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Analysis Package for the BRAGFLO Direct Release Calculations (Task 4) of the Performance Assessment Analyses Supporting the Compliance Certification Application
WPO #40520

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accessible environment. "(1) [T]he atmosphere, (2) land surfaces, (3) surface waters, (4) oceans, and (5) all of the lithosphere that is beyond the controlled area." (40 CFR § 191.12[k])

CCA - Compliance Certification Application. The application submitted by the DOE to the EPA in October 1996 for certification that the WIPP meets the disposal standards in 40 CFR Part 191.

CCDF - complementary cumulative distribution function. Mathematically, a complementary cumulative distribution function is equal to one minus a cumulative distribution function. A cumulative distribution function is the sum (or integral) of the probability of those values or variables that are less than or equal to a specified value.

For the WIPP, a CCDF is the ordered set of points that span the cumulative normalized releases from the waste isolation system for all combinations of future histories of the repository over the 10,000-year regulatory period. The CCDF is a graphical display of the probability (the ordinate) that the value of the cumulative release will be greater than the normalized release (the abscissa). The points are ordered by normalized cumulative releases.

Radionuclide releases are normalized as stipulated in 40 CFR Part 191, Appendix A, and the complementary cumulative distribution function is compared to the quantitative release limits specified in 40 CFR § 191.13(a) to determine compliance.

CMS - Configuration Management System. The system used to provide traceability and reproducibility of the performance assessment calculations. Also referred to as SCMS - software configuration management system.

conceptual model. A statement of how important features, events, and processes are to be represented in performance assessment.

controlled area. The area within the withdrawal boundary (see land withdrawal boundary) and the underlying subsurface.

disposal system. "[A]ny combination of engineered and natural barriers that isolate ... radioactive waste after disposal" (40 CFR § 191.12[a]). For the purposes of the Waste Isolation Pilot Plant, this includes the combination of the repository/shaft system and the controlled area.

distribution. The statistical distribution of values of an entity over the range of expected values.

disturbed rock zone. That portion of the geologic barrier in which the physical and/or chemical properties are significantly altered by underground activities.

E1, E2. These are potential human-intrusion scenarios used in constructing the future histories of the disposal system for compliance purposes. E1 intrusions penetrate both the repository and an underlying brine reservoir in the Castile Formation. E2 intrusions penetrate the repository but do NOT penetrate an underlying brine reservoir.

E2E1. A scenario in which an E2 intrusion is followed by an E1 intrusion. The consequences of this particular intrusion were calculated in this performance assessment.

E1E2. Any multiple-human-intrusion scenario that includes at least one E1 intrusion (note that this also encompasses the E2E1 intrusion scenario described above).

event. A phenomenon that occurs instantaneously or within a short time interval relative to the time frame of interest.

FEPs - features, events, and processes. Features, events, and processes that are potentially important to long-term performance of the disposal system. A comprehensive set of features, events, and processes relevant to the WIPP was considered in applying a screening methodology to develop the conceptual model that is used to evaluate compliance with the numerical performance requirements provided in 40 CFR Part 191.

feature. An aspect or feature of the repository and its environment. For example, the mine shafts are a feature of the repository, and the stratigraphy is a feature of the repository environment.

human intrusion. (See Inadvertent Human Intrusion).

inadvertent human intrusion. The accidental violation of the disposal system through human activity such as mining or exploration drilling. Inadvertent and intermittent intrusion by drilling for resources (other than those resources provided by the waste in the disposal system or engineered barriers designed to isolate such waste) is the most severe human intrusion scenario (40 CFR § 194.33[b][1]).

LWA - Land Withdrawal Act. Public Law 102-579, which withdraws the land at the WIPP site from "entry, appropriation, and disposal"; transfers jurisdiction of the land from the Secretary of the Interior to the Secretary of Energy; reserves the land for activities associated with the development and operation of the WIPP; and includes many other requirements and provisions pertaining to the protection of public health and the environment.

LWB - land withdrawal boundary, WIPP site boundary. The boundary of the 16-section land withdrawal area defined by the Land Withdrawal Act.

LHS - Latin hypercube sampling. A Monte Carlo sampling technique that divides the range of each variable into intervals of equal probability and samples from each interval. (See Monte Carlo Analysis/Technique).

marker bed. One of the well-defined anhydrite layers in the Salado. Four of these thin, horizontal layers are located near the repository and are considered in performance assessment because their properties differ from those of the Salado halite: Marker Bed 139 (below the repository), anhydrites a and b (located between the repository floor and roof and combined into a single layer in the CCA calculations), and Marker Bed 138 (located above the repository).

mean. The probabilistic expectation of a random variable.

median. The value for which the probability of sampling a value greater than the median is 0.5.

Monte Carlo Analysis/Technique. A technique that obtains the statistical distribution of outcomes of deterministic calculations by statistical sampling of the input and computer simulations of disposal system performance. For the WIPP performance assessment, the method is used to evaluate the distribution of the consequences and approximate the uncertainty in the results.

parameter. The quantities in the mathematical model that incorporate information about the features, events, and processes included in the conceptual model of disposal system performance. Parameters are underlying elements ($x = x_1, ..., x_n, ..., x_{nV}$) of a computational model. As x changes so does the model result. The individual parameters, x_n, may be vectors, tensors, higher order quantities, or even functions, but are usually scalar quantities.

PICs - passive institutional controls. "(1) [P]ermanent markers placed at a disposal site, (2) public records and archives, (3) government ownership and regulations regarding land or resource use, and (4) other methods of preserving knowledge about the location, design, and contents of a disposal system." (40 CFR § 191.12[e])

PA - performance assessment. "[A]n analysis that: (1) Identifies the processes and events that might affect the disposal system; (2) examines the effects of these processes and events on the performance of the disposal system; and (3) estimates the cumulative releases of radionuclides, considering the associated uncertainties, caused by all significant processes and events. These estimates shall be incorporated into an overall probability distribution of cumulative release to the extent practicable. (40 CFR § 191.12[q])

performance modeling. A process of building models of the factors affecting the containment of nuclear waste to project into the future how the WIPP facility will respond to probabilistic events and processes. Calculations of system performance using mathematical implementation of the conceptual models.

process. A natural or anthropogenic phenomenon that occurs continuously or over a significant portion of the time frame of interest; a "long-term" phenomenon; processes typically alter the physical state of material under consideration.

probabilistic analysis. Analysis through statistical investigations is referred to as probabilistic analysis. Monte Carlo analysis is used for probabilistic analysis in the WIPP PA. This analysis propagates uncertainties in the future, in the conceptual models, and in the parameters into the analytical results.

QA - quality assurance. The planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service.

realization. One set of values for all uncertain parameters selected through LHS; synonymous with vector.

release. Movement of regulated substances into the accessible environment as defined in 40 CFR Part 191.

replicate. One complete set of probabilistic performance assessment calculations made using a single random number seed to initiate the LHS procedure for generating values of uncertain parameters at the beginning of the calculations. Three independent replicates were made in the CCA performance assessment to demonstrate statistical confidence. The replicates differ from each other only in the random number seed.

repository. The portion of the WIPP underground system within the Salado Formation, including the access drifts, waste panels, and experimental areas, but excluding the shafts.

risk. In the performance assessment analyses, risk is defined by the triplet {what could happen (scenarios), likelihood that it will happen (probability), and the consequences}.

sample. A value randomly drawn from a probabilistic distribution.

SWCF - Sandia WIPP Central Files. A records system containing documentation related to WIPP.

scenario. A combination of naturally occurring or human-induced events and processes that represent realistic future changes to the repository, geologic, and geohydrologic systems that could cause or promote the escape of radionuclides and/or hazardous constituents from the repository.

screening argument. Criteria used to eliminate from scenario and conceptual model development those events and processes that are not applicable to a specific disposal system or that do not have the potential of contributing significantly to performance. The three screening criteria used for the CCA are *Regulatory Guidance*, *Probability of Occurrence*, and *Consequence*.

sensitivity and uncertainty analyses. Analyses to determine the sensitivity of performance to changes in the values of uncertain parameters (those that were expressed as probability distributions). The distributions represent the range of known values for a parameter and the uncertainty in the actual value.

SO-C. Screened-Out on the basis of Consequence: elimination of FEPs on the basis of low consequence to system performance.

SO-P. Screened-Out on the basis of low Probability: elimination of FEPs on the basis of low probability of occurrence.

SO-R. Screened-Out on the basis of Regulations: elimination of FEPs on the basis of regulations provided in 40 CFR Part 191 and criteria provided in 40 CFR Part 194.

subjective uncertainty. Subjective uncertainty derives from a lack of knowledge about quantities, attributes, or properties believed to have a single or certain range of values.

transmissivity. "[T]he hydraulic conductivity integrated over the saturated thickness of an underground formation." (40 CFR § 191.12[l])

TRU - transuranic waste. "[W]aste containing more than 100 nanocuries of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for: (1) high-level radioactive wastes; (2) wastes that the Department has determined, with the concurrence of the Administrator, do not need the degree of isolation required by this Part; or (3) wastes that the Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61" (40 CFR § 191.02[i]). The "Department" is DOE, the "Administrator" is the Administrator of the EPA, "this Part" is 40 CFR Part 191, and the "Commission" is the Nuclear Regulatory Commission.

uncertainty analysis. (1) An evaluation to determine the uncertainty in model predictions that results from imprecisely known input variables. (2) Determination of the degree of uncertainty in the results of a calculation based on uncertainties in the input parameters and underlying assumptions. Such an analysis requires definition of a system, description of the uncertainties in the factors that are to be investigated, and the characteristics of the system that are to be simulated, and the consequences of varying values on input parameters over their respective statistical distributions.

undisturbed performance. "[T]he predicted behavior of a disposal system, including consideration of the uncertainties in predicted behavior, if the disposal system is not disrupted by human intrusion or the occurrence of unlikely natural events." (40 CFR § 191.12[p])

vector. A mathematical construct that requires both a magnitude and direction. Many physical quantities such as force, velocity, acceleration, and fluxes are represented mathematically as vectors. In performance assessment, the term also means a vector over the real numbers and is therefore synonymous with realization (see realization).

Background

This analysis package is one of eight packages documenting analyses performed in support of the Compliance Certification Application (CCA) for the Waste Isolation Pilot Plant (WIPP). The following background and overview of the analyses is provided to assist the reader in understanding this analysis package and the overall strategy and framework of these analyses. The reader is also referred to the glossary for further information regarding terms used in this analysis package.

B.1 Performance Assessment

The WIPP is a geologic repository operated by the U.S. Department of Energy (DOE) for disposal of transuranic radioactive wastes. The repository is located approximately 650 meters underground in the Salado Formation, and is connected to the surface by four shafts which will be sealed after waste emplacement is completed. The geologic formations immediately above and below the Salado are the Rustler and Castile Formations, respectively. The Rustler is considered important because it contains the most transmissive units above the repository; the most significant of these is considered to be the Culebra Dolomite Member. The Castile contains areas of pressurized brine (brine pockets); it is not known whether any such pockets are located under the repository. The area surrounding the shafts and surface facilities and the underlying subsurface are controlled by the DOE.

In October 1996, the DOE submitted the CCA to the U.S. Environmental Protection Agency (EPA) in accordance with the requirements of Title 40 of the Code of Federal Regulations (40 CFR) Parts 191 and 194. The containment requirements in 40 CFR 191.13(a) specify that the disposal system is to be designed to provide a reasonable expectation that radionuclide releases to the accessible environment during 10,000 years are not likely to exceed certain limits (the limits are based on the radionuclide inventory in the repository). The demonstration of having a reasonable expectation is to be based on a performance assessment. Performance assessment (PA) is defined in 40 CFR 191.12:

> *Performance assessment* means an analysis that: (1) Identifies the processes and events that might affect the disposal system; (2) examines the effects of these processes and events on the performance of the disposal system; and (3) estimates the cumulative releases of radionuclides, considering the associated uncertainties, caused by all significant processes and events. These estimates shall be incorporated into an overall probability distribution of cumulative release to the extent practicable.

The PA process used in the CCA fulfills these requirements through 6 major steps, listed below.

(1) Collecting data, characterizing the site and disposal system, and developing the modeling system.

(2) Constructing scenarios (combinations of possible future events), with and without human activities.

(3) Estimating the probability that various scenarios will occur.

(4) Analyzing the consequences of the various scenarios (deterministic futures) which have sufficiently high consequences and probability of occurrence. There are four basic scenarios considered: (1) undisturbed performance (the absence of human intrusion); (2) the E1 intrusion scenario (a borehole which penetrates both the repository and an underlying pressurized brine reservoir in the Castile Formation); (3) the E2 intrusion scenario (a borehole which penetrates the repository); and (4) multiple intrusions (for example, an E2 intrusion followed by an E1 intrusion - E2E1). Each of these scenarios is considered with and without the effects of mining potash located in the Salado within the controlled area.

(5) Calculating cumulative radionuclide releases and comparing them to regulatory standards in 40 CFR Part 191. The releases are calculated using the consequences of each scenario and their combinations in various (probabilistic) futures. The releases are expressed as complementary cumulative distribution functions (CCDFs), the probability distribution of exceeding normalized cumulative radionuclide releases.

(6) Performing sensitivity analyses to identify the most significant factors.

The PA calculations described in these analysis packages (and in this overview) complete the fourth and fifth steps: analysis of scenario consequences and calculation of CCDFs, respectively. The other steps are addressed elsewhere.

P.2 PA Calculation Strategy
Because of the large number of complex calculations that are required to produce CCDFs, it is not practical, nor is it necessary, to model the total system in a single calculation. Instead, disposal system components and subsystems are modeled (in six separate tasks) to calculate consequences for the undisturbed scenario and for the E1, E2, and E2E1 human intrusion scenarios (with and without mining). Each of these tasks is performed for a set of reference conditions, which include specific intrusion scenarios at certain times. The reference conditions are designed to allow the results of the first six tasks to be incorporated into the CCDF calculations in a seventh task.

To perform the first six tasks, several major computer codes are used to simulate relevant features of the disposal system and calculate scenario consequences. An additional computer code is used to construct the CCDFs in the seventh task. The seven tasks are described in the Analysis Plan for the Performance Assessment Analyses Supporting the Compliance Certification Application (AP-AAD), dated March 8, 1996. They are summarized here, together with their major computer codes. The computer codes and disposal system components addressed in the first six tasks are also shown schematically in Figure B-1.

Task 1
In the first task, overall flow of brine and gas is calculated for undisturbed conditions and for human intrusion scenarios. The flow of brine and gas is calculated in the repository, in the

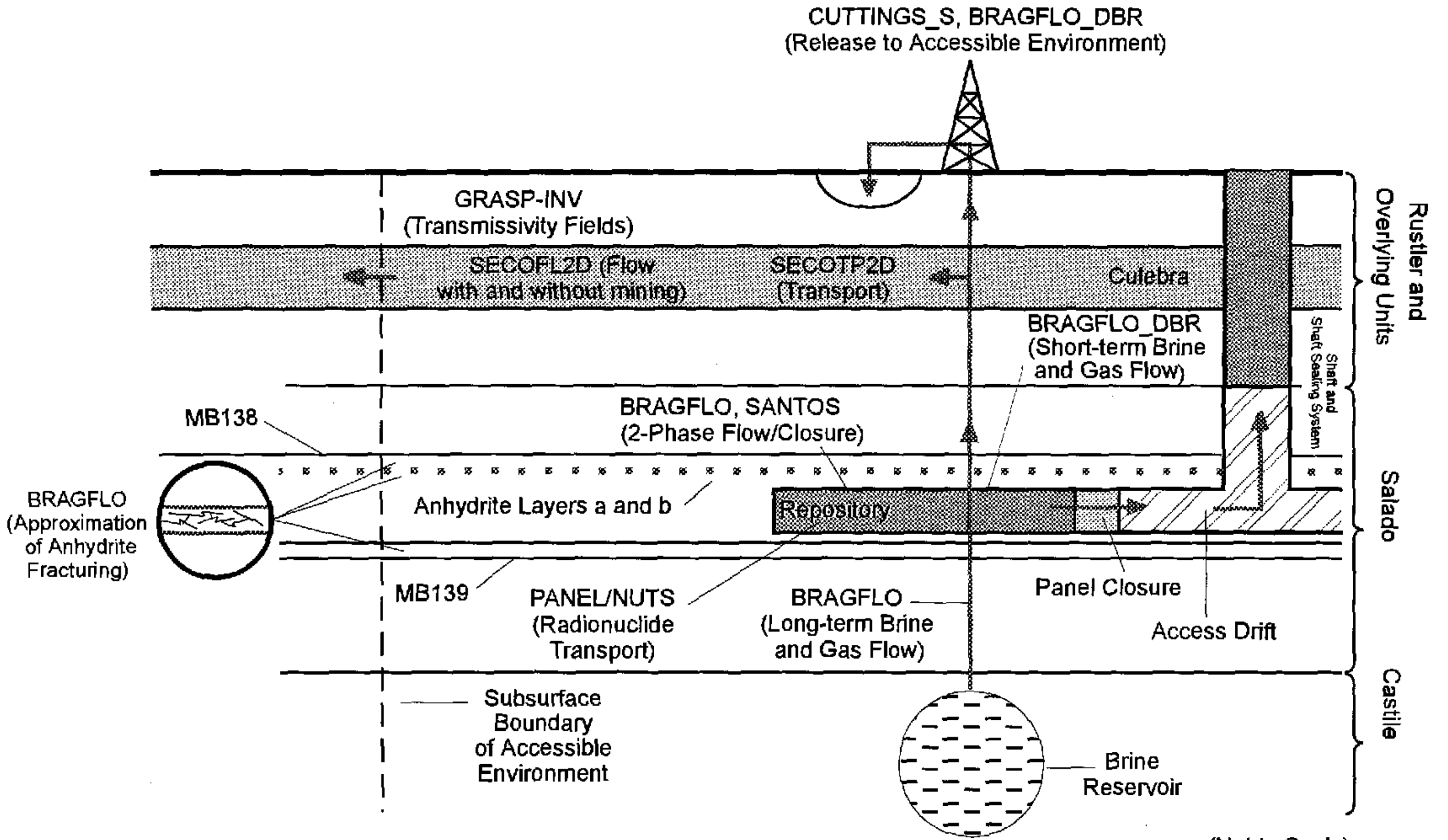


Figure B-1. Schematic Side View of the Disposal System Associating Performance Assessment Codes with the Components of the Disposal System Each Code Simulates sealed shafts, in the Salado Formation (where the repository is located), and in the human intrusion boreholes. Brine flow in other formations is also calculated (except for the Culebra, which is addressed separately in Task 3 because of its significance as a pathway for long-term releases). Processes which are coupled to brine and gas flow are also included in this task: gas generation in the repository, disposal room closure and consolidation, brine flow, and effects on the rock surrounding the repository. Creep closure within the waste regions in the repository is represented in this task using a porosity surface describing porosity as a function of time and pressure. These calculations are performed for the set of system reference conditions, and provide results that are used in subsequent disposal system models (Tasks 2 through 6) and also in CCDF construction (Task 7).

The brine and gas flow and coupled repository processes are modeled using version 4.00 of the computer code BRAGFLO. The porosity surface describing closure of the modeled disposal room is generated using the code SANTOS. The codes and disposal system components are shown in Figure B-1. There are two analysis packages associated with this task: *Analysis Package for the Salado Flow Calculations (Task 1) of the Performance Assessment Analyses Supporting the Compliance Certification Application* (WPO# 40514) and *Final Porosity Surface Data* (WPO# 35697).

Task 2

This task is calculation of the overall long-term transport and radioactive decay of radionuclides from the waste in brine in the Salado and in the overlying Rustler Formation (except for the Culebra, which is addressed in Task 3). The brine flow fields and disposal system model geometry are those calculated in Task 1, and the transport calculations are performed for undisturbed conditions and for human-intrusion scenarios. The radionuclide source concentrations in the brine (the actinide source term) in the repository are the modeled solubilities of the radionuclides contained in the waste. These calculations are performed for the system reference conditions.

The overall transport and decay are calculated using the computer code NUTS for the undisturbed, E1, and E2 scenarios. In simulations of the E1 scenario, NUTS also tracks brine originating in the underlying Castile brine reservoir, including the fraction of Castile brine that has flowed out from the human-intrusion borehole into the waste in the repository. The code PANEL calculates radionuclide concentrations in brine and also radionuclide transport to the Culebra for the E2E1 scenario. In all scenarios, the quantity of brine flowing up the shafts or a degraded exploratory borehole to the Culebra calculated by BRAGFLO (Task 1), together with the concentration of radionuclides in that brine calculated by NUTS or PANEL (Task 2), is used to determine the quantity of radionuclides released to the Culebra (the Culebra is addressed in Task 3). The radionuclide concentration in brine calculated by PANEL is also used to determine the quantity of radionuclides released to the surface in Task 4. The codes and disposal system components are shown in Figure B-1. The analysis package for this task is *Analysis Package for the Salado Transport Calculations (Task 2) of the Performance Assessment Analysis Supporting the Compliance Certification Application* (WPO# 40515).

Task 3
Detailed fluid flow and radionuclide transport in the Culebra for each scenario are modeled in Task 3. The fluid flow calculations use transmissivity fields that are generated for the Culebra to represent the spatial heterogeneity in flow characteristics which has been observed experimentally. Each scenario may occur with or without potash mining in the Salado in the controlled area; this mining affects the transmissivity of the Culebra. Detailed movement of radionuclides is also calculated using a modeled double-porosity medium for the Culebra, accounting for flow in fractures, diffusion in the matrix, retardation, and radioactive decay. The transport is calculated using a unit source of radionuclides. These calculations are performed for the system reference conditions.

The computer code SECOFL2D calculates fluid flow in the Culebra, using transmissivity fields calculated by the code GRASP-INV (one field in each simulation). The code SECOTP2D calculates radionuclide transport in the Culebra. In Task 7, transport of the unit radionuclide source *in* the Culebra (from this task) is combined with the release *to* the Culebra (calculated in Task 2 using brine flows calculated in Task 1) to determine whether any radionuclides are actually released to the Culebra and subsequently transported through it for each scenario. The codes and disposal system components are shown in Figure B-1. There are two analysis packages associated with this task: *Analysis Package for the Culebra Flow and Transport Calculations (Task 3) of the Performance Assessment Analyses Supporting the Compliance Certification Application* (WPO# 40516) and *Analysis of the Generation of Transmissivity Fields for the Culebra Dolomite* (WPO# 40517).

Task 4
Drilling intrusions into the repository (the E1, E2, and E2E1 scenarios) have immediate consequences: they lead to direct releases of material containing radionuclides to the accessible environment at the surface. These consequences are calculated for the system reference conditions in Tasks 4, 5, and 6. The radionuclide content of the materials released is dependent on the time of intrusion and is calculated separately using the system reference conditions.

Task 4 addresses brine containing dissolved radionuclides in the repository that may reach the surface if it is sufficiently pressurized. Short-term flow in the repository is modeled on a scale which includes repository features such as panel closures to calculate brine and gas flow (gas released to the surface is addressed in Task 6). The radionuclide concentration in the brine is calculated in Task 2. The short-term flow in the repository is modeled using version 4.01 of the code BRAGFLO (also referred to as BRAGFLO_DBR to differentiate it from the BRAGFLO code used in Task 1). The modeled geometry in Task 4 is different from the geometry used in the BRAGFLO code in Task 1, to account for the repository features. The initial conditions for Task 4 are provided by the long-term repository conditions calculated in Task 1. The code and modeled system components are shown in Figure B-1. The analysis package for this task is *Analysis Package for the BRAGFLO Direct Release Calculations (Task 4) of the Performance Assessment Analysis Supporting the Compliance Certification Application* (WPO# 40520).

Task 5
Task 5 addresses cuttings and cavings - the second direct release pathway associated with drilling intrusions into the repository (the E1, E2, and E2E1 scenarios). Cuttings and cavings are solid material carried to the surface by the drilling fluid during the process of drilling the borehole: cuttings are materials removed directly by the drill bit, and cavings are materials eroded from the walls of the borehole by the circulating drilling fluid. The code CUTTINGS_S calculates the quantity of material transported to the surface as cuttings for the system reference conditions. The radionuclide content of the materials released is dependent on the time and location of the intrusion; the content is calculated separately (using the results from the reference conditions) during construction of the CCDFs in Task 7. The code and modeled system components are shown in Figure B-1. The analysis package for this task is *Analysis Package for the Cuttings and Spallings Calculations (Tasks 5 and 6) of the Performance Assessment Analysis Supporting the Compliance Certification Application* (WPO# 40521).

Task 6
Task 6 addresses spallings - the third direct release pathway associated with drilling intrusions into the repository (the E1, E2, and E2E1 scenarios). Spallings are solid materials carried up the borehole by pressurized gas which may be present in the repository at the time of intrusion. The repository pressure and conditions are calculated in Task 1. The code CUTTINGS_S calculates the quantity of material transported to the surface as spallings for the system reference conditions. The radionuclide content of the materials released is dependent on the time of intrusion and is calculated separately (using the results from the reference conditions) during construction of the CCDFs in Task 7. The code and modeled system components are shown in Figure B-1. This task is discussed together with Task 5 in *Analysis Package for the Cuttings and Spallings Calculations (Tasks 5 and 6) of the Performance Assessment Analysis Supporting the Compliance Certification Application* (WPO# 40521).

Task 7
The final task is construction of CCDFs representing futures of the repository and calculation of cumulative releases (this task represents Step 5 in the performance assessment process described in the previous section). There are three parts in this task: (1) determine futures (random sequences of future events that may occur over the next 10,000 years at the WIPP site); (2) estimate the radionuclide releases resulting from these random sequences of future events, using the results of the calculations for each scenario and the reference conditions; and (3) construct a CCDF for each future. In order to efficiently calculate the consequences of multiple futures without repeating Tasks 1 through 6 for each history, the radionuclide releases for each future are calculated by scaling the reference-condition results from the first six tasks.

The computer code CCDF_GF is used to perform the steps in this task, using the results from all the previous tasks and associated computer codes. Task 7 does not address a component of the disposal system, therefore the CCDF_GF code is not shown in Figure B-1. The analysis package for this task is *Analysis Package for the CCDF Construction (Task 7) of the Performance Assessment Analysis Supporting the Compliance Certification Application* (WPO# 40524).

P.3 PA Computer Calculations

The major computer codes used in the analyses (including CCDF_GF) and the flow of information among them are illustrated in Figure B-2. Combined, Figures B-1 and B-2 illustrate the flow of information through the codes and the relationship between the codes and the physical system being simulated. In the PA calculations, the codes shown in the figures are executed under the requirements of the software configuration management system (CMS or SCMS), which creates and maintains a complete record of the input data and results of each calculation, together with the exact codes and scripts (commands for executing the codes) used to create those results.

Figures P-1 and P-2 show only those codes that perform the bulk of the computational effort related to simulating the significant physical processes occurring within the disposal system. In addition to these codes, a variety of additional codes are used in this performance assessment. These additional codes are used for the transfer of data between codes, preparation of input data and files, model output processing, and similar tasks. Many of these additional codes are also executed within the CMS, and all are qualified for use in these analyses under applicable SNL WIPP quality assurance procedures.

As shown in Figure B-2, there are three major calculation steps in analyzing the consequences of various scenarios (Tasks 1 through 6 in the previous section):

> Preparation of input from submodels (GRASP-INV and SANTOS),
>
> Latin hypercube sampling (LHS) of the variables in the parameter database that represent subjective uncertainty (such as spatial variability in a disposal system component property or processes), and
>
> Execution of the codes within the "deterministic futures" box indicated by dashed lines in Figure B-2.

The parameter database is the initial element in the calculation process. The database includes the values of parameters used in performance assessment codes that pertain to the technical aspects of disposal system performance. Parameters pertaining only to the execution of the computer codes (for example, convergence criteria for Newton-Raphson numerical solvers) are generally not included in the database but are recorded in input files and are traceable through the CMS. The parameters in the database fall into two categories: those that are assigned fixed values, and those that are uncertain and are therefore assigned a range of values according to a cumulative distribution function (CDF).

For the analyses of scenario consequences (Tasks 1 through 6), vectors (sets) of parameter values are created from the variable parameters representing subjective uncertainty by LHS of each variable for the set of simulations in the analyses. Each of the fixed parameter values from the database and a vector of sampled parameter values are combined to form a realization (a set of input parameters that are used in one or more of the codes). Each set of input parameters is then propagated through Tasks 1 through 6 (that is, the codes are executed) under four code sequence

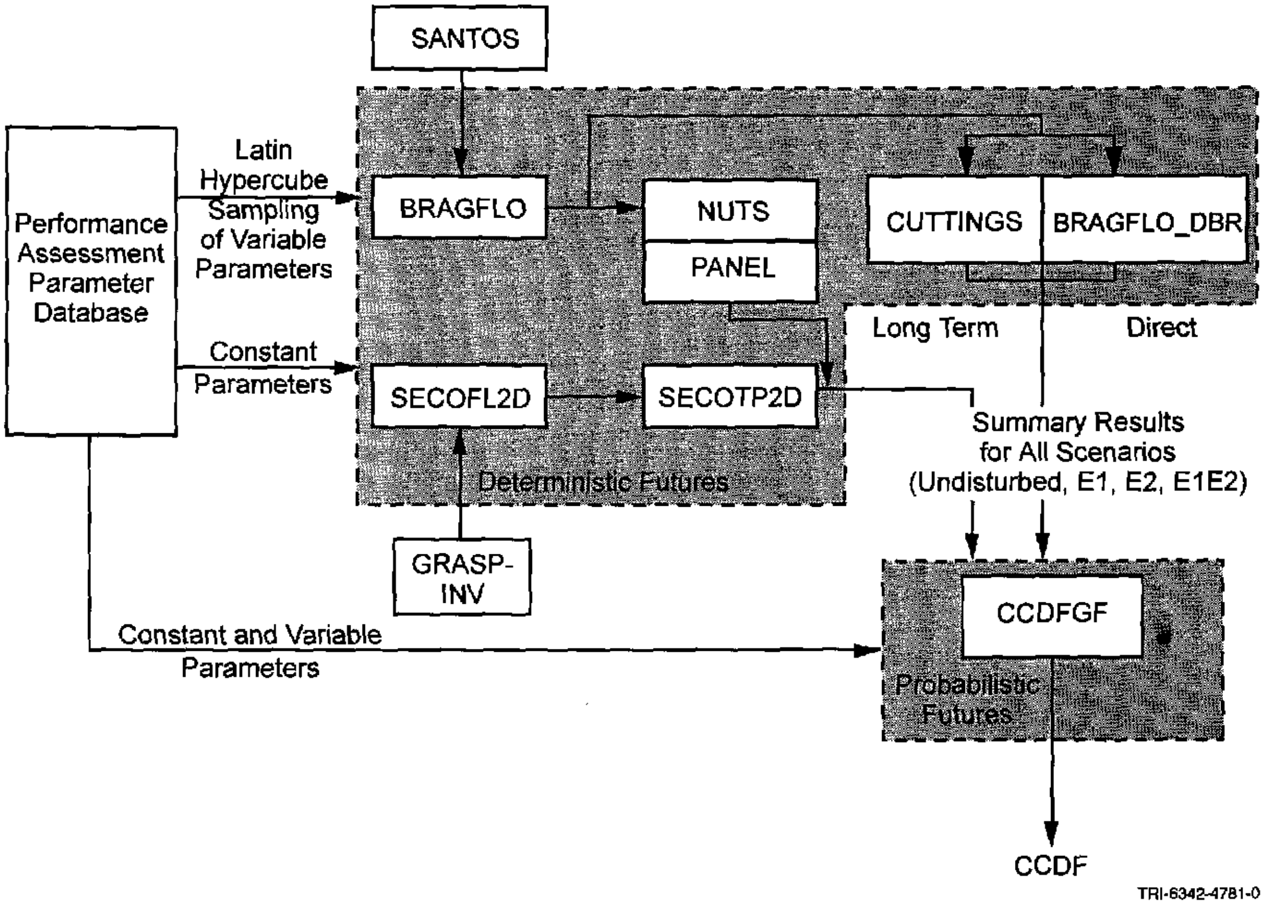


Figure B-2. Major Codes, Code Linkages, and Flow of Numerical Information in WIPP Performance Assessment configurations, one each for the undisturbed performance scenario, the E1 scenario, the E2 scenario, and the E2E1 scenario. In each configuration, the codes are executed sequentially, as shown in Figure B-2.

In this performance assessment, subjective uncertainty is addressed using a LHS sample size no less than a third larger than the number of uncertain parameters: there are 57 sampled parameters (used in one or more of the codes) that represent subjective uncertainty, and they are sampled to create 100 vectors. The entire process (LHS of uncertain parameters, creation of vectors, and evaluation of scenario consequences through execution of the codes) is repeated three times (each time comprises a replicate which is independent of the other replicates) to achieve confidence in the results.

Once the consequences of various scenarios are calculated, there are two major steps in evaluating consequences of probabilistic futures (Task 7):

> Random sampling of parameters which address stochastic uncertainty (such as location of an intrusion borehole), and
>
> Execution of the code in the "probabilistic futures" box (CCDF_GF) in Figure B-2, in which the releases for the futures are calculated using the results of the calculations for each scenario and the reference conditions, and a CCDF is constructed for each future.

This sequence of two steps is repeated once for each of the 100 vectors of uncertain parameters (that is, all the random sequences of future events that may occur over the next 10,000 years at the WIPP site are considered for each of the vectors). This yields a group (family) of 100 CCDFs (one for each of the vectors). The family arises from the fact that fixed, but unknown, quantities are needed in the estimation of each CCDF (these quantities are the uncertain parameters in each vector).

Each individual CCDF displays the effects of stochastic uncertainty in that the stepwise shape of the CCDF reflects the fact that a number of different occurrences have a real possibility of taking place. The variations between the individual CCDFs in the family display the effects of subjective uncertainty. The distribution of CCDFs in the family thus provide a complete display of both stochastic and subjective uncertainty.

In the final step, the family of CCDFs for each replicate is compared to the regulatory standard in 40 CFR 191.13(a) to determine compliance.

1.0. Introduction

This Analysis Package (AP) describes a series of calculations which were performed to support the Direct Brine Release portion of the 1996 performance assessment (PA) of the WIPP repository site. The entire suite of these PA analyses are included in the Compliance Certification Application (CCA). These PA analyses were performed to calculate the complementary cumulative distribution function (CCDF), the probability distribution of exceeding normalized cumulative radionuclide releases to the accessible environment, that will become part of the CCA. **The Direct Release calculations defined in this AP are designated as Task 4 in the CCA.** This AP provides information on the analysis of the Direct Release calculations, a listing of major assumptions, and identification of the software that was used for the analysis. Also included are discussions of applicable WIPP Quality Assurance Procedures (QAP), personnel assignments, training requirements, schedule, and deliverables. This AP identifies several items which are included in the analysis file (a.k.a., Analysis Package WPO #40520) for this analysis for the purposes of documentation and traceability; the complete records package will undergo a technical review per WIPP Quality Assurance Procedure (QAP) 6-3 in accordance with the requirements of QAP 9-1.

2.0. Scope of the analysis, the objectives or hypotheses tested, and all assumptions

2.1. Scope of the analysis

Direct brine releases may occur when a future driller penetrates the WIPP and contaminated brine is unknowingly brought to surface during the drilling process. These releases are not specifically accounted for in the CUTTINGS_S code (Analysis Package WPO #40521), as that code only calculates the solids removed during the drilling process. The calculation of brine releases brought to surface (in cubic meters) during drilling are addressed specifically within this Analysis Package (WPO #40520). These releases are then converted to EPA units for inclusion into the CCDF plots by another process (Task 7: CCDF Construction, Analysis Package WPO #40524). Certain conditions must exist within the waste in order for contaminated brine to flow directly to the surface during a drilling intrusion:

- Pressure in the waste must be greater than that exerted by the column of drilling mud that penetrates a waste panel. Drillers in the Delaware Basin currently use a salt saturated mud while drilling through the Salado, with a specific gravity of 1.23 [McTigue, et. al., 1991]. This corresponds to 7.7E+06 Pascals (which is the conversion of specific gravity of the brine to an equivalent pressure at the depth of the repository horizon), which is the minimum pressure needed to overcome a static column of drilling mud. Additional pressure is created in the wellbore due to frictional forces associated with the fluid flow up the annular space between the drill string and open hole (the assumed flow regime for direct releases). Therefore, a pressure of ~8E+06 Pascals is needed in the waste panel for fluids to flow into the intrusion borehole under dynamic flow conditions.

- There must be mobile brine present in the waste panels to flow to the surface. Corrosion and biodegradation processes consume brine and release gasses as by-products, and it is possible for the brine volume in the waste pores to drop below its "mobile" (residual) saturation. It is likely for gas-only flows to occur up a drill hole, but these flows are only of concern for the solids releases (spalls).

The pressure and saturation time-histories for each realization (3 replicates of 5 scenarios of 100 realizations) from the 10,000 year BRAGFLO calculations provided the basic input needed for the direct brine releases. The pressure and saturation at specified times for each consequence furnished the initial and boundary conditions needed to run the separate "repository scale" BRAGFLO model to determine the volume of direct brine releases to the surface. The model assumes no-flow boundary conditions beyond the footprint of the waste region for the (several day) flow period of direct releases, i.e., there is no connection to the surrounding geology. All relevant flow parameters (permeability, porosity, characteristic curves, etc.), both sampled and unsampled, are the same as those used for the 10,000 year BRAGFLO models. Attachment 1 contains a complete description of the Direct Brine Release conceptual model.

2.2. Work Acceptance Criteria

The criteria for completion of this task are the completion of all direct brine release calculations, the hand-off of the results of those calculations to those personnel performing the CCDF calculations, and the technical review of the records package per QAP 6-3.

2.3. Subtask Descriptions

Subtask 1 -- QA Training for all personnel listed in Section 6.0: All personnel in Section 4.0.1 completed training to the QA procedures in Section 5.0.

Subtask 2 -- Software QA: All software used for this analysis has been qualified for use in the SCMS per QAP 19-1.

Subtask 3 -- BRAGFLO direct release calculations: The entire process was automated through CMS. Multiple sets of calculations were performed for each of the 100 realizations within each replicate and scenario to account for the temporal and spatial variation of multiple drilling intrusions. An output binary (.CDB) file was created for each BRAGFLO direct release calculation. However, if the conditions within the waste (at intrusion time) were such that a direct brine release could not occur (i.e. the pressure was too low, or there was insufficient mobile brine saturation), a "blank" file was created for these realizations. This was done in order to assure that all realizations would have an output file associated with them (for quality assurance tracking purposes) regardless of whether they had a brine release.

Subtask 4 -- Input to CCDF plots: The Direct Brine Release model output is cubic meters of brine for each realization.

Subtask 5 -- Technical review of analysis per QAPs 6-3 and 9-1: The results of the BRAGFLO (Version 4.01) direct brine release calculations were subjected to a technical review per QAP 6-3. The scope of the technical review included the assumptions on initial and boundary conditions, the results obtained from the output files, memos describing the results of the calculations and the screening process, and all other analysis and QA information.

2.4. Assumptions, Data Sources, Initial and Boundary Conditions

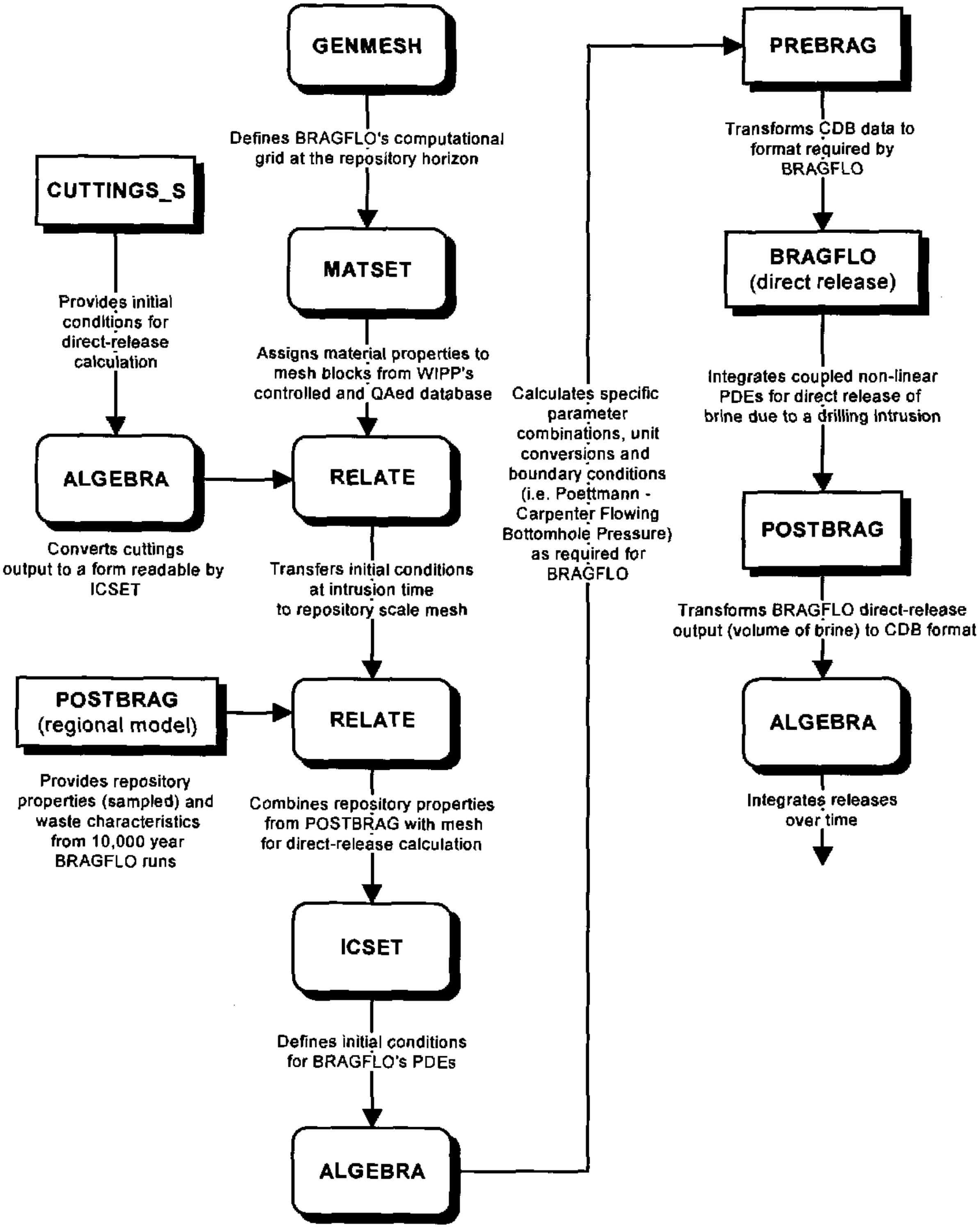
The input parameters that will be used for the direct brine release calculations came from three sources: the 10,000 year BRAGFLO output files, the CUTTINGS_S outputs, and the WIPP database as shown in the flowchart of Figure 1.

- The initial brine saturation and pressure, porosity, and crushed panel height within the waste used in the direct release model were determined from the 10,000 year BRAGFLO results, and therefore vary with time. These parameters were calculated by time interpolation in the CUTTINGS_S code, and RELATE'd to the direct release model. The BRAGFLO and CUTTINGS_S files were created under SCMS for complete traceability.
- Unsampled material properties which remain constant were read directly from the parameters database through the MATSET code. CCA database, View CCA6.SDB was used.
- Sampled material properties were RELATE'd from the 10,000 year BRAGFLO output binary files (*.CDB).

3.0. Scientific approach or technical method used to perform the analysis

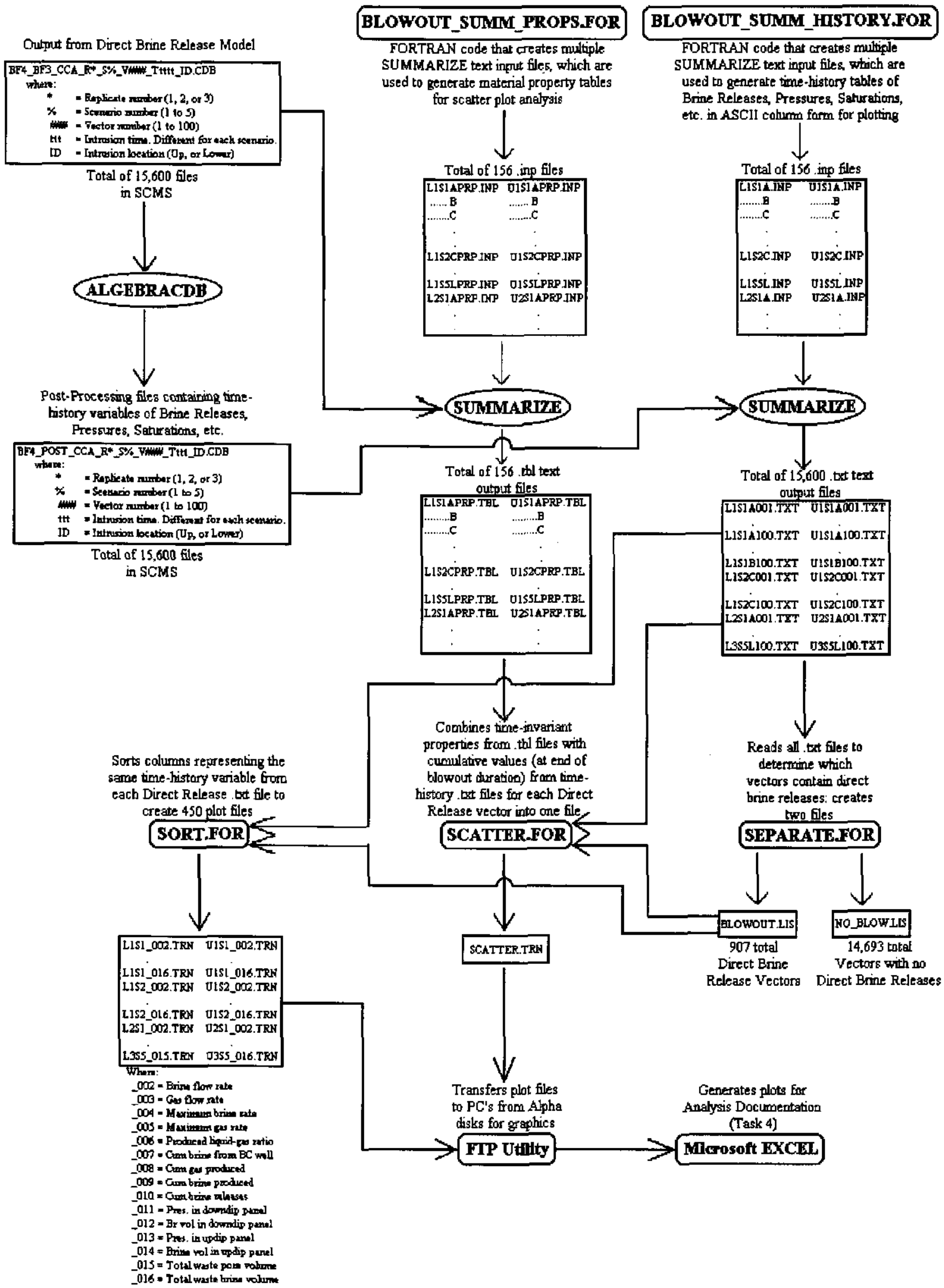
The analysis was performed with existing (QA'ed) system software, FORTRAN codes written specifically to sort and organize the output files, and a commercial PC spreadsheet to plot the data. Figure 2 shows the flow of data used in the analysis.

Figure 1: Code Sequence for Direct Release Calculations



The code sequence for the BRAGFLO direct-release calculation in the 1996 CCA PA.

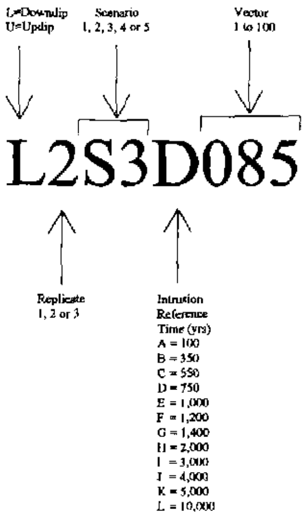
Figure 2: Flow of Data Used in the Analysis



3.1. File Naming Convention

A file naming convention was adopted to provide a means to trace the input/output files for this analysis. This was done because certain analysis software is limited to eight character file names or variable names. The naming scheme for each realization includes the following information (the definitions for replicate and scenario can be found in Attachment 1 in the section entitled "Integration with other PA Codes":
1) Down-dip or up-dip well penetrations in repository panel
2) Replicate number
3) Scenario number
4) Intrusion reference time
5) Realization number
and uses an eight character alpha/numeric name as shown in Figure 3 below:

Figure 3: File Naming Convention



For example, all root file names of the form: U3S4G037 refer to direct brine release realization 37 at 1,400 year up-dip intrusion from replicate three, scenario four. A listing of these realizations with this naming convention occurs in Column 2 of the EXCEL spreadsheet listing in Appendix G.

The following software used in this analysis was run under the VAX/VMS operating system:
- ALGEBRACDB: Version 2.35
- SUMMARIZE_PA96: Version 2.10
- BRAGFLO: Version 4.00
- PREBRAG_PA96: Version 6.00
- POSTBRAG_PA96: Version 4.00
- GM_PA96: Version 6.08 (GENMESH)
- MATSET_PA96: Version 9.00
- ICSET_PA96: Version 2.22
- BLOTCDB_PA96: Version 1.37

The following software was used for analysis and documentation using the Microsoft Windows95 and Apple Macintosh operating systems:

- CANVAS: Mac Version 3.54, Deneba Software, 7400 SW 87th Avenue, Miami, Florida 33173, (305) 596-5644. Canvas is used to manipulate post-script (BLOT) files.
- EXCEL: Mac Version 5.0 and Win95 Version 5.0c, Microsoft Corporation, Product I.D. OEM43-F11-2200217
- WORD: Mac Version 6.0.1 and Win95 Version 6.0c, Microsoft Corporation, Product I.D. OEM43-F11-2200217
- FTP: Microsoft Corporation Windows95 System Software
- ADOBE ILLUSTRATOR: Mac Version 5.5 (used to convert Adobe 3.0 files from BLOTCDB_96 to Illustrator 1.1 files for use in CANVAS)
- SUPERTRAPP: Version 1.0, released in July, 1992, U. S. Department of Commerce, National Standards and Technology (NIST), Standard Reference Data Program, Gaithersburg, MD 20899
- TableCurve 2D: Version 3 for Win32, Jandel Scientific, 2591 Kerner Blvd., San Rafael, CA 94901
- TableCurve 3D: Version 2 for Win32, Jandel Scientific, 2591 Kerner Blvd., San Rafael, CA 94901

Specific comments associated with some of the software follows:

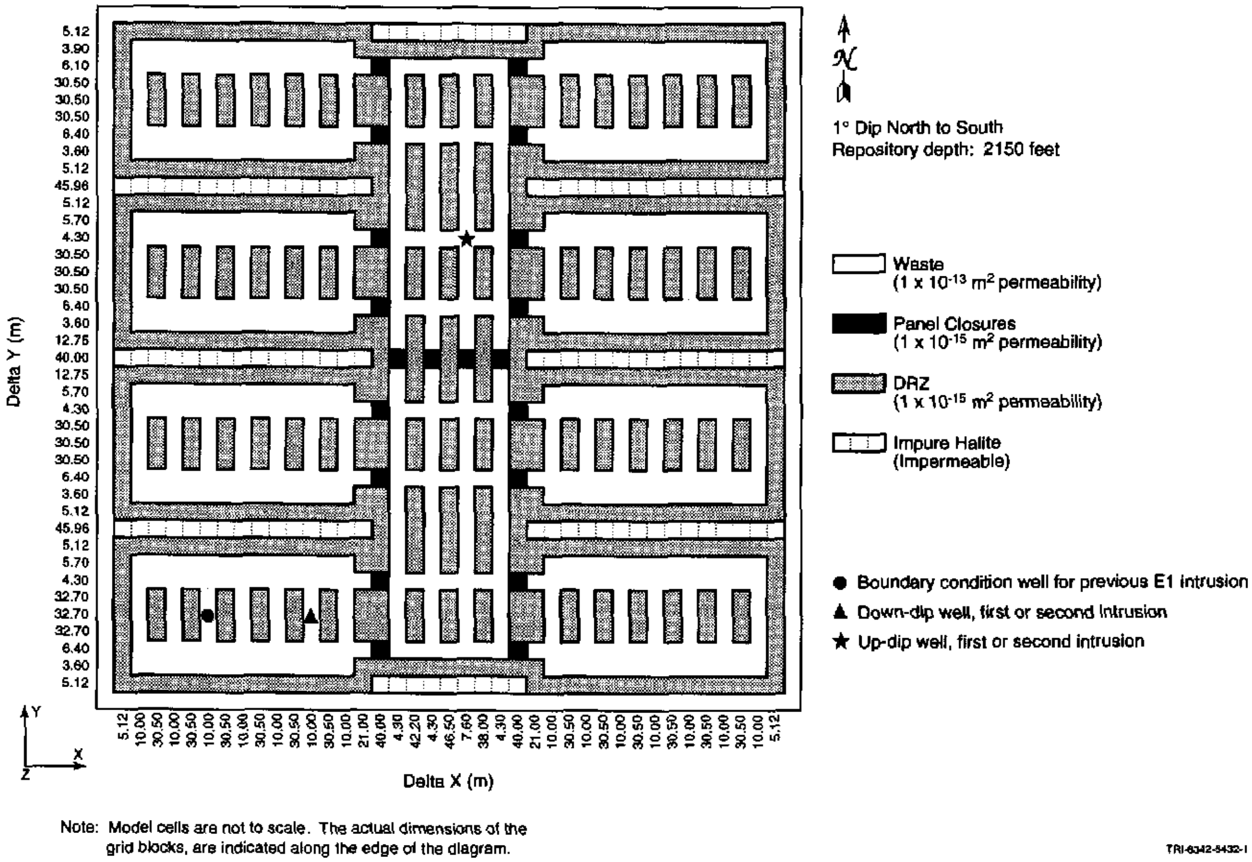
- **ALGEBRACDB**: System software located in SCMS, Version No. 2.35, QA documentation: SWCF Package Number 21247. Performed the final step in the direct brine release calculations to take the model output and accumulate brine releases and other time-history variables. Output is in the format of Camdat Database (*.CDB) binary files. The ALGEBRACDB input file consists of a series of command lines which instruct the code to perform various operations on the output variables in the direct release binary files. An example would be to perform time integration on the brine and gas flows to obtain cumulative volumes.
- **SUMMARIZE**: System software located in SCMS, Version No. 2.10, QA documentation: SWCF Package Number 21781. Used to convert information from the output binary files to ASCII text files for plotting. Requires a command line input descriptor file that specifies which file(s) are to be opened, the variables to be read, and what format to write the output files.
- **FTP (File Transfer) Utility**: PC system software (Microsoft FTP) used to download the text files from the Vax Alpha VMS operating system to the PC Microsoft Windows 95 operating system.
- **Microsoft Excel ver. 5.0c**: Product ID# OEM43-F11-2200217. Used primarily for its plotting capabilities, since the output text files can be easily parsed into spreadsheet form.
- **Jandel TableCurve™ 3D ver. 2.0**: Product ID#460726. Used primarily for three dimensional plotting and curve fitting of the Poettmann-Carpenter flowing bottom hole pressure data in order to derive lookup functions.

The following FORTRAN codes were developed to help automate some of the analysis process. Complete code listings are located in Appendices A through E. Each of the codes contain properties specific to the direct brine release outputs, and do not change any of the output data (except as noted below):

- **BLOWOUT_SUMM_PROPS.FOR**: Creates the 156 SUMMARIZE command line input descriptor files needed to obtain material property values (time invariant) from the direct brine release output binaries, and converts them to ASCII text files.
- **BLOWOUT_SUMM_HISTORY.FOR**: Creates the 156 SUMMARIZE command line input descriptor files needed to obtain time dependent history variables from the ALGEBRACDB output binaries, and converts them to ASCII text files.
- **SEPARATE.FOR**: Reads each of the 15,600 SUMMARIZE time-history output files to determine which realizations represent a direct brine release (blowout) event. Two list files are created, one containing all file names of direct release realizations, and another containing file names of those realizations that did not have direct releases. The direct release realizations differ from the no release realizations in that the variables (cumulative brine and gas, pressures, saturations, etc.) change over time, whereas the no release realizations show no change in the variables from the second to the last selected time interval.
- **SCATTER.FOR**: Uses the list of direct release files to combine time invariant material properties with cumulative values from the calculation result files into one file. This data is then used to generate the X-Y, or "scatter" plots and histograms for analysis. A complete listing of this file can be found in Appendix G. The only changes made to the data were to convert intrusion times from seconds to years, and to convert brine release flow duration from seconds to days.
- **SORT.FOR**: Uses the list of direct release files to combine similar columns of data from the time - history SUMMARIZE files into separate files for plotting. The resulting output files are organized by history variable. For example, the cumulative brine releases for each direct release realization for downdip intrusions at all intrusion times for Replicate 1, Scenario 1, are sorted into file R1S1_010.TRN. The only changes made to the data were to convert the time steps from seconds to days.

Figure 4 shows the computational grid used in the direct brine release model. The initial grid pressures and saturations are obtained from the 10,000 year BRAGFLO calculations at the predetermined intrusion times for each replicate-scenario. In Figure 4, the actual boundary of the grid lies within the outermost border (which is an artifact of the plotting package). Boundary conditions simulate the flow behavior of a well penetrating either the "updip" or "downdip" gridblock. To account for previous E1 intrusions to the Castile brine reservoir, an additional boundary condition well is also "turned on" for Scenarios 2 and 3. Full details on the implementation of the initial and boundary conditions can be found in Attachment 1.

Figure 4: Computational Grid Used in Direct Brine Release Model



The simulated brine and gas flows coming out of the intrusion wellbore are stored in variables which, when interpolated over time (in the aforementioned ALGEBRACDB step) provide the volumes used in this analysis. The direct brine release calculations were performed from June 8 to July 11, 1996, and the analysis followed from July 22 to August 16, 1996.

4.0. The identification of the individuals who performed the work

4.1. Personnel Assignments

Daniel M. Stoelzel, Senior Member Technical Staff, Sandia National Laboratories Division 6848, served as the Principal Investigator for this work, and also performed the calculations. Darien G. O'Brien, Director of Engineering, petroleum and environmental engineering consultant with Solutions Engineering (based in Lakewood, Colorado) assisted in the analyses. Mike Williamson and Kathy Aragon assisted by developing a script to efficiently process and maintain the calculations on the CMS.

5.0. The identification of prerequisites, special controls, processes, skills, or staff training and certification requirements

5.1. QA Requirements and QA Records

The following SNL WIPP QA procedures were required for all analyses pertaining to this Work Agreement:

QAP 6-3	(Conducting and Documenting Reviews of Documents)
QAP 9-1	(Quality Assurance Requirements for Conducting Analyses)
QAP 9-5	(Conducting and Documenting Routine Calculations)
QAP 17-1	(WIPP Quality Assurance Records Source Requirements)

QA records for this analysis can be found in the Records Center under the following file code:

SWCF-A:1.2.07.4.1:PA:QA:Analyses:AP-029:BRAGFLO Direct Brine Release Calculations (Task 4)

Key words include: BRAGFLO, performance assessment, blowout, brine releases, direct releases, QA training, analysis definition, analysis results.

Training records for the individuals mentioned in Section 4.1. were reviewed and all individuals involved with the analysis meet the requirements of the training as specified in Section 5.1.

6.0. The identification (by title, version number, and platform) of any computer software used in performing the analysis

The following software used in this analysis was run under the VAX/VMS operating system and is kept under version and QA control in the CMS:

- ALGEBRACDB: Version 2.35. Referenced in *Traceability/Reproducibility of the PA96 Calculations for the CCA,* SWCF-A:1.207.4.1:PA:QA:CCA:CMS
- SUMMARIZE: Version 2.10. Referenced in *Traceability/Reproducibility of the PA96 Calculations for the CCA,* SWCF-A:1.207.4.1:PA:QA:CCA:CMS
- The five previously mentioned FORTRAN utility codes were not developed under QAP 19-1. They are stored within CMS, however, to provide traceability. These codes were used strictly to efficiently organize the output data, and as such, their use in no way changed the results of the direct brine release calculations. Appendices A through E contain the code listings for these utility programs.

7.0. A listing of the source code and applicable verification for any non-SES software used in performing the analysis

For this analysis, all plotting and display of the data was handled by the commercially available spreadsheet software: Microsoft EXCEL, Version 5.0c. and Jandel TableCurve™ 3D. The final spreadsheets and plots used for this analysis will be stored in the CMS. One Visual Basic macro was developed to calculate flowing bottom-hole pressures (FBHP's) by the Poettmann-Carpenter method, to compare to those derived within the CCA direct release calculations (see Appendix F and data in Appendix 1).

8.0. The identification of all inputs and input sources (i.e., the identification of variables that affect interrelated scientific investigations to assure comparability among the related variables, and documentation of the appropriate control of these variables)

Tables 1-11 use a file naming scheme to identify the input/output files which correspond to the following information:

Rr - Replicate number (1, 2 or 3)
Ss - Scenario number (1, 2, 3, 4, or 5)
V### - Vector (realization) number (1 through 100)
Tttt - Intrusions time (varies by scenario)

Most variables identified in Table 1 as analyst choice are place holders which will be calculated in later steps. Several variables such as height and formation dip are consistent with the 10,000 year BRAGFLO mesh.

Table 1: Parameters Used in MATSET

Parameters Created/Modified in Matset: CMS filename "MS_BF4_CCA_DIR_REL.INP"					
	Input File:	GM_BF4_CCA_PRECAM_DIR_REL.CDB (from GENMESH)			
	Output File:	MS_BF4_CCA_DIR_REL.CDB			
Material Region	Variable Name	Description	Source	Usage	Value Assigned
WAS_AREA	PRMX_LOG	Log X-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	PRMY_LOG	Log Y-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	PRMZ_LOG	Log Z-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	POROSITY	Porosity (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	PORE_DIS	Parameter for Brooks-Corey Model	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	COMP_RCK	Rock Compressibility (1/Pa)	WIPP database CCA6	Later Converted to Pore Comp	Median
WAS_AREA	CAP_MOD	Capillary Pressure Model Number	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	SAT_RGAS	Residual Gas Saturation (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	SAT_RBRN	Residual Brine Saturation (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	PC_MAX	Max Capillary Pressure (Pa)	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	PO_MIN	Minimum Allowable pressure (Pa)	WIPP database CCA6	Required for BRAGFLO-not used	Median
WAS_AREA	RELP_MOD	Rel. Permeability Model Number	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	PCT_A	Threshold Pressure As Function of Perm Equation Variable	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	PCT_EXP	Threshold Pressure As Function of Perm Equation Exponent	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	KPT	Threshold Pressure As Function of Perm Model Indicator	WIPP database CCA6	Required for BRAGFLO	Median
WAS_AREA	HEIGHT	Crushed Panel Height (meters)	Analyst: DM Stoelzel	Place-holder	1.5
WAS_AREA	SAT_IBRN	Initial Brine Saturation (fraction)	WIPP database CCA6	Not Used for Direct Release	Median
WAS_AREA	PRESPAN1	Brine Pressure at Intrusion Time: Region 1 (Updip), Pa	Analyst: DM Stoelzel	Place-holder	0
WAS_AREA	PRESPAN2	Brine Pressure at Intrusion Time: Region 2 (Up-Middle), Pa	Analyst: DM Stoelzel	Place-holder	0
WAS_AREA	PRESPAN3	Brine Pressure at Intrusion Time: Region 3 (Lower-Middle),Pa	Analyst: DM Stoelzel	Place-holder	0
WAS_AREA	PRESPAN4	Brine Pressure at Intrusion Time: Region 4 (Lower), Pa	Analyst: DM Stoelzel	Place-holder	0
WAS_AREA	GPRSPAN1	Gas Pressure at Intrusion Time: Region 1 (Updip), Pa	Analyst: DM Stoelzel	Placeholder - not used	0
WAS_AREA	GPRSPAN2	Gas Pressure at Intrusion Time: Region 2 (Up-Middle), Pa	Analyst: DM Stoelzel	Placeholder - not used	0
WAS_AREA	GPRSPAN3	Gas Pressure at Intrusion Time: Region 3 (Lower-Middle),Pa	Analyst: DM Stoelzel	Placeholder - not used	0
WAS_AREA	GPRSPAN4	Gas Pressure at Intrusion Time: Region 4 (Lower), Pa	Analyst: DM Stoelzel	Placeholder - not used	0
WAS_AREA	BSATPAN1	Brine Saturation at Intrusion Time: Region 1 (Updip)	Analyst: DM Stoelzel	Place-holder	0
WAS_AREA	BSATPAN2	Brine Saturation at Intrusion Time: Region 2 (Up-Middle)	Analyst: DM Stoelzel	Place-holder	0
WAS_AREA	BSATPAN3	Brine Saturation at Intrusion Time: Region 3 (Lower-Middle)	Analyst: DM Stoelzel	Place-holder	0
WAS_AREA	BSATPAN4	Brine Saturation at Intrusion Time: Region 4 (Lower)	Analyst: DM Stoelzel	Place-holder	0
WAS_AREA	GSATPAN1	Gas Saturation at Intrusion Time: Region 1 (Updip)	Analyst: DM Stoelzel	Placeholder - not used	0
WAS_AREA	GSATPAN2	Gas Saturation at Intrusion Time: Region 2 (Up-Middle)	Analyst: DM Stoelzel	Placeholder - not used	0
WAS_AREA	GSATPAN3	Gas Saturation at Intrusion Time: Region 3 (Lower-Middle)	Analyst: DM Stoelzel	Placeholder - not used	0
WAS_AREA	GSATPAN4	Gas Saturation at Intrusion Time: Region 4 (Lower)	Analyst: DM Stoelzel	Placeholder - not used	0
DRZ_1	PRMX_LOG	Log X-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	PRMY_LOG	Log Y-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	PRMZ_LOG	Log Z-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	POROSITY	Porosity (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	PORE_DIS	Parameter for Brooks-Corey Model	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	COMP_RCK	Rock Compressibility (1/Pa)	WIPP database CCA6	Later Converted to Pore Comp	Median
DRZ_1	CAP_MOD	Capillary Pressure Model Number	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	SAT_RGAS	Residual Gas Saturation (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	SAT_RBRN	Residual Brine Saturation (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	PC_MAX	Max Capillary Pressure (Pa)	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	PO_MIN	Minimum Allowable pressure	WIPP database CCA6	Required for BRAGFLO-not used	Median
DRZ_1	RELP_MOD	Rel. Permeability Model Number	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	PCT_A	Threshold Pressure As Function of Perm Equation Variable	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	PCT_EXP	Threshold Pressure As Function of Perm Equation Exponent	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	KPT	Threshold Pressure As Function of Perm Model Indicator	WIPP database CCA6	Required for BRAGFLO	Median
DRZ_1	HEIGHT	DRZ Grid Height (meters)	Analyst: DM Stoelzel	Equivalent to 10,000 yr BRAGFLO	8.98
S_HALITE	PRMX_LOG	Log X-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	PRMY_LOG	Log Y-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	PRMZ_LOG	Log Z-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	POROSITY	Porosity (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	PORE_DIS	Parameter for Brooks-Corey Model	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	COMP_RCK	Rock Compressibility (1/Pa)	WIPP database CCA6	Later Converted to Pore Comp	Median
S_HALITE	CAP_MOD	Capillary Pressure Model Number	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	SAT_RGAS	Residual Gas Saturation (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	SAT_RBRN	Residual Brine Saturation (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	PC_MAX	Max Capillary Pressure (Pa)	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	PO_MIN	Minimum Allowable pressure	WIPP database CCA6	Required for BRAGFLO-not used	Median
S_HALITE	RELP_MOD	Rel. Permeability Model Number	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	PCT_A	Threshold Pressure As Function of Perm Equation Variable	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	PCT_EXP	Threshold Pressure As Function of Perm Equation Exponent	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	KPT	Threshold Pressure As Function of Perm Model Indicator	WIPP database CCA6	Required for BRAGFLO	Median
S_HALITE	HEIGHT	Halite Grid Height (meters)	Analyst: DM Stoelzel	Equivalent to 10,000 yr BRAGFLO	8.98
S_HALITE	PRESSURE	Initial Pressure (Pa)	WIPP database CCA6	Not Used for Direct Release	Median
PAN_SEAL	PRMX_LOG	Log X-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	PRMY_LOG	Log Y-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	PRMZ_LOG	Log Z-direction Permeability Log m^2	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	POROSITY	Porosity (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	PORE_DIS	Parameter for Brooks-Corey Model	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	COMP_RCK	Rock Compressibility (1/Pa)	WIPP database CCA6	Later Converted to Pore Comp	Median
PAN_SEAL	CAP_MOD	Capillary Pressure Model Number	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	SAT_RGAS	Residual Gas Saturation (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	SAT_RBRN	Residual Brine Saturation (fraction)	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	PC_MAX	Max Capillary Pressure (Pa)	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	PO_MIN	Minimum Allowable pressure	WIPP database CCA6	Required for BRAGFLO-not used	Median
PAN_SEAL	RELP_MOD	Rel. Permeability Model Number	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	PCT_A	Threshold Pressure As Function of Perm Equation Variable	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	PCT_EXP	Threshold Pressure As Function of Perm Equation Exponent	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	KPT	Threshold Pressure As Function of Perm Model Indicator	WIPP database CCA6	Required for BRAGFLO	Median
PAN_SEAL	HEIGHT	Panel Seal Grid Height (meters)	Analyst: DM Stoelzel	Equivalent to 10,000 yr BRAGFLO	3.96
PAN_SEAL	SAT_IBRN	Initial Brine Saturation (fraction)	WIPP database CCA6	Not Used for Direct Release	Median
WELLBORE	INTR_TME	Intrusion Time (seconds)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	BITSIZE	Drill Bit Diameter (meters)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	SKIN	Skin Factor for Well Deliverability Equation (dimensionless)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	WELLPI	Well Productivity Index (m^3/s-Pascal)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	DRAINRAD	Equivalent Grid Drainage Radius (meters)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	PRM_OPEN	Abandoned E1 Well Open Borehole Perm: 0 to 200 yrs (m^2)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	PRM_SAND	Abandoned E1 Well Sand Borehole Perm: 200 to 1200 yrs (m^2)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	PRM_CREP	Abandoned E1 Well Creep Borehole Perm 1200 yrs on (m^2)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	AREA_TOT	Total Area Solids Removed by Cuttings/Cavings/Spallings (m^2)	Analyst: DM Stoelzel	Placeholder - not used	0
WELLBORE	VOLU_TOT	Total Volume Solids Removed by Cuttings/Cavings/Spallings (m^2)	Analyst: DM Stoelzel	Placeholder	0
WELLBORE	CAST_RE	Pressure in Castile Brine Res at Boundary: 10,000 yr model (Pa)	Analyst: DM Stoelzel	Placeholder	1.70E+07
WELLBORE	CAST_WB	Pressure in Castile Brine Res at Wellbore: 10,000 yr model (Pa)	Analyst: DM Stoelzel	Placeholder	1.70E+07
WELLBORE	PRM_CAST	Permeability in Castile Reservoir: 10,000 yr model (m^2)	Analyst: DM Stoelzel	Placeholder	1.00E-12
WELLBORE	WELL_PAN	Pressure at Wellbore in Panel: 10,000 yr model (Pa)	Analyst: DM Stoelzel	Placeholder - not used	1.40E+07
REFCON	PI	Constant for Pi	WIPP database CCA6	Constant for conversions	Median
REFCON	GRAVACC	Constant for Acceleration due to gravity	WIPP database CCA6	Constant for conversions	Median
REFCON	PSIPA	Convert Pascals to PSI	WIPP database CCA6	Constant for conversions	Median
REFCON	YRSEC	Convert seconds to years	WIPP database CCA6	Constant for conversions	Median
REFCON	DARM2	Convert permeability from m^2 to Darcy	WIPP database CCA6	Constant for conversions	Median
REFCON	DAYSEC	Convert seconds to days	WIPP database CCA6	Constant for conversions	Median
REFCON	FTM	convert meters to feet	WIPP database CCA6	Constant for conversions	Median
REFCON	DIP_DEG	Formation dip through excavated region (degrees)	Analyst: DM Stoelzel	Used in grid elevation adjustment	1
BLOWOUT	MINFLOW	Minimum flow duration for Direct Release volumes (seconds)	WIPP database CCA6	Time period to accumulate release	Median
BLOWOUT	MAXFLOW	Maximum flow duration for Direct Release volumes (seconds)	WIPP database CCA6	Time period to accumulate release	Median
BLOWOUT	GAS_MIN	Gas cut-off flow rate (1,000 standard cubic feet per day)	WIPP database CCA6	Time period to accumulate release	Median
BLOWOUT	THCK_CAS	Castile reservoir thickness for previous E1 wellbore (meters)	WIPP database CCA6	Boundary condition well pressure	Median
BLOWOUT	RE_CAST	Castile reservoir external radius for previous E1 wellbore (meters)	WIPP database CCA6	Boundary condition well pressure	Median

Table 2 shows the values output from CUTTINGS_S code which required modification prior to being used by the Direct Brine Release Model. The variables had to be converted from time history variables to material property variables.

