table 2. Parameters Changed for the PABC-2009 — Continued

Material Name	Property Name	Code	Distribution	ERMS
PU239	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU239	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU239L	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU239L	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU240	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU240	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU241	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU241	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU242	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU242	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU244	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
PU244	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
RA226	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
RA226	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
RA228	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
RA228	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
SOLMOD3	SOLCOH	PANEL	Constant	Brush, Xiong and Long 2009
SOLMOD3	SOLSOH	PANEL	Constant	Brush, Xiong and Long 2009
SOLMOD4	SOLCOH	PANEL	Constant	Brush, Xiong and Long 2009
SOLMOD4	SOLSOH	PANEL	Constant	Brush, Xiong and Long 2009
SOLMOD5	SOLCOH	PANEL	Constant	Brush, Xiong and Long 2009

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Table 2. Parameters Changed for the PABC-2009 — Continued

Material Name	Property Name	Code	Distribution	ERMS
SOLMOD5	SOLSOH	PANEL	Constant	Brush, Xiong and Long 2009
SR90	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
SR90	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
TH229	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
TH229	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
TH230	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
TH230	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
TH230L	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
TH230L	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
TH232	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
TH232	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U233	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U233	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U234	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U234	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U234L	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U234L	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U235	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U235	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U236	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U236	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009

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Table 2. Parameters Changed for the PABC-2009 — Continued

Material Name	Property Name	Code	Distribution	ERMS
U238	INVCHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
U238	INVRHD	PANEL	Constant	Fox, Clayton and Kirchner 2009
BOREHOLE	WUF	PANEL/PRECCDFGF	Constant	Fox, Clayton and Kirchner 2009
GLOBAL	LAMBDAD	PRECCDFGF	Constant	Clayton 2009a
GLOBAL	ONEPLG	PRECCDFGF	Constant	Clayton 2009a
GLOBAL	THREEPLG	PRECCDFGF	Constant	Clayton 2009a
GLOBAL	TWOPLG	PRECCDFGF	Constant	Clayton 2009a
SOLMOD3	SOLVAR	PRELHS/PANEL	Cumulative	Xiong et al. 2009
SOLMOD4	SOLVAR	PRELHS/PANEL	Cumulative	Xiong et al. 2009
AM+3	MKD_AM	PRELHS/SECOTP2D	Loguniform	Clayton 2009c
NP+4	MKD_NP	*	Loguniform	Clayton 2009c
NP+5	MKD_NP	*	Loguniform	Clayton 2009c
PU+3	MKD_PU	PRELHS/SECOTP2D	Loguniform	Clayton 2009c
PU+4	MKD_PU	PRELHS/SECOTP2D	Loguniform	Clayton 2009c
TH+4	MKD_TH	PRELHS/SECOTP2D	Loguniform	Clayton 2009c
U+4	MKD_U	PRELHS/SECOTP2D	Loguniform	Clayton 2009c

*This parameter was not used in the PABC-2009, but was updated in case of future use.

5.2 SAMPLED PARAMETERS

The parameters sampled by the LHS code are listed in Table 3. The table identifies the parameter number (the number represents the sample order), the Material Name, the Property Name and the code that utilizes the parameter. Parameter sampling order has not changed since the CRA-2009 PA.

Table 3. Index of LHS Sampled Parameters for PABC-2009

Parameter #	Material Name	Property Name	Code
Parameter 1	GLOBAL	PBRINE	PRECCDFGF
Parameter 2	REFCON	LHSBLANK	N/A
Parameter 3	REFCON	LHSBLANK	N/A
Parameter 4	BOREHOLE	DOMEGA	CUTTINGS_S
Parameter 5	BOREHOLE	TAUFAIL	CUTTINGS_S
Parameter 6	REFCON	LHSBLANK	N/A
Parameter 7	REFCON	LHSBLANK	N/A
Parameter 8	SPALLMOD	REPIPERM	DRSPALL
Parameter 9	SPALLMOD	TENSLSTR	DRSPALL
Parameter 10	SPALLMOD	PARTDIAM	DRSPALL

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Table 3. Index of LHS Sampled Parameters for PABC-2009 — Continued

Parameter #	Material Name	Property Name	Code
Parameter 11	SPALLMOD	REPIPOR	DRSPALL
Parameter 12	REFCON	LHSBLANK	N/A
Parameter 13	REFCON	LHSBLANK	N/A
Parameter 14	REFCON	LHSBLANK	N/A
Parameter 15	SOLMOD3	SOLVAR	PANEL
Parameter 16	SOLMOD4	SOLVAR	PANEL
Parameter 17	PHUMOX3	PHUMCIM	PANEL
Parameter 18	GLOBAL	OXSTAT	PANEL / SECOTP2D
Parameter 19	REFCON	LHSBLANK	N/A
Parameter 20	REFCON	LHSBLANK	N/A
Parameter 21	REFCON	LHSBLANK	N/A
Parameter 22	REFCON	LHSBLANK	N/A
Parameter 23	CULEBRA	MINP_FAC	SECOTP2D
Parameter 24	GLOBAL	TRANSIDX	SECOTP2D
Parameter 25	GLOBAL	CLIMTIDX	SECOTP2D
Parameter 26	CULEBRA	HMBLKLT	SECOTP2D
Parameter 27	CULEBRA	APOROS	SECOTP2D
Parameter 28	CULEBRA	DPOROS	SECOTP2D
Parameter 29	U+6	MKD_U	SECOTP2D
Parameter 30	U+4	MKD_U	SECOTP2D
Parameter 31	PU+3	MKD_PU	SECOTP2D
Parameter 32	PU+4	MKD_PU	SECOTP2D
Parameter 33	TH+4	MKD_TH	SECOTP2D
Parameter 34	AM+3	MKD_AM	SECOTP2D
Parameter 35	REFCON	LHSBLANK	N/A
Parameter 36	REFCON	LHSBLANK	N/A
Parameter 37	REFCON	LHSBLANK	N/A
Parameter 38	REFCON	LHSBLANK	N/A
Parameter 39	STEEL	CORRMCO2	BRAGFLO
Parameter 40	WAS_AREA	PROBDEG	BRAGFLO / PANEL
Parameter 41	WAS_AREA	GRATMICI	BRAGFLO
Parameter 42	WAS_AREA	GRATMICH	BRAGFLO
Parameter 43	CELLULS	FBETA	BRAGFLO
Parameter 44	WAS_AREA	SAT_RGAS	BRAGFLO
Parameter 45	WAS_AREA	SAT_RBRN	BRAGFLO
Parameter 46	WAS_AREA	SAT_WICK	BRAGFLO
Parameter 47	DRZ_PCS	PRMX_LOG	BRAGFLO
Parameter 48	CONC_PCS	PRMX_LOG	BRAGFLO
Parameter 49	CONC_PCS	SAT_RGAS	BRAGFLO
Parameter 50	CONC_PCS	SAT_RBRN	BRAGFLO
Parameter 51	CONC_PCS	PORE_DIS	BRAGFLO

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Table 3. Index of LHS Sampled Parameters for PABC-2009 — Continued

Parameter #	Material Name	Property Name	Code
Parameter 52	S_HALITE	POROSITY	BRAGFLO
Parameter 53	S_HALITE	PRMX_LOG	BRAGFLO
Parameter 54	S_HALITE	COMP_RCK	BRAGFLO
Parameter 55	S_MB139	PRMX_LOG	BRAGFLO
Parameter 56	S_MB139	RELP_MOD	BRAGFLO
Parameter 57	S_MB139	SAT_RBRN	BRAGFLO
Parameter 58	S_MB139	PORE_DIS	BRAGFLO
Parameter 59	S_HALITE	PRESSURE	BRAGFLO
Parameter 60	CASTILER	PRESSURE	BRAGFLO
Parameter 61	CASTILER	PRMX_LOG	BRAGFLO
Parameter 62	CASTILER	COMP_RCK	BRAGFLO
Parameter 63	BH_SAND	PRMX_LOG	BRAGFLO
Parameter 64	DRZ_1	PRMX_LOG	BRAGFLO
Parameter 65	CONC_PLG	PRMX_LOG	BRAGFLO
Parameter 66	SHFTU	SAT_RBRN	BRAGFLO
Parameter 67	SHFTU	SAT_RGAS	BRAGFLO
Parameter 68	SHFTU	PRMX_LOG	BRAGFLO
Parameter 69	SHFTL_T1	PRMX_LOG	BRAGFLO
Parameter 70	SHFTL_T2	PRMX_LOG	BRAGFLO
Parameter 71	WAS_AREA	BIOGENFC	BRAGFLO
Parameter 72	REFCON	LHSBLANK	N/A
Parameter 73	REFCON	LHSBLANK	N/A
Parameter 74	REFCON	LHSBLANK	N/A
Parameter 75	REFCON	LHSBLANK	N/A

Sampled values for LHS sampled parameters are listed in Table 4. The table identifies the Parameter number (sample order), the Material Name, Material description, Property name, Property description, Distribution type, Units of measure, Mean value, Median value, Low value, High value and Standard Deviation.

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Table 4. Parameters Sampled in LHS Code (and parameters to which sampled values were applied)

Parameter #	Material	Material Description	Property	Property Description	Distribution Type	Units	Mean	Median	Low	High	Standard Deviation
1	GLOBAL	Information that applies globally	PBRINE	Prob. that Drilling Intrusion In Excavated Area Encounters Pressurized Brine	Uniform	NONE	3.05E-01	3.05E-01	1.00E-02	6.00E-01	1.70E-01
2	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
3	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
4	BOREHOLE	Borehole and Fill	DOMEGA	Drill string angular velocity	Cumulative	rad/s	8.63E+00	7.80E+00	4.20E+00	2.30E+01	3.16E+00
5	BOREHOLE	Borehole and Fill	TAUFAIL	Effective shear strength for erosion (rfail)	Loguniform	Pa	1.05E+01	1.96E+00	5.00E-02	7.70E+01	1.71E+01
6	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
7	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
8	SPALLMOD	Material developed for DRSPALL	REPIPERM	Waste permeability to gas local to intrusion borehole	Loguniform	m^2	5.16E-13	2.4E-13	2.4E -14	2.4E -12	6.0E-13
9	SPALLMOD	Material developed for DRSPALL	TENSLSTR	Tensile strength of waste	Uniform	Pa	1.45E+05	1.45E+05	1.20E +5	1.70E +5	1.44E+04
10	SPALLMOD	Material developed for DRSPALL	PARTDIAM	Particle diameter of diaggregated waste	Loguniform	m	2.15E-02	1.0E-02	1.00E -3	1.00E -1	2.5E-02
11	SPALLMOD	Material developed for DRSPALL	REPIPOR	Waste porosity at time of drilling intrusion	Uniform	NONE	5.05E-01	5.05E-01	3.5E-01	6.6E-01	8.95E-02
12	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
13	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
14	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
15	SOLMOD3	Oxidation state III model	SOLVAR	Solubility multiplier	Cumulative	NONE	-0.142	0.072	-4.20	2.70	1.17
16	SOLMOD4	Oxidation state IV model	SOLVAR	Solubility multiplier	Cumulative	NONE	-0.346	-0.520	-2.25	3.30	0.995
17	PHUMOX3	Proportionality Constant, +3 State, Humic Colloids	PHUMCIM	Proportionality Const., Humic Colloids, Castile Brine, MgO controls pH	Cumulative	NONE	1.10E+00	1.37E+00	6.50E-02	1.60E+00	4.69E-01
18	GLOBAL	Information that applies globally	OXSTAT	Index for the Oxidation State	Uniform	NONE	5.00E-01	5.00E-01	0.00E+00	1.00E+00	2.89E-01
19	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
20	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01

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Table 4. Parameters Sampled in LHS Code (and parameters to which sampled values were applied) — Continued

Parameter #	Material	Material Description	Property	Property Description	Distribution Type	Units	Mean	Median	Low	High	Standard Deviation
21	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
22	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
23	CULEBRA	Culebra member of the Rustler formation	MINP_FAC	Mining Transmissivity Multiplier	Uniform	NONE	5.01E+02	5.01E+02	1.00E+00	1.00E+03	2.88E+02
24	GLOBAL	Information that applies globally	TRANSIDX	Index for selecting realizations of the Transmissivity Field	Uniform	NONE	5.00E-01	5.00E-01	0.00E+00	1.00E+00	2.89E-01
25	GLOBAL	Information that applies globally	CLIMTIDX	Climate Index	Cumulative	NONE	1.31E+00	1.17E+00	1.00E+00	2.25E+00	3.48E-01
26	CULEBRA	Culebra member of the Rustler formation	HMBLKLT	Culebra Half Matrix-Block Length	Uniform	m	2.75E-01	2.75E-01	5.00E-02	5.00E-01	1.30E-01
27	CULEBRA	Culebra member of the Rustler formation	APOROS	Culebra Advective Porosity	Loguniform	NONE	2.10E-03	1.00E-03	1.00E-04	1.00E-02	2.50E-03
28	CULEBRA	Culebra member of the Rustler formation	DPOROS	Diffusive Porosity for Culebra Dolomite	Cumulative	NONE	1.60E-01	1.60E-01	1.00E-01	2.50E-01	3.50E-02
29	U+6	Uranium VI	MKD_U	Matrix Partition Coefficient for Uranium	Loguniform	m^3/kg	3.10E-03	7.70E-04	3.00E-05	2.00E-02	4.60E-03
30	U+4	Uranium IV	MKD_U	Matrix Partition Coefficient for Uranium	Loguniform	m^3/kg	1.0	0.071	0.0005	10.0	2.0
31	PU+3	Plutonium III	MKD_PU	Matrix Partition Coefficient for Plutonium	Loguniform	m^3/kg	0.090	0.045	0.005	0.4	0.10
32	PU+4	Plutonium IV	MKD_PU	Matrix Partition Coefficient for Plutonium	Loguniform	m^3/kg	1.0	0.071	0.0005	10.0	2.0
33	TH+4	Thorium IV	MKD_TH	Matrix Partition Coefficient for Thorium	Loguniform	m^3/kg	1.0	0.071	0.0005	10.0	2.0
34	AM+3	Americium III	MKD_AM	Matrix partition coefficient for americium	Loguniform	m^3/kg	0.090	0.045	0.005	0.4	0.10
35	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
36	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
37	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
38	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
39	STEEL	Generic steel in waste	CORRMCO2	Inundated corrosion rate for steel without CO2 present	Uniform	m/s	1.59E-14	1.59E-14	0.00E+00	3.17E-14	9.15E-15
40	WAS_AREA	Waste emplacement area and waste	PROBDEG	Probability of plastics and rubber biodegradation in event of microbial gas generation	Delta	NONE	1.25E+00	1.25E+00	1.00E+00	2.00E+00	0.00E+00

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Table 4. Parameters Sampled in LHS Code (and parameters to which sampled values were applied) — Continued

Parameter #	Material	Material Description	Property	Property Description	Distribution Type	Units	Mean	Median	Low	High	Standard Deviation
41	WAS_AREA	Waste emplacement area and waste	GRATMICI	Inundated biodegradation rate for cellulose	Uniform	moles/(kg*s)	2.94E-10	2.94E-10	3.08E-11	5.57E-10	1.52E-10
42	WAS_AREA	Waste emplacement area and waste	GRATMICH	Humid biodegredation rate for cellulose	Uniform	moles/(kg*s)	5.14E-10	5.14E-10	0.00E+00	1.03E-09	2.97E-10
43	CELLULS	Cellulose	FBETA	Factor beta for microbial reaction rates	Uniform	NONE	5.00E-01	5.00E-01	0.00E+00	1.00E+00	2.89E-01
44	WAS_AREA	Waste emplacement area and waste	SAT_RGAS	Residual Gas Saturation	Uniform	NONE	7.50E-02	7.50E-02	0.00E+00	1.50E-01	4.33E-02
(44)	DRZ_PCS	DRZ directly above concrete portion of panel closure	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.0E+00	0.0E+00	0.00E+00	0.0E+00	0.0E+00
(44)	REPOSIT	Repository regions outside of panel region	SAT_RGAS	Residual Gas Saturation	Uniform	NONE	7.50E-02	7.50E-02	0.00E+00	1.50E-01	4.33E-02
45	WAS_AREA	Waste emplacement area and waste	SAT_RBRN	Residual Brine Saturation	Uniform	NONE	2.76E-01	2.76E-01	0.00E+00	5.52E-01	1.59E-01
(45)	DRZ_PCS	DRZ directly above concrete portion of panel closure	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.0E+00	0.0E+00	0.00E+00	0.0E+00	0.0E+00
(45)	REPOSIT	Repository regions outside of panel region	SAT_RBRN	Residual Brine Saturation	Uniform	NONE	2.76E-01	2.76E-01	0.00E+00	5.52E-01	1.59E-01
46	WAS_AREA	Waste emplacement area and waste	SAT_WICK	Index for computing wicking	Uniform	NONE	5.00E-01	5.00E-01	0.00E+00	1.00E+00	2.89E-01
47	DRZ_PCS	DRZ directly above concrete portion of panel closure	PRMX_LOG	Log of intrinsic permeability, X-direction	Triangular	log(m^2)	-1.88E+01	-1.87E+01	-2.07E+01	-1.70E+01	7.55E-01
(47)	DRZ_PCS	DRZ directly above concrete portion of panel closure	PRMY_LOG	Log of intrinsic permeability, Y-direction	Triangular	log(m^2)	-1.88E+01	-1.87E+01	-2.07E+01	-1.70E+01	7.55E-01
(47)	DRZ_PCS	DRZ directly above concrete portion of panel closure	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Triangular	log(m^2)	-1.88E+01	-1.87E+01	-2.07E+01	-1.70E+01	7.55E-01
48	CONC_PCS	Concrete portion of PCS	PRMX_LOG	Log of intrinsic permeability, X-direction	Triangular	log(m^2)	-1.88E+01	-1.87E+01	-2.07E+01	-1.70E+01	7.55E-01
(48)	CONC_PCS	Concrete portion of PCS	PRMY_LOG	Log of intrinsic permeability, Y-direction	Triangular	log(m^2)	-1.88E+01	-1.87E+01	-2.07E+01	-1.70E+01	7.55E-01
(48)	CONC_PCS	Concrete portion of PCS	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Triangular	log(m^2)	-1.88E+01	-1.87E+01	-2.07E+01	-1.70E+01	7.55E-01
49	CONC_PCS	Concrete portion of PCS	SAT_RGAS	Residual Gas Saturation	Uniform	NONE	2.00E-01	2.00E-01	0.00E+00	4.00E-01	1.16E-01
50	CONC_PCS	Concrete portion of PCS	SAT_RBRN	Residual Brine Saturation	Cumulative	NONE	2.50E-01	2.00E-01	0.00E+00	6.00E-01	1.76E-01
51	CONC_PCS	Concrete portion of PCS	PORE_DIS	Brooks-Corey pore distribution parameter	Cumulative	NONE	2.52E+00	9.40E-01	1.10E-01	8.10E+00	2.48E+00
52	S_HALITE	Salado halite, intact	POROSITY	Effective porosity	Cumulative	NONE	1.82E-02	1.00E-02	1.00E-03	5.19E-02	1.54E-02

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Table 4. Parameters Sampled in LHS Code (and parameters to which sampled values were applied) — Continued

Parameter #	Material	Material Description	Property	Property Description	Distribution Type	Units	Mean	Median	Low	High	Standard Deviation
53	S_HALITE	Salado halite, intact	PRMX_LOG	Log of intrinsic permeability, X-direction	Uniform	log(m^2)	-2.25E+01	-2.25E+01	-2.40E+01	-2.10E+01	8.66E-01
(53)	S_HALITE	Salado halite, intact	PRMY_LOG	Log of intrinsic permeability, Y-direction	Uniform	log(m^2)	-2.25E+01	-2.25E+01	-2.40E+01	-2.10E+01	8.66E-01
(53)	S_HALITE	Salado halite, intact	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Uniform	log(m^2)	-2.25E+01	-2.25E+01	-2.40E+01	-2.10E+01	8.66E-01
54	S_HALITE	Salado halite, intact	COMP_RCK	Bulk Compressibility	Uniform	Pa^{-1}	9.75E-11	9.75E-11	2.94E-12	1.92E-10	5.46E-11
55	S_MB139	Salado marker bed 139, intact and fractured	PRMX_LOG	Log of intrinsic permeability, X-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
(55)	S_MB139	Salado marker bed 139, intact and fractured	PRMY_LOG	Log of intrinsic permeability, Y-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
(55)	S_MB139	Salado marker bed 139, intact and fractured	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
(55)	S_MB138	Salado marker bed 138, intact and fractured	PRMX_LOG	Log of intrinsic permeability, X-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
(55)	S_MB138	Salado marker bed 138, intact and fractured	PRMY_LOG	Log of intrinsic permeability, Y-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
(55)	S_MB138	Salado marker bed 138, intact and fractured	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
(55)	S_ANH_AB	Salado anhydrite beds A and B, intact and fractured	PRMX_LOG	Log of intrinsic permeability, X-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
(55)	S_ANH_AB	Salado anhydrite beds A and B, intact and fractured	PRMY_LOG	Log of intrinsic permeability, Y-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
(55)	S_ANH_AB	Salado anhydrite beds A and B, intact and fractured	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Student	log(m^2)	-1.89E+01	-1.89E+01	-2.10E+01	-1.71E+01	1.20E+00
56	S_MB139	Salado marker bed 139, intact and fractured	RELP_MOD	Model number, relative permeability model	Delta	NONE	4.00E+00	4.00E+00	1.00E+00	4.00E+00	0.00E+00
(56)	S_MB138	Salado marker bed 138, intact and fractured	RELP_MOD	Model number, relative permeability model	Delta	NONE	4.00E+00	4.00E+00	1.00E+00	4.00E+00	0.00E+00
(56)	S_ANH_AB	Salado anhydrite beds A and B, intact and fractured	RELP_MOD	Model number, relative permeability model	Delta	NONE	4.00E+00	4.00E+00	1.00E+00	4.00E+00	0.00E+00
57	S_MB139	Salado marker bed 139, intact and fractured	SAT_RBRN	Residual Brine Saturation	Student	NONE	8.36E-02	8.36E-02	7.78E-03	1.74E-01	5.01E-02
(57)	S_MB138	Salado marker bed 138, intact and fractured	SAT_RBRN	Residual Brine Saturation	Student	NONE	8.36E-02	8.36E-02	7.78E-03	1.74E-01	5.01E-02
(57)	S_ANH_AB	Salado anhydrite beds A and B, intact and fractured	SAT_RBRN	Residual Brine Saturation	Student	NONE	8.36E-02	8.36E-02	7.78E-03	1.74E-01	5.01E-02

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Table 4. Parameters Sampled in LHS Code (and parameters to which sampled values were applied) — Continued

Parameter #	Material	Material Description	Property	Property Description	Distribution Type	Units	Mean	Median	Low	High	Standard Deviation
58	S_MB139	Salado marker bed 139, intact and fractured	PORE_DIS	Brooks-Corey pore distribution parameter	Student	NONE	6.44E-01	6.44E-01	4.91E-01	8.42E-01	1.09E-01
(58)	S_MB138	Salado marker bed 138, intact and fractured	PORE_DIS	Brooks-Corey pore distribution parameter	Student	NONE	6.44E-01	6.44E-01	4.91E-01	8.42E-01	1.09E-01
(58)	S_ANH_AB	Salado anhydrite beds A and B, intact and fractured	PORE_DIS	Brooks-Corey pore distribution parameter	Student	NONE	6.44E-01	6.44E-01	4.91E-01	8.42E-01	1.09E-01
59	S_HALITE	Salado halite, intact	PRESSURE	Brine far-field pore pressure	Uniform	Pa	1.25E+07	1.25E+07	1.10E+07	1.39E+07	8.23E+05
60	CASTILER	Castile Brine Reservoir	PRESSURE	Brine far-field pore pressure	Triangular	Pa	1.36E+07	1.27E+07	1.11E+07	1.70E+07	1.25E+06
61	CASTILER	Castile Brine Reservoir	PRMX_LOG	Log of intrinsic permeability, X-direction	Triangular	log(m^2)	-1.21E+01	-1.18E+01	-1.47E+01	-9.80E+00	1.01E+00
(61)	CASTILER	Castile Brine Reservoir	PRMY_LOG	Log of intrinsic permeability, Y-direction	Triangular	log(m^2)	-1.21E+01	-1.18E+01	-1.47E+01	-9.80E+00	1.01E+00
(61)	CASTILER	Castile Brine Reservoir	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Triangular	log(m^2)	-1.21E+01	-1.18E+01	-1.47E+01	-9.80E+00	1.01E+00
62	CASTILER	Castile Brine Reservoir	COMP_RCK	Bulk Compressibility	Triangular	Pa^{-1}	5.30E-11	4.00E-11	2.00E-11	1.00E-10	1.70E-11
63	BH_SAND	Borehole filled with silty sand	PRMX_LOG	Log of intrinsic permeability, X-direction	Uniform	log(m^2)	-1.37E+01	-1.37E+01	-1.63E+01	-1.10E+01	1.53E+00
(63)	BH_SAND	Borehole filled with silty sand	PRMY_LOG	Log of intrinsic permeability, Y-direction	Uniform	log(m^2)	-1.37E+01	-1.37E+01	-1.63E+01	-1.10E+01	1.53E+00
(63)	BH_SAND	Borehole filled with silty sand	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Uniform	log(m^2)	-1.37E+01	-1.37E+01	-1.63E+01	-1.10E+01	1.53E+00
64	DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	PRMX_LOG	Log of intrinsic permeability, X-direction	Uniform	log(m^2)	-1.60E+01	-1.60E+01	-1.94E+01	-1.25E+01	2.00E+00
(64)	DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	PRMY_LOG	Log of intrinsic permeability, Y-direction	Uniform	log(m^2)	-1.60E+01	-1.60E+01	-1.94E+01	-1.25E+01	2.00E+00
(64)	DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Uniform	log(m^2)	-1.60E+01	-1.60E+01	-1.94E+01	-1.25E+01	2.00E+00
65	CONC_PLG	Concrete Plug, surface and Rustler	PRMX_LOG	Log of intrinsic permeability, X-direction	Uniform	log(m^2)	-1.80E+01	-1.80E+01	-1.90E+01	-1.70E+01	5.80E-01
(65)	CONC_PLG	Concrete Plug, surface and Rustler	PRMY_LOG	Log of intrinsic permeability, Y-direction	Uniform	log(m^2)	-1.80E+01	-1.80E+01	-1.90E+01	-1.70E+01	5.80E-01
(65)	CONC_PLG	Concrete Plug, surface and Rustler	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Uniform	log(m^2)	-1.80E+01	-1.80E+01	-1.90E+01	-1.70E+01	5.80E-01
66	SHFTU	Upper portion of simplified shaft	SAT_RBRN	Residual Brine Saturation	Cumulative	NONE	2.50E-01	2.00E-01	0.00E+00	6.00E-01	1.76E-01
(66)	CONC_MON	Concrete Monolith	SAT_RBRN	Residual Brine Saturation	Cumulative	NONE	2.50E-01	2.00E-01	0.00E+00	6.00E-01	1.76E-01
67	SHFTU	Upper portion of simplified shaft	SAT_RGAS	Residual Gas Saturation	Uniform	NONE	2.00E-01	2.00E-01	0.00E+00	4.00E-01	1.16E-01
(67)	CONC_MON	Concrete Monolith	SAT_RGAS	Residual Gas Saturation	Uniform	NONE	2.00E-01	2.00E-01	0.00E+00	4.00E-01	1.16E-01

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Table 4. Parameters Sampled in LHS Code (and parameters to which sampled values were applied) — Continued

Parameter #	Material	Material Description	Property	Property Description	Distribution Type	Units	Mean	Median	Low	High	Standard Deviation
68	SHFTU	Upper portion of simplified shaft	PRMX_LOG	Log of intrinsic permeability, X-direction	Cumulative	log(m^2)	-1.82E+01	-1.83E+01	-2.05E+01	-1.65E+01	7.94E-01
(68)	SHFTU	Upper portion of simplified shaft	PRMY_LOG	Log of intrinsic permeability, Y-direction	Cumulative	log(m^2)	-1.82E+01	-1.83E+01	-2.05E+01	-1.65E+01	7.94E-01
(68)	SHFTU	Upper portion of simplified shaft	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Cumulative	log(m^2)	-1.82E+01	-1.83E+01	-2.05E+01	-1.65E+01	7.94E-01
69	SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	PRMX_LOG	Log of intrinsic permeability, X-direction	Cumulative	log(m^2)	-1.80E+01	-1.82E+01	-2.00E+01	-1.65E+01	5.97E-01
(69)	SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	PRMY_LOG	Log of intrinsic permeability, Y-direction	Cumulative	log(m^2)	-1.80E+01	-1.82E+01	-2.00E+01	-1.65E+01	5.97E-01
(69)	SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Cumulative	log(m^2)	-1.80E+01	-1.82E+01	-2.00E+01	-1.65E+01	5.97E-01
70	SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	PRMX_LOG	Log of intrinsic permeability, X-direction	Cumulative	log(m^2)	-1.98E+01	-2.01E+01	-2.25E+01	-1.80E+01	9.37E-01
(70)	SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	PRMY_LOG	Log of intrinsic permeability, Y-direction	Cumulative	log(m^2)	-1.98E+01	-2.01E+01	-2.25E+01	-1.80E+01	9.37E-01
(70)	SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Cumulative	log(m^2)	-1.98E+01	-2.01E+01	-2.25E+01	-1.80E+01	9.37E-01
71	WAS_AREA	Waste emplacement area and waste	BIOGENFC	Probability of attaining sampled microbial-gas-generation rartes	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.89E-01
72	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
73	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
74	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01
75	REFCON	Reference Constant	LHSBLANK	Blank placeholder for the LHS Code	Uniform	NONE	5.0E-01	5.0E-01	0.0E+00	1.0E+00	2.88E-01

[1]For parameters with a triangular distribution, the value provided for the median is actually the mode

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5.3 CONSTANT PARAMETERS

The following list identifies the tables (found later in this document) that give details regarding specific constant parameters and their contribution to calculations and analysis regarding various categories of the PABC-2009.