Table 2: Parameters Used in First ALGEBRACDB

Parameters Created/Modified in Algebra: CMS filename "ALG_BF4_CCA_PRECUSP_DIR_REL.INP"					
Input File(s):		CUSP_CCA_Rr_Ss_V###_L_Ttttt.CDB for each vector from CUTTINGS_S (in CMS)			
Output File(s):		BF4_CUSP_CCA_Rr_Ss_V###_Ttttt.CDB for each vector			
Material Region	Variable Name	Description	Source	Usage	Value Assigned
BLOWOUT	INTR_TME	Intrusion Time (seconds)	CUTTINGS history variable: TIMEHIS	Convert history variable to property	Calculated
BLOWOUT	AREA_TOT	Total area of Solids release (m^2)	CUTTINGS history variable: AREA_T	Convert history variable to property	Calculated
BLOWOUT	VOLU_TOT	Total volume of Solids release (m^3)	CUTTINGS history variable: VOL_T	Convert history variable to property	Calculated
BLOWOUT	BITSIZE	Drill Bir Diameter (meters)	CUTTINGS history variable: DRILDIAM	Convert history variable to property	Calculated
BLOWOUT	PORO_1	Porosity at Intrusion Time: Region 1 (Updip)	CUTTINGS history variable: POROS1	Convert history variable to property	Calculated
BLOWOUT	HEIGHT1	Panel Height at Intrusion Time: Region 1 (Updip)	CUTTINGS history variable: HFINAL1	Convert history variable to property	Calculated
BLOWOUT	BRNPRES1	Brine Pres at Intr Time: Region 1 (Updip), Pa	CUTTINGS history variable: PRESBRI1	Convert history variable to property	Calculated
BLOWOUT	GASPRES1	Gas Pres at Intr Time: Region 1 (Updip), Pa	CUTTINGS history variable: PRESGAS1	Convert history variable to property	Calculated
BLOWOUT	BRN_SAT1	Brine Sat at Intr Time: Region 1 (Updip)	CUTTINGS history variable: SATBRIN1	Convert history variable to property	Calculated
BLOWOUT	GAS_SAT1	Gas Sat at Intr Time: Region 1 (Updip)	CUTTINGS history variable: SATGAS1	Convert history variable to property	Calculated
BLOWOUT	PORO_2	Porosity at Intrusion Time: Region 2 (Middle)	CUTTINGS history variable: POROS2	Convert history variable to property	Calculated
BLOWOUT	HEIGHT2	Panel Height at Intrusion Time: Region 2 (Middle)	CUTTINGS history variable: HFINAL2	Convert history variable to property	Calculated
BLOWOUT	BRNPRES2	Brine Pres at Intr Time: Region 2 (Middle), Pa	CUTTINGS history variable: PRESBRI2	Convert history variable to property	Calculated
BLOWOUT	GASPRES2	Gas Pres at Intr Time: Region 2 (Middle), Pa	CUTTINGS history variable: PRESGAS2	Convert history variable to property	Calculated
BLOWOUT	BRN_SAT2	Brine Sat at Intr Time: Region 2 (Middle)	CUTTINGS history variable: SATBRIN2	Convert history variable to property	Calculated
BLOWOUT	GAS_SAT2	Gas Sat at Intr Time: Region 2 (Middle)	CUTTINGS history variable: SATGAS2	Convert history variable to property	Calculated
BLOWOUT	PORO_3	Porosity at Intrusion Time: Region 3 (Middle)	CUTTINGS history variable: POROS3	Convert history variable to property	Calculated
BLOWOUT	HEIGHT3	Panel Height at Intrusion Time: Region 3 (Middle)	CUTTINGS history variable: HFINAL3	Convert history variable to property	Calculated
BLOWOUT	BRNPRES3	Brine Pres at Intr Time: Region 3 (Middle), Pa	CUTTINGS history variable: PRESBRI3	Convert history variable to property	Calculated
BLOWOUT	GASPRES3	Gas Pres at Intr Time: Region 3 (Middle), Pa	CUTTINGS history variable: PRESGAS3	Convert history variable to property	Calculated
BLOWOUT	BRN_SAT3	Brine Sat at Intr Time: Region 3 (Middle)	CUTTINGS history variable: SATBRIN3	Convert history variable to property	Calculated
BLOWOUT	GAS_SAT3	Gas Sat at Intr Time: Region 3 (Middle)	CUTTINGS history variable: SATGAS3	Convert history variable to property	Calculated
BLOWOUT	PORO_4	Porosity at Intrusion Time: Region 4 (Lower)	CUTTINGS history variable: POROS0	Convert history variable to property	Calculated
BLOWOUT	HEIGHT4	Panel Height at Intrusion Time: Region 4 (Lower)	CUTTINGS history variable: HFINAL0	Convert history variable to property	Calculated
BLOWOUT	BRNPRES4	Brine Pres at Intr Time: Region 4 (Lower), Pa	CUTTINGS history variable: PRESBRI0	Convert history variable to property	Calculated
BLOWOUT	GASPRES4	Gas Pres at Intr Time: Region 4 (Lower), Pa	CUTTINGS history variable: PRESGAS0	Convert history variable to property	Calculated
BLOWOUT	BRN_SAT4	Brine Sat at Intr Time: Region 4 (Lower)	CUTTINGS history variable: SATBRIN0	Convert history variable to property	Calculated
BLOWOUT	GAS_SAT4	Gas Sat at Intr Time: Region 4 (Lower)	CUTTINGS history variable: SATGAS0	Convert history variable to property	Calculated
BLOWOUT	CAST_WB	Castile Brine Reservoir Pressure at Wellbore, Pa	CUTTINGS history variable: PRESBRI4	Convert history variable to property	Calculated
BLOWOUT	CAST_RE	Castile Brine Res Pressure at Ext Radius, Pa	CUTTINGS history variable: PRESBRI5	Convert history variable to property	Calculated
BLOWOUT	WELL_PAN	Pressure in Panel at Wellbore, Pa	CUTTINGS history variable: PRESBRI7	Convert history variable to property	Calculated
BLOWOUT	POROSITY	Average Porosity from four Regions	(poro_1+poro_2+poro_3+poro_4)/4	Used in Direct Release Model	Calculated
BLOWOUT	HEIGHT	Average Crushed Height from four regions	(height1+height2+height3+height4)/4	Used in Direct Release Model	Calculated

Table 3 shows output from CUTTINGS_S (after modification in the first ALGEBRACDB step) which are transferred via the RELATE code to the Direct Brine Release Model. Task 5 and 6 describe the CUTTINGS_S analysis plan.

Table 3: Parameters used in First RELATE

Parameters Transfered in First RELATE step: CMS filename "REL_BF4_CUSP_CCA_DIR_REL.INP"			
Reference Files:	BF4_CUSP_CCA_Rr_Ss_V###_Ttttt.CDB		
Object File:	MS_BF4_CCA_DIR_REL.CDB		
Output Files:	REL1_BF4_CUSP_CCA_Rr_Ss_V###_Ttttt.CDB		
Target Material Region	Target Property (Variable) Name	Source Material Region	Source Property (Variable) Name
WAS_AREA	POROSITY	BLOWOUT	POROSITY
WAS_AREA	HEIGHT	BLOWOUT	HEIGHT
WAS_AREA	PRESPAN1	BLOWOUT	BRNPRES1
WAS_AREA	GPRSPAN1	BLOWOUT	GASPRES1
WAS_AREA	BSATPAN1	BLOWOUT	BRN_SAT1
WAS_AREA	GSATPAN1	BLOWOUT	GAS_SAT1
WAS_AREA	PRESPAN2	BLOWOUT	BRNPRES2
WAS_AREA	GPRSPAN2	BLOWOUT	GASPRES2
WAS_AREA	BSATPAN2	BLOWOUT	BRN_SAT2
WAS_AREA	GSATPAN2	BLOWOUT	GAS_SAT2
WAS_AREA	PRESPAN3	BLOWOUT	BRNPRES3
WAS_AREA	GPRSPAN3	BLOWOUT	GASPRES3
WAS_AREA	BSATPAN3	BLOWOUT	BRN_SAT3
WAS_AREA	GSATPAN3	BLOWOUT	GAS_SAT3
WAS_AREA	PRESPAN4	BLOWOUT	BRNPRES4
WAS_AREA	GPRSPAN4	BLOWOUT	GASPRES4
WAS_AREA	BSATPAN4	BLOWOUT	BRN_SAT4
WAS_AREA	GSATPAN4	BLOWOUT	GAS_SAT4
WELLBORE	INTR_TME	BLOWOUT	INTR_TME
WELLBORE	AREA_TOT	BLOWOUT	AREA_TOT
WELLBORE	VOLU_TOT	BLOWOUT	VOLU_TOT
WELLBORE	BITSIZE	BLOWOUT	BITSIZE
WELLBORE	CAST_WB	BLOWOUT	CAST_WB
WELLBORE	CAST_RE	BLOWOUT	CAST_RE
WELLBORE	WELL_PAN	BLOWOUT	WELL_PAN

Table 4 shows output from BRAGFLO which are transferred via the RELATE code to the Direct Brine Release Model. Task 1 describes the BRAGFLO analysis plan.

Table 4: Parameters used in Second RELATE

Parameters Transferred in Second RELATE step: CMS filenames "REL_BF4_BRAG_CCA_DIR_REL_UND.INP", "REL_BF4_BRAG_CCA_DIR_REL.INP"			
Reference Files:	BF3_CCA_Rr_Ss_V###.CDB (in CMS from 10,000 yr BRAGFLO)		
Object Files:	REL1_BF4_CUSP_CCA_Rr_Ss_V###_Ttttt.CDB		
Output Files:	REL2_Rr_Ss_V###_Ttttt.CDB		
Target Material Region	Target Property (Variable) Name	Source Material Region	Source Property (Variable) Name
WAS_AREA	PORE_DIS	WAS_AREA	PORE_DIS
WAS_AREA	SAT_RGAS	WAS_AREA	SAT_RGAS
WAS_AREA	SAT_RBRN	WAS_AREA	SAT_RBRN
WAS_AREA	COMP_RCK	WAS_AREA	COMP_RCK
WAS_AREA	RELP_MOD	WAS_AREA	RELP_MOD
WAS_AREA	KPT	WAS_AREA	KPT
WAS_AREA	CAP_MOD	WAS_AREA	CAP_MOD
WAS_AREA	PO_MIN	WAS_AREA	PO_MIN
WAS_AREA	PCT_A	WAS_AREA	PCT_A
WAS_AREA	PCT_EXP	WAS_AREA	PCT_EXP
WAS_AREA	PC_MAX	WAS_AREA	PC_MAX
WELLBORE	PRM_CAST	CASTILER	PERM_X
WELLBORE	PRM_OPEN	BH_OPEN	PERM_Y
WELLBORE	PRM_SAND	BH_SAND	PERM_Y
WELLBORE	PRM_CREP	BH_CREEP	PERM_Y

Table 5 shows the variables used to initialize the Direct Brine Release Mesh.

Table 5: Parameters Used in First ICSET to Initialize the Grid, All Scenario One, Undisturbed

Parameters used in first ICSET to initialize the grid (all scenario one, Undisturbed): CMS filename "IC_BF4_DIR_REL_S1_UND.INP"				
Input Files:	REL2_Rr_S1_Ttttt.CDB			
Output Files:	IC_CCA_Rr_S1_V###.CDB			
Location: irange(from:to), jrange(from:to)	Target Element Variable Name	Description	Input Source: Material:Variable Name OR Analyst (Value)	Usage
N/A	TIME	Start Time for All Direct Brine Release Models	Analyst (0.0)	Tinit for BRAGFLO
i (1:40), j (1:40)	FECONC	Initial Iron Concentration (needed by BRAGFLO)	Analyst (0.0)	Not Used
i (1:40), j (1:40)	CH2OCONC	Initial Cellulosics Concentration	Analyst (0.0)	Not Used
i (1:40), j (31:40)	SATBREL	Initial Brine Saturation, Region 1 (Updip)	WAS_AREA:BSATPAN1	Swinit for BRAGFLO
i (1:40), j (31:40)	PRESEL	Initial Brine Pressure, Region 1 (Updip)	WAS_AREA:PRESPAN1	Pwinit for BRAGFLO
i (1:40), j (21:31)	SATBREL	Initial Brine Saturation, Region 2 (Mid-Upper)	WAS_AREA:BSATPAN2	Swinit for BRAGFLO
i (1:40), j (21:31)	PRESEL	Initial Brine Pressure, Region 2 (Mid-Upper)	WAS_AREA:PRESPAN2	Pwinit for BRAGFLO
i (1:40), j (11:21)	SATBREL	Initial Brine Saturation, Region 3 (Mid-Lower)	WAS_AREA:BSATPAN3	Swinit for BRAGFLO
i (1:40), j (11:21)	PRESEL	Initial Brine Pressure, Region 3 (Mid-Lower)	WAS_AREA:PRESPAN3	Pwinit for BRAGFLO
i (1:40), j (1:11)	SATBREL	Initial Brine Saturation, Region 4 (Lower)	WAS_AREA:BSATPAN4	Swinit for BRAGFLO
i (1:40), j (1:11)	PRESEL	Initial Brine Pressure, Region 4 (Lower)	WAS_AREA:PRESPAN4	Pwinit for BRAGFLO

Table 6 shows the variables used for the intrusion scenarios (E1 and E2, which are S2 through S5). The gridblock which contains the previous well intrusion has been changed to 100% brine saturation (via analyst choice). This forces the BRAGFLO well model for the boundary condition well to only inject brine (no gas).

Table 6: Parameters Used in Second ICSET to Initialize the Grid, Intrusion Scenarios 2-5

Parameters used in second ICSET to initialize the grid (scenarios 2 to 5): CMS filename "IC_BF4_DIR_REL_S2TO5_DIST.INP"				
Input Files:	REL2_Rr_Ss_Tttt.CDB			
Output Files:	IC_CCA_Rr_Ss_V###.CDB			
Target Grid Node Location: irange(from:to),	Target Element Variable Name	Description	Input Source: Material:Variable Name OR Analyst (Value)	Usage
N/A	TIME	Start Time for All Direct Brine Release Models	Analyst (0.0)	Tinit for BRAGFLO
i (1:40), j (1:40)	FECONC	Initial Iron Concentration (needed by BRAGFLO)	Analyst (0.0)	Not Used
i (1:40), j (1:40)	CH2OCONC	Initial Cellulocics Concentration	Analyst (0.0)	Not Used
i (1:40), j (31:40)	SATBREL	Initial Brine Saturation, Region 1 (Updip)	WAS_AREA:BSATPAN1	Swinit for BRAGFLO
i (1:40), j (31:40)	PRESEL	Initial Brine Pressure, Region 1 (Updip)	WAS_AREA:PRESPAN1	Pwinit for BRAGFLO
i (1:40), j (21:31)	SATBREL	Initial Brine Saturation, Region 2 (Mid-Upper)	WAS_AREA:BSATPAN2	Swinit for BRAGFLO
i (1:40), j (21:31)	PRESEL	Initial Brine Pressure, Region 2 (Mid-Upper)	WAS_AREA:PRESPAN2	Pwinit for BRAGFLO
i (1:40), j (11:21)	SATBREL	Initial Brine Saturation, Region 3 (Mid-Lower)	WAS_AREA:BSATPAN3	Swinit for BRAGFLO
i (1:40), j (11:21)	PRESEL	Initial Brine Pressure, Region 3 (Mid-Lower)	WAS_AREA:PRESPAN3	Pwinit for BRAGFLO
i (1:40), j (1:11)	SATBREL	Initial Brine Saturation, Region 4 (Lower)	WAS_AREA:BSATPAN4	Swinit for BRAGFLO
i (1:40), j (1:11)	PRESEL	Initial Brine Pressure, Region 4 (Lower)	WAS_AREA:PRESPAN4	Pwinit for BRAGFLO
i (6,7), j (5,6)	SATBREL	Initial Brine Saturation, Boundary Cond Well Elem	Analyst (1.0)	100% Sw for this Ele

As shown in Table 7, the porosity in material regions DRZ_1, S_HALITE, and PAN_SEAL, has been adjusted (via analyst choice) to create equal pore volumes with similar regions as in the 10,000 year BRAGFLO model. Also, the capillary pressure parameters (i.e. CAP_MOD, PCT_A, PCT_EXP) have been set equal to their similar values in material region WAS_AREA. This has been done to stabilize the BRAGFLO calculation [i.e. by not invoking capillary pressure, and selectively sizing the grid around the wellbore, the BRAGFLO code was able to more efficiently execute (take successively larger time steps without sacrificing precision]. Since capillary pressure is not modeled in the waste region (therefore all regions), the brine phase becomes more mobile which is conservative with respect to brine releases.

The two variables ZORIGIN and YORIGIN in Table 7 are used to define the starting coordinates for calculating gridblock elevations for the BRAGFLO_DBR model. They correlate to the location of MB 139 at the shaft with respect to lower left hand corner (coordinate 1) of the BRAGFLO_DBR mesh.

Table 7: Parameters Used in Second ALGEBRA for Scenario 1 (Undisturbed)

Parameters Created/Modified in Second Algebra: CMS filename "ALG_BF4_PRE_DIR_REL_S1_UND.INP" for scenario 1 (Undisturbed)				
	Input Files:	IC_CCA_Rr_S1_V###_Tttt.CDB		
	Output File	ALG2A_CCA_Rr_S1_V###_Tttt.CDB		
Material Region	Variable Name	Description	Source - Material:Variable Name or Analyst (value)	Usage
WAS_AREA	THETA1	One Degree Formation dip in Radians (conversion)	REFCON:DIP_DEG	Used to determine grid block elevat
WAS_AREA	THETA2	Zero Degree Formation dip in Radians	DM Stoelzel (0.0)	not used
WAS_AREA	PERM_X	X direction Permeability (m^2) = 10^PRMX_LOG	WAS_AREA:PRMX_LOG	Permeability usable by BRAGFLO
WAS_AREA	PERM_Y	Y direction Permeability (m^2) = 10^PRMY_LOG	WAS_AREA:PRMY_LOG	Permeability usable by BRAGFLO
WAS_AREA	PERM_Z	Z direction Permeability (m^2) = 10^PRMZ_LOG	WAS_AREA:PRMZ_LOG	Permeability usable by BRAGFLO
WAS_AREA	SB_MIN	Minimum Brine Saturation (= SAT_RBRN*1.05)	DMStoelzel	Required by BRAGFLO - not used
WAS_AREA	POR_COMP	Pore Compressibility (1/Pa) (= COMP_RCK/POROSITY)	Calculated	Required by BRAGFLO
DRZ_1	PERM_X	X direction Permeability (m^2) = 10^PRMX_LOG	DRZ_1:PRMX_LOG	Permeability usable by BRAGFLO
DRZ_1	PERM_Y	Y direction Permeability (m^2) = 10^PRMY_LOG	DRZ_1:PRMY_LOG	Permeability usable by BRAGFLO
DRZ_1	PERM_Z	Z direction Permeability (m^2) = 10^PRMZ_LOG	DRZ_1:PRMZ_LOG	Permeability usable by BRAGFLO
DRZ_1	SB_MIN	Minimum Brine Saturation (= SAT_RBRN*1.05)	DMStoelzel	Required by BRAGFLO - not used
DRZ_1	POROSITY	=HIEGHT*POROSITY/WAS_AREA:HEIGHT	Calculated	Adjusted to 10,000 yr BRAGFLO PV
DRZ_1	POR_COMP	Pore Compressibility (1/Pa) (= COMP_RCK/POROSITY)	Calculated	Required by BRAGFLO
DRZ_1	CAP_MOD	Cap pressure mod no. set equal to WAS_AREA:CAP_MOD	DMStoelzel	To increase BRAGFLO speed
DRZ_1	PCT_A	Cap pressure mod variable set equal to WAS_AREA:PCT_A	DMStoelzel	To increase BRAGFLO speed
DRZ_1	PCT_EXP	Cap pressure mod exp set equal to WAS_AREA:PCT_EXP	DMStoelzel	To increase BRAGFLO speed
S_HALITE	PERM_X	X direction Permeability (m^2) = 10^PRMX_LOG	S_HALITE:PRMX_LOG	Permeability usable by BRAGFLO
S_HALITE	PERM_Y	Y direction Permeability (m^2) = 10^PRMY_LOG	S_HALITE:PRMY_LOG	Permeability usable by BRAGFLO
S_HALITE	PERM_Z	Z direction Permeability (m^2) = 10^PRMZ_LOG	S_HALITE:PRMZ_LOG	Permeability usable by BRAGFLO
S_HALITE	SB_MIN	Minimum Brine Saturation (= SAT_RBRN*1.05)	DMStoelzel	Required by BRAGFLO - not used
S_HALITE	POROSITY	=HIEGHT*POROSITY/WAS_AREA:HEIGHT	Calculated	Adjusted to 10,000 yr BRAGFLO PV
S_HALITE	POR_COMP	Pore Compressibility (1/Pa) (= COMP_RCK/POROSITY)	Calculated	Required by BRAGFLO
S_HALITE	CAP_MOD	Cap pressure mod no. set equal to WAS_AREA:CAP_MOD	DMStoelzel	To increase BRAGFLO speed
S_HALITE	PCT_A	Cap pressure mod variable set equal to WAS_AREA:PCT_A	DMStoelzel	To increase BRAGFLO speed
S_HALITE	PCT_EXP	Cap pressure mod exp set equal to WAS_AREA:PCT_EXP	DMStoelzel	To increase BRAGFLO speed
PAN_SEAL	PERM_X	X direction Permeability (m^2) = 10^PRMX_LOG	PAN_SEAL:PRMX_LOG	Permeability usable by BRAGFLO
PAN_SEAL	PERM_Y	Y direction Permeability (m^2) = 10^PRMY_LOG	PAN_SEAL:PRMY_LOG	Permeability usable by BRAGFLO
PAN_SEAL	PERM_Z	Z direction Permeability (m^2) = 10^PRMZ_LOG	PAN_SEAL:PRMZ_LOG	Permeability usable by BRAGFLO
PAN_SEAL	SB_MIN	Minimum Brine Saturation (= SAT_RBRN*1.05)	DMStoelzel	Required by BRAGFLO - not used
PAN_SEAL	POROSITY	=HIEGHT*POROSITY/WAS_AREA:HEIGHT	Calculated	Adjusted to 10,000 yr BRAGFLO PV
PAN_SEAL	POR_COMP	Pore Compressibility (1/Pa) (= COMP_RCK/POROSITY)	Calculated	Required by BRAGFLO
PAN_SEAL	CAP_MOD	Cap pressure mod no. set equal to WAS_AREA:CAP_MOD	DMStoelzel	To increase BRAGFLO speed
PAN_SEAL	PCT_A	Cap pressure mod variable set equal to WAS_AREA:PCT_A	DMStoelzel	To increase BRAGFLO speed
PAN_SEAL	PCT_EXP	Cap pressure mod exp set equal to WAS_AREA:PCT_EXP	DMStoelzel	To increase BRAGFLO speed
WELLBORE	EQ1_A	Constant for Equation 1 FBHP lookup function	DMStoelzel (8002577.4)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ1_B	Constant for Equation 1 FBHP lookup function	DMStoelzel (821379.75)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ1_C	Constant for Equation 1 FBHP lookup function	DMStoelzel (0.024816086)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ1_D	Constant for Equation 1 FBHP lookup function	DMStoelzel (0.10264807)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ1_E	Constant for Equation 1 FBHP lookup function	DMStoelzel(3.1235777e-9)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ2_A	Constant for Equation 2 FBHP lookup function	DMStoelzel(847082.65)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ2_B	Constant for Equation 2 FBHP lookup function	DMStoelzel(2788147.9)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ2_C	Constant for Equation 2 FBHP lookup function	DMStoelzel(3451058.3)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ2_D	Constant for Equation 2 FBHP lookup function	DMStoelzel(-54884.388)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ2_E	Constant for Equation 2 FBHP lookup function	DMStoelzel(-0.017079483)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ2_F	Constant for Equation 2 FBHP lookup function	DMStoelzel(0.8953597)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ2_G	Constant for Equation 2 FBHP lookup function	DMStoelzel(0.54041532)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ2_H	Constant for Equation 2 FBHP lookup function	DMStoelzel(-4.9369107E-9)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ3_A	Constant for Equation 3 FBHP lookup function	DMStoelzel(8.9214635)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ3_B	Constant for Equation 3 FBHP lookup function	DMStoelzel(-0.2274279)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ3_C	Constant for Equation 3 FBHP lookup function	DMStoelzel(1.3680586)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ3_D	Constant for Equation 3 FBHP lookup function	DMStoelzel(1.8350086)	Calculate Poettmann-Carpenter FBHP
WELLBORE	EQ3_E	Constant for Equation 3 FBHP lookup function	DMStoelzel(0.0004572622)	Calculate Poettmann-Carpenter FBHP
WELLBORE	WELLRAD	Wellbore Radius (meters)	WELLBORE:BITSIZE / 2	Needed for Well PI Equation
WELLBORE	DRAINRAD	Grid Block drainage radius (meters)	Element #15 grid block dim	Needed for Well PI Equation
WELLBORE	SKIN	Skin Factor (dimensionless) Only negative or zero	WELLBORE:AREA_TOT	Needed for Well PI Equation
WELLBORE	WELLPI	Well productivity index (m^3)	Calculated	For BRAGFLO's well model
WELLBORE	BRINE1	Brine saturation constant, region 1. Set equal to Sbr if < Sbr	WAS_AREA:BSATPAN1	Temporary variable
WELLBORE	SEBRINE1	Effective initial brine saturation, region 1.	Calculated	Calc relative permeability - not used
WELLBORE	SEGAS1	Effective Gas saturation, region 1	Calculated	Calc relative permeability - not used
WELLBORE	KRW1	Initial relative permeability to Brine, region 1	Calculated	Calc well deliverability - not used
WELLBORE	KRG1	Initial relative permeability to Gas, region 1	Calculated	Calc well deliverability - not used
WELLBORE	CONBR1	Well deliverability to Brine, region 1 (m^3/Pa-s)	Calculated	FBHP functions-not used
WELLBORE	CONGAS1	Well deliverability to Gas, region 1 (m^3/Pa-s)	Calculated	FBHP functions-not used
WELLBORE	LOG_B1	Log base 10 of CONBR1, region 1	Calculated	FBHP Equation one-not used
WELLBORE	LOG_KR1	Log base 10 of (Krg1/Krw1), region 1	Calculated	FBHP Equations two & three-not used
WELLBORE	PR1_EQ1	Poettman-Carpenter FBHP, Equation one, region 1 (Pa)	Calculated:PRESPAN1	FBHP for well intr. region 1-not used
WELLBORE	PR1_EQ2	Poettman-Carpenter FBHP, Equation two, region 1 (Pa)	Calculated:PRESPAN1	FBHP for well intr. region 1-not used
WELLBORE	PR1_EQ3	Poettman-Carpenter FBHP, Equation three, region 1 (Pa)	Calculated:PRESPAN1	FBHP for well intr. region 1-not used
WELLBORE	FBHP1	Flowing bottom hole pressure for intrusions in region 1 (Pa)	PR1_EQ1 or PR1_EQ2 or PR1_EQ3 or 0 for No blow	BRAGFLO's well model-not used
WELLBORE	NUMSTEP1	No of t-steps for Direct Rel. model: =1 (no blowout), or 1000	calculated	BRAGFLO step control-not used
WELLBORE	BRINE2	Brine saturation constant, region 2. Set equal to Sbr if < Sbr	WAS_AREA:BSATPAN2	Temporary variable
WELLBORE	SEBRINE2	Effective initial brine saturation, region 2.	Calculated	Calc relative permeability - for Updip
WELLBORE	SEGAS2	Effective Gas saturation, region 2	Calculated	Calc relative permeability - for Updip
WELLBORE	KRW2	Initial relative permeability to Brine, region 2	Calculated	Calc well deliverability - for Updip
WELLBORE	KRG2	Initial relative permeability to Gas, region 2	Calculated	Calc well deliverability - for Updip
WELLBORE	CONBR2	Well deliverability to Brine, region 2 (m^3/Pa-s)	Calculated	FBHP functions-for Updip
WELLBORE	CONGAS2	Well deliverability to Gas, region 2 (m^3/Pa-s)	Calculated	FBHP functions-for Updip
WELLBORE	LOG_B2	Log base 10 of CONBR2, region 2	Calculated	FBHP Equation one-for Updip
WELLBORE	LOG_KR2	Log base 10 of (Krg2/Krw2), region 2	Calculated	FBHP Equations two & three-for Updip
WELLBORE	PR2_EQ1	Poettman-Carpenter FBHP, Equation one, region 2 (Pa)	Calculated:PRESPAN2	FBHP for well intr. region 2-for Updip
WELLBORE	PR2_EQ2	Poettman-Carpenter FBHP, Equation two, region 2 (Pa)	Calculated:PRESPAN2	FBHP for well intr. region 2-for Updip
WELLBORE	PR2_EQ3	Poettman-Carpenter FBHP, Equation three, region 2 (Pa)	Calculated:PRESPAN2	FBHP for well intr. region 2-for Updip
WELLBORE	FBHP2	Flowing bottom hole pressure for intrusions in region 2 (Pa)	PR2_EQ1 or PR2_EQ2 or PR2_EQ3 or 0 for No blow	BRAGFLO's well model-for Updip
WELLBORE	NUMSTEP2	No of t-steps for Direct Rel. model: =1 (no blowout), or 1000	calculated	BRAGFLO step control-for Updip
WELLBORE	BRINE3	Brine saturation constant, region 3. Set equal to Sbr if < Sbr	WAS_AREA:BSATPAN3	Temporary variable
WELLBORE	SEBRINE3	Effective initial brine saturation, region 3.	Calculated	Calc relative permeability - not used
WELLBORE	SEGAS3	Effective Gas saturation, region 3	Calculated	Calc relative permeability - not used
WELLBORE	KRW3	Initial relative permeability to Brine, region 3	Calculated	Calc well deliverability - not used
WELLBORE	KRG3	Initial relative permeability to Gas, region 3	Calculated	Calc well deliverability - not used
WELLBORE	CONBR3	Well deliverability to Brine, region 3 (m^3/Pa-s)	Calculated	FBHP functions-not used
WELLBORE	CONGAS3	Well deliverability to Gas, region 3 (m^3/Pa-s)	Calculated	FBHP functions-not used
WELLBORE	LOG_B3	Log base 10 of CONBR3, region 3	Calculated	FBHP Equation one-not used
WELLBORE	LOG_KR3	Log base 10 of (Krg3/Krw3), region 3	Calculated	FBHP Equations two & three-not used
WELLBORE	PR3_EQ1	Poettman-Carpenter FBHP, Equation one, region 3 (Pa)	Calculated:PRESPAN3	FBHP for well intr. region 3-not used
WELLBORE	PR3_EQ2	Poettman-Carpenter FBHP, Equation two, region 3 (Pa)	Calculated:PRESPAN3	FBHP for well intr. region 3-not used
WELLBORE	PR3_EQ3	Poettman-Carpenter FBHP, Equation three, region 3 (Pa)	Calculated:PRESPAN3	FBHP for well intr. region 3-not used
WELLBORE	FBHP3	Flowing bottom hole pressure for intrusions in region 3 (Pa)	PR3_EQ1 or PR3_EQ2 or PR3_EQ3 or 0 for No blow	BRAGFLO's well model-not used
WELLBORE	NUMSTEP3	No of t-steps for Direct Rel. model: =1 (no blowout), or 1000	calculated	BRAGFLO step control-not used
WELLBORE	BRINE4	Brine saturation constant, region 4. Set equal to Sbr if < Sbr	WAS_AREA:BSATPAN4	Temporary variable
WELLBORE	SEBRINE4	Effective initial brine saturation, region 4.	Calculated	Calc relative permeability - Downdip
WELLBORE	SEGAS4	Effective Gas saturation, region 4	Calculated	Calc relative permeability - Downdip
WELLBORE	KRW4	Initial relative permeability to Brine, region 4	Calculated	Calc well deliverability - Downdip
WELLBORE	KRG4	Initial relative permeability to Gas, region 4	Calculated	Calc well deliverability - Downdip
WELLBORE	CONBR4	Well deliverability to Brine, region 4 (m^3/Pa-s)	Calculated	FBHP functions-Downdip
WELLBORE	CONGAS4	Well deliverability to Gas, region 4 (m^3/Pa-s)	Calculated	FBHP functions-Downdip
WELLBORE	LOG_B4	Log base 10 of CONBR4, region 4	Calculated	FBHP Equation one-Downdip
WELLBORE	LOG_KR4	Log base 10 of (Krg4/Krw4), region 4	Calculated	FBHP Equations two & three-Downdip
WELLBORE	PR4_EQ1	Poettman-Carpenter FBHP, Equation one, region 4 (Pa)	Calculated:PRESPAN4	FBHP for well intr. region 4-Downdip
WELLBORE	PR4_EQ2	Poettman-Carpenter FBHP, Equation two, region 4 (Pa)	Calculated:PRESPAN4	FBHP for well intr. region 4-Downdip
WELLBORE	PR4_EQ3	Poettman-Carpenter FBHP, Equation three, region 4 (Pa)	Calculated:PRESPAN4	FBHP for well intr. region 4-Downdip
WELLBORE	FBHP4	Flowing bottom hole pressure for intrusions in region 4 (Pa)	PR4_EQ1 or PR4_EQ2 or PR4_EQ3 or 0 for No blow	BRAGFLO's well model-Downdip
WELLBORE	NUMSTEP4	No of t-steps for Direct Rel. model: =1 (no blowout), or 1000	calculated	BRAGFLO step control-Downdip
All Elements	ZORIGIN	Sea-level Elevation of Repository at shaft (meters)	DMStoelzel (382.671)	Temp variable for gridblock elev calcs
All Elements	YORIGIN	Horizontal distance from Direct Rel meshnode (1,1) to shaft-m	DMStoelzel (1000.0)	Temp variable for gridblock elev calcs
All Elements	ELEVN	Grid node elevations, uses ZORIGIN, YORIGIN, THETA1-meter	Calculated	Temporary variable
All Elements	ELEVE	Grid block center elevations from ELEVN: meters	Calculated	BRAGFLO input: Direct Release Model
All Elements	POTE	Grid block potential from PRESEL & ELEVE: meters	Calculated	Not used
All Elements	THICK	Grid block thickness or depth, meters	Set to WAS_AREA:HEIGHT	BRAGFLO Input: Direct Release Model

Table 8 reflects the additional variables used associated with Scenarios 2 and 3 (E1 intrusions).

Table 8: Parameters Used in Second ALGEBRACDB for E1 Scenarios

Parameters Created/Modified in Second Algebra: CMS filenames "ALG_BF4_PRE_DIR_REL_S%_DIST.INP" (%=2 & 3 for E1 scenarios) in addition to those shown for "ALG_BF4_PRE_DIR_REL_S1_UND.INP"				
	Input Files	IC_CCA_Rr_S1_V###_Ttttt.CDB		
	Output File	ALG2B_CCA_Rr_S1_V###_Ttttt.CDB		
Material Region	Variable Name	Description	Source - Material:Variable Name or Analyst (value)	Usage
WELLBORE	DRAINRAD	Grid Block drainage radius (meters)	Element #59 grid block dim	Needed for Well PI Equation
WELLBORE	LEN_BC	Length of abandoned BH from Castile to repository (meters)	DMStoelzel (247.0)	Needed for B.C. well flowing pr. calc
WELLBORE	DRAIN_BC	Grid block drainage for Boundary Condition well (m)	Element #15 grid block dim	Needed for BC well PI eqation
WELLBORE	WELPI_BC	Boundary condition well productivity index (m^3)	Calculated	Input to BRAGFLO direct rel well mod
WELLBORE	RHO_G_H	Brine density * Gravity Accel * LEN_BC - Pascals	Calc from database values	Needed for B.C. well flowing pr. calc
WELLBORE	CON_OPEN	Constant for B.C. well pressure for open aband hole to Castile	Calc from database values	Needed for B.C. well flowing pr. calc
WELLBORE	CON_SAND	Constant for B.C. well press for sand-fill aband hole to Castile	Calc from database values	Needed for B.C. well flowing pr. calc
WELLBORE	CON_CREP	Constant for B.C. well press for creep cl aband hole to Castile	Calc from database values	Needed for B.C. well flowing pr. calc
WELLBORE	BHP_OPEN	Flowing pressure for abandoned E1 B.C. well: open wb (Pa)	Calc: uses CON_OPEN	Input to BRAGFLO direct rel well mod
WELLBORE	BHP_SAND	Flowing pressure for abandoned E1 B.C. well: sand filled (Pa)	Calc: uses CON_SAND	Input to BRAGFLO direct rel well mod
WELLBORE	BHP_CREP	Flowing press for abandoned E1 B.C. well: creep closed (Pa)	Calc: uses CON_CREP	Input to BRAGFLO direct rel well mod
WELLBORE	PREV_TME	Previous E1 intrusion time, years	DMStoelzel (350 for S2, 1,000 for S1)	Needed in DELT_TME
WELLBORE	DELT_TME	Diff. between INTR_TME (converted to yrs) & PREV_TME	Calculated	Needed for BHP_ABAN
WELLBORE	BHP_ABAN	Actual flowing pres for aban. E1 well used in BRAGFLO (Pa)	Calc:BHP_OPEN, BHP_SAND or BHP_CREP	Input to BRAGFLO direct rel well mod

Table 9 reflects the additional variables used associated with Scenarios 4 and 5 (E2 intrusions).

Table 9: Parameters Used in Second ALGEBRACDB for E2 Scenarios

Parameters Created/Modified in Second Algebra: CMS filenames "ALG_BF4_PRE_DIR_REL_S%_DIST.INP" (%=4 & 5 for E2 scenarios) in addition to those shown for "ALG_BF4_PRE_DIR_REL_S1_UND.INP"				
	Input Files	IC_CCA_Rr_S1_V###_Ttttt.CDB		
	Output File	ALG2B_CCA_Rr_S1_V###_Ttttt.CDB		
Material Region	Variable Name	Description	Source - Material:Variable Name or Analyst (value)	Usage
WELLBORE	DRAINRAD	Grid Block drainage radius (meters)	Element #59 grid block dim	Needed for Well PI Equation
WELLBORE	WELPI_BC	Boundary condition well productivity index (m^3)	DMStoelzel (0.0)	Input to BRAGFLO (dummy variable)
WELLBORE	BHP_ABAN	Actual flowing pres for aban. E2 well used in BRAGFLO (Pa)	DMStoelzel (0.0)	Input to BRAGFLO (dummy variable)

Table 10 shows the variables which are used to control the number of time steps (NUMSTEP2 and NUMSTEP4) for the Direct Brine Release Model simulations. These values were calculated in the previous ALGEBRACDB steps. For no release realizations, the maximum time step is set to 1. For release realizations, the maximum time steps are set to 1000. This is done to run the full calculations for release realizations exclusively.

Table 10: Parameters Used in PREBRAG

Parameters Created/Modified in Prebrag: CMS filenames "BF4_Rr_S%_V###_Ttttt_LOWER.INP", & "BF4_Rr_S%_V###_Ttttt_UP.INP" for % = 1, 2, 3, 4, or 5 (Scenarios 1 to 5)				
Input Files:	ALG2A_CCA_Rr_S1_V###_Ttttt.CDB for S1,up & lower & ALG2B_CCA_Rr_S%_V###_Ttttt.CDB for S2 - S5, up & lower			
Output Files	BF4_Rr_S%_V###_Ttttt_LOWER.INP, & BF4_Rr_S%_V###_Ttttt_UP.INP for BRAGFLO inputs, %=1 to 5			
Material Input	Variable Name	Description	Source - Material:Variable Name or Analyst (value)	Usage
ID_BRINE	SATBR	Initial brine saturation for Direct Brine Release Model	Element Variable:SATBREL	Needed for BRAGFLO
ID_PRES	PRESSURE	Initial brine pressurefor Direct Brine Release Model	Element Variable:PRESEL	Needed for BRAGFLO - not used (0.0)
ID_CONFE	CONFE	Initial Iron Concentration.	Element Variable:FECONC	Needed for BRAGFLO - not used (0.0)
ID_CONCEL	CONCELL	Initial cellulosics concentration	Element Var:CH2OCONC	Needed for BRAGFLO - not used (0.0)
ID_ELEV	ELEVAT	Grid block elevations	Elemaent Variable:ELEVE	Needed for BRAGFLO
WELL_CONTROL	PIWELL	Productivity Index for well model: blowout well ijk=(12,5,1)	WELLBORE:WELLPI	Needed for BRAGFLO
WELL_CONTROL	PRWELL	Well flowing pressure for well model: blowout well ijk=(12,5,1)	WELLBORE:FBHP4 for downdip, & FBHP2 for updip	Needed for BRAGFLO
SIM_CONTROL	MAXSTEPS	Maximum No. of timesteps to run simulation	WELLBORE:NUMSTEP4 for downdip, & NUMSTEP2 for updip	Needed for BRAGFLO: either 1 (no blowout) or 1000 (blowout)
WELL_CONTROL	PIWELL	Productivity Index for boundary condition well ijk=(6,5,1)	WELLBORE:WELPI_BC	Needed for BRAGFLO: scenarios 2 - 5
WELL_CONTROL	PRWELL	Well flowing pressure for boundary condition well ijk=(6,5,1)	WELLBORE:BHP_ABAN	Needed for BRAGFLO: scenarios 2 - 5
Output Control	WELLBRINE	Brine flow from well model, blowout well (m^3/s)	Gridblock ijk=(12,5,1) for all downdip intr	Used to calculate cumulative brine release
Output Control	WELLGAS	Gas flow from well model, blowout well (ref m^3/s)	Gridblock ijk=(12,5,1) for all downdip intr	Used to calculate cumulative gas release
Output Control	WELLBRINE	Brine flow from well model, blowout well (m^3/s)	Gridblock ijk=(21,27,1) for all updip intr	Used to calculate cumulative brine release
Output Control	WELLGAS	Gas flow from well model, blowout well (ref m^3/s)	Gridblock ijk=(21,27,1) for all updip intr	Used to calculate cumulative gas release
Output Control	WELLBRINE	Brine flow from well model, boundary condition well (m^3/s)	Gridblock ijk=(6,5,1)	Used to calculate cumulative brine inj
Output Control	WELLGAS	Gas flow from well model, boundary condition well (ref m^3/s)	Gridblock ijk=(6,5,1)	Used to calculate cumulative gas inj (check only-should be zero for all realizations)

Table 11 shows the variables used for this analysis, as well as the variable BRIN_REL, which provides input to CCDF generation (Task 7 Analysis Package WPO #40524).

Table 11: Parameters Used in Post-Processing ALGEBRACDB

Parameters Created/Modified in Post-Processing Algebra: CMS filename ALG_BF4_POST_DIRECT_RELEASE.INP applied to all scenarios				
	Input Files	BF4_BF3_CCA_Rr_Ss_V###_Tttt_UP.CDB & BF4_BF3_CCA_Rr_Ss_V###_Tttt_LOWER.CDB		
	Output File	BF4_POST_CCA_Rr_Ss_V###_Tttt_UP.CDB & BF4_POST_CCA_Rr_Ss_V###_Tttt_LOWER.CDB		
Material Region	Variable Name	Description	Source - Material:Variable Name or Analyst (value)	Usage
History Var	BRINEFLW	Brine flow rate from blowout well (m^3/s)	H0210001	Needed for analysis
History Var	MAX_BRN	Maximum brine flow over all timesteps (m^3/s)	BRINEFLW	Needed for analysis
History Var	BRN_RATE	Brine flow rate from blowout well (barrels/day)	BRINEFLW	Not used
History Var	BRINEOUT	Cumulative brine over all timesteps (m^3)	BRINEFLW	Needed for analysis
History Var	BRN_ENG	Cumulative brine over all timesteps (barrels)	BRINEOUT	Not used
History Var	GAS_FLW	Gas flow rate from blowout well (ref m^3/s)	H0220001	Needed for analysis
History Var	MAX_GAS	Maximum gas flow over all timesteps (ref m^3/s)	GAS_FLW	Needed for analysis
History Var	GAS_RATE	Gas flow rate from blowout well (1000 st. c.f./day: MSCFD)	GAS_FLW	Needed for analysis
History Var	GASOUT	Cumulative gas over all timesteps (ref m^3)	GAS_FLW	Needed for analysis
History Var	GAS_ENG	Cumulative gas over all timesteps (1000 st. c. ft.: MSCF)	GASOUT	Not used
History Var	LGR_MET	Produced liquid-gas ratio (Million m^3/ref m^3/s)	BRINEOUT, GASOUT	Needed for analysis
History Var	BRIN_REL	Total brine released to environment, 3 to 11 days (m^3)	BLOWOUT:MINFLOW, BLOWOUT:MAXFLOW, GAS_RATE	Provides releases to CCDF generation
History Var	BRINE_BC	Injection from boundary condition well (m^3/s)	H0210002	Not used
Global Var	BRNPRES5	Grid volume average pressure panel 5: downdip (Pa)	Elements 1 to 75	Not used
Global Var	SATBRN5	Grid volume average brine saturation panel 5: downdip (Pa)	Elements 1 to 75	Not used
Global Var	BRNPRES0	Grid volume average pressure panel 0: updip (Pa)	Elements 618 to 760	Not used
Global Var	SATBRN0	Grid volume average brine saturation panel 0: updip (Pa)	Elements 618 to 760	Not used
Global Var	WASTE_PV	Total excavated waste pore volume (m^3)	Calculated	Not used
Global Var	TOT_BRIN	Total brine volume in waste area (m^3)	Calculated	Not used

9.0. Evaluations of input (data acceptance criteria) in terms of precision, accuracy, representation, comparability, and completeness

For a complete discussion of the evaluation adequacy of analyst choice parameter values and parameter values hard-wired in computer software, refer to Tables 1-11 in Section 8.0 of this report.

10.0. Description of the work performed and results obtained including, when appropriate, copies of computer input and output files

All figures and tables used in this report as well as additional information to provide traceability and repeatability for the Direct Brine Release Model calculations for the CCA are stored under CMS. This includes Microsoft EXCEL spreadsheets and plots.

The analysis was controlled by the CMS and all input/output files can be obtained by using software utilities described in *Traceability/Reproducibility of the PA96 Calculations for the CCA,* SCWF-A:1.4.01.6:PA:QA:CCA:CMS (WPO #40313).

10.1. Analysis

Tables 12 and 13 contain a listing of all direct brine release realizations for the downdip and updip realizations. The naming convention is detailed in Figure 3. 697 of the 7800 (8.94%) downdip realizations run in the CCA calculations had direct brine releases, while 210 of the 7800 (2.69%) updip realizations had direct releases.

Table 12: Listing of All Down-dip Direct Brine Release Realizations

Number	Down-dip Replicate 1 Scenario 1	Down-dip Replicate 1 Scenario 2	Down-dip Replicate 1 Scenario 3	Down-dip Replicate 1 Scenario 4	Down-dip Replicate 1 Scenario 5	Down-dip Replicate 2 Scenario 1	Down-dip Replicate 2 Scenario 2	Down-dip Replicate 2 Scenario 3	Down-dip Replicate 2 Scenario 4	Down-dip Replicate 2 Scenario 5	Down-dip Replicate 3 Scenario 1	Down-dip Replicate 3 Scenario 2	Down-dip Replicate 3 Scenario 3	Down-dip Replicate 3 Scenario 4	Down-dip Replicate 3 Scenario 5
1	L1S1B100	L1S2C009	L1S3F009	L1S4C030	L1S5F009	L2S1B022	L2S2C004	L2S3F003	L2S4C004	L2S5F003	L3S1B029	L3S2C004	L3S3F004	L3S4C004	L3S5F004
2	L1S1E009	L1S2C014	L1S3F019	L1S4C034	L1S5F019	L2S1B055	L2S2C008	L2S3F008	L2S4C022	L2S5F018	L3S1B064	L3S2C005	L3S3F005	L3S4C005	L3S5F005
3	L1S1E026	L1S2C020	L1S3F021	L1S4C064	L1S5F021	L2S1B058	L2S2C011	L2S3F011	L2S4C055	L2S5F022	L3S1B082	L3S2C008	L3S3F008	L3S4C040	L3S5F040
4	L1S1E030	L1S2C030	L1S3F026	L1S4C092	L1S5F026	L2S1B081	L2S2C022	L2S3F016	L2S4C058	L2S5F030	L3S1E004	L3S2C012	L3S3F017	L3S4C064	L3S5F056
5	L1S1E034	L1S2C034	L1S3F030	L1S4C100	L1S5F030	L2S1B090	L2S2C026	L2S3F019	L2S4C081	L2S5F033	L3S1E005	L3S2C029	L3S3F025	L3S4C082	L3S5F064
6	L1S1E046	L1S2C037	L1S3F034	L1S4D034	L1S5F034	L2S1E016	L2S2C028	L2S3F022	L2S4C090	L2S5F044	L3S1E040	L3S2C040	L3S3F040	L3S4D064	L3S5F082
7	L1S1E059	L1S2C040	L1S3F038	L1S4D037	L1S5F046	L2S1E022	L2S2C029	L2S3F025	L2S4D022	L2S5F046	L3S1E062	L3S2C051	L3S3F053	L3S4D082	L3S5F099
8	L1S1E064	L1S2C048	L1S3F040	L1S4D046	L1S5F059	L2S1E030	L2S2C046	L2S3F028	L2S4D055	L2S5F051	L3S1E064	L3S2C056	L3S3F058	L3S4H064	L3S5G064
9	L1S1E092	L1S2C050	L1S3F046	L1S4H026	L1S5F064	L2S1E051	L2S2C055	L2S3F030	L2S4D058	L2S5F055	L3S1E082	L3S2C057	L3S3F062	L3S4H083	L3S5G082
10	L1S1E100	L1S2C054	L1S3F048	L1S4H037	L1S5F083	L2S1E056	L2S2C058	L2S3F033	L2S4H033	L2S5F058	L3S1I002	L3S2C064	L3S3F064	L3S4J064	L3S5I064
11	L1S1I004	L1S2C059	L1S3F052	L1S4H046	L1S5F089	L2S1E058	L2S2C075	L2S3F036	L2S4H051	L2S5F075	L3S1I004	L3S2C066	L3S3F074	L3S4J083	L3S5I083
12	L1S1I016	L1S2C064	L1S3F055	L1S4H070	L1S5F092	L2S1E075	L2S2C076	L2S3F044	L2S4H058	L2S5F078	L3S1I013	L3S2C078	L3S3F082	L3S4L039	L3S5K064
13	L1S1I026	L1S2C069	L1S3F059	L1S4J016	L1S5F100	L2S1E081	L2S2C077	L2S3F046	L2S4H068	L2S5G022	L3S1I031	L3S2C082	L3S3F083	L3S4L083	L3S5K083
14	L1S1I030	L1S2C070	L1S3F064	L1S4J026	L1S5G026	L2S1I003	L2S2C081	L2S3F047	L2S4J023	L2S5G033	L3S1I033	L3S2C083	L3S3F090		L3S5L039
15	L1S1I034	L1S2C092	L1S3F068	L1S4J036	L1S5G034	L2S1I016	L2S2C090	L2S3F051	L2S4J033	L2S5G046	L3S1I035	L3S2D006	L3S3F099		L3S5L083
16	L1S1I038	L1S2C100	L1S3F071	L1S4J046	L1S5G046	L2S1I018	L2S2D008	L2S3F055	L2S4J037	L2S5G051	L3S1I040	L3S2D012	L3S3G006		
17	L1S1I039	L1S2D009	L1S3F082	L1S4J067	L1S5G059	L2S1I019	L2S2D011	L2S3F058	L2S4J051	L2S5G055	L3S1I042	L3S2D029	L3S3G056		
18	L1S1I046	L1S2D020	L1S3F083	L1S4L005	L1S5G063	L2S1I021	L2S2D022	L2S3F074	L2S4L033	L2S5G058	L3S1I056	L3S2D039	L3S3G057		
19	L1S1I058	L1S2D026	L1S3F089	L1S4L018	L1S5I026	L2S1I022	L2S2D028	L2S3F075	L2S4L046	L2S5I033	L3S1I060	L3S2D051	L3S3G064		
20	L1S1I059	L1S2D034	L1S3F090	L1S4L020	L1S5I037	L2S1I024	L2S2D029	L2S3F077	L2S4L051	L2S5I037	L3S1I061	L3S2D056	L3S3G074		
21	L1S1I062	L1S2D037	L1S3F092	L1S4L026	L1S5I046	L2S1I030	L2S2D048	L2S3F078		L2S5I051	L3S1I064	L3S2D064	L3S3G082		
22	L1S1I064	L1S2D040	L1S3F100	L1S4L046	L1S5I067	L2S1I033	L2S2D055	L2S3F096		L2S5K023	L3S1I072	L3S2D074	L3S3G083		
23	L1S1I067	L1S2D045	L1S3G009		L1S5I070	L2S1I037	L2S2D058	L2S3G008		L2S5K033	L3S1I076	L3S2D076	L3S3I032		
24	L1S1I075	L1S2D048	L1S3G026		L1S5K005	L2S1I044	L2S2D076	L2S3G011		L2S5K051	L3S1I079	L3S2D082	L3S3I046		
25	L1S1I083	L1S2D059	L1S3G034		L1S5K018	L2S1I051	L2S2H028	L2S3G022		L2S5L033	L3S1I082	L3S2D083	L3S3I050		
26	L1S1I100	L1S2D070	L1S3G036		L1S5K026	L2S1I055	L2S2H029	L2S3G026		L2S5L046	L3S1I083	L3S2H006	L3S3I064		
27	L1S1K004	L1S2H020	L1S3G040		L1S5K038	L2S1I063	L2S2H033	L2S3G033		L2S5L051	L3S1I093	L3S2H032	L3S3I083		
28	L1S1K005	L1S2H026	L1S3G046		L1S5K046	L2S1I078	L2S2H038	L2S3G036			L3S1I098	L3S2H046	L3S3K022		
29	L1S1K007	L1S2H036	L1S3G048		L1S5K067	L2S1I087	L2S2H046	L2S3G046			L3S1K002	L3S2H050	L3S3K025		
30	L1S1K016	L1S2H037	L1S3G055		L1S5L005	L2S1I095	L2S2H051	L2S3G047			L3S1K004	L3S2H064	L3S3K032		
31	L1S1K018	L1S2H046	L1S3G059		L1S5L018	L2S1I099	L2S2H058	L2S3G051			L3S1K013	L3S2H067	L3S3K050		
32	L1S1K021	L1S2H048	L1S3G063		L1S5L020	L2S1K003	L2S2H067	L2S3G055			L3S1K017	L3S2H071	L3S3K064		
33	L1S1K026	L1S2H049	L1S3G090		L1S5L048	L2S1K006	L2S2H068	L2S3G058			L3S1K031	L3S2H074	L3S3K083		
34	L1S1K030	L1S2H055	L1S3I026			L2S1K014	L2S2H074	L2S3I028			L3S1K033	L3S2H083	L3S3L006		
35	L1S1K034	L1S2H056	L1S3I037			L2S1K016	L2S2H078	L2S3I033			L3S1K035	L3S2J006	L3S3L022		
36	L1S1K038	L1S2H059	L1S3I038			L2S1K018	L2S2H081	L2S3I036			L3S1K036	L3S2J022	L3S3L025		
37	L1S1K039	L1S2H070	L1S3I046			L2S1K019	L2S2J023	L2S3I037			L3S1K040	L3S2J025	L3S3L050		
38	L1S1K045	L1S2H083	L1S3I048			L2S1K021	L2S2J028	L2S3I051			L3S1K041	L3S2J032	L3S3L083		
39	L1S1K046	L1S2J005	L1S3I049			L2S1K022	L2S2J029	L2S3I067			L3S1K042	L3S2J046			
40	L1S1K052	L1S2J016	L1S3I055			L2S1K024	L2S2J033	L2S3I074			L3S1K043	L3S2J050			
41	L1S1K056	L1S2J020	L1S3I067			L2S1K030	L2S2J036	L2S3K023			L3S1K052	L3S2J064			
42	L1S1K059	L1S2J026	L1S3I070			L2S1K033	L2S2J037	L2S3K028			L3S1K055	L3S2J067			
43	L1S1K062	L1S2J038	L1S3K005			L2S1K040	L2S2J046	L2S3K033			L3S1K056	L3S2J071			
44	L1S1K064	L1S2J046	L1S3K018			L2S1K044	L2S2J051	L2S3K037			L3S1K058	L3S2J074			
45	L1S1K075	L1S2J048	L1S3K026			L2S1K051	L2S2J067	L2S3K051			L3S1K060	L3S2J083			
46	L1S1K083	L1S2J049	L1S3K038			L2S1K052	L2S2J074	L2S3K067			L3S1K061	L3S2L008			
47	L1S1K095	L1S2J055	L1S3K046			L2S1K053	L2S2J076	L2S3K074			L3S1K070	L3S2L022			
48	L1S1K100	L1S2J059	L1S3K048			L2S1K055	L2S2L026	L2S3L028			L3S1K078	L3S2L025			
49	L1S1L004	L1S2J067	L1S3K049			L2S1K071	L2S2L033	L2S3L033			L3S1K079	L3S2L039			
50	L1S1L005	L1S2J070	L1S3K067			L2S1K078	L2S2L046	L2S3L048			L3S1K080	L3S2L050			
51	L1S1L007	L1S2L005	L1S3L005			L2S1K082	L2S2L051	L2S3L051			L3S1K082	L3S2L083			
52	L1S1L016	L1S2L018	L1S3L018			L2S1K087	L2S2L078				L3S1K083				
53	L1S1L018	L1S2L020	L1S3L026			L2S1K095					L3S1K084				
54	L1S1L021	L1S2L026	L1S3L046			L2S1K098					L3S1K093				
55	L1S1L023	L1S2L046	L1S3L049			L2S1K099					L3S1L002				
56	L1S1L026	L1S2L049	L1S3L055			L2S1L006					L3S1L004				
57	L1S1L027	L1S2L055	L1S3L099			L2S1L011					L3S1L008				
58	L1S1L028	L1S2L099				L2S1L013					L3S1L013				
59	L1S1L030					L2S1L014					L3S1L016				
60	L1S1L032					L2S1L016					L3S1L017				
61	L1S1L033					L2S1L018					L3S1L022				
62	L1S1L034					L2S1L019					L3S1L028				
63	L1S1L036					L2S1L021					L3S1L031				
64	L1S1L039					L2S1L022					L3S1L032				
65	L1S1L041					L2S1L024					L3S1L033				
66	L1S1L044					L2S1L027					L3S1L035				
67	L1S1L046					L2S1L028					L3S1L038				
68	L1S1L052					L2S1L030					L3S1L040				
69	L1S1L058					L2S1L033					L3S1L041				
70	L1S1L059					L2S1L037					L3S1L042				
71	L1S1L062					L2S1L040					L3S1L043				
72	L1S1L064					L2S1L041					L3S1L051				
73	L1S1L067					L2S1L044					L3S1L052				
74	L1S1L073					L2S1L048					L3S1L055				
75	L1S1L075					L2S1L051					L3S1L056				
76	L1S1L081					L2S1L052					L3S1L058				
77	L1S1L083					L2S1L053					L3S1L060				
78	L1S1L089					L2S1L059					L3S1L061				
79	L1S1L093					L2S1L063					L3S1L062				
80	L1S1L094					L2S1L066					L3S1L070				
81	L1S1L095					L2S1L067					L3S1L075				
82	L1S1L100					L2S1L071					L3S1L078				
83						L2S1L073					L3S1L079				
84						L2S1L078					L3S1L080				
85						L2S1L082					L3S1L082				
86						L2S1L087					L3S1L083				
87						L2S1L089					L3S1L084				
88						L2S1L095					L3S1L093				
89						L2S1L098									
90						L2S1L099									

Table 13: Listing of All Up-dip Direct Brine Release Realizations

Number	Up-dip Replicate 1 Scenario 1	Up-dip Replicate 1 Scenario 2	Up-dip Replicate 1 Scenario 3	Up-dip Replicate 1 Scenario 4	Up-dip Replicate 1 Scenario 5	Up-dip Replicate 2 Scenario 1	Up-dip Replicate 2 Scenario 2	Up-dip Replicate 2 Scenario 3	Up-dip Replicate 2 Scenario 4	Up-dip Replicate 2 Scenario 5	Up-dip Replicate 3 Scenario 1	Up-dip Replicate 3 Scenario 2	Up-dip Replicate 3 Scenario 3	Up-dip Replicate 3 Scenario 4	Up-dip Replicate 3 Scenario 5
1	U1S1B100	U1S2C009	U1S3F026	U1S4C030	U1S5F026	U2S1B022	U2S2C022	U2S3F003	U2S4C022	U2S5F003	U3S1B064	U3S2C040	U3S3F040	U3S4C040	U3S5F040
2	U1S1E009	U1S2C030	U1S3F030	U1S4C034	U1S5F030	U2S1B055	U2S2C028	U2S3F016	U2S4C055	U2S5F016	U3S1B082	U3S2C064	U3S3F058	U3S4C064	U3S5F058
3	U1S1E026	U1S2C034	U1S3F034	U1S4C064	U1S5F034	U2S1B058	U2S2C055	U2S3F019	U2S4C058	U2S5F022	U3S1E040	U3S2C082	U3S3F064	U3S4C082	U3S5F064
4	U1S1E030	U1S2C059	U1S3F046	U1S4C092	U1S5F046	U2S1B081	U2S2C058	U2S3F022	U2S4C081	U2S5F044	U3S1E064	U3S2D058	U3S3F082	U3S4D064	U3S5F082
5	U1S1E034	U1S2C084	U1S3F059	U1S4C100	U1S5F059	U2S1B090	U2S2C081	U2S3F028	U2S4C090	U2S5F051	U3S1E082	U3S2D064	U3S3F083	U3S4D082	U3S5G064
6	U1S1E046	U1S2C082	U1S3F064	U1S4D034	U1S5F064	U2S1E016	U2S2C090	U2S3F044	U2S4D022	U2S5F055	U3S1I078	U3S2D082	U3S3G058	U3S4H064	U3S5G082
7	U1S1E059	U1S2C100	U1S3F100	U1S4D046	U1S5F100	U2S1E022	U2S2D011	U2S3F051	U2S4D055	U2S5F058	U3S1I082	U3S2D083	U3S3G064		U3S5I064
8	U1S1E084	U1S2D009	U1S3G026	U1S4H026	U1S5G026	U2S1E051	U2S2D022	U2S3F055	U2S4D058	U2S5F078	U3S1K082	U3S2H050	U3S3G082		
9	U1S1E100	U1S2D034	U1S3G034	U1S4H046	U1S5G034	U2S1E055	U2S2D028	U2S3F058	U2S4H051	U2S5G022		U3S2H064	U3S3G083		
10	U1S1I038	U1S2D040	U1S3G046	U1S4J046	U1S5G046	U2S1E058	U2S2D055	U2S3F078		U2S5G051		U3S2H067	U3S3I050		
11	U1S1I046	U1S2D046	U1S3G059	U1S4L046	U1S5G059	U2S1I022	U2S2D058	U2S3G022		U2S5G058		U3S2H083	U3S3I064		
12	U1S1I064	U1S2D048	U1S3I038		U1S5I046	U2S1I099	U2S2H028	U2S3G028				U3S2J022	U3S3K022		
13	U1S1I100	U1S2D059	U1S3I046		U1S5K046	U2S1L028	U2S2H051	U2S3G051				U3S2J025	U3S3K050		
14	U1S1K046	U1S2H028	U1S3I049		U1S5L046	U2S1L041	U2S2H067	U2S3G058				U3S2J050	U3S3L022		
15	U1S1K064	U1S2H048	U1S3K005				U2S2H074	U2S3I028				U3S2J067	U3S3L025		
16	U1S1K100	U1S2H049	U1S3K046				U2S2J028	U2S3I074				U3S2J083			
17	U1S1L023	U1S2H059	U1S3K049				U2S2J074	U2S3K028				U3S2L022			
18	U1S1L100	U1S2J005	U1S3L046				U2S2L028	U2S3K074				U3S2L025			
19		U1S2J038						U2S3L028							
20		U1S2J046													
21		U1S2J049													
22		U1S2L046													
23		U1S2L049													
24		U1S2L099													

Figure 5 shows a histogram of cumulative brine releases for all blowout scenarios associated with the down-dip intrusion well. The majority of down-dip blowout realizations (363 of 697 or 52%) had less than 1 m^3 of total brine released.

Figure 5: Histogram of Down-dip Brine Releases

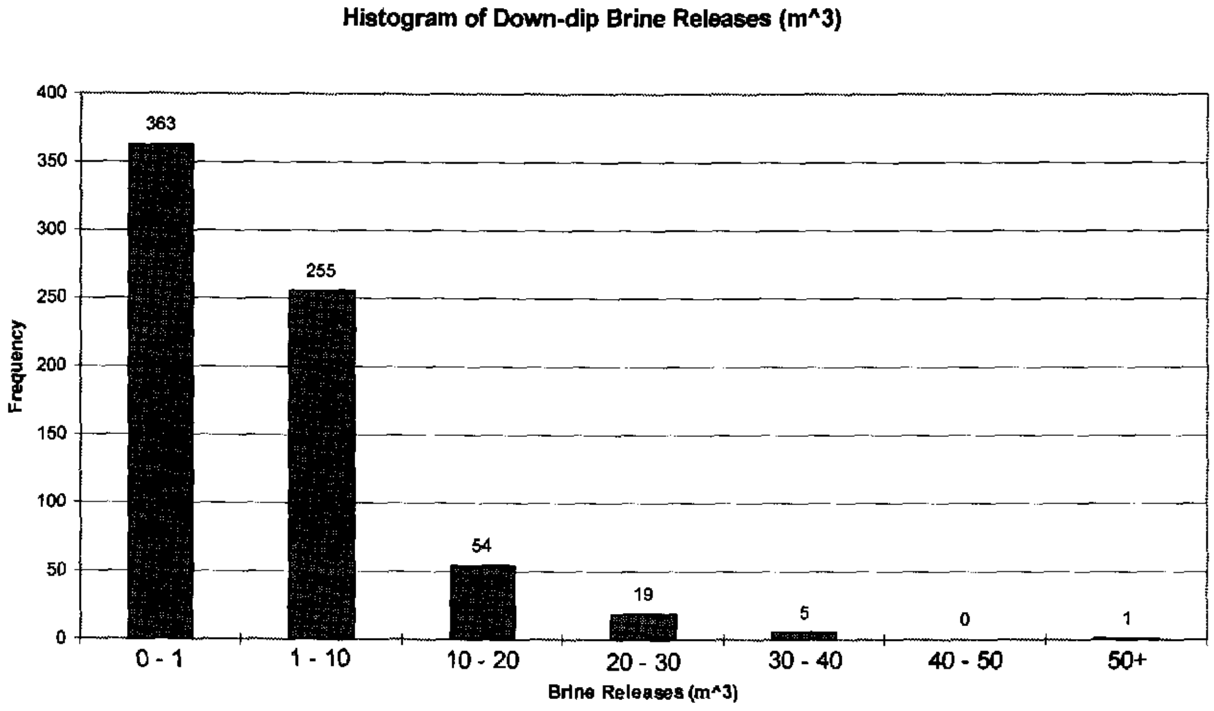


Figure 6 shows a histogram of cumulative brine releases for all blowout scenarios associated with the up-dip intrusion well. The vast majority of up-dip blowout realizations (178 of 210 or 85%) had less than 1 m^3 of total brine released.

Figure 6: Histogram of Cumulative Brine Releases

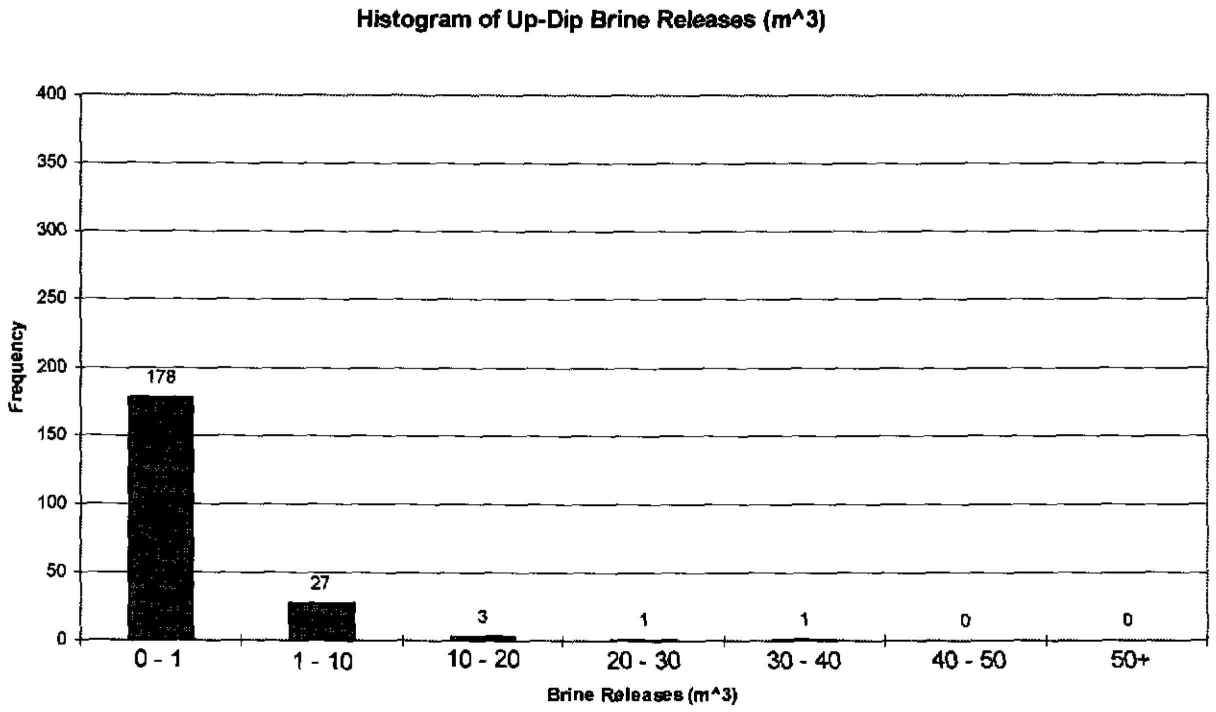
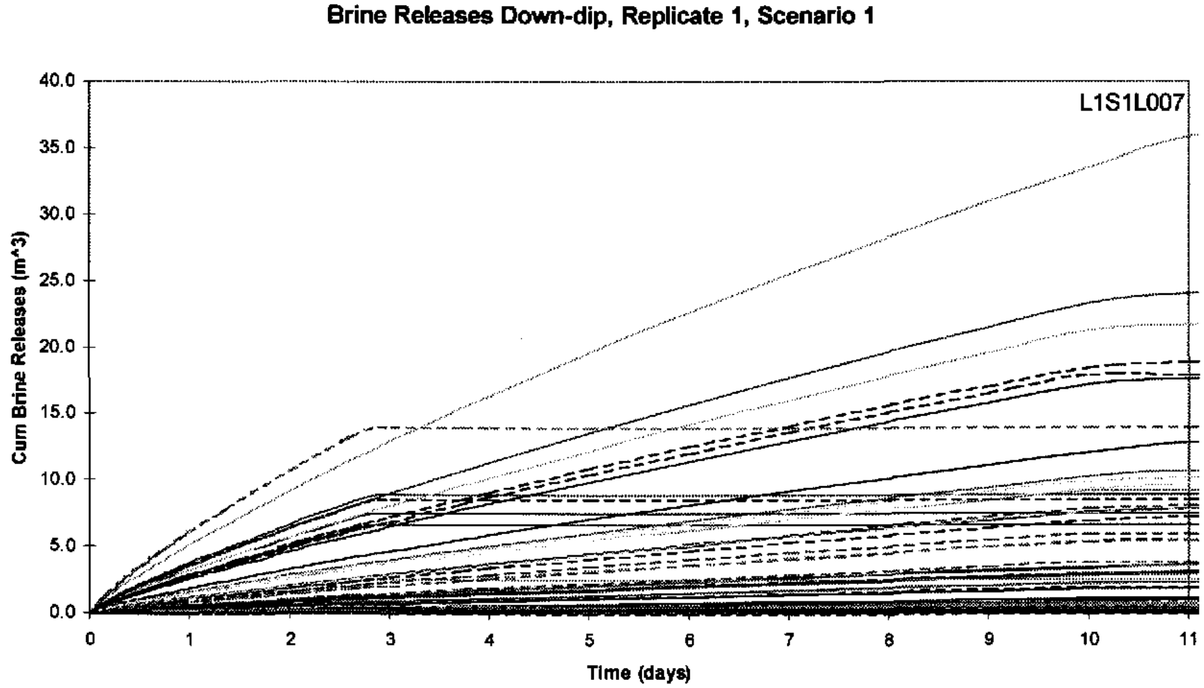


Figure 7 shows the brine releases over an 11 day flow period from a down-dip well intrusion for Replicate 1, Scenario 1. The highest release is from realization L1S1L007.

Figure 7: Brine Releases Down-dip, Replicate 1, Scenario 1



Consistent with the methodology developed on brine blowout duration (for a full discussion see Attachment 5), the flow duration for the direct brine release calculations are a minimum of 3 days (72 hours) up to a maximum of 11 days for high rate gas blowouts. Between these two extremes, a cut-off gas flow rate of 100,000 standard cubic feet per day was used, above which the well will continue to flow. As shown in Figure 7, all realizations have a blowout period release for at least 3 days. The blowout period for some realizations extends longer than 72 hours consistent with the cut-off requirement of 100,000 standard cubic feet of gas per day. To illustrate, Figure 8 shows the gas flowrate over an 11 day flow period for realization L3S1L009 (from Replicate 3, Scenario 1). The 100,000 standard cubic feet of gas per day flowrate occurs at approximately 6.5 days after the blowout was initiated. Figure 9 shows the corresponding brine releases over the 11 day flow period for realization L3S1L009. Following the 6.5 day blowout period, the cumulative brine released remains constant. Therefore, these results demonstrate that brine blowout duration was executed according to the planned methodology in the CCA calculations.