Table 5. Borehole, Blowout and Drill Mud Parameters
Table 6. Borehole (Concrete Plug) Parameters
Table 7. Borehole (Open) Parameters
Table 8. Borehole (Silty Sand) Parameters
Table 9. Borehole (Creep) Parameters
Table 10. DRSPALL Parameters
Table 11. Shaft Material Parameters
Table 12. Panel Closure Parameters
Table 13. Santa Rosa Formation Parameters
Table 14. Dewey Lake Formation
Table 15. Forty-Niner Member of the Rustler Formation Parameters
Table 16. Magenta Member of the Rustler Formation Parameters
Table 17. Tamarisk Member of the Rustler Formation Parameters
Table 18. Culebra Member of the Rustler Formation Parameters
Table 19. Los Medanos (Unnamed Lower) Member of the Rustler Formation Parameters
Table 20. Salado Formation – Intact Halite – Parameters
Table 21. Salado Formation – Brine – Parameters
Table 22. Salado Formation – Marker Bed 138 – Parameters
Table 23. Salado Formation – Marker Bed 139 – Parameters
Table 24. Salado Formation – Anhydrite a and b, Intact and Fractured – Parameters
Table 25. Disturbed Rock Zone Parameters
Table 26. Waste Area Parameters
Table 27. Repository Parameters
Table 28. Stoichiometric Gas Generation Model Parameters
Table 29. Waste Chemistry Parameters
Table 30. Radionuclide Parameters
Table 31. Isotope Inventory
Table 32. Predisposal Cavities (Waste Area) Parameters
Table 33. Operations Region Parameters
Table 34. Experimental Area Parameters
Table 35. Castile Formation Parameters
Table 36. Castile Brine Reservoir Parameters
Table 37. Reference Constants
Table 38. Global Parameters

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6.0 EPAUNI INPUT DATA

The WIPP repository radionuclide inventory build-up and decay is determined by a computational method found in the code: EPAUNI Version 1.15A. Inventory data, provided by Los Alamos National Laboratory (LANL), is formatted for use by the code and input for use in the PA. Table 39 and Table 40 represent input files used for the code EPAUNI Version 1.15A. Table 39 contains radionuclide inventory data from the EPAUNI CH input file EPU_PABC09_CH.INP found in the library LIBPABC09_EPU. Table 40 contains radionuclide inventory data from the EPAUNI RH input file EPU_PABC09_RH.INP found in the library LIBPABC09_EPU. The development of the EPAUNI input files from the inventory is documented in Fox, Clayton and Kirchner (2009).

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Table 5. Borehole, Blowout and Drill Mud Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
BLOWOUT	Material for direct brine release calculations	GAS_MIN	Gas rate cut-off	Constant	mscf/day	1.00E+02
BLOWOUT	Material for direct brine release calculations	HREPO	Height of repository at burial time in CUTTINGS model	Constant	m	3.96E+00
BLOWOUT	Material for direct brine release calculations	MAXFLOW	Maximum blowout flow	Constant	s	3.888E+05
BLOWOUT	Material for direct brine release calculations	MINFLOW	Minimum blowout flow	Constant	s	2.59E+05
BLOWOUT	Material for direct brine release calculations	PARTDIA	Waste Particle Diameter in CUTTINGS Model	Loguniform	m	2.80E-03
BLOWOUT	Material for direct brine release calculations	RE_CAST	External drainage radius for the Castile formation	Constant	m	1.14E+02
BLOWOUT	Material for direct brine release calculations	RGAS	Gas Constant for Hydrogen	Constant	N*m/kg/K	4.12E+03
BLOWOUT	Material for direct brine release calculations	RHOS	Waste Particle Density in CUTTINGS_S Model	Constant	kg/m^3	2.65E+03
BLOWOUT	Material for direct brine release calculations	THCK_CAS	Thickness of the Castile Brine Reservoir	Constant	m	1.26E+02
BLOWOUT	Material for direct brine release calculations	TREPO	Temperature of repository in CUTTINGS model	Constant	K	3.00E+02
BOREHOLE	Borehole and Fill	CAP_MOD	Model number, capillary pressure model	Constant	NONE	2.00E+00
BOREHOLE	Borehole and Fill	COLDIA	Drill collar diameter in CUTTINGS model	Constant	m	2.03E-01
BOREHOLE	Borehole and Fill	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	2.64E-09
BOREHOLE	Borehole and Fill	DIAMMOD	Modern or current diameter	Constant	m	3.11E-01
BOREHOLE	Borehole and Fill	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
BOREHOLE	Borehole and Fill	LI	Drill collar length in CUTTINGS model	Constant	m	1.83E+02
BOREHOLE	Borehole and Fill	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
BOREHOLE	Borehole and Fill	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	5.60E-01
BOREHOLE	Borehole and Fill	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	-3.46E-01
BOREHOLE	Borehole and Fill	PIPED	Drill pipe diameter in CUTTINGS model	Constant	m	1.14E-01
BOREHOLE	Borehole and Fill	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
BOREHOLE	Borehole and Fill	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	9.40E-01
BOREHOLE	Borehole and Fill	POROSITY	Effective porosity	Constant	NONE	5.00E-02
BOREHOLE	Borehole and Fill	PRMX_LOG	Log of intrinsic permeability, X-direction	Normal	$log(m^2)$	-1.25E+01
BOREHOLE	Borehole and Fill	PRMY_LOG	Log of intrinsic permeability, Y-direction	Normal	$log(m^2)$	-1.25E+01
BOREHOLE	Borehole and Fill	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Normal	$log(m^2)$	-1.25E+01
BOREHOLE	Borehole and Fill	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
BOREHOLE	Borehole and Fill	SAT_RBRN	Residual Brine Saturation	Constant	NONE	2.00E-01
BOREHOLE	Borehole and Fill	SAT_RGAS	Residual Gas Saturation	Constant	NONE	2.00E-01
BOREHOLE	Borehole and Fill	WUF	Unit of Waste	Constant	Curies	2.60E+00
DRILLMUD	Drilling Mud	DNSFLUID	Brine Density	Cumulative	kg/m^3	1.21E+03
DRILLMUD	Drilling Mud	VISCO	Viscosity	Cumulative	Pa*s	9.17E-03
DRILLMUD	Drilling Mud	YLDSTRSS	Yield Stress Point	Cumulative	Pa	4.40E+00

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Table 6. Borehole (Concrete Plug) Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
CONC_PLG	Concrete Plug, surface and Rustler	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
CONC_PLG	Concrete Plug, surface and Rustler	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	3.80E-10
CONC_PLG	Concrete Plug, surface and Rustler	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CONC_PLG	Concrete Plug, surface and Rustler	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
CONC_PLG	Concrete Plug, surface and Rustler	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
CONC_PLG	Concrete Plug, surface and Rustler	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
CONC_PLG	Concrete Plug, surface and Rustler	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CONC_PLG	Concrete Plug, surface and Rustler	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	9.40E-01
CONC_PLG	Concrete Plug, surface and Rustler	POROSITY	Effective porosity	Constant	NONE	3.20E-01
CONC_PLG	Concrete Plug, surface and Rustler	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
CONC_PLG	Concrete Plug, surface and Rustler	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
CONC_PLG	Concrete Plug, surface and Rustler	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

Table 7. Borehole (Open) Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
BH_OPEN	Borehole Unrestricted	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
BH_OPEN	Borehole Unrestricted	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
BH_OPEN	Borehole Unrestricted	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
BH_OPEN	Borehole Unrestricted	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
BH_OPEN	Borehole Unrestricted	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
BH_OPEN	Borehole Unrestricted	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
BH_OPEN	Borehole Unrestricted	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
BH_OPEN	Borehole Unrestricted	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
BH_OPEN	Borehole Unrestricted	POROSITY	Effective porosity	Constant	NONE	3.20E-01
BH_OPEN	Borehole Unrestricted	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-9.00E+00
BH_OPEN	Borehole Unrestricted	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-9.00E+00
BH_OPEN	Borehole Unrestricted	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-9.00E+00
BH_OPEN	Borehole Unrestricted	RELP_MOD	Model number, relative permeability model	Constant	NONE	5.00E+00
BH_OPEN	Borehole Unrestricted	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
BH_OPEN	Borehole Unrestricted	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

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Table 8. Borehole (Silty Sand) Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
BH_SAND	Borehole filled with silty sand	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
BH_SAND	Borehole filled with silty sand	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
BH_SAND	Borehole filled with silty sand	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
BH_SAND	Borehole filled with silty sand	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
BH_SAND	Borehole filled with silty sand	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
BH_SAND	Borehole filled with silty sand	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
BH_SAND	Borehole filled with silty sand	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
BH_SAND	Borehole filled with silty sand	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	9.40E-01
BH_SAND	Borehole filled with silty sand	POROSITY	Effective porosity	Constant	NONE	3.20E-01
BH_SAND	Borehole filled with silty sand	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
BH_SAND	Borehole filled with silty sand	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
BH_SAND	Borehole filled with silty sand	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

Table 9. Borehole (Creep) Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
BH_CREEP	Creep Borehole Fill	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
BH_CREEP	Creep Borehole Fill	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
BH_CREEP	Creep Borehole Fill	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
BH_CREEP	Creep Borehole Fill	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
BH_CREEP	Creep Borehole Fill	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
BH_CREEP	Creep Borehole Fill	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
BH_CREEP	Creep Borehole Fill	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
BH_CREEP	Creep Borehole Fill	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	9.40E-01
BH_CREEP	Creep Borehole Fill	POROSITY	Effective porosity	Constant	NONE	3.20E-01
BH_CREEP	Creep Borehole Fill	PRMX_LOG	Log of intrinsic permeability, X-direction	Uniform	$log(m^2)$	-1.35E+01
BH_CREEP	Creep Borehole Fill	PRMY_LOG	Log of intrinsic permeability, Y-direction	Uniform	$log(m^2)$	-1.35E+01
BH_CREEP	Creep Borehole Fill	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Uniform	$log(m^2)$	-1.35E+01
BH_CREEP	Creep Borehole Fill	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
BH_CREEP	Creep Borehole Fill	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
BH_CREEP	Creep Borehole Fill	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

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Table 10. DRSPALL Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
SPALLMOD	Material developed for DRSPALL	ANNUROUG	Absolute wall roughness of wellbore annulus	Constant	m	5.00E-05
SPALLMOD	Material developed for DRSPALL	BIOTBETA	Biot's beta for waste	Constant	NONE	1.00E+00
SPALLMOD	Material developed for DRSPALL	COHESION	Cohesion of waste	Constant	Pa	1.40E+05
SPALLMOD	Material developed for DRSPALL	DDZPERM	Permeability of drilling-damaged zone (DDZ)	Constant	m2	1.00E-14
SPALLMOD	Material developed for DRSPALL	DDZTHICK	Thickness of drilling-damaged zone (DDZ)	Constant	m	1.60E-01
SPALLMOD	Material developed for DRSPALL	DRILRATE	Drill penetration rate through Salado	Constant	m/s	4.45E-03
SPALLMOD	Material developed for DRSPALL	DRZPERM	DRZ Permeability for DRSPALL	Constant	m^2	1.00E-15
SPALLMOD	Material developed for DRSPALL	FFSTRESS	Isotropic in-situ stress in waste area	Constant	Pa	1.49E+07
SPALLMOD	Material developed for DRSPALL	FRICTANG	Friction angle of waste	Constant	deg	4.58E+01
SPALLMOD	Material developed for DRSPALL	MUDPRATE	Typical volumetric mud pumping rate for drilling in Salado	Constant	(m3)/s	2.02E-02
SPALLMOD	Material developed for DRSPALL	MUDSOLMX	Solids volume fraction in drill mud that causes choking of flow	Constant	NONE	6.15E-01
SPALLMOD	Material developed for DRSPALL	MUDSOLVE	Exponent on mud slurry viscosity power law	Constant	NONE	-1.50E+00
SPALLMOD	Material developed for DRSPALL	PIPEID	Inner diameter of drill pipe (where OD = 0.1143 m)	Constant	m	9.72E-02
SPALLMOD	Material developed for DRSPALL	PIPEROUG	Absolute wall roughness of drill pipe	Constant	m	5.00E-05
SPALLMOD	Material developed for DRSPALL	POISRAT	Poisson's ratio for waste	Constant	NONE	3.80E-01
SPALLMOD	Material developed for DRSPALL	REFPRS	Atmospheric pressure at sea level	Constant	Pa	1.02E+05
SPALLMOD	Material developed for DRSPALL	REPOSTOP	Elevation of roof in excavated area	Constant	m	3.85E+02
SPALLMOD	Material developed for DRSPALL	SALTDENS	Density of solid cuttings from the Salado	Constant	kg/m3	2.18E+03
SPALLMOD	Material developed for DRSPALL	SHAPEFAC	Shape factor for disaggregated waste particles	Constant	NONE	1.00E-01
SPALLMOD	Material developed for DRSPALL	STPDVOLR	Mud ejection rate that turns off drilling	Constant	$(m^3)/s$	1.00E+03
SPALLMOD	Material developed for DRSPALL	STPPVOLR	Mud ejection rate that turns off mud pump	Constant	$(m^3)/s$	1.00E+03
SPALLMOD	Material developed for DRSPALL	SURFELEV	Elevation of land surface at WIPP site	Constant	m	1.04E+03

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Table 11. Shaft Material Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
CONC_MON	Concrete Monolith	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
CONC_MON	Concrete Monolith	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	6.00E-11
CONC_MON	Concrete Monolith	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CONC_MON	Concrete Monolith	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
CONC_MON	Concrete Monolith	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
CONC_MON	Concrete Monolith	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
CONC_MON	Concrete Monolith	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CONC_MON	Concrete Monolith	PORE_DIS	Brooks-Corey pore distribution parameter	Cumulative	NONE	9.40E-01
CONC_MON	Concrete Monolith	POROSITY	Effective porosity	Constant	NONE	5.00E-02
CONC_MON	Concrete Monolith	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-1.40E+01
CONC_MON	Concrete Monolith	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-1.40E+01
CONC_MON	Concrete Monolith	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-1.40E+01
CONC_MON	Concrete Monolith	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
CONC_MON	Concrete Monolith	SAT_IBRN	Initial Brine Saturation	Constant	NONE	1.00E+00
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	COMP_POR	Pore volume compressibility	Constant	Pa^{-1}	4.28E-09
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	POROSITY	Effective porosity	Constant	NONE	1.13E-01
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00

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Table 11. Shaft Material Parameters — Continued

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
SHFTL_T1	Lower portion of simplified shaft from 0 - 200 years	SAT_IBRN	Initial Brine Saturation	Constant	NONE	5.34E-01
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	COMP_POR	Pore volume compressibility	Constant	Pa^{-1}	4.28E-09
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	POROSITY	Effective porosity	Constant	NONE	1.13E-01
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
SHFTL_T2	Lower portion of simplified shaft from 200 - 10,000 years	SAT_IBRN	Initial Brine Saturation	Constant	NONE	5.34E-01
SHFTU	Upper portion of simplified shaft	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
SHFTU	Upper portion of simplified shaft	COMP_POR	Pore volume compressibility	Constant	Pa^{-1}	2.05E-08
SHFTU	Upper portion of simplified shaft	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
SHFTU	Upper portion of simplified shaft	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
SHFTU	Upper portion of simplified shaft	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
SHFTU	Upper portion of simplified shaft	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
SHFTU	Upper portion of simplified shaft	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
SHFTU	Upper portion of simplified shaft	POROSITY	Effective porosity	Constant	NONE	2.91E-01
SHFTU	Upper portion of simplified shaft	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
SHFTU	Upper portion of simplified shaft	SAT_IBRN	Initial Brine Saturation	Constant	NONE	7.96E-01

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Table 12. Panel Closure Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
CONC_PCS	Concrete portion of PCS	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
CONC_PCS	Concrete portion of PCS	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	6.00E-11
CONC_PCS	Concrete portion of PCS	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CONC_PCS	Concrete portion of PCS	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
CONC_PCS	Concrete portion of PCS	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
CONC_PCS	Concrete portion of PCS	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
CONC_PCS	Concrete portion of PCS	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CONC_PCS	Concrete portion of PCS	POROSITY	Effective porosity	Constant	NONE	5.00E-02
CONC_PCS	Concrete portion of PCS	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
CONC_PCS	Concrete portion of PCS	THKCONC	Thickness of the panel closure concrete in the Option D panel closure	Constant	m	7.9
CONC_PCS	Concrete portion of PCS	THKOPEN	Thickness of the panel closure empty drift and explosion wall in the Option D panel closure	Constant	m	32.1
DRZ_PCS	DRZ directly above concrete portion of panel closure	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
DRZ_PCS	DRZ directly above concrete portion of panel closure	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	7.41E-10
DRZ_PCS	DRZ directly above concrete portion of panel closure	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
DRZ_PCS	DRZ directly above concrete portion of panel closure	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
DRZ_PCS	DRZ directly above concrete portion of panel closure	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
DRZ_PCS	DRZ directly above concrete portion of panel closure	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
DRZ_PCS	DRZ directly above concrete portion of panel closure	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
DRZ_PCS	DRZ directly above concrete portion of panel closure	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
DRZ_PCS	DRZ directly above concrete portion of panel closure	POROSITY	Effective porosity	Cumulative	NONE	1.29E-02

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Table 13. Santa Rosa Formation Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
SANTAROS	Santa Rosa Formation	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
SANTAROS	Santa Rosa Formation	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	1.00E-08
SANTAROS	Santa Rosa Formation	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
SANTAROS	Santa Rosa Formation	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
SANTAROS	Santa Rosa Formation	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
SANTAROS	Santa Rosa Formation	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
SANTAROS	Santa Rosa Formation	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
SANTAROS	Santa Rosa Formation	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	6.44E-01
SANTAROS	Santa Rosa Formation	POROSITY	Effective porosity	Constant	NONE	1.75E-01
SANTAROS	Santa Rosa Formation	PRESSURE	Brine far-field pore pressure	Constant	Pa	1.01E+05
SANTAROS	Santa Rosa Formation	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-1.00E+01
SANTAROS	Santa Rosa Formation	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-1.00E+01
SANTAROS	Santa Rosa Formation	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-1.00E+01
SANTAROS	Santa Rosa Formation	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
SANTAROS	Santa Rosa Formation	SAT_IBRN	Initial Brine Saturation	Constant	NONE	8.36E-02
SANTAROS	Santa Rosa Formation	SAT_RBRN	Residual Brine Saturation	Constant	NONE	8.36E-02
SANTAROS	Santa Rosa Formation	SAT_RGAS	Residual Gas Saturation	Constant	NONE	7.71E-02

Table 14. Dewey Lake Formation

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
DEWYLAKE	Dewey Lake Red Beds	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
DEWYLAKE	Dewey Lake Red Beds	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	1.00E-08
DEWYLAKE	Dewey Lake Red Beds	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
DEWYLAKE	Dewey Lake Red Beds	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
DEWYLAKE	Dewey Lake Red Beds	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
DEWYLAKE	Dewey Lake Red Beds	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
DEWYLAKE	Dewey Lake Red Beds	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
DEWYLAKE	Dewey Lake Red Beds	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	6.44E-01
DEWYLAKE	Dewey Lake Red Beds	POROSITY	Effective porosity	Student	NONE	1.43E-01
DEWYLAKE	Dewey Lake Red Beds	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-1.63E+01
DEWYLAKE	Dewey Lake Red Beds	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-1.63E+01
DEWYLAKE	Dewey Lake Red Beds	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-1.63E+01
DEWYLAKE	Dewey Lake Red Beds	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
DEWYLAKE	Dewey Lake Red Beds	SAL_USAT	Average saturation, unsaturated zones	Constant	NONE	8.36E-02
DEWYLAKE	Dewey Lake Red Beds	SAT_IBRN	Initial Brine Saturation	Constant	NONE	1.00E+00
DEWYLAKE	Dewey Lake Red Beds	SAT_RBRN	Residual Brine Saturation	Constant	NONE	8.36E-02
DEWYLAKE	Dewey Lake Red Beds	SAT_RGAS	Residual Gas Saturation	Constant	NONE	7.71E-02

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Table 15. Forty-Niner Member of the Rustler Formation Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
FORTYNIN	Forty Niner Member	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
FORTYNIN	Forty Niner Member	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
FORTYNIN	Forty Niner Member	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
FORTYNIN	Forty Niner Member	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
FORTYNIN	Forty Niner Member	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
FORTYNIN	Forty Niner Member	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
FORTYNIN	Forty Niner Member	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
FORTYNIN	Forty Niner Member	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
FORTYNIN	Forty Niner Member	POROSITY	Effective porosity	Student	NONE	8.20E-02
FORTYNIN	Forty Niner Member	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-3.50E+01
FORTYNIN	Forty Niner Member	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-3.50E+01
FORTYNIN	Forty Niner Member	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-3.50E+01
FORTYNIN	Forty Niner Member	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
FORTYNIN	Forty Niner Member	SAT_RBRN	Residual Brine Saturation	Constant	NONE	2.00E-01
FORTYNIN	Forty Niner Member	SAT_RGAS	Residual Gas Saturation	Constant	NONE	2.00E-01

Table 16. Magenta Member of the Rustler Formation Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
MAGENTA	Magenta Member	CAP_MOD	Model number, capillary pressure model	Constant	NONE	2.00E+00
MAGENTA	Magenta Member	COMP_RCK	Bulk Compressibility	Student	Pa^{-1}	2.64E-10
MAGENTA	Magenta Member	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
MAGENTA	Magenta Member	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
MAGENTA	Magenta Member	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	2.60E-01
MAGENTA	Magenta Member	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	-3.48E-01
MAGENTA	Magenta Member	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
MAGENTA	Magenta Member	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	6.44E-01
MAGENTA	Magenta Member	POROSITY	Effective porosity	Student	NONE	1.38E-01
MAGENTA	Magenta Member	PRESSURE	Brine far-field pore pressure	Constant	Pa	9.63E+05
MAGENTA	Magenta Member	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-1.47E+01
MAGENTA	Magenta Member	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-1.47E+01
MAGENTA	Magenta Member	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-1.47E+01
MAGENTA	Magenta Member	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
MAGENTA	Magenta Member	SAT_RBRN	Residual Brine Saturation	Constant	NONE	8.36E-02
MAGENTA	Magenta Member	SAT_RGAS	Residual Gas Saturation	Constant	NONE	7.71E-02

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Table 17. Tamarisk Member of the Rustler Formation Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
TAMARISK	Tamarisk Member	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
TAMARISK	Tamarisk Member	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
TAMARISK	Tamarisk Member	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
TAMARISK	Tamarisk Member	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
TAMARISK	Tamarisk Member	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
TAMARISK	Tamarisk Member	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
TAMARISK	Tamarisk Member	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
TAMARISK	Tamarisk Member	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
TAMARISK	Tamarisk Member	POROSITY	Effective porosity	Student	NONE	6.40E-02
TAMARISK	Tamarisk Member	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-3.50E+01
TAMARISK	Tamarisk Member	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-3.50E+01
TAMARISK	Tamarisk Member	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-3.50E+01
TAMARISK	Tamarisk Member	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
TAMARISK	Tamarisk Member	SAT_RBRN	Residual Brine Saturation	Constant	NONE	2.00E-01
TAMARISK	Tamarisk Member	SAT_RGAS	Residual Gas Saturation	Constant	NONE	2.00E-01

Table 18. Culebra Member of the Rustler Formation Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
CULEBRA	Culebra member of the Rustler formation	CAP_MOD	Model number, capillary pressure model	Constant	NONE	2.00E+00
CULEBRA	Culebra member of the Rustler formation	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	1.00E-10
CULEBRA	Culebra member of the Rustler formation	DISP_L	Longitudinal dispersivity	Constant	m	0.00E+00
CULEBRA	Culebra member of the Rustler formation	DISPT_L	Transverse dispersivity	Constant	m	0.00E+00
CULEBRA	Culebra member of the Rustler formation	DNSGRAIN	Material Grain Density	Constant	kg/m^3	2.82E+03
CULEBRA	Culebra member of the Rustler formation	DTORT	Diffusive Tortuosity	Constant	NONE	1.10E-01
CULEBRA	Culebra member of the Rustler formation	FTORT	Fracture Tortuosity	Constant	NONE	1.00E+00
CULEBRA	Culebra member of the Rustler formation	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CULEBRA	Culebra member of the Rustler formation	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
CULEBRA	Culebra member of the Rustler formation	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	2.60E-01
CULEBRA	Culebra member of the Rustler formation	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	-3.48E-01
CULEBRA	Culebra member of the Rustler formation	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CULEBRA	Culebra member of the Rustler formation	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	6.44E-01
CULEBRA	Culebra member of the Rustler formation	POROSITY	Effective porosity	Constant	NONE	1.51E-01
CULEBRA	Culebra member of the Rustler formation	PRESSURE	Brine far-field pore pressure	Constant	Pa	9.33E+05
CULEBRA	Culebra member of the Rustler formation	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-1.40E+01
CULEBRA	Culebra member of the Rustler formation	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-1.40E+01
CULEBRA	Culebra member of the Rustler formation	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-1.40E+01
CULEBRA	Culebra member of the Rustler formation	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
CULEBRA	Culebra member of the Rustler formation	SAT_IBRN	Initial Brine Saturation	Constant	NONE	1.00E+00
CULEBRA	Culebra member of the Rustler formation	SAT_RBRN	Residual Brine Saturation	Constant	NONE	8.36E-02
CULEBRA	Culebra member of the Rustler formation	SAT_RGAS	Residual Gas Saturation	Constant	NONE	7.71E-02
CULEBRA	Culebra member of the Rustler formation	SKIN_RES	Skin Resistance	Constant	NONE	0.00E+00

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Table 19. Los Medanos (Unnamed Lower) Member of the Rustler Formation Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
UNNAMED	Unnamed Lower Member of Rustler Formation	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
UNNAMED	Unnamed Lower Member of Rustler Formation	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
UNNAMED	Unnamed Lower Member of Rustler Formation	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
UNNAMED	Unnamed Lower Member of Rustler Formation	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
UNNAMED	Unnamed Lower Member of Rustler Formation	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
UNNAMED	Unnamed Lower Member of Rustler Formation	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
UNNAMED	Unnamed Lower Member of Rustler Formation	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
UNNAMED	Unnamed Lower Member of Rustler Formation	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
UNNAMED	Unnamed Lower Member of Rustler Formation	POROSITY	Effective porosity	Student	NONE	1.81E-01
UNNAMED	Unnamed Lower Member of Rustler Formation	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-3.50E+01
UNNAMED	Unnamed Lower Member of Rustler Formation	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-3.50E+01
UNNAMED	Unnamed Lower Member of Rustler Formation	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-3.50E+01
UNNAMED	Unnamed Lower Member of Rustler Formation	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
UNNAMED	Unnamed Lower Member of Rustler Formation	SAT_RBRN	Residual Brine Saturation	Constant	NONE	2.00E-01
UNNAMED	Unnamed Lower Member of Rustler Formation	SAT_RGAS	Residual Gas Saturation	Constant	NONE	2.00E-01

Table 20. Salado Formation – Intact Halite – Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
S_HALITE	Salado halite, intact	CAP_MOD	Model number, capillary pressure model	Constant	NONE	2.00E+00
S_HALITE	Salado halite, intact	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
S_HALITE	Salado halite, intact	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
S_HALITE	Salado halite, intact	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	5.60E-01
S_HALITE	Salado halite, intact	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	-3.46E-01
S_HALITE	Salado halite, intact	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
S_HALITE	Salado halite, intact	PORE_DIS	Brooks-Corey pore distribution parameter	Cumulative	NONE	7.00E-01
S_HALITE	Salado halite, intact	RELP_MOD	Model number, relative permeability model	Delta	NONE	4.00E+00
S_HALITE	Salado halite, intact	SAT_RBRN	Residual Brine Saturation	Uniform	NONE	3.00E-01
S_HALITE	Salado halite, intact	SAT_RGAS	Residual Gas Saturation	Uniform	NONE	2.00E-01

Table 21. Salado Formation – Brine – Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
BRINESAL	Salado Brine	COMPRES	Brine Compressibility	Constant	Pa^{-1}	3.10E-10
BRINESAL	Salado Brine	DNSFLUID	Brine Density	Constant	kg/m^3	1.22E+03
BRINESAL	Salado Brine	REF_PRES	Reference pressure for porosity	Constant	Pa	1.01E+05
BRINESAL	Salado Brine	REF_TEMP	Reference Temperature	Constant	K	3.00E+02
BRINESAL	Salado Brine	VISCO	Viscosity	Constant	Pa*s	2.10E-03
BRINESAL	Salado Brine	WTF	Mass fraction of salt in brine	Student	NONE	3.24E-01

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Table 22. Salado Formation – Marker Bed 138 – Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
S_MB138	Salado marker bed 138, intact and fractured	BKLINK	Klinkenberg B Correction Parameters for H2 gas	Constant	Pa	2.71E-01
S_MB138	Salado marker bed 138, intact and fractured	CAP_MOD	Model number, capillary pressure model	Constant	NONE	2.00E+00
S_MB138	Salado marker bed 138, intact and fractured	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	2.23E-11
S_MB138	Salado marker bed 138, intact and fractured	DPHIMAX	Incremental increase in porosity relative to intact conditions	Constant	NONE	3.90E-02
S_MB138	Salado marker bed 138, intact and fractured	IFRX	Index for fracture perm. enhancement in X-direction	Constant	NONE	1.00E+00
S_MB138	Salado marker bed 138, intact and fractured	IFRY	Index for fracture perm. enhancement in Y-direction	Constant	NONE	1.00E+00
S_MB138	Salado marker bed 138, intact and fractured	IFRZ	Index for fracture perm. enhancement in Z-direction	Constant	NONE	0.00E+00
S_MB138	Salado marker bed 138, intact and fractured	KMAXLOG	Log of Maximum Permeability in Altered Anhydrite Flow Model Anhydrites	Constant	$log(m^2)$	-9.00E+00
S_MB138	Salado marker bed 138, intact and fractured	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
S_MB138	Salado marker bed 138, intact and fractured	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
S_MB138	Salado marker bed 138, intact and fractured	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	2.60E-01
S_MB138	Salado marker bed 138, intact and fractured	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	-3.48E-01
S_MB138	Salado marker bed 138, intact and fractured	PF_DELTA	Incremental pressure for full fracture development	Constant	Pa	3.80E+06
S_MB138	Salado marker bed 138, intact and fractured	PI_DELTA	Fracture initiation pressure increment	Constant	Pa	2.00E+05
S_MB138	Salado marker bed 138, intact and fractured	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
S_MB138	Salado marker bed 138, intact and fractured	POROSITY	Effective porosity	Student	NONE	1.10E-02
S_MB138	Salado marker bed 138, intact and fractured	SAT_RGAS	Residual Gas Saturation	Constant	NONE	5.495E-02

Table 23. Salado Formation – Marker Bed 139 – Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
S_MB139	Salado marker bed 139, intact and fractured	BKLINK	Klinkenberg B Correction Parameters for H2 gas	Constant	Pa	2.71E-01
S_MB139	Salado marker bed 139, intact and fractured	CAP_MOD	Model number, capillary pressure model	Constant	NONE	2.00E+00
S_MB139	Salado marker bed 139, intact and fractured	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	2.23E-11
S_MB139	Salado marker bed 139, intact and fractured	DPHIMAX	Incremental increase in porosity relative to intact conditions	Constant	NONE	3.90E-02
S_MB139	Salado marker bed 139, intact and fractured	EXPKLINK	Klinkenberg b correction parameters for H2 gas	Constant	NONE	-3.41E-01
S_MB139	Salado marker bed 139, intact and fractured	IFRX	Index for fracture perm. enhancement in X-direction	Constant	NONE	1.00E+00
S_MB139	Salado marker bed 139, intact and fractured	IFRY	Index for fracture perm. enhancement in Y-direction	Constant	NONE	1.00E+00
S_MB139	Salado marker bed 139, intact and fractured	IFRZ	Index for fracture perm. enhancement in Z-direction	Constant	NONE	0.00E+00
S_MB139	Salado marker bed 139, intact and fractured	KMAXLOG	Log of Maximum Permeability in Altered Anhydrite Flow Model Anhydrites	Constant	$log(m^2)$	-9.00E+00
S_MB139	Salado marker bed 139, intact and fractured	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
S_MB139	Salado marker bed 139, intact and fractured	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
S_MB139	Salado marker bed 139, intact and fractured	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	2.60E-01
S_MB139	Salado marker bed 139, intact and fractured	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	-3.48E-01
S_MB139	Salado marker bed 139, intact and fractured	PF_DELTA	Incremental pressure for full fracture development	Constant	Pa	3.80E+06
S_MB139	Salado marker bed 139, intact and fractured	PI_DELTA	Fracture initiation pressure increment	Constant	Pa	2.00E+05
S_MB139	Salado marker bed 139, intact and fractured	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
S_MB139	Salado marker bed 139, intact and fractured	POROSITY	Effective porosity	Student	NONE	1.10E-02
S_MB139	Salado marker bed 139, intact and fractured	SAT_RGAS	Residual Gas Saturation	Constant	NONE	5.495E-02

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Table 24. Salado Formation – Anhydrite a and b, Intact and Fractured – Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	BKLINK	Klinkenberg B Correction Parameters for H2 gas	Constant	Pa	2.71E-01
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	CAP_MOD	Model number, capillary pressure model	Constant	NONE	2.00E+00
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	2.23E-11
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	DPHIMAX	Incremental increase in porosity relative to intact conditions	Constant	NONE	2.39E-01
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	IFRX	Index for fracture perm. enhancement in X-direction	Constant	NONE	1.00E+00
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	IFRY	Index for fracture perm. enhancement in Y-direction	Constant	NONE	1.00E+00
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	IFRZ	Index for fracture perm. enhancement in Z-direction	Constant	NONE	0.00E+00
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	KMAXLOG	Log of Maximum Permeability in Altered Anhydrite Flow Model Anhydrites	Constant	$log(m^2)$	-9.00E+00
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	2.60E-01
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	-3.48E-01
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	PF_DELTA	Incremental pressure for full fracture development	Constant	Pa	3.80E+06
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	PI_DELTA	Fracture initiation pressure increment	Constant	Pa	2.00E+05
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	POROSITY	Effective porosity	Student	NONE	1.10E-02
S_ANH_AB	Salado anhydrite beds A and B, intact and fracture	SAT_RGAS	Residual Gas Saturation	Constant	NONE	5.495E-02

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Table 25. Disturbed Rock Zone Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
DRZ_0	Disturbed rock zone; time period -5 to 0 years	ADDPOR	Additional porosity in the DRZ caused by fracturing	Constant	NONE	0.0029
DRZ_0	Disturbed rock zone; time period -5 to 0 years	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	7.41E-10
DRZ_0	Disturbed rock zone; time period -5 to 0 years	DPHIMAX	Incremental increase in porosity relative to intact conditions	Constant	NONE	0.039
DRZ_0	Disturbed rock zone; time period -5 to 0 years	IFRX	Index for fracture perm. Enhancement in X-direction	Constant	NONE	1.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	IFRY	Index for fracture perm. Enhancement in Y-direction	Constant	NONE	1.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	IFRZ	Index for fracture perm. Enhancement in Z-direction	Constant	NONE	0.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	KMAXLOG	Log of Maximum Permeability in Altered Anhydrite Flow Model Anhydrites	Constant	$log(m^2)$	-9.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PF_DELTA	Incremental pressure for full fracture development	Constant	Pa	3.80E+06
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PI_DELTA	Fracture initiation pressure increment	Constant	Pa	2.00E+05
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
DRZ_0	Disturbed rock zone; time period -5 to 0 years	POROSITY	Effective porosity	Cumulative	NONE	1.29E-02
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-1.70E+01
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-1.70E+01
DRZ_0	Disturbed rock zone; time period -5 to 0 years	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-1.70E+01
DRZ_0	Disturbed rock zone; time period -5 to 0 years	RELP_MOD	Model number, relative permeability model	Delta	NONE	4.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
DRZ_0	Disturbed rock zone; time period -5 to 0 years	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	7.41E-10
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	EHEIGHT	Effective height for DBR calculations	Constant	m	4.35E+01
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	POROSITY	Effective porosity	Cumulative	NONE	1.29E-02
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	RELP_MOD	Model number, relative permeability model	Delta	NONE	4.00E+00
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
DRZ_1	Disturbed rock zone; time period 0 to 10,000 years	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

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Table 26. Waste Area Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
WAS_AREA	Waste emplacement area and waste	ABSROUGH	Absolute roughness of material	Uniform	m	2.50E-02
WAS_AREA	Waste emplacement area and waste	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
WAS_AREA	Waste emplacement area and waste	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
WAS_AREA	Waste emplacement area and waste	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
WAS_AREA	Waste emplacement area and waste	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
WAS_AREA	Waste emplacement area and waste	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
WAS_AREA	Waste emplacement area and waste	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
WAS_AREA	Waste emplacement area and waste	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
WAS_AREA	Waste emplacement area and waste	PORE_DIS	Brooks-Corey pore distribution parameter	Cumulative	NONE	2.89E+00
WAS_AREA	Waste emplacement area and waste	POROSITY	Effective porosity	Constant	NONE	8.48E-01
WAS_AREA	Waste emplacement area and waste	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-1.26E+01
WAS_AREA	Waste emplacement area and waste	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-1.26E+01
WAS_AREA	Waste emplacement area and waste	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-1.26E+01
WAS_AREA	Waste emplacement area and waste	PTHRESH	Capillary threshold displacement pressure	Constant	Pa	8.00E+06
WAS_AREA	Waste emplacement area and waste	RELP_MOD	Model number, relative permeability model	Constant	NONE	1.20E+01
WAS_AREA	Waste emplacement area and waste	SAT_IBRN	Initial Brine Saturation	Constant	NONE	1.50E-02
WAS_AREA	Waste emplacement area and waste	VOLCHW	BIR total volume of CH waste	Constant	m^3	1.69E+05
WAS_AREA	Waste emplacement area and waste	VOLRHW	BIR total volume of RH waste	Constant	m^3	7.08E+03

Table 27. Repository Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
REPOSIT	Repository regions outside of Panel region	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
REPOSIT	Repository regions outside of Panel region	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
REPOSIT	Repository regions outside of Panel region	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
REPOSIT	Repository regions outside of Panel region	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
REPOSIT	Repository regions outside of Panel region	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
REPOSIT	Repository regions outside of Panel region	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
REPOSIT	Repository regions outside of Panel region	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
REPOSIT	Repository regions outside of Panel region	PORE_DIS	Brooks-Corey pore distribution parameter	Cumulative	NONE	2.89E+00
REPOSIT	Repository regions outside of Panel region	POROSITY	Effective porosity	Constant	NONE	8.48E-01
REPOSIT	Repository regions outside of Panel region	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-1.26E+01
REPOSIT	Repository regions outside of Panel region	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-1.26E+01
REPOSIT	Repository regions outside of Panel region	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-1.26E+01
REPOSIT	Repository regions outside of Panel region	RELP_MOD	Model number, relative permeability model	Constant	NONE	1.20E+01
REPOSIT	Repository regions outside of Panel region	SAT_IBRN	Initial Brine Saturation	Constant	NONE	1.50E-02
REPOSIT	Repository regions outside of Panel region	VOLCHW	BIR total volume of CH waste	Constant	m^3	1.69E+05
REPOSIT	Repository regions outside of Panel region	VOLRHW	BIR total volume of RH waste	Constant	m^3	7.08E+03

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Table 28. Stoichiometric Gas Generation Model Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
NITRATE	Nitrate	QINIT	Initial quantity of material in waste	Constant	moles	2.79E+07
STEEL	Generic steel in waste	HUMCORR	Humid corrosion rate for steel	Constant	m/s	0.00E+00
STEEL	Generic steel in waste	STOIFX	Stoichiometric factor - X	Constant	NONE	1.00E+00
SULFATE	Sulfate	QINIT	Initial quantity of material in waste	Constant	moles	6.15E+06
WAS_AREA	Waste emplacement area and waste	DCELCCHW	Average density of cellulosics in CH waste container materials	Constant	kg/m^3	5.10E+00
WAS_AREA	Waste emplacement area and waste	DCELCRHW	Average density of cellulosics in RH waste container materials	Constant	kg/m^3	0.00E+00
WAS_AREA	Waste emplacement area and waste	DCELECHW	Average density of cellulosics in CH waste amplacement materials	Constant	kg/m^3	1.34E+00
WAS_AREA	Waste emplacement area and waste	DCELERHW	Average density of cellulosics in RH waste amplacement materials	Constant	kg/m^3	0.00E+00
WAS_AREA	Waste emplacement area and waste	DCELLCHW	Average density of cellulosics in CH waste	Constant	kg/m^3	4.00E+01
WAS_AREA	Waste emplacement area and waste	DCELLRHW	Average density of cellulosics in RH waste	Constant	kg/m^3	2.20E+01
WAS_AREA	Waste emplacement area and waste	DIRNCCHW	Bulk density of iron containers, CH waste	Constant	kg/m^3	1.90E+02
WAS_AREA	Waste emplacement area and waste	DIRNCRHW	Bulk density of iron containers, RH waste	Constant	kg/m^3	6.30E+02
WAS_AREA	Waste emplacement area and waste	DIRONCHW	Average density of iron-based material in CH waste	Constant	kg/m^3	8.10E+01
WAS_AREA	Waste emplacement area and waste	DIRONRHW	Average density of iron-based material in RH waste	Constant	kg/m^3	1.70E+02
WAS_AREA	Waste emplacement area and waste	DPLASCHW	Average density of plastics in CH waste	Constant	kg/m^3	3.80E+01
WAS_AREA	Waste emplacement area and waste	DPLASRHW	Average density of plastics in RH waste	Constant	kg/m^3	2.80E+01
WAS_AREA	Waste emplacement area and waste	DPLSCCHW	Bulk density of plastic liners, CH waste	Constant	kg/m^3	1.60E+01
WAS_AREA	Waste emplacement area and waste	DPLSCRHW	Bulk density of plastic liners, RH waste	Constant	kg/m^3	1.40E+01
WAS_AREA	Waste emplacement area and waste	DPLSECHW	Average density of plastic in CH waste emplacement materials	Constant	kg/m^3	6.59E+00
WAS_AREA	Waste emplacement area and waste	DPLSERHW	Average density of plastic in RH waste emplacement materials	Constant	kg/m^3	0.00E+00
WAS_AREA	Waste emplacement area and waste	DRUBBCHW	Average density of rubber in CH waste	Constant	kg/m^3	5.60E+00
WAS_AREA	Waste emplacement area and waste	DRUBBRHW	Average density of rubber in RH waste	Constant	kg/m^3	6.60E+00
WAS_AREA	Waste emplacement area and waste	DRUBCCHW	Average density of rubber in CH waste container materials	Constant	kg/m^3	0.00E+00
WAS_AREA	Waste emplacement area and waste	DRUBCRHW	Average density of rubber in RH waste container materials	Constant	kg/m^3	0.00E+00
WAS_AREA	Waste emplacement area and waste	DRUBECHW	Average density of rubber in CH waste emplacement materials	Constant	kg/m^3	0.00E+00
WAS_AREA	Waste emplacement area and waste	DRUBERHW	Average density of rubber in RH waste emplacement materials	Constant	kg/m^3	0.00E+00
WAS_AREA	Waste emplacement area and waste	MGO_EF	MgO Excess Factor: ratio of MgO to organic carbon in CPR	Constant	NONE	1.2E+00
WAS_AREA	Waste emplacement area and waste	SMIC_CO2	Moles of CO2 produced per mole of organic carbon consumed	Constant	NONE	1.0E+00

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Table 29. Waste Chemistry Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
AM	Americium	CAPHUM	Maximum Concentration of Actinide with Mobile Humic Colloids	Constant	moles/liter	1.10E-05
AM	Americium	CAPMIC	Maximum Concentration of Actinide on Microbe Colloids	Constant	moles/liter	1.00E+00
AM	Americium	CONCINT	Actinide Concentration with Mobile Actinide Intrinsic Colloids	Constant	moles/liter	0.00E+00
AM	Americium	CONCMIN	Actinide Concentration with Mobile Mineral Fragment Colloids	Constant	moles/liter	2.60E-08
AM	Americium	PROPMIC	Moles of Actinide Mobilized on Microbe Colloids per Moles Dissolved	Constant	NONE	3.60E+00
AM+3	Americium III	MD0	Molecular diffusion in pure fluid	Constant	m^2/s	3.00E-10
NP	Neptunium	CAPHUM	Maximum Concentration of Actinide with Mobile Humic Colloids	Constant	moles/liter	1.10E-05
NP	Neptunium	CAPMIC	Maximum Concentration of Actinide on Microbe Colloids	Constant	moles/liter	2.70E-03
NP	Neptunium	CONCINT	Actinide Concentration with Mobile Actinide Intrinsic Colloids	Constant	moles/liter	0.00E+00
NP	Neptunium	CONCMIN	Actinide Concentration with Mobile Mineral Fragment Colloids	Constant	moles/liter	2.60E-08
NP	Neptunium	PROPMIC	Moles of Actinide Mobilized on Microbe Colloids per Moles Dissolved	Constant	NONE	1.20E+01
PHUMOX3	Proportionality constant with humic colloids for actinides in oxidation state III	PHUMSIM	Proportionality Const. Of Actinides in Salado Brine w/Humic Colloids, Inorganic	Constant	NONE	1.90E-01
PHUMOX4	Proportionality constant with humic colloids for actinides in oxidation state IV	PHUMCIM	Proportionality Const., Humic Colloids, Castile Brine, MgO controls pH	Constant	NONE	6.30E+00
PHUMOX4	Proportionality constant with humic colloids for actinides in oxidation state IV	PHUMSIM	Proportionality Const. Of Actinides in Salado Brine w/Humic Colloids, Inorganic	Constant	NONE	6.30E+00
PHUMOX5	Proportionality constant with humic colloids for actinides in oxidation state V	PHUMCIM	Proportionality Const., Humic Colloids, Castile Brine, MgO controls pH	Constant	NONE	7.40E-03
PHUMOX5	Proportionality constant with humic colloids for actinides in oxidation state V	PHUMSIM	Proportionality Const. Of Actinides in Salado Brine w/Humic Colloids, Inorganic	Constant	NONE	9.10E-04
PHUMOX6	Proportionality constant with humic colloids for actinides in oxidation state VI	PHUMCIM	Proportionality Const., Humic Colloids, Castile Brine, MgO controls pH	Constant	NONE	5.10E-01
PHUMOX6	Proportionality constant with humic colloids for actinides in oxidation state VI	PHUMSIM	Proportionality Const. Of Actinides in Salado Brine w/Humic Colloids, Inorganic	Constant	NONE	1.20E-01
PU	Plutonium	CAPHUM	Maximum Concentration of Actinide with Mobile Humic Colloids	Constant	moles/liter	1.10E-05
PU	Plutonium	CAPMIC	Maximum Concentration of Actinide on Microbe Colloids	Constant	moles/liter	6.80E-05
PU	Plutonium	CONCINT	Actinide Concentration with Mobile Actinide Intrinsic Colloids	Constant	moles/liter	1.00E-09
PU	Plutonium	CONCMIN	Actinide Concentration with Mobile Mineral Fragment Colloids	Constant	moles/liter	2.60E-08
PU	Plutonium	PROPMIC	Moles of Actinide Mobilized on Microbe Colloids per Moles Dissolved	Constant	NONE	3.00E-01
PU+3	Plutonium III	MD0	Molecular diffusion in pure fluid	Constant	m^2/s	3.00E-10
PU+4	Plutonium IV	MD0	Molecular diffusion in pure fluid	Constant	m^2/s	1.53E-10
SOLMOD3	Oxidation state III model	SOLCOH	Solubility in Castile Brine with Organics included Controlled by Mg(OH)2/Hydromagnisite buffer(5424)	Constant	moles/liter	1.51E-06
SOLMOD3	Oxidation state III model	SOLSOH	Solubility in Salado Brine with Organics included Controlled by Mg(OH)2/Hydromagnisite buffer(5424)	Constant	moles/liter	1.66E-06
SOLMOD4	Oxidation state IV model	SOLCOH	Solubility in Castile Brine with Organics included Controlled by Mg(OH)2/Hydromagnisite buffer(5424)	Constant	moles/liter	6.98E-08
SOLMOD4	Oxidation state IV model	SOLSOH	Solubility in Salado Brine with Organics included Controlled by Mg(OH)2/Hydromagnisite buffer(5424)	Constant	moles/liter	5.63E-08

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Table 29. Waste Chemistry Parameters — Continued

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
SOLMOD5	Oxidation state V model	SOLCOH	Solubility in Castile Brine with Organics included Controlled by Mg(OH)2/Hydromagnisite buffer(5424)	Constant	moles/liter	8.75E-07
SOLMOD5	Oxidation state V model	SOLSOH	Solubility in Salado Brine with Organics included Controlled by Mg(OH)2/Hydromagnisite buffer(5424)	Constant	moles/liter	3.90E-07
SOLMOD6	Oxidation state VI model	SOLCOH	Solubility in Castile Brine with Organics included Controlled by Mg(OH)2/Hydromagnisite buffer(5424)	Constant	moles/liter	1.00E-03
SOLMOD6	Oxidation state VI model	SOLSOH	Solubility in Salado Brine with Organics included Controlled by Mg(OH)2/Hydromagnisite buffer(5424)	Constant	moles/liter	1.00E-03
TH	Thorium	CAPHUM	Maximum Concentration of Actinide with Mobile Humic Colloids	Constant	moles/liter	1.10E-05
TH	Thorium	CAPMIC	Maximum Concentration of Actinide on Microbe Colloids	Constant	moles/liter	1.90E-03
TH	Thorium	CONCINT	Actinide Concentration with Mobile Actinide Intrinsic Colloids	Constant	moles/liter	0.00E+00
TH	Thorium	CONCMIN	Actinide Concentration with Mobile Mineral Fragment Colloids	Constant	moles/liter	2.60E-08
TH	Thorium	PROPMIC	Moles of Actinide Mobilized on Microbe Colloids per Moles Dissolved	Constant	NONE	3.10E+00
TH+4	Thorium IV	MD0	Molecular diffusion in pure fluid	Constant	m^2/s	1.53E-10
U	Uranium	CAPHUM	Maximum Concentration of Actinide with Mobile Humic Colloids	Constant	moles/liter	1.10E-05
U	Uranium	CAPMIC	Maximum Concentration of Actinide on Microbe Colloids	Constant	moles/liter	2.10E-03
U	Uranium	CONCINT	Actinide Concentration with Mobile Actinide Intrinsic Colloids	Constant	moles/liter	0.00E+00
U	Uranium	CONCMIN	Actinide Concentration with Mobile Mineral Fragment Colloids	Constant	moles/liter	2.60E-08
U	Uranium	PROPMIC	Moles of Actinide Mobilized on Microbe Colloids per Moles Dissolved	Constant	NONE	2.10E-03
U+4	Uranium IV	MD0	Molecular diffusion in pure fluid	Constant	m^2/s	1.53E-10
U+6	Uranium VI	MD0	Molecular diffusion in pure fluid	Constant	m^2/s	4.26E-10