Figure 8: Gas Flow Rate for Realization L3S1L009

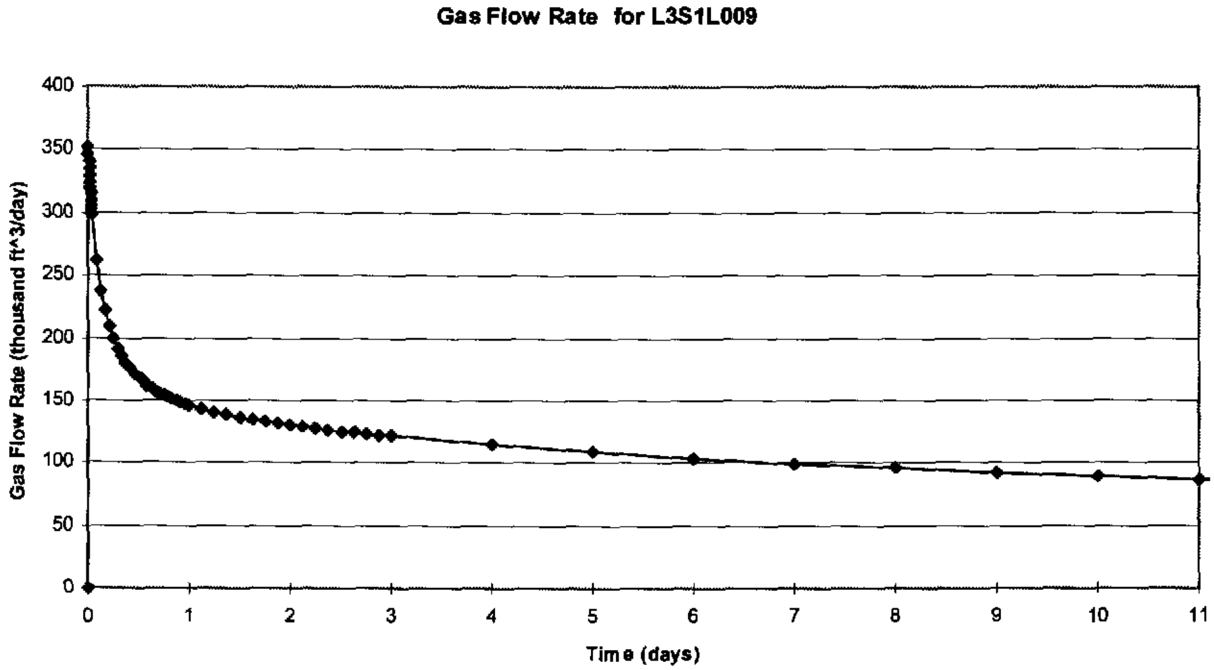


Figure 9: Brine Releases for L3S1L009

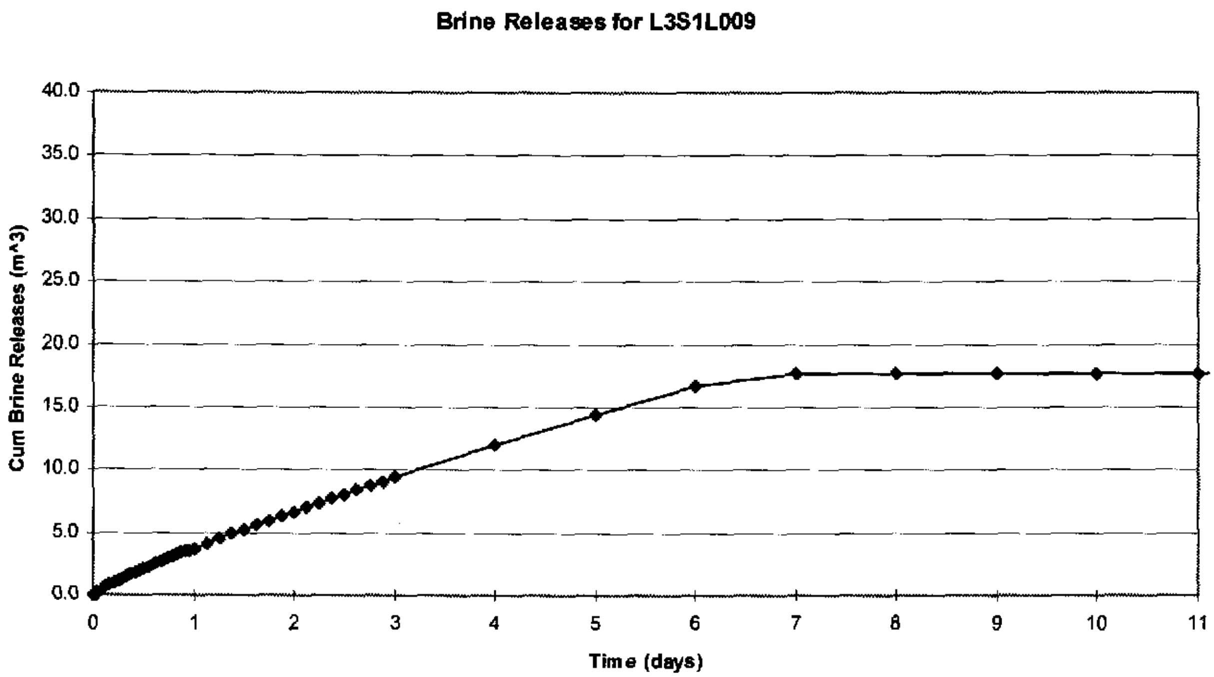


Figure 10 shows the brine releases of an 11 day flow period from an up-dip well intrusion for Replicate 1, Scenario 1. The highest release is from realization U1S1L023. Note that the variation in blowout duration varies between 3 days and 11 days, again satisfying the duration methodology.

Figure 10: Brine Releases Up-dip, Replicate 1, Scenario 1

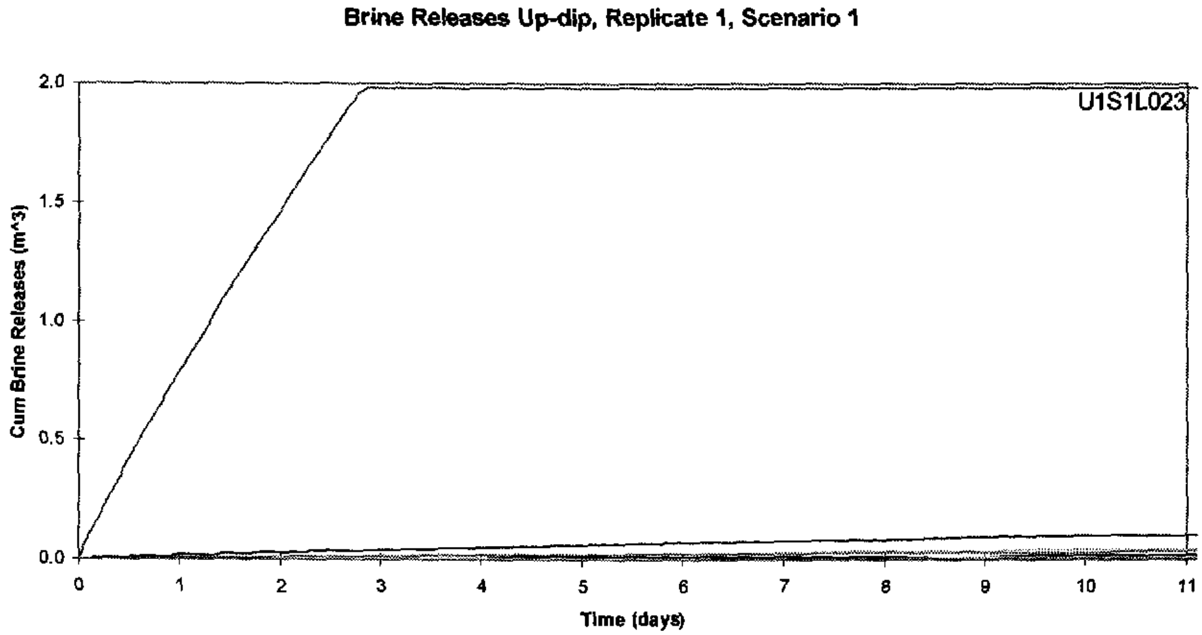
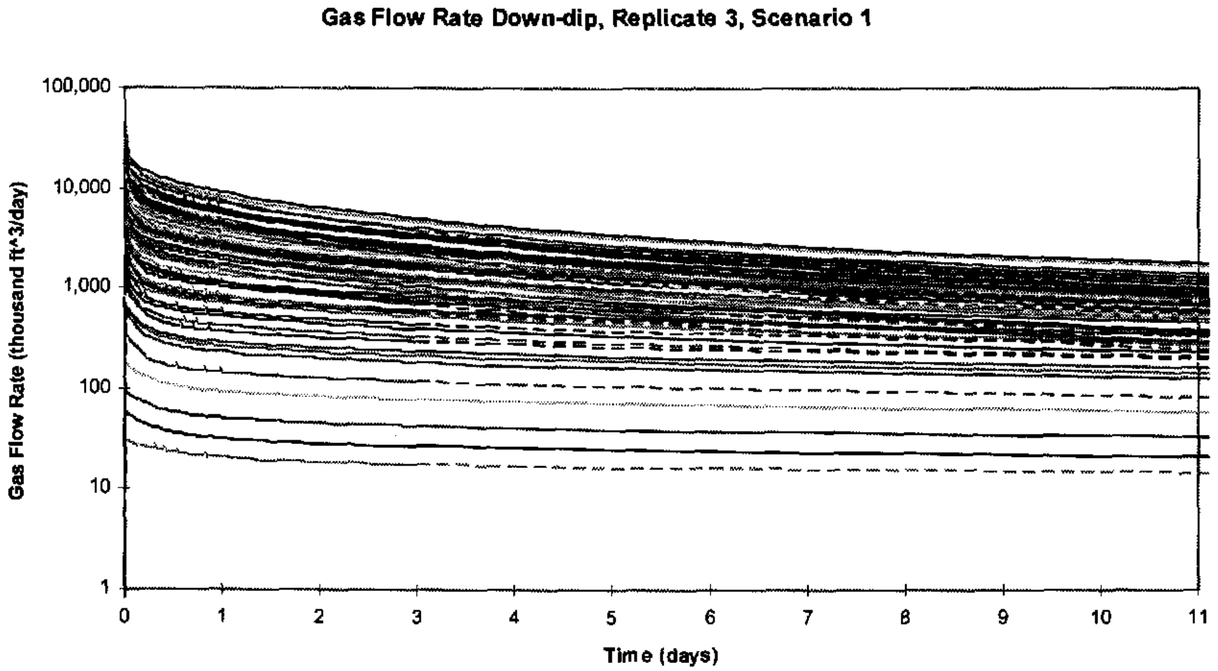
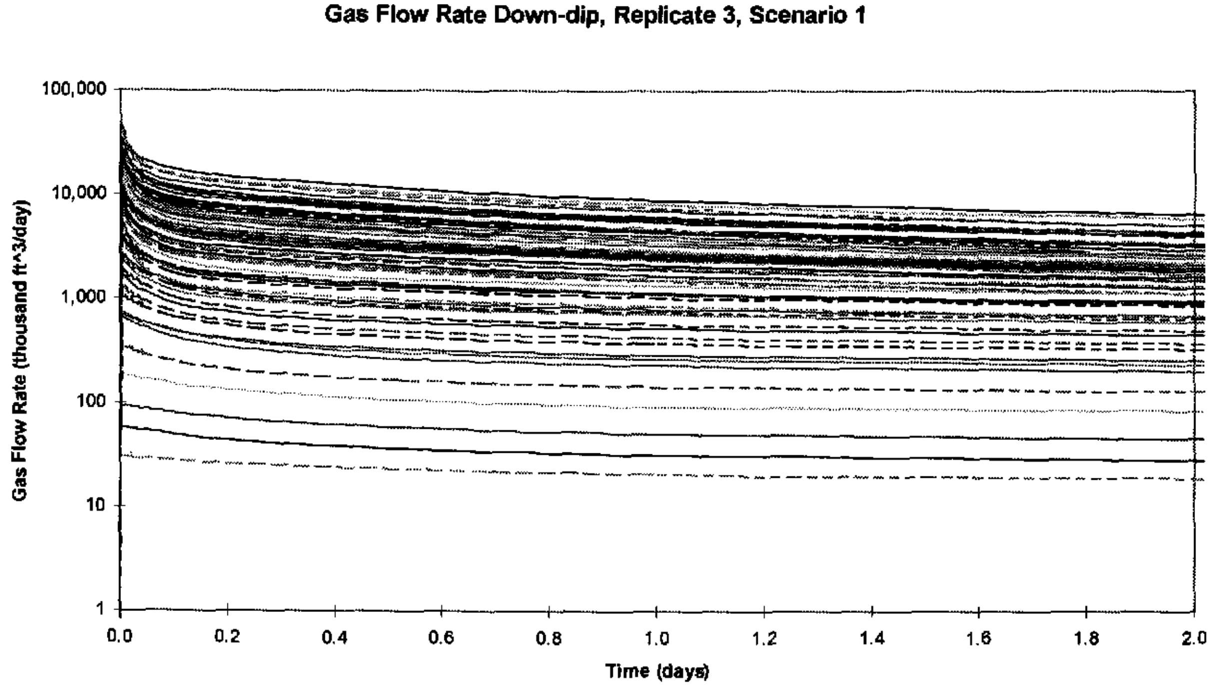


Figure 11 shows the semilog gas rate of an 11 day flow period from a down-dip well intrusion for Replicate 3, Scenario 1. The lower semilog plot of Figure 11 details the first 2 days of the flow period. The variation in gas flow rates extends over several orders of magnitude. The spikes during the first 2 days of flow in the upper portion of Figure 11 are artifacts of the printer, and do not reflect data fluctuations (as evidenced by the more detailed 2 day flow period show in the lower plot of Figure 11).

Figure 11: Semilog Gas Rate Down-dip, Replicate 3, Scenario 1





Figures 12-26 show the brine releases down-dip for all brine blowout realizations from each separate Replicate 1-3, and separate Scenarios 1-5. The largest release is from each realization is shown in Table 14.

Figures 27-29 show the brine releases up-dip for all brine blowout realizations combining Scenarios 1-5 with each Replicate 1-3. The largest release realization for each replicate (all scenarios) is shown in Table 14.

Table 14: Largest Brine Release Realizations

Figure	Down- or Up-Dip	Replicate	Scenario	Largest Brine Release Realization
12	D	1	1	L1S1L007
13	D	1	2	L1S2H046
14	D	1	3	L1S3I046
15	D	1	4	L1S4H046
16	D	1	5	L1S5K005
17	D	2	1	L2S1L024
18	D	2	2	L2S2H051
19	D	2	3	L2S3G033
20	D	2	4	L2S4L033
21	D	2	5	L2S5F033
22	D	3	1	L3S1L082
23	D	3	2	L3S2H006
24	D	3	3	L3S3K083
25	D	3	4	L3S4L083
26	D	3	5	L3S5G082
27	U	1	1-5	U1S2J049
28	U	2	1-5	U2S2H074
29	U	3	1-5	U3S2D083

Figure 12: Brine Releases Down-dip, Replicate 1, Scenario 1

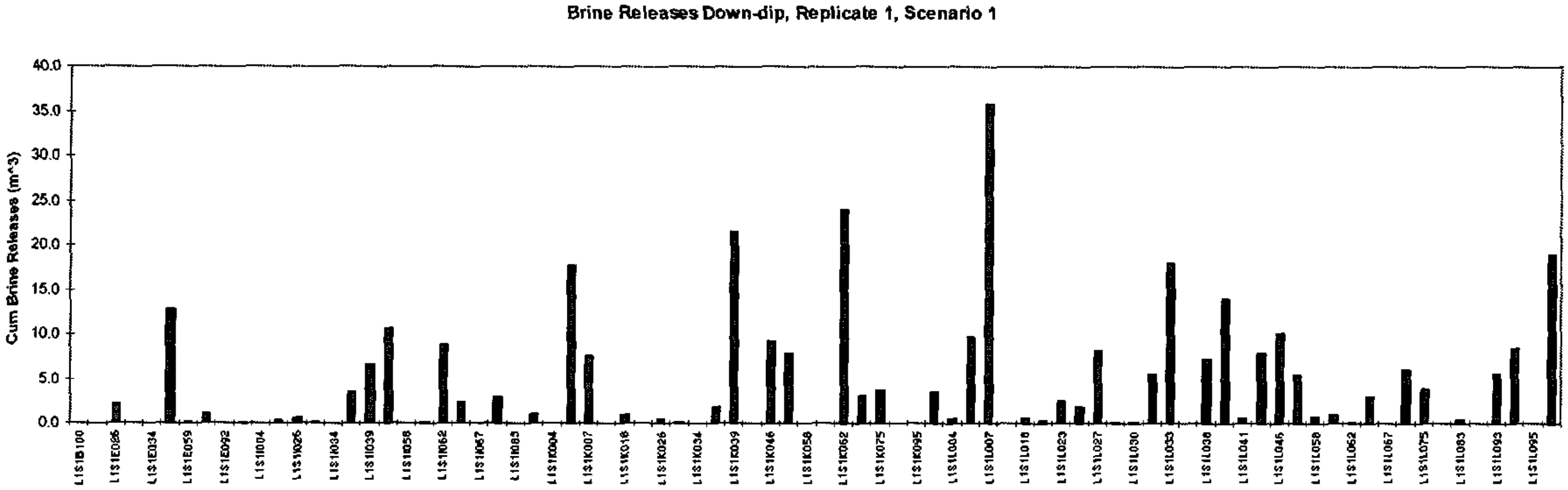


Figure 13: Brine Releases Down-dip, Replicate 1, Scenario 2

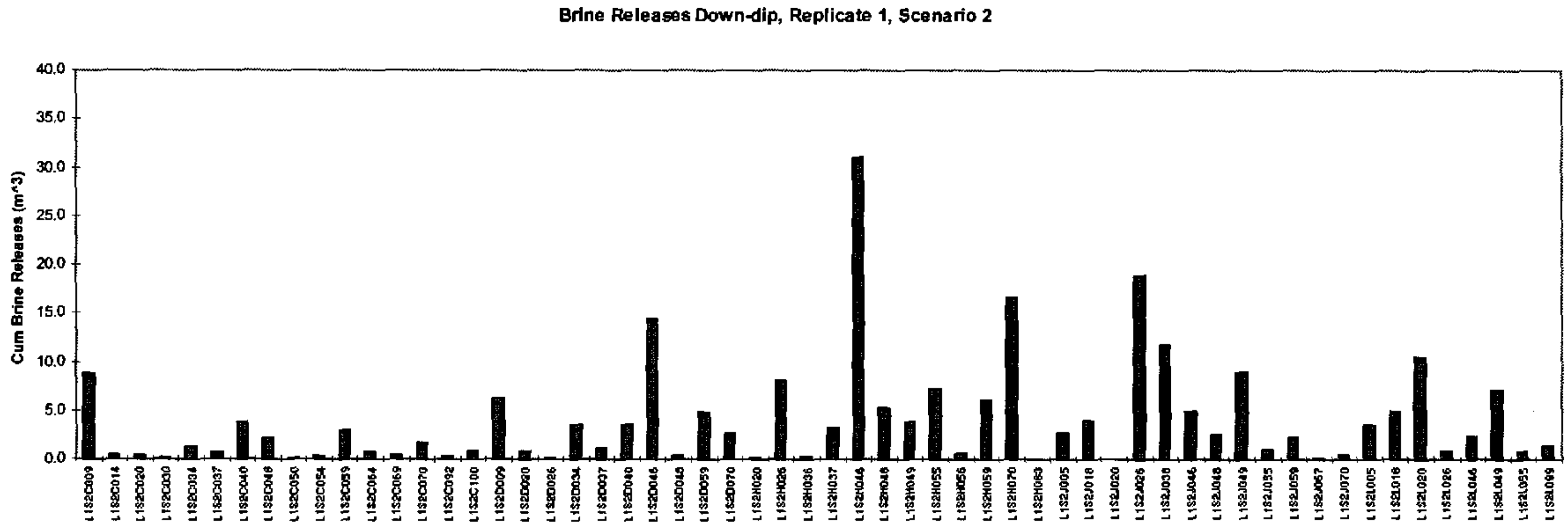


Figure 14: Brine Releases Down-dip, Replicate 1, Scenario 3

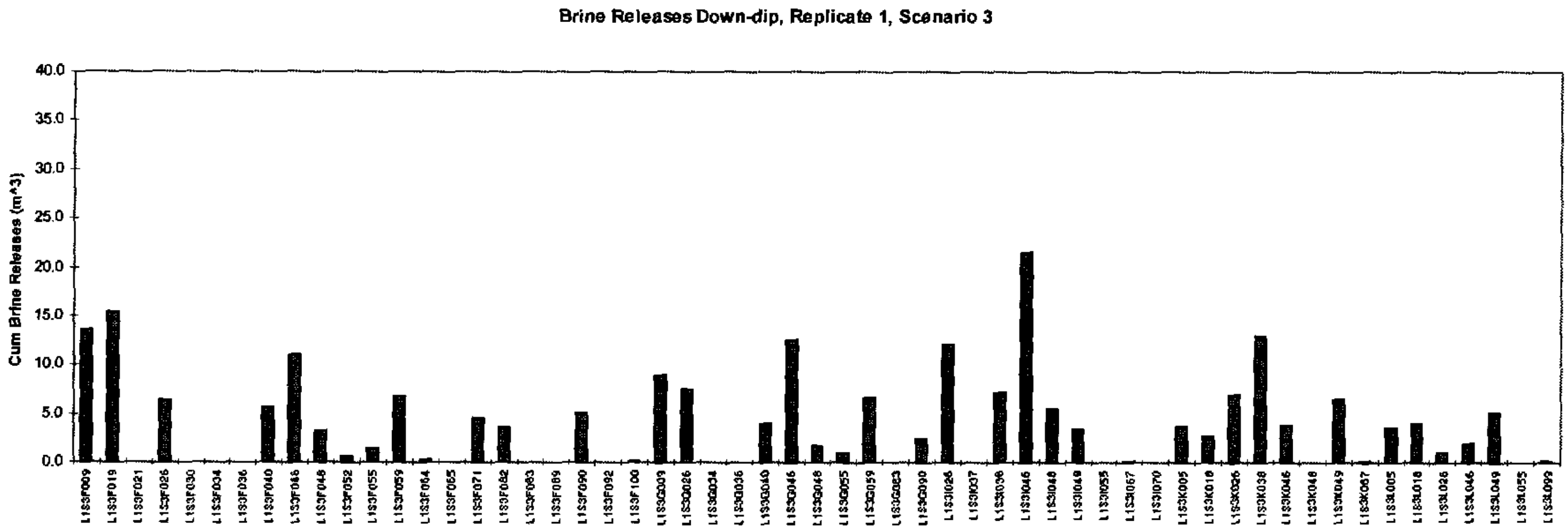


Figure 15: Brine Releases Down-dip, Replicate 1, Scenario 4

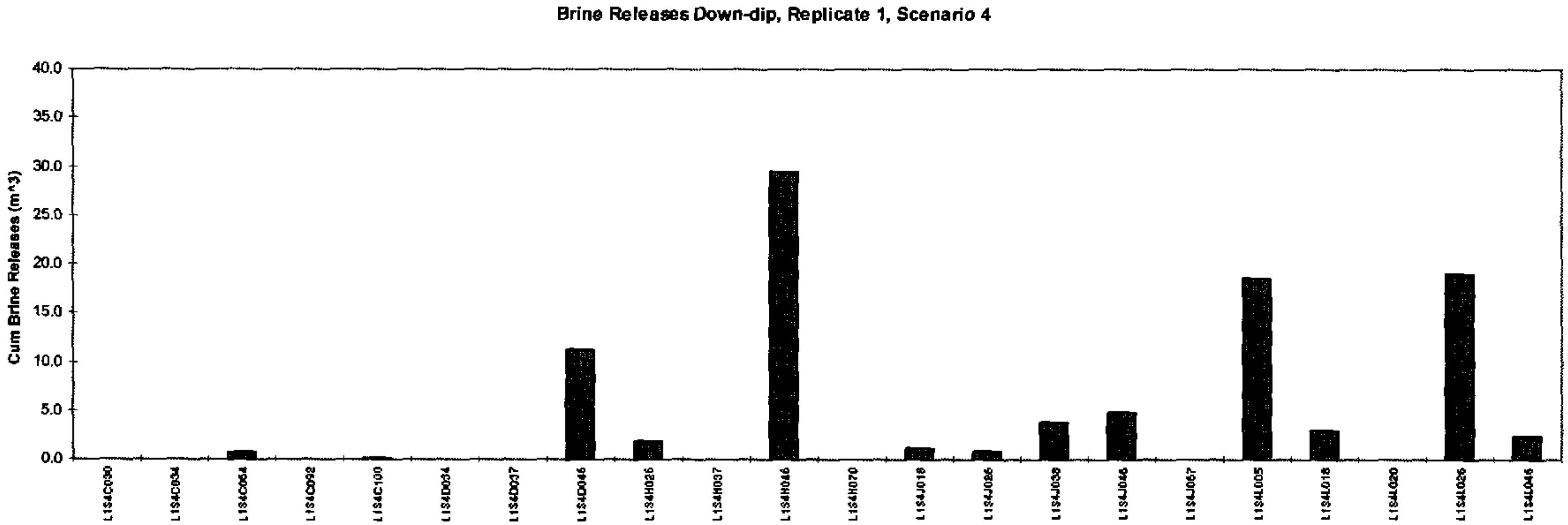


Figure 16: Brine Releases Down-dip, Replicate 1, Scenario 5

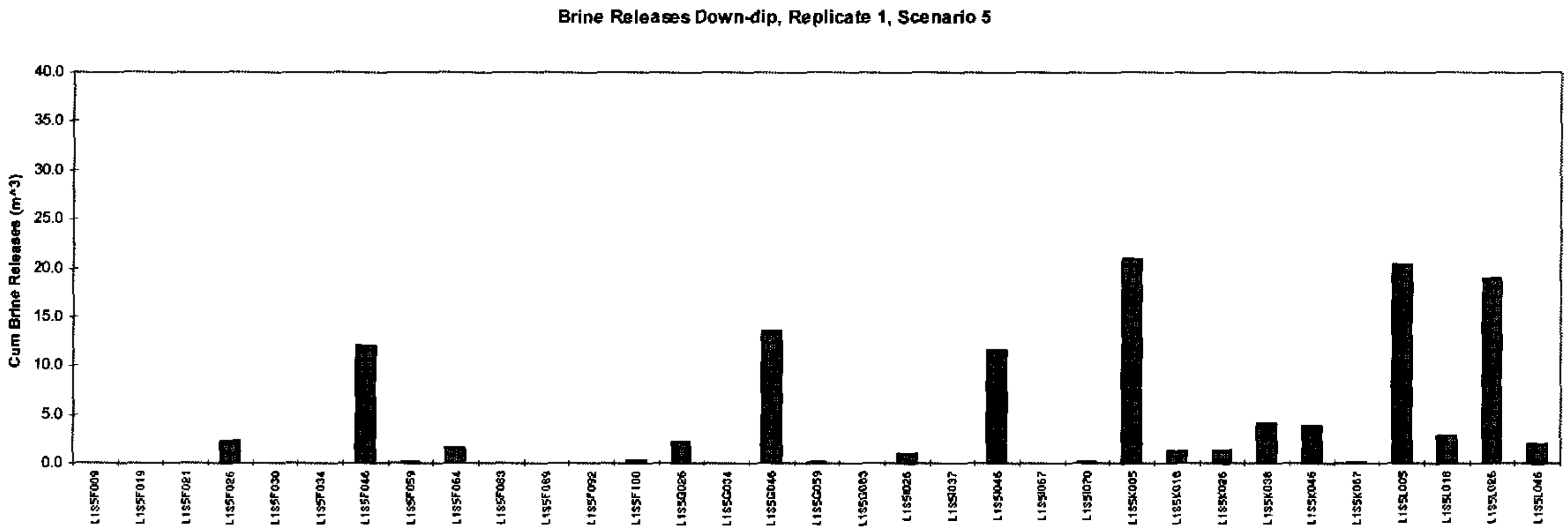


Figure 17: Brine Releases Down-dip, Replicate 2, Scenario 1

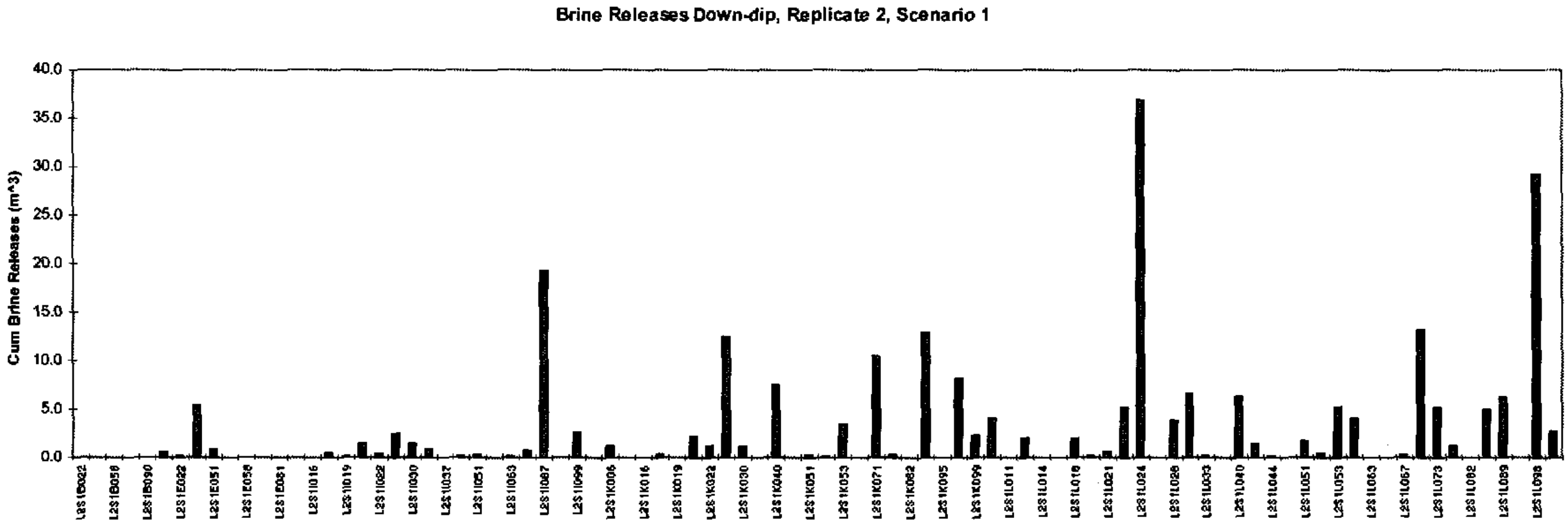


Figure 18: Brine Releases Down-dip, Replicate 2, Scenario 2

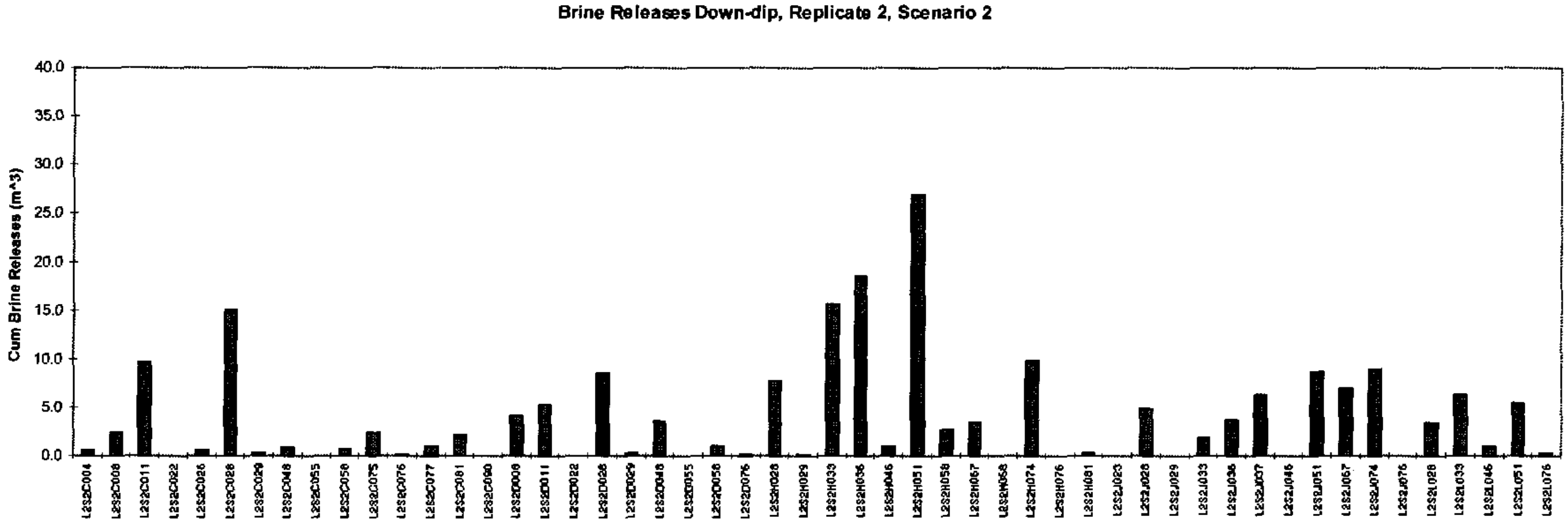


Figure 19: Brine Releases Down-dip, Replicate 2, Scenario 3

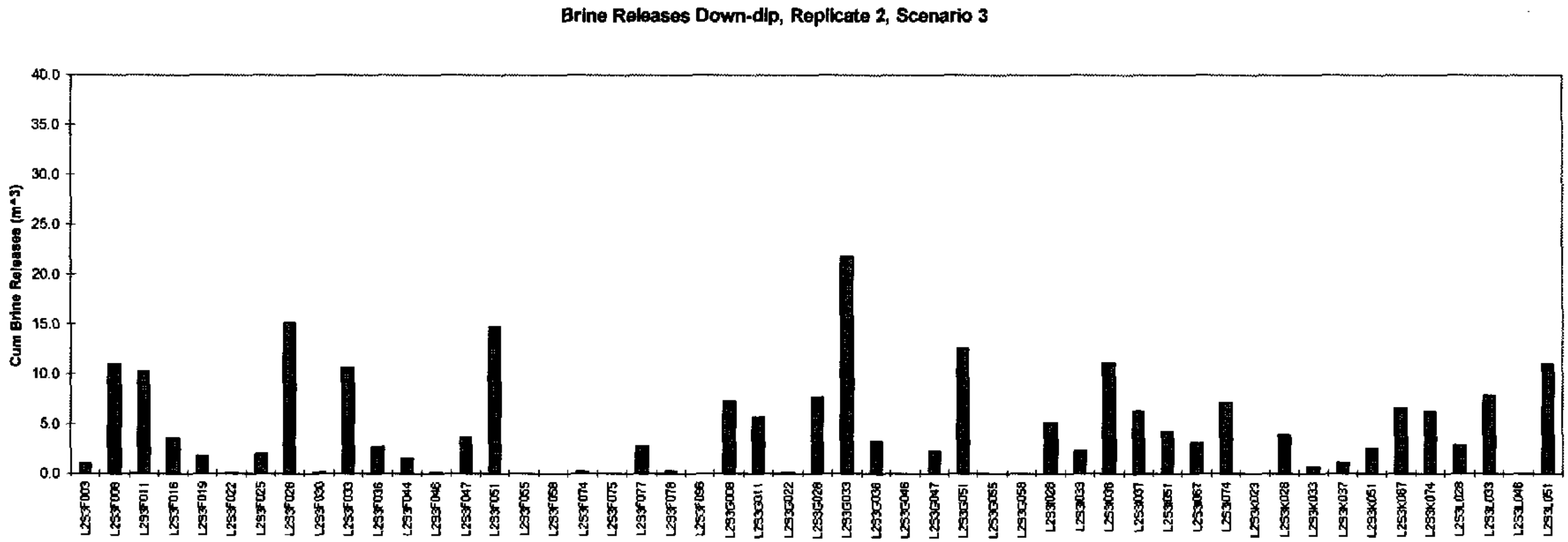


Figure 20: Brine Releases Down-dip, Replicate 2, Scenario 4

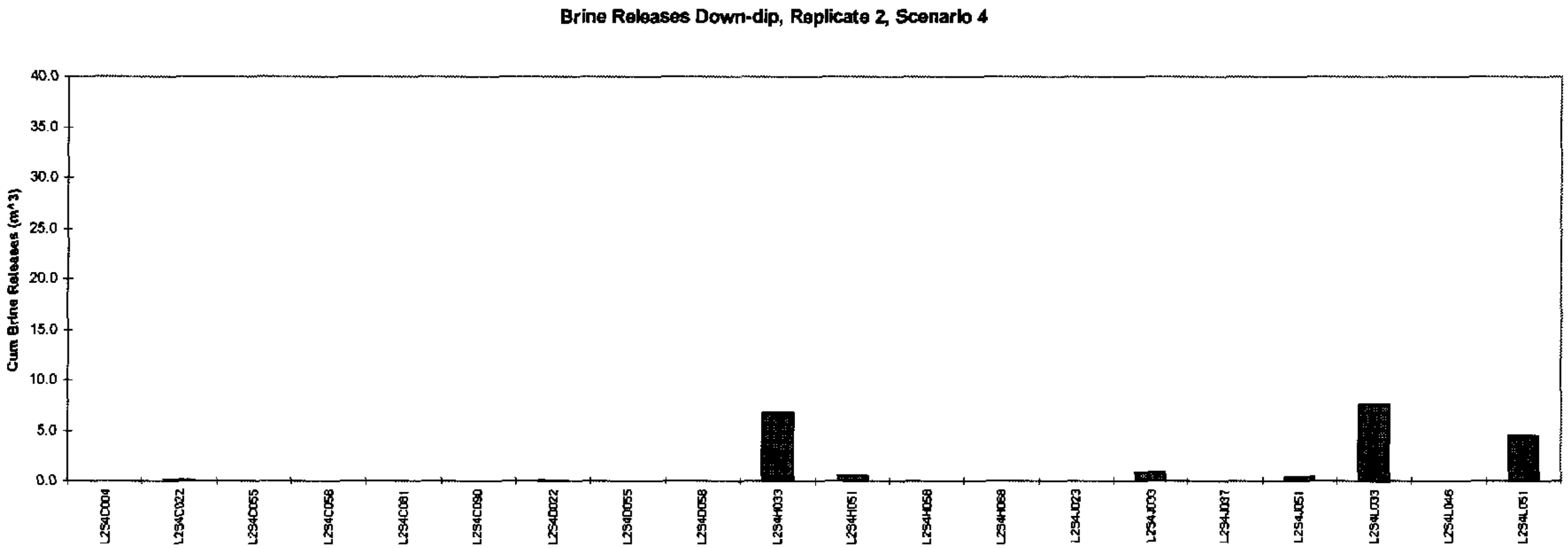


Figure 21: Brine Releases Down-dip, Replicate 2, Scenario 5

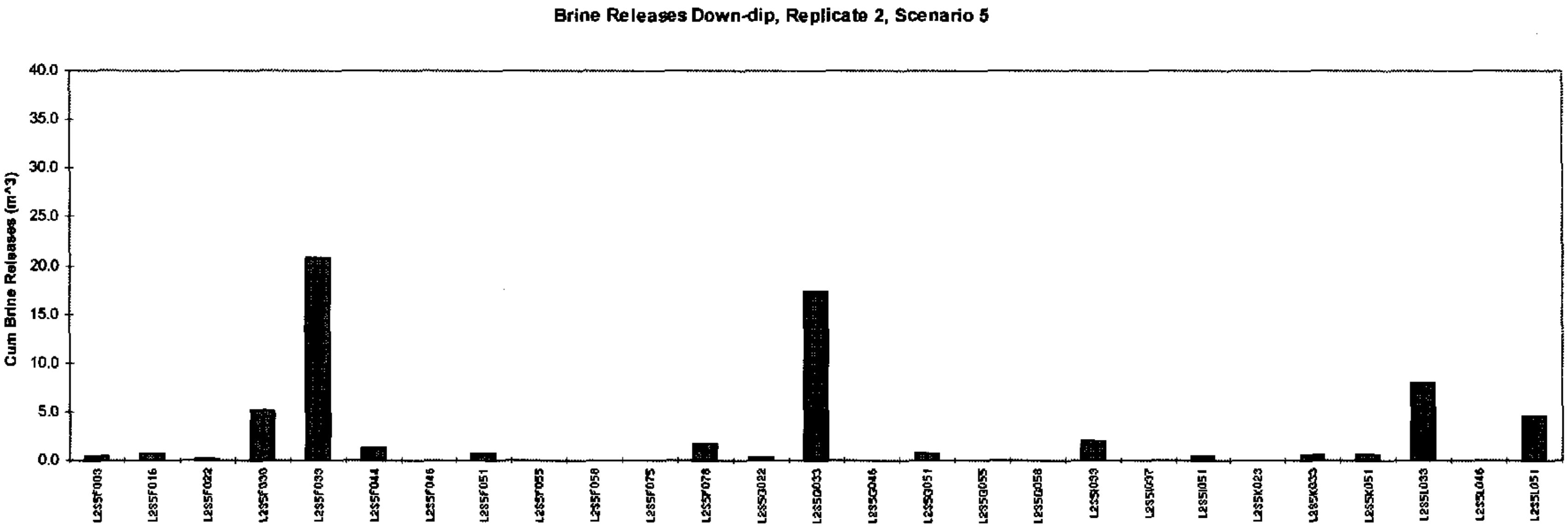


Figure 22: Brine Releases Down-dip, Replicate 3, Scenario 4

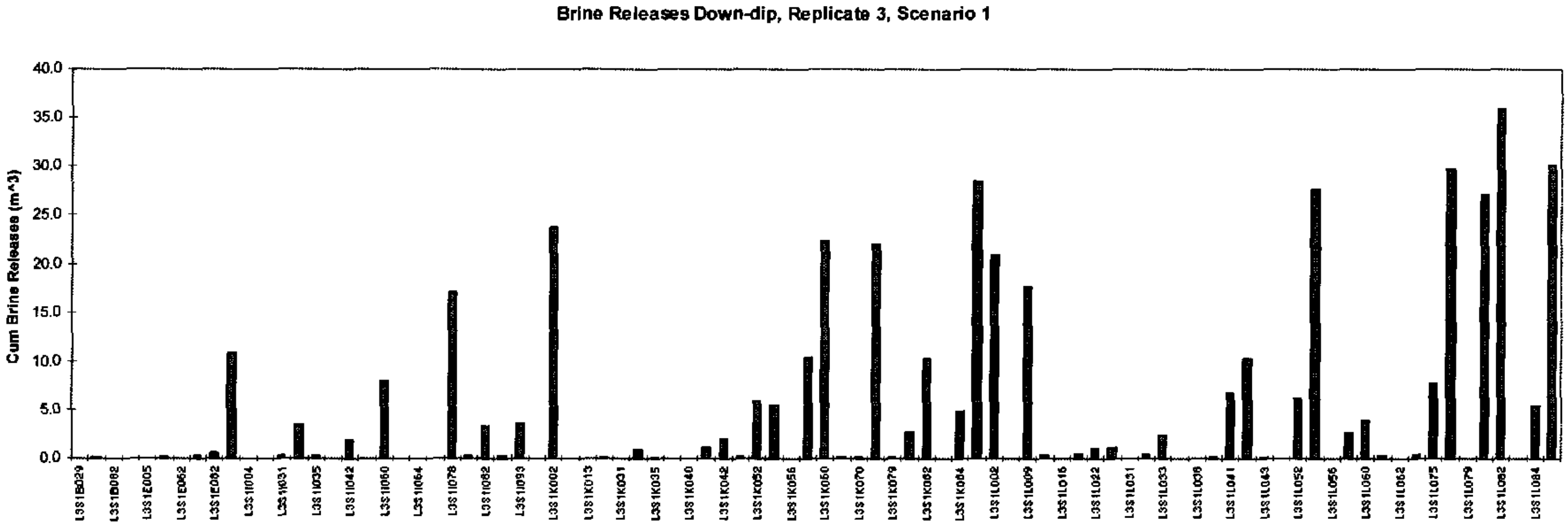


Figure 23: Brine Releases Down-dip, Replicate 3, Scenario 2

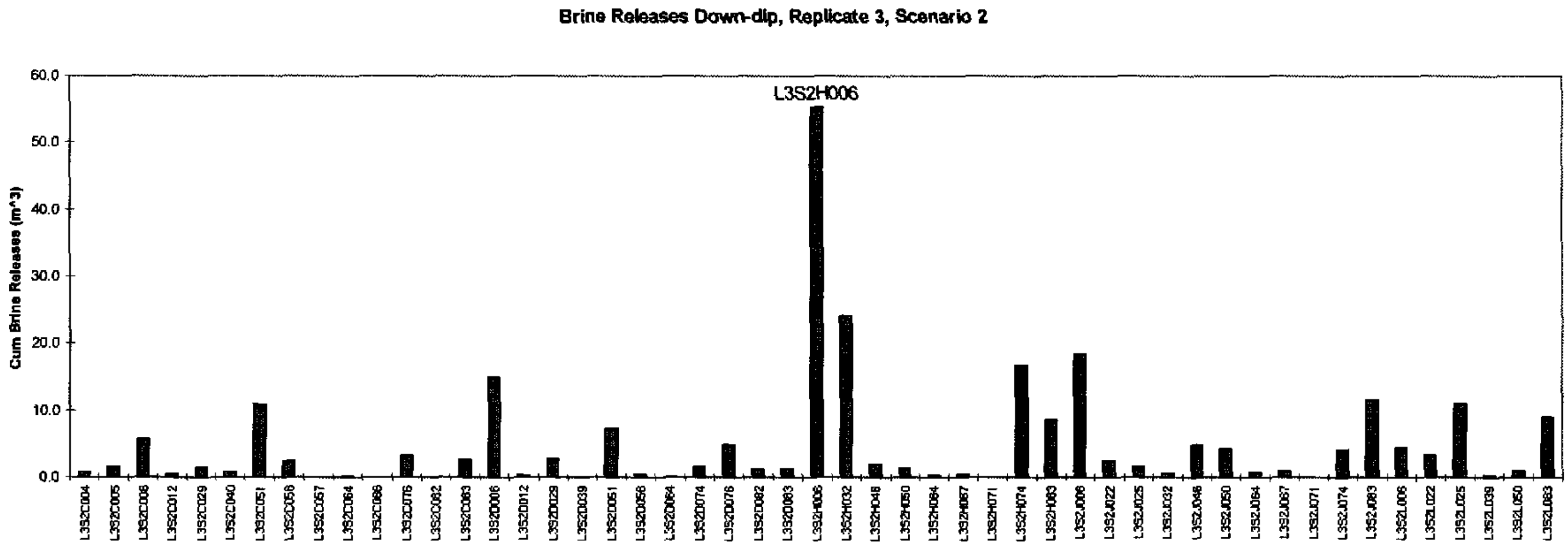


Figure 24: Brine Releases Down-dip, Replicate 3, Scenario 3

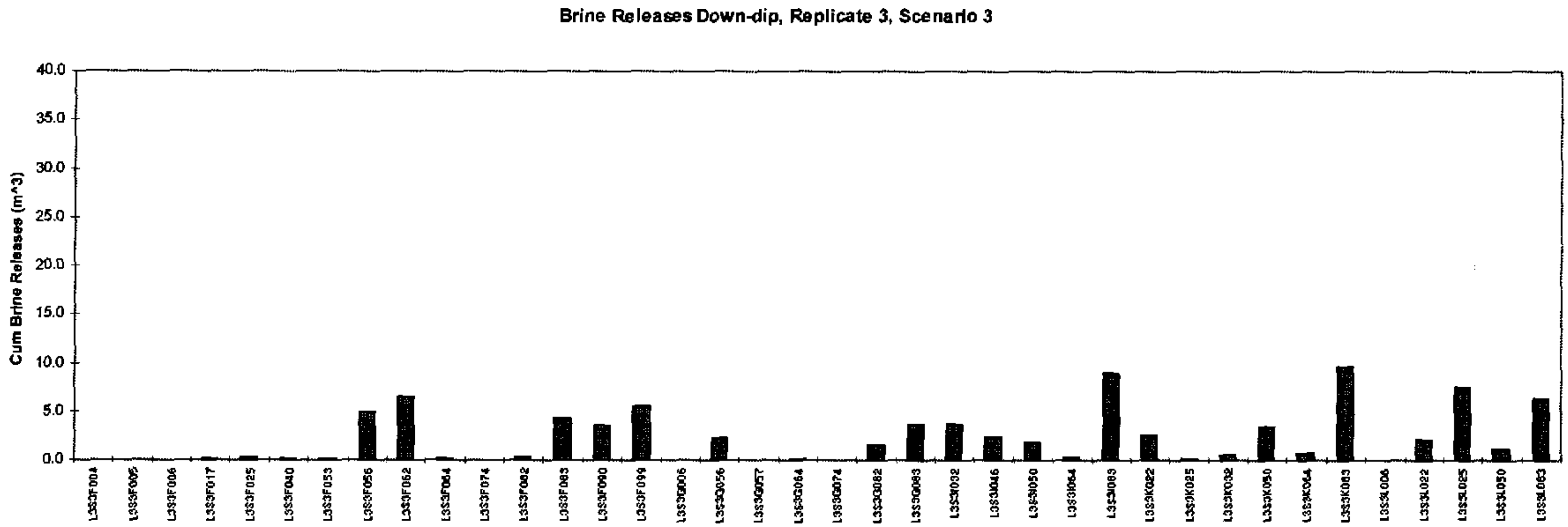


Figure 25: Brine Releases Down-dip, Replicate 3, Scenario 4

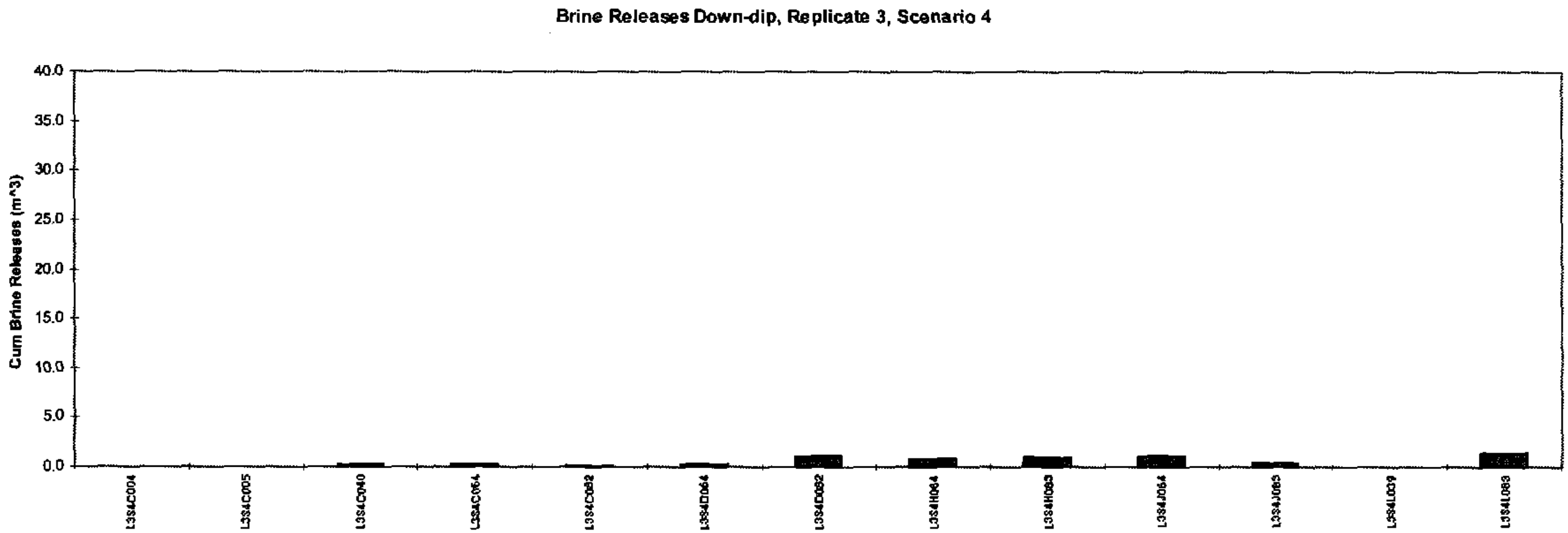


Figure 26: Brine Releases Down-dip, Replicate 3, Scenario 5

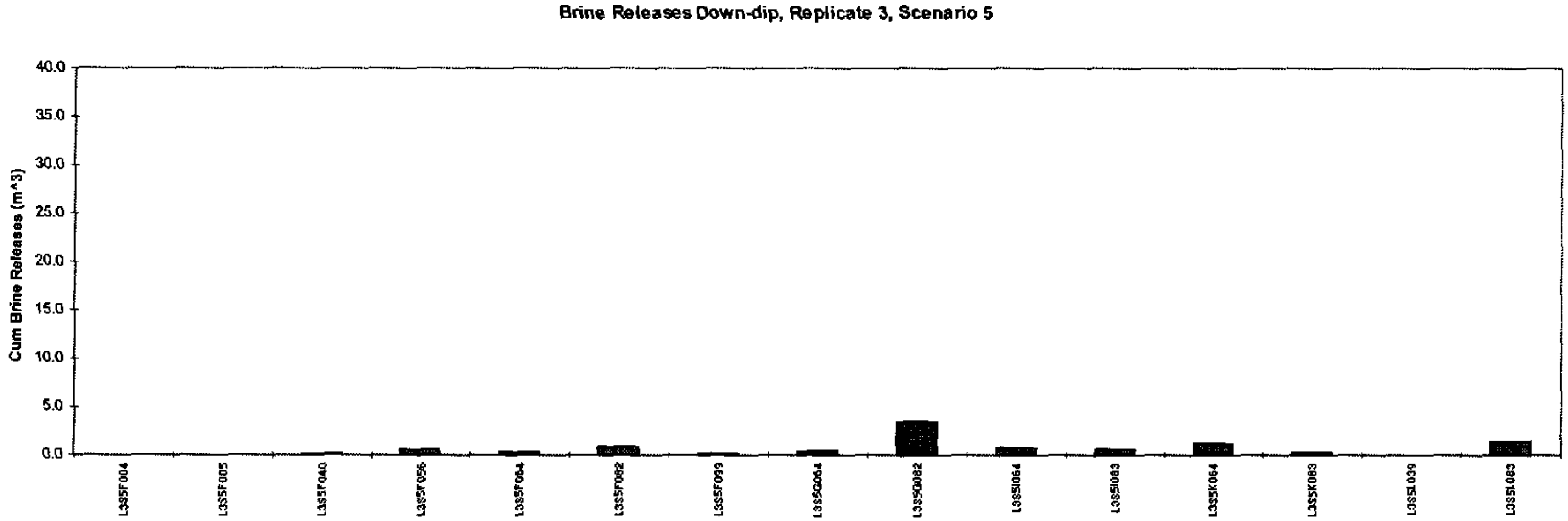


Figure 27: Brine Releases Up-dip, Replicate 1, Scenarios 1-5

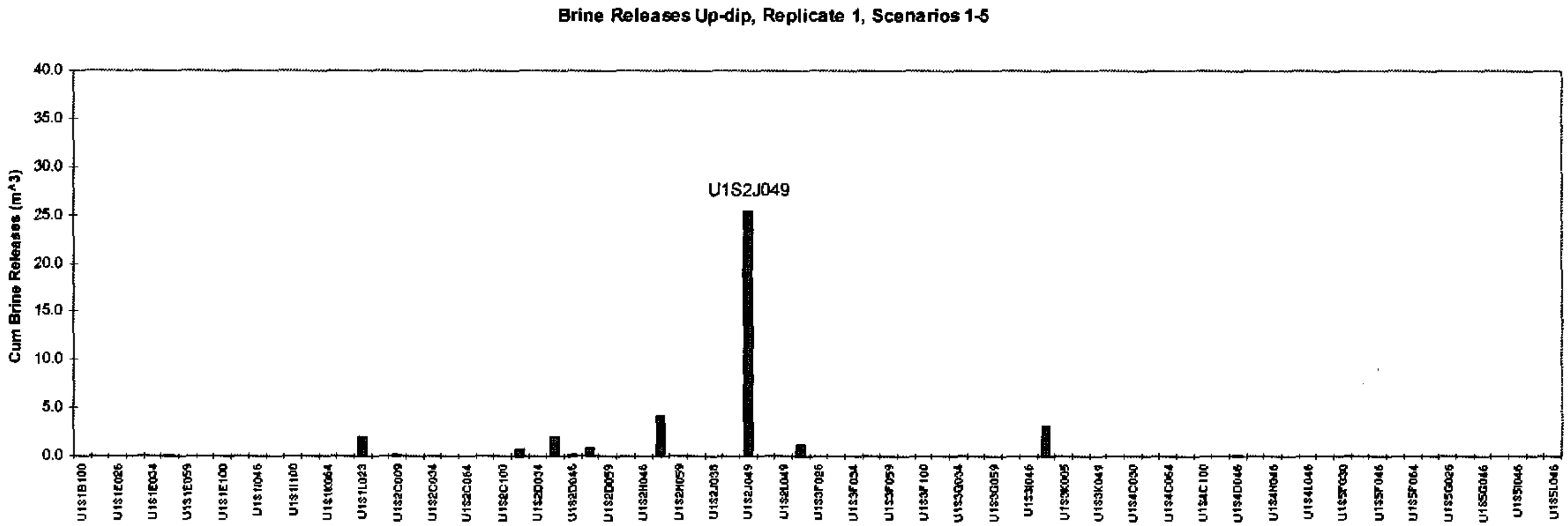


Figure 28: Brine Releases Up-dip, Replicate 2, Scenarios 1-5

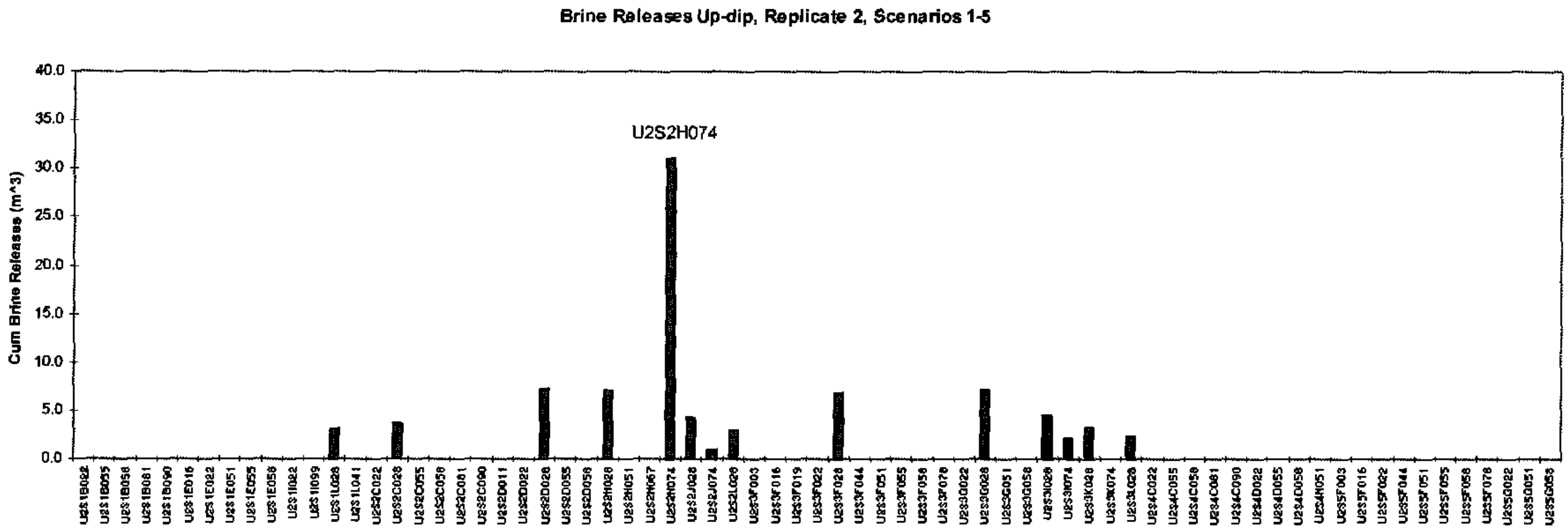


Figure 29: Brine Releases Up-dip, Replicate 3, Scenarios 1-5

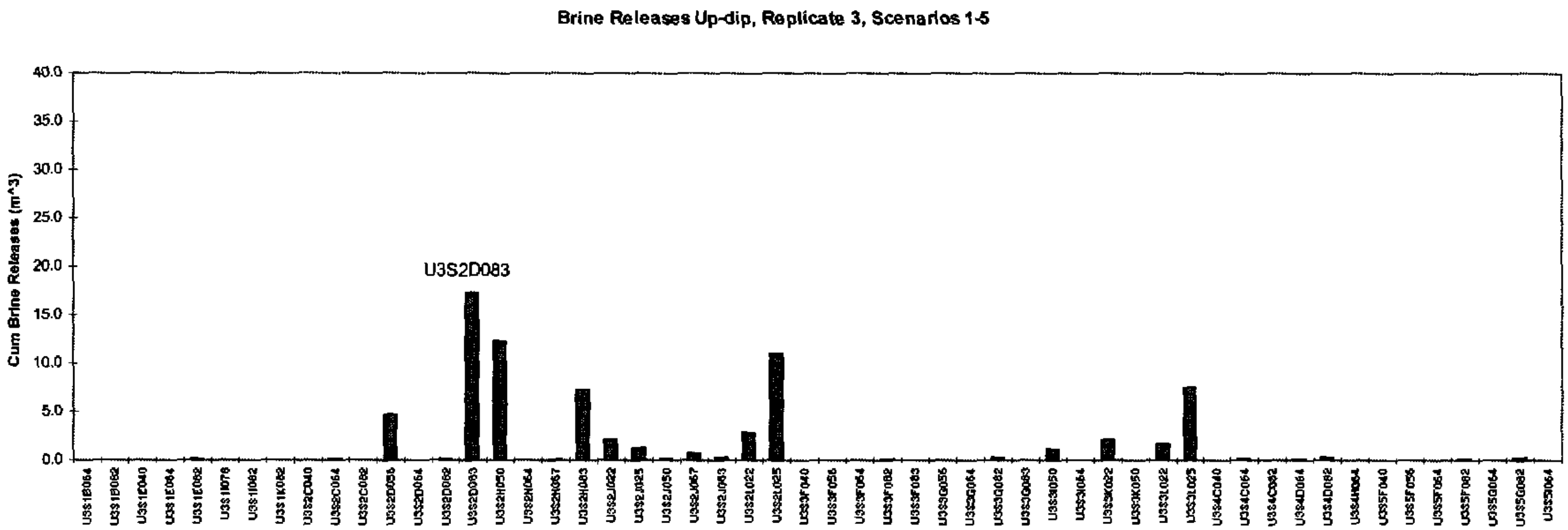
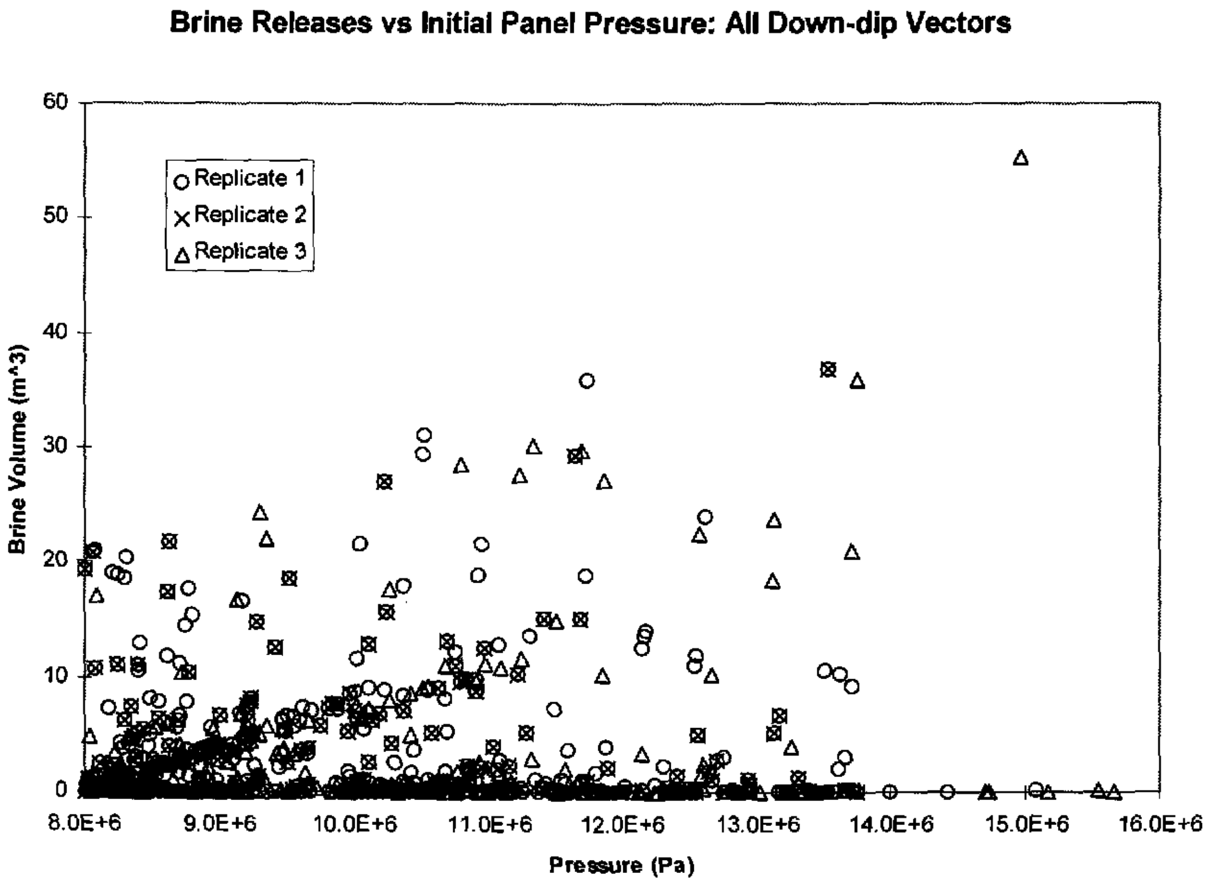


Figure 30 shows brine volume releases versus initial panel pressure for all down-dip brine blowout realizations.

Figure 30: Brine Releases vs. Initial Panel Pressure: All Down-dip Realizations



Note that although 5 realizations have initial panel pressures greater than 14.9 MPa, only one of these had a significant brine volume released (Realization L3S2H006 @ 55.3 m^3). To understand why this particular realization has a larger release than comparable realizations based on initial panel pressure can be determined by comparing the mobile water saturation ($Sw_{mobile} = Sw_{initial} - Sw_{residual}$) and mobile gas saturation ($Sg_{mobile} = Sg_{initial} - Sg_{critical}$) as shown in Table 15:

Table 15: Comparison of 5 Highest Realization's Initial Panel Pressure, Mobile Brine and Gas Saturations with Brine Volume Releases

Realization	$P_{initial}$ (Pa)	Sw_{mobile}	Sg_{mobile}	Brine Vol. (m^3)
L3S1K040	15.66E+06	0.092	0.851	0.026
L3S1L040	15.55E+06	0.131	0.812	0.102
L3S1I040	15.17E+06	0.112	0.831	0.053
L1S1L062	15.08E+06	0.101	0.510	0.141
L3S2H006	14.97E+06	0.475	0.156	55.300

Notice that realization L3S2H006 has the largest mobile water saturation and the smallest mobile gas saturation as compared to the other realizations with similar initial panel pressures. This implies that in addition to high initial panel pressure, the relative permeability of brine and gas flow (endpoints and shape of the relative permeability curves) plays an important role in determining the amount of brine which will be released. An optimal condition between mobile brine and mobile gas saturation exists for this specific realization to allow production of the brine from within the repository up the wellbore to the surface.

Figure 31 shows the brine volume releases versus initial brine saturation ($Sw_{initial}$) for all down-dip brine blowout realizations. The scatter in the data suggests that generally higher initial brine saturations result in higher brine volume releases. As was previously mentioned, however, initial brine saturation is not the only property which influences brine releases.

Figure 31: Brine Releases vs Initial Panel Saturation: All Down-dip Realizations

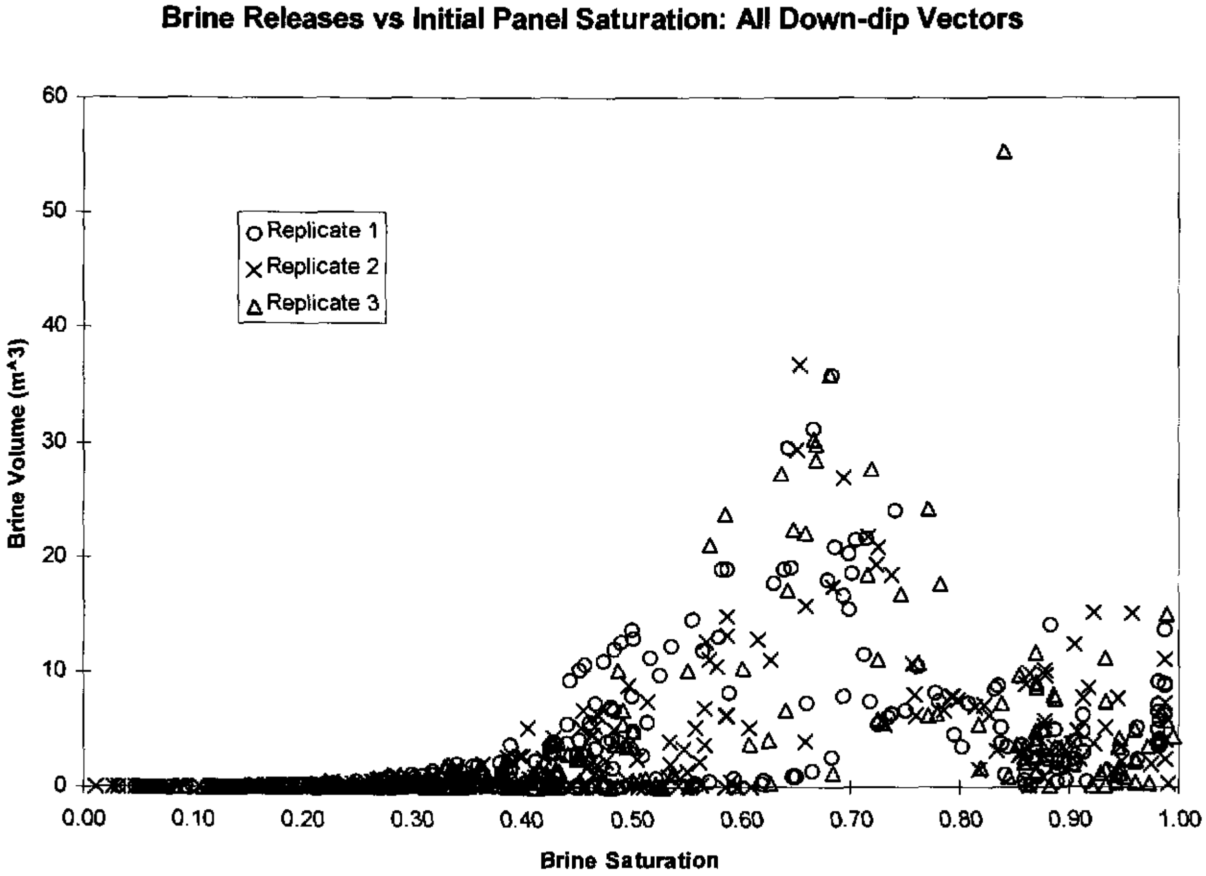


Figure 32 shows brine volume releases versus initial panel pressure for all up-dip brine blowout realizations. Again, initial panel pressure does not, in and of itself, determine the resultant behavior of brine releases.

Figure 32: Brine Releases vs Initial Panel Pressure: All Up-dip Realizations

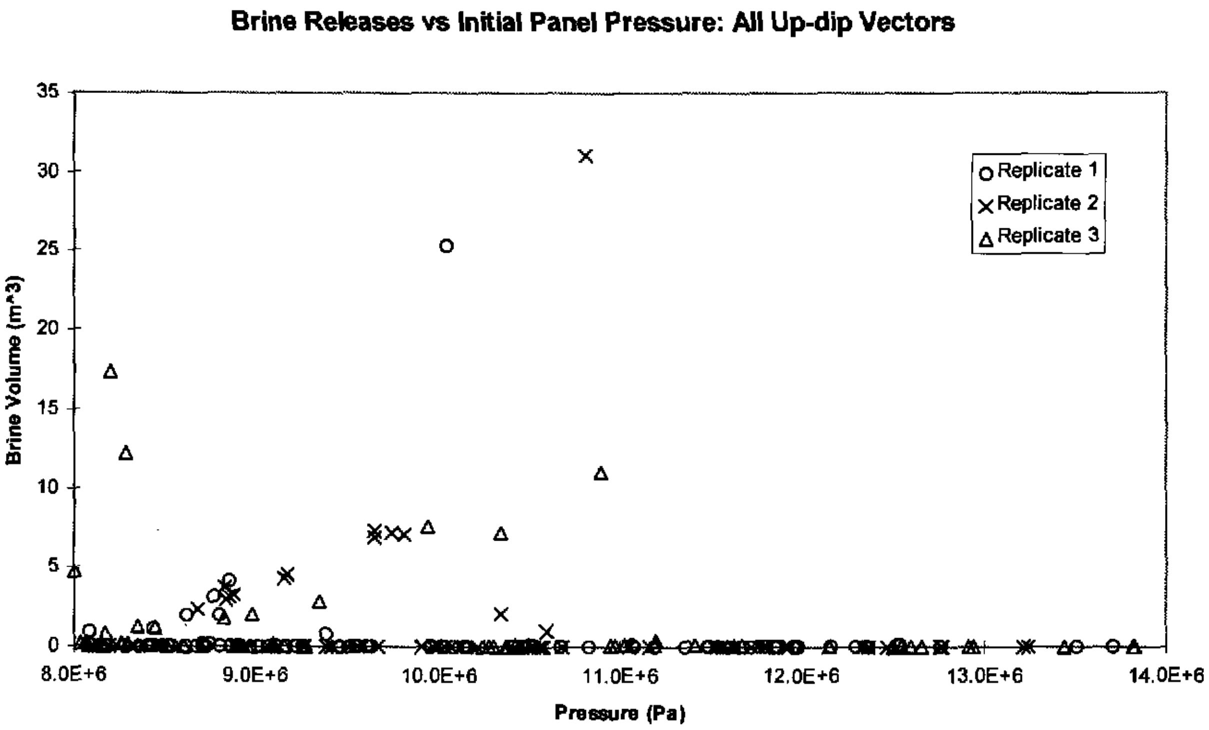


Figure 33 shows the brine volume releases versus initial brine saturation for all up-dip brine blowout realizations. As with the down-dip realizations, higher initial brine saturations generally result in higher brine volume releases. The gap between brine saturation between 0.65 to 0.85 is an artifact of the Latin Hypercube Sampling (LHS) technique.