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Table 30. Radionuclide Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
AM241	Americium 241	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.41E-01
AM241	Americium 241	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
AM241	Americium 241	HALFLIFE	Halflife	Constant	s	1.36E+10
AM243	Americium 243	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.43E-01
AM243	Americium 243	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
AM243	Americium 243	HALFLIFE	Halflife	Constant	s	2.33E+11
CF252	Californium 252	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.52E-01
CF252	Californium 252	EPAREL	EPA Release Limit	Constant	Curies/wuf	0.00E+00
CF252	Californium 252	HALFLIFE	Halflife	Constant	s	8.33E+07
CM243	Curium 243	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.43E-01
CM243	Curium 243	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
CM243	Curium 243	HALFLIFE	Halflife	Constant	s	8.99E+08
CM244	Curium 244	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.44E-01
CM244	Curium 244	EPAREL	EPA Release Limit	Constant	Curies/wuf	0.00E+00
CM244	Curium 244	HALFLIFE	Halflife	Constant	s	5.72E+08
CM245	Curium 245	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.45E-01
CM245	Curium 245	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
CM245	Curium 245	HALFLIFE	Halflife	Constant	s	2.68E+11
CM248	Curium 248	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.48E-01
CM248	Curium 248	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
CM248	Curium 248	HALFLIFE	Halflife	Constant	s	1.07E+13
CS137	Cesium 137	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	1.37E-01
CS137	Cesium 137	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+03
CS137	Cesium 137	HALFLIFE	Halflife	Constant	s	9.47E+08
NP237	Neptunium 237	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.37E-01
NP237	Neptunium 237	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
NP237	Neptunium 237	HALFLIFE	Halflife	Constant	s	6.75E+13
PA231	Protactinium 231	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.31E-01
PA231	Protactinium 231	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
PA231	Protactinium 231	HALFLIFE	Halflife	Constant	s	1.03E+12
PB210	Lead 210	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.10E-01
PB210	Lead 210	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
PB210	Lead 210	HALFLIFE	Halflife	Constant	s	7.04E+08
PM147	Promethium 147	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	1.47E-01
PM147	Promethium 147	EPAREL	EPA Release Limit	Constant	Curies/wuf	0.00E+00
PM147	Promethium 147	HALFLIFE	Halflife	Constant	s	8.28E+07
PU238	Plutonium 238	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.38E-01
PU238	Plutonium 238	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
PU238	Plutonium 238	HALFLIFE	Halflife	Constant	s	2.77E+09
PU239	Plutonium 239	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.39E-01
PU239	Plutonium 239	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
PU239	Plutonium 239	HALFLIFE	Halflife	Constant	s	7.59E+11
PU240	Plutonium 240	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.40E-01
PU240	Plutonium 240	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02

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Table 30. Radionuclide Parameters — Continued

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
PU240	Plutonium 240	HALFLIFE	Halflife	Constant	s	2.06E+11
PU241	Plutonium 241	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.41E-01
PU241	Plutonium 241	EPAREL	EPA Release Limit	Constant	Curies/wuf	0.00E+00
PU241	Plutonium 241	HALFLIFE	Halflife	Constant	s	4.54E+08
PU242	Plutonium 242	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.42E-01
PU242	Plutonium 242	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
PU242	Plutonium 242	HALFLIFE	Halflife	Constant	s	1.22E+13
PU244	Plutonium 244	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.44E-01
PU244	Plutonium 244	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
PU244	Plutonium 244	HALFLIFE	Halflife	Constant	s	2.61E+15
RA226	Radium 226	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.26E-01
RA226	Radium 226	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
RA226	Radium 226	HALFLIFE	Halflife	Constant	s	5.05E+10
RA228	Radium 228	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.28E-01
RA228	Radium 228	EPAREL	EPA Release Limit	Constant	Curies/wuf	0.00E+00
RA228	Radium 228	HALFLIFE	Halflife	Constant	s	2.11E+08
SR90	Strontium 90	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	8.99E-02
SR90	Strontium 90	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+03
SR90	Strontium 90	HALFLIFE	Halflife	Constant	s	9.19E+08
TH229	Thorium 229	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.29E-01
TH229	Thorium 229	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
TH229	Thorium 229	HALFLIFE	Halflife	Constant	s	2.32E+11
TH230	Thorium 230	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.30E-01
TH230	Thorium 230	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+01
TH230	Thorium 230	HALFLIFE	Halflife	Constant	s	2.43E+12
TH232	Thorium 232	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.32E-01
TH232	Thorium 232	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+01
TH232	Thorium 232	HALFLIFE	Halflife	Constant	s	4.43E+17
U233	Uranium 233	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.33E-01
U233	Uranium 233	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
U233	Uranium 233	HALFLIFE	Halflife	Constant	s	5.00E+12
U234	Uranium 234	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.34E-01
U234	Uranium 234	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
U234	Uranium 234	HALFLIFE	Halflife	Constant	s	7.72E+12
U235	Uranium 235	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.35E-01
U235	Uranium 235	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
U235	Uranium 235	HALFLIFE	Halflife	Constant	s	2.22E+16
U236	Uranium 236	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.36E-01
U236	Uranium 236	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
U236	Uranium 236	HALFLIFE	Halflife	Constant	s	7.39E+14
U238	Uranium 238	ATWEIGHT	Atomic Weight in kg/mole	Constant	kg/mole	2.38E-01
U238	Uranium 238	EPAREL	EPA Release Limit	Constant	Curies/wuf	1.00E+02
U238	Uranium 238	HALFLIFE	Halflife	Constant	s	1.41E+17

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Table 31. Isotope Inventory Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
AM241	Americium 241	INVCHD	Inventory of Contact Handled Design	Constant	Curies	4.68E+05
AM241	Americium 241	INVRHD	Inventory of Remote Handled Design	Constant	Curies	4.48E+03
AM241L	Americium 241 Lumped with Plutonium 241	INVCHD	Inventory of Contact Handled Design	Constant	Curies	4.85E+05
AM241L	Americium 241 Lumped with Plutonium 241	INVRHD	Inventory of Remote Handled Design	Constant	Curies	4.61E+03
AM243	Americium 243	INVCHD	Inventory of Contact Handled Design	Constant	Curies	7.17E+01
AM243	Americium 243	INVRHD	Inventory of Remote Handled Design	Constant	Curies	7.80E+00
CF252	Californium 252	INVCHD	Inventory of Contact Handled Design	Constant	Curies	3.28E-02
CF252	Californium 252	INVRHD	Inventory of Remote Handled Design	Constant	Curies	1.83E-04
CM243	Curium 243	INVCHD	Inventory of Contact Handled Design	Constant	Curies	1.34E+00
CM243	Curium 243	INVRHD	Inventory of Remote Handled Design	Constant	Curies	2.09E+00
CM244	Curium 244	INVCHD	Inventory of Contact Handled Design	Constant	Curies	2.61E+03
CM244	Curium 244	INVRHD	Inventory of Remote Handled Design	Constant	Curies	4.36E+02
CM245	Curium 245	INVCHD	Inventory of Contact Handled Design	Constant	Curies	5.86E-01
CM245	Curium 245	INVRHD	Inventory of Remote Handled Design	Constant	Curies	8.26E-02
CM248	Curium 248	INVCHD	Inventory of Contact Handled Design	Constant	Curies	1.24E-01
CM248	Curium 248	INVRHD	Inventory of Remote Handled Design	Constant	Curies	7.63E-03
CS137	Cesium 137	INVCHD	Inventory of Contact Handled Design	Constant	Curies	5.48E+02
CS137	Cesium 137	INVRHD	Inventory of Remote Handled Design	Constant	Curies	8.89E+04
NP237	Neptunium 237	INVCHD	Inventory of Contact Handled Design	Constant	Curies	3.65E+01
NP237	Neptunium 237	INVRHD	Inventory of Remote Handled Design	Constant	Curies	2.49E+00
PA231	Protactinium 231	INVCHD	Inventory of Contact Handled Design	Constant	Curies	3.78E-01
PA231	Protactinium 231	INVRHD	Inventory of Remote Handled Design	Constant	Curies	1.87E-01
PB210	Lead 210	INVCHD	Inventory of Contact Handled Design	Constant	Curies	1.75E+00
PB210	Lead 210	INVRHD	Inventory of Remote Handled Design	Constant	Curies	1.43E+01
PM147	Promethium 147	INVCHD	Inventory of Contact Handled Design	Constant	Curies	5.09E-02
PM147	Promethium 147	INVRHD	Inventory of Remote Handled Design	Constant	Curies	1.18E+00
PU238	Plutonium 238	INVCHD	Inventory of Contact Handled Design	Constant	Curies	1.47E+06
PU238	Plutonium 238	INVRHD	Inventory of Remote Handled Design	Constant	Curies	5.11E+03
PU238L	Plutonium 238 Equals Plutonium 238 Inventory	INVCHD	Inventory of Contact Handled Design	Constant	Curies	1.47E+06
PU238L	Plutonium 238 Equals Plutonium 238 Inventory	INVRHD	Inventory of Remote Handled Design	Constant	Curies	5.11E+03
PU239	Plutonium 239	INVCHD	Inventory of Contact Handled Design	Constant	Curies	5.10E+05
PU239	Plutonium 239	INVRHD	Inventory of Remote Handled Design	Constant	Curies	2.92E+03
PU239L	Plutonium 239 Lumped with Plutonium 240 and Pluton	INVCHD	Inventory of Contact Handled Design	Constant	Curies	6.55E+05
PU239L	Plutonium 239 Lumped with Plutonium 240 and Pluton	INVRHD	Inventory of Remote Handled Design	Constant	Curies	3.92E+03
PU240	Plutonium 240	INVCHD	Inventory of Contact Handled Design	Constant	Curies	1.44E+05
PU240	Plutonium 240	INVRHD	Inventory of Remote Handled Design	Constant	Curies	9.89E+02

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Table 31. Isotope Inventory Parameters — Continued

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
PU241	Plutonium 241	INVCHD	Inventory of Contact Handled Design	Constant	Curies	5.06E+05
PU241	Plutonium 241	INVRHD	Inventory of Remote Handled Design	Constant	Curies	3.94E+03
PU242	Plutonium 242	INVCHD	Inventory of Contact Handled Design	Constant	Curies	7.46E+01
PU242	Plutonium 242	INVRHD	Inventory of Remote Handled Design	Constant	Curies	1.25E+00
PU244	Plutonium 244	INVCHD	Inventory of Contact Handled Design	Constant	Curies	3.48E-04
PU244	Plutonium 244	INVRHD	Inventory of Remote Handled Design	Constant	Curies	2.34E-06
RA226	Radium 226	INVCHD	Inventory of Contact Handled Design	Constant	Curies	2.21E+00
RA226	Radium 226	INVRHD	Inventory of Remote Handled Design	Constant	Curies	1.83E+01
RA228	Radium 228	INVCHD	Inventory of Contact Handled Design	Constant	Curies	3.08E-01
RA228	Radium 228	INVRHD	Inventory of Remote Handled Design	Constant	Curies	7.69E-02
SR90	Strontium 90	INVCHD	Inventory of Contact Handled Design	Constant	Curies	5.03E+02
SR90	Strontium 90	INVRHD	Inventory of Remote Handled Design	Constant	Curies	7.99E+04
TH229	Thorium 229	INVCHD	Inventory of Contact Handled Design	Constant	Curies	8.81E+00
TH229	Thorium 229	INVRHD	Inventory of Remote Handled Design	Constant	Curies	4.19E+00
TH230	Thorium 230	INVCHD	Inventory of Contact Handled Design	Constant	Curies	5.87E-01
TH230	Thorium 230	INVRHD	Inventory of Remote Handled Design	Constant	Curies	9.20E-03
TH230L	Thorium 230 Lumped with Thorium 229	INVCHD	Inventory of Contact Handled Design	Constant	Curies	9.40E+00
TH230L	Thorium 230 Lumped with Thorium 229	INVRHD	Inventory of Remote Handled Design	Constant	Curies	4.20E+00
TH232	Thorium 232	INVCHD	Inventory of Contact Handled Design	Constant	Curies	2.75E-01
TH232	Thorium 232	INVRHD	Inventory of Remote Handled Design	Constant	Curies	6.86E-02
U233	Uranium 233	INVCHD	Inventory of Contact Handled Design	Constant	Curies	1.56E+02
U233	Uranium 233	INVRHD	Inventory of Remote Handled Design	Constant	Curies	5.09E+01
U234	Uranium 234	INVCHD	Inventory of Contact Handled Design	Constant	Curies	3.04E+02
U234	Uranium 234	INVRHD	Inventory of Remote Handled Design	Constant	Curies	5.18E+00
U234L	Uranium 234 Lumped with Uranium 233	INVCHD	Inventory of Contact Handled Design	Constant	Curies	4.60E+02
U234L	Uranium 234 Lumped with Uranium 233	INVRHD	Inventory of Remote Handled Design	Constant	Curies	5.61E+01
U235	Uranium 235	INVCHD	Inventory of Contact Handled Design	Constant	Curies	4.42E+00
U235	Uranium 235	INVRHD	Inventory of Remote Handled Design	Constant	Curies	7.04E-02
U236	Uranium 236	INVCHD	Inventory of Contact Handled Design	Constant	Curies	1.35E+00
U236	Uranium 236	INVRHD	Inventory of Remote Handled Design	Constant	Curies	2.48E-01
U238	Uranium 238	INVCHD	Inventory of Contact Handled Design	Constant	Curies	2.71E+01
U238	Uranium 238	INVRHD	Inventory of Remote Handled Design	Constant	Curies	2.96E-01

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Table 32. Predisposal Cavities (Waste Area) Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
CAVITY_1	Cavity for Waste Areas	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
CAVITY_1	Cavity for Waste Areas	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
CAVITY_1	Cavity for Waste Areas	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CAVITY_1	Cavity for Waste Areas	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
CAVITY_1	Cavity for Waste Areas	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
CAVITY_1	Cavity for Waste Areas	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
CAVITY_1	Cavity for Waste Areas	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CAVITY_1	Cavity for Waste Areas	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
CAVITY_1	Cavity for Waste Areas	POROSITY	Effective porosity	Constant	NONE	1.00E+00
CAVITY_1	Cavity for Waste Areas	PRESSURE	Brine far-field pore pressure	Constant	Pa	1.28E+05
CAVITY_1	Cavity for Waste Areas	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-1.00E+01
CAVITY_1	Cavity for Waste Areas	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-1.00E+01
CAVITY_1	Cavity for Waste Areas	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-1.00E+01
CAVITY_1	Cavity for Waste Areas	RELP_MOD	Model number, relative permeability model	Constant	NONE	1.10E+01
CAVITY_1	Cavity for Waste Areas	SAT_IBRN	Initial Brine Saturation	Constant	NONE	0.00E+00
CAVITY_1	Cavity for Waste Areas	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
CAVITY_1	Cavity for Waste Areas	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00
CAVITY_2	Cavity for Non-waste Areas	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
CAVITY_2	Cavity for Non-waste Areas	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
CAVITY_2	Cavity for Non-waste Areas	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CAVITY_2	Cavity for Non-waste Areas	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
CAVITY_2	Cavity for Non-waste Areas	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
CAVITY_2	Cavity for Non-waste Areas	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
CAVITY_2	Cavity for Non-waste Areas	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CAVITY_2	Cavity for Non-waste Areas	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
CAVITY_2	Cavity for Non-waste Areas	POROSITY	Effective porosity	Constant	NONE	1.00E+00
CAVITY_2	Cavity for Non-waste Areas	PRESSURE	Brine far-field pore pressure	Constant	Pa	1.28E+05
CAVITY_2	Cavity for Non-waste Areas	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-1.00E+01
CAVITY_2	Cavity for Non-waste Areas	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-1.00E+01
CAVITY_2	Cavity for Non-waste Areas	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-1.00E+01
CAVITY_2	Cavity for Non-waste Areas	RELP_MOD	Model number, relative permeability model	Constant	NONE	1.10E+01
CAVITY_2	Cavity for Non-waste Areas	SAT_IBRN	Initial Brine Saturation	Constant	NONE	0.00E+00
CAVITY_2	Cavity for Non-waste Areas	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
CAVITY_2	Cavity for Non-waste Areas	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00
CAVITY_3	Cavity for Shaft	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
CAVITY_3	Cavity for Shaft	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
CAVITY_3	Cavity for Shaft	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CAVITY_3	Cavity for Shaft	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08

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Table 32. Predisposal Cavities (Waste Area) Parameters — Continued

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
CAVITY_3	Cavity for Shaft	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
CAVITY_3	Cavity for Shaft	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
CAVITY_3	Cavity for Shaft	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CAVITY_3	Cavity for Shaft	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
CAVITY_3	Cavity for Shaft	POROSITY	Effective porosity	Constant	NONE	1.00E+00
CAVITY_3	Cavity for Shaft	PRESSURE	Brine far-field pore pressure	Constant	Pa	1.01E+05
CAVITY_3	Cavity for Shaft	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-1.00E+01
CAVITY_3	Cavity for Shaft	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-1.00E+01
CAVITY_3	Cavity for Shaft	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-1.00E+01
CAVITY_3	Cavity for Shaft	RELP_MOD	Model number, relative permeability model	Constant	NONE	1.10E+01
CAVITY_3	Cavity for Shaft	SAT_IBRN	Initial Brine Saturation	Constant	NONE	0.00E+00
CAVITY_3	Cavity for Shaft	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
CAVITY_3	Cavity for Shaft	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00
CAVITY_4	Cavity for Borehole	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
CAVITY_4	Cavity for Borehole	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
CAVITY_4	Cavity for Borehole	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CAVITY_4	Cavity for Borehole	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
CAVITY_4	Cavity for Borehole	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
CAVITY_4	Cavity for Borehole	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
CAVITY_4	Cavity for Borehole	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CAVITY_4	Cavity for Borehole	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
CAVITY_4	Cavity for Borehole	POROSITY	Effective porosity	Constant	NONE	1.00E+00
CAVITY_4	Cavity for Borehole	PRESSURE	Brine far-field pore pressure	Constant	Pa	1.01E+05
CAVITY_4	Cavity for Borehole	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$\log(m^2)$	-1.00E+01
CAVITY_4	Cavity for Borehole	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$\log(m^2)$	-1.00E+01
CAVITY_4	Cavity for Borehole	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$\log(m^2)$	-1.00E+01
CAVITY_4	Cavity for Borehole	RELP_MOD	Model number, relative permeability model	Constant	NONE	1.10E+01
CAVITY_4	Cavity for Borehole	SAT_IBRN	Initial Brine Saturation	Constant	NONE	0.00E+00
CAVITY_4	Cavity for Borehole	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
CAVITY_4	Cavity for Borehole	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

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Table 33. Operations Region Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
OPS_AREA	Operations Region	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
OPS_AREA	Operations Region	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
OPS_AREA	Operations Region	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
OPS_AREA	Operations Region	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
OPS_AREA	Operations Region	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
OPS_AREA	Operations Region	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
OPS_AREA	Operations Region	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
OPS_AREA	Operations Region	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
OPS_AREA	Operations Region	POROSITY	Effective porosity	Constant	NONE	1.80E-01
OPS_AREA	Operations Region	PRESSURE	Brine far-field pore pressure	Constant	Pa	1.01E+05
OPS_AREA	Operations Region	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-1.10E+01
OPS_AREA	Operations Region	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-1.10E+01
OPS_AREA	Operations Region	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-1.10E+01
OPS_AREA	Operations Region	RELP_MOD	Model number, relative permeability model	Constant	NONE	1.10E+01
OPS_AREA	Operations Region	SAT_IBRN	Initial Brine Saturation	Constant	NONE	0.00E+00
OPS_AREA	Operations Region	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
OPS_AREA	Operations Region	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

Table 34. Experimental Area Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
EXP_AREA	Experimental Area	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
EXP_AREA	Experimental Area	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
EXP_AREA	Experimental Area	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
EXP_AREA	Experimental Area	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
EXP_AREA	Experimental Area	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
EXP_AREA	Experimental Area	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
EXP_AREA	Experimental Area	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
EXP_AREA	Experimental Area	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
EXP_AREA	Experimental Area	POROSITY	Effective porosity	Constant	NONE	1.80E-01
EXP_AREA	Experimental Area	PRESSURE	Brine far-field pore pressure	Constant	Pa	1.01E+05
EXP_AREA	Experimental Area	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-1.10E+01
EXP_AREA	Experimental Area	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-1.10E+01
EXP_AREA	Experimental Area	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-1.10E+01
EXP_AREA	Experimental Area	RELP_MOD	Model number, relative permeability model	Constant	NONE	1.10E+01
EXP_AREA	Experimental Area	SAT_IBRN	Initial Brine Saturation	Constant	NONE	0.00E+00
EXP_AREA	Experimental Area	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
EXP_AREA	Experimental Area	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

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Table 35. Castile Formation Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
IMPERM_Z	Impermeable Zones	CAP_MOD	Model number, capillary pressure model	Constant	NONE	1.00E+00
IMPERM_Z	Impermeable Zones	COMP_RCK	Bulk Compressibility	Constant	Pa^{-1}	0.00E+00
IMPERM_Z	Impermeable Zones	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0
IMPERM_Z	Impermeable Zones	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
IMPERM_Z	Impermeable Zones	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	0.00E+00
IMPERM_Z	Impermeable Zones	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	0.00E+00
IMPERM_Z	Impermeable Zones	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
IMPERM_Z	Impermeable Zones	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
IMPERM_Z	Impermeable Zones	POROSITY	Effective porosity	Constant	NONE	5.00E-03
IMPERM_Z	Impermeable Zones	PRMX_LOG	Log of intrinsic permeability, X-direction	Constant	$log(m^2)$	-3.50E+01
IMPERM_Z	Impermeable Zones	PRMY_LOG	Log of intrinsic permeability, Y-direction	Constant	$log(m^2)$	-3.50E+01
IMPERM_Z	Impermeable Zones	PRMZ_LOG	Log of intrinsic permeability, Z-direction	Constant	$log(m^2)$	-3.50E+01
IMPERM_Z	Impermeable Zones	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
IMPERM_Z	Impermeable Zones	SAT_RBRN	Residual Brine Saturation	Constant	NONE	0.00E+00
IMPERM_Z	Impermeable Zones	SAT_RGAS	Residual Gas Saturation	Constant	NONE	0.00E+00

Table 36. Castile Brine Reservoir Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
CASTILER	Castile Brine Reservoir	CAP_MOD	Model number, capillary pressure model	Constant	NONE	2.00E+00
CASTILER	Castile Brine Reservoir	KPT	Flag for Permeability Determined Threshold	Constant	NONE	0.00E+00
CASTILER	Castile Brine Reservoir	PC_MAX	Maximum allowable capillary pressure	Constant	Pa	1.00E+08
CASTILER	Castile Brine Reservoir	PCT_A	Threshold Pressure Linear Parameter	Constant	Pa	5.60E-01
CASTILER	Castile Brine Reservoir	PCT_EXP	Threshold pressure exponential parameter	Constant	NONE	-3.46E-01
CASTILER	Castile Brine Reservoir	PO_MIN	Minimum brine pressure for capillary model KPC=3	Constant	Pa	1.01E+05
CASTILER	Castile Brine Reservoir	PORE_DIS	Brooks-Corey pore distribution parameter	Constant	NONE	7.00E-01
CASTILER	Castile Brine Reservoir	POROSITY	Effective porosity	Student	NONE	8.70E-03
CASTILER	Castile Brine Reservoir	RELP_MOD	Model number, relative permeability model	Constant	NONE	4.00E+00
CASTILER	Castile Brine Reservoir	SAT_IBRN	Initial Brine Saturation	Constant	NONE	1.00E+00
CASTILER	Castile Brine Reservoir	SAT_RBRN	Residual Brine Saturation	Constant	NONE	2.00E-01
CASTILER	Castile Brine Reservoir	SAT_RGAS	Residual Gas Saturation	Constant	NONE	2.00E-01

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Table 37. Reference Constants

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
REFCON	Reference Constant	ABERM	Area of Berm Placed Over Waste Panel	Constant	m^2	6.29E+05
REFCON	Reference Constant	ACF_CH4	Acentric Factors - CH4	Constant	NONE	1.00E-02
REFCON	Reference Constant	ACF_CO2	Acentric Factors - CO2	Constant	NONE	2.31E-01
REFCON	Reference Constant	ACF_H2	Acentric Factors - H2	Constant	NONE	0.00E+00
REFCON	Reference Constant	ACF_H2S	Acentric Factors - H2S	Constant	NONE	1.00E-01
REFCON	Reference Constant	ACF_N2	Acentric Factors - N2	Constant	NONE	4.50E-02
REFCON	Reference Constant	ACF_O2	Acentric Factors - O2	Constant	NONE	1.90E-02
REFCON	Reference Constant	AREA_CH	Area For CH Waste Disposal in CDFGF Model	Constant	m^2	1.12E+05
REFCON	Reference Constant	AREA_RH	Area For RH Waste Disposal in CDFGF Model	Constant	m^2	1.58E+04
REFCON	Reference Constant	AREA_ZRO	Area in Waste Panels Not Used For Disposal (CCDFGF Model)	Constant	m^2	4.13E+03
REFCON	Reference Constant	ASDRUM	Surface area of corrodible metal per drum	Constant	m^2	6.00E+00
REFCON	Reference Constant	ATMPA	Conversion from std. atmosphere to Pa	Constant	Pa/atm	1.01E+05
REFCON	Reference Constant	AVOGADRO	Avogadro's number	Constant	$mole^{-1}$	6.02E+23
REFCON	Reference Constant	BIP_11	H2:H2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_12	H2:CO2 - Binary Interaction Parameter	Constant	NONE	-3.43E-01
REFCON	Reference Constant	BIP_13	H2:CH4 - Binary Interaction Parameter	Constant	NONE	-2.22E-02
REFCON	Reference Constant	BIP_14	H2:N2 - Binary Interaction Parameter	Constant	NONE	9.78E-02
REFCON	Reference Constant	BIP_15	H2:H2S - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_16	H2:O2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_21	CO2:H2 - Binary Interaction Parameter	Constant	NONE	-3.43E-01
REFCON	Reference Constant	BIP_22	CO2:CO2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_23	CO2:CH4 - Binary Interaction Parameter	Constant	NONE	9.33E-02
REFCON	Reference Constant	BIP_24	CO2:N2 - Binary Interaction Parameter	Constant	NONE	-3.15E-02
REFCON	Reference Constant	BIP_25	CO2:H2S - Binary Interaction Parameter	Constant	NONE	9.89E-02
REFCON	Reference Constant	BIP_26	CO2:O2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_31	CH4:H2 - Binary Interaction Parameter	Constant	NONE	-2.22E-02
REFCON	Reference Constant	BIP_32	CH4:CO2 - Binary Interaction Parameter	Constant	NONE	9.33E-02
REFCON	Reference Constant	BIP_33	CH4:CH4 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_34	CH4:N2 - Binary Interaction Parameter	Constant	NONE	2.78E-02
REFCON	Reference Constant	BIP_35	CH4:H2S - Binary Interaction Parameter	Constant	NONE	8.50E-02
REFCON	Reference Constant	BIP_36	CH4:O2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_41	N2:H2 - Binary Interaction Parameter	Constant	NONE	9.78E-02
REFCON	Reference Constant	BIP_42	N2:CO2 - Binary Interaction Parameter	Constant	NONE	-3.15E-02
REFCON	Reference Constant	BIP_43	N2:CH4 - Binary Interaction Parameter	Constant	NONE	2.78E-02
REFCON	Reference Constant	BIP_44	N2:N2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_45	N2:H2S - Binary Interaction Parameter	Constant	NONE	1.70E-01
REFCON	Reference Constant	BIP_46	N2:O2 - Binary Interaction Parameter	Constant	NONE	-7.80E-03
REFCON	Reference Constant	BIP_51	H2S:H2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_52	H2S:CO2 - Binary Interaction Parameter	Constant	NONE	9.89E-02
REFCON	Reference Constant	BIP_53	H2S:CH4 - Binary Interaction Parameter	Constant	NONE	8.50E-02
REFCON	Reference Constant	BIP_54	H2S:N2 - Binary Interaction Parameter	Constant	NONE	1.70E-01
REFCON	Reference Constant	BIP_55	H2S:H2S - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_56	H2S:O2 - Binary Interaction Parameter	Constant	NONE	0.00E+00