Figure 33: Brine Releases vs Panel Saturation: All Up-dip Realizations

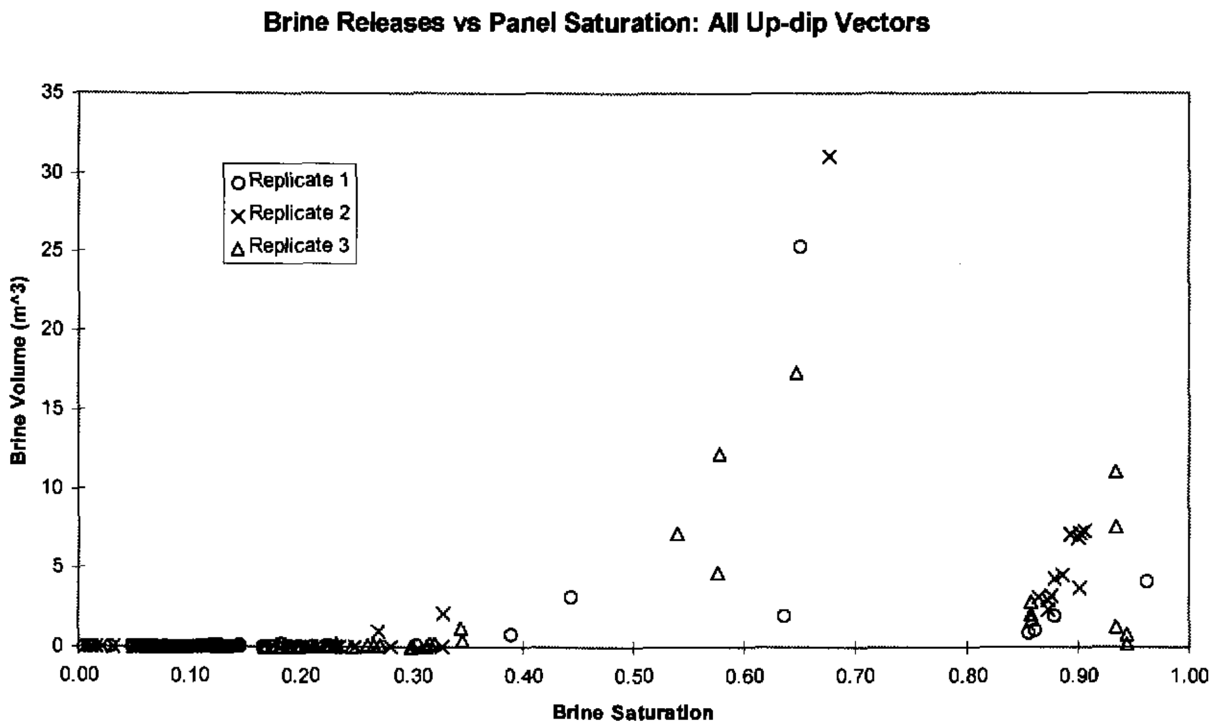


Figure 34 shows the brine volume releases versus residual brine saturation for all down-dip brine blowout realizations. A slight trend is observed that as the residual brine saturation increases, the amount of brine volume released decreases. The randomness along the x-axis reaffirms that the LHS sampling appears to capture the range for residual brine saturation between 0% and 55.2%.

Figure 34: Brine Releases vs Residual Brine Saturation: All Down-dip Realizations

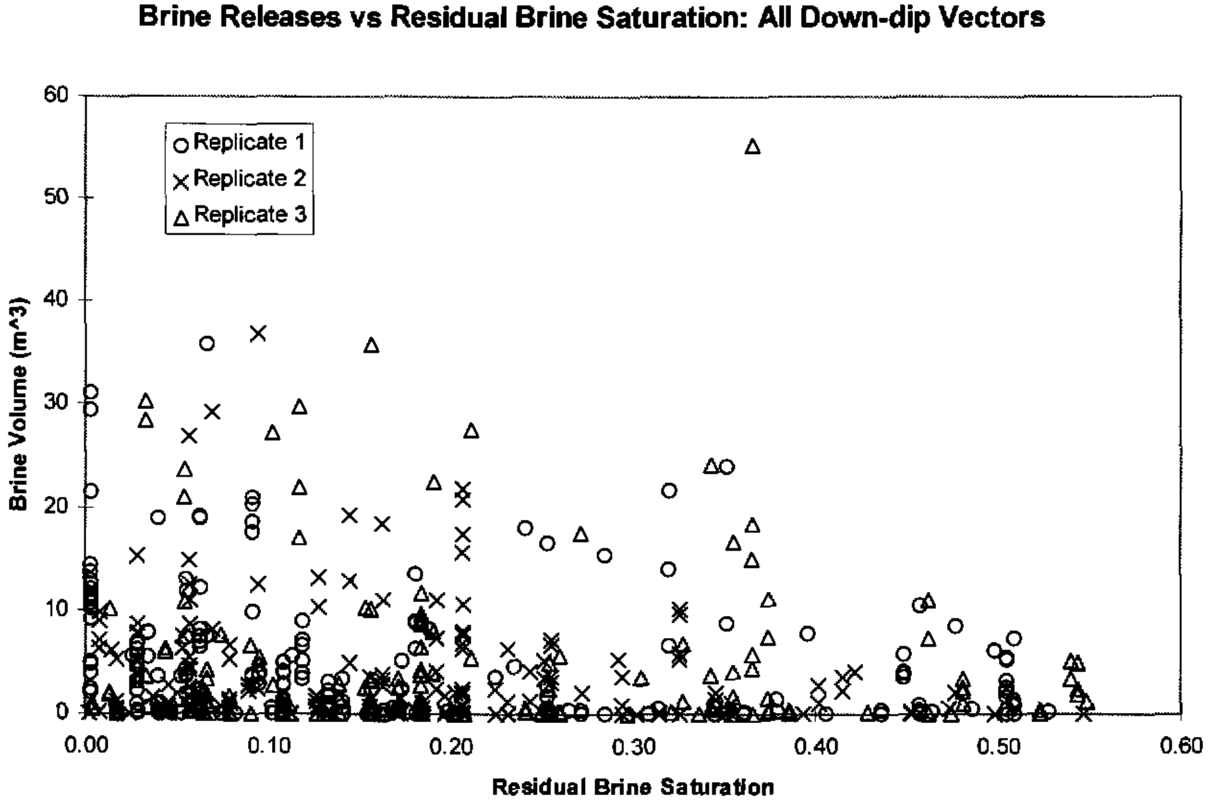


Figure 35 shows the brine volume releases versus critical gas saturation for all down-dip brine blowout realizations. No apparent trend is exhibited from this plot. The LHS sampling captured the range for critical gas saturation between 0% and 15%.

Figure 35: Brine Releases vs Residual Gas Saturation: All Down-dip Realizations

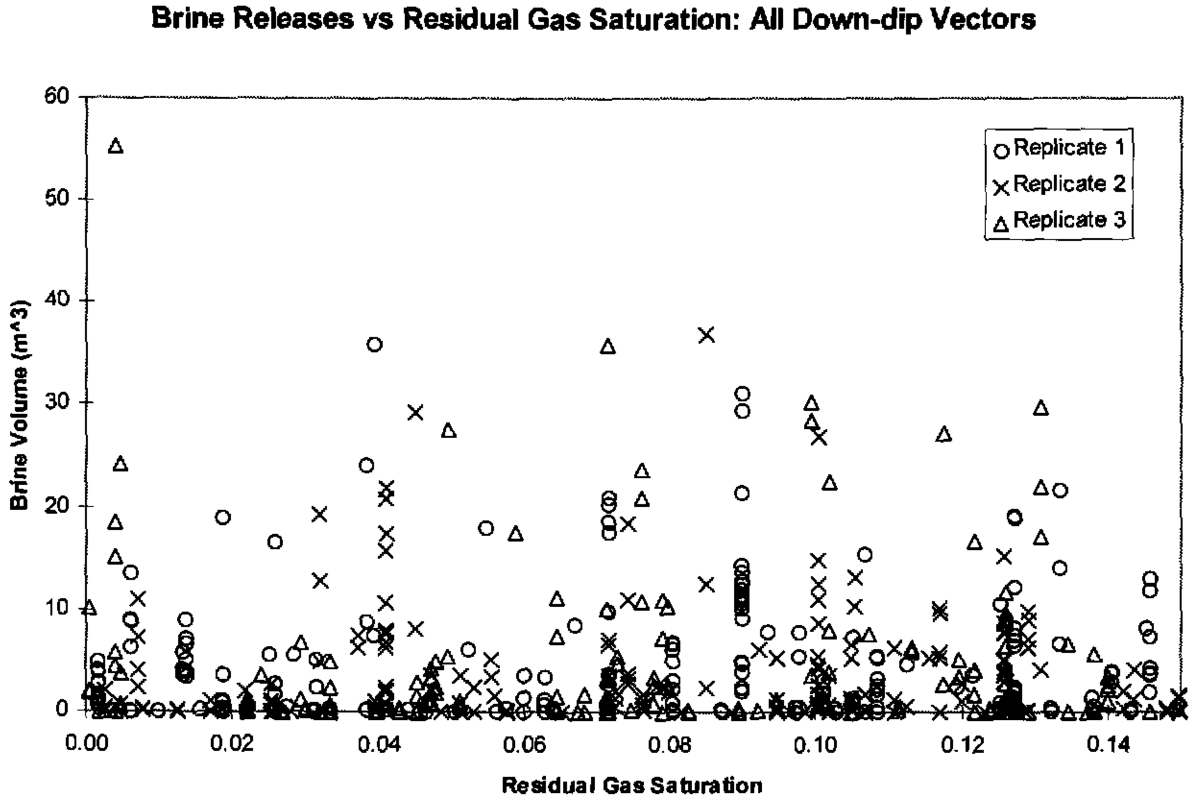


Figure 36 shows the brine volume releases versus mobile brine saturation for all down-dip brine blowout realizations. A slight trend is observed that as the mobile brine saturation increases, the amount of brine volume released increases. As discussed earlier, the limit to the amount of brine volume released based solely on mobile brine saturation is influenced by the initial brine pressure and the amount of mobile gas that competes with the brine to flow through the repository to the wellbore and once commingled in the wellbore, influences the ability of the brine to be brought to the surface by reducing the liquid density via gas-lift.

Figure 36: Brine Releases vs Mobile Brine Saturation: All Down-dip Realizations

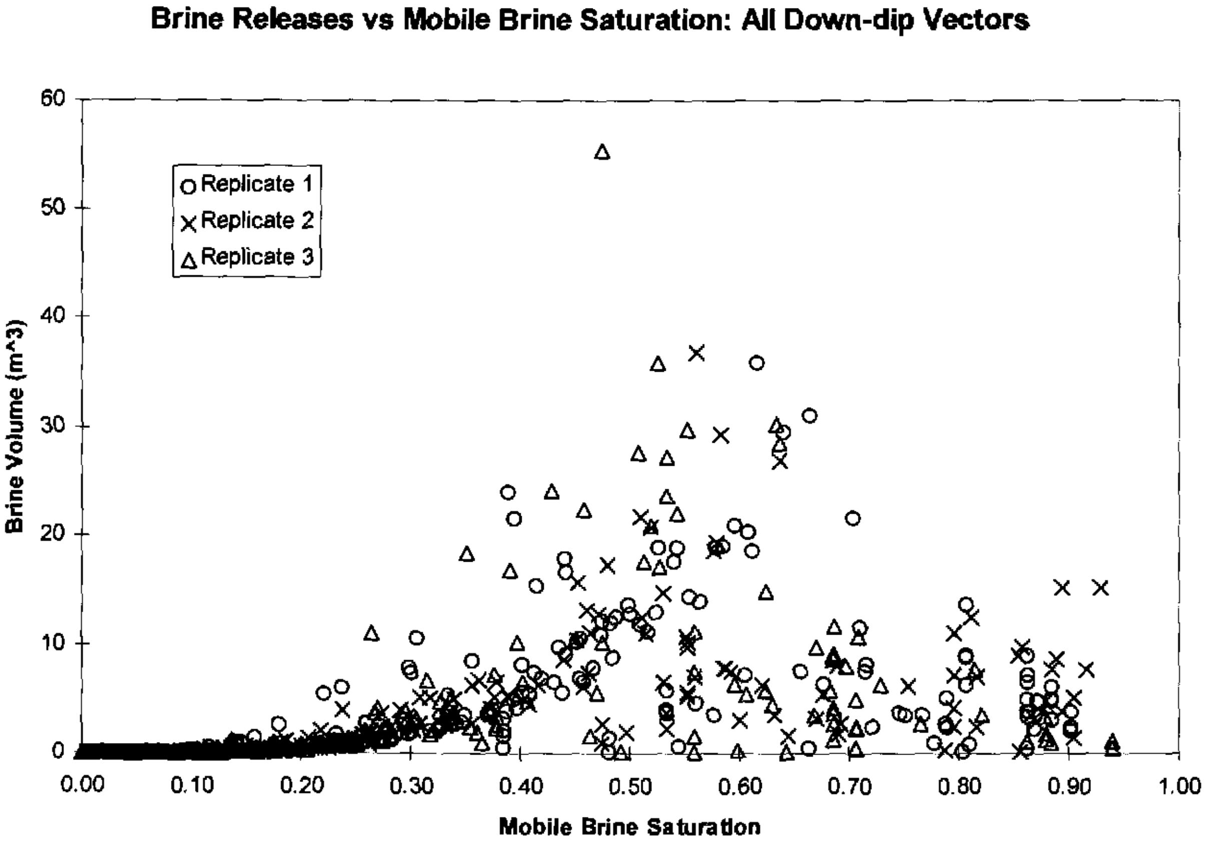


Figure 37 shows the brine volume releases versus mobile gas saturation for all down-dip brine blowout realizations. A slight trend is observed that as the mobile gas saturation increases, the amount of brine volume released decreases. Comparison of Figures 34 and 35 demonstrate the relative permeability effects of brine and gas on brine releases.

Figure 37: Brine Releases vs Mobile Gas Saturation: All Down-dip Realizations

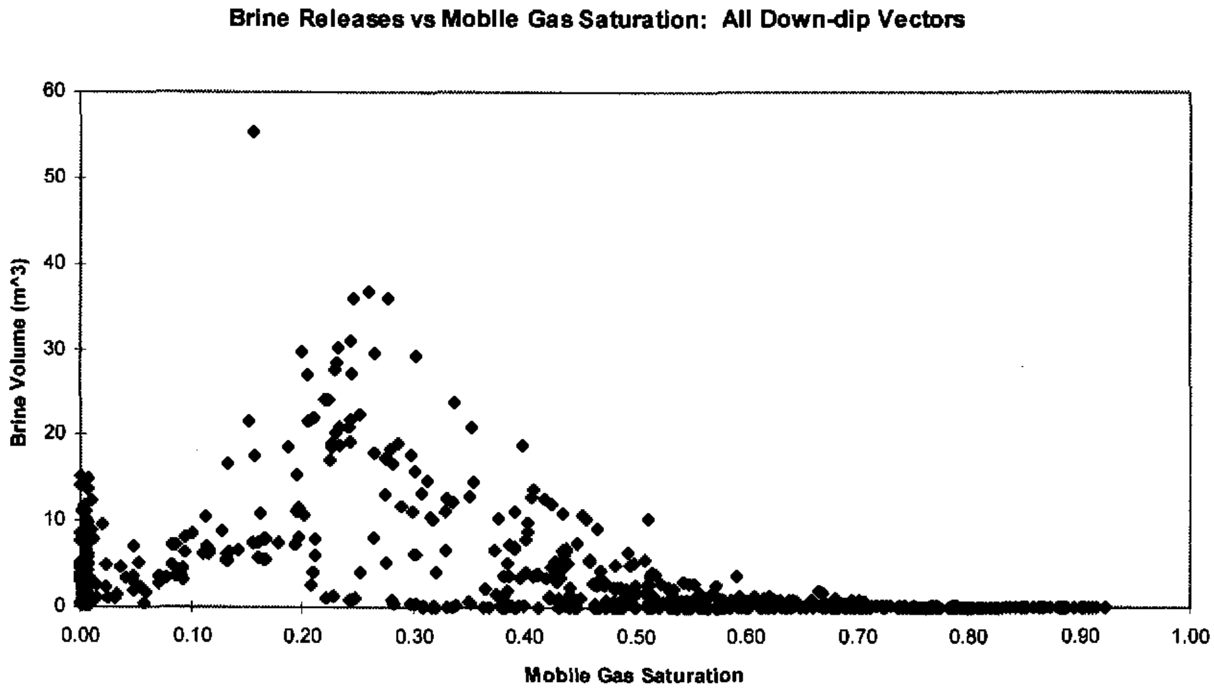


Figure 38 shows a comparison of flowing bottom hole pressure (FBHP) computations directly from the Poettmann-Carpenter correlation vs. the lookup functions which were used to compute FBHP in the CCA calculations for all down-dip brine blowout realizations (see Conceptual Model description for calculating flowing bottom hole pressure in Attachment 1 for a full discussion of the Poettmann-Carpenter methodology). A 45° line is drawn to show where the FBHP lookup function equals the FBHP obtained via correlation. The data is well constrained to the 45° line. Where points lie above the 45° line lower brine releases will result whereas where points lie below the 45° line, higher brine releases will result.

Figure 38: Comparison of Flowing Bottom Hole Pressures: All Down-dip Direct Release Realizations

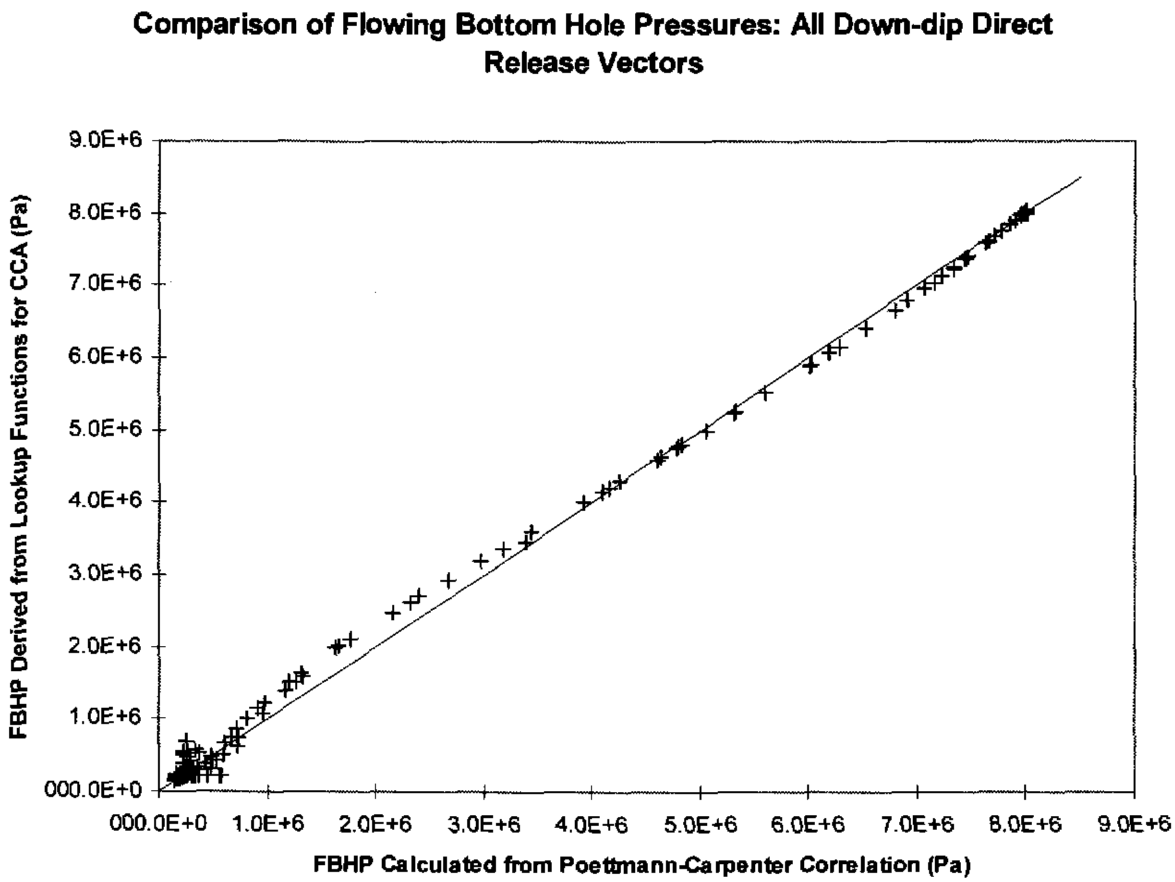
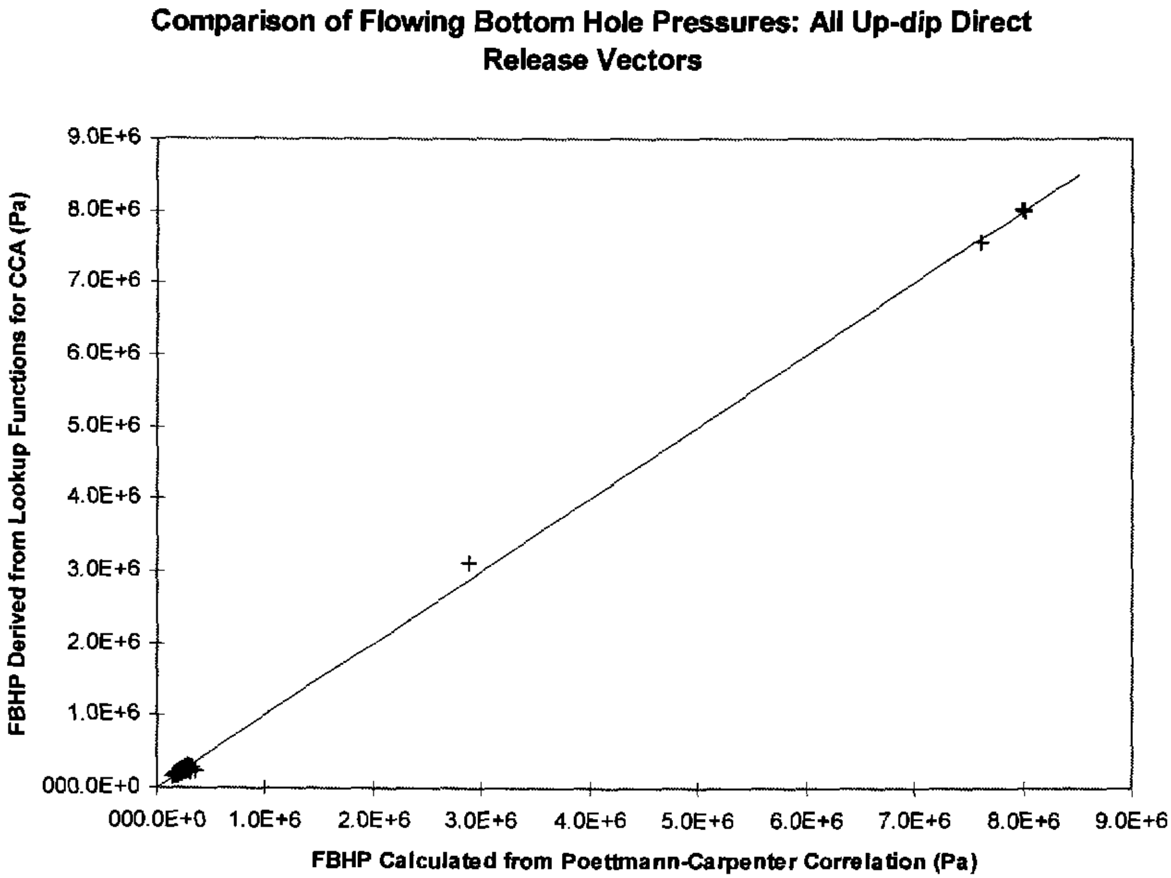


Figure 39 shows a comparison of flowing bottom hole pressure (FBHP) computations directly from the Poettmann-Carpenter correlation vs. the lookup functions which were used to compute FBHP in the CCA calculations for all up-dip brine blowout realizations (see Conceptual Model description for calculating flowing bottom hole pressure in Attachment 1 for a full discussion of the Poettmann-Carpenter methodology). A 45° line is drawn to show where the FBHP lookup function equals the FBHP obtained via correlation. The data is well constrained to the 45° line.

Figure 39: Comparison of Flowing Bottom Hole Pressures: All Up-dip Direct Release Realizations



Figures 40 through 57 show the brine and gas flowrates, pressure contours and flow vectors for each of the largest brine release realizations in Table 14. Also included for each series of plots are a description of the realization (from the file naming convention described in Section 3.1), and the cumulative brine released (taken from Appendix G). To illustrate, Figure 40 shows four plots for brine release realization L1S1L007. This realization is for a downdip, undisturbed intrusion @ 10,000 years in which the cumulative brine released during the 11 day blowout period is 36.02 m^3. The upper left diagram shows the brine rate (barrels brine/day) and the gas rate (thousand cubic feet per day). The upper right diagram is a contour plot in plan view (for the logical grid, i.e. not to scale) showing brine pressure in the repository surrounding the intruded wellbore at 6.92 days after the intrusion. The highest pressure is indicated by an asterisk and the lowest pressure by a dot. The lower left diagram shows for the plan view of the logical grid the vector plot of brine flow (m^3/sec) at 6.92 days after the intrusion. The lower right diagram shows for the plan view of the logical grid the vector plot of gas flow (m^3/sec) at 6.92 days after the intrusion.

Figure 40: Plots for Brine Release Realization L1S1L007

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Undisturbed, Intrusion @ 10,000 years, Cumulative Brine Released = 36.02 m^3

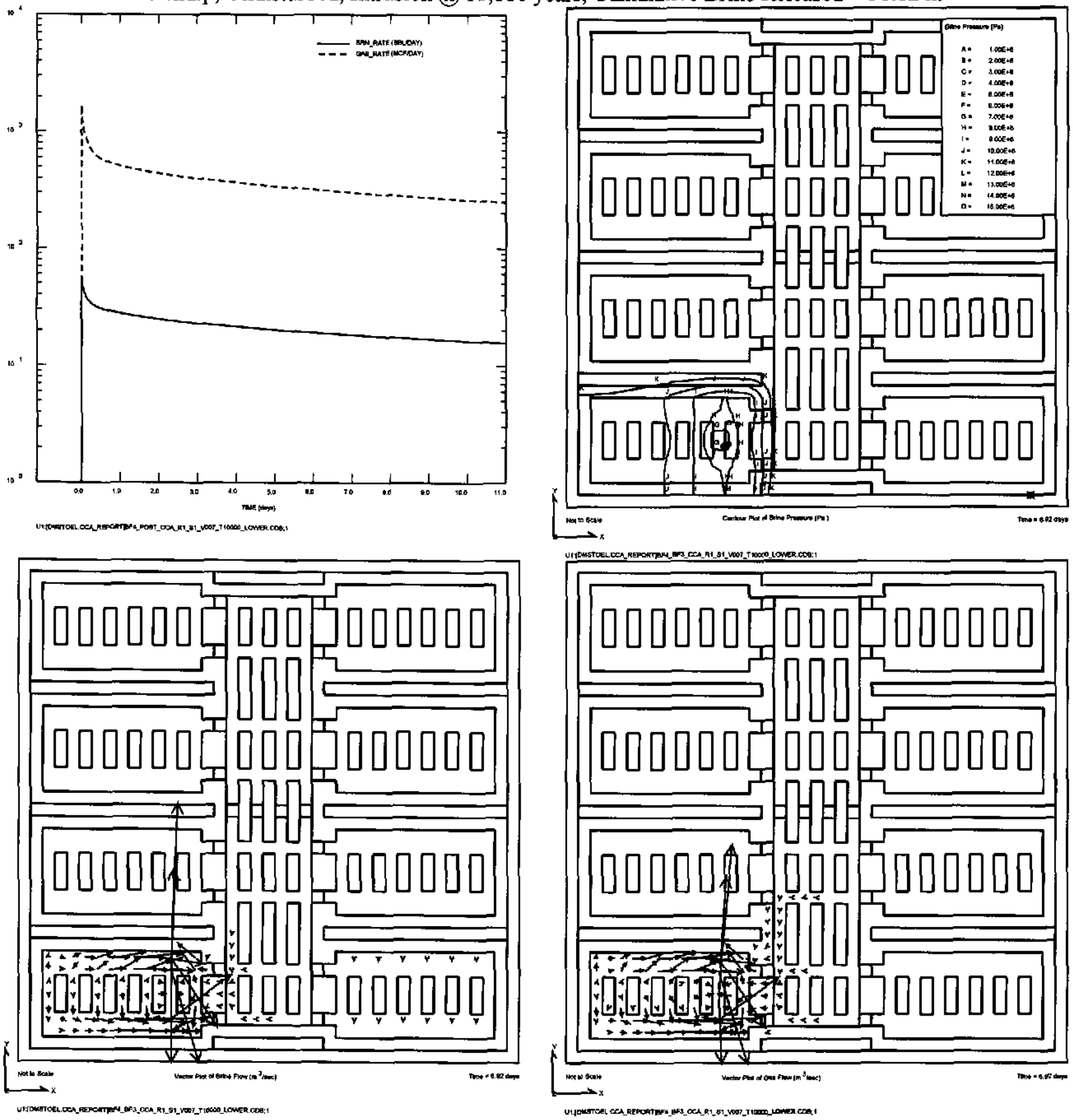


Figure 41: Plots for Brine Release Realization L1S2H046

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E1 @ 350 years, Intrusion @ 2,000 years, Cumulative Brine Released = 32.44 m^3

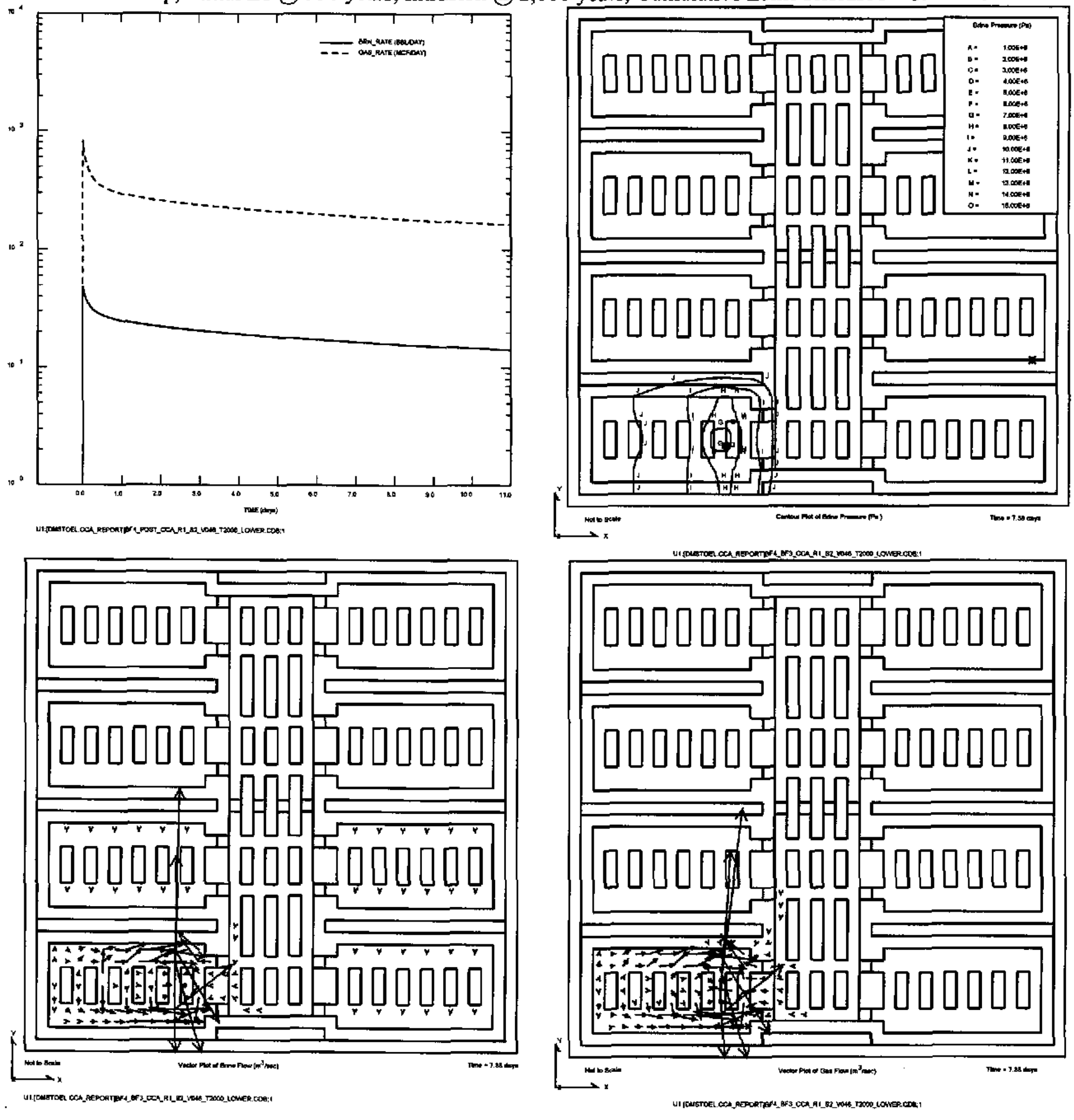


Figure 42: Plots for Brine Release Realization L1S3I046

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E1 @ 1000 years, Intrusion @ 3,000 years, Cumulative Brine Released = 22.92 m^3

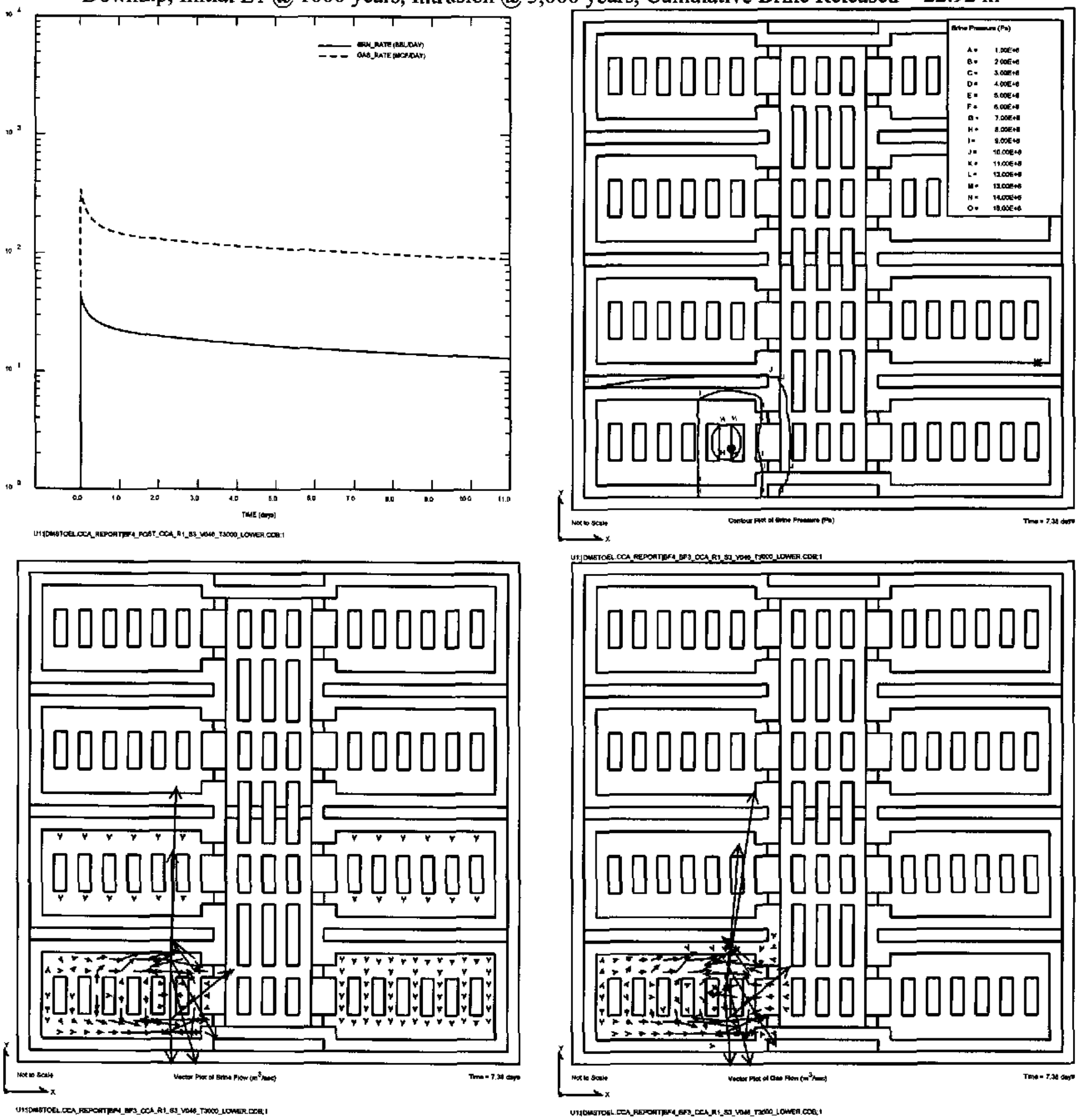


Figure 43: Plots for Brine Release Realization L1S4H046

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E2 @ 350 years, Intrusion @ 2,000 years, Cumulative Brine Released = 30.82 m^3

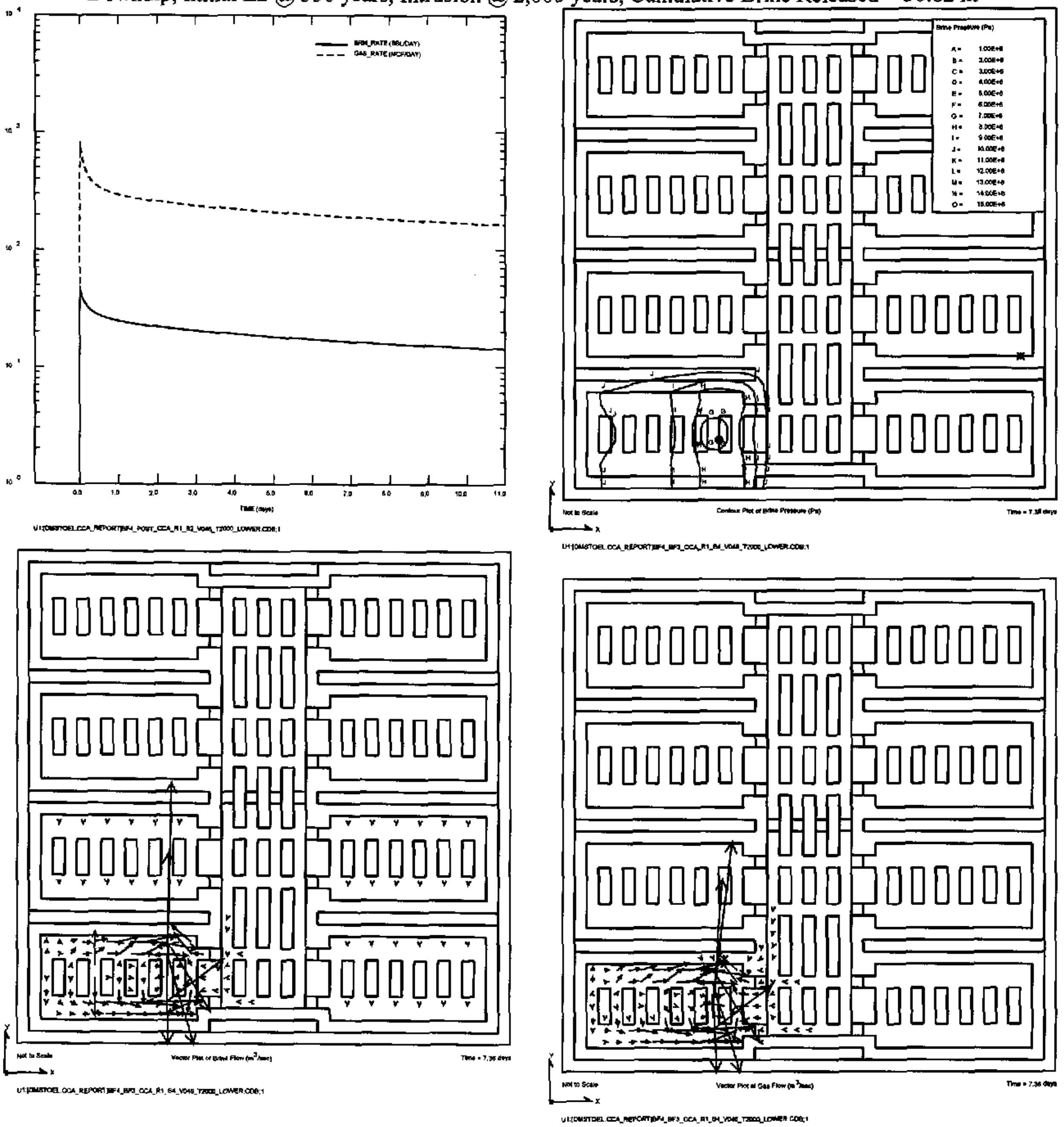


Figure 44: Plots for Brine Release Realization L1S5K005

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E2 @ 1000 years, Intrusion @ 5,000 years, Cumulative Brine Released = 21.85 m^3

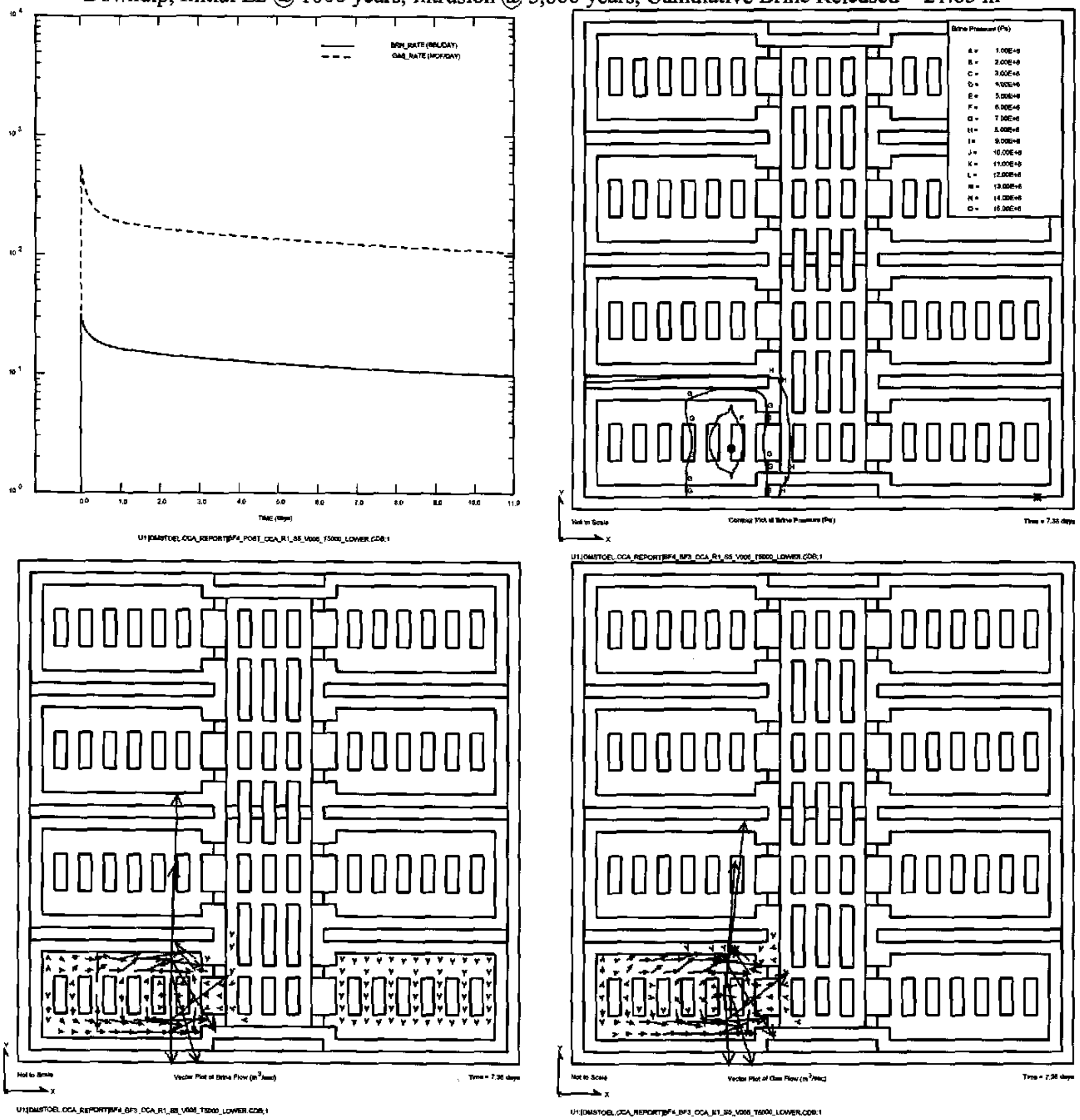


Figure 45: Plots for Brine Release Realization L2S1L024

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Undisturbed, Intrusion @ 10,000 years, Cumulative Brine Released = 37.85 m^3

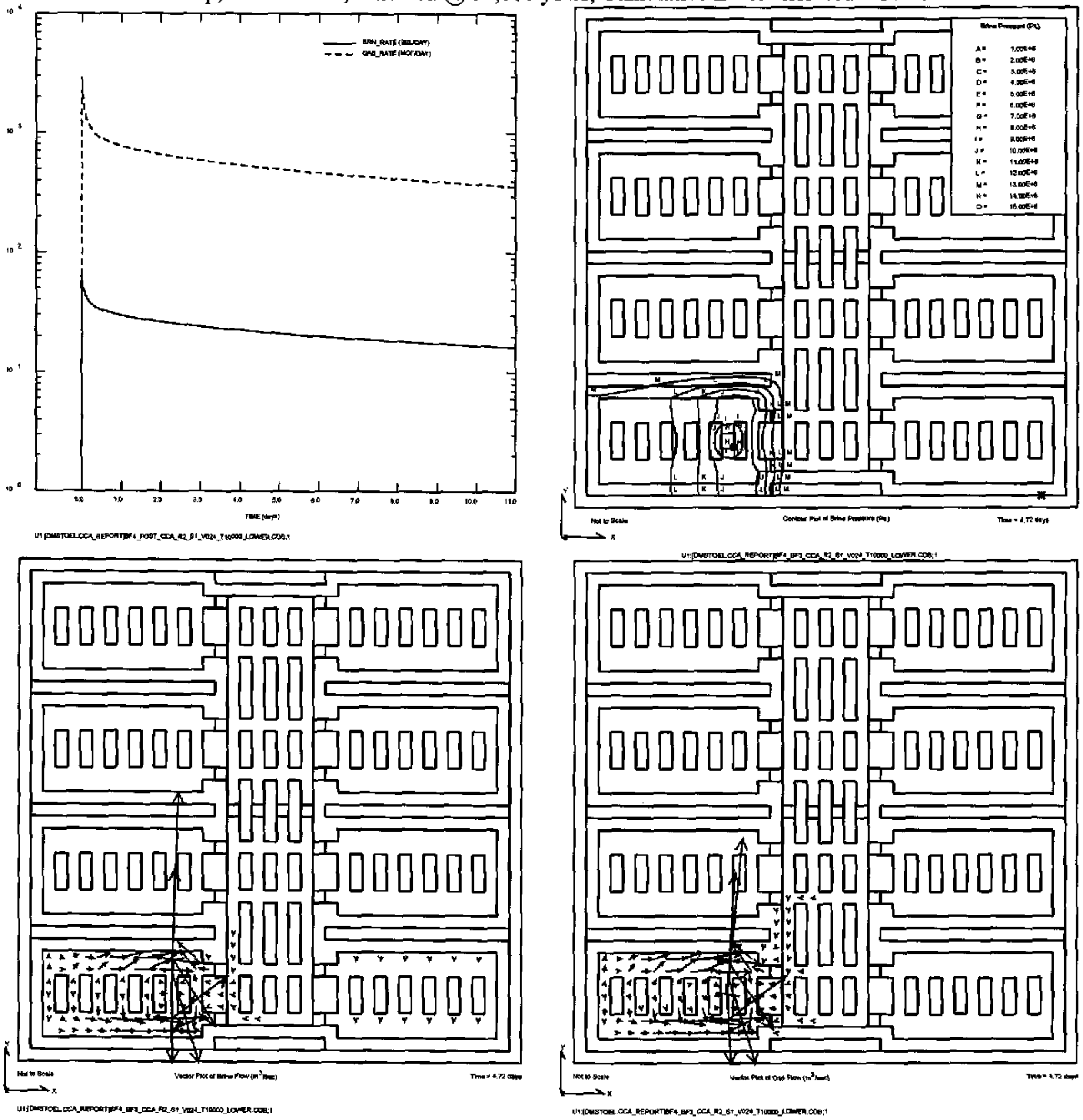


Figure 46: Plots for Brine Release Realization L2S2H051

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E1 @ 350 years, Intrusion @ 2,000 years, Cumulative Brine Released = 28.16 m^3

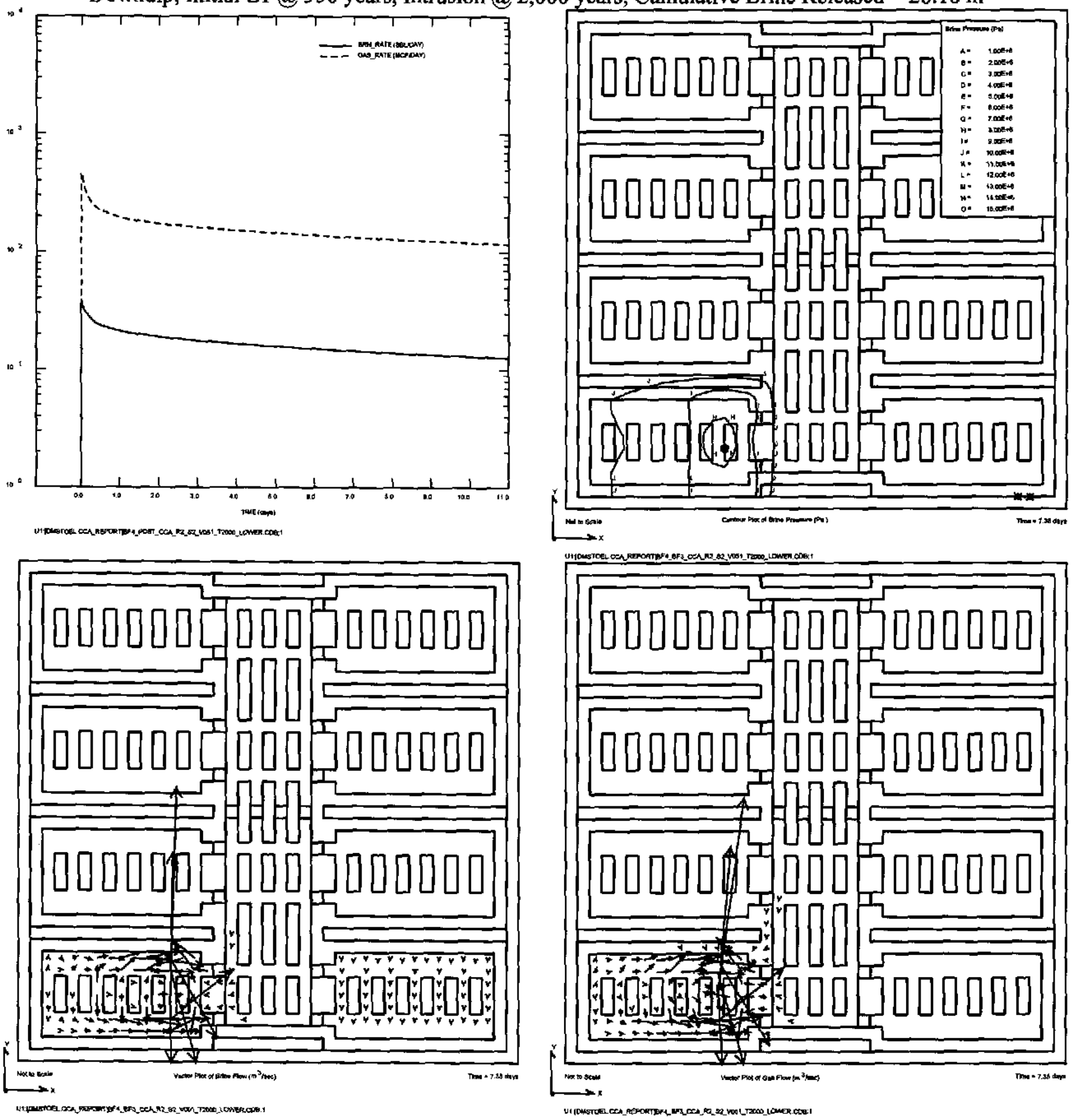


Figure 47: Plots for Brine Release Realization L2S3G033

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E1 @ 1000 years, Intrusion @ 1,400 years, Cumulative Brine Released = 22.73 m^3

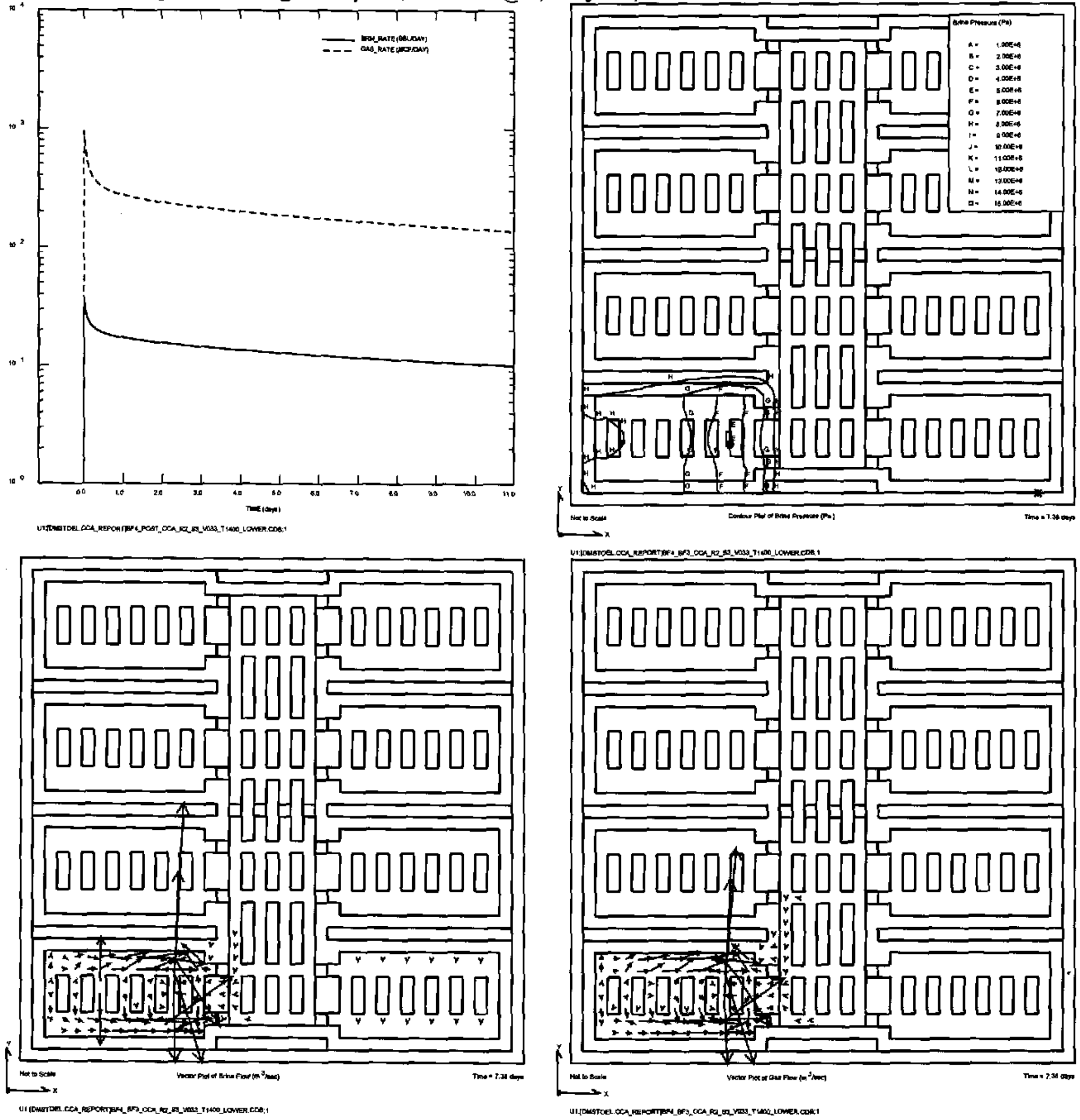


Figure 48: Plots for Brine Release Realization L2S4L033

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E2 @ 350 years, Intrusion @ 10,000 years, Cumulative Brine Released = 7.737 m^3

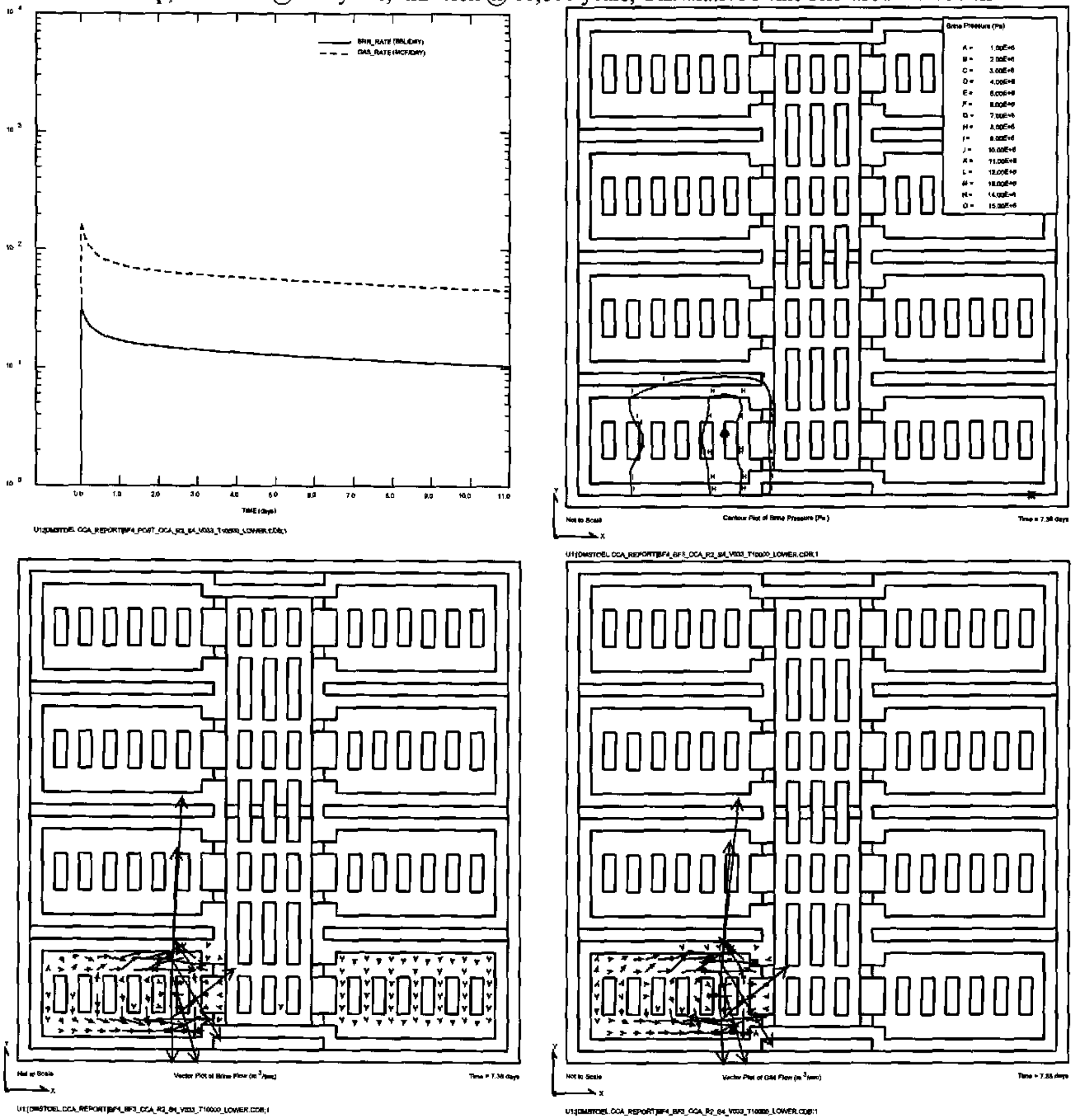


Figure 49: Plots for Brine Release Realization L2S5F033

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E2 @ 1000 years, Intrusion @ 1,200 years, Cumulative Brine Released = 21.76 m^3

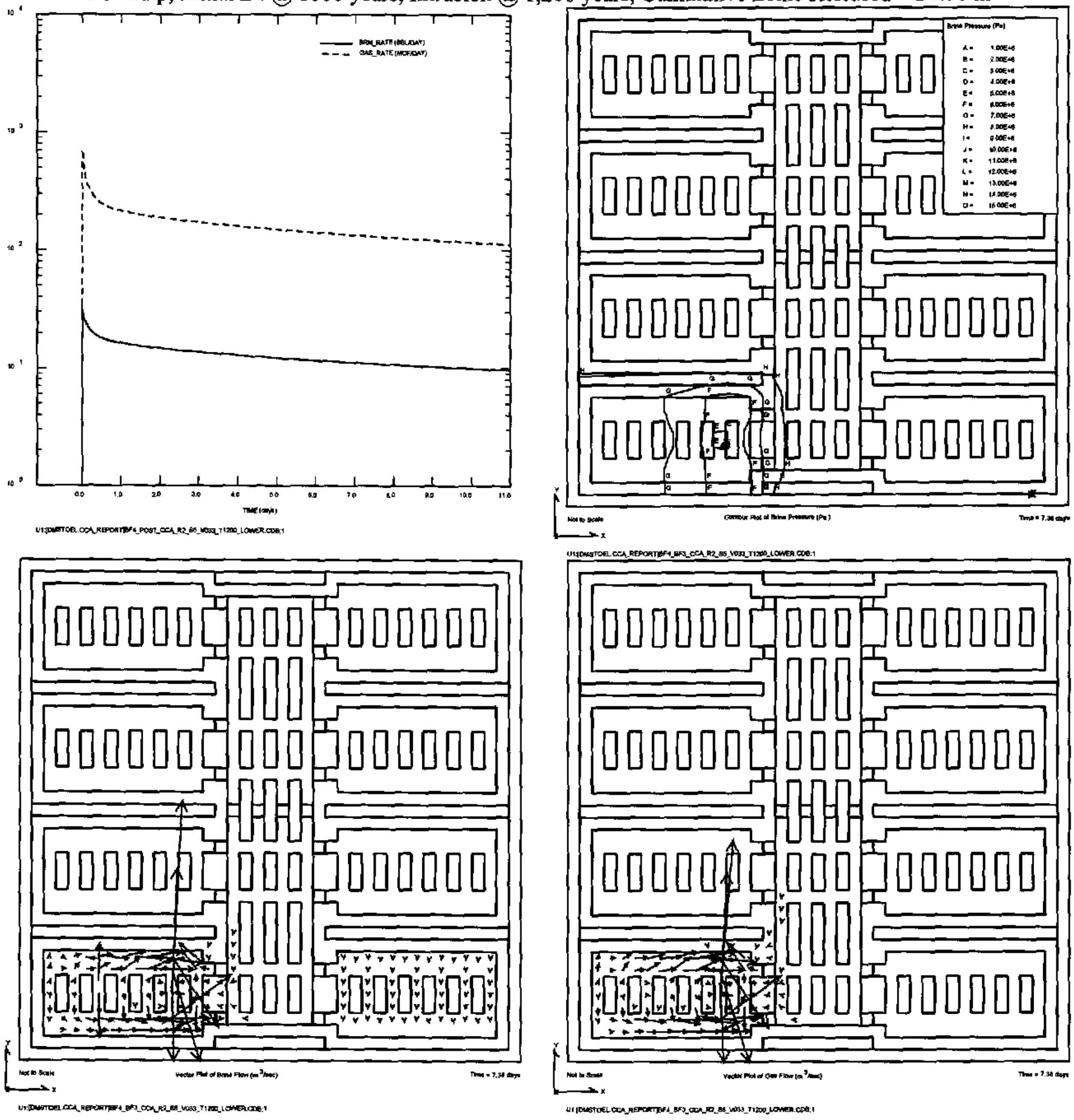


Figure 50: Plots for Brine Release Realization L3S1L082

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Undisturbed, Intrusion @ 10,000 years, Cumulative Brine Released = 36.48 m^3

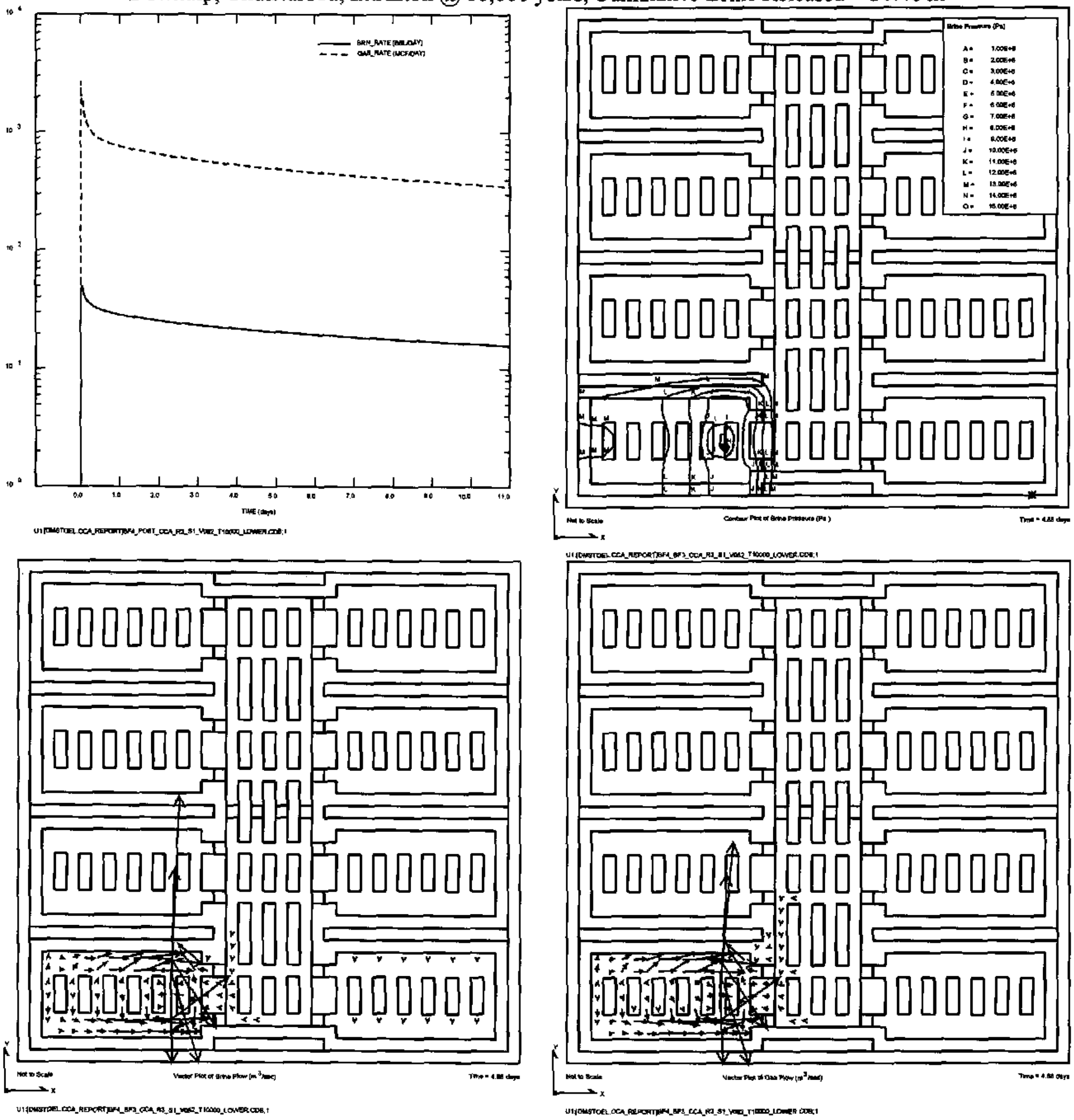


Figure 51: Plots for Brine Release Realization L3S2H006

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E1 @ 350 years, Intrusion @ 2,000 years, Cumulative Brine Released = 58.29 m^3

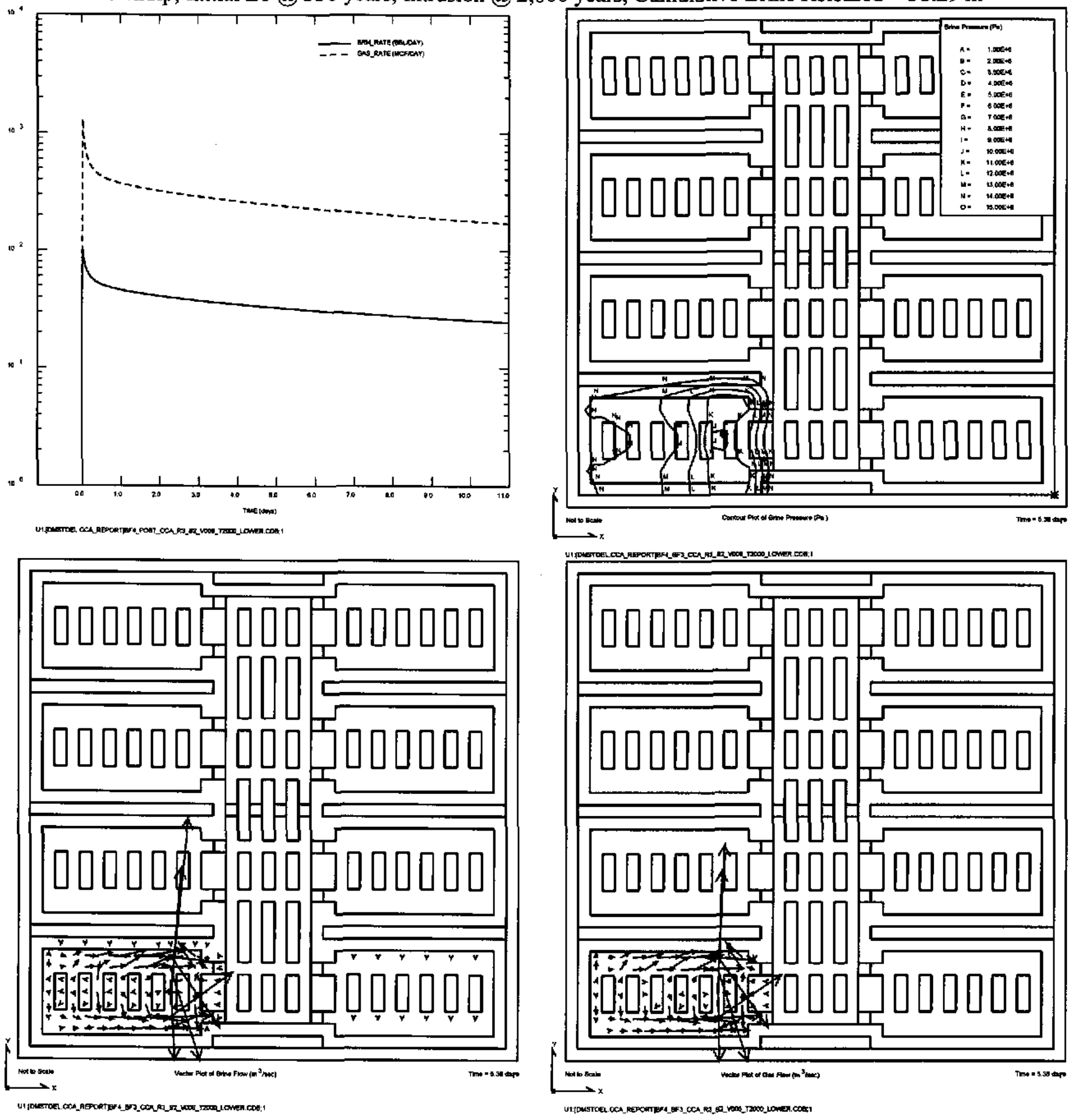


Figure 52: Plots for Brine Release Realization L3S3K083

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E1 @ 1000 years, Intrusion @ 5,000 years, Cumulative Brine Released = 9.908 m^3