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Table 37. Reference Constants — Continued

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
REFCON	Reference Constant	BIP_61	O2:H2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_62	O2:CO2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_63	O2:CH4 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_64	O2:N2 - Binary Interaction Parameter	Constant	NONE	-7.80E-03
REFCON	Reference Constant	BIP_65	O2:H2S - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	BIP_66	O2:O2 - Binary Interaction Parameter	Constant	NONE	0.00E+00
REFCON	Reference Constant	CITOBQ	Curie to Becquerel Conversion	Constant	Bq/Curies	3.70E+10
REFCON	Reference Constant	DARM2	Conversion from darcy to m^2	Constant	m^2/darcy	9.87E-13
REFCON	Reference Constant	DAYSEC	Conversion from days to seconds	Constant	s/day	8.64E+04
REFCON	Reference Constant	DIP1	Down-dip angle or slope of the repository towards the panel modeled in BRAGFLO	Constant	NONE	1.00E+00
REFCON	Reference Constant	DIP2	Down-dip angle or slope of the Rustler Formation towards the panel modeled in BRAGFLO	Constant	NONE	0.00E+00
REFCON	Reference Constant	DRROOM	Number of drums, per room, in ideal packing	Constant	NONE	6.80E+03
REFCON	Reference Constant	FTM	Conversion from feet to meter	Constant	m/ft	3.05E-01
REFCON	Reference Constant	FVRW	Fraction of Emplaced RH Volume Occupied by RH Waste in CCDFGF Model	Constant	NONE	1.00E+00
REFCON	Reference Constant	FVW	Fraction of Repository Volume Occupied By Waste In CCDFGF Model	Constant	NONE	3.85E-01
REFCON	Reference Constant	GRAVACC	Standard gravitational acceleration	Constant	m/s^2	9.81E+00
REFCON	Reference Constant	HRH	Emplaced Height of Remote Handled Waste in CCDFGF Model	Constant	m	5.09E-01
REFCON	Reference Constant	MW_CELL	Carbon Normalized Molecular Weight of Cellulose	Constant	kg/mole	2.70E-02
REFCON	Reference Constant	MW_CH4	Molecular Weight of CH4	Constant	kg/mole	1.60E-02
REFCON	Reference Constant	MW_CO2	Molecular Weight of CO2	Constant	kg/mole	4.40E-02
REFCON	Reference Constant	MW_FE	Molecular Weight - FE	Constant	kg/mole	5.58E-02
REFCON	Reference Constant	MW_H2	Molecular Weight - H2	Constant	kg/mole	2.02E-03
REFCON	Reference Constant	MW_H2O	Molecular Weight - H2O	Constant	kg/mole	1.80E-02
REFCON	Reference Constant	MW_H2S	Molecular Weight of H2S	Constant	kg/mole	3.41E-02
REFCON	Reference Constant	MW_N2	Molecular Weight of N2	Constant	kg/mole	2.80E-02
REFCON	Reference Constant	MW_NACL	Molecular Weight of NaCl	Constant	kg/mole	5.84E-02
REFCON	Reference Constant	MW_O2	Molecular Weight of O2	Constant	kg/mole	3.20E-02
REFCON	Reference Constant	OMEGAA	Constants for RKS EOS	Constant	NONE	4.27E-01
REFCON	Reference Constant	OMEGAB	Constants for RDS EOS	Constant	NONE	8.66E-02
REFCON	Reference Constant	PC_CH4	Critical Pressure of CH4	Constant	Pa	4.62E+06
REFCON	Reference Constant	PC_CO2	Critical Pressure of CO2	Constant	Pa	7.38E+06
REFCON	Reference Constant	PC_H2	Critical Pressure of H2	Constant	Pa	2.05E+06
REFCON	Reference Constant	PC_H2S	Critical Pressure of H2S	Constant	Pa	9.01E+06
REFCON	Reference Constant	PC_N2	Critical Pressure of N2	Constant	Pa	3.39E+06
REFCON	Reference Constant	PC_O2	Critical Pressure of O2	Constant	Pa	5.08E+06
REFCON	Reference Constant	PI	Mathematical constant: PI	Constant	NONE	3.14E+00
REFCON	Reference Constant	PLASFAC	Mass ratio of plastics to equivalent carbon	Constant	NONE	1.70E+00
REFCON	Reference Constant	PSIPA	Conversion from psi to pascal	Constant	$Pa*in^2/lb$	6.89E+03
REFCON	Reference Constant	R	Gas constant R	Constant	J/mole*K	8.31E+00

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Table 37. Reference Constants — Continued

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
REFCON	Reference Constant	SECYR	Seconds to years Conversion	Constant	yr/s	3.17E-08
REFCON	Reference Constant	TC_CH4	Critical temperature: Methane (CH4)	Constant	K	1.91E+02
REFCON	Reference Constant	TC_CO2	Critical temperature: Carbon Dioxide (CO2)	Constant	K	3.04E+02
REFCON	Reference Constant	TC_H2	Critical temperature: Hydrogen (H2)	Constant	K	4.36E+01
REFCON	Reference Constant	TC_H2S	Critical temperature: Hydrogen Sulfide (H2S)	Constant	K	3.74E+02
REFCON	Reference Constant	TC_N2	Critical temperature: Nitrogen (N2)	Constant	K	1.26E+02
REFCON	Reference Constant	TC_O2	Critical temperature: Oxygen (O2)	Constant	K	1.55E+02
REFCON	Reference Constant	VOLWP	Uncompacted Volume of Waste Panels In CCDFGF Model	Constant	m^3	4.36E+05
REFCON	Reference Constant	VPANLEX	Excavated volume of one panel	Constant	m^3	4.61E+04
REFCON	Reference Constant	VREPOS	Excavated storage volume of repository	Constant	m^3	4.38E+05
REFCON	Reference Constant	VROOM	Volume of one room in repository	Constant	m^3	3.64E+03
REFCON	Reference Constant	YRSEC	Conversion from mean solar or tropical year to seconds	Constant	s/yr	3.16E+07

Table 38. Global Parameters

Material	Material Description	Property	Property Description	Distribution Type	Units	Value
GLOBAL	Information that applies globally	DBRMINBV	Minimum volume of brine in the repository required for a direct brine release	Constant	m^3	1.74E+04
GLOBAL	Information that applies globally	FPICD	PIC multiplicative factor for human intrusion by drilling	Constant	NONE	1.00E+00
GLOBAL	Information that applies globally	FPICM	PIC multiplicative factor for human intrusion by mining	Constant	NONE	1.00E+00
GLOBAL	Information that applies globally	LAMBDAD	Drilling Rate Per Unit Area	Constant	(km^{-2}) (yr^{-1})	5.98E-03
GLOBAL	Information that applies globally	MINERT	Mining rate from 40 CFR 194	Constant	yr^{-1}	1.00E-04
GLOBAL	Information that applies globally	ONEPLG	Probability of having Plug Pattern 1	Constant	NONE	2.20E-02
GLOBAL	Information that applies globally	PLGPAT	Index for Plugging Pattern After Drilling Intrusion	Delta	NONE	0.00E+00
GLOBAL	Information that applies globally	TA	Time Active Institutional Controls at WIPP Site Are Effective	Constant	yr	1.00E+02
GLOBAL	Information that applies globally	THREEPLG	Probability of having Plug Pattern 3	Constant	NONE	3.26E-01
GLOBAL	Information that applies globally	TPICD	Time over which passive institutional controls reduce rate of drilling	Constant	yr	6.00E+02
GLOBAL	Information that applies globally	TPICM	Time over which passive institutional controls reduce rate of mining	Constant	yr	6.00E+02
GLOBAL	Information that applies globally	TWOPLG	Probability of having Plug Pattern 2	Constant	NONE	6.52E-01

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Table 39. EPAUNI CH Input (Stream Totals)

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
AECHDM-S	1.02E+02	5.42E+01	4.30E-02	5.21E+01	8.54E+01	6.44E+01	2.57E+01	8.34E-02	9.74E-01	9.95E-01	4.20E-02
AECHHM-S	1.39E+01	1.41E+01	0.00E+00	3.62E+00	4.13E+01	1.64E+01	2.95E-10	5.67E-03	7.63E-04	7.81E-04	2.30E-07
AE-T001	5.12E+02	1.89E+02	0.00E+00	3.11E+01	4.66E+02	2.75E+02	1.20E+02	3.27E-02	5.81E+00	4.01E+00	3.08E-01
AE-T003	2.33E+01	4.47E+00	0.00E+00	8.32E-01	2.89E+01	1.11E+01	1.32E+01	1.34E-04	3.22E-03	7.99E-03	9.54E-03
MU-W002-S	4.50E+00	6.72E+00	0.00E+00	0.00E+00	2.27E-02	0.00E+00	0.00E+00	1.47E-09	9.16E-07	9.38E-07	5.06E-07
AW-N026.82	1.87E+00	0.00E+00	0.00E+00	0.00E+00	7.65E-03	0.00E+00	0.00E+00	0.00E+00	4.87E-01	2.37E+00	0.00E+00
AW-N027.531	3.18E+01	1.02E-01	0.00E+00	1.03E+02	1.04E+02	6.24E-01	9.80E-02	1.32E-02	0.00E+00	0.00E+00	9.63E-06
AW-T033.1325	1.98E+02	3.10E+02	0.00E+00	6.49E+02	7.11E+02	1.62E+02	3.32E+02	4.89E-01	0.00E+00	0.00E+00	6.74E+00
AW-W049	1.86E+02	2.06E+02	0.00E+00	8.53E+00	5.80E+01	4.14E+01	1.89E+02	6.99E-04	0.00E+00	0.00E+00	9.66E-08
BT-T002	1.89E+01	1.22E-02	7.85E-04	7.40E-01	7.36E-04	1.51E-03	3.62E-02	2.10E-03	1.06E+01	1.04E+01	7.72E-09
FR-MOX-MT02	4.16E-01	1.66E-06	0.00E+00	4.25E-07	2.99E-07	1.78E-07	2.63E-06	6.86E-11	0.00E+00	0.00E+00	2.13E-15
FR-MOX-T01	5.62E+00	2.24E-05	0.00E+00	5.73E-06	4.04E-06	2.40E-06	3.55E-05	9.26E-10	0.00E+00	0.00E+00	2.88E-14
BN004-S	3.34E+02	3.97E+02	6.20E-01	4.06E+01	1.21E+03	2.74E+02	6.52E+02	1.44E-02	1.35E-03	2.24E-03	2.43E-01
BN161-S	5.84E+01	5.52E+01	0.00E+00	7.97E+00	2.34E+02	5.33E+01	1.05E+02	7.29E-04	0.00E+00	0.00E+00	9.83E-08
BN211-S	5.23E+02	5.36E+02	0.00E+00	7.17E+01	2.07E+03	4.76E+02	9.06E+02	9.23E-03	7.47E-07	1.24E-06	3.04E-02
BN243-S	1.50E+02	4.33E+01	4.65E-01	4.59E+00	1.18E+02	2.65E+01	5.39E+01	1.31E-03	7.60E-08	1.26E-07	3.40E-07
BN252-S	1.79E+02	2.24E+02	0.00E+00	3.24E+01	1.14E+03	2.44E+02	6.39E+02	3.37E-03	2.39E-07	3.73E-07	7.56E-06
BN296-S	4.74E+02	7.22E+02	4.41E-01	6.94E+01	1.78E+03	3.95E+02	7.64E+02	7.12E-03	4.99E-06	8.80E-06	5.64E-03
BN304-S	3.05E+02	5.74E+01	0.00E+00	1.25E+04	3.04E+01	2.29E+01	7.14E+01	1.12E+00	2.27E-04	4.53E-04	3.20E-07
BN510-S	4.06E+03	1.63E+03	0.00E+00	5.28E+02	6.16E+03	1.33E+03	2.88E+03	1.07E+00	2.59E-04	4.24E-04	1.73E-02
BN835-S	1.03E+03	4.01E+01	0.00E+00	1.40E+03	3.40E+00	2.17E+00	1.09E+01	1.24E-01	4.89E-05	8.38E-05	7.86E-07
BN836-S	1.67E+03	2.41E+00	0.00E+00	1.45E+03	2.71E+00	1.84E+00	2.52E+00	1.24E-01	1.88E-04	3.04E-04	2.56E-07
BNINW216-S	4.47E+03	2.88E+04	0.00E+00	1.43E+02	1.71E+03	4.34E+02	1.40E+03	1.89E-01	4.93E-05	7.88E-05	5.62E-05
BNINW218-S	4.49E+02	4.29E+01	0.00E+00	1.86E+00	4.48E+01	9.21E+00	2.54E+01	1.69E-02	5.58E-06	8.96E-06	3.29E-05
ID-RF-BNL-ASH-S	2.08E-01	1.63E-01	0.00E+00	1.99E-02	7.32E-01	1.68E-01	2.98E-01	1.77E-06	0.00E+00	0.00E+00	3.01E-10
ID-RF-S3114-S	2.74E+02	1.64E+01	0.00E+00	1.26E+00	3.82E+01	8.29E+00	2.17E+01	1.51E-03	2.56E-06	4.12E-06	4.16E-08
ID-RF-S3150-A-S	2.02E+02	4.30E+01	0.00E+00	5.71E+00	1.52E+02	3.34E+01	9.22E+01	5.64E-01	9.69E-06	1.62E-05	2.30E-07
ID-RF-S5100-A-S	6.16E+02	1.53E+02	0.00E+00	1.58E+01	5.84E+02	1.23E+02	2.13E+02	3.40E-03	7.37E-06	1.10E-05	1.03E-03
ID-RF-S5126-S	2.32E+02	1.84E+02	0.00E+00	2.49E+01	8.42E+02	1.96E+02	4.24E+02	1.88E-02	5.36E-01	1.06E-05	2.18E-01
ID-RF-S5300-A-S	2.09E+03	8.52E+01	1.89E-01	5.88E+00	2.17E+02	4.86E+01	9.54E+01	2.30E-02	1.02E-05	1.39E-05	2.97E-01

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
ID-SDA-DEBRIS-S	3.35E+01	3.23E+01	0.00E+00	4.19E+00	1.12E+02	2.55E+01	3.90E+01	6.06E-03	3.63E-06	4.25E-06	5.21E-03
IN-BN004	6.48E+02	5.56E+02	0.00E+00	5.75E+01	1.71E+03	3.87E+02	1.01E+03	1.71E-02	1.91E-03	2.06E-03	2.41E-05
IN-BN222	2.66E+02	1.66E+02	0.00E+00	1.65E+01	6.39E+02	1.43E+02	4.06E+02	9.74E-03	0.00E+00	0.00E+00	3.53E-01
IN-BN311	1.23E+01	1.21E+02	0.00E+00	9.52E+00	3.79E+02	8.40E+01	2.55E+02	1.74E-03	0.00E+00	0.00E+00	4.82E-01
IN-BN409	1.64E+01	1.25E+03	0.00E+00	3.83E+01	1.11E+03	2.54E+02	6.17E+02	3.82E-03	0.00E+00	0.00E+00	8.49E-07
IN-BN421	3.08E+01	1.36E+02	0.00E+00	2.80E+01	6.49E+02	1.48E+02	3.60E+02	6.45E-03	0.00E+00	0.00E+00	2.59E-02
IN-BN432	6.74E+01	1.48E+02	0.00E+00	1.43E+01	5.66E+02	1.26E+02	3.80E+02	2.25E-03	0.00E+00	0.00E+00	2.29E-01
IN-BN510	1.12E+04	4.07E+03	0.00E+00	1.26E+03	1.56E+04	3.35E+03	7.51E+03	1.53E-01	5.85E-04	6.29E-04	1.24E-05
IN-BN835	1.12E+02	2.78E+00	0.00E+00	1.14E+02	2.64E-01	1.67E-01	2.03E-01	9.33E-03	3.89E-06	4.20E-06	5.80E-08
IN-BN836	2.41E+02	8.02E-02	0.00E+00	3.39E+01	6.23E-02	4.25E-02	1.61E-02	2.80E-03	1.89E-05	2.05E-05	2.38E-08
IN-BNINW216	5.48E+03	2.42E+04	0.00E+00	1.05E+02	1.44E+03	3.51E+02	1.22E+03	1.35E-01	4.06E-05	4.37E-05	4.30E-05
IN-BNINW218	5.73E+02	3.69E+01	0.00E+00	1.35E+00	3.84E+01	7.71E+00	2.44E+01	1.24E-02	4.81E-06	5.22E-06	1.43E-05
IN-GEM-01	7.28E+00	3.17E+00	0.00E+00	2.80E-02	1.59E+00	3.63E-01	4.64E-01	2.69E-06	0.00E+00	0.00E+00	2.06E-09
IN-GEM-02	5.41E+00	2.36E+00	0.00E+00	2.08E-02	1.18E+00	2.70E-01	3.45E-01	2.00E-06	0.00E+00	0.00E+00	1.53E-09
IN-ID-RF-S3114	3.80E+03	2.15E+02	0.00E+00	1.66E+01	5.01E+02	1.09E+02	2.99E+02	1.98E-02	3.44E-05	5.53E-05	5.21E-07
IN-ID-RF-S3150-A	5.61E+01	1.19E+01	0.00E+00	1.60E+00	4.21E+01	9.24E+00	2.81E+01	1.56E-01	2.81E-06	4.72E-06	5.86E-08
IN-ID-RF-S5100-A	1.62E+02	3.84E+01	0.00E+00	4.02E+00	1.46E+02	3.08E+01	5.87E+01	8.30E-04	1.93E-06	2.90E-06	2.58E-04
IN-ID-RF-S5126-A	1.81E+02	1.37E+02	0.00E+00	1.88E+01	6.30E+02	1.46E+02	3.33E+02	1.40E-02	4.11E-01	8.14E-06	1.63E-01
IN-ID-RF-S5300-A	9.12E+03	4.91E+02	8.06E-01	2.43E+01	8.90E+02	2.00E+02	2.16E+03	9.41E-02	4.28E-05	5.85E-05	1.22E+00
IN-ID-SDA-Debris	2.30E+03	1.88E+03	0.00E+00	2.12E+02	6.30E+03	1.43E+03	2.26E+03	2.41E+00	2.58E-04	2.90E-04	1.85E-01
IN-ID-SDA-Sludge	4.55E+03	2.45E+04	0.00E+00	7.49E+01	2.47E+03	5.54E+02	1.51E+03	1.03E+00	3.12E-04	3.39E-04	1.23E-01
IN-ID-SDA-Soil	6.65E+02	5.83E+02	0.00E+00	1.40E+01	4.39E+02	9.95E+01	1.98E+02	1.14E-01	2.85E-04	3.13E-04	1.17E-06
INW161.001-S	1.91E+01	3.13E+01	0.00E+00	4.29E+00	1.57E+02	3.55E+01	8.92E+01	7.33E-04	0.00E+00	0.00E+00	1.81E-08
IN-W163.1007	9.21E+00	8.02E+00	0.00E+00	1.78E+00	6.96E+01	1.53E+01	3.44E+01	2.65E-04	0.00E+00	0.00E+00	5.73E-09
INW169.001-S	1.91E+01	5.47E+00	0.00E+00	5.34E-01	1.97E+01	4.38E+00	1.24E+01	3.51E-04	0.00E+00	0.00E+00	3.29E-09
IN-W181.162	7.62E+01	4.38E+00	0.00E+00	6.46E-01	2.58E+01	5.84E+00	1.88E+01	9.65E-05	0.00E+00	0.00E+00	3.13E-09
IN-W188.160	1.42E+02	8.05E+00	0.00E+00	1.78E+00	6.98E+01	1.54E+01	3.46E+01	2.66E-04	0.00E+00	0.00E+00	5.75E-09
INW198.001-S	4.91E+01	7.61E+00	0.00E+00	9.66E-01	3.78E+01	8.42E+00	2.17E+01	2.38E-04	0.00E+00	0.00E+00	2.60E-04
INW211.001-S	3.04E+02	9.32E+02	0.00E+00	1.07E+02	3.64E+03	8.09E+02	2.66E+03	1.44E-02	0.00E+00	0.00E+00	1.30E-02

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
INW216.001-S	1.25E+03	5.48E+04	0.00E+00	9.06E+01	3.26E+03	7.30E+02	2.22E+03	6.31E-01	0.00E+00	0.00E+00	3.35E-02
INW218.001-S	1.11E+03	8.21E+02	0.00E+00	1.35E+01	4.97E+02	1.11E+02	3.34E+02	9.26E-01	0.00E+00	0.00E+00	1.11E-02
INW222.001-S	6.51E+01	6.59E+01	0.00E+00	8.04E+00	2.84E+02	6.37E+01	1.78E+02	1.66E-03	0.00E+00	0.00E+00	3.85E-08
INW243.001-S	7.49E+01	8.44E+01	0.00E+00	8.29E+00	2.37E+02	5.28E+01	1.57E+02	2.70E-03	0.00E+00	0.00E+00	2.47E-03
INW247.001R1-S	1.17E+02	1.07E+02	0.00E+00	1.97E+01	4.15E+02	9.44E+01	2.86E+02	2.06E-03	0.00E+00	0.00E+00	7.54E-03
INW252.001-S	6.09E+01	7.55E+01	0.00E+00	9.73E+00	3.01E+02	6.83E+01	2.89E+02	1.74E-03	0.00E+00	0.00E+00	4.05E-08
IN-W263.520	2.66E+02	7.35E-02	0.00E+00	2.74E+02	1.80E+01	2.86E-02	3.15E-01	4.09E-02	0.00E+00	0.00E+00	5.25E-11
INW276.001-S	1.02E+01	7.11E+00	0.00E+00	1.86E+00	3.17E+01	7.23E+00	2.21E+01	2.20E-04	0.00E+00	0.00E+00	5.08E-09
INW276.002-S	1.60E+01	1.12E+01	0.00E+00	2.81E+00	4.77E+01	1.08E+01	3.47E+01	3.25E-04	0.00E+00	0.00E+00	7.30E-04
INW276.003-S	1.87E+02	4.23E+02	0.00E+00	1.04E+02	1.73E+03	3.92E+02	1.40E+03	1.13E-02	0.00E+00	0.00E+00	5.21E-02
INW276.004-S	4.68E+01	9.92E+01	0.00E+00	2.18E+01	3.67E+02	8.34E+01	2.94E+02	2.47E-03	0.00E+00	0.00E+00	4.53E-02
INW296.001-S	9.78E+01	1.77E+02	0.00E+00	2.32E+01	5.13E+02	1.16E+02	3.57E+02	3.07E-03	0.00E+00	0.00E+00	1.01E-02
IN-W315.601	6.92E+00	4.19E+02	0.00E+00	1.42E-01	5.69E+00	1.29E+00	4.13E+00	2.12E-05	0.00E+00	0.00E+00	5.98E-07
IN-W319.584	4.50E+00	2.61E+00	0.00E+00	5.79E-01	2.26E+01	4.97E+00	1.12E+01	8.64E-05	0.00E+00	0.00E+00	1.86E-09
IN-W321.1023	1.09E+01	2.28E+01	0.00E+00	5.05E+00	1.98E+02	4.36E+01	9.81E+01	7.54E-04	0.00E+00	0.00E+00	1.63E-08
IN-W357.1022	4.50E+00	8.18E-02	0.00E+00	1.81E-02	7.06E-01	1.55E-01	3.51E-01	2.70E-06	0.00E+00	0.00E+00	5.85E-11
IN-W375.1096	1.90E+02	2.02E+00	0.00E+00	4.46E-01	1.75E+01	3.85E+00	8.67E+00	6.66E-05	0.00E+00	0.00E+00	1.44E-09
KN-B234TRU	8.38E+02	2.01E+02	0.00E+00	1.77E+01	6.78E+02	6.76E+02	2.26E+02	2.43E+00	0.00E+00	0.00E+00	2.43E+00
LA-CIN01.001	5.16E+02	2.21E+04	0.00E+00	8.17E+02	8.56E+03	2.30E+03	3.41E+03	3.80E-01	3.23E-07	3.11E-07	9.64E-02
LA-CIN02.001	4.27E+02	5.87E+02	0.00E+00	5.36E+01	7.38E+02	4.20E+01	3.04E+01	2.91E-02	5.86E-02	1.47E-03	2.00E-02
LA-LAMHD03DD	3.78E+00	3.48E-03	0.00E+00	5.31E-02	3.53E-02	0.00E+00	2.08E-02	5.10E-06	0.00E+00	0.00E+00	1.49E-12
LA-LAMIN02V.001	2.73E+01	1.18E+01	0.00E+00	1.59E+00	6.83E+01	1.62E+01	5.82E+01	1.47E-04	0.00E+00	0.00E+00	5.26E-09
LA-LAMIN04S	2.04E+02	1.10E+03	0.00E+00	6.51E+01	1.96E+03	5.04E+02	2.07E+03	6.02E-03	0.00E+00	0.00E+00	6.05E-07
LA-LA-NCD01	2.62E+02	5.59E+00	0.00E+00	7.42E-01	3.21E+01	7.61E+00	2.61E+01	7.13E-05	0.00E+00	0.00E+00	2.67E-09
LA-LANHD01	1.61E+02	4.22E+00	0.00E+00	4.67E-01	2.29E+01	5.42E+00	8.62E+00	7.34E-05	0.00E+00	0.00E+00	4.88E-09
LA-LANHD02238	1.34E+03	1.72E+00	0.00E+00	1.50E+03	1.17E+00	5.53E-01	5.64E+00	2.00E-01	0.00E+00	0.00E+00	1.38E-09
LA-LANIN03NC	7.02E+02	2.21E+03	0.00E+00	3.53E+03	6.14E+03	1.54E+03	6.09E+03	3.27E-01	0.00E+00	0.00E+00	1.66E-05
LA-MHD01.001	2.52E+03	5.79E+03	5.83E-01	2.46E+04	2.16E+04	5.67E+03	6.79E+03	8.48E+00	3.08E-04	2.88E-04	3.42E-01
LA-MHD01.001-S	1.11E+03	4.53E+03	1.63E+00	1.48E+04	1.11E+04	2.93E+03	8.18E+03	4.18E+00	7.12E-04	5.26E-01	5.99E-01