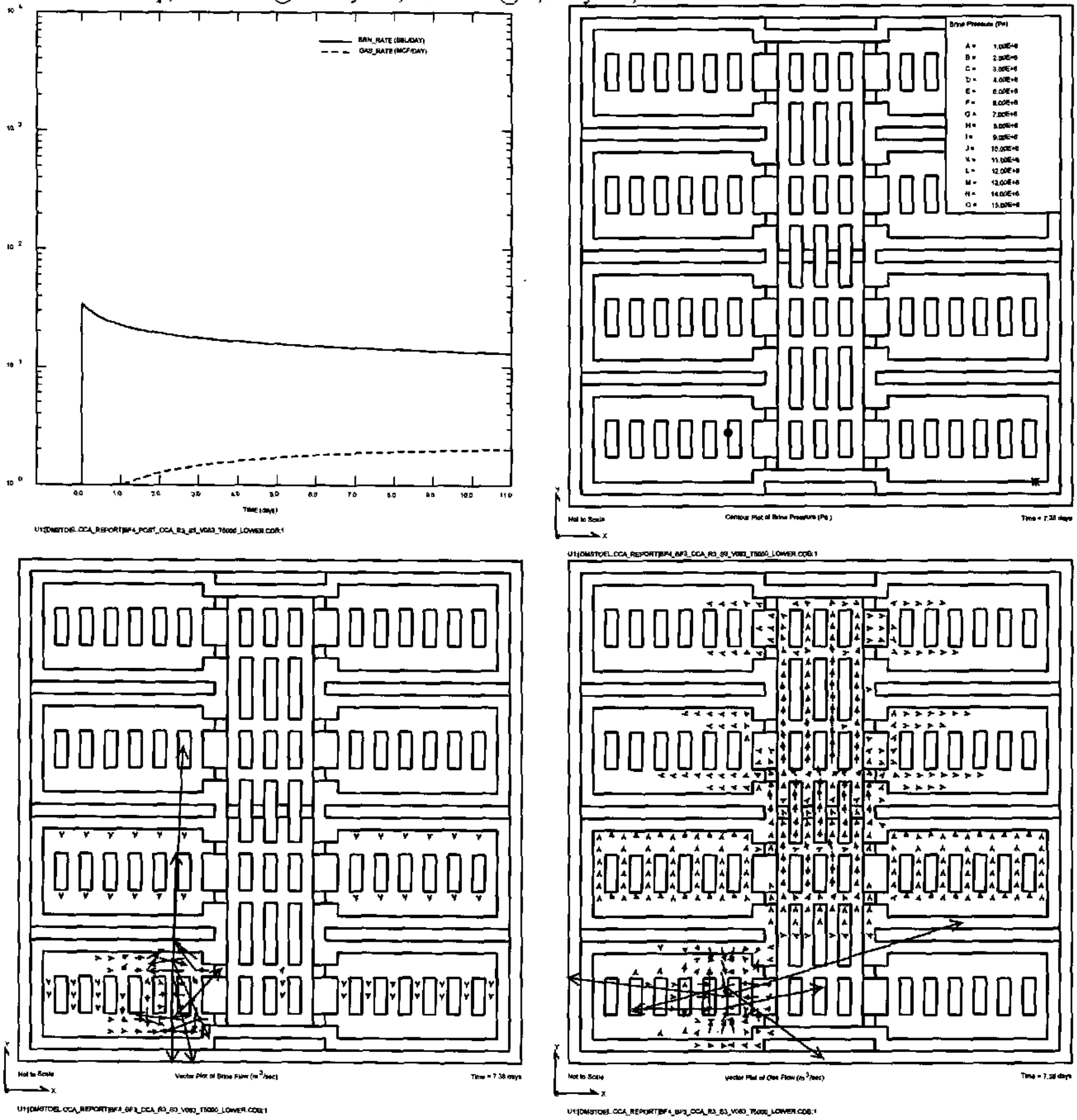


Figure 53: Plots for Brine Release Realization L3S4L083

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E2 @ 350 years, Intrusion @ 10,000 years, Cumulative Brine Released = 1.429 m^3

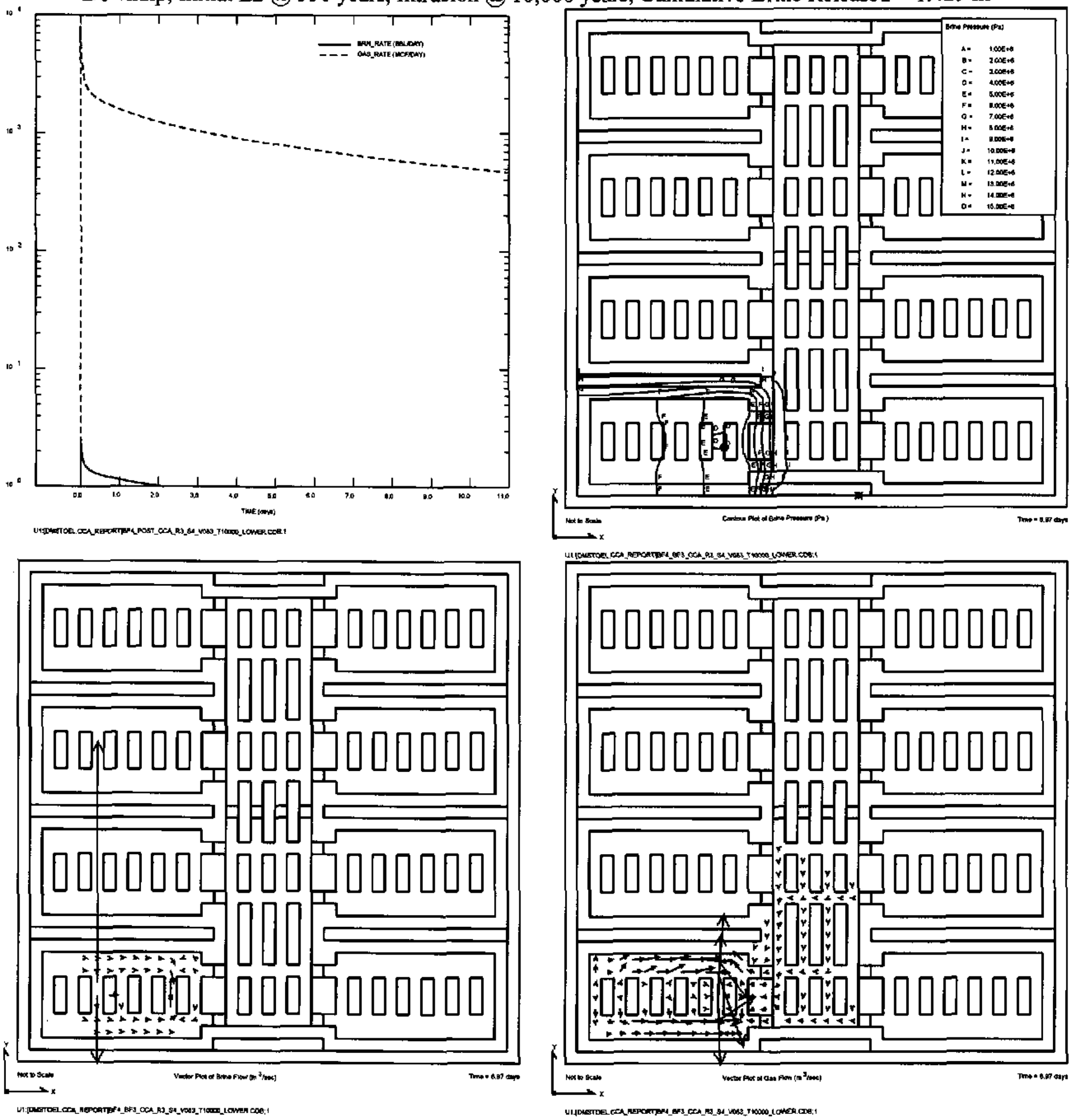


Figure 54: Plots for Brine Release Realization L3S5G082

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Downdip, Initial E2 @ 1000 years, Intrusion @ 1,400 years, Cumulative Brine Released = 3.551 m^3

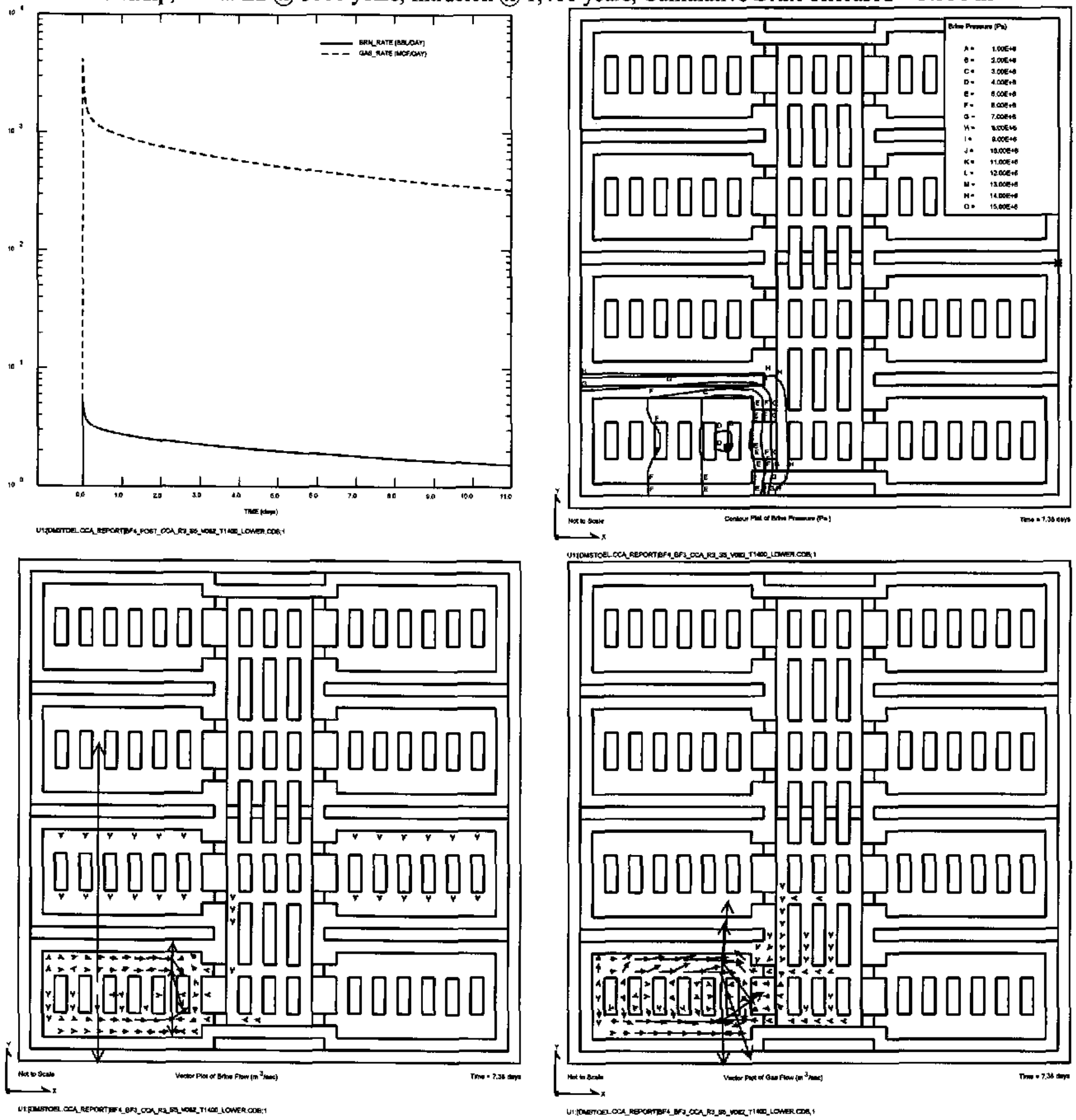


Figure 55: Plots for Brine Release Realization U1S2J049

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Updip, Initial E1 @ 350 years, Intrusion @ 4,000 years, Cumulative Brine Released = 26.54 m^3

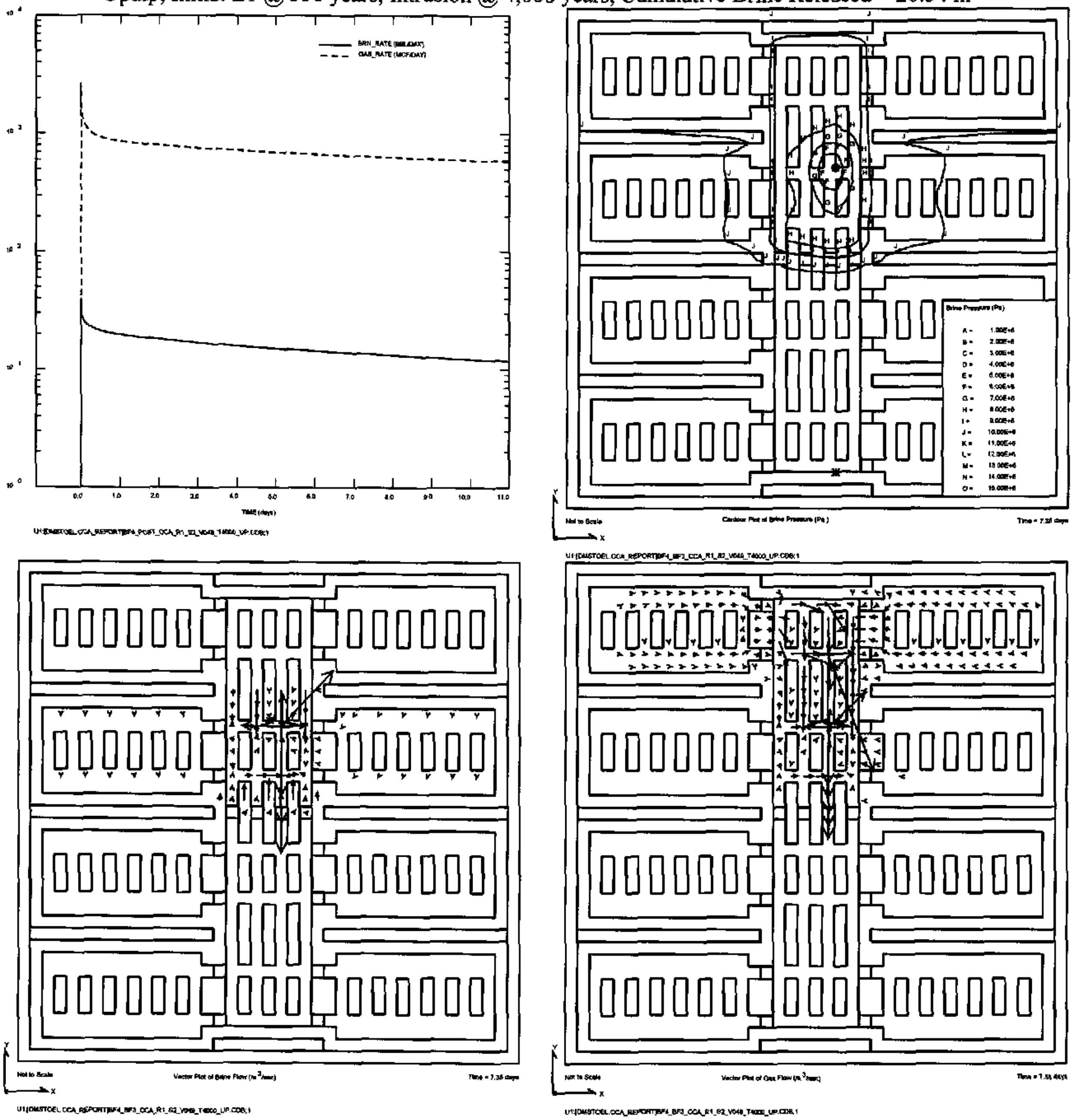


Figure 56: Plots for Brine Release Realization U2S2H074

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Updip, Initial E1 @ 350 years, Intrusion @ 2,000 years, Cumulative Brine Released = 32.63 m^3

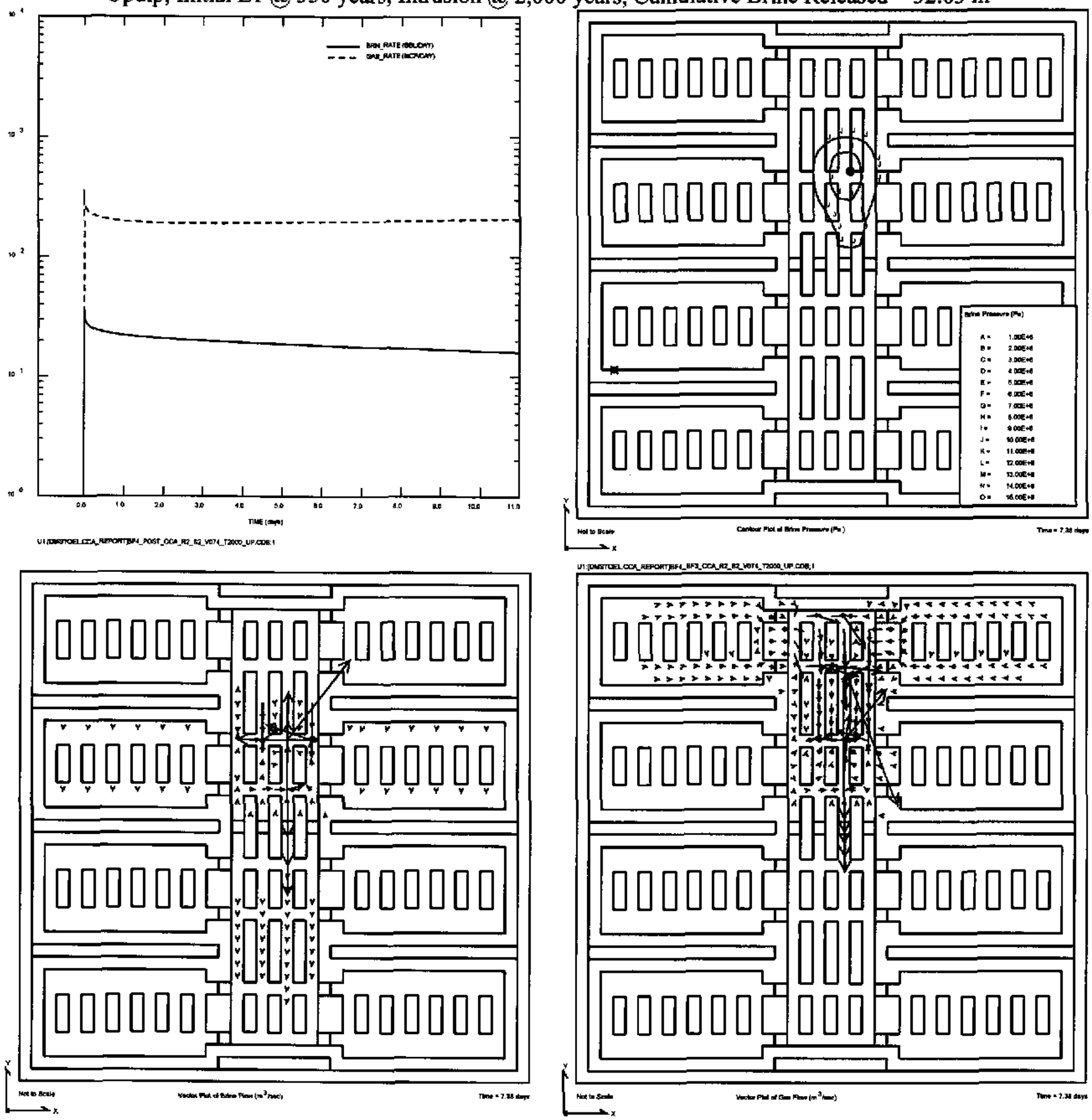
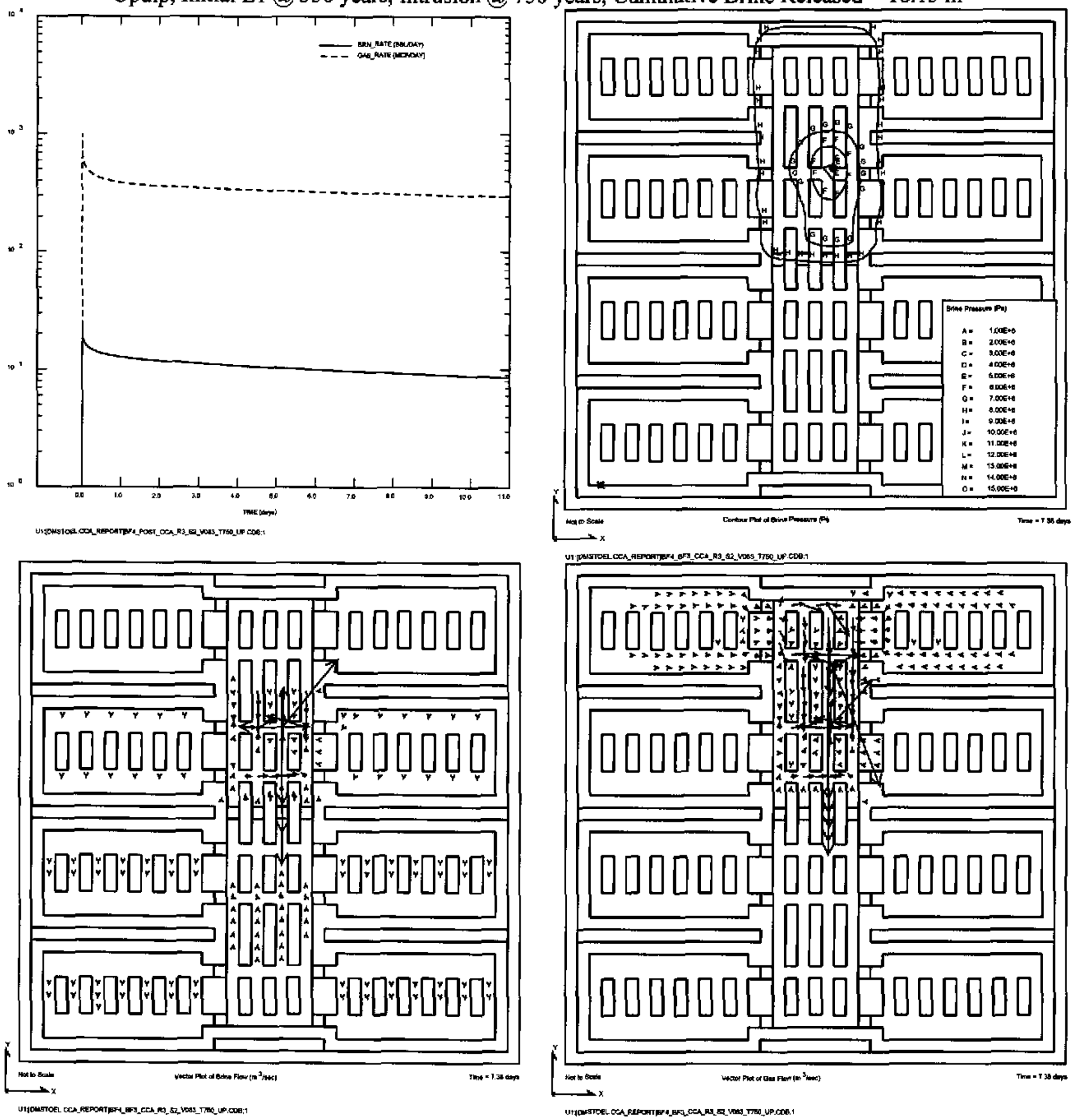


Figure 57: Plots for Brine Release Realization U3S2D083

Brine & Gas Flowrates, Pressure Contours and Flow Vectors

Updip, Initial E1 @ 350 years, Intrusion @ 750 years, Cumulative Brine Released = 18.15 m^3



10.1. Bibliography

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2. [Brill, Beggs, 1986]: Brill, James, P. and Beggs, H. Dale, Two-Phase Flow in Pipes, Fifth Edition, first printing, published by University of Tulsa, 1986, pp. 3-2 and 3-73, 3-74.

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11.0. Documentation of any changes that occurred during the performance of the analysis and the reasons for the changes

The only deviation from the original analysis plan. Subtask 3 (start of calculations) was to be initiated on June 6, 1996. The direct brine release calculations started June 8, 1996. Subtask 4 (supply brine release output to CCDF) and Subtask 5 (begin technical review) were to commence on June 24, 1996. Both Subtasks were initiated at a later date.

SI Metric Conversion Factors

inch	X 2.54*	E+00	=	cm
ft	X 3.048*	E-01	=	m
mile	X 1.609344*	E+00	=	km
$inch^3$	X 1.6387	E+02	=	cm^3
lb/ft^3	X 1.602	E-02	=	g/cm^3
psi	X 6.894757	E+00	=	kPa
gal	X 3.785	E+00	=	L
bbl	X 1.589873	E-01	=	m^3
md	X 9.869233	E-16	=	m^2
bbl/MMscf	X 5.614583	E-06	=	m^3/m^3
°F	(°F - 32)/1.8		=	°C
°C	+ 2.7316	E+02	=	K

* Conversion factor is exact.

Appendix A: Source Code Listing for BLOWOUT_SUMM_PROPS.FOR

```
        Program BLOWOUT_SUMM_PROPS
C This program will generate the necessary SUMMARIZE.INP files needed to
C access the blowout .CDB's, to create text files for the analysis
    dimension iscen(7,12)
        character*78 txtln(50)
        character*35 namestr
        character*12 outfile
        character*12 newfile
        character*5 base
        character*30 disk
        character*40 direct
        character*5 time_id(12)
        character*5 locat(2)
        character*1 name_id(2)
        character*1 repnum(3)
        character*1 scennum(7)
        character*1 id_out(12)
C Define Variables
    disk='DISK$BONNIE_CCA2'
    direct='BLOWOUT.DATA'
        DATA (time_id(j), j=1,12) /'100','350','550','750','1000',
   1 '1200','1400','2000','3000','4000','5000','10000'/
    DATA (locat(j), j=1,2) /'LOWER','UP'/
        DATA (name_id(j), j=1,2) /'L','U'/
        DATA (id_out(j), j=1,12) /'A','B','C','D','E','F','G','H',
   1 'I','J','K','L'/
        DATA (repnum(j), j=1,3) /'1','2','3'/
        DATA (scennum(j), j=1,5) /'1','2','3','4','5'/
        DATA ((iscen(i,j), j=1,12),i=1,5) /1,1,0,0,1,0,0,0,1,0,1,1,
   1                     0,0,1,1,0,0,0,1,0,1,0,1,
   1                     0,0,0,0,0,1,1,0,1,0,1,1,
   1                     0,0,1,1,0,0,0,1,0,1,0,1,
   1                     0,0,0,0,0,1,1,0,1,0,1,1/
C Define hardwired text lines prior to going into loops
        txtln(1)= '*INPUT FILES'
        txtln(2)= ' DISK='//disk
        txtln(3)= ' TYPE=CDB'
        txtln(4)= ' EXTENSION=CDB'
C
C       txtln(5)=  DIRECTORY PATH: DONE INSIDE LOOPS
C       txtln(6)=  FILE NAME: DONE IN LOOPS
C
        txtln(7)= '*VECTORS'
        txtln(8)= ' ID=#'
        txtln(9)= ' VECTORS= 1 TO 100'
        txtln(10)='*SCENARIO'
        txtln(11)=' ID=%'
C
C       txtln(12)=  Define scenario time inside loop
C
        txtln(13)='*OUTPUT FILES'
        txtln(14)=' DRIVER=EXCEL'
        txtln(15)=' WRITE=VECTOR VS ITEM'
        txtln(16)=' SINGLE FILE'
C
C       txtln(17)=  OUTPUT FILE: DONE IN LOOPS
C
        txtln(18)='!'
```

```
         txtln(19)=' EXTENSION=TBL'
C  ONLY FIRST STEP NEEDED FOR PROPERTIES
         txtln(20)='*TIMES'
         txtln(21)=' STEPS=1'
         txtln(22)='!'
         txtln(23)='!'
         txtln(24)='!'
         txtln(25)='*ITEMS'
         txtln(26)=' TYPE=PROPERTY'
         txtln(27)=' NUMBER=1'
         txtln(28)=' NAMES=POROSITY,SAT_RGAS,SAT_RBRN,HEIGHT,&'
         txtln(29)=' PRESPAN2,BSATPAN2,PRESPAN4,BSATPAN4'
         txtln(30)=' TYPE=PROPERTY'
         txtln(31)=' NUMBER=7'
         txtln(32)=' NAMES=INTR_TME,SKIN,WELLPI,PRM_SAND,AREA_TOT,'//
   1          'CAST_RE,&'
     txtln(33)=' PRM_CAST,KRW2,KRG2,KRW4,KRG4,FBHP2,FBHP4,BHP_ABAN'
         txtln(34)='*END'
C  BEGIN LOOPING TO GENERATE ALL FILES
      DO 10 irep=1,3
       DO 20 isn=1,5
        DO 30 itme=1,12
         IF (iscen(isn,itme) .EQ. 1) THEN
          DO 40 iloc=1,2
           base=name_id(iloc)//repnum(irep)//'S'//
   1          scennum(isn)//id_out(itme)
           newfile=base//'PRP.INP'
           outfile=base//'PRP.EXT'
C            write (*,*) outfile
           namestr='BF4_BF3_CCA_R'//repnum(irep)//'_S'//
   1            scennum(isn)//'_V###_T%_'//locat(iloc)
           ispace=INDEX(direct,' ')
           txtln(5)=' DIRECTORY=['//direct(1:ispace-1)//'.R'//
   1            repnum(irep)//'S'//scennum(isn)//']'
           txtln(6)=' TEMPLATE='//namestr
           txtln(12)=' SCENARIO='//time_id(itme)
           txtln(17)=' NAME='//outfile
C
C  NOW WRITE TEXT LINES TO OUTPUT FILE
           OPEN(unit=11,file=newfile,status='new')
           DO 50 IJ=1,34
              WRITE(11,*) txtln(IJ)
50          CONTINUE
           CLOSE(11)
40         CONTINUE
         END IF
30       CONTINUE
20      CONTINUE
10     CONTINUE
         END
```

Appendix B: Source Code Listing for BLOWOUT_SUMM_HISTORY.FOR

```
      Program BLOWOUT_SUMM_HISTORY
C  This program will generate the necessary SUMMARIZE.INP files needed to
C  access the blowout .CDB's, to create text files for the analysis.  The
C  resulting text files will be used to generate "hairplots" in PC land
     dimension iscen(7,12)
      character*78 txtln(50)
      character*35 namestr
      character*10 outfile
      character*9 newfile
      character*5 base
      character*30 disk
      character*40 direct
      character*5 time_id(12)
      character*5 locat(2)
      character*1 name_id(2)
      character*1 repnum(3)
      character*1 scennum(7)
      character*1 id_out(12)
C  Define Variables
     disk='DISK$BONNIE_CCA2'
     direct='BLOWOUT.DATA'
      DATA (time_id(j), j=1,12) /'100','350','550','750','1000',
   1 '1200','1400','2000','3000','4000','5000','10000'/
     DATA (locat(j), j=1,2) /'LOWER','UP'/
      DATA (name_id(j), j=1,2) /'L','U'/
      DATA (id_out(j), j=1,12) /'A','B','C','D','E','F','G','H',
   1 'I','J','K','L'/
      DATA (repnum(j), j=1,3) /'1','2','3'/
      DATA (scennum(j), j=1,5) /'1','2','3','4','5'/
      DATA ((iscen(i,j), j=1,12),i=1,5) /1,1,0,0,1,0,0,0,1,0,1,1,
   1                   0,0,1,1,0,0,0,1,0,1,0,1,
   1                   0,0,0,0,0,1,1,0,1,0,1,1,
   1                   0,0,1,1,0,0,0,1,0,1,0,1,
   1                   0,0,0,0,0,1,1,0,1,0,1,1/
C  Define hardwired text lines prior to going into loops
      txtln(1)= '*INPUT FILES'
      txtln(2)= ' DISK='//disk
      txtln(3)= ' TYPE=CDB'
      txtln(4)= ' EXTENSION=CDB'
C
C     txtln(5)=   DIRECTORY PATH: DONE INSIDE LOOPS
C     txtln(6)=   FILE NAME: DONE IN LOOPS
C
      txtln(7)= '*VECTORS'
      txtln(8)= ' ID=#'
      txtln(9)= ' VECTORS= 1 TO 100'
      txtln(10)='*SCENARIO'
      txtln(11)=' ID=%'
C
C     txtln(12)=  Define scenario time inside loop
C
      txtln(13)='*OUTPUT FILES'
      txtln(14)=' DRIVER=EXCEL'
      txtln(15)=' WRITE=TIME VS ITEM'
      txtln(16)=' MULTIPLE FILES'
C
C     txtln(17)=  OUTPUT FILE: DONE IN LOOPS
C
```

```
        txtln(18)='  ID=@'
        txtln(19)='  EXTENSION=TXT'
C DESCRIBE TIME-HISTORY VARIABLES FOR HAIRPLOTS
        txtln(20)='*TIMES'
        txtln(21)='  READ=SECONDS'
        txtln(22)='  INPUT=SECONDS'
        txtln(23)='  OUTPUT=SECONDS'
        txtln(24)='  INTERPOLATE= 0 TO 3600 BY 300, 3600 TO '//
     1     '86400 BY 3600,&'
        txtln(25)='  86400 TO 2.592E5 BY 1.08E4, 2.592E5 TO '//
     1     '1.0368E6 BY 86400'
        txtln(26)='  ORDER=FIRST'
        txtln(27)='*ITEMS'
        txtln(28)='  TYPE=HISTORY'
        txtln(29)='  NAMES=BRINEFLW,GASFLW,MAX_BRN,MAX_GAS,LGR_MET,&'
        txtln(30)='       BRINE_BC,GASOUT,BRINEOUT,BRIN_REL'
        txtln(31)='  TYPE=GLOBAL'
        txtln(32)='  NAMES=BRNPRES5,SATBRN5,BRNPRES0,SATBRN0,'//
     1     'WASTE_PV,TOT_BRIN'
        txtln(33)='*END'
C BEGIN LOOPING TO GENERATE ALL FILES
      DO 10 irep=1,3
       DO 20 isn=1,5
        DO 30 itme=1,12
         IF (iscen(isn,itme) .EQ. 1) THEN
          DO 40 iloc=1,2
           base=name_id(iloc)//repnum(irep)//'S'//
     1          scennum(isn)//id_out(itme)
           newfile=base//'.INP'
           outfile=base//'@.EXT'
C            write (*,*) outfile
           namestr='BF4_POST_CCA_R'//repnum(irep)//'_S'//
     1            scennum(isn)//'_V###_T%_'//locat(iloc)
           ispace=INDEX(direct,' ')
           txtln(5)='  DIRECTORY=['//direct(1:ispace-1)//'.R'//
     1             repnum(irep)//'S'//scennum(isn)//']'
           txtln(6)='  TEMPLATE='//namestr
           txtln(12)='  SCENARIO='//time_id(itme)
           txtln(17)='  NAME='//outfile
C
C NOW WRITE TEXT LINES TO OUTPUT FILE
           OPEN(unit=11,file=newfile,status='new')
           DO 50 IJ=1,33
                WRITE(11,*) txtln(IJ)
50          CONTINUE
           CLOSE(11)
40         CONTINUE
         END IF
30       CONTINUE
20      CONTINUE
10     CONTINUE
        END
```

Appendix C: Source Code Listing for SEPARATE.FOR

```
        Program SEPARATE
C This program will open the previously generated SUMMARIZE hair files, read
C the second and last brineout's to see if the file is a "blowout" vector or
C not, then divide the filenames into "blowout" and non"blowout" lists
      dimension iscen(7,12)
        character*12 outfile
        character*5 base
        character*1 name_id(2)
        character*1 repnum(3)
        character*1 scennum(7)
        character*1 id_out(12)
        character*3 vno(100)
C Define Variables
        DATA (name_id(j), j=1,2) /'L','U'/
        DATA (id_out(j), j=1,12) /'A','B','C','D','E','F','G','H',
   1 'I','J','K','L'/
        DATA (repnum(j), j=1,3) /'1','2','3'/
        DATA (scennum(j), j=1,5) /'1','2','3','4','5'/
        DATA ((iscen(i,j), j=1,12),i=1,5) /1,1,0,0,1,0,0,0,1,0,1,1,
   1                    0,0,1,1,0,0,0,1,0,1,0,1,
   1                    0,0,0,0,0,1,1,0,1,0,1,1,
   1                    0,0,1,1,0,0,0,1,0,1,0,1,
   1                    0,0,0,0,0,1,1,0,1,0,1,1/
        DATA (vno(i),i=1,100) /'001','002','003','004','005','006',
   1'007','008','009','010','011','012','013','014','015','016','017',
   2'018','019','020','021','022','023','024','025','026','027','028',
   3'029','030','031','032','033','034','035','036','037','038','039',
   4'040','041','042','043','044','045','046','047','048','049','050',
   5'051','052','053','054','055','056','057','058','059','060','061',
   6'062','063','064','065','066','067','068','069','070','071','072',
   7'073','074','075','076','077','078','079','080','081','082','083',
   8'084','085','086','087','088','089','090','091','092','093','094',
   9'095','096','097','098','099','100'/
     OPEN(unit=10,file='NO_BLOW.LIS',status='new')
     OPEN(unit=11,file='BLOWOUT.LIS',status='new')
C BEGIN LOOPING TO OPEN ALL FILES
      DO 10 irep=1,3
       DO 20 isn=1,5
        DO 30 itme=1,12
         IF (iscen(isn,itme) .EQ. 1) THEN
          DO 40 iloc=1,2
           DO 45 inum=1,100
            base=name_id(iloc)//repnum(irep)//'S'//
   1           scennum(isn)//id_out(itme)
            outfile=base//vno(inum)//'.TXT'
               OPEN(unit=12,file=outfile,readonly,status='old')
C            read first four lines to get to fifth
            READ(12,101) label
            READ(12,101) label
            READ(12,101) label
            READ(12,101) label
101            FORMAT(A72)
```

```
          READ(12,*) X1,X2,X3,X4,X5,X6,X7,X8,X9,BRINE5,
   1                X11,X12,X13,X14,X15,X16,X17
          DO 46 iline=6,64
           READ(12,*) X1,X2,X3,X4,X5,X6,X7,X8,X9,BRINE64,
   1                X11,X12,X13,X14,X15,X16,X17
46         CONTINUE
          IF (BRINE5 .EQ. BRINE64) THEN
           WRITE(10,*) outfile
          ELSE
           WRITE(11,*) outfile
          END IF
          CLOSE(12)
45        CONTINUE
40       CONTINUE
        END IF
30      CONTINUE
20     CONTINUE
10    CONTINUE
     CLOSE(10)
     CLOSE(11)
        END
```

Appendix D: Source Code Listing for SCATTER.FOR

```
      Program SCATTER
C This program will parse out the blowout properties from the .txt files
C and add to the blowout vectors for scatter plot generation.
    dimension outnum(50)
    dimension tmpnum(50)
      character*12 prpfile
      character*12 curfile
      character*4 base
      character*8 id
      character*250 label
      character*3 num(100)
      character*8 varname(50)
      character*46 title(50)
      character*1 repnum(3)
      character*1 scennum(7)
C Define Variables
      DATA (repnum(j), j=1,3) /'1','2','3'/
      DATA (scennum(j), j=1,5) /'1','2','3','4','5'/
      DATA (title(j), j=1,42) /'*','*','*','*',
  1 'Excavated_Waste_Porosity_(fraction)',
  1 'Residual_Gas_Sat._(fraction)','Residual_Brine_Sat._(fraction)',
  1 'Crushed_Panel_Height_(m)','Up-dip_Avg_Pressure_(Pa)',
  1 'Up-dip_Avg_Sat._(fraction)','Down-dip_Avg_Pressure_(Pa)',
  1 'Down-dip_Avg_Sat._(fraction)','Intrusion_Time_(Years)',
  1 'Skin_factor','Well_Productivity_Index_(1/Pa)',
  1 'BC_well_Sand_Permeability_(m^2)',
  1 'Total_Area_solids_released_(m^2)',
  1 'Castile_Reservoir_Pressure_(Pa)',
  1 'Castile_Reservoir_Permeability_(m^3)',
  1 'Up-dip_Brine_Relative_Permeability_(m^2)',
  1 'Up-dip_Gas_Relative_Permeability_(m^3)',
  1 'Down-dip_Brine_Relative_Permeability_(m^2)',
  1 'Down-dip_Gas_Relative_Permeability_(m^3)',
  1 'Up-dip_Flowing_Bottom-hole_Pressure_(Pa)',
  1 'Down-dip_Flowing_Bottom-hole_Pressure_(Pa)',
  1 'BC_well_Injection_Pressure_(Pa)',
  1 'Blowout_Duration_(Days)','Brine_Rate_(m^3/s)',
  1 'Gas_Rate_(ref_m^3/s)','Max_Brine_Rate_(m^3/s)',
  1 'Max_Gas_Rate_(ref_m^3/s)',
  1 'Produced_Liquid/Gas_Ratio_(m^3/s_/_ref_m^3/s)',
  1 'Cum_Brine_from_Boundary_Condition_Well_(m^3)',
  1 'Cum_Gas_Produced_(ref_m^3)','Cum_Brine_Produced_(m^3)',
  1 'Cum_Brine_Releases_(m^3)','Avg_Brine_Pressure_Panel_5_(Pa)',
  1 'Avg_Brine_Saturation_Panel_5_(fraction)',
  1 'Avg_Brine_Pressure_Panel_0_(Pa)',
  1 'Avg_Brine_Saturation_Panel_0_(fraction)',
  1 'Total_Excavated_Waste_Pore_Volume_(fraction)',
  1 'Total_Excavated_Brine_Saturation_(fraction)'/
      DATA (num(i),i=1,100) /'001','002','003','004','005','006',
  1'007','008','009','010','011','012','013','014','015','016','017',
  1'018','019','020','021','022','023','024','025','026','027','028',
  1'029','030','031','032','033','034','035','036','037','038','039',
```

```
     1'040','041','042','043','044','045','046','047','048','049','050',
     1'051','052','053','054','055','056','057','058','059','060','061',
     1'062','063','064','065','066','067','068','069','070','071','072',
     1'073','074','075','076','077','078','079','080','081','082','083',
     1'084','085','086','087','088','089','090','091','092','093','094',
     1'095','096','097','098','099','100'/
C  Read in variable names and times (convert to days)from first .TXT file
          DATA (varname(i),i=1,4) /'ID','Replic','Scenario','Vector'/
          OPEN(unit=10,file='L1S1APRP.TBL',status='old')
      READ(10,98) label
98     FORMAT(A250)
      ispace=INDEX(label,',')
      label=label(ispace+1:250)
      ispace=INDEX(label,',')
      label=label(ispace+1:250)
      do 1 i=5,25
       ispace=INDEX(label,',')
       varname(i)=label(1:ispace-1)
       label=label(ispace+1:250)
1      CONTINUE
      varname(26)=label(1:8)
      CLOSE(10)
          OPEN(unit=10,file='L1S1A001.TXT',status='old')
      READ(10,98) label
      ispace=INDEX(label,',')
      label=label(ispace+1:250)
      do 2 i=27,41
       ispace=INDEX(label,',')
       varname(i)=label(1:ispace-1)
       label=label(ispace+1:250)
2      CONTINUE
      varname(42)=label(1:8)
      CLOSE(10)
C  Open output file
      OPEN(unit=2,file='SCATTER.TRN',recl=10000,status='new')
      WRITE(2,99) (title(i),i=1,42)
99     FORMAT(42(A46,','))
      WRITE(2,100) (varname(i),i=1,42)
100    FORMAT(42(A8,','))
C  Read in blowout file needed to construct output lines
      OPEN(unit=11,file='BLOWOUT.LIS',readonly,status='old')
      DO 10 ifile=1,907
       READ(11,101) curfile
101      FORMAT(1X,A12)
       base=curfile(1:4)
       IF (base(1:1) .EQ. 'L') THEN
        id='Down-dip'
       ELSE
        id='Up-dip'
       END IF
       irep=0
       DO 20 i=1,3
        IF (base(2:2) .EQ. repnum(i)) THEN
         irep=i
        END IF
```

```
20    CONTINUE
     iscen=0
     DO 30 i=1,5
      IF (base(4:4) .EQ. scennum(i)) THEN
        iscen=i
      END IF
30    CONTINUE
     ivec=0
     DO 40 i=1,100
      IF (curfile(6:8) .EQ. num(i)) THEN
        ivec=i
      END IF
40    CONTINUE
     prpfile=curfile(1:5)//'PRP.TBL'
     OPEN(unit=12,file=prpfile,readonly,status='old')
     READ(12,98) label
     READ(12,98) label
     READ(12,98) label
     DO 50 j=1,ivec
      READ(12,*) (num1,num2,(outnum(i), i=1,22))
50    CONTINUE
     CLOSE(12)
     outnum(9)=outnum(9)/3.15569E7
     OPEN(unit=12,file=curfile,readonly,status='old')
     READ(12,98) label
     READ(12,98) label
     READ(12,98) label
     READ(12,*) (num1,(outnum(i), i=23,38))
     READ(12,*) (num1,(tmpnum(i), i=23,38))
     DO 60 j=3,61
      IF (outnum(32) .NE. tmpnum(32)) THEN
        DO 62 i=23,38
          outnum(i)=tmpnum(i)
62        CONTINUE
        READ(12,*) (num1,(tmpnum(i), i=23,38))
      END IF
60    CONTINUE
     CLOSE(12)
     outnum(23)=outnum(23)/86400.0
     WRITE(2,110) (id,irep,iscen,ivec,(outnum(i), i=1,38))
110    FORMAT(A8,',',I1,',',I1,',',I3,',',38(1P,E10.3,','))
10   CONTINUE
    CLOSE(2)
       END
```

Appendix E: Source Code Listing for SORT.FOR

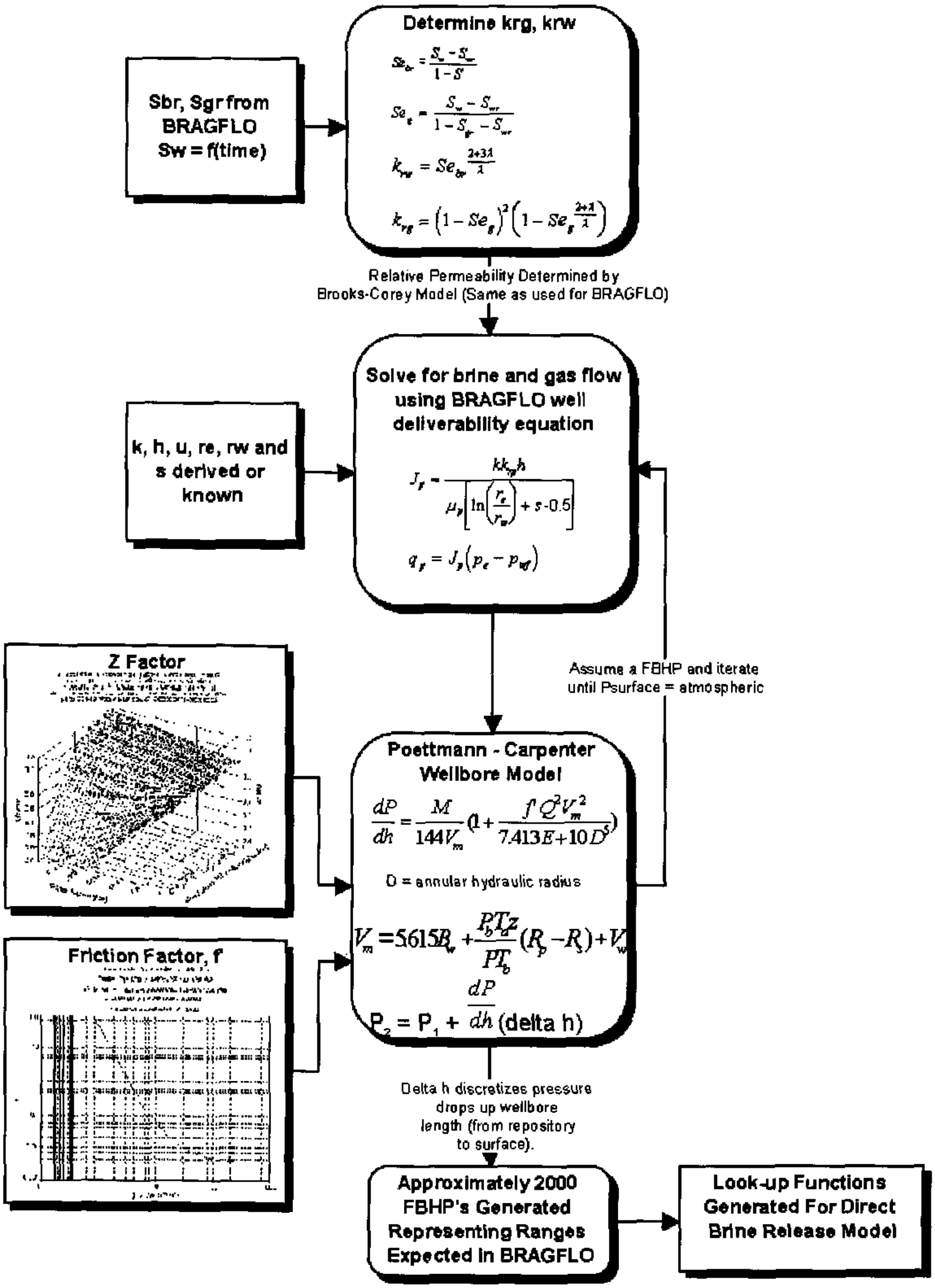
```
        Program SORT
C  This program will read the 'blowout' list of filess previously generated
C  by the SEPARATE.EXE executable and create a file for each history variable
C  to make hairplots in PC land.
      dimension var(100,61)
      dimension xvar(17)
        character*12 outfile
        character*12 curfile
        character*12 allfile(907)
        character*4 base
        character*200 label
        character*4 curbase
        character*3 num(100)
        character*8 varname(16)
        character*46 title(16)
        character*8 column(100,2)
        character*1 name_id(2)
        character*1 repnum(3)
        character*1 scennum(7)
C  Define Variables
        DATA (name_id(j), j=1,2) /'L','U'/
        DATA (repnum(j), j=1,3) /'1','2','3'/
        DATA (scennum(j), j=1,5) /'1','2','3','4','5'/
        DATA (title(j), j=1,16) /'Days','Brine Rate (m^3/s)',
     1 'Gas Rate (ref m^3/s)','Max Brine Rate (m^3/s)',
     1 'Max Gas Rate (ref m^3/s)',
     1 'Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)',
     1 'Cum Brine from Boundary Condition Well (m^3)',
     1 'Cum Gas Produced (ref m^3)','Cum Brine Produced (m^3)',
     1 'Cum Brine Releases (m^3)','Avg Brine Pressure Panel 5 (Pa)',
     1 'Avg Brine Saturation Panel 5 (fraction)',
     1 'Avg Brine Pressure Panel 0 (Pa)',
     1 'Avg Brine Saturation Panel 0 (fraction)',
     1 'Total Excavated Waste Pore Volume (fraction)',
     1 'Total Excavated Brine Saturation (fraction)'/
        DATA (num(i),i=1,100) /'001','002','003','004','005','006',
     1'007','008','009','010','011','012','013','014','015','016','017',
     1'018','019','020','021','022','023','024','025','026','027','028',
     1'029','030','031','032','033','034','035','036','037','038','039',
     1'040','041','042','043','044','045','046','047','048','049','050',
     1'051','052','053','054','055','056','057','058','059','060','061',
     1'062','063','064','065','066','067','068','069','070','071','072',
     1'073','074','075','076','077','078','079','080','081','082','083',
     1'084','085','086','087','088','089','090','091','092','093','094',
     1'095','096','097','098','099','100'/
C  Read in variable names and times (convert to days)from first .TXT file
        OPEN(unit=10,file='L1S1A001.TXT',status='old')
      READ(10,98) label
98     FORMAT(A200)
      ispace=INDEX(label,',')
      label=label(ispace+1:200)
      do 1 i=1,15
```

```
       ispace=INDEX(label,',')
       varname(i)=label(1:ispace-1)
       label=label(ispace+1:200)
1     CONTINUE
      varname(16)=label(1:8)
      READ(10,98) label
      READ(10,98) label
      DO 2 j=1,61
       READ(10,*) (xvar(i),i=1,17)
       var(1,j)=xvar(2)/86400.0
2     CONTINUE
      CLOSE(10)
C Read in all blowout files to an array
      OPEN(unit=11,file='BLOWOUT.LIS',readonly,status='old')
      DO 3 i=1,907
       READ(11,102) allfile(i)
3     CONTINUE
102   FORMAT(1X,A12)
      CLOSE(11)
C Open Summary file
         OPEN(unit=1,file='SORT_SUM.OUT',recl=10000,
     1 status='new')
      icount=0
      column(1,1)='Time'
      column(1,2)='Days'
C External loop to sort by variable name
      DO 5 ivar=3,17
C Begin loops to construct file lookups
       DO 10 irep=1,3
        DO 20 isn=1,5
         DO 30 iloc=1,2
C           BEGIN LOOPING TO OPEN ALL FILES
          curbase=name_id(iloc)//repnum(irep)//'S'//scennum(isn)
          outfile=curbase//'_'//num(ivar-1)//'.TRN'
          DO 40 ifile=1,907
           curfile=allfile(ifile)
           base=curfile(1:4)
           IF (base .EQ. curbase) THEN
            icount=icount+1
            icol=icount+1
            column(icol,1)=varname(ivar-1)
            column(icol,2)=curfile(1:8)
            OPEN(unit=12,file=curfile,readonly,status='old')
            READ(12,98) label
            READ(12,98) label
            READ(12,98) label
            DO 42 j=1,61
             READ(12,*) (xvar(i), i=1,17)
             var(icol,j)=xvar(ivar)
42           CONTINUE
           END IF
40         CONTINUE
          IF (icount .NE. 0) THEN
           label=curbase//' '//num(icount)//' '//title(ivar-1)
           WRITE(*,*) label
```

```
           WRITE(1,*) label
           WRITE(1,*) ((column(i,2),','), i=2,icol)
           OPEN(unit=2,file=outfile,recl=10000,
     1      status='new')
           WRITE(2,*) label
           WRITE(2,*) ((column(i,1),','), i=1,icol)
           WRITE(2,*) ((column(i,2),','), i=1,icol)
           DO 32 j=1,61
            WRITE(2,*) ((var(i,j),','),i=1,icol)
32          CONTINUE
           CLOSE(2)
           icount=0
          END IF
30        CONTINUE
20       CONTINUE
10      CONTINUE
5     CONTINUE
      CLOSE(1)
         END
```

Appendix F: Poettmann-Carpenter Information

Appendix F.1: Flowchart for Poettmann-Carpenter Correlation (see Attachment 1 for full discussion of methodology)



Appendix F.2: Microsoft Visual Basic™ Macro for Developing FBHP from Poettmann-Carpenter Correlation

Poettmann-Carpenter Macro to Compute FBHP for Direct Brine Release Model Look-up Functions

This macro generates the data required for TableCurve3D to develop look-up functions used in DBR_BRAGFLO for brine blowout release calculations. The realization input value allows the user to specify how many random FBHP's are generated using a sampling from the parameter range.

User Requested Number of FBHP Realizations:

push to start

A flowchart and description of the Poettmann-Carpenter method is available in Appendix F and Attachment 1 of the BRAGFLO Direct Brine Release Calculation Analysis Document AD-029.
FBHP_B01.XLS is a workbook which is composed of 6 working sheets which do the following:

Do this first:	This sheet
Data Input	Parameters associated with the calculation
FBHP calc:	Calculator to compute FBHP using Poettmann and Carpenter Methodology
Template:	Template for successive uses of this macro
Output:	Results of FBHP computations using FBHP calc. sheet and the template sheet
Module 1:	Listing of macro

Enter a number between 1 and 5000. Click on "push to start" button.
Macro will execute and return to this page upon completion.
Results are located in the Output sheet for subsequent analyses. The -999 indicates end of file.

```
'
' calcFBHP Macro
' Macro recorded 1/29/96 by Authorized Gateway Customer
'
'
Sub calcFBHP()
  Dim ATMO_PRES As Single, TOLERANCE As Single, UPPER As Single, FBHP As Single
  Dim LOWER As Single, SURF_PRES As Single, COUNTER As Integer, RELAX_TOL As Single
  Dim CHECKER As Single
  ATMO_PRES = Sheets("FBHP calc").Range("V10").Value
  TOLERANCE = Sheets("FBHP calc").Range("V11").Value
  RELAX_TOL = Sheets("FBHP calc").Range("W11").Value
  CHECKER = TOLERANCE
  Sheets("FBHP calc").Select
  Range("A15:a15").Select
  Sheets("output").Select
  Range("A4:v5000").Select
  Selection.ClearContents
  r1 = Sheets("do this first").Range("e5:e5").Value
  r1 = r1 - 1
  Sheets("template").Select
  Range("A9:I9").Select
  Application.CutCopyMode = False
  Selection.Copy
  Sheets("output").Select
  Range("A4").Select
  ActiveSheet.Paste
  COUNTER = 0
  Do Until (COUNTER = r1)
    COUNTER = COUNTER + 1
    Selection.End(xlToLeft).Select
    ActiveCell.Offset(1, 0).Range("A1").Select
    ActiveSheet.Paste
  Loop
  ActiveCell.Offset(1, 0).Range("A1").Select
  ActiveCell.FormulaR1C1 = "-999"
  Sheets("output").Select
  Range("A4").Select
  Application.ScreenUpdating = False
  ENDLIST = ActiveCell.Value
  ActiveCell.Offset(0, 0).Range("A1:I1").Select
  Do While ENDLIST <> -999#
    Selection.Copy
    Sheets("FBHP calc").Select
    ActiveCell.Offset(0, 0).Range("A1").Select
    ActiveSheet.Paste
    Application.CutCopyMode = False
    ActiveCell.Offset(0, 2).Range("A1").Select
    FBHP = ActiveCell.Value
    UPPER = FBHP
    LOWER = 0#
    SURF_PRES = Sheets("FBHP calc").Range("V15").Value
    COUNTER = 0
    Do Until (Abs((ATMO_PRES - SURF_PRES) / ATMO_PRES) < CHECKER)
      If SURF_PRES - ATMO_PRES < 0# Then
```

```
            LOWER = FBHP
        Else
            UPPER = FBHP
        End If
        FBHP = (UPPER + LOWER) / 2#
        ActiveCell.FormulaR1C1 = FBHP
        SURF_PRES = Sheets("FBHP calc").Range("V15").Value
        COUNTER = COUNTER + 1
        If COUNTER = 26 Then
          If CHECKER = TOLERANCE Then
            CHECKER = RELAX_TOL
            Exit Do
          Else
            ActiveCell.FormulaR1C1 = -999#
            CHECKER = TOLERANCE
            Exit Do
          End If
        End If
      Loop
      If CHECKER = TOLERANCE Or COUNTER < 26 Then
        ActiveCell.Offset(0, -2).Range("A1:V1").Select
        Selection.Copy
        Sheets("output").Select
        ActiveCell.Offset(0, 0).Range("A1").Select
        Selection.PasteSpecial Paste:=xlValues
        ActiveCell.Offset(1, 0).Range("A1:I1").Select
        ENDLIST = ActiveCell.Value
        CHECKER = TOLERANCE
      Else
        ActiveCell.Offset(0, -2).Range("A1:V1").Select
        Sheets("output").Select
        ActiveCell.Offset(0, 0).Range("A1:I1").Select
        ENDLIST = ActiveCell.Value
      End If
    Loop
    Application.CutCopyMode = False
    Application.ScreenUpdating = True
    Sheets("do this first").Select
End Sub
```

Appendix F.3: Microsoft EXCEL 5.0c Spreadsheet: FBHP_BO.XLS: Sheets 1,2 and 3 showing grid cell formulas for Poettmann-Carpenter FBHP computations.