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m^3)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
LA-MHD02.001-S	1.35E+01	1.87E+00	0.00E+00	1.44E+03	1.39E+00	6.99E-01	1.86E+00	4.54E-01	1.31E-06	1.28E-06	2.57E-06
LA-MHD03.001	5.97E+02	1.74E+02	2.15E+01	1.16E+03	5.31E+02	1.29E+02	1.75E+02	4.06E-01	9.61E-03	9.31E-02	1.31E-02
LA-MHD03.001-S	1.92E+02	5.11E+01	9.76E-02	5.79E+02	1.26E+02	3.41E+01	1.35E+02	1.44E-01	2.41E-03	2.35E-03	1.42E-02
LA-MHD04.001	8.75E+00	9.84E-01	0.00E+00	6.72E+02	1.06E+00	5.47E-01	6.63E-01	1.81E-01	3.62E-08	3.47E-08	3.91E-08
LA-MIN03-NC.001	1.11E+03	3.19E+02	0.00E+00	4.55E+01	4.11E+02	1.74E+01	8.24E+01	3.31E-02	7.97E-03	7.77E-03	9.80E-04
LA-MIN03-NC.001-S	3.67E+02	1.72E+02	0.00E+00	6.36E+00	1.39E+02	2.03E+01	9.80E+01	1.31E-02	2.36E-02	1.91E-02	5.28E-07
LA-OS-00-01.001	2.07E+02	1.33E+04	0.00E+00	7.00E+03	6.65E+02	1.85E+02	9.89E+01	7.97E-01	2.08E+00	1.64E-04	1.07E-05
LA-OS-00-01.001-S	8.26E+01	7.12E+02	0.00E+00	5.46E+03	6.96E+02	2.08E+02	1.93E+02	1.04E+00	8.34E-02	9.96E-01	6.75E-07
LA-OS-00-01-S	4.16E-01	2.65E+00	0.00E+00	1.41E+00	4.78E+00	4.85E+00	1.60E+00	1.41E-04	1.41E-04	1.29E-04	3.37E-09
LA-OS-00-03	5.78E+01	2.44E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.94E-08
LA-PX-00-01	6.24E-01	1.20E-02	0.00E+00	3.87E-03	5.56E-02	1.31E-02	2.27E-02	4.72E-07	0.00E+00	0.00E+00	1.01E-11
LA-TA-00-01	1.96E+02	3.47E+01	8.53E+00	3.36E+02	1.05E+02	2.02E+01	2.09E+01	7.63E-02	2.11E-07	2.02E-07	1.22E-03
LA-TA-03-01	2.08E-01	4.70E-02	0.00E+00	4.21E-03	1.85E-01	4.39E-02	1.37E-01	4.35E-07	0.00E+00	0.00E+00	9.54E-10
LA-TA-03-09	8.18E+00	1.27E+00	0.00E+00	5.02E-02	1.04E-01	2.46E-02	6.33E-02	5.93E-06	0.00E+00	0.00E+00	1.37E-08
LA-TA-03-10	2.77E+02	4.95E+00	0.00E+00	9.47E-01	2.40E+01	5.68E+00	1.69E+01	1.65E-03	3.15E-06	3.07E-06	1.43E-07
LA-TA-03-12	2.08E-01	1.98E-02	0.00E+00	3.42E-03	1.89E-01	4.41E-02	3.40E-02	7.76E-07	0.00E+00	0.00E+00	3.21E-11
LA-TA-03-14	1.51E+01	0.00E+00	0.00E+00	2.24E+00	9.34E-01	0.00E+00	0.00E+00	5.08E-04	0.00E+00	0.00E+00	0.00E+00
LA-TA-03-20	1.87E+00	5.16E-01	0.00E+00	3.19E+02	3.74E-01	1.78E-01	2.09E-01	1.19E-01	0.00E+00	0.00E+00	7.30E-09
LA-TA-03-28	6.03E+00	5.20E-01	0.00E+00	2.29E+00	4.05E+00	7.66E-01	8.89E-01	4.89E-04	0.00E+00	0.00E+00	8.42E-10
LA-TA-03-29	4.16E-01	7.90E-02	0.00E+00	1.50E+02	1.13E-01	4.43E-02	2.23E-01	2.74E-02	0.00E+00	0.00E+00	8.39E-11
LA-TA-03-30	7.77E+00	8.68E-02	0.00E+00	5.58E-02	5.31E-02	1.68E-02	1.58E-02	1.19E-05	3.56E-06	0.00E+00	5.36E-10
LA-TA-03-31	2.08E-01	1.20E-01	0.00E+00	2.39E-02	1.19E+00	2.77E-01	4.17E-01	3.96E-06	0.00E+00	0.00E+00	1.05E-10
LA-TA-03-33	2.10E+00	2.62E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.04E-09	5.25E-07	0.00E+00	4.82E-08
LA-TA-03-34	2.08E+01	1.54E-02	0.00E+00	2.42E+00	3.84E-02	4.28E-03	8.29E-03	3.14E-04	7.07E-08	0.00E+00	1.64E-11
LA-TA-03-40	1.70E+01	0.00E+00	0.00E+00	4.54E-01	7.56E+00	0.00E+00	0.00E+00	8.48E-05	0.00E+00	0.00E+00	0.00E+00
LA-TA-03-42	5.67E+01	3.50E-03	0.00E+00	1.00E-01	6.01E-01	7.92E-03	8.96E-03	1.91E-05	0.00E+00	0.00E+00	4.07E-12
LA-TA-21-05	4.16E-01	1.16E-01	0.00E+00	2.04E-02	1.05E+00	2.50E-01	2.19E-01	4.44E-06	0.00E+00	0.00E+00	1.73E-10
LA-TA-21-06	2.34E+02	4.11E+01	0.00E+00	1.14E+04	2.03E+02	6.15E+01	7.74E+01	2.53E+00	0.00E+00	0.00E+00	6.60E-08
LA-TA-21-07	2.99E+02	1.96E+01	0.00E+00	8.60E+03	2.04E+02	3.91E+01	3.35E+01	1.95E+00	0.00E+00	0.00E+00	3.17E-08

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
LA-TA-21-08	2.91E+00	4.60E-01	0.00E+00	7.31E+01	2.67E+00	7.49E-01	8.70E-01	1.59E-02	0.00E+00	0.00E+00	6.88E-10
LA-TA-21-09	2.50E+00	3.75E-02	0.00E+00	1.20E+03	3.59E-01	8.36E-02	7.09E-02	2.62E-01	0.00E+00	0.00E+00	5.61E-11
LA-TA-21-10	1.89E+00	0.00E+00	0.00E+00	0.00E+00	5.08E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LA-TA-21-11	1.32E+01	0.00E+00	0.00E+00	4.20E-01	2.11E+01	0.00E+00	0.00E+00	9.34E-05	0.00E+00	0.00E+00	0.00E+00
LA-TA-21-12	1.63E+02	7.58E+01	0.00E+00	3.58E+04	2.76E+02	9.08E+01	1.40E+02	7.64E+00	0.00E+00	0.00E+00	4.17E+01
LA-TA-21-13	1.77E+03	1.24E+04	0.00E+00	1.47E+02	1.23E+02	0.00E+00	0.00E+00	3.96E-02	0.00E+00	0.00E+00	3.58E-05
LA-TA-21-14	5.52E+01	0.00E+00	0.00E+00	0.00E+00	9.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LA-TA-21-15	3.74E+00	3.64E-01	0.00E+00	6.46E-02	4.73E+00	8.14E-01	7.24E-01	1.38E-05	0.00E+00	0.00E+00	5.24E-10
LA-TA-21-16	7.99E+01	7.33E+01	0.00E+00	1.68E+01	6.33E+02	1.51E+02	1.45E+02	3.59E-03	0.00E+00	0.00E+00	1.06E-07
LA-TA-21-17	6.24E-01	2.73E-03	0.00E+00	4.80E-04	2.62E-02	6.10E-03	5.17E-03	1.05E-07	0.00E+00	0.00E+00	4.09E-12
LA-TA-21-40	6.65E+02	5.69E-01	0.00E+00	1.10E+03	3.34E+02	8.85E-01	4.20E-01	2.09E-01	2.99E-07	1.85E-06	5.18E-06
LA-TA-21-41	1.51E+01	0.00E+00	0.00E+00	0.00E+00	1.83E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LA-TA-21-42	6.24E+01	7.41E+00	0.00E+00	3.66E+00	2.11E+01	0.00E+00	4.16E+00	6.98E-04	0.00E+00	0.00E+00	4.57E-08
LA-TA-48-01	8.32E+00	2.43E-01	0.00E+00	3.98E-01	6.09E-01	1.53E-01	4.89E-01	5.91E-05	2.63E-04	0.00E+00	8.13E-03
LA-TA-50-01	1.89E+00	1.54E-02	0.00E+00	1.78E-04	8.67E-04	0.00E+00	0.00E+00	1.85E-04	6.50E-04	0.00E+00	1.17E-11
LA-TA-50-02	6.24E-01	2.86E-02	0.00E+00	2.82E-01	3.48E-02	0.00E+00	5.13E-02	2.91E-05	1.57E-07	0.00E+00	5.23E-11
LA-TA-50-05	2.08E-01	1.72E-02	0.00E+00	2.58E-02	1.50E-01	3.99E-03	8.99E-03	2.57E-06	0.00E+00	0.00E+00	1.16E-11
LA-TA-50-06	3.55E+00	1.14E+01	0.00E+00	2.52E+00	3.65E+00	2.17E+00	1.47E+01	3.66E-04	0.00E+00	0.00E+00	1.33E-08
LA-TA-50-10	3.95E+00	1.86E+01	0.00E+00	1.48E+02	1.01E+02	2.40E+01	6.34E+01	1.74E-02	0.00E+00	0.00E+00	1.29E-08
LA-TA-50-11	8.32E-01	2.98E-01	0.00E+00	5.17E-02	2.52E+00	5.70E-01	6.76E-01	9.66E-06	0.00E+00	0.00E+00	3.77E-10
LA-TA-50-12	9.22E+00	1.20E-02	0.00E+00	1.89E-02	8.38E-02	0.00E+00	6.53E-04	1.62E-04	0.00E+00	0.00E+00	4.27E-11
LA-TA-50-13	2.08E-01	0.00E+00	0.00E+00	7.31E-03	0.00E+00	0.00E+00	0.00E+00	1.15E-06	0.00E+00	0.00E+00	0.00E+00
LA-TA-50-14	4.16E-01	5.25E-02	0.00E+00	2.51E-03	1.57E-02	0.00E+00	0.00E+00	4.68E-07	0.00E+00	0.00E+00	1.10E-10
LA-TA-50-15	9.11E+01	1.45E+01	0.00E+00	2.04E+02	3.72E+01	8.23E+00	1.11E+01	3.68E-02	5.13E-01	4.13E-01	2.47E-08
LA-TA-50-16	1.32E+01	4.56E-01	0.00E+00	2.73E+00	6.33E-01	9.22E-02	8.15E-01	3.75E-04	3.32E-03	0.00E+00	6.38E-07
LA-TA-50-18	3.54E+00	1.56E+00	0.00E+00	7.79E-01	6.30E-01	9.29E-02	0.00E+00	1.73E-04	0.00E+00	0.00E+00	4.37E-09
LA-TA-50-19	1.09E+02	2.32E+01	0.00E+00	3.83E+01	7.59E+00	0.00E+00	2.62E-03	8.68E-03	5.84E-07	5.59E-07	6.73E-08
LA-TA-50-20	6.24E-01	2.75E-03	0.00E+00	0.00E+00	3.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.21E-12
LA-TA-50-40	1.89E+00	0.00E+00	0.00E+00	0.00E+00	6.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m^3)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
LA-TA-50-41	2.08E+01	1.57E-01	0.00E+00	3.37E-02	1.59E+00	3.72E-01	7.49E-01	4.76E-06	0.00E+00	0.00E+00	1.00E-10
LA-TA-55-03	3.56E+01	4.89E+01	0.00E+00	1.01E+02	2.18E+02	5.43E+01	1.58E+02	1.23E-02	0.00E+00	0.00E+00	1.58E-07
LA-TA-55-04	1.25E+00	5.95E-01	0.00E+00	7.33E-02	3.33E+00	7.87E-01	2.02E+00	8.66E-06	0.00E+00	0.00E+00	4.13E-10
LA-TA-55-05	5.65E+01	2.09E+01	0.00E+00	1.08E+03	1.04E+02	2.54E+01	6.67E+01	3.27E-01	1.56E-07	1.52E-07	2.53E-08
LA-TA-55-07	3.12E+00	5.79E+00	0.00E+00	3.54E+01	2.37E+01	5.80E+00	1.87E+01	4.32E-03	0.00E+00	0.00E+00	4.24E-09
LA-TA-55-08	2.70E+00	1.24E+00	0.00E+00	5.79E+00	6.88E+00	1.63E+00	4.02E+00	7.06E-04	0.00E+00	0.00E+00	9.11E-10
LA-TA-55-09	6.24E-01	5.78E-02	0.00E+00	1.16E+02	1.32E-01	7.12E-02	2.34E-01	3.82E-02	0.00E+00	0.00E+00	4.09E-10
LA-TA-55-10	6.24E-01	1.99E-01	0.00E+00	6.46E+01	7.46E-02	6.47E-02	7.00E-01	2.10E-02	0.00E+00	0.00E+00	6.53E-10
LA-TA-55-12	2.08E-01	2.17E-02	0.00E+00	3.10E-03	2.83E-02	1.38E-02	7.76E-02	3.55E-07	0.00E+00	0.00E+00	1.42E-11
LA-TA-55-14	3.59E+02	3.27E+03	0.00E+00	1.55E+01	6.41E+02	1.53E+02	3.61E+02	1.95E-03	0.00E+00	0.00E+00	3.43E-06
LA-TA-55-15	1.81E+01	1.04E+02	0.00E+00	8.10E+02	5.34E+02	1.30E+02	3.38E+02	9.88E-02	0.00E+00	0.00E+00	7.66E-08
LA-TA-55-17B	1.48E+01	3.52E-01	0.00E+00	4.11E-01	1.98E+00	4.69E-01	1.33E+00	4.55E-05	0.00E+00	0.00E+00	2.17E-10
LA-TA-55-18	4.16E-01	0.00E+00	0.00E+00	9.67E+01	0.00E+00	0.00E+00	0.00E+00	1.64E-02	0.00E+00	0.00E+00	0.00E+00
LA-TA-55-19	1.20E+03	9.32E+02	0.00E+00	1.47E+04	4.12E+03	1.22E+03	2.11E+03	4.01E+00	4.94E-06	4.64E-07	7.16E-02
LA-TA-55-19.01-S	8.14E+01	7.69E+01	0.00E+00	1.64E+01	2.49E+02	6.14E+01	1.66E+02	1.20E-01	4.91E-07	0.00E+00	6.03E-07
LA-TA-55-19.02-S	2.29E+02	4.34E+02	0.00E+00	1.65E+02	8.16E+02	2.28E+02	8.68E+02	8.20E-01	2.97E-04	2.71E-04	4.54E-03
LA-TA-55-20	4.63E+01	2.17E+01	0.00E+00	3.60E+02	1.31E+02	3.21E+01	7.63E+01	5.10E-02	0.00E+00	0.00E+00	4.44E-08
LA-TA-55-21	7.55E+01	5.62E+01	0.00E+00	1.66E+03	3.25E+02	8.85E+01	1.11E+02	3.91E-01	9.56E-08	8.45E-08	1.01E-07
LA-TA-55-22	2.71E+01	4.77E+00	0.00E+00	1.38E+03	2.28E+01	5.99E+00	1.49E+01	3.40E-01	1.85E-07	1.79E-07	1.32E-08
LA-TA-55-23	1.66E+00	1.38E+00	0.00E+00	1.33E+02	1.28E+01	3.01E+00	3.89E+00	2.42E-02	0.00E+00	0.00E+00	1.46E-09
LA-TA-55-24	1.46E+00	8.82E-01	0.00E+00	1.70E-01	6.65E+00	1.64E+00	4.04E+00	1.20E-04	0.00E+00	0.00E+00	5.86E-10
LA-TA-55-25	4.16E-01	1.03E+00	0.00E+00	2.02E-01	9.91E+00	2.33E+00	3.24E+00	3.51E-05	0.00E+00	0.00E+00	9.99E-10
LA-TA-55-26	1.66E+00	1.12E-01	0.00E+00	4.04E+01	6.42E-01	1.67E-01	5.23E-01	5.71E-03	0.00E+00	0.00E+00	5.48E-10
LA-TA-55-27	4.16E-01	2.62E-03	0.00E+00	5.04E-04	2.56E-02	5.97E-03	7.80E-03	8.98E-08	0.00E+00	0.00E+00	2.66E-12
LA-TA-55-29	3.74E+00	6.31E-01	0.00E+00	1.69E+03	2.04E+00	9.88E-01	1.75E+00	5.67E-01	0.00E+00	0.00E+00	1.08E-08
LA-TA-55-30	1.18E+03	6.43E+02	0.00E+00	2.22E+04	2.26E+03	7.12E+02	1.40E+03	5.04E+00	1.31E-06	1.23E-06	9.07E-07
LA-TA-55-30-S	9.53E+01	1.30E+02	0.00E+00	3.65E+01	2.47E+02	6.94E+01	2.25E+02	1.34E-02	4.41E-03	4.31E-03	9.49E-03
LA-TA-55-31	2.17E+01	1.16E+01	0.00E+00	2.45E+00	1.04E+02	2.37E+01	4.10E+01	3.60E-03	0.00E+00	0.00E+00	1.03E-08
LA-TA-55-32	1.00E+01	6.77E+00	0.00E+00	2.17E+03	2.08E+01	5.98E+00	1.24E+01	4.98E-01	1.66E-07	1.60E-07	2.04E-08

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
LA-TA-55-33	2.50E+00	2.00E-01	0.00E+00	3.95E-02	4.90E-01	2.38E-01	5.37E-01	7.38E-06	0.00E+00	0.00E+00	2.22E-10
LA-TA-55-34	7.05E+01	3.31E+02	0.00E+00	4.86E+01	1.83E+03	4.59E+02	6.60E+02	2.23E-02	0.00E+00	0.00E+00	9.64E-03
LA-TA-55-36	2.08E-01	1.37E+01	0.00E+00	8.69E-02	4.21E+00	9.82E-01	1.71E+00	1.33E-05	0.00E+00	0.00E+00	2.02E-08
LA-TA-55-38	3.54E+00	9.47E-01	0.00E+00	1.76E+03	1.35E+00	5.28E-01	2.42E+00	3.37E-01	0.00E+00	0.00E+00	1.10E-09
LA-TA-55-39	6.93E+01	3.62E+02	0.00E+00	8.17E+01	3.39E+03	7.95E+02	1.08E+03	1.47E-02	0.00E+00	0.00E+00	3.68E-07
LA-TA-55-43	6.55E+01	3.75E-01	0.00E+00	2.44E+02	5.67E-01	1.90E-01	7.18E-01	5.27E-02	0.00E+00	0.00E+00	2.41E-09
LA-TA-55-43.01-S	1.91E+02	6.23E-01	0.00E+00	4.33E+02	4.66E-01	7.62E-01	1.49E+00	8.29E-02	0.00E+00	0.00E+00	6.16E-09
LA-TA-55-46	2.08E-01	8.69E-05	0.00E+00	5.90E-02	5.13E-05	2.61E-05	2.00E-04	9.53E-06	0.00E+00	0.00E+00	9.85E-14
LA-TA-55-47	1.89E+00	2.71E-03	0.00E+00	6.00E-04	2.79E-02	6.52E-03	1.44E-02	8.00E-08	0.00E+00	0.00E+00	1.55E-12
LA-TA-55-50	3.14E+00	2.94E-02	0.00E+00	1.97E+00	1.55E-01	3.63E-02	1.02E-01	2.32E-04	0.00E+00	0.00E+00	2.86E-11
LA-TA-55-53	1.19E+01	5.94E+01	0.00E+00	7.85E+00	3.04E+02	7.51E+01	2.36E+02	8.39E-04	0.00E+00	0.00E+00	3.44E-08
LA-TA-55-54	2.08E-01	1.13E-03	0.00E+00	1.18E-04	6.10E-03	1.44E-03	1.72E-03	2.16E-08	0.00E+00	0.00E+00	1.70E-12
LA-TA-55-60	7.56E+01	7.65E+00	0.00E+00	8.01E+00	1.27E+01	4.39E+00	1.71E+01	1.53E-03	0.00E+00	0.00E+00	8.79E-07
LA-TA-55-61	1.19E+02	7.28E+00	0.00E+00	4.27E+01	2.55E+01	8.70E+00	1.90E+01	7.80E-03	0.00E+00	0.00E+00	8.25E-09
LA-TA-55-62	1.51E+01	2.84E-01	0.00E+00	6.09E-02	6.36E-01	3.05E-01	7.64E-01	1.14E-05	0.00E+00	0.00E+00	3.16E-10
LA-TA-55-63	3.78E+00	2.35E-02	0.00E+00	4.73E-03	2.33E-01	5.43E-02	8.59E-02	7.64E-07	0.00E+00	0.00E+00	1.96E-11
LB-T001	1.61E+00	5.95E-02	0.00E+00	1.50E-04	3.05E-03	7.53E-04	9.44E-05	1.55E-08	0.00E+00	0.00E+00	4.66E-04
LB-T002	1.40E+00	4.19E-02	0.00E+00	6.88E-03	7.68E-02	1.12E-04	6.41E-03	9.45E-07	2.17E-09	0.00E+00	8.72E-07
LB-T003	1.40E+00	1.71E-01	3.14E-03	0.00E+00	0.00E+00	3.39E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.91E-10
BLCHDN.001-S	1.66E+00	1.05E-01	7.23E-02	7.10E-02	4.38E-06	4.06E-04	2.20E-04	6.57E-06	0.00E+00	0.00E+00	1.13E-07
LL-M001	1.53E+03	6.86E+03	1.25E+03	6.93E+03	5.74E+03	1.75E+03	5.92E+03	7.05E-01	1.34E+00	1.32E+00	3.33E+01
LL-M001-S5400-S	1.43E+02	3.29E+02	1.12E+01	2.90E+02	5.98E+02	1.68E+02	5.88E+02	4.55E-02	1.13E-05	1.09E-05	9.35E-06
LL-T004	1.25E+00	2.04E+01	7.24E-04	1.37E+00	4.26E+00	2.08E+00	8.07E+00	1.12E-04	0.00E+00	0.00E+00	1.86E-08
LL-T005	4.16E-01	7.44E-03	0.00E+00	2.29E-04	5.99E-03	1.38E-03	1.15E-02	1.88E-08	4.29E-03	4.21E-03	3.38E-12
LL-W018a	1.52E+03	7.40E+01	1.82E-02	4.70E+00	4.88E+01	1.45E+01	1.23E+02	3.85E-04	0.00E+00	0.00E+00	3.38E-08
LL-W018b	2.73E+01	2.58E+02	2.60E-03	8.26E+01	4.56E+00	1.28E-05	4.04E-01	6.77E-03	6.78E-02	2.08E-01	1.31E-07
LL-W019	1.58E+01	3.88E+01	4.83E-03	2.12E+01	8.20E+01	2.29E+01	9.18E+01	1.94E-03	1.86E-05	1.83E-05	1.05E+00
MC-W001	2.08E-01	0.00E+00	0.00E+00	0.00E+00	5.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.28E-09
NT-JAS-01	1.97E+03	3.73E+02	0.00E+00	1.09E+02	1.95E+02	1.58E+02	1.14E+03	1.05E-02	0.00E+00	0.00E+00	2.01E-07

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
NTLBL-S5400-S	1.66E+00	1.09E+00	3.32E-01	1.19E-01	6.72E-01	1.54E-01	9.63E-01	1.06E-05	2.84E-05	2.78E-05	8.27E-08
NTLRC-S5400-S	3.12E+00	5.38E+00	0.00E+00	4.68E-01	7.19E+00	2.63E+00	9.55E+00	4.48E-03	6.15E-07	6.03E-07	3.23E-08
NT-RF-BERYLLIUM-S	2.93E+01	4.69E+00	0.00E+00	7.73E-01	2.43E+01	5.50E+00	1.23E+01	9.71E-04	0.00E+00	0.00E+00	5.94E-03
NT-RF-GRAPHITE-S	3.74E+00	4.73E+00	0.00E+00	9.75E-01	3.88E+01	7.19E+00	1.85E+01	1.43E-04	0.00E+00	0.00E+00	5.82E-09
NT-RF-METAL-S	6.03E+00	1.03E+00	0.00E+00	1.74E-01	6.73E+00	1.66E+00	4.35E+00	4.46E-02	0.00E+00	0.00E+00	1.80E-09
NTS54332R0-S	3.07E+02	1.41E+02	1.09E+00	2.04E+01	3.69E+02	9.63E+01	3.03E+02	2.96E-02	1.30E-04	1.30E-04	2.17E-01
NTS54COMR0-S	5.04E+01	3.56E+01	9.14E+00	1.74E+01	5.12E+01	1.22E+01	3.44E+01	3.64E-03	4.54E-05	4.44E-05	2.61E-01
NTS54MIX1R0-S	4.16E-01	3.80E-03	0.00E+00	3.28E-04	2.89E-02	6.94E-03	6.46E-03	3.27E-08	4.03E-05	0.00E+00	1.08E-10
NT-W001	1.11E+02	5.26E+01	1.25E-01	1.85E+01	5.04E+02	3.38E+00	6.51E+00	3.90E-03	2.46E-03	8.14E-06	3.27E-01
NT-W002	1.88E+01	8.86E+00	2.11E-02	3.12E+00	8.51E+01	5.69E-01	1.10E+00	6.57E-04	4.14E-04	1.37E-06	5.52E-02
NT-W003	1.89E+00	1.56E+00	0.00E+00	1.38E-01	3.38E+00	8.28E-01	2.50E+00	2.23E-05	2.71E-05	0.00E+00	3.98E-09
NT-W004	2.08E-01	0.00E+00	0.00E+00	2.75E-01	2.77E-02	0.00E+00	0.00E+00	4.44E-05	0.00E+00	0.00E+00	0.00E+00
NT-W005	2.08E-01	1.60E-02	0.00E+00	2.05E-03	5.03E-02	1.23E-02	3.73E-02	3.31E-07	1.19E-07	0.00E+00	4.44E-11
NT-W021	9.00E+00	8.17E+00	0.00E+00	1.19E+00	5.11E+01	1.17E+01	2.99E+01	2.85E-02	0.00E+00	0.00E+00	6.82E-09
OR-CHEM-CH-HET	2.60E+01	4.78E+00	3.89E-02	8.61E+01	3.14E+00	5.85E-01	1.14E+00	1.54E-02	1.32E-01	1.07E-01	6.12E-01
OR-GENR-CH-HET	2.60E+01	4.22E-01	2.23E+00	7.35E+00	2.58E+00	3.71E-02	9.23E-04	1.44E-03	8.49E-07	4.28E-06	6.09E-02
OR-ISTP-CH-HET	6.91E+01	1.78E+02	2.33E+02	7.29E+02	1.23E+01	1.85E+01	7.26E+01	1.21E-01	1.32E-02	1.47E-05	1.78E-01
OR-NBL-CH-HET	1.14E+01	3.34E-05	0.00E+00	5.85E-01	1.09E+00	4.28E-01	2.18E-05	1.27E-03	0.00E+00	0.00E+00	1.44E-02
OR-NFS-CH-HET	5.89E+01	5.31E+01	1.87E+00	8.35E+00	8.69E+01	4.82E+01	8.00E+01	2.65E+00	1.72E-02	1.22E-01	1.26E-01
OR-NFS-CH-HOM	9.98E+00	1.16E+02	0.00E+00	2.39E+01	1.59E+02	8.53E+01	2.01E+02	4.55E+00	0.00E+00	0.00E+00	1.50E-07
OR-NFS-CH-SOIL	1.24E+02	1.62E+02	0.00E+00	2.08E+01	3.36E+02	1.48E+02	1.81E+02	6.78E+00	0.00E+00	0.00E+00	9.64E-03
OR-PGDP-CH-HET	3.74E+00	0.00E+00	0.00E+00	0.00E+00	2.84E-01	0.00E+00	0.00E+00	1.06E-02	0.00E+00	0.00E+00	1.84E-05
OR-RADP-CH-HET	4.58E+01	3.12E+01	3.06E+01	1.28E+00	1.08E+01	2.43E+00	3.52E+00	3.27E-04	5.52E-04	5.44E-04	1.98E-02
OR-REDC-CH-HET	4.89E+02	1.33E+01	3.37E+01	1.15E+01	1.28E+01	6.96E+00	1.88E+01	3.18E-03	1.64E+00	1.11E+01	1.50E-03
OR-RF-CH-HET	1.31E+02	1.02E+01	5.90E-02	3.32E+00	4.22E+01	9.79E+00	8.75E+00	3.79E-03	8.16E-02	6.04E-02	4.15E+01
OR-RF-CH-HOM	2.50E+00	4.57E-02	0.00E+00	1.39E-02	4.19E-02	4.12E-02	0.00E+00	5.25E-05	1.52E-03	1.52E-02	7.81E-11
OR-TBD-CH-HET	1.66E+02	2.28E+02	1.21E+02	3.66E+02	8.55E+01	2.06E+02	2.68E+01	7.79E-02	4.65E-01	9.74E-03	2.73E+00
OR-W203	2.86E+02	3.01E+00	1.17E+02	1.59E+00	3.55E-02	2.22E+00	6.62E+00	1.30E-04	5.27E+00	3.83E+01	1.32E-09
OR-W213-CH-HET	3.23E+02	1.12E+01	1.19E-02	1.68E+00	5.43E+00	6.73E-03	7.04E+00	5.95E-01	6.31E+00	4.63E-02	1.05E+01

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
OR-WSTR-CH-HET	4.16E-01	0.00E+00	0.00E+00	3.66E-02	0.00E+00	0.00E+00	0.00E+00	6.06E-06	0.00E+00	0.00E+00	0.00E+00
OR-Y12-CH-HET	1.04E+00	0.00E+00	0.00E+00	1.53E-04	5.23E-02	1.09E-05	0.00E+00	4.64E-04	0.00E+00	0.00E+00	1.12E-06
PA-A015	2.08E+00	3.88E-02	0.00E+00	2.35E-03	3.95E-01	0.00E+00	0.00E+00	1.67E-02	0.00E+00	0.00E+00	2.50E-05
PA-W014	2.91E+00	1.55E-01	0.00E+00	0.00E+00	1.60E-01	0.00E+00	0.00E+00	7.14E-02	5.58E-03	0.00E+00	3.87E-04
RF001.01-S	9.79E+02	1.69E+03	0.00E+00	1.18E+02	3.36E+03	7.80E+02	3.14E+03	2.12E-01	0.00E+00	0.00E+00	7.53E-02
RF002.01-S	1.46E+03	1.63E+03	0.00E+00	1.75E+02	4.40E+03	1.04E+03	5.09E+03	1.47E-01	1.71E-04	0.00E+00	2.19E-02
RF003.01-S	3.55E+02	2.97E+03	0.00E+00	4.24E+02	1.27E+04	3.06E+03	9.89E+03	6.04E-02	0.00E+00	0.00E+00	1.01E-02
RF004.01-S	2.83E+02	2.69E+02	0.00E+00	2.64E+01	6.86E+02	1.59E+02	8.56E+02	2.31E-02	0.00E+00	0.00E+00	3.13E-07
RF005.01-S	1.19E+02	5.26E+03	0.00E+00	1.67E+02	4.78E+03	1.23E+03	2.20E+03	1.91E-02	0.00E+00	0.00E+00	4.96E-06
RF005.02-S	7.84E+01	6.29E+03	0.00E+00	9.85E+01	2.90E+03	7.61E+02	1.21E+03	1.15E-02	0.00E+00	0.00E+00	5.58E-06
RF006.01-S	2.36E+02	2.35E+03	0.00E+00	3.71E+02	9.21E+03	2.22E+03	8.24E+03	5.59E-02	0.00E+00	0.00E+00	2.64E-06
RF008.01-S	9.72E+01	1.16E+03	0.00E+00	1.59E+02	3.39E+03	9.28E+02	2.93E+03	1.79E-02	0.00E+00	0.00E+00	2.76E-06
RF009.01-S	1.33E+03	6.64E+04	0.00E+00	1.58E+03	5.50E+04	1.36E+04	2.60E+04	1.79E-01	0.00E+00	0.00E+00	1.02E-04
RF010.01-S	6.30E+02	1.79E+03	0.00E+00	2.03E+02	6.26E+03	1.46E+03	5.09E+03	1.45E-01	0.00E+00	0.00E+00	1.85E-06
RF011.01-S	7.95E+01	3.02E+02	0.00E+00	5.08E+01	1.49E+03	3.57E+02	1.08E+03	5.77E-03	0.00E+00	0.00E+00	2.03E-07
RF015.01-S	1.66E+00	5.54E+00	0.00E+00	7.68E-01	1.87E+01	4.37E+00	2.65E+01	7.66E-05	0.00E+00	0.00E+00	1.35E-08
RF029.01-S	4.35E+03	2.88E+03	0.00E+00	2.99E+02	6.85E+03	1.64E+03	1.05E+04	1.10E-01	1.43E-05	9.59E-08	4.39E-06
RF031.01-S	2.06E+01	1.41E+01	0.00E+00	1.89E+00	4.81E+01	1.11E+01	6.57E+01	1.07E-03	0.00E+00	0.00E+00	1.20E-08
RF032.01-S	2.09E+02	2.63E+03	0.00E+00	2.53E+02	8.61E+03	2.02E+03	5.17E+03	2.79E-02	0.00E+00	0.00E+00	4.65E-06
RF033.01-S	2.56E+01	1.75E+02	0.00E+00	2.81E+01	7.99E+02	1.86E+02	8.00E+02	3.11E-03	0.00E+00	0.00E+00	1.74E-07
RF036.01-S	4.41E+01	7.62E+01	0.00E+00	1.10E+01	2.64E+02	6.16E+01	4.10E+02	3.47E-03	0.00E+00	0.00E+00	7.36E-08
RF101.01-S	1.75E+02	4.90E+02	0.00E+00	6.55E+01	1.69E+03	3.94E+02	1.94E+03	4.81E-02	0.00E+00	0.00E+00	5.07E-07
RF101.29-S	3.04E+01	4.36E+01	0.00E+00	6.25E+00	1.56E+02	3.63E+01	1.68E+02	6.16E-03	0.00E+00	0.00E+00	4.40E-08
RF101.30-S	1.17E+02	4.18E+02	0.00E+00	3.14E+01	8.78E+02	2.06E+02	8.46E+02	1.97E-02	0.00E+00	0.00E+00	5.48E-07
RF101.31-S	6.25E+01	8.42E+01	0.00E+00	8.55E+00	2.34E+02	5.54E+01	2.15E+02	6.54E-03	0.00E+00	0.00E+00	8.52E-08
RF101.35-S	7.96E+01	2.88E+02	0.00E+00	2.41E+01	6.38E+02	1.49E+02	7.08E+02	8.69E-02	0.00E+00	0.00E+00	4.10E-07
RF102.01-S	2.24E+02	2.10E+02	0.00E+00	2.40E+01	5.72E+02	1.36E+02	8.07E+02	6.50E-03	5.39E-03	0.00E+00	2.84E-07
RF102.31-S	1.24E+02	1.64E+02	0.00E+00	1.11E+01	2.75E+02	6.48E+01	3.58E+02	9.03E-03	0.00E+00	0.00E+00	2.18E-07
RF104.01-S	5.44E+01	1.46E+02	0.00E+00	1.31E+01	4.09E+02	9.61E+01	3.66E+02	2.10E-03	0.00E+00	0.00E+00	1.94E-07

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m^3)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
RF107.01-S	6.34E+01	2.54E+03	0.00E+00	7.70E+00	1.91E+02	4.41E+01	2.90E+02	1.79E-02	0.00E+00	0.00E+00	3.31E-06
RF107.03-S	6.09E+01	1.66E+01	0.00E+00	9.43E-01	2.31E+01	5.37E+00	3.55E+01	7.75E-02	0.00E+00	0.00E+00	2.28E-08
RF107.04-S	1.10E+02	6.64E+01	0.00E+00	3.36E+00	8.32E+01	1.93E+01	1.27E+02	2.42E-03	0.00E+00	0.00E+00	9.25E-08
RF107.05-S	4.37E+00	7.03E+00	0.00E+00	8.28E-01	2.04E+01	4.73E+00	3.12E+01	9.93E-03	0.00E+00	0.00E+00	6.09E-09
RF107.06-S	1.44E+01	7.76E-01	0.00E+00	1.23E-01	3.05E+00	7.07E-01	4.65E+00	2.32E-03	0.00E+00	0.00E+00	3.83E-10
RF107.07-S	5.89E+01	3.63E+02	0.00E+00	2.99E+01	7.24E+02	1.68E+02	1.12E+03	1.39E-01	0.00E+00	0.00E+00	4.59E-07
RF110.01-S	9.15E+00	7.43E+01	0.00E+00	5.04E+00	1.25E+02	2.92E+01	1.44E+02	1.38E-03	0.00E+00	0.00E+00	6.47E-08
RF110.05-S	3.15E+01	1.03E+02	0.00E+00	1.66E+01	4.61E+02	1.06E+02	3.29E+02	6.65E-03	0.00E+00	0.00E+00	7.17E-08
RF113.01-S	4.16E-01	9.83E-02	0.00E+00	1.48E-02	3.70E-01	8.58E-02	5.14E-01	1.47E-06	0.00E+00	0.00E+00	1.70E-10
RF115.01-S	1.15E+02	5.74E+02	0.00E+00	8.46E+01	2.53E+03	5.88E+02	1.43E+03	9.24E-03	0.00E+00	0.00E+00	4.77E-07
RF116.01-S	3.95E+00	2.35E+01	0.00E+00	2.07E+00	9.79E+01	2.27E+01	3.58E+01	2.07E-04	0.00E+00	0.00E+00	2.96E-08
RF117.01-S	1.87E+00	7.48E+00	0.00E+00	9.97E-01	2.44E+01	5.68E+00	3.48E+01	1.56E-03	0.00E+00	0.00E+00	8.18E-09
RF118.01-S	1.43E+03	1.72E+04	0.00E+00	3.37E+03	6.66E+04	1.79E+04	5.61E+04	6.37E-01	0.00E+00	0.00E+00	1.84E-05
RF119.01-S	2.41E+01	5.15E+01	0.00E+00	6.02E+00	1.47E+02	3.45E+01	2.16E+02	1.03E-03	0.00E+00	0.00E+00	5.52E-08
RF121.01-S	4.60E+01	3.01E+02	0.00E+00	5.20E+01	1.97E+03	4.71E+02	8.94E+02	5.63E-03	0.00E+00	0.00E+00	1.68E-07
RF122.01-S	3.56E+01	2.96E+02	0.00E+00	5.08E+01	1.37E+03	3.29E+02	7.86E+02	5.07E-03	0.00E+00	0.00E+00	7.74E-06
RF122.03-S	4.37E+00	3.37E+01	0.00E+00	5.71E-01	1.42E+01	3.29E+00	2.16E+01	9.08E-03	0.00E+00	0.00E+00	6.70E-08
RF122.04-S	5.41E+01	3.17E+02	0.00E+00	6.52E+00	1.61E+02	3.73E+01	2.46E+02	3.37E-02	0.00E+00	0.00E+00	6.16E-07
RF122.05-S	1.62E+01	3.49E+00	0.00E+00	2.23E-01	5.46E+00	1.27E+00	8.39E+00	2.01E-02	0.00E+00	0.00E+00	3.20E-09
RF122.06-S	7.28E+00	6.60E+01	0.00E+00	8.10E+00	2.52E+02	5.95E+01	1.42E+02	1.13E-03	0.00E+00	0.00E+00	8.34E-08
RF123.01-S	9.38E+00	7.50E+01	0.00E+00	8.20E+00	3.02E+02	7.03E+01	1.77E+02	1.16E-03	0.00E+00	0.00E+00	5.38E-08
RF123.02-S	8.32E-01	2.45E-02	0.00E+00	3.42E-03	8.31E-02	1.93E-02	1.28E-01	2.34E-04	0.00E+00	0.00E+00	1.06E-11
RF123.03-S	1.21E+01	3.12E+02	0.00E+00	8.37E+00	2.06E+02	4.78E+01	3.01E+02	9.68E-04	0.00E+00	0.00E+00	4.83E-07
RF123.04-S	4.45E+01	2.29E+02	0.00E+00	3.30E+01	8.06E+02	1.88E+02	1.19E+03	3.97E-03	0.00E+00	0.00E+00	2.14E-07
RF124.01-S	9.42E+01	7.05E+01	0.00E+00	9.16E+00	2.47E+02	5.67E+01	2.92E+02	7.94E-03	0.00E+00	0.00E+00	2.31E-07
RF124.02-S	1.33E+01	1.86E+01	0.00E+00	2.59E+00	6.66E+01	1.52E+01	8.10E+01	5.75E-04	0.00E+00	0.00E+00	2.71E-08
RF125.01-S	1.44E+01	2.38E+02	0.00E+00	1.26E+01	3.86E+02	8.92E+01	3.06E+02	9.94E-03	0.00E+00	0.00E+00	7.03E-07
RF126.01-S	1.04E+00	6.24E+00	0.00E+00	1.23E+00	3.87E+01	8.66E+00	2.42E+01	1.58E-04	0.00E+00	0.00E+00	3.17E-09
RF126.04-S	2.08E+00	1.41E+01	0.00E+00	2.03E+00	7.07E+01	1.63E+01	4.11E+01	3.24E-04	0.00E+00	0.00E+00	7.67E-09

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
RF128.01-S	1.98E+02	1.34E+03	0.00E+00	3.05E+02	8.50E+03	2.06E+03	5.09E+03	3.16E-02	0.00E+00	0.00E+00	1.07E-06
RF129.01-S	4.68E+02	3.53E+02	0.00E+00	3.68E+01	8.67E+02	2.07E+02	1.28E+03	4.24E-02	5.71E-05	0.00E+00	4.27E-07
RF129.05-S	4.48E+02	4.21E+02	0.00E+00	3.32E+01	7.51E+02	1.81E+02	1.18E+03	8.93E-03	0.00E+00	0.00E+00	1.49E-06
RF130.01-S	3.86E+01	3.28E+02	4.96E-08	2.03E+01	4.95E+02	1.15E+02	7.30E+02	4.22E-02	3.69E-04	1.76E-02	1.21E-06
RF134.02-S	1.13E+01	3.13E-01	0.00E+00	3.74E-02	9.25E-01	2.14E-01	1.35E+00	3.59E-06	0.00E+00	0.00E+00	1.54E-10
RF135.01-S	2.29E+00	5.19E+00	0.00E+00	1.32E-01	3.31E+00	7.65E-01	4.79E+00	3.35E-04	0.00E+00	0.00E+00	9.10E-09
RF135.02-S	1.04E+01	2.08E+00	0.00E+00	2.50E-01	6.17E+00	1.43E+00	9.41E+00	4.14E-03	0.00E+00	0.00E+00	2.45E-09
RF137.01-S	4.16E-01	3.31E-01	0.00E+00	2.68E-02	6.81E-01	1.57E-01	9.77E-01	2.58E-06	0.00E+00	0.00E+00	5.98E-10
RF139.01-S	1.16E+01	3.54E+02	0.00E+00	1.34E+00	3.34E+01	7.73E+00	5.07E+01	2.57E-03	0.00E+00	0.00E+00	5.90E-07
RF140.01-S	1.72E+02	7.94E+01	0.00E+00	1.10E+01	2.47E+02	5.99E+01	3.89E+02	1.18E-03	0.00E+00	0.00E+00	8.42E-08
RF141.01-S	4.56E+01	2.65E+02	0.00E+00	5.81E+01	1.82E+03	4.25E+02	1.23E+03	2.72E-01	0.00E+00	0.00E+00	1.27E-07
RF141.02-S	1.76E+02	1.92E+03	0.00E+00	2.27E+02	7.42E+03	1.77E+03	4.48E+03	3.14E-01	0.00E+00	0.00E+00	3.27E-05
RL105-01	1.62E+02	4.98E+01	8.72E-01	6.63E+00	2.03E+01	1.17E+01	3.28E+02	9.69E-03	6.50E+01	5.67E+01	6.67E-06
RL105-03	6.72E+01	2.92E+01	0.00E+00	2.12E+00	1.28E+01	7.01E+00	9.39E+01	2.40E-02	5.20E+01	9.36E+00	5.84E-07
RL200-01	1.52E+02	1.28E+02	0.00E+00	1.42E+01	6.68E+01	3.76E+01	3.95E+02	1.21E-03	7.11E-02	0.00E+00	5.71E-08
RL200-02	5.60E+01	1.70E+01	0.00E+00	1.44E-01	2.76E+00	1.11E+00	8.84E-01	1.79E-04	2.32E+00	6.92E-01	4.22E-05
RL201-01	1.16E+01	2.70E+01	0.00E+00	0.00E+00	1.85E+00	4.54E-01	0.00E+00	8.50E-07	1.07E+00	2.71E+01	3.34E-08
RL202S-01	1.04E+00	4.79E-02	0.00E+00	3.02E-03	7.61E-02	1.83E-02	3.85E-02	3.34E-07	0.00E+00	0.00E+00	8.19E-11
RL209E-01	8.24E+01	5.14E+02	0.00E+00	6.86E+01	6.92E+02	2.52E+02	3.37E+02	2.44E-02	3.46E-07	3.04E-07	1.47E-06
RL216Z-02	3.11E+02	2.66E+03	0.00E+00	3.89E+02	3.28E+03	1.15E+03	8.31E+03	3.60E-02	0.00E+00	0.00E+00	1.36E-06
RL221T-01	6.66E+00	1.81E-03	0.00E+00	3.47E-04	2.10E-03	1.18E-03	2.67E-03	7.40E-08	0.00E+00	0.00E+00	3.15E-12
RL221U-01	2.10E+00	4.86E-04	0.00E+00	3.56E-04	5.96E-04	5.65E-05	0.00E+00	4.34E-04	6.23E-02	2.42E-02	4.59E-09
RL222S-01	1.33E+02	2.20E+01	0.00E+00	9.51E-01	4.76E+00	2.49E+00	2.50E+01	9.70E-05	6.16E-03	2.88E-03	7.10E-02
RL231Z-01	1.54E+03	3.31E+02	0.00E+00	5.57E+01	6.47E+02	1.73E+02	3.30E+02	1.04E-01	2.77E-02	2.45E-02	4.81E-06
RL231Z-03	1.46E+00	4.40E-04	0.00E+00	4.47E-05	2.60E-04	1.46E-04	4.21E-04	8.54E-09	0.00E+00	0.00E+00	7.91E-13
RL233S-01	6.77E+01	3.76E+01	0.00E+00	5.69E+00	5.32E+01	1.73E+01	4.43E+01	8.06E-04	1.71E-03	1.53E-03	1.90E-06
RL233S-03	4.78E+00	4.40E-01	0.00E+00	9.66E-02	4.11E-01	1.73E-01	2.33E-01	7.91E-06	3.70E-06	3.29E-06	3.72E-08
RL2718-01	6.24E-01	8.05E-01	0.00E+00	8.97E-02	5.33E-01	2.97E-01	1.32E+00	1.30E-05	0.00E+00	0.00E+00	8.99E-10
RL300-01	1.95E+02	4.64E+02	0.00E+00	8.70E+01	5.64E+02	2.58E+02	1.08E+03	1.27E-01	1.34E-04	1.20E-04	1.14E-06

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m^3)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
RL300-03	2.08E+00	8.52E+00	0.00E+00	1.46E+00	9.72E+00	5.11E+00	1.97E+01	2.38E-04	0.00E+00	0.00E+00	7.84E-09
RL308-01	6.04E+02	2.32E+04	0.00E+00	5.16E+03	9.98E+03	6.47E+03	4.04E+04	5.64E-01	1.09E-01	9.77E-02	7.93E-02
RL325-01	1.37E+03	2.82E+03	4.81E+00	9.83E+02	2.34E+03	9.63E+02	5.29E+03	5.04E-01	8.39E-01	8.28E-01	5.48E-02
RL325-03	4.37E+00	1.17E+01	0.00E+00	6.70E-01	8.22E+00	2.46E+00	1.33E+01	1.99E-03	5.28E-04	4.71E-04	2.58E-07
RLARG-01	5.62E+00	1.93E+01	0.00E+00	2.06E+00	1.14E+01	6.44E+00	2.47E+01	3.42E-04	0.00E+00	0.00E+00	1.08E+00
RLBART-01	6.24E-01	3.77E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-05	0.00E+00	0.00E+00	0.00E+00	4.01E-15
RLBAT-01	4.48E+01	1.41E+01	0.00E+00	7.84E+01	8.34E+00	4.70E+00	1.98E+01	1.59E-02	1.30E-06	1.17E-06	2.34E-07
RLBET-01	4.16E-01	6.25E-03	0.00E+00	1.79E-03	1.01E-02	5.66E-03	2.06E-02	3.04E-07	4.51E-05	0.00E+00	5.76E-12
RLBW-01	4.05E+02	8.03E+02	0.00E+00	1.35E+02	9.19E+02	4.37E+02	1.85E+03	3.09E-02	1.09E-01	9.69E-02	7.44E-02
RLBW-03	8.32E-01	3.20E+00	0.00E+00	5.92E-01	2.98E+00	1.62E+00	7.12E+00	1.37E-04	4.03E-07	3.67E-07	3.67E-09
RLCBWD.001-S	7.17E+01	1.14E+02	0.00E+00	1.94E+01	1.27E+02	6.09E+01	2.54E+02	4.44E-03	1.77E-04	1.58E-04	1.76E-02
RLCFF-01	1.08E+01	1.94E+01	0.00E+00	2.77E+00	2.04E+01	1.03E+01	4.33E+01	3.58E-04	4.30E-07	3.84E-07	8.86E-09
RLCFF-03	4.99E+00	6.68E+00	0.00E+00	7.90E-01	7.19E+00	3.52E+00	5.52E+00	1.76E-04	0.00E+00	0.00E+00	9.36E-09
RLCFFD.001-S	2.74E+02	5.69E+02	0.00E+00	7.95E+01	5.98E+02	3.02E+02	1.16E+03	1.11E-02	1.03E-05	9.16E-06	2.99E-07
RLCH2-01	2.08E-01	9.27E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.91E-12
RLESG-01	4.99E+01	4.45E+01	0.00E+00	4.70E+00	3.62E+01	1.64E+01	6.03E+01	5.79E-02	6.40E-02	4.91E-02	7.36E-08
RLEXX-01	4.35E+01	5.98E+03	0.00E+00	8.23E+02	1.73E+03	1.53E+03	2.40E+03	1.47E-01	2.40E-06	2.16E-06	1.08E-05
RLGEV-01	3.79E+02	2.04E+02	0.00E+00	2.88E+01	2.22E+02	9.54E+01	1.54E+02	9.76E-02	1.61E-05	1.41E-05	4.81E-07
RLHAN-01	1.55E+02	1.59E+02	0.00E+00	2.14E+01	1.02E+02	5.48E+01	4.34E+02	5.03E-03	1.68E-02	1.53E-02	1.47E-02
RLHMOX.001-S	1.94E+02	1.00E+04	0.00E+00	1.37E+03	7.75E+03	3.92E+03	1.70E+04	8.83E-01	3.40E-04	3.00E-04	5.82E-05
RLIAEA-01	2.08E-01	8.13E-01	0.00E+00	3.65E-01	2.25E-01	2.90E-01	6.53E-01	5.89E-05	2.34E-05	0.00E+00	2.58E-09
RLM233SD.001-S	1.73E+01	5.94E+00	0.00E+00	1.09E+00	1.18E+01	3.32E+00	8.36E+00	1.20E-04	1.40E-04	1.25E-04	4.81E-07
RLM308D.001-S	6.71E+01	2.11E+03	0.00E+00	4.58E+02	9.67E+02	6.10E+02	3.24E+03	9.16E-02	9.11E-03	8.11E-03	9.93E-03
RLM325D.001-S	2.08E+00	3.69E+00	0.00E+00	4.88E-01	3.20E+00	1.19E+00	6.70E+00	1.20E-03	3.54E-04	3.21E-04	5.79E-09
RLMHASH.001-S	6.22E+01	8.03E+02	0.00E+00	6.28E+01	2.44E+03	6.03E+02	9.63E+02	6.49E-03	2.01E-06	9.32E-07	1.73E-03
RLMLB-01	4.16E-01	8.79E-02	5.68E+00	9.15E-03	5.20E-02	1.24E-01	9.73E-02	1.63E-06	0.00E+00	0.00E+00	1.40E-10
RLMLL-01	1.04E+00	2.02E-01	0.00E+00	1.96E-02	1.20E-01	6.74E-02	1.45E-01	4.28E-06	0.00E+00	0.00E+00	4.55E-10
RLMPDT.001-S	1.68E+03	4.04E+03	0.00E+00	8.15E+02	6.75E+03	2.20E+03	9.02E+03	1.06E-01	1.35E-02	1.20E-02	3.47E-01
RLMPURX.001-S	1.18E+02	6.88E+02	0.00E+00	1.58E+02	9.82E+02	3.87E+02	3.28E+03	1.51E-02	7.58E-03	6.46E-03	4.04E-02