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	R	S	T
1	Mole Fraction H2	=Sheet2!A15																
2	Mole Fraction CO	=(1-B1)																
3	Qg (MMcfd) =	=Sheet2!U15																
4	Qb (bpd) =	=Sheet2!T15+0.0000000001																
5	Rp (cf/bbl) =	=(B3/B4)*1000000																
6	MW gaS =	=(B1*2.02+B2*44.01)																
7	GaS gravity (air = 1) =	=(B6/28.96)																
8	Brine grav. (wat. = 1) =	1.23																
9	TreS (deg R) =	540.1																
10	TbaSe (deg R) =	540.1																
11	PbaSe (pSia) =	14.7																
12	RS (Scf/Stb) =	0																
13	Bw (rbl/Stb) =	1																
14	Vw (cf/bbl) =	0																
15	M (lb/bbl) =	=((5.615*62.4*B8)+(0.0764*B7*B5))																
16																		
17	Surface Depth	Delta h	P1	P1	di	do	di - do	di+do		Vm	rho '= M/Vm	1.4737E-05*	Fanning	dp/dh	P2			
18	(ft)	(ft)	(psia)	(Pa)	(ft)	(ft)	(ft)	(ft)	z	(cf/bbl)	(lb/ft3)	MQ/(di+do)	Friction, f	(psia/ft)	(psia)	Const	f, Fanning Friction	Z Factor
19	2150	=(A20-A19)	=Sheet2!C15/Sheet2!$D$3	=(C19*Sheet2!$D$3)	=12.25/12	=8/12	=(E19-F19)	=(E19+F19)	=($T$19+$T$21*$B$1+$T$23*C19+$T$25*$B$1^2+$T$48*C19^2+$T$50*$B$1*C19)/(1+$T$20*$B$1+$T$22*C19+$T$24*$B$1^2+$T$47*C19^2+$T$49*$B$1*C19)	=(5.615*$B$13+(($B$11*$B$9*I19)/(C19*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J19)	=IF((0.000014737*$B$15*$B$4)/H19<0.8,0.8,(0.000014737*$B$15*$B$4)/H19)	=($S$19+$S$20/L19+$S$21/L19^2+$S$22/L19^3+$S$23/L19^4+$S$24/L19^5)	=(K19/144)*(1+((M19*($B$4^2)*(J19^2))/(7413000000*(H19^2)*(G19^3))))	=IF((C19+N19*B19)<14.5,1,(C19+N19*B19))	a	0.0034152135	0.96953278
20	2125	=(A21-A20)	=O19	=(C20*Sheet2!$D$3)	=12.25/12	=8/12	=(E20-F20)	=(E20+F20)	=($T$19+$T$21*$B$1+$T$23*C20+$T$25*$B$1^2+$T$48*C20^2+$T$50*$B$1*C20)/(1+$T$20*$B$1+$T$22*C20+$T$24*$B$1^2+$T$47*C20^2+$T$49*$B$1*C20)	=(5.615*$B$13+(($B$11*$B$9*I20)/(C20*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J20)	=IF((0.000014737*$B$15*$B$4)/H20<0.8,0.8,(0.000014737*$B$15*$B$4)/H20)	=($S$19+$S$20/L20+$S$21/L20^2+$S$22/L20^3+$S$23/L20^4+$S$24/L20^5)	=(K20/144)*(1+((M20*($B$4^2)*(J20^2))/(7413000000*(H20^2)*(G20^3))))	=IF((C20+N20*B20)<14.5,1,(C20+N20*B20))	b	0.050408991	-0.53291978
21	2100	=(A22-A21)	=O20	=(C21*Sheet2!$D$3)	=12.25/12	=8/12	=(E21-F21)	=(E21+F21)	=($T$19+$T$21*$B$1+$T$23*C21+$T$25*$B$1^2+$T$48*C21^2+$T$50*$B$1*C21)/(1+$T$20*$B$1+$T$22*C21+$T$24*$B$1^2+$T$47*C21^2+$T$49*$B$1*C21)	=(5.615*$B$13+(($B$11*$B$9*I21)/(C21*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J21)	=IF((0.000014737*$B$15*$B$4)/H21<0.8,0.8,(0.000014737*$B$15*$B$4)/H21)	=($S$19+$S$20/L21+$S$21/L21^2+$S$22/L21^3+$S$23/L21^4+$S$24/L21^5)	=(K21/144)*(1+((M21*($B$4^2)*(J21^2))/(7413000000*(H21^2)*(G21^3))))	=IF((C21+N21*B21)<14.5,1,(C21+N21*B21))	c	3.5265639	-0.42234014
22	2075	=(A23-A22)	=O21	=(C22*Sheet2!$D$3)	=12.25/12	=8/12	=(E22-F22)	=(E22+F22)	=($T$19+$T$21*$B$1+$T$23*C22+$T$25*$B$1^2+$T$48*C22^2+$T$50*$B$1*C22)/(1+$T$20*$B$1+$T$22*C22+$T$24*$B$1^2+$T$47*C22^2+$T$49*$B$1*C22)	=(5.615*$B$13+(($B$11*$B$9*I22)/(C22*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J22)	=IF((0.000014737*$B$15*$B$4)/H22<0.8,0.8,(0.000014737*$B$15*$B$4)/H22)	=($S$19+$S$20/L22+$S$21/L22^2+$S$22/L22^3+$S$23/L22^4+$S$24/L22^5)	=(K22/144)*(1+((M22*($B$4^2)*(J22^2))/(7413000000*(H22^2)*(G22^3))))	=IF((C22+N22*B22)<14.5,1,(C22+N22*B22))	d	6.0204928	-0.00052606629
23	2050	=(A24-A23)	=O22	=(C23*Sheet2!$D$3)	=12.25/12	=8/12	=(E23-F23)	=(E23+F23)	=($T$19+$T$21*$B$1+$T$23*C23+$T$25*$B$1^2+$T$48*C23^2+$T$50*$B$1*C23)/(1+$T$20*$B$1+$T$22*C23+$T$24*$B$1^2+$T$47*C23^2+$T$49*$B$1*C23)	=(5.615*$B$13+(($B$11*$B$9*I23)/(C23*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J23)	=IF((0.000014737*$B$15*$B$4)/H23<0.8,0.8,(0.000014737*$B$15*$B$4)/H23)	=($S$19+$S$20/L23+$S$21/L23^2+$S$22/L23^3+$S$23/L23^4+$S$24/L23^5)	=(K23/144)*(1+((M23*($B$4^2)*(J23^2))/(7413000000*(H23^2)*(G23^3))))	=IF((C23+N23*B23)<14.5,1,(C23+N23*B23))	e	62.22596	-0.0006826474
24	2025	=(A25-A24)	=O23	=(C24*Sheet2!$D$3)	=12.25/12	=8/12	=(E24-F24)	=(E24+F24)	=($T$19+$T$21*$B$1+$T$23*C24+$T$25*$B$1^2+$T$48*C24^2+$T$50*$B$1*C24)/(1+$T$20*$B$1+$T$22*C24+$T$24*$B$1^2+$T$47*C24^2+$T$49*$B$1*C24)	=(5.615*$B$13+(($B$11*$B$9*I24)/(C24*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J24)	=IF((0.000014737*$B$15*$B$4)/H24<0.8,0.8,(0.000014737*$B$15*$B$4)/H24)	=($S$19+$S$20/L24+$S$21/L24^2+$S$22/L24^3+$S$23/L24^4+$S$24/L24^5)	=(K24/144)*(1+((M24*($B$4^2)*(J24^2))/(7413000000*(H24^2)*(G24^3))))	=IF((C24+N24*B24)<14.5,1,(C24+N24*B24))	f	-24.126861	1.9968523
25	2000	=(A26-A25)	=O24	=(C25*Sheet2!$D$3)	=12.25/12	=8/12	=(E25-F25)	=(E25+F25)	=($T$19+$T$21*$B$1+$T$23*C25+$T$25*$B$1^2+$T$48*C25^2+$T$50*$B$1*C25)/(1+$T$20*$B$1+$T$22*C25+$T$24*$B$1^2+$T$47*C25^2+$T$49*$B$1*C25)	=(5.615*$B$13+(($B$11*$B$9*I25)/(C25*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J25)	=IF((0.000014737*$B$15*$B$4)/H25<0.8,0.8,(0.000014737*$B$15*$B$4)/H25)	=($S$19+$S$20/L25+$S$21/L25^2+$S$22/L25^3+$S$23/L25^4+$S$24/L25^5)	=(K25/144)*(1+((M25*($B$4^2)*(J25^2))/(7413000000*(H25^2)*(G25^3))))	=IF((C25+N25*B25)<14.5,1,(C25+N25*B25))	g		1.9224329
26	1975	=(A27-A26)	=O25	=(C26*Sheet2!$D$3)	=12.25/12	=8/12	=(E26-F26)	=(E26+F26)	=($T$19+$T$21*$B$1+$T$23*C26+$T$25*$B$1^2+$T$48*C26^2+$T$50*$B$1*C26)/(1+$T$20*$B$1+$T$22*C26+$T$24*$B$1^2+$T$47*C26^2+$T$49*$B$1*C26)	=(5.615*$B$13+(($B$11*$B$9*I26)/(C26*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J26)	=IF((0.000014737*$B$15*$B$4)/H26<0.8,0.8,(0.000014737*$B$15*$B$4)/H26)	=($S$19+$S$20/L26+$S$21/L26^2+$S$22/L26^3+$S$23/L26^4+$S$24/L26^5)	=(K26/144)*(1+((M26*($B$4^2)*(J26^2))/(7413000000*(H26^2)*(G26^3))))	=IF((C26+N26*B26)<14.5,1,(C26+N26*B26))			
27	1950	=(A28-A27)	=O26	=(C27*Sheet2!$D$3)	=12.25/12	=8/12	=(E27-F27)	=(E27+F27)	=($T$19+$T$21*$B$1+$T$23*C27+$T$25*$B$1^2+$T$48*C27^2+$T$50*$B$1*C27)/(1+$T$20*$B$1+$T$22*C27+$T$24*$B$1^2+$T$47*C27^2+$T$49*$B$1*C27)	=(5.615*$B$13+(($B$11*$B$9*I27)/(C27*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J27)	=IF((0.000014737*$B$15*$B$4)/H27<0.8,0.8,(0.000014737*$B$15*$B$4)/H27)	=($S$19+$S$20/L27+$S$21/L27^2+$S$22/L27^3+$S$23/L27^4+$S$24/L27^5)	=(K27/144)*(1+((M27*($B$4^2)*(J27^2))/(7413000000*(H27^2)*(G27^3))))	=IF((C27+N27*B27)<14.5,1,(C27+N27*B27))			
28	1925	=(A29-A28)	=O27	=(C28*Sheet2!$D$3)	=12.25/12	=8/12	=(E28-F28)	=(E28+F28)	=($T$19+$T$21*$B$1+$T$23*C28+$T$25*$B$1^2+$T$48*C28^2+$T$50*$B$1*C28)/(1+$T$20*$B$1+$T$22*C28+$T$24*$B$1^2+$T$47*C28^2+$T$49*$B$1*C28)	=(5.615*$B$13+(($B$11*$B$9*I28)/(C28*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J28)	=IF((0.000014737*$B$15*$B$4)/H28<0.8,0.8,(0.000014737*$B$15*$B$4)/H28)	=($S$19+$S$20/L28+$S$21/L28^2+$S$22/L28^3+$S$23/L28^4+$S$24/L28^5)	=(K28/144)*(1+((M28*($B$4^2)*(J28^2))/(7413000000*(H28^2)*(G28^3))))	=IF((C28+N28*B28)<14.5,1,(C28+N28*B28))			
29	1900	=(A30-A29)	=O28	=(C29*Sheet2!$D$3)	=12.25/12	=8/12	=(E29-F29)	=(E29+F29)	=($T$19+$T$21*$B$1+$T$23*C29+$T$25*$B$1^2+$T$48*C29^2+$T$50*$B$1*C29)/(1+$T$20*$B$1+$T$22*C29+$T$24*$B$1^2+$T$47*C29^2+$T$49*$B$1*C29)	=(5.615*$B$13+(($B$11*$B$9*I29)/(C29*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J29)	=IF((0.000014737*$B$15*$B$4)/H29<0.8,0.8,(0.000014737*$B$15*$B$4)/H29)	=($S$19+$S$20/L29+$S$21/L29^2+$S$22/L29^3+$S$23/L29^4+$S$24/L29^5)	=(K29/144)*(1+((M29*($B$4^2)*(J29^2))/(7413000000*(H29^2)*(G29^3))))	=IF((C29+N29*B29)<14.5,1,(C29+N29*B29))			
30	1875	=(A31-A30)	=O29	=(C30*Sheet2!$D$3)	=12.25/12	=8/12	=(E30-F30)	=(E30+F30)	=($T$19+$T$21*$B$1+$T$23*C30+$T$25*$B$1^2+$T$48*C30^2+$T$50*$B$1*C30)/(1+$T$20*$B$1+$T$22*C30+$T$24*$B$1^2+$T$47*C30^2+$T$49*$B$1*C30)	=(5.615*$B$13+(($B$11*$B$9*I30)/(C30*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J30)	=IF((0.000014737*$B$15*$B$4)/H30<0.8,0.8,(0.000014737*$B$15*$B$4)/H30)	=($S$19+$S$20/L30+$S$21/L30^2+$S$22/L30^3+$S$23/L30^4+$S$24/L30^5)	=(K30/144)*(1+((M30*($B$4^2)*(J30^2))/(7413000000*(H30^2)*(G30^3))))	=IF((C30+N30*B30)<14.5,1,(C30+N30*B30))			
31	1850	=(A32-A31)	=O30	=(C31*Sheet2!$D$3)	=12.25/12	=8/12	=(E31-F31)	=(E31+F31)	=($T$19+$T$21*$B$1+$T$23*C31+$T$25*$B$1^2+$T$48*C31^2+$T$50*$B$1*C31)/(1+$T$20*$B$1+$T$22*C31+$T$24*$B$1^2+$T$47*C31^2+$T$49*$B$1*C31)	=(5.615*$B$13+(($B$11*$B$9*I31)/(C31*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J31)	=IF((0.000014737*$B$15*$B$4)/H31<0.8,0.8,(0.000014737*$B$15*$B$4)/H31)	=($S$19+$S$20/L31+$S$21/L31^2+$S$22/L31^3+$S$23/L31^4+$S$24/L31^5)	=(K31/144)*(1+((M31*($B$4^2)*(J31^2))/(7413000000*(H31^2)*(G31^3))))	=IF((C31+N31*B31)<14.5,1,(C31+N31*B31))			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	R	S	T
17	Surface Depth	Delta h	P1	P1	di	do	di - do	di+do		Vm	rho '= M/Vm	1.4737E-05*	Fanning	dp/dh	P2			
18	(ft)	(ft)	(psia)	(Pa)	(ft)	(ft)	(ft)	(ft)	z	(cf/bbl)	(lb/ft3)	MQ/(di+do)	Friction, f	(psia/ft)	(psia)	Const	f, Fanning Friction	Z Factor
32	1825	=(A33-A32)	=O31	=(C32*Sheet2!$D$3)	=12.25/12	=8/12	=(E32-F32)	=(E32+F32)	=($T$19+$T$21*$B$1+$T$23*C32+$T$25*$B$1^2+$T$48*C32^2+$T$50*$B$1*C32)/(1+$T$20*$B$1+$T$22*C32+$T$24*$B$1^2+$T$47*C32^2+$T$49*$B$1*C32)	=(5.615*$B$13+(($B$11*$B$9*I32)/(C32*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J32)	=IF((0.000014737*$B$15*$B$4)/H32<0.8,0.8,(0.000014737*$B$15*$B$4)/H32)	=($S$19+$S$20/L32+$S$21/L32^2+$S$22/L32^3+$S$23/L32^4+$S$24/L32^5)	=(K32/144)*(1+((M32*($B$4^2)*(J32^2))/(74130000000*(H32^2)*(G32^3))))	=IF((C32+N32*B32)<14.5,1,(C32+N32*B32))			
33	1800	=(A34-A33)	=O32	=(C33*Sheet2!$D$3)	=12.25/12	=8/12	=(E33-F33)	=(E33+F33)	=($T$19+$T$21*$B$1+$T$23*C33+$T$25*$B$1^2+$T$48*C33^2+$T$50*$B$1*C33)/(1+$T$20*$B$1+$T$22*C33+$T$24*$B$1^2+$T$47*C33^2+$T$49*$B$1*C33)	=(5.615*$B$13+(($B$11*$B$9*I33)/(C33*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J33)	=IF((0.000014737*$B$15*$B$4)/H33<0.8,0.8,(0.000014737*$B$15*$B$4)/H33)	=($S$19+$S$20/L33+$S$21/L33^2+$S$22/L33^3+$S$23/L33^4+$S$24/L33^5)	=(K33/144)*(1+((M33*($B$4^2)*(J33^2))/(74130000000*(H33^2)*(G33^3))))	=IF((C33+N33*B33)<14.5,1,(C33+N33*B33))			
34	1775	=(A35-A34)	=O33	=(C34*Sheet2!$D$3)	=12.25/12	=8/12	=(E34-F34)	=(E34+F34)	=($T$19+$T$21*$B$1+$T$23*C34+$T$25*$B$1^2+$T$48*C34^2+$T$50*$B$1*C34)/(1+$T$20*$B$1+$T$22*C34+$T$24*$B$1^2+$T$47*C34^2+$T$49*$B$1*C34)	=(5.615*$B$13+(($B$11*$B$9*I34)/(C34*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J34)	=IF((0.000014737*$B$15*$B$4)/H34<0.8,0.8,(0.000014737*$B$15*$B$4)/H34)	=($S$19+$S$20/L34+$S$21/L34^2+$S$22/L34^3+$S$23/L34^4+$S$24/L34^5)	=(K34/144)*(1+((M34*($B$4^2)*(J34^2))/(74130000000*(H34^2)*(G34^3))))	=IF((C34+N34*B34)<14.5,1,(C34+N34*B34))			
35	1750	=(A36-A35)	=O34	=(C35*Sheet2!$D$3)	=12.25/12	=8/12	=(E35-F35)	=(E35+F35)	=($T$19+$T$21*$B$1+$T$23*C35+$T$25*$B$1^2+$T$48*C35^2+$T$50*$B$1*C35)/(1+$T$20*$B$1+$T$22*C35+$T$24*$B$1^2+$T$47*C35^2+$T$49*$B$1*C35)	=(5.615*$B$13+(($B$11*$B$9*I35)/(C35*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J35)	=IF((0.000014737*$B$15*$B$4)/H35<0.8,0.8,(0.000014737*$B$15*$B$4)/H35)	=($S$19+$S$20/L35+$S$21/L35^2+$S$22/L35^3+$S$23/L35^4+$S$24/L35^5)	=(K35/144)*(1+((M35*($B$4^2)*(J35^2))/(74130000000*(H35^2)*(G35^3))))	=IF((C35+N35*B35)<14.5,1,(C35+N35*B35))			
36	1725	=(A37-A36)	=O35	=(C36*Sheet2!$D$3)	=12.25/12	=8/12	=(E36-F36)	=(E36+F36)	=($T$19+$T$21*$B$1+$T$23*C36+$T$25*$B$1^2+$T$48*C36^2+$T$50*$B$1*C36)/(1+$T$20*$B$1+$T$22*C36+$T$24*$B$1^2+$T$47*C36^2+$T$49*$B$1*C36)	=(5.615*$B$13+(($B$11*$B$9*I36)/(C36*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J36)	=IF((0.000014737*$B$15*$B$4)/H36<0.8,0.8,(0.000014737*$B$15*$B$4)/H36)	=($S$19+$S$20/L36+$S$21/L36^2+$S$22/L36^3+$S$23/L36^4+$S$24/L36^5)	=(K36/144)*(1+((M36*($B$4^2)*(J36^2))/(74130000000*(H36^2)*(G36^3))))	=IF((C36+N36*B36)<14.5,1,(C36+N36*B36))			
37	1700	=(A38-A37)	=O36	=(C37*Sheet2!$D$3)	=12.25/12	=8/12	=(E37-F37)	=(E37+F37)	=($T$19+$T$21*$B$1+$T$23*C37+$T$25*$B$1^2+$T$48*C37^2+$T$50*$B$1*C37)/(1+$T$20*$B$1+$T$22*C37+$T$24*$B$1^2+$T$47*C37^2+$T$49*$B$1*C37)	=(5.615*$B$13+(($B$11*$B$9*I37)/(C37*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J37)	=IF((0.000014737*$B$15*$B$4)/H37<0.8,0.8,(0.000014737*$B$15*$B$4)/H37)	=($S$19+$S$20/L37+$S$21/L37^2+$S$22/L37^3+$S$23/L37^4+$S$24/L37^5)	=(K37/144)*(1+((M37*($B$4^2)*(J37^2))/(74130000000*(H37^2)*(G37^3))))	=IF((C37+N37*B37)<14.5,1,(C37+N37*B37))			
38	1675	=(A39-A38)	=O37	=(C38*Sheet2!$D$3)	=12.25/12	=8/12	=(E38-F38)	=(E38+F38)	=($T$19+$T$21*$B$1+$T$23*C38+$T$25*$B$1^2+$T$48*C38^2+$T$50*$B$1*C38)/(1+$T$20*$B$1+$T$22*C38+$T$24*$B$1^2+$T$47*C38^2+$T$49*$B$1*C38)	=(5.615*$B$13+(($B$11*$B$9*I38)/(C38*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J38)	=IF((0.000014737*$B$15*$B$4)/H38<0.8,0.8,(0.000014737*$B$15*$B$4)/H38)	=($S$19+$S$20/L38+$S$21/L38^2+$S$22/L38^3+$S$23/L38^4+$S$24/L38^5)	=(K38/144)*(1+((M38*($B$4^2)*(J38^2))/(74130000000*(H38^2)*(G38^3))))	=IF((C38+N38*B38)<14.5,1,(C38+N38*B38))			
39	1650	=(A40-A39)	=O38	=(C39*Sheet2!$D$3)	=12.25/12	=8/12	=(E39-F39)	=(E39+F39)	=($T$19+$T$21*$B$1+$T$23*C39+$T$25*$B$1^2+$T$48*C39^2+$T$50*$B$1*C39)/(1+$T$20*$B$1+$T$22*C39+$T$24*$B$1^2+$T$47*C39^2+$T$49*$B$1*C39)	=(5.615*$B$13+(($B$11*$B$9*I39)/(C39*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J39)	=IF((0.000014737*$B$15*$B$4)/H39<0.8,0.8,(0.000014737*$B$15*$B$4)/H39)	=($S$19+$S$20/L39+$S$21/L39^2+$S$22/L39^3+$S$23/L39^4+$S$24/L39^5)	=(K39/144)*(1+((M39*($B$4^2)*(J39^2))/(74130000000*(H39^2)*(G39^3))))	=IF((C39+N39*B39)<14.5,1,(C39+N39*B39))			
40	1625	=(A41-A40)	=O39	=(C40*Sheet2!$D$3)	=12.25/12	=8/12	=(E40-F40)	=(E40+F40)	=($T$19+$T$21*$B$1+$T$23*C40+$T$25*$B$1^2+$T$48*C40^2+$T$50*$B$1*C40)/(1+$T$20*$B$1+$T$22*C40+$T$24*$B$1^2+$T$47*C40^2+$T$49*$B$1*C40)	=(5.615*$B$13+(($B$11*$B$9*I40)/(C40*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J40)	=IF((0.000014737*$B$15*$B$4)/H40<0.8,0.8,(0.000014737*$B$15*$B$4)/H40)	=($S$19+$S$20/L40+$S$21/L40^2+$S$22/L40^3+$S$23/L40^4+$S$24/L40^5)	=(K40/144)*(1+((M40*($B$4^2)*(J40^2))/(74130000000*(H40^2)*(G40^3))))	=IF((C40+N40*B40)<14.5,1,(C40+N40*B40))			
41	1600	=(A42-A41)	=O40	=(C41*Sheet2!$D$3)	=12.25/12	=8/12	=(E41-F41)	=(E41+F41)	=($T$19+$T$21*$B$1+$T$23*C41+$T$25*$B$1^2+$T$48*C41^2+$T$50*$B$1*C41)/(1+$T$20*$B$1+$T$22*C41+$T$24*$B$1^2+$T$47*C41^2+$T$49*$B$1*C41)	=(5.615*$B$13+(($B$11*$B$9*I41)/(C41*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J41)	=IF((0.000014737*$B$15*$B$4)/H41<0.8,0.8,(0.000014737*$B$15*$B$4)/H41)	=($S$19+$S$20/L41+$S$21/L41^2+$S$22/L41^3+$S$23/L41^4+$S$24/L41^5)	=(K41/144)*(1+((M41*($B$4^2)*(J41^2))/(74130000000*(H41^2)*(G41^3))))	=IF((C41+N41*B41)<14.5,1,(C41+N41*B41))			
42	1575	=(A43-A42)	=O41	=(C42*Sheet2!$D$3)	=12.25/12	=8/12	=(E42-F42)	=(E42+F42)	=($T$19+$T$21*$B$1+$T$23*C42+$T$25*$B$1^2+$T$48*C42^2+$T$50*$B$1*C42)/(1+$T$20*$B$1+$T$22*C42+$T$24*$B$1^2+$T$47*C42^2+$T$49*$B$1*C42)	=(5.615*$B$13+(($B$11*$B$9*I42)/(C42*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J42)	=IF((0.000014737*$B$15*$B$4)/H42<0.8,0.8,(0.000014737*$B$15*$B$4)/H42)	=($S$19+$S$20/L42+$S$21/L42^2+$S$22/L42^3+$S$23/L42^4+$S$24/L42^5)	=(K42/144)*(1+((M42*($B$4^2)*(J42^2))/(74130000000*(H42^2)*(G42^3))))	=IF((C42+N42*B42)<14.5,1,(C42+N42*B42))			
43	1550	=(A44-A43)	=O42	=(C43*Sheet2!$D$3)	=12.25/12	=8/12	=(E43-F43)	=(E43+F43)	=($T$19+$T$21*$B$1+$T$23*C43+$T$25*$B$1^2+$T$48*C43^2+$T$50*$B$1*C43)/(1+$T$20*$B$1+$T$22*C43+$T$24*$B$1^2+$T$47*C43^2+$T$49*$B$1*C43)	=(5.615*$B$13+(($B$11*$B$9*I43)/(C43*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J43)	=IF((0.000014737*$B$15*$B$4)/H43<0.8,0.8,(0.000014737*$B$15*$B$4)/H43)	=($S$19+$S$20/L43+$S$21/L43^2+$S$22/L43^3+$S$23/L43^4+$S$24/L43^5)	=(K43/144)*(1+((M43*($B$4^2)*(J43^2))/(74130000000*(H43^2)*(G43^3))))	=IF((C43+N43*B43)<14.5,1,(C43+N43*B43))			
44	1525	=(A45-A44)	=O43	=(C44*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E44-F44)	=(E44+F44)	=($T$19+$T$21*$B$1+$T$23*C44+$T$25*$B$1^2+$T$48*C44^2+$T$50*$B$1*C44)/(1+$T$20*$B$1+$T$22*C44+$T$24*$B$1^2+$T$47*C44^2+$T$49*$B$1*C44)	=(5.615*$B$13+(($B$11*$B$9*I44)/(C44*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J44)	=IF((0.000014737*$B$15*$B$4)/H44<0.8,0.8,(0.000014737*$B$15*$B$4)/H44)	=($S$19+$S$20/L44+$S$21/L44^2+$S$22/L44^3+$S$23/L44^4+$S$24/L44^5)	=(K44/144)*(1+((M44*($B$4^2)*(J44^2))/(74130000000*(H44^2)*(G44^3))))	=IF((C44+N44*B44)<14.5,1,(C44+N44*B44))			
45	1500	=(A46-A45)	=O44	=(C45*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E45-F45)	=(E45+F45)	=($T$19+$T$21*$B$1+$T$23*C45+$T$25*$B$1^2+$T$48*C45^2+$T$50*$B$1*C45)/(1+$T$20*$B$1+$T$22*C45+$T$24*$B$1^2+$T$47*C45^2+$T$49*$B$1*C45)	=(5.615*$B$13+(($B$11*$B$9*I45)/(C45*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J45)	=IF((0.000014737*$B$15*$B$4)/H45<0.8,0.8,(0.000014737*$B$15*$B$4)/H45)	=($S$19+$S$20/L45+$S$21/L45^2+$S$22/L45^3+$S$23/L45^4+$S$24/L45^5)	=(K45/144)*(1+((M45*($B$4^2)*(J45^2))/(74130000000*(H45^2)*(G45^3))))	=IF((C45+N45*B45)<14.5,1,(C45+N45*B45))			
46	1475	=(A47-A46)	=O45	=(C46*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E46-F46)	=(E46+F46)	=($T$19+$T$21*$B$1+$T$23*C46+$T$25*$B$1^2+$T$48*C46^2+$T$50*$B$1*C46)/(1+$T$20*$B$1+$T$22*C46+$T$24*$B$1^2+$T$47*C46^2+$T$49*$B$1*C46)	=(5.615*$B$13+(($B$11*$B$9*I46)/(C46*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J46)	=IF((0.000014737*$B$15*$B$4)/H46<0.8,0.8,(0.000014737*$B$15*$B$4)/H46)	=($S$19+$S$20/L46+$S$21/L46^2+$S$22/L46^3+$S$23/L46^4+$S$24/L46^5)	=(K46/144)*(1+((M46*($B$4^2)*(J46^2))/(74130000000*(H46^2)*(G46^3))))	=IF((C46+N46*B46)<14.5,1,(C46+N46*B46))			
47	1450	=(A48-A47)	=O46	=(C47*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E47-F47)	=(E47+F47)	=($T$19+$T$21*$B$1+$T$23*C47+$T$25*$B$1^2+$T$48*C47^2+$T$50*$B$1*C47)/(1+$T$20*$B$1+$T$22*C47+$T$24*$B$1^2+$T$47*C47^2+$T$49*$B$1*C47)	=(5.615*$B$13+(($B$11*$B$9*I47)/(C47*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J47)	=IF((0.000014737*$B$15*$B$4)/H47<0.8,0.8,(0.000014737*$B$15*$B$4)/H47)	=($S$19+$S$20/L47+$S$21/L47^2+$S$22/L47^3+$S$23/L47^4+$S$24/L47^5)	=(K47/144)*(1+((M47*($B$4^2)*(J47^2))/(74130000000*(H47^2)*(G47^3))))	=IF((C47+N47*B47)<14.5,1,(C47+N47*B47))	h		0.00000012470738
48	1425	=(A49-A48)	=O47	=(C48*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E48-F48)	=(E48+F48)	=($T$19+$T$21*$B$1+$T$23*C48+$T$25*$B$1^2+$T$48*C48^2+$T$50*$B$1*C48)/(1+$T$20*$B$1+$T$22*C48+$T$24*$B$1^2+$T$47*C48^2+$T$49*$B$1*C48)	=(5.615*$B$13+(($B$11*$B$9*I48)/(C48*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J48)	=IF((0.000014737*$B$15*$B$4)/H48<0.8,0.8,(0.000014737*$B$15*$B$4)/H48)	=($S$19+$S$20/L48+$S$21/L48^2+$S$22/L48^3+$S$23/L48^4+$S$24/L48^5)	=(K48/144)*(1+((M48*($B$4^2)*(J48^2))/(74130000000*(H48^2)*(G48^3))))	=IF((C48+N48*B48)<14.5,1,(C48+N48*B48))	i		0.00000013716083
49	1400	=(A50-A49)	=O48	=(C49*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E49-F49)	=(E49+F49)	=($T$19+$T$21*$B$1+$T$23*C49+$T$25*$B$1^2+$T$48*C49^2+$T$50*$B$1*C49)/(1+$T$20*$B$1+$T$22*C49+$T$24*$B$1^2+$T$47*C49^2+$T$49*$B$1*C49)	=(5.615*$B$13+(($B$11*$B$9*I49)/(C49*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J49)	=IF((0.000014737*$B$15*$B$4)/H49<0.8,0.8,(0.000014737*$B$15*$B$4)/H49)	=($S$19+$S$20/L49+$S$21/L49^2+$S$22/L49^3+$S$23/L49^4+$S$24/L49^5)	=(K49/144)*(1+((M49*($B$4^2)*(J49^2))/(74130000000*(H49^2)*(G49^3))))	=IF((C49+N49*B49)<14.5,1,(C49+N49*B49))	j		0.00025630877

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	R	S	T
17	Surface Depth	Delta h	P1	P1	di	do	di - do	di+do		Vm	rho '= M/Vm	1.4737E-05*	Fanning	dp/dh	P2			
18	(ft)	(ft)	(psia)	(Pa)	(ft)	(ft)	(ft)	(ft)	z	(cf/bbl)	(lb/ft3)	MQ/(di+do)	Friction, f	(psia/ft)	(psia)	Const	f, Fanning Friction	Z Factor
50	1375	=(A51-A50)	=O49	=(C50*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E50-F50)	=(E50+F50)	=($T$19+$T$21*$B$1+$T$23*C50+$T$25*$B$1^2+$T$48*C50^2+$T$50*$B$1*C50)/(1+$T$20*$B$1+$T$22*C50+$T$24*$B$1^2+$T$47*C50^2+$T$49*$B$1*C50)	=(5.615*$B$13+(($B$11*$B$9*I50)/(C50*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J50)	=IF((0.000014737*$B$15*$B$4)/H50<0.8,0.8,(0.000014737*$B$15*$B$4)/H50)	=($S$19+$S$20/L50+$S$21/L50^2+$S$22/L50^3+$S$23/L50^4+$S$24/L50^5)	=(K50/144)*(1+((M50*($B$4^2)*(J50^2))/(74130000000*(H50^2)*(G50^3))))	=IF((C50+N50*B50)<14.5,1,(C50+N50*B50))	k		0.00054053362
51	1350	=(A52-A51)	=O50	=(C51*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E51-F51)	=(E51+F51)	=($T$19+$T$21*$B$1+$T$23*C51+$T$25*$B$1^2+$T$48*C51^2+$T$50*$B$1*C51)/(1+$T$20*$B$1+$T$22*C51+$T$24*$B$1^2+$T$47*C51^2+$T$49*$B$1*C51)	=(5.615*$B$13+(($B$11*$B$9*I51)/(C51*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J51)	=IF((0.000014737*$B$15*$B$4)/H51<0.8,0.8,(0.000014737*$B$15*$B$4)/H51)	=($S$19+$S$20/L51+$S$21/L51^2+$S$22/L51^3+$S$23/L51^4+$S$24/L51^5)	=(K51/144)*(1+((M51*($B$4^2)*(J51^2))/(74130000000*(H51^2)*(G51^3))))	=IF((C51+N51*B51)<14.5,1,(C51+N51*B51))			
52	1325	=(A53-A52)	=O51	=(C52*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E52-F52)	=(E52+F52)	=($T$19+$T$21*$B$1+$T$23*C52+$T$25*$B$1^2+$T$48*C52^2+$T$50*$B$1*C52)/(1+$T$20*$B$1+$T$22*C52+$T$24*$B$1^2+$T$47*C52^2+$T$49*$B$1*C52)	=(5.615*$B$13+(($B$11*$B$9*I52)/(C52*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J52)	=IF((0.000014737*$B$15*$B$4)/H52<0.8,0.8,(0.000014737*$B$15*$B$4)/H52)	=($S$19+$S$20/L52+$S$21/L52^2+$S$22/L52^3+$S$23/L52^4+$S$24/L52^5)	=(K52/144)*(1+((M52*($B$4^2)*(J52^2))/(74130000000*(H52^2)*(G52^3))))	=IF((C52+N52*B52)<14.5,1,(C52+N52*B52))			
53	1300	=(A54-A53)	=O52	=(C53*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E53-F53)	=(E53+F53)	=($T$19+$T$21*$B$1+$T$23*C53+$T$25*$B$1^2+$T$48*C53^2+$T$50*$B$1*C53)/(1+$T$20*$B$1+$T$22*C53+$T$24*$B$1^2+$T$47*C53^2+$T$49*$B$1*C53)	=(5.615*$B$13+(($B$11*$B$9*I53)/(C53*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J53)	=IF((0.000014737*$B$15*$B$4)/H53<0.8,0.8,(0.000014737*$B$15*$B$4)/H53)	=($S$19+$S$20/L53+$S$21/L53^2+$S$22/L53^3+$S$23/L53^4+$S$24/L53^5)	=(K53/144)*(1+((M53*($B$4^2)*(J53^2))/(74130000000*(H53^2)*(G53^3))))	=IF((C53+N53*B53)<14.5,1,(C53+N53*B53))			
54	1275	=(A55-A54)	=O53	=(C54*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E54-F54)	=(E54+F54)	=($T$19+$T$21*$B$1+$T$23*C54+$T$25*$B$1^2+$T$48*C54^2+$T$50*$B$1*C54)/(1+$T$20*$B$1+$T$22*C54+$T$24*$B$1^2+$T$47*C54^2+$T$49*$B$1*C54)	=(5.615*$B$13+(($B$11*$B$9*I54)/(C54*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J54)	=IF((0.000014737*$B$15*$B$4)/H54<0.8,0.8,(0.000014737*$B$15*$B$4)/H54)	=($S$19+$S$20/L54+$S$21/L54^2+$S$22/L54^3+$S$23/L54^4+$S$24/L54^5)	=(K54/144)*(1+((M54*($B$4^2)*(J54^2))/(74130000000*(H54^2)*(G54^3))))	=IF((C54+N54*B54)<14.5,1,(C54+N54*B54))			
55	1250	=(A56-A55)	=O54	=(C55*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E55-F55)	=(E55+F55)	=($T$19+$T$21*$B$1+$T$23*C55+$T$25*$B$1^2+$T$48*C55^2+$T$50*$B$1*C55)/(1+$T$20*$B$1+$T$22*C55+$T$24*$B$1^2+$T$47*C55^2+$T$49*$B$1*C55)	=(5.615*$B$13+(($B$11*$B$9*I55)/(C55*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J55)	=IF((0.000014737*$B$15*$B$4)/H55<0.8,0.8,(0.000014737*$B$15*$B$4)/H55)	=($S$19+$S$20/L55+$S$21/L55^2+$S$22/L55^3+$S$23/L55^4+$S$24/L55^5)	=(K55/144)*(1+((M55*($B$4^2)*(J55^2))/(74130000000*(H55^2)*(G55^3))))	=IF((C55+N55*B55)<14.5,1,(C55+N55*B55))			
56	1225	=(A57-A56)	=O55	=(C56*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E56-F56)	=(E56+F56)	=($T$19+$T$21*$B$1+$T$23*C56+$T$25*$B$1^2+$T$48*C56^2+$T$50*$B$1*C56)/(1+$T$20*$B$1+$T$22*C56+$T$24*$B$1^2+$T$47*C56^2+$T$49*$B$1*C56)	=(5.615*$B$13+(($B$11*$B$9*I56)/(C56*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J56)	=IF((0.000014737*$B$15*$B$4)/H56<0.8,0.8,(0.000014737*$B$15*$B$4)/H56)	=($S$19+$S$20/L56+$S$21/L56^2+$S$22/L56^3+$S$23/L56^4+$S$24/L56^5)	=(K56/144)*(1+((M56*($B$4^2)*(J56^2))/(74130000000*(H56^2)*(G56^3))))	=IF((C56+N56*B56)<14.5,1,(C56+N56*B56))			
57	1200	=(A58-A57)	=O56	=(C57*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E57-F57)	=(E57+F57)	=($T$19+$T$21*$B$1+$T$23*C57+$T$25*$B$1^2+$T$48*C57^2+$T$50*$B$1*C57)/(1+$T$20*$B$1+$T$22*C57+$T$24*$B$1^2+$T$47*C57^2+$T$49*$B$1*C57)	=(5.615*$B$13+(($B$11*$B$9*I57)/(C57*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J57)	=IF((0.000014737*$B$15*$B$4)/H57<0.8,0.8,(0.000014737*$B$15*$B$4)/H57)	=($S$19+$S$20/L57+$S$21/L57^2+$S$22/L57^3+$S$23/L57^4+$S$24/L57^5)	=(K57/144)*(1+((M57*($B$4^2)*(J57^2))/(74130000000*(H57^2)*(G57^3))))	=IF((C57+N57*B57)<14.5,1,(C57+N57*B57))			
58	1175	=(A59-A58)	=O57	=(C58*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E58-F58)	=(E58+F58)	=($T$19+$T$21*$B$1+$T$23*C58+$T$25*$B$1^2+$T$48*C58^2+$T$50*$B$1*C58)/(1+$T$20*$B$1+$T$22*C58+$T$24*$B$1^2+$T$47*C58^2+$T$49*$B$1*C58)	=(5.615*$B$13+(($B$11*$B$9*I58)/(C58*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J58)	=IF((0.000014737*$B$15*$B$4)/H58<0.8,0.8,(0.000014737*$B$15*$B$4)/H58)	=($S$19+$S$20/L58+$S$21/L58^2+$S$22/L58^3+$S$23/L58^4+$S$24/L58^5)	=(K58/144)*(1+((M58*($B$4^2)*(J58^2))/(74130000000*(H58^2)*(G58^3))))	=IF((C58+N58*B58)<14.5,1,(C58+N58*B58))			
59	1150	=(A60-A59)	=O58	=(C59*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E59-F59)	=(E59+F59)	=($T$19+$T$21*$B$1+$T$23*C59+$T$25*$B$1^2+$T$48*C59^2+$T$50*$B$1*C59)/(1+$T$20*$B$1+$T$22*C59+$T$24*$B$1^2+$T$47*C59^2+$T$49*$B$1*C59)	=(5.615*$B$13+(($B$11*$B$9*I59)/(C59*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J59)	=IF((0.000014737*$B$15*$B$4)/H59<0.8,0.8,(0.000014737*$B$15*$B$4)/H59)	=($S$19+$S$20/L59+$S$21/L59^2+$S$22/L59^3+$S$23/L59^4+$S$24/L59^5)	=(K59/144)*(1+((M59*($B$4^2)*(J59^2))/(74130000000*(H59^2)*(G59^3))))	=IF((C59+N59*B59)<14.5,1,(C59+N59*B59))			
60	1125	=(A61-A60)	=O59	=(C60*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E60-F60)	=(E60+F60)	=($T$19+$T$21*$B$1+$T$23*C60+$T$25*$B$1^2+$T$48*C60^2+$T$50*$B$1*C60)/(1+$T$20*$B$1+$T$22*C60+$T$24*$B$1^2+$T$47*C60^2+$T$49*$B$1*C60)	=(5.615*$B$13+(($B$11*$B$9*I60)/(C60*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J60)	=IF((0.000014737*$B$15*$B$4)/H60<0.8,0.8,(0.000014737*$B$15*$B$4)/H60)	=($S$19+$S$20/L60+$S$21/L60^2+$S$22/L60^3+$S$23/L60^4+$S$24/L60^5)	=(K60/144)*(1+((M60*($B$4^2)*(J60^2))/(74130000000*(H60^2)*(G60^3))))	=IF((C60+N60*B60)<14.5,1,(C60+N60*B60))			
61	1100	=(A62-A61)	=O60	=(C61*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E61-F61)	=(E61+F61)	=($T$19+$T$21*$B$1+$T$23*C61+$T$25*$B$1^2+$T$48*C61^2+$T$50*$B$1*C61)/(1+$T$20*$B$1+$T$22*C61+$T$24*$B$1^2+$T$47*C61^2+$T$49*$B$1*C61)	=(5.615*$B$13+(($B$11*$B$9*I61)/(C61*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J61)	=IF((0.000014737*$B$15*$B$4)/H61<0.8,0.8,(0.000014737*$B$15*$B$4)/H61)	=($S$19+$S$20/L61+$S$21/L61^2+$S$22/L61^3+$S$23/L61^4+$S$24/L61^5)	=(K61/144)*(1+((M61*($B$4^2)*(J61^2))/(74130000000*(H61^2)*(G61^3))))	=IF((C61+N61*B61)<14.5,1,(C61+N61*B61))			
62	1075	=(A63-A62)	=O61	=(C62*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E62-F62)	=(E62+F62)	=($T$19+$T$21*$B$1+$T$23*C62+$T$25*$B$1^2+$T$48*C62^2+$T$50*$B$1*C62)/(1+$T$20*$B$1+$T$22*C62+$T$24*$B$1^2+$T$47*C62^2+$T$49*$B$1*C62)	=(5.615*$B$13+(($B$11*$B$9*I62)/(C62*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J62)	=IF((0.000014737*$B$15*$B$4)/H62<0.8,0.8,(0.000014737*$B$15*$B$4)/H62)	=($S$19+$S$20/L62+$S$21/L62^2+$S$22/L62^3+$S$23/L62^4+$S$24/L62^5)	=(K62/144)*(1+((M62*($B$4^2)*(J62^2))/(74130000000*(H62^2)*(G62^3))))	=IF((C62+N62*B62)<14.5,1,(C62+N62*B62))			
63	1050	=(A64-A63)	=O62	=(C63*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E63-F63)	=(E63+F63)	=($T$19+$T$21*$B$1+$T$23*C63+$T$25*$B$1^2+$T$48*C63^2+$T$50*$B$1*C63)/(1+$T$20*$B$1+$T$22*C63+$T$24*$B$1^2+$T$47*C63^2+$T$49*$B$1*C63)	=(5.615*$B$13+(($B$11*$B$9*I63)/(C63*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J63)	=IF((0.000014737*$B$15*$B$4)/H63<0.8,0.8,(0.000014737*$B$15*$B$4)/H63)	=($S$19+$S$20/L63+$S$21/L63^2+$S$22/L63^3+$S$23/L63^4+$S$24/L63^5)	=(K63/144)*(1+((M63*($B$4^2)*(J63^2))/(74130000000*(H63^2)*(G63^3))))	=IF((C63+N63*B63)<14.5,1,(C63+N63*B63))			
64	1025	=(A65-A64)	=O63	=(C64*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E64-F64)	=(E64+F64)	=($T$19+$T$21*$B$1+$T$23*C64+$T$25*$B$1^2+$T$48*C64^2+$T$50*$B$1*C64)/(1+$T$20*$B$1+$T$22*C64+$T$24*$B$1^2+$T$47*C64^2+$T$49*$B$1*C64)	=(5.615*$B$13+(($B$11*$B$9*I64)/(C64*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J64)	=IF((0.000014737*$B$15*$B$4)/H64<0.8,0.8,(0.000014737*$B$15*$B$4)/H64)	=($S$19+$S$20/L64+$S$21/L64^2+$S$22/L64^3+$S$23/L64^4+$S$24/L64^5)	=(K64/144)*(1+((M64*($B$4^2)*(J64^2))/(74130000000*(H64^2)*(G64^3))))	=IF((C64+N64*B64)<14.5,1,(C64+N64*B64))			
65	1000	=(A66-A65)	=O64	=(C65*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E65-F65)	=(E65+F65)	=($T$19+$T$21*$B$1+$T$23*C65+$T$25*$B$1^2+$T$48*C65^2+$T$50*$B$1*C65)/(1+$T$20*$B$1+$T$22*C65+$T$24*$B$1^2+$T$47*C65^2+$T$49*$B$1*C65)	=(5.615*$B$13+(($B$11*$B$9*I65)/(C65*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J65)	=IF((0.000014737*$B$15*$B$4)/H65<0.8,0.8,(0.000014737*$B$15*$B$4)/H65)	=($S$19+$S$20/L65+$S$21/L65^2+$S$22/L65^3+$S$23/L65^4+$S$24/L65^5)	=(K65/144)*(1+((M65*($B$4^2)*(J65^2))/(74130000000*(H65^2)*(G65^3))))	=IF((C65+N65*B65)<14.5,1,(C65+N65*B65))			
66	975	=(A67-A66)	=O65	=(C66*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E66-F66)	=(E66+F66)	=($T$19+$T$21*$B$1+$T$23*C66+$T$25*$B$1^2+$T$48*C66^2+$T$50*$B$1*C66)/(1+$T$20*$B$1+$T$22*C66+$T$24*$B$1^2+$T$47*C66^2+$T$49*$B$1*C66)	=(5.615*$B$13+(($B$11*$B$9*I66)/(C66*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J66)	=IF((0.000014737*$B$15*$B$4)/H66<0.8,0.8,(0.000014737*$B$15*$B$4)/H66)	=($S$19+$S$20/L66+$S$21/L66^2+$S$22/L66^3+$S$23/L66^4+$S$24/L66^5)	=(K66/144)*(1+((M66*($B$4^2)*(J66^2))/(74130000000*(H66^2)*(G66^3))))	=IF((C66+N66*B66)<14.5,1,(C66+N66*B66))			
67	950	=(A68-A67)	=O66	=(C67*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E67-F67)	=(E67+F67)	=($T$19+$T$21*$B$1+$T$23*C67+$T$25*$B$1^2+$T$48*C67^2+$T$50*$B$1*C67)/(1+$T$20*$B$1+$T$22*C67+$T$24*$B$1^2+$T$47*C67^2+$T$49*$B$1*C67)	=(5.615*$B$13+(($B$11*$B$9*I67)/(C67*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J67)	=IF((0.000014737*$B$15*$B$4)/H67<0.8,0.8,(0.000014737*$B$15*$B$4)/H67)	=($S$19+$S$20/L67+$S$21/L67^2+$S$22/L67^3+$S$23/L67^4+$S$24/L67^5)	=(K67/144)*(1+((M67*($B$4^2)*(J67^2))/(74130000000*(H67^2)*(G67^3))))	=IF((C67+N67*B67)<14.5,1,(C67+N67*B67))			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	R	S	T
17	Surface Depth	Delta h	P1	P1	di	do	di - do	di+do		Vm	rho '= M/Vm	1.473E-05*	Fanning	dp/dh	P2			
18	(ft)	(ft)	(psia)	(Pa)	(ft)	(ft)	(ft)	(ft)	z	(cf/bbl)	(lb/ft3)	MQ/(di+do)	Friction, f	(psia/ft)	(psia)		Const', Fanning Friction	Z Factor
68	925	=(A69-A68)	=O67	=(C68*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E68-F68)	=(E68+F68)	=($T$19+$T$21*$B$1+$T$23*C68+$T$25*$B$1^2+$T$48*C68^2+$T$50*$B$1*C68)/(1+$T$20*$B$1+$T$22*C68+$T$24*$B$1^2+$T$47*C68^2+$T$49*$B$1*C68)	=(5.615*$B$13+(($B$11*$B$9*I68)/(C68*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J68)	=IF((0.000014737*$B$15*$B$4)/H68<0.8,0.8,(0.000014737*$B$15*$B$4)/H68)	=($S$19+$S$20/L68+$S$21/L68^2+$S$22/L68^3+$S$23/L68^4+$S$24/L68^5)	=(K68/144)*(1+((M68*($B$4^2)*(J68^2))/(74130000000*(H68^2)*(G68^3))))	=IF((C68+N68*B68)<14.5,1,(C68+N68*B68))			
69	900	=(A70-A69)	=O68	=(C69*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E69-F69)	=(E69+F69)	=($T$19+$T$21*$B$1+$T$23*C69+$T$25*$B$1^2+$T$48*C69^2+$T$50*$B$1*C69)/(1+$T$20*$B$1+$T$22*C69+$T$24*$B$1^2+$T$47*C69^2+$T$49*$B$1*C69)	=(5.615*$B$13+(($B$11*$B$9*I69)/(C69*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J69)	=IF((0.000014737*$B$15*$B$4)/H69<0.8,0.8,(0.000014737*$B$15*$B$4)/H69)	=($S$19+$S$20/L69+$S$21/L69^2+$S$22/L69^3+$S$23/L69^4+$S$24/L69^5)	=(K69/144)*(1+((M69*($B$4^2)*(J69^2))/(74130000000*(H69^2)*(G69^3))))	=IF((C69+N69*B69)<14.5,1,(C69+N69*B69))			
70	875	=(A71-A70)	=O69	=(C70*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E70-F70)	=(E70+F70)	=($T$19+$T$21*$B$1+$T$23*C70+$T$25*$B$1^2+$T$48*C70^2+$T$50*$B$1*C70)/(1+$T$20*$B$1+$T$22*C70+$T$24*$B$1^2+$T$47*C70^2+$T$49*$B$1*C70)	=(5.615*$B$13+(($B$11*$B$9*I70)/(C70*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J70)	=IF((0.000014737*$B$15*$B$4)/H70<0.8,0.8,(0.000014737*$B$15*$B$4)/H70)	=($S$19+$S$20/L70+$S$21/L70^2+$S$22/L70^3+$S$23/L70^4+$S$24/L70^5)	=(K70/144)*(1+((M70*($B$4^2)*(J70^2))/(74130000000*(H70^2)*(G70^3))))	=IF((C70+N70*B70)<14.5,1,(C70+N70*B70))			
71	850	=(A72-A71)	=O70	=(C71*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E71-F71)	=(E71+F71)	=($T$19+$T$21*$B$1+$T$23*C71+$T$25*$B$1^2+$T$48*C71^2+$T$50*$B$1*C71)/(1+$T$20*$B$1+$T$22*C71+$T$24*$B$1^2+$T$47*C71^2+$T$49*$B$1*C71)	=(5.615*$B$13+(($B$11*$B$9*I71)/(C71*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J71)	=IF((0.000014737*$B$15*$B$4)/H71<0.8,0.8,(0.000014737*$B$15*$B$4)/H71)	=($S$19+$S$20/L71+$S$21/L71^2+$S$22/L71^3+$S$23/L71^4+$S$24/L71^5)	=(K71/144)*(1+((M71*($B$4^2)*(J71^2))/(74130000000*(H71^2)*(G71^3))))	=IF((C71+N71*B71)<14.5,1,(C71+N71*B71))			
72	825	=(A73-A72)	=O71	=(C72*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E72-F72)	=(E72+F72)	=($T$19+$T$21*$B$1+$T$23*C72+$T$25*$B$1^2+$T$48*C72^2+$T$50*$B$1*C72)/(1+$T$20*$B$1+$T$22*C72+$T$24*$B$1^2+$T$47*C72^2+$T$49*$B$1*C72)	=(5.615*$B$13+(($B$11*$B$9*I72)/(C72*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J72)	=IF((0.000014737*$B$15*$B$4)/H72<0.8,0.8,(0.000014737*$B$15*$B$4)/H72)	=($S$19+$S$20/L72+$S$21/L72^2+$S$22/L72^3+$S$23/L72^4+$S$24/L72^5)	=(K72/144)*(1+((M72*($B$4^2)*(J72^2))/(74130000000*(H72^2)*(G72^3))))	=IF((C72+N72*B72)<14.5,1,(C72+N72*B72))			
73	800	=(A74-A73)	=O72	=(C73*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E73-F73)	=(E73+F73)	=($T$19+$T$21*$B$1+$T$23*C73+$T$25*$B$1^2+$T$48*C73^2+$T$50*$B$1*C73)/(1+$T$20*$B$1+$T$22*C73+$T$24*$B$1^2+$T$47*C73^2+$T$49*$B$1*C73)	=(5.615*$B$13+(($B$11*$B$9*I73)/(C73*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J73)	=IF((0.000014737*$B$15*$B$4)/H73<0.8,0.8,(0.000014737*$B$15*$B$4)/H73)	=($S$19+$S$20/L73+$S$21/L73^2+$S$22/L73^3+$S$23/L73^4+$S$24/L73^5)	=(K73/144)*(1+((M73*($B$4^2)*(J73^2))/(74130000000*(H73^2)*(G73^3))))	=IF((C73+N73*B73)<14.5,1,(C73+N73*B73))			
74	775	=(A75-A74)	=O73	=(C74*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E74-F74)	=(E74+F74)	=($T$19+$T$21*$B$1+$T$23*C74+$T$25*$B$1^2+$T$48*C74^2+$T$50*$B$1*C74)/(1+$T$20*$B$1+$T$22*C74+$T$24*$B$1^2+$T$47*C74^2+$T$49*$B$1*C74)	=(5.615*$B$13+(($B$11*$B$9*I74)/(C74*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J74)	=IF((0.000014737*$B$15*$B$4)/H74<0.8,0.8,(0.000014737*$B$15*$B$4)/H74)	=($S$19+$S$20/L74+$S$21/L74^2+$S$22/L74^3+$S$23/L74^4+$S$24/L74^5)	=(K74/144)*(1+((M74*($B$4^2)*(J74^2))/(74130000000*(H74^2)*(G74^3))))	=IF((C74+N74*B74)<14.5,1,(C74+N74*B74))			
75	750	=(A76-A75)	=O74	=(C75*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E75-F75)	=(E75+F75)	=($T$19+$T$21*$B$1+$T$23*C75+$T$25*$B$1^2+$T$48*C75^2+$T$50*$B$1*C75)/(1+$T$20*$B$1+$T$22*C75+$T$24*$B$1^2+$T$47*C75^2+$T$49*$B$1*C75)	=(5.615*$B$13+(($B$11*$B$9*I75)/(C75*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J75)	=IF((0.000014737*$B$15*$B$4)/H75<0.8,0.8,(0.000014737*$B$15*$B$4)/H75)	=($S$19+$S$20/L75+$S$21/L75^2+$S$22/L75^3+$S$23/L75^4+$S$24/L75^5)	=(K75/144)*(1+((M75*($B$4^2)*(J75^2))/(74130000000*(H75^2)*(G75^3))))	=IF((C75+N75*B75)<14.5,1,(C75+N75*B75))			
76	725	=(A77-A76)	=O75	=(C76*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E76-F76)	=(E76+F76)	=($T$19+$T$21*$B$1+$T$23*C76+$T$25*$B$1^2+$T$48*C76^2+$T$50*$B$1*C76)/(1+$T$20*$B$1+$T$22*C76+$T$24*$B$1^2+$T$47*C76^2+$T$49*$B$1*C76)	=(5.615*$B$13+(($B$11*$B$9*I76)/(C76*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J76)	=IF((0.000014737*$B$15*$B$4)/H76<0.8,0.8,(0.000014737*$B$15*$B$4)/H76)	=($S$19+$S$20/L76+$S$21/L76^2+$S$22/L76^3+$S$23/L76^4+$S$24/L76^5)	=(K76/144)*(1+((M76*($B$4^2)*(J76^2))/(74130000000*(H76^2)*(G76^3))))	=IF((C76+N76*B76)<14.5,1,(C76+N76*B76))			
77	700	=(A78-A77)	=O76	=(C77*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E77-F77)	=(E77+F77)	=($T$19+$T$21*$B$1+$T$23*C77+$T$25*$B$1^2+$T$48*C77^2+$T$50*$B$1*C77)/(1+$T$20*$B$1+$T$22*C77+$T$24*$B$1^2+$T$47*C77^2+$T$49*$B$1*C77)	=(5.615*$B$13+(($B$11*$B$9*I77)/(C77*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J77)	=IF((0.000014737*$B$15*$B$4)/H77<0.8,0.8,(0.000014737*$B$15*$B$4)/H77)	=($S$19+$S$20/L77+$S$21/L77^2+$S$22/L77^3+$S$23/L77^4+$S$24/L77^5)	=(K77/144)*(1+((M77*($B$4^2)*(J77^2))/(74130000000*(H77^2)*(G77^3))))	=IF((C77+N77*B77)<14.5,1,(C77+N77*B77))			
78	675	=(A79-A78)	=O77	=(C78*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E78-F78)	=(E78+F78)	=($T$19+$T$21*$B$1+$T$23*C78+$T$25*$B$1^2+$T$48*C78^2+$T$50*$B$1*C78)/(1+$T$20*$B$1+$T$22*C78+$T$24*$B$1^2+$T$47*C78^2+$T$49*$B$1*C78)	=(5.615*$B$13+(($B$11*$B$9*I78)/(C78*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J78)	=IF((0.000014737*$B$15*$B$4)/H78<0.8,0.8,(0.000014737*$B$15*$B$4)/H78)	=($S$19+$S$20/L78+$S$21/L78^2+$S$22/L78^3+$S$23/L78^4+$S$24/L78^5)	=(K78/144)*(1+((M78*($B$4^2)*(J78^2))/(74130000000*(H78^2)*(G78^3))))	=IF((C78+N78*B78)<14.5,1,(C78+N78*B78))			
79	650	=(A80-A79)	=O78	=(C79*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E79-F79)	=(E79+F79)	=($T$19+$T$21*$B$1+$T$23*C79+$T$25*$B$1^2+$T$48*C79^2+$T$50*$B$1*C79)/(1+$T$20*$B$1+$T$22*C79+$T$24*$B$1^2+$T$47*C79^2+$T$49*$B$1*C79)	=(5.615*$B$13+(($B$11*$B$9*I79)/(C79*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J79)	=IF((0.000014737*$B$15*$B$4)/H79<0.8,0.8,(0.000014737*$B$15*$B$4)/H79)	=($S$19+$S$20/L79+$S$21/L79^2+$S$22/L79^3+$S$23/L79^4+$S$24/L79^5)	=(K79/144)*(1+((M79*($B$4^2)*(J79^2))/(74130000000*(H79^2)*(G79^3))))	=IF((C79+N79*B79)<14.5,1,(C79+N79*B79))			
80	625	=(A81-A80)	=O79	=(C80*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E80-F80)	=(E80+F80)	=($T$19+$T$21*$B$1+$T$23*C80+$T$25*$B$1^2+$T$48*C80^2+$T$50*$B$1*C80)/(1+$T$20*$B$1+$T$22*C80+$T$24*$B$1^2+$T$47*C80^2+$T$49*$B$1*C80)	=(5.615*$B$13+(($B$11*$B$9*I80)/(C80*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J80)	=IF((0.000014737*$B$15*$B$4)/H80<0.8,0.8,(0.000014737*$B$15*$B$4)/H80)	=($S$19+$S$20/L80+$S$21/L80^2+$S$22/L80^3+$S$23/L80^4+$S$24/L80^5)	=(K80/144)*(1+((M80*($B$4^2)*(J80^2))/(74130000000*(H80^2)*(G80^3))))	=IF((C80+N80*B80)<14.5,1,(C80+N80*B80))			
81	600	=(A82-A81)	=O80	=(C81*Sheet2!$D$3)	=12.25/12	=3.5/12	=(E81-F81)	=(E81+F81)	=($T$19+$T$21*$B$1+$T$23*C81+$T$25*$B$1^2+$T$48*C81^2+$T$50*$B$1*C81)/(1+$T$20*$B$1+$T$22*C81+$T$24*$B$1^2+$T$47*C81^2+$T$49*$B$1*C81)	=(5.615*$B$13+(($B$11*$B$9*I81)/(C81*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J81)	=IF((0.000014737*$B$15*$B$4)/H81<0.8,0.8,(0.000014737*$B$15*$B$4)/H81)	=($S$19+$S$20/L81+$S$21/L81^2+$S$22/L81^3+$S$23/L81^4+$S$24/L81^5)	=(K81/144)*(1+((M81*($B$4^2)*(J81^2))/(74130000000*(H81^2)*(G81^3))))	=IF((C81+N81*B81)<14.5,1,(C81+N81*B81))			
82	575	=(A83-A82)	=O81	=(C82*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E82-F82)	=(E82+F82)	=($T$19+$T$21*$B$1+$T$23*C82+$T$25*$B$1^2+$T$48*C82^2+$T$50*$B$1*C82)/(1+$T$20*$B$1+$T$22*C82+$T$24*$B$1^2+$T$47*C82^2+$T$49*$B$1*C82)	=(5.615*$B$13+(($B$11*$B$9*I82)/(C82*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J82)	=IF((0.000014737*$B$15*$B$4)/H82<0.8,0.8,(0.000014737*$B$15*$B$4)/H82)	=($S$19+$S$20/L82+$S$21/L82^2+$S$22/L82^3+$S$23/L82^4+$S$24/L82^5)	=(K82/144)*(1+((M82*($B$4^2)*(J82^2))/(74130000000*(H82^2)*(G82^3))))	=IF((C82+N82*B82)<14.5,1,(C82+N82*B82))			
83	550	=(A84-A83)	=O82	=(C83*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E83-F83)	=(E83+F83)	=($T$19+$T$21*$B$1+$T$23*C83+$T$25*$B$1^2+$T$48*C83^2+$T$50*$B$1*C83)/(1+$T$20*$B$1+$T$22*C83+$T$24*$B$1^2+$T$47*C83^2+$T$49*$B$1*C83)	=(5.615*$B$13+(($B$11*$B$9*I83)/(C83*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J83)	=IF((0.000014737*$B$15*$B$4)/H83<0.8,0.8,(0.000014737*$B$15*$B$4)/H83)	=($S$19+$S$20/L83+$S$21/L83^2+$S$22/L83^3+$S$23/L83^4+$S$24/L83^5)	=(K83/144)*(1+((M83*($B$4^2)*(J83^2))/(74130000000*(H83^2)*(G83^3))))	=IF((C83+N83*B83)<14.5,1,(C83+N83*B83))			
84	525	=(A85-A84)	=O83	=(C84*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E84-F84)	=(E84+F84)	=($T$19+$T$21*$B$1+$T$23*C84+$T$25*$B$1^2+$T$48*C84^2+$T$50*$B$1*C84)/(1+$T$20*$B$1+$T$22*C84+$T$24*$B$1^2+$T$47*C84^2+$T$49*$B$1*C84)	=(5.615*$B$13+(($B$11*$B$9*I84)/(C84*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J84)	=IF((0.000014737*$B$15*$B$4)/H84<0.8,0.8,(0.000014737*$B$15*$B$4)/H84)	=($S$19+$S$20/L84+$S$21/L84^2+$S$22/L84^3+$S$23/L84^4+$S$24/L84^5)	=(K84/144)*(1+((M84*($B$4^2)*(J84^2))/(74130000000*(H84^2)*(G84^3))))	=IF((C84+N84*B84)<14.5,1,(C84+N84*B84))			
85	500	=(A86-A85)	=O84	=(C85*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E85-F85)	=(E85+F85)	=($T$19+$T$21*$B$1+$T$23*C85+$T$25*$B$1^2+$T$48*C85^2+$T$50*$B$1*C85)/(1+$T$20*$B$1+$T$22*C85+$T$24*$B$1^2+$T$47*C85^2+$T$49*$B$1*C85)	=(5.615*$B$13+(($B$11*$B$9*I85)/(C85*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J85)	=IF((0.000014737*$B$15*$B$4)/H85<0.8,0.8,(0.000014737*$B$15*$B$4)/H85)	=($S$19+$S$20/L85+$S$21/L85^2+$S$22/L85^3+$S$23/L85^4+$S$24/L85^5)	=(K85/144)*(1+((M85*($B$4^2)*(J85^2))/(74130000000*(H85^2)*(G85^3))))	=IF((C85+N85*B85)<14.5,1,(C85+N85*B85))			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	R	S	T
17	Surface Depth	Delta h	P1	P1	di	do	di - do	di+do		Vm	rho '= M/Vm	1.4737E-05*	Fanning	dp/dh	P2			
18	(ft)	(ft)	(psia)	(Pa)	(ft)	(ft)	(ft)	(ft)	z	(cf/bbl)	(lb/ft3)	MQ/(di+do)	Friction, f	(psia/ft)	(psia)	Const	f, Fanning Friction	Z Factor
86	475	=(A87-A86)	=O85	=(C86*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E86-F86)	=(E86+F86)	=($T$19+$T$21*$B$1+$T$23*C86+$T$25*$B$1^2+$T$48*C86^2+$T$50*$B$1*C86)/(1+$T$20*$B$1+$T$22*C86+$T$24*$B$1^2+$T$47*C86^2+$T$49*$B$1*C86)	=(5.615*$B$13+(($B$11*$B$9*I86)/(C86*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J86)	=IF((0.000014737*$B$15*$B$4)/H86<0.8,0.8,(0.000014737*$B$15*$B$4)/H86)	=($S$19+$S$20/L86+$S$21/L86^2+$S$22/L86^3+$S$23/L86^4+$S$24/L86^5)	=(K86/144)*(1+((M86*($B$4^2)*(J86^2))/(74130000000*(H86^2)*(G86^3))))	=IF((C86+N86*B86)<14.5,1,(C86+N86*B86))			
87	450	=(A88-A87)	=O86	=(C87*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E87-F87)	=(E87+F87)	=($T$19+$T$21*$B$1+$T$23*C87+$T$25*$B$1^2+$T$48*C87^2+$T$50*$B$1*C87)/(1+$T$20*$B$1+$T$22*C87+$T$24*$B$1^2+$T$47*C87^2+$T$49*$B$1*C87)	=(5.615*$B$13+(($B$11*$B$9*I87)/(C87*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J87)	=IF((0.000014737*$B$15*$B$4)/H87<0.8,0.8,(0.000014737*$B$15*$B$4)/H87)	=($S$19+$S$20/L87+$S$21/L87^2+$S$22/L87^3+$S$23/L87^4+$S$24/L87^5)	=(K87/144)*(1+((M87*($B$4^2)*(J87^2))/(74130000000*(H87^2)*(G87^3))))	=IF((C87+N87*B87)<14.5,1,(C87+N87*B87))			
88	425	=(A89-A88)	=O87	=(C88*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E88-F88)	=(E88+F88)	=($T$19+$T$21*$B$1+$T$23*C88+$T$25*$B$1^2+$T$48*C88^2+$T$50*$B$1*C88)/(1+$T$20*$B$1+$T$22*C88+$T$24*$B$1^2+$T$47*C88^2+$T$49*$B$1*C88)	=(5.615*$B$13+(($B$11*$B$9*I88)/(C88*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J88)	=IF((0.000014737*$B$15*$B$4)/H88<0.8,0.8,(0.000014737*$B$15*$B$4)/H88)	=($S$19+$S$20/L88+$S$21/L88^2+$S$22/L88^3+$S$23/L88^4+$S$24/L88^5)	=(K88/144)*(1+((M88*($B$4^2)*(J88^2))/(74130000000*(H88^2)*(G88^3))))	=IF((C88+N88*B88)<14.5,1,(C88+N88*B88))			
89	400	=(A90-A89)	=O88	=(C89*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E89-F89)	=(E89+F89)	=($T$19+$T$21*$B$1+$T$23*C89+$T$25*$B$1^2+$T$48*C89^2+$T$50*$B$1*C89)/(1+$T$20*$B$1+$T$22*C89+$T$24*$B$1^2+$T$47*C89^2+$T$49*$B$1*C89)	=(5.615*$B$13+(($B$11*$B$9*I89)/(C89*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J89)	=IF((0.000014737*$B$15*$B$4)/H89<0.8,0.8,(0.000014737*$B$15*$B$4)/H89)	=($S$19+$S$20/L89+$S$21/L89^2+$S$22/L89^3+$S$23/L89^4+$S$24/L89^5)	=(K89/144)*(1+((M89*($B$4^2)*(J89^2))/(74130000000*(H89^2)*(G89^3))))	=IF((C89+N89*B89)<14.5,1,(C89+N89*B89))			
90	375	=(A91-A90)	=O89	=(C90*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E90-F90)	=(E90+F90)	=($T$19+$T$21*$B$1+$T$23*C90+$T$25*$B$1^2+$T$48*C90^2+$T$50*$B$1*C90)/(1+$T$20*$B$1+$T$22*C90+$T$24*$B$1^2+$T$47*C90^2+$T$49*$B$1*C90)	=(5.615*$B$13+(($B$11*$B$9*I90)/(C90*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J90)	=IF((0.000014737*$B$15*$B$4)/H90<0.8,0.8,(0.000014737*$B$15*$B$4)/H90)	=($S$19+$S$20/L90+$S$21/L90^2+$S$22/L90^3+$S$23/L90^4+$S$24/L90^5)	=(K90/144)*(1+((M90*($B$4^2)*(J90^2))/(74130000000*(H90^2)*(G90^3))))	=IF((C90+N90*B90)<14.5,1,(C90+N90*B90))			
91	350	=(A92-A91)	=O90	=(C91*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E91-F91)	=(E91+F91)	=($T$19+$T$21*$B$1+$T$23*C91+$T$25*$B$1^2+$T$48*C91^2+$T$50*$B$1*C91)/(1+$T$20*$B$1+$T$22*C91+$T$24*$B$1^2+$T$47*C91^2+$T$49*$B$1*C91)	=(5.615*$B$13+(($B$11*$B$9*I91)/(C91*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J91)	=IF((0.000014737*$B$15*$B$4)/H91<0.8,0.8,(0.000014737*$B$15*$B$4)/H91)	=($S$19+$S$20/L91+$S$21/L91^2+$S$22/L91^3+$S$23/L91^4+$S$24/L91^5)	=(K91/144)*(1+((M91*($B$4^2)*(J91^2))/(74130000000*(H91^2)*(G91^3))))	=IF((C91+N91*B91)<14.5,1,(C91+N91*B91))			
92	325	=(A93-A92)	=O91	=(C92*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E92-F92)	=(E92+F92)	=($T$19+$T$21*$B$1+$T$23*C92+$T$25*$B$1^2+$T$48*C92^2+$T$50*$B$1*C92)/(1+$T$20*$B$1+$T$22*C92+$T$24*$B$1^2+$T$47*C92^2+$T$49*$B$1*C92)	=(5.615*$B$13+(($B$11*$B$9*I92)/(C92*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J92)	=IF((0.000014737*$B$15*$B$4)/H92<0.8,0.8,(0.000014737*$B$15*$B$4)/H92)	=($S$19+$S$20/L92+$S$21/L92^2+$S$22/L92^3+$S$23/L92^4+$S$24/L92^5)	=(K92/144)*(1+((M92*($B$4^2)*(J92^2))/(74130000000*(H92^2)*(G92^3))))	=IF((C92+N92*B92)<14.5,1,(C92+N92*B92))			
93	300	=(A94-A93)	=O92	=(C93*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E93-F93)	=(E93+F93)	=($T$19+$T$21*$B$1+$T$23*C93+$T$25*$B$1^2+$T$48*C93^2+$T$50*$B$1*C93)/(1+$T$20*$B$1+$T$22*C93+$T$24*$B$1^2+$T$47*C93^2+$T$49*$B$1*C93)	=(5.615*$B$13+(($B$11*$B$9*I93)/(C93*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J93)	=IF((0.000014737*$B$15*$B$4)/H93<0.8,0.8,(0.000014737*$B$15*$B$4)/H93)	=($S$19+$S$20/L93+$S$21/L93^2+$S$22/L93^3+$S$23/L93^4+$S$24/L93^5)	=(K93/144)*(1+((M93*($B$4^2)*(J93^2))/(74130000000*(H93^2)*(G93^3))))	=IF((C93+N93*B93)<14.5,1,(C93+N93*B93))			
94	275	=(A95-A94)	=O93	=(C94*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E94-F94)	=(E94+F94)	=($T$19+$T$21*$B$1+$T$23*C94+$T$25*$B$1^2+$T$48*C94^2+$T$50*$B$1*C94)/(1+$T$20*$B$1+$T$22*C94+$T$24*$B$1^2+$T$47*C94^2+$T$49*$B$1*C94)	=(5.615*$B$13+(($B$11*$B$9*I94)/(C94*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J94)	=IF((0.000014737*$B$15*$B$4)/H94<0.8,0.8,(0.000014737*$B$15*$B$4)/H94)	=($S$19+$S$20/L94+$S$21/L94^2+$S$22/L94^3+$S$23/L94^4+$S$24/L94^5)	=(K94/144)*(1+((M94*($B$4^2)*(J94^2))/(74130000000*(H94^2)*(G94^3))))	=IF((C94+N94*B94)<14.5,1,(C94+N94*B94))			
95	250	=(A96-A95)	=O94	=(C95*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E95-F95)	=(E95+F95)	=($T$19+$T$21*$B$1+$T$23*C95+$T$25*$B$1^2+$T$48*C95^2+$T$50*$B$1*C95)/(1+$T$20*$B$1+$T$22*C95+$T$24*$B$1^2+$T$47*C95^2+$T$49*$B$1*C95)	=(5.615*$B$13+(($B$11*$B$9*I95)/(C95*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J95)	=IF((0.000014737*$B$15*$B$4)/H95<0.8,0.8,(0.000014737*$B$15*$B$4)/H95)	=($S$19+$S$20/L95+$S$21/L95^2+$S$22/L95^3+$S$23/L95^4+$S$24/L95^5)	=(K95/144)*(1+((M95*($B$4^2)*(J95^2))/(74130000000*(H95^2)*(G95^3))))	=IF((C95+N95*B95)<14.5,1,(C95+N95*B95))			
96	225	=(A97-A96)	=O95	=(C96*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E96-F96)	=(E96+F96)	=($T$19+$T$21*$B$1+$T$23*C96+$T$25*$B$1^2+$T$48*C96^2+$T$50*$B$1*C96)/(1+$T$20*$B$1+$T$22*C96+$T$24*$B$1^2+$T$47*C96^2+$T$49*$B$1*C96)	=(5.615*$B$13+(($B$11*$B$9*I96)/(C96*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J96)	=IF((0.000014737*$B$15*$B$4)/H96<0.8,0.8,(0.000014737*$B$15*$B$4)/H96)	=($S$19+$S$20/L96+$S$21/L96^2+$S$22/L96^3+$S$23/L96^4+$S$24/L96^5)	=(K96/144)*(1+((M96*($B$4^2)*(J96^2))/(74130000000*(H96^2)*(G96^3))))	=IF((C96+N96*B96)<14.5,1,(C96+N96*B96))			
97	200	=(A98-A97)	=O96	=(C97*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E97-F97)	=(E97+F97)	=($T$19+$T$21*$B$1+$T$23*C97+$T$25*$B$1^2+$T$48*C97^2+$T$50*$B$1*C97)/(1+$T$20*$B$1+$T$22*C97+$T$24*$B$1^2+$T$47*C97^2+$T$49*$B$1*C97)	=(5.615*$B$13+(($B$11*$B$9*I97)/(C97*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J97)	=IF((0.000014737*$B$15*$B$4)/H97<0.8,0.8,(0.000014737*$B$15*$B$4)/H97)	=($S$19+$S$20/L97+$S$21/L97^2+$S$22/L97^3+$S$23/L97^4+$S$24/L97^5)	=(K97/144)*(1+((M97*($B$4^2)*(J97^2))/(74130000000*(H97^2)*(G97^3))))	=IF((C97+N97*B97)<14.5,1,(C97+N97*B97))			
98	175	=(A99-A98)	=O97	=(C98*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E98-F98)	=(E98+F98)	=($T$19+$T$21*$B$1+$T$23*C98+$T$25*$B$1^2+$T$48*C98^2+$T$50*$B$1*C98)/(1+$T$20*$B$1+$T$22*C98+$T$24*$B$1^2+$T$47*C98^2+$T$49*$B$1*C98)	=(5.615*$B$13+(($B$11*$B$9*I98)/(C98*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J98)	=IF((0.000014737*$B$15*$B$4)/H98<0.8,0.8,(0.000014737*$B$15*$B$4)/H98)	=($S$19+$S$20/L98+$S$21/L98^2+$S$22/L98^3+$S$23/L98^4+$S$24/L98^5)	=(K98/144)*(1+((M98*($B$4^2)*(J98^2))/(74130000000*(H98^2)*(G98^3))))	=IF((C98+N98*B98)<14.5,1,(C98+N98*B98))			
99	150	=(A100-A99)	=O98	=(C99*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E99-F99)	=(E99+F99)	=($T$19+$T$21*$B$1+$T$23*C99+$T$25*$B$1^2+$T$48*C99^2+$T$50*$B$1*C99)/(1+$T$20*$B$1+$T$22*C99+$T$24*$B$1^2+$T$47*C99^2+$T$49*$B$1*C99)	=(5.615*$B$13+(($B$11*$B$9*I99)/(C99*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J99)	=IF((0.000014737*$B$15*$B$4)/H99<0.8,0.8,(0.000014737*$B$15*$B$4)/H99)	=($S$19+$S$20/L99+$S$21/L99^2+$S$22/L99^3+$S$23/L99^4+$S$24/L99^5)	=(K99/144)*(1+((M99*($B$4^2)*(J99^2))/(74130000000*(H99^2)*(G99^3))))	=IF((C99+N99*B99)<14.5,1,(C99+N99*B99))			
100	125	=(A101-A100)	=O99	=(C100*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E100-F100)	=(E100+F100)	=($T$19+$T$21*$B$1+$T$23*C100+$T$25*$B$1^2+$T$48*C100^2+$T$50*$B$1*C100)/(1+$T$20*$B$1+$T$22*C100+$T$24*$B$1^2+$T$47*C100^2+$T$49*$B$1*C100)	=(5.615*$B$13+(($B$11*$B$9*I100)/(C100*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J100)	=IF((0.000014737*$B$15*$B$4)/H100<0.8,0.8,(0.000014737*$B$15*$B$4)/H100)	=($S$19+$S$20/L100+$S$21/L100^2+$S$22/L100^3+$S$23/L100^4+$S$24/L100^5)	=(K100/144)*(1+((M100*($B$4^2)*(J100^2))/(74130000000*(H100^2)*(G100^3))))	=IF((C100+N100*B100)<14.5,1,(C100+N100*B100))			
101	100	=(A102-A101)	=O100	=(C101*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E101-F101)	=(E101+F101)	=($T$19+$T$21*$B$1+$T$23*C101+$T$25*$B$1^2+$T$48*C101^2+$T$50*$B$1*C101)/(1+$T$20*$B$1+$T$22*C101+$T$24*$B$1^2+$T$47*C101^2+$T$49*$B$1*C101)	=(5.615*$B$13+(($B$11*$B$9*I101)/(C101*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J101)	=IF((0.000014737*$B$15*$B$4)/H101<0.8,0.8,(0.000014737*$B$15*$B$4)/H101)	=($S$19+$S$20/L101+$S$21/L101^2+$S$22/L101^3+$S$23/L101^4+$S$24/L101^5)	=(K101/144)*(1+((M101*($B$4^2)*(J101^2))/(74130000000*(H101^2)*(G101^3))))	=IF((C101+N101*B101)<14.5,1,(C101+N101*B101))			
102	75	=(A103-A102)	=O101	=(C102*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E102-F102)	=(E102+F102)	=($T$19+$T$21*$B$1+$T$23*C102+$T$25*$B$1^2+$T$48*C102^2+$T$50*$B$1*C102)/(1+$T$20*$B$1+$T$22*C102+$T$24*$B$1^2+$T$47*C102^2+$T$49*$B$1*C102)	=(5.615*$B$13+(($B$11*$B$9*I102)/(C102*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J102)	=IF((0.000014737*$B$15*$B$4)/H102<0.8,0.8,(0.000014737*$B$15*$B$4)/H102)	=($S$19+$S$20/L102+$S$21/L102^2+$S$22/L102^3+$S$23/L102^4+$S$24/L102^5)	=(K102/144)*(1+((M102*($B$4^2)*(J102^2))/(74130000000*(H102^2)*(G102^3))))	=IF((C102+N102*B102)<14.5,1,(C102+N102*B102))			
103	50	=(A104-A103)	=O102	=(C103*Sheet2!$D$3)	=12.72/12	=3.5/12	=(E103-F103)	=(E103+F103)	=($T$19+$T$21*$B$1+$T$23*C103+$T$25*$B$1^2+$T$48*C103^2+$T$50*$B$1*C103)/(1+$T$20*$B$1+$T$22*C103+$T$24*$B$1^2+$T$47*C103^2+$T$49*$B$1*C103)	=(5.615*$B$13+(($B$11*$B$9*I103)/(C103*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J103)	=IF((0.000014737*$B$15*$B$4)/H103<0.8,0.8,(0.000014737*$B$15*$B$4)/H103)	=($S$19+$S$20/L103+$S$21/L103^2+$S$22/L103^3+$S$23/L103^4+$S$24/L103^5)	=(K103/144)*(1+((M103*($B$4^2)*(J103^2))/(74130000000*(H103^2)*(G103^3))))	=IF((C103+N103*B103)<14.5,1,(C103+N103*B103))			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	R	S	T
17	Surface Depth	Delta h	P1	P1	di	do	di - do	di+do		Vm	rho ' = M/Vm	1.4737E-05*	Fanning	dp/dh	P2			
18	(ft)	(ft)	(psia)	(Pa)	(ft)	(ft)	(ft)	(ft)	z	(cf/bbl)	(lb/ft3)	MQ/(di+do)	Friction, (	(psia/ft)	(psia)	Const f, Fanning Friction		Z Factor
104	25	=(A105-A104)	=O103	=(C104*Sheet 2!$D$3)	=12.72/12	=3.5/12	=(E104-F104)	=(E104+F104)	=($T$19+$T$21*$B$1+$T$23*C104+$T$25*$B$1^2+$T$46*C104^2+$T$50*$B$1*C104)/(1+$T$20*$B$1+$T$22*C104+$T$24*$B$1^2+$T$47*C104^2+$T$48*$B$1*C104)	=(5.615*$B$13+(($B$11*$B$9*I104)/(C104*$B$10))*($B$5-$B$12)+$B$14)	=($B$15/J104)	=IF((0.000014737*$B$15*$B$4)/H104<0.8,0.8,(0.000014737*$B$15*$B$4)/H104)	=($S$19+$S$20/L104+$S$21/L104^2+$S$22/L104^3+$S$23/L104^4+$S$24/L104^5)	=(K104/144)*(1+((M104*($B$4^2)*(J104^2))/(7413000000*(H104^2)*(G104^3))))	=IF((C104+N104*B104)<14.5,1,(C104+N104*B104))			
105	0	=(A106-A105)	=O104	=(C105*Sheet 2!$D$3)														

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	MMcf/d / m^3/s			3.051187																			
2	bbl/d / m^s/s			543456																			
3	Pascals/Psi			6894.757																			
4	Del X (m)			10																			
5	Del Y (m)			32.7																			
6	re (m)			=SQRT(D4*D5/PI())																			
7	rw (m)			0.155575																			
8	Lambda			2.89																			
9	Brine Vis (Pa-s)			0.0018																			
10	Gas Vis (Pa-s)			0.00000892															Surface Pressure (Pa) =			101320	
11																			Tolerances (normal,relaxed) =			0.0007	0.05
12	Mole	Panel	FBHP	Repos. Abs.	Residual	Residual	Crushed	Spallings								Brine	Gas			Brine	Gas	Surface	
13	Fraction	Pressure	Postmann	Permeability	Gas	Brine	Height	& Cavings							WellPI	Constant	Constant	qbrine	qgas	Flow	Flow	Pressure	
14	H2	Pa	Pa	m^2	Satur.	Satur.	(m)	(m^3)	Sw	Skin	Sabrine	Segas	krw	krg	m^3	m^3/Pa-s	m^3/Pa-s	m3/s	m^3/s	bbl/d	mmcf/d	Pa	
15	1	9619580	4826921	0.000000000000170216	0.1273	0.0624	1.25991	0.91944	0.718129	=-1*LN(SQRT(H15/PI())/$D$7)	=IF((I15-F15)<0,0,(I15-F15)/(1-F15))	=IF((I15-F15)<0,0,IF((I15-F15)/(1-E15-F15)>1,1,(I15-F15)/(1-E15-F15)))	=(K15^((2+3*$D$8)/$D$8))	=(1-L15)^2*(1-L15^((2+$D$8)/$D$8))	=(D15*G15/(LN($D$6/$D$7)+J15-0.5))	=(O15*M15/$D$9)	=(O15*N15/$D$10)	=(P15*(B15-C15))	=(Q15*(B15-C15))	=(R15*$D$2)	=(S15*$D$1)	=Sheet1!D105	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Mole	Panel	FBHP	Repos. Abs.	Residual	Residual	Crushed									Brine	Gas			Brine	Gas	Surface
2	Fraction	Pressure	Poetmann	Permeability	Gas	Brine	Height	Area_tot							WellPI	Constant	Constant	qbrine	qgas	Flow	Flow	Pressure
3	H2	Pa	Pa	m^2	Satur.	Satur.	(m)	(m^3)	Sw	Skin	Sebrine	Segas	krw	krg	m^3	m^3/Pa-s	m^3/Pa-s	m3/s	m^3/s	bbl/d	mmcf/d	Pa
4	1	9.61E+06	2.05E+05	1.702E-13	0.1273	0.06	1.25991	0.91944	0.10257	-1.24627	0.04284	0.04957	0.00001	0.89772	8.80012E-14	4.34466E-16	8.85853E-09	4.08579E-09	0.08329	0.00222	0.25413	101348.62358
5	1	9.61E+06	1.97E+05	1.702E-13	0.1273	0.06	1.25991	0.91944	0.12246	-1.24627	0.06406	0.07412	0.00004	0.84675	8.80012E-14	1.91897E-15	8.35372E-09	1.80630E-08	0.07863	0.00982	0.23992	101269.35587
6	1	9.62E+06	1.88E+05	1.702E-13	0.1273	0.06	1.25991	0.91944	0.44756	-1.24627	0.41080	0.47533	0.03745	0.19707	8.80012E-14	1.83110E-12	1.94421E-09	1.72617E-05	0.01833	9.38100	0.05592	101337.63217
7	1	9.62E+06	4.83E+06	1.702E-13	0.1273	0.06	1.25991	0.91944	0.71813	-1.24627	0.69937	0.80924	0.26709	0.01095	8.80012E-14	1.30577E-11	1.08064E-10	6.25812E-05	0.00052	34.01012	0.00158	101328.63041
8	-999																					