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
RLMSSC.001-S	6.47E+01	8.86E+02	0.00E+00	1.73E+02	2.79E+03	6.18E+02	3.07E+03	1.74E-02	0.00E+00	0.00E+00	5.04E-07
RLMWARD.001-S	2.06E+01	2.65E+01	0.00E+00	6.58E+00	1.03E+01	7.11E+00	5.24E+01	3.94E-03	2.28E-06	2.03E-06	3.08E-08
RLNPDT.002-S	4.38E+02	7.47E+02	0.00E+00	1.62E+02	2.01E+03	4.79E+02	2.01E+03	2.11E-02	7.71E-04	5.21E-04	7.03E-07
RLNPURX.001-S	3.88E+01	3.35E+02	0.00E+00	8.08E+01	4.12E+02	1.60E+02	1.81E+03	8.05E-03	1.06E-03	6.65E-04	1.57E-07
RLPFP-01	1.24E+04	4.03E+04	0.00E+00	8.28E+03	7.17E+04	2.32E+04	9.75E+04	4.10E+00	1.06E-01	9.45E-02	2.91E+00
RLPFP-03	2.23E+01	2.10E+02	0.00E+00	3.79E+01	3.29E+02	1.06E+02	3.84E+02	2.73E-02	4.25E-05	3.79E-05	4.79E-03
RLPFP-04	3.74E+00	2.51E-01	0.00E+00	5.00E-02	8.56E-01	2.13E-01	7.08E-01	4.27E-06	0.00E+00	0.00E+00	1.14E-10
RLPRC-01	2.10E+00	1.54E-01	0.00E+00	2.61E-02	3.44E-01	8.74E-02	2.63E-01	5.29E-06	0.00E+00	0.00E+00	1.89E-10
RLPURX-01	5.98E+02	4.20E+03	0.00E+00	1.01E+03	6.24E+03	2.40E+03	2.31E+04	8.58E-02	4.87E-02	4.21E-02	1.48E+00
RLRFETS.001-S	6.39E+01	6.47E+02	0.00E+00	6.53E+01	3.81E+03	6.31E+02	1.43E+03	1.17E-02	1.04E-05	1.05E-06	7.51E-03
RLSWO-01	3.11E+02	3.03E+02	0.00E+00	3.96E+01	4.71E+02	1.53E+02	5.44E+02	7.95E-03	7.32E-03	6.53E-03	2.65E-02
RLSWOCD.001-S	5.82E+00	5.13E+00	0.00E+00	8.60E-01	1.08E+01	3.29E+00	1.02E+01	1.12E-04	2.58E-04	2.30E-04	3.60E-09
RLVIPAC.001-S	1.55E+02	3.79E+02	0.00E+00	1.26E+02	9.77E+02	2.98E+02	4.31E+02	5.32E-01	1.07E-03	9.51E-04	1.55E-02
RLWAR-01	7.17E+02	6.27E+02	0.00E+00	1.60E+02	2.47E+02	1.70E+02	1.28E+03	9.09E-02	3.92E-05	3.50E-05	6.69E-07
RLWAR-03	2.50E+00	5.81E+00	0.00E+00	1.37E+00	2.00E+00	1.26E+00	9.82E+00	1.12E-04	0.00E+00	0.00E+00	7.94E-09
SA-T001	6.37E+00	1.02E+00	1.72E+00	1.83E-01	3.57E+00	1.64E-02	0.00E+00	2.37E-05	0.00E+00	0.00E+00	4.32E-09
SA-W134	1.41E+01	9.43E+00	5.28E-04	3.23E-01	8.35E-01	1.16E-01	4.82E-02	3.77E-03	3.15E+01	3.07E+01	1.86E-03
SA-W134M	2.08E+00	1.98E-01	7.34E-05	5.52E-03	6.05E-02	2.18E-02	2.65E-02	4.55E-03	8.36E-02	8.15E-02	4.47E-03
SA-W136	2.56E+01	6.91E-01	0.00E+00	7.00E-01	1.46E+01	3.35E+00	7.76E+00	5.98E-05	0.00E+00	0.00E+00	1.65E-10
SR2001.001.00-S	6.12E+01	1.38E+00	0.00E+00	8.74E-01	9.65E+00	1.91E+00	7.77E+00	9.02E-05	2.75E-06	0.00E+00	6.57E-10
SR2002.002.00-S	6.99E+01	4.79E+00	0.00E+00	3.80E-01	1.13E+01	2.62E+00	1.85E+01	3.78E-05	9.40E-06	7.80E-07	8.85E-02
SR-BCLCH-MT01	1.13E+01	3.27E+01	0.00E+00	3.04E+03	6.22E+01	1.63E+01	1.84E+02	2.92E-01	0.00E+00	0.00E+00	1.44E-08
SR-SWMF-HET-A	7.31E+02	1.53E+02	5.72E+00	7.35E+02	3.85E+02	8.47E+01	8.14E+02	9.74E-01	1.26E+01	7.12E+01	7.86E-04
SR-SWMF-SOIL	2.91E+00	3.76E+00	6.21E+01	5.21E+00	1.76E-02	2.86E+00	2.97E-01	9.93E-04	0.00E+00	0.00E+00	8.08E-09
SR-T001-221H-HEPA	2.99E+02	3.71E+00	0.00E+00	3.62E+02	1.16E+01	3.73E+00	1.56E+01	6.03E-02	8.17E+00	4.55E-03	4.33E-02
SR-W026-221F-HEPA	1.59E+03	3.60E+02	0.00E+00	4.89E+02	1.19E+03	2.77E+02	1.62E+03	7.10E-02	1.94E-04	8.52E-10	2.44E-07
SR-W026-221F-HET	8.67E+02	2.06E+02	4.22E-02	1.29E+02	3.75E+02	8.60E+01	7.27E+02	3.56E-02	4.47E-01	1.24E-01	8.41E-02
SR-W026-221F-HET-S	5.74E+02	3.78E+02	2.83E-02	2.60E+02	1.18E+03	3.28E+02	1.40E+03	1.71E-01	1.63E-04	1.71E-04	8.06E-07
SR-W026-221F-HOM	8.45E+00	5.05E-01	0.00E+00	5.52E-01	2.58E+00	4.98E-01	1.75E+00	8.35E-05	5.15E-06	1.92E-11	4.41E-10

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Table 39. EPAUNI CH Input (Stream Totals) — Continued

Stream ID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
SR-W026-772F-HET	5.02E+02	8.27E+01	9.99E-03	7.00E+03	1.10E+02	2.81E+01	3.59E+02	1.61E+00	1.51E+00	8.71E-01	2.19E-03
SR-W026-772F-HET-S	1.42E+03	2.13E+02	3.41E-02	4.13E+03	3.29E+02	9.06E+01	4.62E+02	1.22E+00	3.37E-02	2.92E-02	7.40E-02
SR-W027-221F-HET	6.37E+02	9.26E+02	0.00E+00	8.45E+02	1.82E+03	4.27E+02	4.69E+03	8.11E-02	0.00E+00	0.00E+00	4.28E-07
SR-W027-221F-HETA-S	2.11E+03	9.03E+02	0.00E+00	5.03E+02	2.03E+03	6.32E+02	3.36E+03	2.98E-01	1.23E+00	1.50E-04	1.51E-01
SR-W027-221F-HOM	3.33E+00	9.28E+00	0.00E+00	6.54E+00	1.69E+01	3.94E+00	1.40E+01	1.22E-03	0.00E+00	0.00E+00	1.43E-08
SR-W027-221H-HEPA	1.63E+02	3.34E+00	0.00E+00	4.28E+03	5.68E+00	2.65E+00	3.64E+01	3.68E-01	9.85E-01	3.23E-01	3.90E-04
SR-W027-221H-HET	2.64E+03	4.88E+02	0.00E+00	3.71E+05	1.78E+03	6.03E+02	3.23E+03	3.66E+01	2.65E+01	1.14E+01	1.63E-02
SR-W027-221H-HET-S	2.89E+03	2.88E+02	3.06E-03	5.02E+04	1.65E+02	5.49E+01	2.14E+03	1.57E+01	7.46E-03	7.31E-03	6.80E-01
SR-W027-221H-HOM	1.04E+00	6.34E-02	0.00E+00	1.08E+00	2.01E-01	1.04E-01	1.15E-01	2.83E-03	5.08E-03	0.00E+00	2.57E-10
SR-W027-235F-HET	5.69E+02	1.45E+02	0.00E+00	7.41E+04	9.31E+01	4.59E+01	1.53E+03	6.63E+00	0.00E+00	0.00E+00	2.13E-04
SR-W027-235F-HET-S	3.95E+02	5.11E+01	0.00E+00	6.88E+03	2.29E+01	1.23E+01	2.41E+02	2.16E+00	1.62E-04	1.59E-04	6.93E-05
SR-W027-235F-HOMO	3.33E+00	8.85E-01	0.00E+00	6.20E+02	6.06E-01	3.28E-01	2.36E+00	8.76E-02	0.00E+00	0.00E+00	8.25E-10
SR-W027-773A-HET	4.45E+03	2.89E+02	6.71E+02	1.20E+04	7.89E+02	1.94E+02	1.96E+03	1.10E+00	3.05E+02	2.16E+02	4.18E-02
SR-W027-773A-HET-S	5.06E+02	5.58E+01	8.04E+00	2.40E+03	1.05E+02	2.52E+01	1.54E+02	7.40E-01	2.97E-02	2.91E-02	3.10E-03
SR-W027-999-AGNS-HET	4.59E+01	1.96E+00	0.00E+00	1.32E+00	3.15E+00	9.45E-01	3.81E+00	4.53E-04	6.65E-02	4.55E-02	5.95E-07
SR-W027-999-AGNS-HOM	3.33E+00	1.86E+00	0.00E+00	1.35E+00	3.47E+00	8.11E-01	2.88E+00	4.73E-04	0.00E+00	0.00E+00	3.97E-07
SR-W027-999-LASL-HET	1.25E+02	8.05E+01	0.00E+00	2.11E+04	2.41E+01	1.49E+01	8.03E+01	4.69E+00	0.00E+00	0.00E+00	1.70E-07
SR-W027-999-LASL-HOM	1.87E+01	2.59E+01	0.00E+00	9.56E+03	1.09E+01	6.26E+00	2.53E+01	2.13E+00	0.00E+00	0.00E+00	5.49E-08
SR-W027-999-MD-HET	8.97E+03	7.91E+02	1.04E-03	6.15E+05	7.46E+02	3.98E+02	1.22E+03	1.37E+02	6.47E-05	0.00E+00	7.53E-02
SR-W027-999-MD-HOM-A	2.70E+00	1.05E-01	0.00E+00	8.04E+01	6.96E-02	5.54E-03	1.99E-02	1.78E-02	0.00E+00	0.00E+00	2.18E-08
SR-W027-999-MD-HOM-B	2.26E+01	4.24E-03	0.00E+00	1.69E-01	0.00E+00	0.00E+00	0.00E+00	3.30E-05	0.00E+00	0.00E+00	1.19E-10
SR-W027-999-MD-HOM-C	3.01E+00	1.92E-03	0.00E+00	4.90E-01	2.38E-04	0.00E+00	0.00E+00	9.57E-05	0.00E+00	0.00E+00	4.35E-12
SR-W027-999-MD-SOIL	4.82E+02	6.57E-02	0.00E+00	2.15E+01	9.00E-01	0.00E+00	0.00E+00	4.20E-03	2.20E-05	0.00E+00	4.96E-08
SR-W027-FB-PRE86-C-S	2.57E+03	1.03E+03	2.21E-01	2.48E+02	2.97E+03	7.06E+02	3.06E+03	1.39E-01	3.42E-04	3.18E-04	8.35E-03
SR-W027-HBL-Box-A	7.86E+03	8.49E+01	0.00E+00	4.94E+04	4.87E+01	2.64E+01	1.81E+02	7.18E+00	2.82E-01	1.94E-01	1.68E-04
SR-W027-SRSG-HET	9.89E+02	6.32E+02	3.76E-03	2.99E+03	2.18E+02	5.13E+01	1.46E+03	6.16E-01	1.85E-01	5.16E+00	3.49E-04
SR-W027-SRSG-HOM	6.69E+01	2.85E+01	1.85E-02	1.57E+03	1.34E+02	1.82E+01	5.46E+01	3.26E+00	1.80E-03	1.81E-04	1.30E+00

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Table 40. EPAUNI RH Input (Stream Totals)

StreamID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
AE-T009	2.15E+03	1.86E+02	1.03E+00	1.29E+02	3.16E+02	6.89E+01	1.21E+02	2.70E-02	4.00E+02	1.00E+02	3.32E-03
AW-T031.1322	1.15E+02	2.52E+01	3.13E-03	3.38E+01	3.63E+02	3.47E+01	1.82E+01	1.95E+00	1.41E+04	1.84E+04	1.24E-06
AW-W026	8.90E-01	1.18E-01	0.00E+00	0.00E+00	2.21E-02	0.00E+00	0.00E+00	3.50E-11	6.42E-02	2.23E-01	1.39E-10
AW-W028	7.98E+01	0.00E+00	0.00E+00	0.00E+00	1.94E+00	1.02E-01	0.00E+00	6.10E-09	8.91E+00	2.43E+01	0.00E+00
AW-W046	4.08E+01	6.82E+00	0.00E+00	5.89E+00	4.67E+00	2.96E+00	5.61E+00	5.06E-04	1.80E+04	1.92E+04	1.09E-07
AW-W047	2.26E+01	0.00E+00	0.00E+00	0.00E+00	9.30E-03	0.00E+00	0.00E+00	0.00E+00	8.96E+02	9.54E+02	0.00E+00
BT-T001	2.67E+00	3.64E+00	1.52E-01	1.75E+02	3.76E-01	4.21E-01	7.63E+00	1.17E+00	4.92E+03	4.77E+03	8.22E+00
BT-T007	8.90E-01	1.21E+00	5.06E-02	5.82E+01	1.25E-01	1.40E-01	2.54E+00	3.89E-01	1.64E+03	1.59E+03	2.74E+00
ID-ANLE-S5000-S	8.81E+01	2.01E+01	0.00E+00	6.66E+00	2.92E+01	1.54E+01	6.82E+01	9.51E-02	1.60E+02	1.18E+02	7.62E-02
IN-AE-AGHC-01	9.52E+01	4.77E+01	0.00E+00	1.65E+01	7.38E+01	3.87E+01	1.66E+02	2.40E-01	4.40E+02	3.20E+02	1.32E-01
IN-AW-161	1.78E+00	0.00E+00	0.00E+00	0.00E+00	2.31E+00	4.89E-02	0.00E+00	1.40E-11	1.94E-01	0.00E+00	0.00E+00
IN-ID-BTO-030	1.78E+00	5.15E-03	0.00E+00	4.71E+00	6.18E-03	6.22E-03	0.00E+00	7.23E-04	2.52E+01	2.40E+01	1.42E-01
IN-ID-INL-152	1.69E+01	0.00E+00	0.00E+00	0.00E+00	6.45E+00	2.49E+00	0.00E+00	8.37E-08	2.79E+02	2.56E+02	6.59E-02
IN-INTEC-SFS-01	8.90E-01	1.79E+00	0.00E+00	1.37E+00	2.42E-01	2.79E-01	4.34E+00	2.67E-04	1.69E+00	1.20E+00	2.17E-09
IN-NRF-153	8.01E+00	1.30E-02	0.00E+00	1.88E-01	3.24E-03	3.49E-03	3.33E-02	3.59E-05	0.00E+00	0.00E+00	1.51E-11
IN-TRA-150	3.56E+00	3.62E+01	0.00E+00	3.19E+01	0.00E+00	0.00E+00	0.00E+00	4.64E-03	0.00E+00	0.00E+00	4.94E-08
IN-TRA-157	4.45E+00	1.50E-01	4.44E-03	1.17E-01	4.17E-03	4.23E-05	0.00E+00	6.43E-04	1.14E-01	1.02E+00	2.08E-03
IN-W208.243	8.90E-01	1.82E+01	0.00E+00	1.05E+00	4.25E+01	9.57E+00	2.95E+01	1.62E-04	0.00E+00	0.00E+00	2.18E-08
IN-W216.876	1.51E+01	7.37E+02	0.00E+00	8.63E-01	3.48E+01	7.88E+00	2.41E+01	1.32E-04	0.00E+00	0.00E+00	1.10E-06
IN-W216.877	4.36E+01	1.06E+03	0.00E+00	1.24E+00	5.01E+01	1.13E+01	3.48E+01	1.91E-04	0.00E+00	0.00E+00	1.58E-06
IN-W228.884	8.90E+00	6.41E+00	0.00E+00	4.06E-02	1.63E+00	3.68E-01	1.18E+00	6.06E-06	0.00E+00	0.00E+00	8.97E-09
IN-W228.885	8.90E-01	1.07E-01	0.00E+00	6.79E-04	2.71E-02	6.13E-03	1.97E-02	1.01E-07	0.00E+00	0.00E+00	1.49E-10
IN-W228.886	2.14E+01	7.69E+00	0.00E+00	4.87E-02	1.95E+00	4.40E-01	1.42E+00	7.27E-06	0.00E+00	0.00E+00	1.08E-08
IN-W243.276	3.56E+00	1.79E+00	0.00E+00	1.90E-01	7.61E+00	1.72E+00	5.52E+00	2.83E-05	0.00E+00	0.00E+00	1.64E-09
IN-W243.277	1.78E+00	3.58E+00	0.00E+00	3.80E-01	1.52E+01	3.44E+00	1.10E+01	5.67E-05	0.00E+00	0.00E+00	3.28E-09
IN-W252.282	1.78E+01	2.61E+01	0.00E+00	3.22E+00	1.29E+02	2.91E+01	9.35E+01	4.80E-04	0.00E+00	0.00E+00	2.17E-08
IN-W254.1045	1.78E+00	1.31E+00	0.00E+00	1.92E-01	7.70E+00	1.74E+00	5.61E+00	2.87E-05	0.00E+00	0.00E+00	9.34E-10
IN-W294.343	8.90E+00	5.36E+00	0.00E+00	6.98E-01	2.80E+01	6.33E+00	2.03E+01	1.04E-04	0.00E+00	0.00E+00	4.28E-09
IN-W296.330	1.25E+01	1.83E+00	0.00E+00	2.26E-01	9.08E+00	2.05E+00	6.59E+00	3.38E-05	0.00E+00	0.00E+00	8.84E-09
IN-W296.331	1.25E+01	6.12E+00	0.00E+00	7.55E-01	3.02E+01	6.83E+00	2.20E+01	1.13E-04	0.00E+00	0.00E+00	2.94E-08
IN-W298.318	8.01E+00	2.53E+01	0.00E+00	2.40E+00	9.60E+01	2.18E+01	7.01E+01	3.59E-04	0.00E+00	0.00E+00	2.45E-08

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Table 40. EPAUNI RH Input (Stream Totals) — Continued

StreamID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
KA-T001	3.81E+02	1.44E-01	1.86E-03	8.95E+00	3.04E-02	7.62E-03	2.44E-01	2.03E-02	1.52E+02	1.41E+02	2.03E-06
KA-W016	3.90E+01	1.47E-02	1.90E-04	9.15E-01	3.11E-03	7.79E-04	2.49E-02	2.08E-03	1.55E+01	1.45E+01	2.08E-07
LA-TA-00-03	8.90E-01	0.00E+00	0.00E+00	0.00E+00	1.24E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LA-TA-03-27	9.70E+01	2.68E+00	0.00E+00	1.03E+00	2.33E+02	2.52E+00	6.84E+00	1.94E-03	8.55E+02	7.53E+02	3.11E-09
OR-REDC-RH-HET	5.30E+02	1.39E+00	4.42E+01	5.18E-01	4.32E-01	9.14E-01	8.90E-01	8.57E-05	1.92E+00	9.11E+00	2.16E-09
OR-TBD-RH-HET	2.66E+02	2.23E+02	1.84E+02	1.60E+02	2.93E+01	2.47E+01	4.17E+01	2.95E-02	1.98E+03	1.19E+03	3.38E+01
OR-W213-RH-HET	1.59E+02	5.50E+00	5.84E-03	8.25E-01	2.67E+00	3.31E-03	3.46E+00	2.92E-01	3.06E+01	2.51E-01	5.15E+00
RL105-07	9.79E+01	7.88E+00	1.11E-01	1.31E+00	3.99E+00	2.02E+00	3.06E+01	9.35E-03	1.08E+01	9.02E+00	4.75E-08
RL105-09	3.48E+02	7.10E+01	0.00E+00	5.76E+00	3.55E+01	1.95E+01	2.24E+02	6.30E-02	9.02E+01	3.33E+01	1.33E-06
RL209E-08	8.90E-01	2.76E+00	0.00E+00	3.79E-01	3.49E+00	1.22E+00	1.72E+00	5.81E-05	0.00E+00	0.00E+00	7.36E-09
RL222S-08	3.56E+00	6.70E-01	0.00E+00	5.37E-02	6.40E+00	2.16E-01	5.68E+00	4.61E-06	1.72E-01	2.64E-01	4.46E-01
RL325-08	2.24E+02	4.16E+02	3.06E+01	4.10E+02	6.68E+01	7.03E+01	1.40E+03	4.24E-02	3.95E+02	2.85E+03	7.24E-05
RL325-09	8.90E-01	2.27E-02	3.15E-01	1.37E-03	2.85E-04	1.92E-03	1.69E-02	1.12E-07	2.76E-02	6.85E-02	1.07E-11
RLBART-08	8.90E-01	4.31E-01	0.00E+00	3.60E-07	3.38E-06	1.63E-06	1.54E-06	6.56E-11	0.00E+00	0.00E+00	8.69E-10
RLBAT-08	6.23E+00	5.26E+00	9.52E-01	2.92E+00	4.79E-01	7.85E-01	1.41E+01	7.00E-04	3.78E+01	2.43E+01	1.58E-08
RLBW-08	1.78E+00	3.20E+00	0.00E+00	6.07E-01	1.46E+00	8.76E-01	3.13E+00	8.47E-05	0.00E+00	0.00E+00	5.02E-09
RLESG-08	2.94E+01	5.03E+00	0.00E+00	5.73E-01	3.18E+00	1.69E+00	1.41E+01	5.71E-05	8.17E-01	1.36E-02	2.91E-09
RLGEV-08	7.12E+00	1.84E+01	0.00E+00	7.00E+00	4.52E+01	2.22E+01	5.77E+01	1.22E-03	5.65E+00	4.29E+00	1.78E-08
RLPFP-08	1.96E+01	3.21E+01	0.00E+00	6.11E+00	3.79E+01	1.33E+01	7.91E+01	6.37E-04	4.56E-05	4.07E-05	1.90E-08
RLPURX-07	4.18E+01	8.97E+02	0.00E+00	1.39E+02	1.09E+03	5.04E+02	9.25E+02	2.73E-02	0.00E+00	0.00E+00	1.63E-06
RLSWO-08	2.76E+01	2.47E+02	0.00E+00	1.00E+03	3.14E+00	3.08E+00	3.23E+01	1.04E-01	3.47E+04	2.23E+04	1.82E-07
RLWTP-08	1.78E+03	3.50E+01	0.00E+00	1.23E+00	2.43E+01	4.14E+00	1.15E+01	1.15E-01	8.43E+03	5.84E+03	1.76E-01
SA-W135	6.23E+00	2.76E+01	1.73E-01	4.50E+00	3.86E+00	5.79E-01	7.60E-03	1.05E-02	3.25E+02	3.17E+02	2.12E-07
SR-BCLRH-MT01	8.90E-01	3.46E+00	6.52E-01	1.94E+00	3.16E-01	5.17E-01	9.78E+00	1.07E-03	2.55E+01	1.64E+01	5.93E-08
SR-BCLRH-T001	8.90E-01	2.40E-02	4.52E-03	1.35E-02	2.19E-03	3.58E-03	6.78E-02	7.41E-06	1.77E-01	1.13E-01	4.10E-10
SR-BCLRH-T002	1.78E+00	9.04E-01	1.57E-01	8.75E-01	1.17E-01	1.91E-01	0.00E+00	6.04E-04	4.17E-01	1.65E+01	1.67E-08
SR-BCLRH-T003	1.25E+01	2.41E+00	4.54E-01	1.35E+00	2.20E-01	3.61E-01	6.82E+00	7.42E-04	1.78E+01	1.14E+01	4.13E-08
SR-BCLRH-T004	1.16E+01	7.21E+01	1.36E+01	4.05E+01	6.58E+00	1.08E+01	2.04E+02	2.22E-02	5.30E+02	3.42E+02	1.24E-06
SR-BCLRH-T005	8.90E-01	4.93E+00	9.29E-01	2.77E+00	4.49E-01	7.36E-01	1.39E+01	1.52E-03	3.62E+01	2.32E+01	8.44E-08
SR-BCLRH-T006	8.90E-01	1.16E+00	2.18E-01	6.48E-01	1.06E-01	1.73E-01	3.28E+00	3.56E-04	8.50E+00	5.49E+00	1.98E-08
SR-BCLRH-T007	8.90E-01	9.56E-03	1.80E-03	5.35E-03	8.71E-04	1.43E-03	2.71E-02	2.94E-06	7.03E-02	4.53E-02	1.63E-10
SR-BCLRH-T008	8.90E-01	1.14E-01	2.15E-02	6.40E-02	1.04E-02	1.71E-02	3.23E-01	3.52E-05	8.41E-01	5.40E-01	1.95E-09

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Table 40. EPAUNI RH Input (Stream Totals) — Continued

StreamID	Volume(m³)	Am-241	Cm-244	Pu-238	Pu-239	Pu-240	Pu-241	U-234	Cs-137	Sr-90	U-233
SR-BCLRH-T009	1.78E+00	7.67E-01	1.45E-01	4.31E-01	7.01E-02	1.15E-01	2.17E+00	2.37E-04	5.67E+00	3.64E+00	1.32E-08
SR-BCLRH-T010	8.90E-01	4.76E+00	1.16E+00	1.86E-02	1.36E-03	2.24E-02	4.20E-02	6.82E-06	3.58E+02	1.90E+02	1.02E-06
SR-BCLRH-T011	3.56E+00	4.55E-02	6.06E-03	2.22E-02	1.06E-02	3.60E-05	0.00E+00	2.24E-05	2.87E-01	1.52E-01	2.97E-11
SR-SWMF-HET-RH	1.78E+00	1.99E-01	2.15E+00	5.92E-01	4.61E-01	1.61E-01	7.57E-01	1.24E-04	4.10E-02	3.00E-02	1.56E-07
SR-T003-773A-HET	1.04E+02	1.00E+02	1.55E+02	1.31E+02	1.64E+00	3.69E+00	3.57E+00	1.86E-02	5.99E+01	4.14E+01	2.56E-05
SR-W027-221H-HET-RH	7.12E+00	5.77E-01	0.00E+00	3.41E+02	4.48E-01	2.23E-01	8.90E-01	6.37E-02	0.00E+00	0.00E+00	4.51E-04
SR-W027-SRSG-HET-RH	6.94E+01	5.56E+01	5.21E-01	2.36E+03	5.47E+01	3.29E+01	1.28E+02	4.71E-01	7.39E-02	8.54E-02	7.07E-08

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