Appendix G: Complete Listing of Variable Output for All Direct Release Realizations

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No.	File (*.TXT)	• ID	• Rep	• Scen	• Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
1	L1S1B100	Down-dip	1	1	100	350	0.617	0.019	0.040	1.569	8.61E+6	0.125	8.61E+6	0.153	-1.181	106.80E-15
2	L1S1E009	Down-dip	1	1	9	1,000	0.532	0.006	0.181	1.284	9.54E+6	0.211	9.54E+6	0.289	-1.303	91.82E-15
3	L1S1E026	Down-dip	1	1	26	1,000	0.520	0.127	0.062	1.252	8.40E+6	0.174	8.40E+6	0.389	-1.286	88.91E-15
4	L1S1E030	Down-dip	1	1	30	1,000	0.555	0.031	0.047	1.349	10.14E+6	0.070	10.14E+6	0.142	-1.056	87.42E-15
5	L1S1E034	Down-dip	1	1	34	1,000	0.568	0.060	0.052	1.391	11.87E+6	0.084	11.87E+6	0.132	-1.111	92.07E-15
6	L1S1E046	Down-dip	1	1	46	1,000	0.550	0.090	0.003	1.333	11.07E+6	0.144	11.09E+6	0.503	-1.340	96.86E-15
7	L1S1E059	Down-dip	1	1	59	1,000	0.524	0.081	0.028	1.262	8.39E+6	0.082	8.40E+6	0.202	-0.928	77.96E-15
8	L1S1E064	Down-dip	1	1	64	1,000	0.566	0.101	0.134	1.385	11.36E+6	0.191	11.36E+6	0.364	-1.291	98.57E-15
9	L1S1E092	Down-dip	1	1	92	1,000	0.582	0.143	0.017	1.438	13.18E+6	0.010	13.18E+6	0.051	-0.791	84.60E-15
10	L1S1E100	Down-dip	1	1	100	1,000	0.558	0.019	0.040	1.359	11.19E+6	0.140	11.19E+6	0.212	-1.294	96.87E-15
11	L1S1I004	Down-dip	1	1	4	3,000	0.536	0.064	0.183	1.294	10.54E+6	0.002	10.55E+6	0.242	-1.301	92.49E-15
12	L1S1I016	Down-dip	1	1	16	3,000	0.503	0.103	0.271	1.209	8.59E+6	0.105	8.59E+6	0.432	-1.104	79.80E-15
13	L1S1I026	Down-dip	1	1	26	3,000	0.557	0.127	0.062	1.357	12.25E+6	0.033	12.25E+6	0.271	-1.338	98.46E-15
14	L1S1I030	Down-dip	1	1	30	3,000	0.559	0.031	0.047	1.362	12.40E+6	0.044	12.41E+6	0.183	-1.093	89.51E-15
15	L1S1I034	Down-dip	1	1	34	3,000	0.570	0.060	0.052	1.397	13.35E+6	0.031	13.35E+6	0.136	-1.133	93.23E-15
16	L1S1I038	Down-dip	1	1	38	3,000	0.511	0.146	0.055	1.228	8.90E+6	0.075	8.91E+6	0.426	-1.042	79.11E-15
17	L1S1I039	Down-dip	1	1	39	3,000	0.522	0.134	0.320	1.256	9.50E+6	0.000	9.51E+6	0.751	-1.294	89.46E-15
18	L1S1I046	Down-dip	1	1	46	3,000	0.572	0.090	0.003	1.403	13.51E+6	0.076	13.51E+6	0.458	-1.362	102.80E-15
19	L1S1I058	Down-dip	1	1	58	3,000	0.500	0.047	0.345	1.201	8.40E+6	0.036	8.40E+6	0.394	-0.942	74.55E-15
20	L1S1I059	Down-dip	1	1	59	3,000	0.536	0.081	0.028	1.294	10.53E+6	0.000	10.54E+6	0.181	-0.960	80.88E-15
21	L1S1I062	Down-dip	1	1	62	3,000	0.536	0.038	0.351	1.294	10.53E+6	0.172	10.55E+6	0.835	-0.819	76.88E-15
22	L1S1I064	Down-dip	1	1	64	3,000	0.558	0.101	0.134	1.358	12.30E+6	0.165	12.31E+6	0.411	-1.318	97.77E-15
23	L1S1I067	Down-dip	1	1	67	3,000	0.523	0.087	0.361	1.260	9.61E+6	0.034	9.61E+6	0.400	-0.902	77.12E-15
24	L1S1I075	Down-dip	1	1	75	3,000	0.514	0.141	0.096	1.236	9.11E+6	0.082	9.11E+6	0.429	-1.285	87.72E-15
25	L1S1I083	Down-dip	1	1	83	3,000	0.513	0.097	0.102	1.233	9.02E+6	0.000	9.02E+6	0.120	-1.266	86.85E-15
26	L1S1I100	Down-dip	1	1	100	3,000	0.549	0.019	0.040	1.331	11.54E+6	0.098	11.55E+6	0.300	-1.310	95.44E-15
27	L1S1K004	Down-dip	1	1	4	5,000	0.545	0.064	0.183	1.320	11.26E+6	0.000	11.26E+6	0.224	-1.308	94.59E-15
28	L1S1K005	Down-dip	1	1	5	5,000	0.505	0.072	0.092	1.214	8.76E+6	0.075	8.77E+6	0.631	-1.297	86.60E-15
29	L1S1K007	Down-dip	1	1	7	5,000	0.516	0.039	0.067	1.242	9.21E+6	0.053	9.22E+6	0.781	-1.122	82.51E-15
30	L1S1K016	Down-dip	1	1	16	5,000	0.540	0.103	0.271	1.305	10.84E+6	0.017	10.84E+6	0.351	-1.120	86.66E-15
31	L1S1K018	Down-dip	1	1	18	5,000	0.511	0.002	0.108	1.229	8.98E+6	0.031	8.98E+6	0.355	-1.301	87.77E-15
32	L1S1K021	Down-dip	1	1	21	5,000	0.558	0.034	0.164	1.360	12.35E+6	0.000	12.35E+6	0.168	-1.297	97.01E-15
33	L1S1K026	Down-dip	1	1	26	5,000	0.570	0.127	0.062	1.396	13.33E+6	0.001	13.33E+6	0.249	-1.345	101.60E-15
34	L1S1K030	Down-dip	1	1	30	5,000	0.564	0.031	0.047	1.378	12.83E+6	0.025	12.83E+6	0.196	-1.095	90.63E-15
35	L1S1K034	Down-dip	1	1	34	5,000	0.578	0.060	0.052	1.422	14.00E+6	0.005	14.00E+6	0.146	-1.136	94.98E-15
36	L1S1K038	Down-dip	1	1	38	5,000	0.538	0.146	0.055	1.299	10.68E+6	0.025	10.68E+6	0.355	-1.056	84.15E-15
37	L1S1K039	Down-dip	1	1	39	5,000	0.541	0.134	0.320	1.309	10.94E+6	0.000	10.96E+6	0.714	-1.306	93.70E-15
38	L1S1K045	Down-dip	1	1	45	5,000	0.497	0.046	0.405	1.194	8.42E+6	0.127	8.42E+6	0.454	-1.303	85.37E-15
39	L1S1K046	Down-dip	1	1	46	5,000	0.574	0.090	0.003	1.411	13.71E+6	0.047	13.71E+6	0.444	-1.362	103.50E-15
40	L1S1K052	Down-dip	1	1	52	5,000	0.500	0.098	0.035	1.202	8.54E+6	0.000	8.55E+6	0.501	-1.336	87.13E-15
41	L1S1K058	Down-dip	1	1	58	5,000	0.514	0.047	0.345	1.235	9.08E+6	0.014	9.09E+6	0.438	-0.946	76.83E-15
42	L1S1K059	Down-dip	1	1	59	5,000	0.547	0.081	0.028	1.324	11.37E+6	0.000	11.38E+6	0.161	-0.966	82.96E-15
43	L1S1K062	Down-dip	1	1	62	5,000	0.562	0.038	0.351	1.370	12.61E+6	0.081	12.62E+6	0.741	-0.830	81.73E-15
44	L1S1K064	Down-dip	1	1	64	5,000	0.563	0.101	0.134	1.375	12.76E+6	0.135	12.76E+6	0.429	-1.321	99.10E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
1	L1S1B100	Down-dip	1	1	100	000.00E+0	0.807	13.04E+6	1.00E-12	126.00E-6	814.80E-3	366.50E-6	753.70E-3	181.20E+3	174.00E+3
2	L1S1E009	Down-dip	1	1	9	000.00E+0	1.029	16.40E+6	1.00E-12	4.92E-6	924.30E-3	563.70E-6	727.30E-3	216.50E+3	183.70E+3
3	L1S1E026	Down-dip	1	1	26	000.00E+0	0.996	14.54E+6	1.00E-12	385.30E-6	717.80E-3	20.43E-3	279.40E-3	170.50E+3	168.70E+3
4	L1S1E030	Down-dip	1	1	30	000.00E+0	0.628	12.61E+6	1.00E-12	1.02E-6	949.50E-3	200.30E-6	787.40E-3	235.00E+3	199.70E+3
5	L1S1E034	Down-dip	1	1	34	000.00E+0	0.701	15.48E+6	1.00E-12	3.48E-6	927.00E-3	108.10E-6	814.10E-3	257.20E+3	230.30E+3
6	L1S1E046	Down-dip	1	1	46	000.00E+0	1.110	15.34E+6	1.00E-12	737.80E-6	681.90E-3	78.17E-3	127.90E-3	202.60E+3	270.90E+3
7	L1S1E059	Down-dip	1	1	59	000.00E+0	0.487	12.61E+6	1.00E-12	23.34E-6	874.60E-3	1.73E-3	607.60E-3	189.20E+3	161.80E+3
8	L1S1E064	Down-dip	1	1	64	000.00E+0	1.006	12.24E+6	1.00E-12	42.94E-6	846.40E-3	7.49E-3	424.90E-3	230.00E+3	197.40E+3
9	L1S1E092	Down-dip	1	1	92	000.00E+0	0.370	12.65E+6	1.00E-12	000.00E+0	1.00E+0	4.04E-6	916.60E-3	000.00E+0	278.80E+3
10	L1S1E100	Down-dip	1	1	100	000.00E+0	1.012	13.04E+6	1.00E-12	232.30E-6	781.80E-3	1.76E-3	629.90E-3	213.70E+3	198.70E+3
11	L1S1I004	Down-dip	1	1	4	000.00E+0	1.027	11.68E+6	1.00E-12	000.00E+0	1.00E+0	59.31E-6	839.30E-3	000.00E+0	215.10E+3
12	L1S1I016	Down-dip	1	1	16	000.00E+0	0.691	12.61E+6	1.00E-12	000.00E+0	1.00E+0	3.76E-3	497.30E-3	000.00E+0	161.40E+3
13	L1S1I026	Down-dip	1	1	26	000.00E+0	1.105	14.54E+6	1.00E-12	000.00E+0	1.00E+0	3.86E-3	497.00E-3	000.00E+0	209.40E+3
14	L1S1I030	Down-dip	1	1	30	000.00E+0	0.677	12.61E+6	1.00E-12	000.00E+0	1.00E+0	749.90E-6	698.70E-3	000.00E+0	221.50E+3
15	L1S1I034	Down-dip	1	1	34	000.00E+0	0.733	15.48E+6	1.00E-12	000.00E+0	1.00E+0	128.60E-6	805.20E-3	000.00E+0	251.60E+3
16	L1S1I038	Down-dip	1	1	38	000.00E+0	0.611	14.59E+6	1.00E-12	659.70E-9	948.70E-3	31.52E-3	209.30E-3	216.20E+3	188.40E+3
17	L1S1I039	Down-dip	1	1	39	000.00E+0	1.011	15.87E+6	1.00E-12	000.00E+0	1.00E+0	184.80E-3	14.99E-3	000.00E+0	2.94E+6
18	L1S1I046	Down-dip	1	1	46	000.00E+0	1.158	15.34E+6	1.00E-12	64.29E-6	833.60E-3	55.12E-3	171.30E-3	260.70E+3	288.30E+3
19	L1S1I058	Down-dip	1	1	58	000.00E+0	0.500	13.53E+6	1.00E-12	000.00E+0	1.00E+0	71.23E-6	832.40E-3	000.00E+0	182.10E+3
20	L1S1I059	Down-dip	1	1	59	000.00E+0	0.519	12.61E+6	1.00E-12	000.00E+0	1.00E+0	1.08E-3	651.90E-3	000.00E+0	192.60E+3
21	L1S1I062	Down-dip	1	1	62	000.00E+0	0.391	12.12E+6	1.00E-12	000.00E+0	1.00E+0	337.90E-3	14.06E-3	000.00E+0	4.77E+6
22	L1S1I064	Down-dip	1	1	64	000.00E+0	1.061	12.24E+6	1.00E-12	4.94E-6	914.80E-3	15.01E-3	332.70E-3	262.20E+3	216.30E+3
23	L1S1I067	Down-dip	1	1	67	000.00E+0	0.462	12.68E+6	1.00E-12	000.00E+0	1.00E+0	31.69E-6	855.30E-3	000.00E+0	205.40E+3
24	L1S1I075	Down-dip	1	1	75	000.00E+0	0.994	14.00E+6	1.00E-12	000.00E+0	1.00E+0	25.12E-3	239.40E-3	000.00E+0	183.80E+3
25	L1S1I083	Down-dip	1	1	83	000.00E+0	0.957	11.26E+6	1.00E-12	000.00E+0	1.00E+0	534.60E-9	954.10E-3	000.00E+0	219.00E+3
26	L1S1I100	Down-dip	1	1	100	000.00E+0	1.045	13.04E+6	1.00E-12	30.64E-6	873.80E-3	8.00E-3	465.20E-3	235.80E+3	199.90E+3
27	L1S1K004	Down-dip	1	1	4	000.00E+0	1.040	11.68E+6	1.00E-12	000.00E+0	1.00E+0	15.21E-6	889.00E-3	000.00E+0	236.60E+3
28	L1S1K005	Down-dip	1	1	5	000.00E+0	1.018	12.63E+6	1.00E-12	000.00E+0	1.00E+0	145.60E-3	66.45E-3	000.00E+0	225.50E+3
29	L1S1K007	Down-dip	1	1	7	000.00E+0	0.717	12.52E+6	1.00E-12	000.00E+0	1.00E+0	373.20E-3	12.69E-3	000.00E+0	5.23E+6
30	L1S1K016	Down-dip	1	1	16	000.00E+0	0.715	12.61E+6	1.00E-12	000.00E+0	1.00E+0	277.90E-6	739.50E-3	000.00E+0	206.90E+3
31	L1S1K018	Down-dip	1	1	18	000.00E+0	1.025	11.89E+6	1.00E-12	000.00E+0	1.00E+0	8.76E-3	462.20E-3	000.00E+0	166.60E+3
32	L1S1K021	Down-dip	1	1	21	000.00E+0	1.018	12.67E+6	1.00E-12	000.00E+0	1.00E+0	4.21E-9	988.70E-3	000.00E+0	291.60E+3
33	L1S1K026	Down-dip	1	1	26	000.00E+0	1.119	14.54E+6	1.00E-12	000.00E+0	1.00E+0	2.58E-3	543.10E-3	000.00E+0	225.80E+3
34	L1S1K030	Down-dip	1	1	30	000.00E+0	0.680	12.61E+6	1.00E-12	000.00E+0	1.00E+0	1.07E-3	669.80E-3	000.00E+0	224.90E+3
35	L1S1K034	Down-dip	1	1	34	000.00E+0	0.737	15.48E+6	1.00E-12	000.00E+0	1.00E+0	194.10E-6	782.40E-3	000.00E+0	257.80E+3
36	L1S1K038	Down-dip	1	1	38	000.00E+0	0.628	14.59E+6	1.00E-12	000.00E+0	1.00E+0	14.37E-3	316.70E-3	000.00E+0	193.90E+3
37	L1S1K039	Down-dip	1	1	39	000.00E+0	1.036	15.67E+6	1.00E-12	000.00E+0	1.00E+0	133.70E-3	32.92E-3	000.00E+0	422.10E+3
38	L1S1K045	Down-dip	1	1	45	000.00E+0	1.030	12.42E+6	1.00E-12	000.00E+0	1.00E+0	94.78E-6	817.90E-3	000.00E+0	180.50E+3
39	L1S1K046	Down-dip	1	1	46	000.00E+0	1.159	15.34E+6	1.00E-12	10.34E-6	898.80E-3	49.05E-3	186.50E-3	280.60E+3	282.70E+3
40	L1S1K052	Down-dip	1	1	52	000.00E+0	1.100	14.91E+6	1.00E-12	000.00E+0	1.00E+0	68.16E-3	139.10E-3	000.00E+0	218.70E+3
41	L1S1K058	Down-dip	1	1	58	000.00E+0	0.505	13.53E+6	1.00E-12	000.00E+0	1.00E+0	730.00E-6	689.00E-3	000.00E+0	175.70E+3
42	L1S1K059	Down-dip	1	1	59	000.00E+0	0.525	12.61E+6	1.00E-12	000.00E+0	1.00E+0	635.40E-6	696.30E-3	000.00E+0	208.00E+3
43	L1S1K062	Down-dip	1	1	62	000.00E+0	0.400	12.12E+6	1.00E-12	000.00E+0	1.00E+0	152.30E-3	69.56E-3	000.00E+0	225.50E+3
44	L1S1K064	Down-dip	1	1	64	000.00E+0	1.068	12.24E+6	1.00E-12	75.73E-12	995.90E-3	18.79E-3	301.90E-3	298.20E+3	227.00E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
1	L1S1B100	Down-dip	1	1	100	000.00E+0	11	33.79E-9	310.90E-3	157.50E-9	6.15E+0	75.28E-3	0.000	592.40E+3	0.045
2	L1S1E009	Down-dip	1	1	9	000.00E+0	11	41.59E-9	220.40E-3	231.20E-9	6.24E+0	122.20E-3	0.000	473.10E+3	0.058
3	L1S1E026	Down-dip	1	1	26	000.00E+0	11	1.87E-6	142.70E-3	7.14E-6	1.81E+0	10.09E+0	0.000	229.80E+3	2.319
4	L1S1E030	Down-dip	1	1	30	000.00E+0	11	16.38E-9	311.40E-3	83.12E-9	7.24E+0	35.02E-3	0.000	637.30E+3	0.022
5	L1S1E034	Down-dip	1	1	34	000.00E+0	11	9.95E-9	386.20E-3	55.35E-9	10.70E+0	16.58E-3	0.000	839.30E+3	0.014
6	L1S1E046	Down-dip	1	1	46	000.00E+0	11	10.38E-6	151.20E-3	39.12E-6	1.54E+0	57.06E+0	0.000	227.20E+3	12.970
7	L1S1E059	Down-dip	1	1	59	000.00E+0	11	125.70E-9	211.70E-3	530.80E-9	3.45E+0	422.80E-3	0.000	384.30E+3	0.163
8	L1S1E064	Down-dip	1	1	64	000.00E+0	11	803.20E-9	257.20E-3	3.94E-6	5.50E+0	2.15E+0	0.000	500.40E+3	1.076
9	L1S1E092	Down-dip	1	1	92	000.00E+0	11	360.10E-12	497.00E-3	2.11E-9	13.52E+0	486.40E-6	0.000	1.10E+6	0.001
10	L1S1E100	Down-dip	1	1	100	000.00E+0	11	170.30E-9	316.40E-3	893.30E-9	7.78E+0	359.10E-3	0.000	645.90E+3	0.232
11	L1S1I004	Down-dip	1	1	4	000.00E+0	11	4.53E-9	265.30E-3	27.06E-9	8.80E+0	10.70E-3	0.000	602.70E+3	0.006
12	L1S1I016	Down-dip	1	1	16	000.00E+0	11	251.30E-9	141.20E-3	1.21E-6	3.02E+0	1.21E+0	0.000	279.20E+3	0.337
13	L1S1I026	Down-dip	1	1	26	000.00E+0	11	424.80E-9	316.50E-3	2.19E-6	7.44E+0	906.60E-3	0.000	634.80E+3	0.576
14	L1S1I030	Down-dip	1	1	30	000.00E+0	11	72.00E-9	369.60E-3	390.80E-9	9.73E+0	126.50E-3	0.000	790.20E+3	0.100
15	L1S1I034	Down-dip	1	1	34	000.00E+0	11	12.75E-9	436.90E-3	75.05E-9	13.45E+0	18.41E-3	0.000	982.50E+3	0.018
16	L1S1I038	Down-dip	1	1	38	000.00E+0	11	2.98E-6	131.60E-3	10.38E-6	1.35E+0	18.01E+0	0.000	202.10E+3	3.641
17	L1S1I039	Down-dip	1	1	39	000.00E+0	3	22.86E-6	31.44E-3	51.90E-6	87.86E-3	711.60E+0	0.000	9.46E+3	6.733
18	L1S1I046	Down-dip	1	1	46	000.00E+0	11	8.47E-6	241.10E-3	35.83E-6	3.22E+0	27.56E+0	0.000	396.30E+3	10.930
19	L1S1I058	Down-dip	1	1	58	000.00E+0	11	3.72E-9	144.50E-3	20.82E-9	4.51E+0	15.85E-3	0.000	335.10E+3	0.005
20	L1S1I059	Down-dip	1	1	59	000.00E+0	11	90.39E-9	291.10E-3	430.90E-9	5.98E+0	211.00E-3	0.000	574.50E+3	0.121
21	L1S1I062	Down-dip	1	1	62	000.00E+0	3	31.10E-6	24.60E-3	71.65E-6	68.50E-3	1.23E+3	0.000	7.34E+3	9.021
22	L1S1I064	Down-dip	1	1	64	000.00E+0	11	1.76E-6	247.90E-3	8.48E-6	4.99E+0	4.97E+0	0.000	471.40E+3	2.345
23	L1S1I067	Down-dip	1	1	67	000.00E+0	11	1.88E-9	173.00E-3	10.97E-9	6.23E+0	6.41E-3	0.000	426.70E+3	0.003
24	L1S1I075	Down-dip	1	1	75	000.00E+0	11	2.44E-6	141.80E-3	9.39E-6	1.79E+0	13.31E+0	0.000	228.10E+3	3.036
25	L1S1I083	Down-dip	1	1	83	000.00E+0	11	36.33E-12	250.00E-3	195.00E-12	6.90E+0	94.52E-6	0.000	531.50E+3	0.000
26	L1S1I100	Down-dip	1	1	100	000.00E+0	11	830.90E-9	276.30E-3	4.14E-6	6.02E+0	2.07E+0	0.000	540.10E+3	1.116
27	L1S1K004	Down-dip	1	1	4	000.00E+0	11	1.23E-9	296.60E-3	7.57E-9	10.81E+0	2.53E-3	0.000	699.00E+3	0.002
28	L1S1K005	Down-dip	1	1	5	000.00E+0	11	15.07E-6	61.98E-3	51.42E-6	453.10E-3	218.30E+0	0.000	84.40E+3	18.430
29	L1S1K007	Down-dip	1	1	7	000.00E+0	3	25.93E-6	16.35E-3	58.71E-6	40.45E-3	1.58E+3	0.000	4.83E+3	7.635
30	L1S1K016	Down-dip	1	1	16	000.00E+0	11	20.58E-9	229.20E-3	122.40E-9	7.68E+0	55.15E-3	0.000	536.30E+3	0.030
31	L1S1K018	Down-dip	1	1	18	000.00E+0	11	691.80E-9	173.20E-3	3.23E-6	3.37E+0	2.82E+0	0.000	323.50E+3	0.911
32	L1S1K021	Down-dip	1	1	21	000.00E+0	11	512.00E-15	367.00E-3	2.35E-12	14.70E+0	806.80E-9	0.000	890.50E+3	0.000
33	L1S1K026	Down-dip	1	1	26	000.00E+0	11	300.10E-9	372.40E-3	1.64E-6	9.88E+0	530.80E-3	0.000	779.40E+3	0.414
34	L1S1K030	Down-dip	1	1	30	000.00E+0	11	107.20E-9	382.30E-3	583.10E-9	10.09E+0	182.10E-3	0.000	817.40E+3	0.149
35	L1S1K034	Down-dip	1	1	34	000.00E+0	11	20.34E-9	463.90E-3	121.10E-9	14.59E+0	27.53E-3	0.000	1.05E+6	0.029
36	L1S1K038	Down-dip	1	1	38	000.00E+0	11	1.50E-6	216.90E-3	6.06E-6	3.10E+0	5.12E+0	0.000	373.10E+3	1.911
37	L1S1K039	Down-dip	1	1	39	000.00E+0	11	18.62E-6	59.10E-3	63.04E-6	369.70E-3	293.40E+0	0.000	77.64E+3	22.780
38	L1S1K045	Down-dip	1	1	45	000.00E+0	11	5.04E-9	124.70E-3	31.82E-9	5.10E+0	23.82E-3	0.000	309.60E+3	0.007
39	L1S1K046	Down-dip	1	1	46	000.00E+0	11	7.56E-6	257.40E-3	32.59E-6	3.63E+0	22.72E+0	0.000	431.60E+3	9.805
40	L1S1K052	Down-dip	1	1	52	000.00E+0	11	6.68E-6	96.12E-3	23.62E-6	908.30E-3	58.07E+0	0.000	140.50E+3	8.158
41	L1S1K058	Down-dip	1	1	58	000.00E+0	11	42.77E-9	150.40E-3	238.50E-9	4.50E+0	176.70E-3	0.000	344.10E+3	0.061
42	L1S1K059	Down-dip	1	1	59	000.00E+0	11	56.01E-9	335.30E-3	281.20E-9	7.60E+0	111.20E-3	0.000	686.30E+3	0.076
43	L1S1K062	Down-dip	1	1	62	000.00E+0	11	19.61E-6	93.04E-3	73.77E-6	915.40E-3	173.60E+0	0.000	143.40E+3	24.900
44	L1S1K064	Down-dip	1	1	64	000.00E+0	11	2.33E-6	251.80E-3	11.16E-6	4.92E+0	6.54E+0	0.000	474.60E+3	3.106

No.	File (*.TXT)	ID	Rep	Scen	Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
1	L1S1B100	Down-dip	1	1	100	0.042	4.01E+6	0.153	8.59E+6	0.120	108.80E+3	14.33E+3
2	L1S1E009	Down-dip	1	1	9	0.057	3.75E+6	0.289	9.52E+6	0.210	76.74E+3	19.08E+3
3	L1S1E026	Down-dip	1	1	26	2.220	4.96E+6	0.389	8.40E+6	0.160	73.12E+3	21.69E+3
4	L1S1E030	Down-dip	1	1	30	0.022	4.19E+6	0.142	10.11E+6	0.070	84.07E+3	7.71E+3
5	L1S1E034	Down-dip	1	1	34	0.014	4.54E+6	0.133	11.82E+6	0.080	88.78E+3	9.03E+3
6	L1S1E046	Down-dip	1	1	46	12.790	7.17E+6	0.502	11.07E+6	0.123	82.24E+3	27.84E+3
7	L1S1E059	Down-dip	1	1	59	0.155	4.14E+6	0.202	8.38E+6	0.071	74.24E+3	9.74E+3
8	L1S1E064	Down-dip	1	1	64	1.051	5.14E+6	0.364	11.33E+6	0.185	88.07E+3	21.17E+3
9	L1S1E092	Down-dip	1	1	92	0.001	4.76E+6	0.051	13.10E+6	0.009	93.95E+3	2.07E+3
10	L1S1E100	Down-dip	1	1	100	0.223	4.89E+6	0.213	11.16E+6	0.128	85.18E+3	14.32E+3
11	L1S1I004	Down-dip	1	1	4	0.006	3.84E+6	0.242	10.51E+6	0.004	77.86E+3	5.58E+3
12	L1S1I016	Down-dip	1	1	16	0.335	3.84E+6	0.433	8.58E+6	0.119	68.34E+3	16.77E+3
13	L1S1I026	Down-dip	1	1	26	0.571	5.30E+6	0.271	12.22E+6	0.030	84.86E+3	12.64E+3
14	L1S1I030	Down-dip	1	1	30	0.100	4.83E+6	0.183	12.35E+6	0.044	85.48E+3	7.14E+3
15	L1S1I034	Down-dip	1	1	34	0.018	4.80E+6	0.137	13.28E+6	0.031	89.39E+3	6.17E+3
16	L1S1I038	Down-dip	1	1	38	3.485	5.59E+6	0.426	8.90E+6	0.071	70.40E+3	17.63E+3
17	L1S1I039	Down-dip	1	1	39	6.596	9.10E+6	0.750	9.50E+6	0.000	73.57E+3	14.30E+3
18	L1S1I046	Down-dip	1	1	46	10.620	7.71E+6	0.457	13.50E+6	0.061	90.02E+3	25.11E+3
19	L1S1I058	Down-dip	1	1	58	0.005	3.02E+6	0.395	8.38E+6	0.037	67.35E+3	8.70E+3
20	L1S1I059	Down-dip	1	1	59	0.117	4.57E+6	0.181	10.50E+6	0.000	77.81E+3	5.99E+3
21	L1S1I062	Down-dip	1	1	62	8.833	10.03E+6	0.834	10.53E+6	0.212	77.81E+3	29.06E+3
22	L1S1I064	Down-dip	1	1	64	2.268	5.78E+6	0.412	12.28E+6	0.161	85.08E+3	21.51E+3
23	L1S1I067	Down-dip	1	1	67	0.003	3.21E+6	0.401	9.59E+6	0.038	74.01E+3	9.70E+3
24	L1S1I075	Down-dip	1	1	75	2.898	5.37E+6	0.429	9.10E+6	0.073	71.31E+3	16.63E+3
25	L1S1I083	Down-dip	1	1	83	0.000	3.55E+6	0.120	8.99E+6	0.000	71.02E+3	2.20E+3
26	L1S1I100	Down-dip	1	1	100	1.066	5.17E+6	0.300	11.52E+6	0.083	81.95E+3	15.79E+3
27	L1S1K004	Down-dip	1	1	4	0.002	3.91E+6	0.224	11.21E+6	0.000	80.76E+3	4.68E+3
28	L1S1K005	Down-dip	1	1	5	17.630	6.49E+6	0.629	8.76E+6	0.080	68.87E+3	21.79E+3
29	L1S1K007	Down-dip	1	1	7	7.479	8.96E+6	0.781	9.21E+6	0.040	71.95E+3	26.24E+3
30	L1S1K016	Down-dip	1	1	16	0.029	3.85E+6	0.352	10.81E+6	0.029	79.06E+3	11.49E+3
31	L1S1K018	Down-dip	1	1	18	0.910	4.30E+6	0.356	8.97E+6	0.032	70.49E+3	8.89E+3
32	L1S1K021	Down-dip	1	1	21	0.000	3.98E+6	0.169	12.28E+6	0.000	85.24E+3	6.00E+3
33	L1S1K026	Down-dip	1	1	26	0.397	5.34E+6	0.250	13.28E+6	0.001	89.34E+3	10.12E+3
34	L1S1K030	Down-dip	1	1	30	0.142	4.93E+6	0.197	12.78E+6	0.025	87.26E+3	6.26E+3
35	L1S1K034	Down-dip	1	1	34	0.027	4.99E+6	0.147	13.92E+6	0.006	92.17E+3	4.61E+3
36	L1S1K038	Down-dip	1	1	38	1.845	5.66E+6	0.355	10.66E+6	0.030	78.38E+3	13.67E+3
37	L1S1K039	Down-dip	1	1	39	21.610	8.47E+6	0.713	10.94E+6	0.000	79.47E+3	14.69E+3
38	L1S1K045	Down-dip	1	1	45	0.007	2.80E+6	0.455	8.41E+6	0.150	66.60E+3	17.09E+3
39	L1S1K046	Down-dip	1	1	46	9.177	7.63E+6	0.443	13.70E+6	0.033	90.96E+3	22.37E+3
40	L1S1K052	Down-dip	1	1	52	7.806	5.78E+6	0.500	8.54E+6	0.000	67.48E+3	14.03E+3
41	L1S1K058	Down-dip	1	1	58	0.060	3.34E+6	0.438	9.07E+6	0.014	71.25E+3	8.80E+3
42	L1S1K059	Down-dip	1	1	59	0.073	4.71E+6	0.161	11.33E+6	0.000	81.24E+3	4.17E+3
43	L1S1K062	Down-dip	1	1	62	24.040	7.81E+6	0.741	12.61E+6	0.129	86.36E+3	25.15E+3
44	L1S1K064	Down-dip	1	1	64	3.090	6.08E+6	0.429	12.74E+6	0.138	86.97E+3	21.60E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
45	L1S1K075	Down-dip	1	1	75	5,000	0.535	0.141	0.096	1.290	10.45E+6	0.027	10.45E+6	0.433	-1.294	91.95E-15
46	L1S1K083	Down-dip	1	1	83	5,000	0.519	0.097	0.102	1.249	9.31E+6	0.000	9.31E+6	0.154	-1.268	87.99E-15
47	L1S1K095	Down-dip	1	1	95	5,000	0.504	0.128	0.082	1.212	8.72E+6	0.003	8.72E+6	0.119	-1.302	86.60E-15
48	L1S1K100	Down-dip	1	1	100	5,000	0.549	0.019	0.040	1.333	11.60E+6	0.061	11.60E+6	0.390	-1.311	95.60E-15
49	L1S1L004	Down-dip	1	1	4	10,000	0.551	0.064	0.183	1.337	11.67E+6	0.000	11.68E+6	0.358	-1.311	95.91E-15
50	L1S1L005	Down-dip	1	1	5	10,000	0.541	0.072	0.092	1.308	10.90E+6	0.020	10.91E+6	0.526	-1.309	93.79E-15
51	L1S1L007	Down-dip	1	1	7	10,000	0.552	0.039	0.067	1.339	11.73E+6	0.000	11.74E+6	0.683	-1.141	89.64E-15
52	L1S1L016	Down-dip	1	1	16	10,000	0.561	0.103	0.271	1.369	12.52E+6	0.000	12.52E+6	0.324	-1.131	91.27E-15
53	L1S1L018	Down-dip	1	1	18	10,000	0.531	0.002	0.108	1.281	10.18E+6	0.000	10.19E+6	0.327	-1.310	91.88E-15
54	L1S1L021	Down-dip	1	1	21	10,000	0.561	0.034	0.164	1.369	12.54E+6	0.000	12.54E+6	0.323	-1.297	97.70E-15
55	L1S1L023	Down-dip	1	1	23	10,000	0.502	0.120	0.158	1.206	8.62E+6	0.879	8.74E+6	0.879	-0.970	75.67E-15
56	L1S1L026	Down-dip	1	1	26	10,000	0.574	0.127	0.062	1.409	13.60E+6	0.000	13.61E+6	0.341	-1.345	102.60E-15
57	L1S1L027	Down-dip	1	1	27	10,000	0.498	0.145	0.188	1.195	8.48E+6	0.000	8.49E+6	0.590	-0.980	75.27E-15
58	L1S1L028	Down-dip	1	1	28	10,000	0.494	0.016	0.198	1.187	8.36E+6	0.000	8.36E+6	0.324	-1.111	78.58E-15
59	L1S1L030	Down-dip	1	1	30	10,000	0.571	0.031	0.047	1.401	13.39E+6	0.000	13.39E+6	0.172	-1.097	92.21E-15
60	L1S1L032	Down-dip	1	1	32	10,000	0.510	0.029	0.026	1.226	8.94E+6	0.000	8.95E+6	0.463	-1.037	78.86E-15
61	L1S1L033	Down-dip	1	1	33	10,000	0.534	0.055	0.241	1.288	10.37E+6	0.084	10.38E+6	0.680	-1.281	91.29E-15
62	L1S1L034	Down-dip	1	1	34	10,000	0.583	0.060	0.052	1.441	14.42E+6	0.000	14.42E+6	0.152	-1.136	96.32E-15
63	L1S1L038	Down-dip	1	1	38	10,000	0.549	0.146	0.055	1.330	11.49E+6	0.000	11.50E+6	0.468	-1.061	86.34E-15
64	L1S1L039	Down-dip	1	1	39	10,000	0.557	0.134	0.320	1.355	12.15E+6	0.000	12.18E+6	0.883	-1.314	97.34E-15
65	L1S1L041	Down-dip	1	1	41	10,000	0.488	0.138	0.314	1.173	8.13E+6	0.244	8.18E+6	0.860	-1.261	82.44E-15
66	L1S1L044	Down-dip	1	1	44	10,000	0.505	0.094	0.397	1.213	8.75E+6	0.101	8.76E+6	0.694	-1.092	79.69E-15
67	L1S1L046	Down-dip	1	1	46	10,000	0.574	0.090	0.003	1.409	13.61E+6	0.000	13.62E+6	0.454	-1.361	103.30E-15
68	L1S1L052	Down-dip	1	1	52	10,000	0.530	0.098	0.035	1.277	10.08E+6	0.000	10.08E+6	0.442	-1.346	93.02E-15
69	L1S1L058	Down-dip	1	1	58	10,000	0.527	0.047	0.345	1.269	9.86E+6	0.000	9.87E+6	0.524	-0.952	79.10E-15
70	L1S1L059	Down-dip	1	1	59	10,000	0.551	0.081	0.028	1.338	11.69E+6	0.000	11.70E+6	0.279	-0.967	83.84E-15
71	L1S1L062	Down-dip	1	1	62	10,000	0.593	0.038	0.351	1.475	15.08E+6	0.000	15.08E+6	0.452	-0.835	88.12E-15
72	L1S1L064	Down-dip	1	1	64	10,000	0.574	0.101	0.134	1.411	13.65E+6	0.103	13.66E+6	0.426	-1.325	101.90E-15
73	L1S1L067	Down-dip	1	1	67	10,000	0.550	0.087	0.361	1.334	11.58E+6	0.000	11.59E+6	0.390	-0.916	82.03E-15
74	L1S1L073	Down-dip	1	1	73	10,000	0.501	0.053	0.498	1.202	8.59E+6	0.000	8.60E+6	0.735	-1.280	85.16E-15
75	L1S1L075	Down-dip	1	1	75	10,000	0.554	0.141	0.096	1.345	11.88E+6	0.000	11.89E+6	0.429	-1.303	96.18E-15
76	L1S1L081	Down-dip	1	1	81	10,000	0.500	0.010	0.309	1.201	8.57E+6	0.023	8.57E+6	0.341	-0.913	73.81E-15
77	L1S1L083	Down-dip	1	1	83	10,000	0.524	0.097	0.102	1.261	9.66E+6	0.000	9.66E+6	0.302	-1.272	89.04E-15
78	L1S1L089	Down-dip	1	1	89	10,000	0.526	0.056	0.074	1.267	9.81E+6	0.000	9.82E+6	0.168	-0.845	76.00E-15
79	L1S1L093	Down-dip	1	1	93	10,000	0.503	0.025	0.114	1.208	8.68E+6	0.000	8.69E+6	0.516	-1.135	80.73E-15
80	L1S1L094	Down-dip	1	1	94	10,000	0.534	0.067	0.477	1.288	10.35E+6	0.197	10.37E+6	0.832	-1.368	94.68E-15
81	L1S1L095	Down-dip	1	1	95	10,000	0.511	0.128	0.082	1.229	8.99E+6	0.000	8.99E+6	0.117	-1.302	87.86E-15
82	L1S1L100	Down-dip	1	1	100	10,000	0.551	0.019	0.040	1.339	11.72E+6	0.050	11.73E+6	0.584	-1.311	96.05E-15
83	L1S2C009	Down-dip	1	2	9	550	0.568	0.006	0.181	1.391	9.10E+6	0.303	10.01E+6	0.987	-1.270	98.11E-15
84	L1S2C014	Down-dip	1	2	14	550	0.602	0.022	0.169	1.510	12.03E+6	0.120	12.02E+6	0.342	-0.986	95.26E-15
85	L1S2C020	Down-dip	1	2	20	550	0.595	0.125	0.458	1.483	11.39E+6	0.072	11.40E+6	0.573	-1.249	103.70E-15
86	L1S2C030	Down-dip	1	2	30	550	0.555	0.031	0.047	1.349	8.48E+6	0.078	8.48E+6	0.225	-1.020	86.24E-15
87	L1S2C034	Down-dip	1	2	34	550	0.591	0.060	0.052	1.469	11.08E+6	0.093	11.08E+6	0.318	-1.075	95.88E-15
88	L1S2C037	Down-dip	1	2	37	550	0.595	0.063	0.141	1.484	11.43E+6	0.098	11.43E+6	0.351	-1.042	95.65E-15

		•	•	•	•	BC well Sand Permeability (m^2)	Total Area solids released (m^2)	Castile Reservoir Pressure (Pa)	Castile Reservoir Permeability (m^3)	Up-dip Brine Relative Permeability (m^2)	Up-dip Gas Relative Permeability (m^3)	Down-dip Brine Relative Permeability (m^2)	Down-dip Gas Relative Permeability (m^3)	Up-dip Flowing Bottom-hole Pressure (Pa)	Down-dip Flowing Bottom-hole Pressure (Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	PRM_SAND	AREA_TOT	CAST_RE	PRM_CAST	KRW2	KRG2	KRW4	KRG4	FBHP2	FBHP4
45	L1S1K075	Down-dip	1	1	75	000.00E+0	1.012	14.00E+6	1.00E-12	000.00E+0	1.00E+0	26.13E-3	234.10E-3	000.00E+0	204.10E+3
46	L1S1K083	Down-dip	1	1	83	000.00E+0	0.960	11.26E+6	1.00E-12	000.00E+0	1.00E+0	28.10E-6	864.40E-3	000.00E+0	201.70E+3
47	L1S1K095	Down-dip	1	1	95	000.00E+0	1.027	17.11E+6	1.00E-12	000.00E+0	1.00E+0	6.67E-6	905.10E-3	000.00E+0	201.70E+3
48	L1S1K100	Down-dip	1	1	100	000.00E+0	1.046	13.04E+6	1.00E-12	741.60E-9	954.40E-3	24.14E-3	320.40E-3	261.70E+3	213.30E+3
49	L1S1L004	Down-dip	1	1	4	000.00E+0	1.046	11.68E+6	1.00E-12	000.00E+0	1.00E+0	3.37E-3	539.70E-3	000.00E+0	202.10E+3
50	L1S1L005	Down-dip	1	1	5	000.00E+0	1.043	12.63E+6	1.00E-12	000.00E+0	1.00E+0	65.50E-3	155.20E-3	000.00E+0	254.10E+3
51	L1S1L007	Down-dip	1	1	7	000.00E+0	0.744	12.52E+6	1.00E-12	000.00E+0	1.00E+0	215.60E-3	45.24E-3	000.00E+0	616.80E+3
52	L1S1L016	Down-dip	1	1	16	000.00E+0	0.730	12.61E+6	1.00E-12	000.00E+0	1.00E+0	59.29E-6	827.60E-3	000.00E+0	245.60E+3
53	L1S1L018	Down-dip	1	1	18	000.00E+0	1.044	11.89E+6	1.00E-12	000.00E+0	1.00E+0	5.56E-3	516.40E-3	000.00E+0	181.50E+3
54	L1S1L021	Down-dip	1	1	21	000.00E+0	1.018	12.67E+6	1.00E-12	000.00E+0	1.00E+0	2.17E-3	602.00E-3	000.00E+0	216.00E+3
55	L1S1L023	Down-dip	1	1	23	000.00E+0	0.529	11.27E+6	1.00E-12	563.60E-3	21.57E-9	563.60E-3	21.19E-9	8.00E+6	8.00E+6
56	L1S1L026	Down-dip	1	1	26	000.00E+0	1.121	14.54E+6	1.00E-12	000.00E+0	1.00E+0	11.36E-3	359.50E-3	000.00E+0	231.40E+3
57	L1S1L027	Down-dip	1	1	27	000.00E+0	0.540	12.65E+6	1.00E-12	000.00E+0	1.00E+0	74.61E-3	90.66E-3	000.00E+0	223.80E+3
58	L1S1L028	Down-dip	1	1	28	000.00E+0	0.702	12.70E+6	1.00E-12	000.00E+0	1.00E+0	1.06E-3	675.10E-3	000.00E+0	164.10E+3
59	L1S1L030	Down-dip	1	1	30	000.00E+0	0.682	12.61E+6	1.00E-12	000.00E+0	1.00E+0	550.70E-6	722.00E-3	000.00E+0	238.50E+3
60	L1S1L032	Down-dip	1	1	32	000.00E+0	0.605	14.53E+6	1.00E-12	000.00E+0	1.00E+0	51.95E-3	210.60E-3	000.00E+0	202.10E+3
61	L1S1L033	Down-dip	1	1	33	000.00E+0	0.986	12.50E+6	1.00E-12	000.00E+0	1.00E+0	132.60E-3	77.96E-3	000.00E+0	273.60E+3
62	L1S1L034	Down-dip	1	1	34	000.00E+0	0.737	15.48E+6	1.00E-12	000.00E+0	1.00E+0	238.90E-6	770.00E-3	000.00E+0	262.40E+3
63	L1S1L038	Down-dip	1	1	38	000.00E+0	0.635	14.59E+6	1.00E-12	000.00E+0	1.00E+0	47.02E-3	157.20E-3	000.00E+0	250.10E+3
64	L1S1L039	Down-dip	1	1	39	000.00E+0	1.052	15.87E+6	1.00E-12	000.00E+0	1.00E+0	499.30E-3	000.00E+0	000.00E+0	8.01E+6
65	L1S1L041	Down-dip	1	1	41	000.00E+0	0.946	17.35E+6	1.00E-12	000.00E+0	1.00E+0	428.80E-3	129.20E-9	000.00E+0	7.98E+6
66	L1S1L044	Down-dip	1	1	44	000.00E+0	0.675	12.18E+6	1.00E-12	000.00E+0	1.00E+0	73.66E-3	103.50E-3	000.00E+0	231.00E+3
67	L1S1L046	Down-dip	1	1	46	000.00E+0	1.157	15.34E+6	1.00E-12	000.00E+0	1.00E+0	53.23E-3	175.80E-3	000.00E+0	287.30E+3
68	L1S1L052	Down-dip	1	1	52	000.00E+0	1.123	14.91E+6	1.00E-12	000.00E+0	1.00E+0	41.54E-3	202.50E-3	000.00E+0	214.00E+3
69	L1S1L058	Down-dip	1	1	58	000.00E+0	0.510	13.53E+6	1.00E-12	000.00E+0	1.00E+0	8.24E-3	436.40E-3	000.00E+0	178.00E+3
70	L1S1L059	Down-dip	1	1	59	000.00E+0	0.526	12.61E+6	1.00E-12	000.00E+0	1.00E+0	6.75E-3	455.70E-3	000.00E+0	201.60E+3
71	L1S1L062	Down-dip	1	1	62	000.00E+0	0.404	12.12E+6	1.00E-12	000.00E+0	1.00E+0	1.01E-3	666.10E-3	000.00E+0	258.50E+3
72	L1S1L064	Down-dip	1	1	64	000.00E+0	1.077	12.24E+6	1.00E-12	000.00E+0	1.00E+0	18.22E-3	306.10E-3	000.00E+0	239.40E+3
73	L1S1L067	Down-dip	1	1	67	000.00E+0	0.475	12.68E+6	1.00E-12	000.00E+0	1.00E+0	10.65E-6	892.40E-3	000.00E+0	244.50E+3
74	L1S1L073	Down-dip	1	1	73	000.00E+0	0.984	14.58E+6	1.00E-12	000.00E+0	1.00E+0	62.72E-3	147.50E-3	000.00E+0	214.70E+3
75	L1S1L075	Down-dip	1	1	75	000.00E+0	1.030	14.00E+6	1.00E-12	000.00E+0	1.00E+0	25.20E-3	239.00E-3	000.00E+0	223.90E+3
76	L1S1L081	Down-dip	1	1	81	000.00E+0	0.472	16.94E+6	1.00E-12	000.00E+0	1.00E+0	11.48E-6	903.90E-3	000.00E+0	196.30E+3
77	L1S1L083	Down-dip	1	1	83	000.00E+0	0.967	11.26E+6	1.00E-12	000.00E+0	1.00E+0	3.95E-3	507.80E-3	000.00E+0	175.00E+3
78	L1S1L089	Down-dip	1	1	89	000.00E+0	0.412	14.20E+6	1.00E-12	000.00E+0	1.00E+0	214.40E-6	777.20E-3	000.00E+0	194.40E+3
79	L1S1L093	Down-dip	1	1	93	000.00E+0	0.737	15.15E+6	1.00E-12	000.00E+0	1.00E+0	53.92E-3	206.10E-3	000.00E+0	199.90E+3
80	L1S1L094	Down-dip	1	1	94	000.00E+0	1.174	12.67E+6	1.00E-12	000.00E+0	1.00E+0	240.20E-3	16.79E-3	000.00E+0	3.37E+6
81	L1S1L095	Down-dip	1	1	95	000.00E+0	1.028	17.11E+6	1.00E-12	000.00E+0	1.00E+0	5.87E-6	908.30E-3	000.00E+0	206.80E+3
82	L1S1L100	Down-dip	1	1	100	000.00E+0	1.046	13.04E+6	1.00E-12	37.44E-9	979.80E-3	122.30E-3	108.20E-3	275.60E+3	567.30E+3
83	L1S2C009	Down-dip	1	2	9	2.88E-12	0.964	13.60E+6	81.28E-15	898.70E-6	692.00E-3	941.70E-3	1.11E-6	174.70E+3	7.99E+6
84	L1S2C014	Down-dip	1	2	14	602.60E-15	0.546	13.93E+6	141.30E-15	000.00E+0	1.00E+0	3.05E-3	572.20E-3	000.00E+0	207.20E+3
85	L1S2C020	Down-dip	1	2	20	14.13E-15	0.925	13.11E+6	2.04E-12	000.00E+0	1.00E+0	3.27E-3	464.60E-3	000.00E+0	198.00E+3
86	L1S2C030	Down-dip	1	2	30	363.10E-15	0.585	10.81E+6	446.70E-15	3.19E-6	931.00E-3	2.03E-3	611.40E-3	202.10E+3	162.30E+3
87	L1S2C034	Down-dip	1	2	34	85.11E-15	0.653	14.47E+6	2.75E-12	8.72E-6	906.20E-3	9.13E-3	427.30E-3	237.80E+3	194.30E+3
88	L1S2C037	Down-dip	1	2	37	43.65E-15	0.611	14.67E+6	16.60E-12	000.00E+0	1.00E+0	5.52E-3	485.10E-3	000.00E+0	197.90E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
45	L1S1K075	Down-dip	1	1	75	000.00E+0	11	2.92E-6	176.30E-3	11.76E-6	2.40E+0	12.67E+0	0.000	291.40E+3	3.691
46	L1S1K083	Down-dip	1	1	83	000.00E+0	11	1.99E-9	252.00E-3	10.75E-9	6.75E+0	5.16E-3	0.000	530.30E+3	0.003
47	L1S1K095	Down-dip	1	1	95	000.00E+0	11	440.70E-12	236.10E-3	2.35E-9	6.12E+0	1.24E-3	0.000	488.20E+3	0.001
48	L1S1K100	Down-dip	1	1	100	000.00E+0	11	2.72E-6	233.80E-3	12.56E-6	4.19E+0	8.41E+0	0.000	426.40E+3	3.585
49	L1S1L004	Down-dip	1	1	4	000.00E+0	11	317.80E-9	256.00E-3	1.77E-6	7.17E+0	805.70E-3	0.000	549.50E+3	0.443
50	L1S1L005	Down-dip	1	1	5	000.00E+0	11	7.85E-6	147.70E-3	31.27E-6	1.76E+0	42.65E+0	0.000	233.20E+3	9.947
51	L1S1L007	Down-dip	1	1	7	000.00E+0	11	28.83E-6	81.63E-3	102.70E-6	547.60E-3	325.80E+0	0.000	110.50E+3	36.020
52	L1S1L016	Down-dip	1	1	16	000.00E+0	11	4.93E-9	293.00E-3	31.75E-9	11.95E+0	9.88E-3	0.000	735.30E+3	0.007
53	L1S1L018	Down-dip	1	1	18	000.00E+0	11	483.80E-9	221.90E-3	2.44E-6	5.04E+0	1.49E+0	0.000	438.70E+3	0.652
54	L1S1L021	Down-dip	1	1	21	000.00E+0	11	212.40E-9	301.50E-3	1.25E-6	9.35E+0	446.80E-3	0.000	672.80E+3	0.301
55	L1S1L023	Down-dip	1	1	23	000.00E+0	3	8.51E-6	413.20E-9	15.07E-6	413.20E-9	39.88E+6	0.000	63.00E-3	2.492
56	L1S1L026	Down-dip	1	1	26	000.00E+0	11	1.51E-6	328.20E-3	7.45E-6	6.87E+0	3.21E+0	0.000	632.40E+3	2.029
57	L1S1L027	Down-dip	1	1	27	000.00E+0	11	7.08E-6	69.08E-3	22.15E-6	504.00E-3	88.46E+0	0.000	95.79E+3	8.475
58	L1S1L028	Down-dip	1	1	28	000.00E+0	11	64.37E-9	163.70E-3	324.40E-9	3.83E+0	262.40E-3	0.000	333.40E+3	0.087
59	L1S1L030	Down-dip	1	1	30	000.00E+0	11	56.41E-9	421.60E-3	319.10E-9	12.00E+0	85.57E-3	0.000	925.70E+3	0.079
60	L1S1L032	Down-dip	1	1	32	000.00E+0	11	4.69E-6	125.80E-3	17.10E-6	1.36E+0	29.58E+0	0.000	196.50E+3	5.814
61	L1S1L033	Down-dip	1	1	33	000.00E+0	11	15.28E-6	81.66E-3	58.44E-6	777.90E-3	160.20E+0	0.000	120.00E+3	19.230
62	L1S1L034	Down-dip	1	1	34	000.00E+0	11	25.98E-9	484.30E-3	155.80E-9	15.42E+0	33.61E-3	0.000	1.10E+6	0.037
63	L1S1L038	Down-dip	1	1	38	000.00E+0	11	6.04E-6	176.50E-3	21.82E-6	1.82E+0	27.55E+0	0.000	271.90E+3	7.493
64	L1S1L039	Down-dip	1	1	39	000.00E+0	3	47.04E-6	7.93E-6	96.98E-6	7.93E-6	29.72E+6	0.000	541.60E-3	14.270
65	L1S1L041	Down-dip	1	1	41	000.00E+0	3	1.98E-6	51.01E-9	3.28E-6	51.01E-9	58.93E+6	0.000	9.82E-3	0.577
66	L1S1L044	Down-dip	1	1	44	000.00E+0	11	6.65E-6	62.81E-3	23.90E-6	647.80E-3	85.75E+0	0.000	95.44E+3	8.185
67	L1S1L046	Down-dip	1	1	46	000.00E+0	11	8.25E-6	248.60E-3	35.04E-6	3.37E+0	25.92E+0	0.000	410.40E+3	10.640
68	L1S1L052	Down-dip	1	1	52	000.00E+0	11	4.65E-6	158.50E-3	18.21E-6	1.96E+0	23.10E+0	0.000	252.20E+3	5.826
69	L1S1L058	Down-dip	1	1	58	000.00E+0	11	592.60E-9	142.40E-3	3.02E-6	3.45E+0	2.71E+0	0.000	301.50E+3	0.818
70	L1S1L059	Down-dip	1	1	59	000.00E+0	11	687.60E-9	292.20E-3	3.11E-6	5.31E+0	1.64E+0	0.000	552.70E+3	0.909
71	L1S1L062	Down-dip	1	1	62	000.00E+0	11	93.02E-9	296.30E-3	629.70E-9	13.30E+0	175.30E-3	0.000	805.80E+3	0.141
72	L1S1L064	Down-dip	1	1	64	000.00E+0	11	2.41E-6	281.60E-3	11.91E-6	5.84E+0	5.97E+0	0.000	543.20E+3	3.245
73	L1S1L067	Down-dip	1	1	67	000.00E+0	11	767.90E-12	226.00E-3	4.73E-9	9.95E+0	1.91E-3	0.000	600.20E+3	0.001
74	L1S1L073	Down-dip	1	1	73	000.00E+0	11	5.00E-6	57.90E-3	21.37E-6	952.50E-3	63.07E+0	0.000	101.50E+3	6.399
75	L1S1L075	Down-dip	1	1	75	000.00E+0	11	3.19E-6	219.50E-3	13.52E-6	3.29E+0	10.89E+0	0.000	375.80E+3	4.094
76	L1S1L081	Down-dip	1	1	81	000.00E+0	11	618.60E-12	163.10E-3	3.39E-9	5.04E+0	2.34E-3	0.000	377.20E+3	0.001
77	L1S1L083	Down-dip	1	1	83	000.00E+0	11	335.60E-9	213.10E-3	1.59E-6	4.33E+0	1.09E+0	0.000	405.60E+3	0.444
78	L1S1L089	Down-dip	1	1	89	000.00E+0	11	15.33E-9	268.10E-3	74.88E-9	5.83E+0	38.17E-3	0.000	545.60E+3	0.021
79	L1S1L093	Down-dip	1	1	93	000.00E+0	11	4.60E-6	108.70E-3	17.63E-6	1.29E+0	33.32E+0	0.000	173.20E+3	5.773
80	L1S1L094	Down-dip	1	1	94	000.00E+0	3	29.62E-6	33.89E-3	76.04E-6	120.20E-3	832.40E+0	0.000	10.41E+3	8.668
81	L1S1L095	Down-dip	1	1	95	000.00E+0	11	401.20E-12	249.10E-3	2.16E-9	6.62E+0	1.06E-3	0.000	520.10E+3	0.001
82	L1S1L100	Down-dip	1	1	100	000.00E+0	11	15.49E-6	135.40E-3	62.64E-6	1.41E+0	96.47E+0	0.000	205.50E+3	19.830
83	L1S2C009	Down-dip	1	2	9	9.90E+6	3	30.98E-6	1.43E-6	89.46E-6	2.31E-6	23.08E+6	0.000	389.10E-3	8.979
84	L1S2C014	Down-dip	1	2	14	8.87E+6	11	309.30E-9	312.70E-3	1.64E-6	7.99E+0	639.60E-3	0.000	673.60E+3	0.431
85	L1S2C020	Down-dip	1	2	20	10.00E+6	11	301.90E-9	169.80E-3	1.82E-6	6.36E+0	1.04E+0	0.000	417.40E+3	0.436
86	L1S2C030	Down-dip	1	2	30	7.36E+6	11	158.60E-9	224.10E-3	694.10E-9	3.92E+0	498.40E-3	0.000	414.80E+3	0.207
87	L1S2C034	Down-dip	1	2	34	11.38E+6	11	1.02E-6	288.20E-3	4.55E-6	5.13E+0	2.49E+0	0.000	535.90E+3	1.336
88	L1S2C037	Down-dip	1	2	37	11.69E+6	11	581.60E-9	288.60E-3	2.83E-6	6.17E+0	1.36E+0	0.000	576.50E+3	0.786

		*	*	*	*	Cum Brine Releases (m^3)	Avg Brine Pressure Panel 5 (Pa)	Avg Brine Saturation Panel 5 (fraction)	Avg Brine Pressure Panel 0 (Pa)	Avg Brine Saturation Panel 0 (fraction)	Total Excavated Waste Pore Volume (m^3)	Total Excavated Brine Volume (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BRIN_REL	BRNPRES5	SATBRN5	BRNPRES0	SATBRN0	WASTE_PV	TOT_BRIN
45	L1S1K075	Down-dip	1	1	75	3.634	5.91E+6	0.433	10.44E+6	0.026	77.44E+3	14.85E+3
46	L1S1K083	Down-dip	1	1	83	0.003	3.70E+6	0.155	9.28E+6	0.000	72.75E+3	2.91E+3
47	L1S1K095	Down-dip	1	1	95	0.001	3.58E+6	0.119	8.70E+6	0.003	68.59E+3	2.27E+3
48	L1S1K100	Down-dip	1	1	100	3.585	5.73E+6	0.391	11.58E+6	0.060	82.16E+3	17.64E+3
49	L1S1L004	Down-dip	1	1	4	0.416	4.65E+6	0.359	11.64E+6	0.000	82.66E+3	7.67E+3
50	L1S1L005	Down-dip	1	1	5	9.726	6.58E+6	0.525	10.89E+6	0.028	79.42E+3	17.44E+3
51	L1S1L007	Down-dip	1	1	7	35.830	8.65E+6	0.680	11.73E+6	0.000	82.90E+3	21.12E+3
52	L1S1L016	Down-dip	1	1	16	0.007	3.96E+6	0.325	12.47E+6	0.000	86.22E+3	8.25E+3
53	L1S1L018	Down-dip	1	1	18	0.641	4.46E+6	0.327	10.16E+6	0.003	76.40E+3	6.97E+3
54	L1S1L021	Down-dip	1	1	21	0.284	4.63E+6	0.323	12.50E+6	0.000	86.30E+3	9.88E+3
55	L1S1L023	Down-dip	1	1	23	2.440	8.72E+6	0.879	8.60E+6	0.879	68.00E+3	59.76E+3
56	L1S1L026	Down-dip	1	1	26	1.910	6.15E+6	0.342	13.57E+6	0.000	90.77E+3	12.61E+3
57	L1S1L027	Down-dip	1	1	27	8.102	6.14E+6	0.590	8.48E+6	0.000	66.76E+3	10.20E+3
58	L1S1L028	Down-dip	1	1	28	0.087	3.56E+6	0.324	8.35E+6	0.000	65.87E+3	5.52E+3
59	L1S1L030	Down-dip	1	1	30	0.078	4.97E+6	0.172	13.32E+6	0.000	89.85E+3	4.18E+3
60	L1S1L032	Down-dip	1	1	32	5.563	5.46E+6	0.463	8.94E+6	0.000	70.18E+3	10.20E+3
61	L1S1L033	Down-dip	1	1	33	17.950	6.90E+6	0.679	10.37E+6	0.114	77.19E+3	23.45E+3
62	L1S1L034	Down-dip	1	1	34	0.035	5.08E+6	0.152	14.33E+6	0.000	94.40E+3	3.72E+3
63	L1S1L038	Down-dip	1	1	38	7.284	7.13E+6	0.468	11.48E+6	0.003	81.88E+3	15.33E+3
64	L1S1L039	Down-dip	1	1	39	13.990	12.06E+6	0.882	12.15E+6	0.000	84.69E+3	19.36E+3
65	L1S1L041	Down-dip	1	1	41	0.565	8.17E+6	0.859	8.13E+6	0.233	64.29E+3	33.71E+3
66	L1S1L044	Down-dip	1	1	44	7.808	5.61E+6	0.694	8.75E+6	0.126	68.78E+3	22.22E+3
67	L1S1L046	Down-dip	1	1	46	10.190	7.71E+6	0.453	13.59E+6	0.000	90.80E+3	17.48E+3
68	L1S1L052	Down-dip	1	1	52	5.444	6.03E+6	0.442	10.07E+6	0.000	75.95E+3	11.89E+3
69	L1S1L058	Down-dip	1	1	58	0.795	4.05E+6	0.525	9.85E+6	0.000	75.06E+3	10.18E+3
70	L1S1L059	Down-dip	1	1	59	0.891	5.42E+6	0.280	11.66E+6	0.000	82.74E+3	6.26E+3
71	L1S1L062	Down-dip	1	1	62	0.141	4.40E+6	0.453	15.01E+6	0.015	98.11E+3	12.78E+3
72	L1S1L064	Down-dip	1	1	64	3.060	6.22E+6	0.427	13.62E+6	0.109	90.97E+3	20.01E+3
73	L1S1L067	Down-dip	1	1	67	0.001	3.43E+6	0.391	11.54E+6	0.000	82.28E+3	8.32E+3
74	L1S1L073	Down-dip	1	1	73	6.012	4.62E+6	0.737	8.58E+6	0.000	67.56E+3	12.87E+3
75	L1S1L075	Down-dip	1	1	75	3.892	6.39E+6	0.430	11.87E+6	0.000	83.55E+3	12.93E+3
76	L1S1L081	Down-dip	1	1	81	0.001	3.06E+6	0.341	8.55E+6	0.034	67.42E+3	7.56E+3
77	L1S1L083	Down-dip	1	1	83	0.428	4.46E+6	0.303	9.64E+6	0.000	74.19E+3	5.81E+3
78	L1S1L089	Down-dip	1	1	89	0.021	4.07E+6	0.169	9.79E+6	0.000	74.85E+3	3.26E+3
79	L1S1L093	Down-dip	1	1	93	5.525	5.18E+6	0.515	8.67E+6	0.000	68.23E+3	9.11E+3
80	L1S1L094	Down-dip	1	1	94	8.489	9.67E+6	0.832	10.35E+6	0.236	77.13E+3	35.48E+3
81	L1S1L095	Down-dip	1	1	95	0.001	3.63E+6	0.118	8.97E+6	0.000	70.55E+3	2.14E+3
82	L1S1L100	Down-dip	1	1	100	18.880	7.45E+6	0.582	11.71E+6	0.051	82.86E+3	21.57E+3
83	L1S2C009	Down-dip	1	2	9	8.792	9.70E+6	0.987	9.10E+6	0.275	88.71E+3	56.00E+3
84	L1S2C014	Down-dip	1	2	14	0.426	4.79E+6	0.363	11.99E+6	0.120	102.00E+3	18.35E+3
85	L1S2C020	Down-dip	1	2	20	0.419	4.06E+6	0.591	11.38E+6	0.072	99.02E+3	20.17E+3
86	L1S2C030	Down-dip	1	2	30	0.197	4.12E+6	0.249	8.47E+6	0.078	84.06E+3	10.18E+3
87	L1S2C034	Down-dip	1	2	34	1.302	5.32E+6	0.344	11.06E+6	0.090	97.52E+3	16.22E+3
88	L1S2C037	Down-dip	1	2	37	0.760	5.04E+6	0.377	11.40E+6	0.098	99.18E+3	16.51E+3

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
89	L1S2C040	Down-dip	1	2	40	550	0.548	0.013	0.449	1.328	7.71E+6	0.573	8.97E+6	0.982	-0.989	83.89E-15
90	L1S2C048	Down-dip	1	2	48	550	0.532	0.108	0.505	1.285	6.59E+6	0.888	8.87E+6	0.888	-0.753	74.61E-15
91	L1S2C050	Down-dip	1	2	50	550	0.589	0.044	0.464	1.461	10.92E+6	0.275	10.79E+6	0.560	-1.288	103.80E-15
92	L1S2C054	Down-dip	1	2	54	550	0.573	0.041	0.528	1.408	9.69E+6	0.209	9.66E+6	0.620	-1.250	98.47E-15
93	L1S2C059	Down-dip	1	2	59	550	0.551	0.081	0.028	1.338	8.09E+6	0.125	8.72E+6	0.912	-0.908	82.05E-15
94	L1S2C064	Down-dip	1	2	64	550	0.580	0.101	0.134	1.430	10.16E+6	0.188	10.12E+6	0.347	-1.252	100.10E-15
95	L1S2C069	Down-dip	1	2	69	550	0.584	0.058	0.265	1.442	10.44E+6	0.185	10.42E+6	0.419	-0.961	90.13E-15
96	L1S2C070	Down-dip	1	2	70	550	0.584	0.026	0.253	1.442	10.44E+6	0.054	10.43E+6	0.484	-1.273	101.80E-15
97	L1S2C092	Down-dip	1	2	92	550	0.601	0.143	0.017	1.505	11.95E+6	0.028	11.85E+6	0.190	-0.763	87.73E-15
98	L1S2C100	Down-dip	1	2	100	550	0.584	0.019	0.040	1.443	10.47E+6	0.138	10.45E+6	0.279	-1.255	101.20E-15
99	L1S2D009	Down-dip	1	2	9	750	0.548	0.006	0.181	1.330	9.38E+6	0.389	9.47E+6	0.987	-1.286	94.39E-15
100	L1S2D020	Down-dip	1	2	20	750	0.577	0.125	0.458	1.419	11.58E+6	0.069	11.57E+8	0.594	-1.268	100.00E-15
101	L1S2D026	Down-dip	1	2	26	750	0.525	0.127	0.062	1.264	7.94E+6	0.205	8.03E+6	0.866	-1.271	89.21E-15
102	L1S2D034	Down-dip	1	2	34	750	0.539	0.060	0.052	1.302	8.80E+6	0.113	8.77E+6	0.426	-1.077	85.01E-15
103	L1S2D037	Down-dip	1	2	37	750	0.573	0.063	0.141	1.405	11.01E+6	0.096	11.00E+6	0.382	-1.056	91.02E-15
104	L1S2D040	Down-dip	1	2	40	750	0.538	0.013	0.449	1.301	8.80E+6	0.637	8.92E+6	0.982	-1.009	82.79E-15
105	L1S2D046	Down-dip	1	2	46	750	0.537	0.090	0.003	1.296	8.74E+6	0.181	8.75E+6	0.557	-1.301	92.62E-15
106	L1S2D048	Down-dip	1	2	48	750	0.527	0.108	0.505	1.270	8.08E+6	0.856	8.17E+6	0.888	-0.762	74.01E-15
107	L1S2D059	Down-dip	1	2	59	750	0.542	0.081	0.028	1.312	9.06E+6	0.110	9.19E+6	0.913	-0.929	81.11E-15
108	L1S2D070	Down-dip	1	2	70	750	0.570	0.026	0.253	1.398	11.11E+6	0.054	11.10E+6	0.511	-1.300	99.83E-15
109	L1S2H020	Down-dip	1	2	20	2,000	0.540	0.125	0.458	1.305	10.85E+6	0.033	10.85E+6	0.556	-1.294	93.01E-15
110	L1S2H026	Down-dip	1	2	26	2,000	0.538	0.127	0.062	1.299	10.67E+6	0.086	10.69E+6	0.779	-1.326	93.78E-15
111	L1S2H036	Down-dip	1	2	36	2,000	0.497	0.132	0.436	1.193	8.12E+6	0.000	8.12E+6	0.558	-1.287	84.75E-15
112	L1S2H037	Down-dip	1	2	37	2,000	0.524	0.063	0.141	1.262	9.66E+6	0.047	9.66E+6	0.468	-1.073	82.29E-15
113	L1S2H046	Down-dip	1	2	46	2,000	0.536	0.090	0.003	1.293	10.52E+6	0.127	10.53E+6	0.667	-1.342	94.03E-15
114	L1S2H048	Down-dip	1	2	48	2,000	0.538	0.108	0.505	1.300	10.69E+6	0.477	10.70E+6	0.839	-0.798	76.68E-15
115	L1S2H049	Down-dip	1	2	49	2,000	0.511	0.014	0.119	1.229	8.85E+6	0.962	8.91E+6	0.981	-1.522	96.78E-15
116	L1S2H055	Down-dip	1	2	55	2,000	0.527	0.105	0.508	1.269	9.87E+6	0.126	9.88E+6	0.808	-0.975	79.78E-15
117	L1S2H056	Down-dip	1	2	56	2,000	0.495	0.027	0.486	1.189	8.04E+6	0.012	8.04E+6	0.622	-1.035	76.45E-15
118	L1S2H059	Down-dip	1	2	59	2,000	0.523	0.081	0.028	1.259	9.56E+6	0.067	9.60E+6	0.913	-0.953	78.47E-15
119	L1S2H070	Down-dip	1	2	70	2,000	0.517	0.026	0.253	1.243	9.17E+6	0.042	9.17E+6	0.694	-1.306	89.00E-15
120	L1S2H083	Down-dip	1	2	83	2,000	0.495	0.097	0.102	1.189	8.04E+6	0.000	8.04E+6	0.166	-1.256	83.41E-15
121	L1S2J005	Down-dip	1	2	5	4,000	0.505	0.072	0.092	1.213	8.72E+6	0.167	8.74E+6	0.879	-1.297	86.52E-15
122	L1S2J018	Down-dip	1	2	18	4,000	0.496	0.002	0.108	1.190	8.33E+6	0.048	8.33E+6	0.483	-1.298	84.94E-15
123	L1S2J020	Down-dip	1	2	20	4,000	0.531	0.125	0.458	1.280	10.17E+6	0.006	10.17E+6	0.462	-1.294	91.21E-15
124	L1S2J026	Down-dip	1	2	26	4,000	0.541	0.127	0.062	1.308	10.92E+6	0.021	10.93E+6	0.587	-1.328	94.52E-15
125	L1S2J038	Down-dip	1	2	38	4,000	0.502	0.146	0.055	1.207	8.61E+6	0.057	8.62E+6	0.566	-1.042	77.75E-15
126	L1S2J046	Down-dip	1	2	46	4,000	0.517	0.090	0.003	1.244	9.22E+6	0.101	9.25E+6	0.887	-1.330	89.98E-15
127	L1S2J048	Down-dip	1	2	48	4,000	0.533	0.108	0.505	1.285	10.30E+6	0.186	10.31E+6	0.683	-0.796	75.76E-15
128	L1S2J049	Down-dip	1	2	49	4,000	0.530	0.014	0.119	1.277	10.05E+6	0.651	10.12E+6	0.981	-1.526	100.80E-15
129	L1S2J055	Down-dip	1	2	55	4,000	0.538	0.105	0.508	1.300	10.69E+6	0.059	10.70E+6	0.647	-0.981	81.87E-15
130	L1S2J059	Down-dip	1	2	59	4,000	0.502	0.081	0.028	1.206	8.62E+6	0.000	8.64E+6	0.896	-0.950	75.06E-15
131	L1S2J067	Down-dip	1	2	67	4,000	0.517	0.087	0.361	1.243	9.20E+6	0.004	9.20E+6	0.466	-0.899	75.99E-15
132	L1S2J070	Down-dip	1	2	70	4,000	0.489	0.026	0.253	1.175	8.00E+6	0.010	8.02E+6	0.916	-1.300	83.90E-15

		*	*	*	*	BC well Sand Permeability (m^2)	Total Area solids released (m^2)	Castile Reservoir Pressure (Pa)	Castile Reservoir Permeability (m^3)	Up-dip Brine Relative Permeability (m^2)	Up-dip Gas Relative Permeability (m^3)	Down-dip Brine Relative Permeability (m^2)	Down-dip Gas Relative Permeability (m^3)	Up-dip Flowing Bottom-hole Pressure (Pa)	Down-dip Flowing Bottom-hole Pressure (Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	PRM_SAND	AREA_TOT	CAST_RE	PRM_CAST	KRW2	KRG2	KRW4	KRG4	FBHP2	FBHP4
89	L1S2C040	Down-dip	1	2	40	234.40E-15	0.550	12.57E+6	25.70E-15	4.04E-3	543.10E-3	885.70E-3	952.50E-9	000.00E+0	7.98E+6
90	L1S2C048	Down-dip	1	2	48	22.39E-15	0.343	12.54E+6	10.47E-15	389.60E-3	957.10E-9	389.20E-3	1.05E-6	000.00E+0	7.99E+6
91	L1S2C050	Down-dip	1	2	50	7.94E-12	0.999	12.28E+6	269.20E-15	000.00E+0	1.00E+0	1.79E-3	604.80E-3	000.00E+0	193.00E+3
92	L1S2C054	Down-dip	1	2	54	2.63E-12	0.926	11.73E+6	3.09E-12	000.00E+0	1.00E+0	2.41E-3	572.10E-3	000.00E+0	176.50E+3
93	L1S2C059	Down-dip	1	2	59	25.70E-15	0.467	12.30E+6	41.69E-15	203.70E-6	775.00E-3	705.00E-3	918.20E-9	170.60E+3	7.98E+6
94	L1S2C064	Down-dip	1	2	64	2.82E-12	0.931	12.19E+6	1.18E-12	35.17E-6	854.50E-3	5.68E-3	459.80E-3	213.10E+3	180.70E+3
95	L1S2C069	Down-dip	1	2	69	1.29E-12	0.519	11.88E+6	16.22E-15	000.00E+0	1.00E+0	3.17E-3	546.40E-3	000.00E+0	185.50E+3
96	L1S2C070	Down-dip	1	2	70	32.36E-15	0.969	13.34E+6	109.60E-15	000.00E+0	1.00E+0	13.13E-3	394.60E-3	000.00E+0	188.00E+3
97	L1S2C092	Down-dip	1	2	92	6.17E-12	0.350	12.40E+6	1.29E-12	54.29E-9	974.40E-3	1.64E-3	587.00E-3	278.90E+3	207.60E+3
98	L1S2C100	Down-dip	1	2	100	1.10E-12	0.936	13.56E+6	3.47E-15	219.10E-6	785.20E-3	5.87E-3	502.40E-3	203.60E+3	184.90E+3
99	L1S2D009	Down-dip	1	2	9	2.88E-12	0.995	13.53E+6	81.28E-15	6.33E-3	498.80E-3	941.20E-3	1.16E-6	171.20E+3	7.99E+6
100	L1S2D020	Down-dip	1	2	20	14.13E-15	0.961	13.11E+6	2.04E-12	000.00E+0	1.00E+0	6.14E-3	384.10E-3	000.00E+0	200.10E+3
101	L1S2D026	Down-dip	1	2	26	23.99E-15	0.966	10.76E+6	104.70E-15	944.90E-6	644.10E-3	564.40E-3	1.21E-6	000.00E+0	7.98E+6
102	L1S2D034	Down-dip	1	2	34	85.11E-15	0.655	14.46E+6	2.75E-12	38.55E-6	859.30E-3	32.24E-3	257.50E-3	192.00E+3	182.40E+3
103	L1S2D037	Down-dip	1	2	37	43.65E-15	0.629	14.67E+6	16.60E-12	000.00E+0	1.00E+0	9.20E-3	421.40E-3	000.00E+0	193.40E+3
104	L1S2D040	Down-dip	1	2	40	234.40E-15	0.572	12.56E+6	25.70E-15	18.84E-3	351.70E-3	885.80E-3	941.80E-9	170.40E+3	7.98E+6
105	L1S2D046	Down-dip	1	2	46	10.96E-15	1.026	10.80E+6	26.92E-12	1.74E-3	604.30E-3	113.90E-3	85.97E-3	166.20E+3	477.40E+3
106	L1S2D048	Down-dip	1	2	48	22.39E-15	0.349	12.51E+6	10.47E-15	280.50E-3	1.31E-3	389.70E-3	931.70E-9	7.55E+6	7.99E+6
107	L1S2D059	Down-dip	1	2	59	25.70E-15	0.488	12.30E+6	41.69E-15	105.80E-6	811.20E-3	706.10E-3	786.80E-9	188.90E+3	7.98E+6
108	L1S2D070	Down-dip	1	2	70	32.36E-15	1.023	13.34E+6	109.60E-15	000.00E+0	1.00E+0	19.77E-3	339.80E-3	000.00E+0	202.40E+3
109	L1S2H020	Down-dip	1	2	20	14.13E-15	1.012	13.12E+6	2.04E-12	000.00E+0	1.00E+0	1.85E-3	532.00E-3	000.00E+0	193.10E+3
110	L1S2H026	Down-dip	1	2	26	23.99E-15	1.077	10.83E+6	104.70E-15	1.31E-6	939.50E-3	370.60E-3	2.52E-3	242.60E+3	7.37E+6
111	L1S2H036	Down-dip	1	2	36	33.11E-15	0.998	11.16E+6	38.02E-15	000.00E+0	1.00E+0	3.49E-3	454.70E-3	000.00E+0	155.50E+3
112	L1S2H037	Down-dip	1	2	37	43.65E-15	0.650	14.66E+6	16.60E-12	000.00E+0	1.00E+0	28.37E-3	269.80E-3	000.00E+0	191.60E+3
113	L1S2H046	Down-dip	1	2	46	10.96E-15	1.114	11.97E+6	26.92E-12	448.10E-6	720.60E-3	222.60E-3	29.53E-3	198.60E+3	1.58E+6
114	L1S2H048	Down-dip	1	2	48	22.39E-15	0.375	12.51E+6	10.47E-15	000.00E+0	1.00E+0	232.90E-3	4.17E-3	000.00E+0	6.41E+6
115	L1S2H049	Down-dip	1	2	49	12.59E-15	1.595	10.31E+6	32.36E-15	847.90E-3	38.46E-6	923.40E-3	314.40E-9	8.01E+6	7.98E+6
116	L1S2H055	Down-dip	1	2	55	16.22E-15	0.534	10.35E+6	1.35E-12	000.00E+0	1.00E+0	161.40E-3	17.48E-3	000.00E+0	2.12E+6
117	L1S2H056	Down-dip	1	2	56	10.47E-15	0.603	8.73E+6	1.74E-12	000.00E+0	1.00E+0	7.35E-3	459.60E-3	000.00E+0	154.40E+3
118	L1S2H059	Down-dip	1	2	59	25.70E-15	0.512	12.30E+6	41.69E-15	7.10E-6	909.40E-3	705.90E-3	807.00E-9	214.50E+3	7.99E+6
119	L1S2H070	Down-dip	1	2	70	32.36E-15	1.037	13.34E+6	109.60E-15	000.00E+0	1.00E+0	142.70E-3	85.41E-3	000.00E+0	308.30E+3
120	L1S2H083	Down-dip	1	2	83	30.20E-15	0.938	10.10E+6	3.02E-12	000.00E+0	1.00E+0	58.45E-6	834.60E-3	000.00E+0	178.10E+3
121	L1S2J005	Down-dip	1	2	5	13.80E-15	1.017	6.39E+6	123.00E-15	100.60E-6	814.60E-3	590.10E-3	338.60E-6	184.30E+3	7.98E+6
122	L1S2J018	Down-dip	1	2	18	11.75E-15	1.020	7.13E+6	6.03E-12	000.00E+0	1.00E+0	40.94E-3	257.00E-3	000.00E+0	181.40E+3
123	L1S2J020	Down-dip	1	2	20	14.13E-15	1.012	13.12E+6	2.04E-12	000.00E+0	1.00E+0	18.48E-9	978.80E-3	000.00E+0	249.10E+3
124	L1S2J026	Down-dip	1	2	26	23.99E-15	1.082	10.86E+6	104.70E-15	000.00E+0	1.00E+0	117.40E-3	64.60E-3	000.00E+0	227.10E+3
125	L1S2J038	Down-dip	1	2	38	26.30E-15	0.611	7.39E+6	812.80E-15	36.31E-12	996.50E-3	102.90E-3	69.41E-3	221.70E+3	395.70E+3
126	L1S2J046	Down-dip	1	2	46	10.96E-15	1.088	12.10E+6	26.92E-12	188.60E-6	777.80E-3	642.30E-3	26.08E-6	186.90E+3	8.01E+6
127	L1S2J048	Down-dip	1	2	48	22.39E-15	0.373	12.51E+6	10.47E-15	000.00E+0	1.00E+0	23.20E-3	211.20E-3	000.00E+0	201.60E+3
128	L1S2J049	Down-dip	1	2	49	12.59E-15	1.609	10.31E+6	32.36E-15	155.10E-3	84.16E-3	924.10E-3	280.60E-9	239.00E+3	7.99E+6
129	L1S2J055	Down-dip	1	2	55	16.22E-15	0.541	10.39E+6	1.35E-12	000.00E+0	1.00E+0	9.46E-3	337.10E-3	000.00E+0	190.50E+3
130	L1S2J059	Down-dip	1	2	59	25.70E-15	0.508	12.30E+6	41.69E-15	000.00E+0	1.00E+0	858.10E-3	31.09E-6	000.00E+0	8.01E+6
131	L1S2J067	Down-dip	1	2	67	20.42E-15	0.459	9.43E+6	87.10E-12	000.00E+0	1.00E+0	1.26E-3	616.70E-3	000.00E+0	173.70E+3
132	L1S2J070	Down-dip	1	2	70	32.36E-15	1.023	13.34E+6	109.60E-15	000.00E+0	1.00E+0	644.60E-3	852.50E-6	000.00E+0	7.90E+6

No.	File (*.TXT)	ID	Rep	Scen	Vector	BC well Injection Pressure (Pa) BHP_ABAN	Blowout Duration (Days) time	Brine Rate (m^3/s) BRINEFLW	Gas Rate (ref m^3/s) GASFLW	Max Brine Rate (m^3/s) MAX_BRN	Max Gas Rate (ref m^3/s) MAX_GAS	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s) LGR_MET	Cum Brine from Boundary Condition Well (m^3) BRINE_BC	Cum Gas Produced (ref m^3) GASOUT	Cum Brine Produced (m^3) BRINEOUT
89	L1S2C040	Down-dip	1	2	40	8.73E+6	3	13.65E-6	562.00E-9	34.95E-6	747.40E-9	26.28E+6	0.000	149.60E-3	3.930
90	L1S2C048	Down-dip	1	2	48	8.41E+6	3	7.48E-6	5.31E-6	12.19E-6	5.31E-6	2.46E+6	0.000	887.10E-3	2.166
91	L1S2C050	Down-dip	1	2	50	8.32E+6	11	138.50E-9	157.30E-3	938.40E-9	7.46E+0	490.90E-3	0.000	422.60E+3	0.208
92	L1S2C054	Down-dip	1	2	54	8.69E+6	11	163.30E-9	112.40E-3	1.07E-6	5.39E+0	792.70E-3	0.000	306.00E+3	0.243
93	L1S2C059	Down-dip	1	2	59	8.77E+6	3	10.40E-6	917.00E-9	20.23E-6	917.00E-9	14.99E+6	0.000	205.80E-3	3.080
94	L1S2C064	Down-dip	1	2	64	8.99E+6	11	572.90E-9	240.90E-3	2.70E-6	4.83E+0	1.65E+0	0.000	459.50E+3	0.759
95	L1S2C069	Down-dip	1	2	69	3.07E+6	11	269.30E-9	219.00E-3	1.40E-6	5.47E+0	795.20E-3	0.000	470.60E+3	0.374
96	L1S2C070	Down-dip	1	2	70	8.03E+6	11	1.28E-6	192.50E-3	6.54E-6	4.47E+0	4.49E+0	0.000	388.90E+3	1.748
97	L1S2C092	Down-dip	1	2	92	9.21E+6	11	175.30E-9	390.90E-3	798.80E-9	7.34E+0	306.60E-3	0.000	762.80E+3	0.234
98	L1S2C100	Down-dip	1	2	100	1.18E+6	11	611.40E-9	280.50E-3	2.91E-6	5.67E+0	1.51E+0	0.000	537.80E+3	0.812
99	L1S2D009	Down-dip	1	2	9	8.02E+6	3	21.77E-6	875.80E-9	62.94E-6	1.62E-6	26.12E+6	0.000	241.50E-3	6.306
100	L1S2D020	Down-dip	1	2	20	200.80E+3	11	580.20E-9	154.20E-3	3.34E-6	5.23E+0	2.26E+0	0.000	365.00E+3	0.825
101	L1S2D026	Down-dip	1	2	26	7.98E+6	3	556.60E-9	24.26E-9	978.60E-9	37.13E-9	24.03E+6	0.000	6.83E-3	0.164
102	L1S2D034	Down-dip	1	2	34	187.30E+3	11	3.00E-6	145.30E-3	11.23E-6	1.73E+0	15.98E+0	0.000	234.30E+3	3.745
103	L1S2D037	Down-dip	1	2	37	195.70E+3	11	922.20E-9	241.10E-3	4.33E-6	4.74E+0	2.64E+0	0.000	467.50E+3	1.233
104	L1S2D040	Down-dip	1	2	40	7.99E+6	3	12.78E-6	507.00E-9	32.92E-6	690.00E-9	27.20E+6	0.000	135.40E-3	3.681
105	L1S2D046	Down-dip	1	2	46	477.90E+3	11	12.40E-6	81.51E-3	41.67E-6	605.70E-3	134.20E+0	0.000	112.40E+3	15.090
106	L1S2D048	Down-dip	1	2	48	7.99E+6	3	1.62E-6	161.10E-9	2.56E-6	161.10E-9	12.86E+6	0.000	36.25E-3	0.466
107	L1S2D059	Down-dip	1	2	59	7.98E+6	3	16.64E-6	2.50E-6	33.03E-6	2.50E-6	9.64E+6	0.000	513.20E-3	4.936
108	L1S2D070	Down-dip	1	2	70	204.00E+3	11	2.00E-6	184.40E-3	10.28E-6	4.26E+0	7.35E+0	0.000	371.80E+3	2.734
109	L1S2H020	Down-dip	1	2	20	193.10E+3	11	136.90E-9	139.50E-3	875.80E-9	5.94E+0	561.60E-3	0.000	358.10E+3	0.201
110	L1S2H026	Down-dip	1	2	26	7.37E+6	3	27.34E-6	5.99E-3	55.05E-6	8.70E-3	5.04E+3	0.000	1.65E+3	8.289
111	L1S2H036	Down-dip	1	2	36	155.60E+3	11	213.70E-9	95.71E-3	1.13E-6	2.63E+0	1.43E+0	0.000	204.70E+3	0.293
112	L1S2H037	Down-dip	1	2	37	191.90E+3	11	2.58E-6	148.50E-3	10.56E-6	2.12E+0	12.96E+0	0.000	255.50E+3	3.310
113	L1S2H046	Down-dip	1	2	46	1.58E+6	11	26.26E-6	53.65E-3	89.49E-6	272.50E-3	477.10E+0	0.000	67.99E+3	32.440
114	L1S2H048	Down-dip	1	2	48	6.41E+6	3	18.04E-6	8.40E-3	36.61E-6	15.28E-3	2.19E+3	0.000	2.43E+3	5.315
115	L1S2H049	Down-dip	1	2	49	7.98E+6	3	13.30E-6	170.60E-9	39.71E-6	265.30E-9	83.77E+6	0.000	46.47E-3	3.892
116	L1S2H055	Down-dip	1	2	55	2.12E+6	4	20.34E-6	32.86E-3	47.72E-6	111.70E-3	586.70E+0	0.000	13.89E+3	8.152
117	L1S2H056	Down-dip	1	2	56	154.50E+3	11	388.10E-9	78.15E-3	2.11E-6	2.35E+0	3.05E+0	0.000	178.80E+3	0.545
118	L1S2H059	Down-dip	1	2	59	7.99E+6	3	21.09E-6	5.11E-6	42.70E-6	5.11E-6	6.26E+6	0.000	1.00E+0	6.259
119	L1S2H070	Down-dip	1	2	70	308.40E+3	11	13.82E-6	65.16E-3	53.75E-6	648.30E-3	180.10E+0	0.000	96.78E+3	17.430
120	L1S2H083	Down-dip	1	2	83	178.20E+3	11	3.58E-9	195.10E-3	18.28E-9	4.64E+0	12.32E-3	0.000	393.80E+3	0.005
121	L1S2J005	Down-dip	1	2	5	7.98E+6	3	9.37E-6	136.10E-6	18.59E-6	205.50E-6	74.59E+3	0.000	37.75E+0	2.815
122	L1S2J018	Down-dip	1	2	18	181.40E+3	11	3.28E-6	111.30E-3	13.53E-6	1.56E+0	22.54E+0	0.000	185.40E+3	4.180
123	L1S2J020	Down-dip	1	2	20	249.20E+3	11	2.78E-12	150.10E-3	6.09E-12	9.38E+0	8.38E-6	0.000	441.50E+3	0.000
124	L1S2J026	Down-dip	1	2	26	227.20E+3	11	16.33E-6	98.72E-3	56.74E-6	742.00E-3	147.70E+0	0.000	136.30E+3	20.130
125	L1S2J038	Down-dip	1	2	38	395.70E+3	11	10.34E-6	65.28E-3	31.40E-6	402.30E-3	142.20E+0	0.000	86.91E+3	12.360
126	L1S2J046	Down-dip	1	2	46	8.01E+6	3	16.90E-6	35.72E-6	34.23E-6	35.72E-6	603.50E+3	0.000	8.44E+0	5.087
127	L1S2J048	Down-dip	1	2	48	201.80E+3	11	2.01E-6	93.03E-3	8.48E-6	1.74E+0	14.39E+0	0.000	182.00E+3	2.620
126	L1S2J049	Down-dip	1	2	49	7.99E+6	3	31.40E-6	760.50E-9	95.02E-6	846.80E-9	46.93E+6	0.000	196.10E-3	9.196
129	L1S2J055	Down-dip	1	2	55	190.50E+3	11	741.60E-9	108.20E-3	3.89E-6	3.23E+0	4.12E+0	0.000	251.30E+3	1.034
130	L1S2J059	Down-dip	1	2	59	8.01E+6	3	7.81E-6	10.96E-6	14.78E-6	13.30E-6	806.00E+3	0.000	2.86E+0	2.306
131	L1S2J067	Down-dip	1	2	67	173.70E+3	11	75.80E-9	142.20E-3	413.40E-9	4.08E+0	332.10E-3	0.000	323.10E+3	0.107
132	L1S2J070	Down-dip	1	2	70	7.90E+6	3	1.46E-6	35.13E-6	3.26E-6	76.59E-6	41.87E+3	0.000	10.53E+0	0.441

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
89	L1S2C040	Down-dip	1	2	40	3.847	8.85E+6	0.982	7.71E+6	0.473	81.59E+3	58.99E+3
90	L1S2C048	Down-dip	1	2	48	2.120	8.85E+6	0.891	6.55E+6	0.538	76.70E+3	53.21E+3
91	L1S2C050	Down-dip	1	2	50	0.202	3.44E+6	0.578	10.89E+6	0.278	96.59E+3	34.08E+3
92	L1S2C054	Down-dip	1	2	54	0.231	3.10E+6	0.637	9.68E+6	0.211	90.60E+3	28.84E+3
93	L1S2C059	Down-dip	1	2	59	3.017	8.69E+6	0.914	8.09E+6	0.113	82.77E+3	38.44E+3
94	L1S2C064	Down-dip	1	2	64	0.718	4.72E+6	0.369	10.14E+6	0.183	93.08E+3	22.20E+3
95	L1S2C069	Down-dip	1	2	69	0.373	4.20E+6	0.436	10.42E+6	0.186	94.43E+3	23.48E+3
96	L1S2C070	Down-dip	1	2	70	1.686	4.59E+6	0.501	10.42E+6	0.054	94.44E+3	22.08E+3
97	L1S2C092	Down-dip	1	2	92	0.224	5.27E+6	0.215	11.91E+6	0.026	101.60E+3	7.48E+3
98	L1S2C100	Down-dip	1	2	100	0.806	4.79E+6	0.299	10.44E+6	0.130	94.56E+3	16.81E+3
99	L1S2D009	Down-dip	1	2	9	6.175	9.24E+6	0.987	9.38E+6	0.321	81.84E+3	53.32E+3
100	L1S2D020	Down-dip	1	2	20	0.798	4.31E+6	0.607	11.56E+6	0.070	91.93E+3	19.01E+3
101	L1S2D026	Down-dip	1	2	26	0.161	8.02E+6	0.869	7.94E+8	0.187	74.51E+3	34.51E+3
102	L1S2D034	Down-dip	1	2	34	3.587	5.16E+6	0.442	8.79E+6	0.107	78.71E+3	16.67E+3
103	L1S2D037	Down-dip	1	2	37	1.175	5.01E+6	0.399	10.99E+6	0.096	90.26E+3	15.51E+3
104	L1S2D040	Down-dip	1	2	40	3.603	8.81E+6	0.983	8.80E+6	0.510	78.60E+3	58.18E+3
105	L1S2D046	Down-dip	1	2	46	14.440	6.46E+6	0.567	8.74E+6	0.154	78.08E+3	29.09E+3
106	L1S2D048	Down-dip	1	2	48	0.456	8.17E+6	0.891	8.07E+6	0.527	75.15E+3	51.85E+3
107	L1S2D059	Down-dip	1	2	59	4.835	9.14E+6	0.914	9.06E+6	0.092	79.91E+3	37.21E+3
108	L1S2D070	Down-dip	1	2	70	2.682	4.91E+6	0.525	11.10E+6	0.054	89.51E+3	21.70E+3
109	L1S2H020	Down-dip	1	2	20	0.199	3.62E+6	0.570	10.84E+6	0.033	79.12E+3	13.42E+3
110	L1S2H026	Down-dip	1	2	26	8.125	10.59E+6	0.784	10.67E+6	0.076	78.40E+3	28.00E+3
111	L1S2H036	Down-dip	1	2	36	0.289	3.37E+6	0.571	8.11E+6	0.000	66.50E+3	9.70E+3
112	L1S2H037	Down-dip	1	2	37	3.302	5.20E+6	0.483	9.66E+6	0.048	74.23E+3	11.73E+3
113	L1S2H046	Down-dip	1	2	46	31.060	8.63E+6	0.672	10.52E+6	0.105	77.76E+3	29.22E+3
114	L1S2H048	Down-dip	1	2	48	5.206	10.52E+6	0.842	10.69E+6	0.268	78.48E+3	42.62E+3
115	L1S2H049	Down-dip	1	2	49	3.812	8.78E+6	0.981	8.84E+6	0.653	70.54E+3	56.42E+3
116	L1S2H055	Down-dip	1	2	55	7.294	9.11E+6	0.813	9.87E+6	0.128	75.08E+3	23.06E+3
117	L1S2H056	Down-dip	1	2	56	0.534	3.09E+6	0.633	8.03E+6	0.012	66.09E+3	11.98E+3
118	L1S2H059	Down-dip	1	2	59	6.131	9.53E+6	0.914	9.56E+6	0.041	73.86E+3	31.81E+3
119	L1S2H070	Down-dip	1	2	70	16.610	6.03E+6	0.701	9.17E+6	0.043	72.10E+3	20.90E+3
120	L1S2H083	Down-dip	1	2	83	0.005	3.45E+6	0.189	8.02E+6	0.000	66.10E+3	3.00E+3
121	L1S2J005	Down-dip	1	2	5	2.758	8.72E+6	0.882	8.72E+6	0.138	68.75E+3	33.70E+3
122	L1S2J018	Down-dip	1	2	18	4.007	4.71E+6	0.497	8.32E+6	0.049	66.20E+3	11.77E+3
123	L1S2J020	Down-dip	1	2	20	0.000	2.78E+6	0.478	10.14E+6	0.006	76.29E+3	9.57E+3
124	L1S2J026	Down-dip	1	2	26	18.900	7.96E+6	0.597	10.92E+6	0.018	79.41E+3	18.73E+3
125	L1S2J038	Down-dip	1	2	38	11.810	6.63E+6	0.578	8.61E+6	0.055	68.02E+3	18.65E+3
126	L1S2J046	Down-dip	1	2	46	4.985	9.21E+6	0.890	9.22E+8	0.071	72.20E+3	29.75E+3
127	L1S2J046	Down-dip	1	2	48	2.593	4.83E+6	0.694	10.30E+6	0.104	76.86E+3	27.68E+3
128	L1S2J049	Down-dip	1	2	49	9.007	9.81E+6	0.981	10.05E+6	0.405	75.93E+3	51.64E+3
129	L1S2J055	Down-dip	1	2	55	0.979	4.12E+6	0.659	10.69E+6	0.059	78.46E+3	16.69E+3
130	L1S2J059	Down-dip	1	2	59	2.258	8.62E+6	0.898	8.62E+6	0.000	67.91E+3	24.80E+3
131	L1S2J067	Down-dip	1	2	67	0.105	3.44E+6	0.481	9.18E+6	0.006	72.10E+3	9.11E+3
132	L1S2J070	Down-dip	1	2	70	0.432	8.02E+6	0.918	8.00E+6	0.012	84.48E+3	20.74E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
133	L1S2L005	Down-dip	1	2	5	10,000	0.509	0.072	0.092	1.224	8.91E+6	0.036	8.93E+6	0.857	-1.297	87.31E-15
134	L1S2L018	Down-dip	1	2	18	10,000	0.498	0.002	0.108	1.196	8.48E+6	0.000	8.49E+6	0.502	-1.300	85.39E-15
135	L1S2L020	Down-dip	1	2	20	10,000	0.495	0.125	0.458	1.189	8.38E+6	0.000	8.40E+6	0.763	-1.298	84.85E-15
136	L1S2L026	Down-dip	1	2	26	10,000	0.490	0.127	0.062	1.176	8.17E+6	0.000	8.24E+6	0.871	-1.308	84.29E-15
137	L1S2L046	Down-dip	1	2	46	10,000	0.499	0.090	0.003	1.200	8.53E+6	0.011	8.59E+6	0.904	-1.329	86.73E-15
138	L1S2L049	Down-dip	1	2	49	10,000	0.524	0.014	0.119	1.261	9.64E+6	0.145	9.69E+6	0.981	-1.524	99.46E-15
139	L1S2L055	Down-dip	1	2	55	10,000	0.517	0.105	0.508	1.243	9.21E+6	0.000	9.22E+6	0.650	-0.969	77.98E-15
140	L1S2L099	Down-dip	1	2	99	10,000	0.497	0.138	0.379	1.194	8.44E+6	0.860	8.52E+6	0.860	-1.082	78.13E-15
141	L1S3F009	Down-dip	1	3	9	1,200	0.544	0.006	0.181	1.318	11.22E+6	0.170	11.32E+6	0.987	-1.330	95.34E-15
142	L1S3F019	Down-dip	1	3	19	1,200	0.512	0.107	0.285	1.230	8.90E+6	0.229	8.81E+6	0.699	-0.943	76.42E-15
143	L1S3F021	Down-dip	1	3	21	1,200	0.515	0.034	0.164	1.239	9.07E+6	0.095	9.07E+6	0.283	-1.273	87.47E-15
144	L1S3F026	Down-dip	1	3	26	1,200	0.521	0.127	0.062	1.254	9.46E+6	0.142	9.48E+6	0.738	-1.313	90.08E-15
145	L1S3F030	Down-dip	1	3	30	1,200	0.553	0.031	0.047	1.344	11.97E+6	0.065	11.96E+6	0.121	-1.091	88.25E-15
146	L1S3F034	Down-dip	1	3	34	1,200	0.558	0.060	0.052	1.358	12.35E+6	0.078	12.35E+6	0.113	-1.129	90.47E-15
147	L1S3F036	Down-dip	1	3	36	1,200	0.511	0.132	0.436	1.229	8.85E+6	0.000	8.85E+6	0.488	-1.292	87.48E-15
148	L1S3F040	Down-dip	1	3	40	1,200	0.516	0.013	0.449	1.240	8.97E+6	0.337	9.56E+6	0.982	-1.038	79.79E-15
149	L1S3F046	Down-dip	1	3	46	1,200	0.560	0.090	0.003	1.364	12.53E+6	0.120	12.54E+6	0.475	-1.357	99.85E-15
150	L1S3F048	Down-dip	1	3	48	1,200	0.502	0.108	0.505	1.206	7.95E+6	0.159	9.46E+6	0.889	-0.790	70.95E-15
151	L1S3F052	Down-dip	1	3	52	1,200	0.479	0.098	0.035	1.154	6.83E+6	0.897	8.12E+6	0.896	-1.327	83.35E-15
152	L1S3F055	Down-dip	1	3	55	1,200	0.510	0.105	0.508	1.226	8.77E+6	0.178	8.77E+6	0.666	-0.965	76.75E-15
153	L1S3F059	Down-dip	1	3	59	1,200	0.517	0.081	0.028	1.243	9.16E+6	0.069	9.17E+6	0.482	-0.950	77.38E-15
154	L1S3F064	Down-dip	1	3	64	1,200	0.551	0.101	0.134	1.337	11.80E+6	0.199	11.74E+6	0.300	-1.315	96.11E-15
155	L1S3F065	Down-dip	1	3	65	1,200	0.508	0.051	0.154	1.221	8.68E+6	0.066	8.65E+6	0.224	-1.289	86.80E-15
156	L1S3F071	Down-dip	1	3	71	1,200	0.518	0.113	0.235	1.245	9.20E+6	0.088	9.22E+6	0.795	-1.094	81.83E-15
157	L1S3F082	Down-dip	1	3	82	1,200	0.512	0.122	0.224	1.232	8.92E+6	0.047	8.88E+6	0.801	-1.281	87.26E-15
158	L1S3F083	Down-dip	1	3	83	1,200	0.500	0.097	0.102	1.201	8.23E+6	0.011	8.23E+6	0.137	-1.257	84.28E-15
159	L1S3F089	Down-dip	1	3	89	1,200	0.505	0.056	0.074	1.213	8.50E+6	0.025	8.49E+6	0.124	-0.837	72.55E-15
160	L1S3F090	Down-dip	1	3	90	1,200	0.513	0.032	0.174	1.234	8.86E+6	0.095	9.25E+6	0.963	-1.310	88.48E-15
161	L1S3F092	Down-dip	1	3	92	1,200	0.572	0.143	0.017	1.403	13.65E+6	0.003	13.52E+6	0.032	-0.803	82.91E-15
162	L1S3F100	Down-dip	1	3	100	1,200	0.547	0.019	0.040	1.326	11.48E+6	0.139	11.46E+6	0.195	-1.310	95.12E-15
163	L1S3G009	Down-dip	1	3	9	1,400	0.531	0.006	0.181	1.280	10.15E+6	0.155	10.23E+6	0.987	-1.319	92.17E-15
164	L1S3G026	Down-dip	1	3	26	1,400	0.523	0.127	0.062	1.260	9.61E+6	0.123	9.62E+6	0.718	-1.315	90.54E-15
165	L1S3G034	Down-dip	1	3	34	1,400	0.515	0.060	0.052	1.237	9.16E+6	0.092	9.13E+6	0.168	-1.105	81.69E-15
166	L1S3G036	Down-dip	1	3	36	1,400	0.502	0.132	0.436	1.205	8.32E+6	0.000	8.32E+6	0.474	-1.288	85.61E-15
167	L1S3G040	Down-dip	1	3	40	1,400	0.514	0.013	0.449	1.236	8.99E+6	0.324	9.09E+6	0.982	-1.033	79.40E-15
168	L1S3G046	Down-dip	1	3	46	1,400	0.556	0.090	0.003	1.352	12.18E+6	0.114	12.16E+6	0.491	-1.355	98.81E-15
169	L1S3G048	Down-dip	1	3	48	1,400	0.508	0.108	0.505	1.220	8.62E+6	0.160	8.69E+6	0.888	-0.785	71.61E-15
170	L1S3G055	Down-dip	1	3	55	1,400	0.512	0.105	0.508	1.232	8.92E+6	0.165	8.92E+6	0.652	-0.967	77.16E-15
171	L1S3G059	Down-dip	1	3	59	1,400	0.509	0.081	0.028	1.222	8.70E+6	0.060	8.71E+6	0.485	-0.946	76.01E-15
172	L1S3G083	Down-dip	1	3	83	1,400	0.498	0.097	0.102	1.196	8.12E+6	0.000	8.12E+6	0.135	-1.256	83.86E-15
173	L1S3G090	Down-dip	1	3	90	1,400	0.505	0.032	0.174	1.213	8.47E+6	0.086	8.58E+6	0.963	-1.305	86.80E-15
174	L1S3I026	Down-dip	1	3	26	3,000	0.539	0.127	0.062	1.302	10.75E+6	0.041	10.76E+6	0.537	-1.326	94.00E-15
175	L1S3I037	Down-dip	1	3	37	3,000	0.514	0.063	0.141	1.235	9.12E+6	0.013	9.12E+6	0.181	-1.070	80.44E-15
176	L1S3I038	Down-dip	1	3	38	3,000	0.495	0.146	0.055	1.190	8.17E+6	0.083	8.18E+6	0.661	-1.037	76.52E-15

						BC well Sand Permeability (m^2)	Total Area solids released (m^2)	Castile Reservoir Pressure (Pa)	Castile Reservoir Permeability (m^3)	Up-dip Brine Relative Permeability (m^2)	Up-dip Gas Relative Permeability (m^3)	Down-dip Brine Relative Permeability (m^2)	Down-dip Gas Relative Permeability (m^3)	Up-dip Flowing Bottom-hole Pressure (Pa)	Down-dip Flowing Bottom-hole Pressure (Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	PRM_SAND	AREA_TOT	CAST_RE	PRM_CAST	KRW2	KRG2	KRW4	KRG4	FBHP2	FBHP4
133	L1S2L005	Down-dip	1	2	5	13.80E-15	1.018	6.52E+6	123.00E-15	000.00E+0	1.00E+0	532.30E-3	1.00E-3	000.00E+0	7.84E+6
134	L1S2L018	Down-dip	1	2	18	11.75E-15	1.024	7.73E+6	6.03E-12	000.00E+0	1.00E+0	48.78E-3	233.10E-3	000.00E+0	190.40E+3
135	L1S2L020	Down-dip	1	2	20	14.13E-15	1.019	13.12E+6	2.04E-12	000.00E+0	1.00E+0	119.80E-3	29.44E-3	000.00E+0	486.60E+3
136	L1S2L026	Down-dip	1	2	26	23.99E-15	1.040	10.92E+6	104.70E-15	000.00E+0	1.00E+0	580.00E-3	7.11E-9	000.00E+0	8.01E+6
137	L1S2L046	Down-dip	1	2	46	10.96E-15	1.064	12.16E+6	26.92E-12	14.90E-9	983.10E-3	689.00E-3	413.40E-9	220.80E+3	7.98E+6
138	L1S2L049	Down-dip	1	2	49	12.59E-15	1.604	10.32E+6	32.36E-15	2.38E-6	937.40E-3	923.80E-3	293.30E-9	222.20E+3	7.98E+6
139	L1S2L055	Down-dip	1	2	55	16.22E-15	0.528	10.49E+6	1.35E-12	000.00E+0	1.00E+0	9.98E-3	329.70E-3	000.00E+0	171.50E+3
140	L1S2L099	Down-dip	1	2	99	85.11E-15	0.662	8.30E+6	50.12E-15	390.70E-3	83.47E-9	390.80E-3	81.94E-9	7.98E+6	7.98E+6
141	L1S3F009	Down-dip	1	3	9	2.88E-12	1.087	14.90E+6	81.28E-15	000.00E+0	1.00E+0	942.90E-3	989.00E-9	000.00E+0	7.99E+6
142	L1S3F019	Down-dip	1	3	19	8.32E-12	0.501	12.48E+6	208.90E-15	000.00E+0	1.00E+0	132.80E-3	48.86E-3	000.00E+0	225.50E+3
143	L1S3F021	Down-dip	1	3	21	691.80E-15	0.969	12.63E+6	660.70E-15	000.00E+0	1.00E+0	740.20E-6	697.60E-3	000.00E+0	175.40E+3
144	L1S3F026	Down-dip	1	3	26	23.99E-15	1.051	13.05E+6	104.70E-15	109.40E-6	798.00E-3	298.80E-3	7.26E-3	194.20E+3	5.91E+6
145	L1S3F030	Down-dip	1	3	30	363.10E-15	0.674	13.28E+6	446.70E-15	447.10E-9	959.70E-3	81.43E-6	833.10E-3	270.70E+3	234.10E+3
146	L1S3F034	Down-dip	1	3	34	85.11E-15	0.727	15.06E+6	2.75E-12	1.68E-6	940.20E-3	39.00E-6	858.90E-3	270.20E+3	246.60E+3
147	L1S3F036	Down-dip	1	3	36	33.11E-15	1.008	12.41E+6	38.02E-15	000.00E+0	1.00E+0	148.20E-6	753.20E-3	000.00E+0	183.10E+3
148	L1S3F040	Down-dip	1	3	40	234.40E-15	0.606	13.15E+6	25.70E-15	000.00E+0	1.00E+0	886.40E-3	884.10E-9	000.00E+0	7.98E+6
149	L1S3F046	Down-dip	1	3	46	10.96E-15	1.148	16.12E+6	26.92E-12	366.60E-6	735.00E-3	63.42E-3	153.50E-3	229.30E+3	282.40E+3
150	L1S3F048	Down-dip	1	3	48	22.39E-15	0.369	13.10E+6	10.47E-15	000.00E+0	1.00E+0	389.90E-3	883.60E-9	000.00E+0	7.99E+6
151	L1S3F052	Down-dip	1	3	52	1.62E-12	1.080	11.72E+6	141.30E-15	658.90E-3	407.50E-9	657.60E-3	526.70E-9	000.00E+0	7.98E+6
152	L1S3F055	Down-dip	1	3	55	16.22E-15	0.524	12.34E+6	1.35E-12	000.00E+0	1.00E+0	15.01E-3	273.70E-3	000.00E+0	170.30E+3
153	L1S3F059	Down-dip	1	3	59	25.70E-15	0.508	12.73E+6	41.69E-15	7.98E-6	906.50E-3	60.02E-3	164.30E-3	207.80E+3	218.80E+3
154	L1S3F064	Down-dip	1	3	64	2.82E-12	1.054	12.31E+6	1.18E-12	72.05E-6	823.30E-3	2.26E-3	566.20E-3	232.50E+3	204.40E+3
155	L1S3F065	Down-dip	1	3	65	2.19E-12	1.001	12.22E+6	457.10E-15	000.00E+0	1.00E+0	98.15E-6	819.50E-3	000.00E+0	183.50E+3
156	L1S3F071	Down-dip	1	3	71	245.50E-15	0.678	12.79E+6	7.59E-15	000.00E+0	1.00E+0	315.60E-3	4.62E-3	000.00E+0	6.66E+6
157	L1S3F082	Down-dip	1	3	82	6.92E-12	0.985	12.52E+6	724.40E-15	000.00E+0	1.00E+0	335.20E-3	2.66E-3	000.00E+0	7.24E+6
158	L1S3F083	Down-dip	1	3	83	30.20E-15	0.939	11.78E+6	3.02E-12	000.00E+0	1.00E+0	6.73E-6	908.10E-3	000.00E+0	194.00E+3
159	L1S3F089	Down-dip	1	3	89	549.50E-15	0.406	12.05E+6	11.48E-12	000.00E+0	1.00E+0	20.58E-6	881.70E-3	000.00E+0	191.50E+3
160	L1S3F090	Down-dip	1	3	90	2.46E-12	1.045	12.83E+6	190.50E-15	000.00E+0	1.00E+0	842.80E-3	677.60E-9	000.00E+0	7.98E+6
161	L1S3F092	Down-dip	1	3	92	6.17E-12	0.379	13.67E+6	1.29E-12	000.00E+0	1.00E+0	200.20E-9	963.40E-3	000.00E+0	303.20E+3
162	L1S3F100	Down-dip	1	3	100	1.10E-12	1.044	13.72E+6	3.47E-15	226.40E-6	783.30E-3	1.19E-3	664.90E-3	218.10E+3	204.80E+3
163	L1S3G009	Down-dip	1	3	9	2.88E-12	1.064	14.79E+6	81.28E-15	000.00E+0	1.00E+0	942.00E-3	1.08E-6	000.00E+0	7.99E+6
164	L1S3G026	Down-dip	1	3	26	23.99E-15	1.054	13.05E+6	104.70E-15	39.25E-6	846.80E-3	267.10E-3	10.95E-3	203.90E+3	4.80E+6
165	L1S3G034	Down-dip	1	3	34	85.11E-15	0.694	15.05E+6	2.75E-12	7.71E-6	909.30E-3	416.30E-6	733.60E-3	207.80E+3	180.10E+3
166	L1S3G036	Down-dip	1	3	36	33.11E-15	1.000	12.40E+6	38.02E-15	000.00E+0	1.00E+0	47.47E-6	818.00E-3	000.00E+0	183.30E+3
167	L1S3G040	Down-dip	1	3	40	234.40E-15	0.601	13.15E+6	25.70E-15	000.00E+0	1.00E+0	885.90E-3	933.50E-9	000.00E+0	7.98E+6
168	L1S3G046	Down-dip	1	3	46	10.96E-15	1.142	16.09E+6	26.92E-12	298.80E-6	748.90E-3	71.56E-3	138.60E-3	225.60E+3	285.30E+3
169	L1S3G048	Down-dip	1	3	48	22.39E-15	0.365	13.08E+6	10.47E-15	000.00E+0	1.00E+0	389.80E-3	915.30E-9	000.00E+0	7.99E+6
170	L1S3G055	Down-dip	1	3	55	16.22E-15	0.526	12.34E+6	1.35E-12	000.00E+0	1.00E+0	10.68E-3	320.50E-3	000.00E+0	168.20E+3
171	L1S3G059	Down-dip	1	3	59	25.70E-15	0.505	12.73E+6	41.69E-15	3.16E-6	927.40E-3	61.54E-3	161.10E-3	205.60E+3	212.80E+3
172	L1S3G083	Down-dip	1	3	83	30.20E-15	0.937	11.77E+6	3.02E-12	000.00E+0	1.00E+0	5.08E-6	914.90E-3	000.00E+0	193.80E+3
173	L1S3G090	Down-dip	1	3	90	2.46E-12	1.035	12.62E+6	190.50E-15	000.00E+0	1.00E+0	842.30E-3	723.40E-9	000.00E+0	7.98E+6
174	L1S3I026	Down-dip	1	3	26	23.99E-15	1.079	13.07E+6	104.70E-15	000.00E+0	1.00E+0	81.12E-3	102.00E-3	000.00E+0	266.00E+3
175	L1S3I037	Down-dip	1	3	37	43.65E-15	0.647	15.13E+6	16.60E-12	000.00E+0	1.00E+0	12.92E-6	894.40E-3	000.00E+0	204.00E+3
176	L1S3I038	Down-dip	1	3	38	26.30E-15	0.605	9.65E+6	812.80E-15	2.01E-6	930.30E-3	193.10E-3	22.07E-3	199.30E+3	2.00E+6

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
133	L1S2L005	Down-dip	1	2	5	7.84E+6	3	12.10E-6	563.00E-6	24.13E-6	891.30E-6	23.03E+3	0.000	158.30E+0	3.643
134	L1S2L018	Down-dip	1	2	18	190.40E+3	11	4.03E-6	108.70E-3	16.49E-6	1.48E+0	28.64E+0	0.000	179.00E+3	5.127
135	L1S2L020	Down-dip	1	2	20	486.70E+3	8	13.35E-6	33.10E-3	38.41E-6	175.10E-3	374.40E+0	0.000	29.93E+3	11.210
136	L1S2L026	Down-dip	1	2	26	8.01E+6	3	2.90E-6	9.75E-9	5.34E-6	9.75E-9	513.00E+6	0.000	1.69E-3	0.860
137	L1S2L046	Down-dip	1	2	46	7.98E+6	3	8.23E-6	446.30E-9	17.29E-6	446.30E-9	25.66E+6	0.000	96.81E-3	2.479
138	L1S2L049	Down-dip	1	2	49	7.98E+6	3	24.86E-6	492.30E-9	74.88E-6	587.30E-9	56.44E+6	0.000	129.10E-3	7.280
139	L1S2L055	Down-dip	1	2	55	171.50E+3	11	688.20E-9	88.45E-3	3.36E-6	2.25E+0	4.88E+0	0.000	191.70E+3	0.936
140	L1S2L099	Down-dip	1	2	99	7.98E+6	3	4.92E-6	634.00E-9	7.87E-6	634.00E-9	15.32E+6	0.000	93.51E-3	1.419
141	L1S3F009	Down-dip	1	3	9	10.87E+6	3	47.87E-6	2.97E-6	143.10E-6	3.82E-6	17.66E+6	0.000	785.70E-3	13.870
142	L1S3F019	Down-dip	1	3	19	8.42E+6	11	13.46E-6	47.89E-3	41.58E-6	296.50E-3	254.20E+0	0.000	63.51E+3	16.150
143	L1S3F021	Down-dip	1	3	21	9.29E+6	11	51.61E-9	199.20E-3	274.80E-9	5.16E+0	170.80E-3	0.000	414.60E+3	0.071
144	L1S3F026	Down-dip	1	3	26	9.19E+6	3	21.87E-6	11.79E-3	45.89E-6	23.15E-3	1.92E+3	0.000	3.41E+3	6.537
145	L1S3F030	Down-dip	1	3	30	9.68E+6	11	7.11E-9	371.50E-3	40.25E-9	10.64E+0	12.21E-3	0.000	818.00E+3	0.010
146	L1S3F034	Down-dip	1	3	34	11.98E+6	11	3.50E-9	393.50E-3	20.40E-9	11.96E+0	5.62E-3	0.000	881.40E+3	0.005
147	L1S3F036	Down-dip	1	3	36	5.52E+6	11	8.41E-9	123.60E-3	53.63E-9	5.30E+0	39.32E-3	0.000	314.40E+3	0.012
148	L1S3F040	Down-dip	1	3	40	9.04E+6	3	20.28E-6	1.15E-6	53.29E-6	1.29E-6	19.68E+6	0.000	296.70E-3	5.838
149	L1S3F046	Down-dip	1	3	46	13.15E+6	11	9.16E-6	200.80E-3	37.11E-6	2.43E+0	36.59E+0	0.000	318.70E+3	11.660
150	L1S3F048	Down-dip	1	3	48	8.58E+6	3	11.39E-6	21.35E-6	19.42E-6	21.35E-6	1.02E+6	0.000	3.30E+0	3.327
151	L1S3F052	Down-dip	1	3	52	8.64E+6	3	1.81E-6	41.57E-9	3.65E-6	52.49E-9	49.38E+6	0.000	10.98E-3	0.542
152	L1S3F055	Down-dip	1	3	55	9.19E+6	11	1.06E-6	79.94E-3	4.73E-6	1.67E+0	8.77E+0	0.000	158.90E+3	1.395
153	L1S3F059	Down-dip	1	3	59	5.90E+6	11	5.81E-6	117.80E-3	19.84E-6	1.09E+0	40.22E+0	0.000	176.90E+3	7.114
154	L1S3F064	Down-dip	1	3	64	9.12E+6	11	217.70E-9	279.90E-3	1.20E-6	7.61E+0	507.50E-3	0.000	594.10E+3	0.302
155	L1S3F065	Down-dip	1	3	65	8.75E+6	11	6.37E-9	203.70E-3	34.43E-9	5.48E+0	20.49E-3	0.000	427.70E+3	0.009
156	L1S3F071	Down-dip	1	3	71	7.33E+6	3	15.75E-6	5.27E-3	31.57E-6	9.35E-3	3.11E+3	0.000	1.51E+3	4.684
157	L1S3F082	Down-dip	1	3	82	9.48E+6	3	11.85E-6	2.25E-3	22.88E-6	3.55E-3	5.62E+3	0.000	631.50E+0	3.550
158	L1S3F083	Down-dip	1	3	83	8.75E+6	11	415.90E-12	211.50E-3	2.17E-9	5.33E+0	1.31E-3	0.000	435.60E+3	0.001
159	L1S3F089	Down-dip	1	3	89	9.07E+6	11	1.24E-9	226.00E-3	5.92E-9	4.74E+0	3.68E-3	0.000	454.00E+3	0.002
160	L1S3F090	Down-dip	1	3	90	9.63E+6	3	17.65E-6	1.01E-6	45.03E-6	1.04E-6	20.59E+6	0.000	252.30E-3	5.192
161	L1S3F092	Down-dip	1	3	92	10.47E+6	11	18.26E-12	499.00E-3	104.90E-12	14.61E+0	22.97E-6	0.000	1.13E+6	0.000
162	L1S3F100	Down-dip	1	3	100	1.29E+6	11	111.20E-9	315.60E-3	608.90E-9	8.44E+0	230.80E-3	0.000	664.80E+3	0.154
163	L1S3G009	Down-dip	1	3	9	8.04E+6	3	31.56E-6	1.54E-6	93.23E-6	2.40E-6	21.91E+6	0.000	417.20E-3	9.140
164	L1S3G026	Down-dip	1	3	26	4.80E+6	3	25.55E-6	21.36E-3	55.66E-6	48.11E-3	1.21E+3	0.000	6.27E+3	7.613
165	L1S3G034	Down-dip	1	3	34	185.50E+3	11	29.62E-9	235.40E-3	145.30E-9	5.13E+0	85.07E-3	0.000	468.50E+3	0.040
166	L1S3G036	Down-dip	1	3	36	185.00E+3	11	2.52E-9	116.00E-3	15.77E-9	4.99E+0	12.51E-3	0.000	295.10E+3	0.004
167	L1S3G040	Down-dip	1	3	40	7.99E+6	3	14.28E-6	632.10E-9	37.25E-6	805.60E-9	24.59E+6	0.000	167.20E-3	4.110
168	L1S3G046	Down-dip	1	3	46	285.90E+3	11	10.10E-6	179.50E-3	40.14E-6	2.04E+0	45.77E+0	0.000	280.30E+3	12.830
169	L1S3G048	Down-dip	1	3	48	7.99E+6	3	5.75E-6	2.78E-6	9.40E-6	2.78E-6	3.49E+6	0.000	479.30E-3	1.664
170	L1S3G055	Down-dip	1	3	55	169.00E+3	11	721.80E-9	84.09E-3	3.44E-6	2.03E+0	5.46E+0	0.000	178.10E+3	0.973
171	L1S3G059	Down-dip	1	3	59	214.20E+3	11	5.65E-6	106.30E-3	18.97E-6	952.00E-3	43.66E+0	0.000	157.80E+3	6.891
172	L1S3G083	Down-dip	1	3	83	195.30E+3	11	308.20E-12	206.40E-3	1.61E-9	5.20E+0	989.50E-6	0.000	426.20E+3	0.000
173	L1S3G090	Down-dip	1	3	90	8.01E+6	3	8.27E-6	265.10E-9	20.96E-6	344.60E-9	34.55E+6	0.000	70.63E-3	2.439
174	L1S3I026	Down-dip	1	3	26	266.20E+3	11	10.56E-6	122.90E-3	38.22E-6	1.13E+0	72.97E+0	0.000	179.30E+3	13.090
175	L1S3I037	Down-dip	1	3	37	204.30E+3	11	828.40E-12	230.20E-3	4.42E-9	6.14E+0	2.33E-3	0.000	495.10E+3	0.001
176	L1S3I038	Down-dip	1	3	38	2.00E+6	4	19.94E-6	32.35E-3	43.63E-6	90.15E-3	604.60E+0	0.000	13.41E+3	8.108

No.	File (*.TXT)	ID	Rep	Scen	Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
133	L1S2L005	Down-dip	1	2	5	3.570	8.89E+6	0.861	8.91E+6	0.041	69.97E+3	25.38E+3
134	L1S2L018	Down-dip	1	2	18	4.909	4.87E+6	0.515	8.48E+6	0.004	66.78E+3	9.30E+3
135	L1S2L020	Down-dip	1	2	20	10.500	7.02E+6	0.769	8.38E+6	0.000	66.07E+3	13.09E+3
136	L1S2L026	Down-dip	1	2	26	0.842	8.23E+6	0.875	8.18E+6	0.000	64.63E+3	20.50E+3
137	L1S2L046	Down-dip	1	2	46	2.429	8.56E+6	0.907	8.53E+6	0.008	67.25E+3	25.86E+3
138	L1S2L049	Down-dip	1	2	49	7.130	9.45E+6	0.981	9.64E+6	0.081	74.18E+3	39.23E+3
139	L1S2L055	Down-dip	1	2	55	0.880	3.79E+6	0.661	9.20E+6	0.000	72.16E+3	12.22E+3
140	L1S2L099	Down-dip	1	2	99	1.389	8.52E+6	0.864	8.42E+6	0.790	66.62E+3	54.75E+3
141	L1S3F009	Down-dip	1	3	9	13.580	10.77E+6	0.987	11.22E+6	0.171	80.55E+3	34.28E+3
142	L1S3F019	Down-dip	1	3	19	15.440	6.71E+6	0.706	8.90E+6	0.236	70.68E+3	25.43E+3
143	L1S3F021	Down-dip	1	3	21	0.068	3.76E+6	0.310	9.06E+6	0.095	71.63E+3	13.91E+3
144	L1S3F026	Down-dip	1	3	26	6.406	9.33E+6	0.745	9.46E+6	0.131	73.39E+3	27.23E+3
145	L1S3F030	Down-dip	1	3	30	0.010	4.50E+6	0.150	11.91E+6	0.065	83.44E+3	7.21E+3
146	L1S3F034	Down-dip	1	3	34	0.005	4.51E+6	0.147	12.29E+6	0.075	85.00E+3	8.38E+3
147	L1S3F036	Down-dip	1	3	36	0.012	2.91E+6	0.504	8.83E+6	0.000	70.52E+3	9.03E+3
148	L1S3F040	Down-dip	1	3	40	5.715	9.36E+6	0.982	8.97E+6	0.352	71.78E+3	42.76E+3
149	L1S3F046	Down-dip	1	3	46	10.950	7.55E+6	0.495	12.53E+6	0.104	85.75E+3	27.40E+3
150	L1S3F048	Down-dip	1	3	48	3.258	9.43E+6	0.891	7.95E+6	0.104	67.93E+3	33.68E+3
151	L1S3F052	Down-dip	1	3	52	0.531	8.14E+6	0.899	6.80E+6	0.640	62.09E+3	46.82E+3
152	L1S3F055	Down-dip	1	3	55	1.367	4.07E+6	0.683	8.77E+6	0.181	70.15E+3	21.60E+3
153	L1S3F059	Down-dip	1	3	59	6.806	5.93E+6	0.495	9.16E+6	0.055	72.09E+3	14.36E+3
154	L1S3F064	Down-dip	1	3	64	0.283	4.75E+6	0.323	11.76E+6	0.192	82.72E+3	19.41E+3
155	L1S3F065	Down-dip	1	3	65	0.009	3.53E+6	0.252	8.66E+6	0.066	69.65E+3	7.66E+3
156	L1S3F071	Down-dip	1	3	71	4.589	9.12E+6	0.800	9.20E+6	0.089	72.30E+3	19.66E+3
157	L1S3F082	Down-dip	1	3	82	3.478	8.85E+6	0.807	8.92E+6	0.048	70.84E+3	17.25E+3
158	L1S3F083	Down-dip	1	3	83	0.001	3.46E+6	0.169	8.21E+6	0.009	67.44E+3	3.46E+3
159	L1S3F089	Down-dip	1	3	89	0.002	3.67E+6	0.156	8.48E+6	0.026	68.77E+3	3.77E+3
160	L1S3F090	Down-dip	1	3	90	5.085	9.17E+6	0.963	8.86E+6	0.096	71.05E+3	31.54E+3
161	L1S3F092	Down-dip	1	3	92	0.000	4.77E+6	0.064	13.55E+6	0.002	90.10E+3	1.34E+3
162	L1S3F100	Down-dip	1	3	100	0.149	4.62E+6	0.217	11.44E+6	0.126	81.46E+3	13.87E+3
163	L1S3G009	Down-dip	1	3	9	8.950	9.87E+8	0.987	10.15E+6	0.159	76.26E+3	32.42E+3
164	L1S3G026	Down-dip	1	3	26	7.459	9.38E+6	0.725	9.61E+6	0.114	74.01E+3	26.04E+3
165	L1S3G034	Down-dip	1	3	34	0.039	3.96E+6	0.190	9.14E+6	0.086	71.48E+3	8.81E+3
166	L1S3G036	Down-dip	1	3	36	0.004	2.71E+6	0.489	8.31E+6	0.000	67.82E+3	8.44E+3
167	L1S3G040	Down-dip	1	3	40	4.023	8.95E+6	0.982	8.99E+6	0.342	71.34E+3	42.92E+3
168	L1S3G046	Down-dip	1	3	46	12.530	7.45E+6	0.504	12.16E+6	0.100	84.33E+3	27.32E+3
169	L1S3G048	Down-dip	1	3	48	1.629	8.68E+6	0.891	8.62E+6	0.100	69.48E+3	33.80E+3
170	L1S3G055	Down-dip	1	3	55	0.935	3.78E+6	0.663	8.91E+6	0.167	70.83E+3	20.78E+3
171	L1S3G059	Down-dip	1	3	59	6.593	5.73E+6	0.498	8.70E+6	0.046	69.78E+3	13.73E+3
172	L1S3G083	Down-dip	1	3	83	0.000	3.38E+8	0.158	8.10E+6	0.000	66.82E+3	2.84E+3
173	L1S3G090	Down-dip	1	3	90	2.389	8.53E+6	0.963	8.47E+6	0.087	68.71E+3	30.70E+3
174	L1S3I026	Down-dip	1	3	26	12.210	7.28E+6	0.549	10.75E+6	0.035	78.71E+3	18.07E+3
175	L1S3I037	Down-dip	1	3	37	0.001	3.54E+6	0.204	9.10E+6	0.013	71.20E+3	4.18E+3
176	L1S3I038	Down-dip	1	3	38	7.269	7.76E+6	0.669	8.17E+6	0.076	66.12E+3	21.51E+3

No.	File (*.TXT)	ID	Rep	Scen	Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
177	L1S3I046	Down-dip	1	3	46	3,000	0.529	0.090	0.003	1.276	10.04E+6	0.111	10.05E+6	0.706	-1.338	92.60E-15
178	L1S3I048	Down-dip	1	3	48	3,000	0.522	0.108	0.505	1.255	9.48E+6	0.013	9.49E+6	0.726	-0.790	73.86E-15
179	L1S3I049	Down-dip	1	3	49	3,000	0.508	0.014	0.119	1.220	8.76E+6	0.444	8.82E+6	0.981	-1.522	96.07E-15
180	L1S3I055	Down-dip	1	3	55	3,000	0.532	0.105	0.508	1.282	10.22E+6	0.088	10.22E+6	0.526	-0.978	80.66E-15
181	L1S3I067	Down-dip	1	3	67	3,000	0.510	0.087	0.361	1.224	8.84E+6	0.038	8.84E+6	0.478	-0.897	74.82E-15
182	L1S3I070	Down-dip	1	3	70	3,000	0.502	0.026	0.253	1.205	8.50E+6	0.025	8.50E+6	0.356	-1.302	86.12E-15
183	L1S3K005	Down-dip	1	3	5	5,000	0.508	0.072	0.092	1.221	8.86E+6	0.124	8.88E+8	0.838	-1.297	87.10E-15
184	L1S3K018	Down-dip	1	3	18	5,000	0.499	0.002	0.108	1.198	8.52E+6	0.032	8.52E+6	0.445	-1.300	85.58E-15
185	L1S3K026	Down-dip	1	3	26	5,000	0.530	0.127	0.062	1.278	10.11E+6	0.001	10.12E+6	0.482	-1.320	92.07E-15
186	L1S3K038	Down-dip	1	3	38	5,000	0.496	0.146	0.055	1.191	8.41E+6	0.033	8.42E+6	0.580	-1.042	76.78E-15
187	L1S3K046	Down-dip	1	3	46	5,000	0.509	0.090	0.003	1.224	8.89E+6	0.081	8.93E+6	0.904	-1.329	88.49E-15
188	L1S3K048	Down-dip	1	3	48	5,000	0.505	0.108	0.505	1.212	8.73E+6	0.000	8.73E+6	0.556	-0.788	71.28E-15
189	L1S3K049	Down-dip	1	3	49	5,000	0.522	0.014	0.119	1.257	9.51E+6	0.169	9.55E+6	0.981	-1.524	99.05E-15
190	L1S3K067	Down-dip	1	3	67	5,000	0.512	0.087	0.361	1.230	9.01E+6	0.000	9.01E+6	0.475	-0.899	75.23E-15
191	L1S3L005	Down-dip	1	3	5	10,000	0.507	0.072	0.092	1.218	8.83E+6	0.032	8.85E+6	0.843	-1.297	86.92E-15
192	L1S3L018	Down-dip	1	3	18	10,000	0.497	0.002	0.108	1.195	8.47E+6	0.000	8.48E+6	0.479	-1.300	85.35E-15
193	L1S3L026	Down-dip	1	3	26	10,000	0.493	0.127	0.062	1.183	8.29E+6	0.000	8.31E+6	0.841	-1.308	84.80E-15
194	L1S3L046	Down-dip	1	3	46	10,000	0.497	0.090	0.003	1.193	8.43E+6	0.004	8.49E+6	0.904	-1.329	86.25E-15
195	L1S3L049	Down-dip	1	3	49	10,000	0.516	0.014	0.119	1.240	9.15E+6	0.026	9.20E+6	0.981	-1.523	97.73E-15
196	L1S3L055	Down-dip	1	3	55	10,000	0.516	0.105	0.508	1.240	9.16E+6	0.000	9.17E+6	0.515	-0.969	77.79E-15
197	L1S3L099	Down-dip	1	3	99	10,000	0.484	0.138	0.379	1.163	7.96E+6	0.860	8.05E+6	0.860	-1.081	76.06E-15
198	L1S4C030	Down-dip	1	4	30	550	0.554	0.031	0.047	1.346	8.41E+6	0.078	8.41E+6	0.134	-1.019	85.99E-15
199	L1S4C034	Down-dip	1	4	34	550	0.588	0.060	0.052	1.459	10.83E+6	0.095	10.83E+6	0.123	-1.073	95.12E-15
200	L1S4C064	Down-dip	1	4	64	550	0.578	0.101	0.134	1.424	10.04E+6	0.189	10.01E+6	0.342	-1.251	99.70E-15
201	L1S4C092	Down-dip	1	4	92	550	0.600	0.143	0.017	1.502	11.87E+6	0.028	11.77E+6	0.067	-0.763	87.52E-15
202	L1S4C100	Down-dip	1	4	100	550	0.583	0.019	0.040	1.441	10.41E+6	0.139	10.39E+6	0.181	-1.255	101.00E-15
203	L1S4D034	Down-dip	1	4	34	750	0.537	0.060	0.052	1.296	8.67E+6	0.115	8.64E+6	0.168	-1.075	84.62E-15
204	L1S4D037	Down-dip	1	4	37	750	0.568	0.063	0.141	1.390	10.92E+6	0.097	10.91E+6	0.152	-1.059	90.14E-15
205	L1S4D046	Down-dip	1	4	46	750	0.536	0.090	0.003	1.295	8.71E+6	0.182	8.71E+6	0.518	-1.301	92.49E-15
206	L1S4H026	Down-dip	1	4	26	2,000	0.528	0.127	0.062	1.272	9.96E+6	0.088	9.96E+6	0.360	-1.318	91.58E-15
207	L1S4H037	Down-dip	1	4	37	2,000	0.524	0.063	0.141	1.261	9.68E+6	0.047	9.68E+6	0.188	-1.074	82.25E-15
208	L1S4H046	Down-dip	1	4	46	2,000	0.535	0.090	0.003	1.293	10.50E+6	0.127	10.51E+6	0.643	-1.342	93.97E-15
209	L1S4H070	Down-dip	1	4	70	2,000	0.512	0.026	0.253	1.230	8.91E+6	0.043	8.91E+6	0.341	-1.304	88.00E-15
210	L1S4J018	Down-dip	1	4	18	4,000	0.493	0.002	0.108	1.184	8.19E+6	0.048	8.19E+6	0.383	-1.297	84.44E-15
211	L1S4J026	Down-dip	1	4	26	4,000	0.534	0.127	0.062	1.288	10.37E+6	0.014	10.37E+6	0.309	-1.322	92.84E-15
212	L1S4J038	Down-dip	1	4	38	4,000	0.495	0.146	0.055	1.188	8.28E+6	0.052	8.28E+6	0.443	-1.040	76.50E-15
213	L1S4J046	Down-dip	1	4	46	4,000	0.517	0.090	0.003	1.243	9.21E+6	0.100	9.24E+6	0.874	-1.330	89.92E-15
214	L1S4J067	Down-dip	1	4	67	4,000	0.516	0.087	0.361	1.242	9.18E+6	0.003	9.19E+6	0.438	-0.899	75.93E-15
215	L1S4L005	Down-dip	1	4	5	10,000	0.492	0.072	0.092	1.183	8.29E+6	0.023	8.30E+6	0.702	-1.297	84.39E-15
216	L1S4L018	Down-dip	1	4	18	10,000	0.495	0.002	0.108	1.189	8.38E+6	0.000	8.39E+6	0.455	-1.300	84.91E-15
217	L1S4L020	Down-dip	1	4	20	10,000	0.495	0.125	0.458	1.188	8.37E+6	0.000	8.38E+6	0.492	-1.298	84.80E-15
218	L1S4L026	Down-dip	1	4	26	10,000	0.490	0.127	0.062	1.176	8.19E+6	0.000	8.20E+6	0.647	-1.308	84.30E-15
219	L1S4L046	Down-dip	1	4	46	10,000	0.499	0.090	0.003	1.199	8.52E+6	0.009	8.58E+6	0.904	-1.329	86.67E-15
220	L1S5F009	Down-dip	1	5	9	1,200	0.534	0.006	0.181	1.288	10.41E+6	0.179	10.37E+6	0.269	-1.321	92.79E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
177	L1S3I046	Down-dip	1	3	46	10.96E-15	1.104	15.67E+6	26.92E-12	271.50E-6	755.20E-3	275.00E-3	17.77E-3	195.70E+3	3.59E+6
178	L1S3I048	Down-dip	1	3	48	22.39E-15	0.369	13.08E+6	10.47E-15	000.00E+0	1.00E+0	50.98E-3	112.20E-3	000.00E+0	232.30E+3
179	L1S3I049	Down-dip	1	3	49	12.59E-15	1.597	11.40E+6	32.36E-15	25.09E-3	317.10E-3	923.30E-3	318.40E-9	174.60E+3	7.98E+6
180	L1S3I055	Down-dip	1	3	55	16.22E-15	0.537	12.37E+6	1.35E-12	000.00E+0	1.00E+0	4.62E-6	905.90E-3	000.00E+0	227.70E+3
181	L1S3I067	Down-dip	1	3	67	20.42E-15	0.458	10.67E+6	87.10E-12	000.00E+0	1.00E+0	1.89E-3	576.00E-3	000.00E+0	166.90E+3
182	L1S3I070	Down-dip	1	3	70	32.36E-15	1.028	13.53E+6	109.60E-15	000.00E+0	1.00E+0	670.40E-6	706.90E-3	000.00E+0	168.50E+3
183	L1S3K005	Down-dip	1	3	5	13.80E-15	1.017	8.35E+6	123.00E-15	4.68E-6	919.50E-3	484.60E-3	2.04E-3	205.90E+3	7.60E+6
184	L1S3K018	Down-dip	1	3	18	11.75E-15	1.024	9.43E+6	6.03E-12	000.00E+0	1.00E+0	27.59E-3	311.20E-3	000.00E+0	173.00E+3
185	L1S3K026	Down-dip	1	3	26	23.99E-15	1.066	13.08E+6	104.70E-15	000.00E+0	1.00E+0	51.26E-3	156.40E-3	000.00E+0	230.60E+3
186	L1S3K038	Down-dip	1	3	38	26.30E-15	0.611	9.73E+6	812.80E-15	000.00E+0	1.00E+0	113.80E-3	60.13E-3	000.00E+0	261.70E+3
187	L1S3K046	Down-dip	1	3	46	10.96E-15	1.085	15.42E+6	26.92E-12	81.96E-6	822.30E-3	688.60E-3	441.50E-9	188.20E+3	7.98E+6
188	L1S3K048	Down-dip	1	3	48	22.39E-15	0.366	13.08E+6	10.47E-15	000.00E+0	1.00E+0	237.40E-6	725.90E-3	000.00E+0	178.10E+3
189	L1S3K049	Down-dip	1	3	49	12.59E-15	1.602	11.40E+6	32.36E-15	25.51E-6	880.40E-3	923.70E-3	298.30E-9	205.50E+3	7.98E+6
190	L1S3K067	Down-dip	1	3	67	20.42E-15	0.459	11.11E+6	87.10E-12	000.00E+0	1.00E+0	1.73E-3	585.40E-3	000.00E+0	169.50E+3
191	L1S3L005	Down-dip	1	3	5	13.80E-15	1.018	8.42E+6	123.00E-15	000.00E+0	1.00E+0	495.90E-3	1.74E-3	000.00E+0	7.67E+6
192	L1S3L018	Down-dip	1	3	18	11.75E-15	1.024	9.72E+6	6.03E-12	000.00E+0	1.00E+0	39.21E-3	262.90E-3	000.00E+0	182.00E+3
193	L1S3L026	Down-dip	1	3	26	23.99E-15	1.041	13.08E+6	104.70E-15	000.00E+0	1.00E+0	503.30E-3	100.70E-6	000.00E+0	8.01E+6
194	L1S3L046	Down-dip	1	3	46	10.96E-15	1.084	14.73E+6	26.92E-12	23.69E-12	997.10E-3	688.90E-3	418.00E-9	218.00E+3	7.98E+6
195	L1S3L049	Down-dip	1	3	49	12.59E-15	1.598	11.40E+6	32.36E-15	000.00E+0	1.00E+0	923.50E-3	308.00E-9	000.00E+0	7.98E+6
196	L1S3L055	Down-dip	1	3	55	16.22E-15	0.528	12.42E+6	1.35E-12	000.00E+0	1.00E+0	126.80E-9	964.80E-3	000.00E+0	226.80E+3
197	L1S3L099	Down-dip	1	3	99	85.11E-15	0.661	9.22E+6	50.12E-15	390.60E-3	87.56E-9	390.70E-3	85.87E-9	000.00E+0	7.98E+6
198	L1S4C030	Down-dip	1	4	30	363.10E-15	0.584	12.72E+6	446.70E-15	3.33E-6	930.20E-3	146.40E-6	804.60E-3	200.70E+3	177.40E+3
199	L1S4C034	Down-dip	1	4	34	85.11E-15	0.650	15.03E+6	2.75E-12	10.25E-6	901.90E-3	68.65E-6	835.50E-3	232.60E+3	218.20E+3
200	L1S4C064	Down-dip	1	4	64	2.82E-12	0.929	12.26E+6	1.18E-12	39.01E-6	850.30E-3	5.14E-3	472.10E-3	210.40E+3	179.20E+3
201	L1S4C092	Down-dip	1	4	92	6.17E-12	0.349	13.15E+6	1.29E-12	56.25E-9	974.10E-3	16.57E-6	877.40E-3	277.20E+3	244.20E+3
202	L1S4C100	Down-dip	1	4	100	1.10E-12	0.935	13.69E+6	3.47E-15	222.80E-6	784.20E-3	829.10E-6	694.80E-3	202.70E+3	192.60E+3
203	L1S4D034	Down-dip	1	4	34	85.11E-15	0.653	15.03E+6	2.75E-12	42.48E-6	855.50E-3	419.20E-6	733.10E-3	189.40E+3	173.40E+3
204	L1S4D037	Down-dip	1	4	37	43.65E-15	0.632	15.13E+6	16.60E-12	000.00E+0	1.00E+0	128.10E-9	970.10E-3	000.00E+0	257.20E+3
205	L1S4D046	Down-dip	1	4	46	10.96E-15	1.025	14.94E+6	26.92E-12	1.76E-3	603.00E-3	87.47E-3	114.80E-3	165.70E+3	229.80E+3
206	L1S4H026	Down-dip	1	4	26	23.99E-15	1.062	14.18E+6	104.70E-15	1.72E-6	934.70E-3	14.38E-3	327.50E-3	229.20E+3	183.90E+3
207	L1S4H037	Down-dip	1	4	37	43.65E-15	0.651	15.13E+6	16.60E-12	000.00E+0	1.00E+0	21.85E-6	878.20E-3	000.00E+0	209.10E+3
208	L1S4H046	Down-dip	1	4	46	10.96E-15	1.113	14.94E+6	26.92E-12	449.10E-6	720.50E-3	195.10E-3	38.44E-3	198.40E+3	747.50E+3
209	L1S4H070	Down-dip	1	4	70	32.36E-15	1.032	13.53E+6	109.60E-15	000.00E+0	1.00E+0	376.70E-6	748.10E-3	000.00E+0	177.80E+3
210	L1S4J018	Down-dip	1	4	18	11.75E-15	1.017	12.00E+6	6.03E-12	000.00E+0	1.00E+0	12.90E-3	413.00E-3	000.00E+0	158.50E+3
211	L1S4J026	Down-dip	1	4	26	23.99E-15	1.071	14.18E+6	104.70E-15	000.00E+0	1.00E+0	7.17E-3	420.10E-3	000.00E+0	184.30E+3
212	L1S4J038	Down-dip	1	4	38	26.30E-15	0.609	14.43E+6	812.80E-15	000.00E+0	1.00E+0	37.17E-3	187.50E-3	000.00E+0	185.90E+3
213	L1S4J046	Down-dip	1	4	46	10.96E-15	1.088	14.94E+6	26.92E-12	183.10E-6	779.50E-3	607.60E-3	102.90E-6	187.00E+3	8.02E+6
214	L1S4J067	Down-dip	1	4	67	20.42E-15	0.459	13.37E+6	87.10E-12	000.00E+0	1.00E+0	405.90E-6	713.70E-3	000.00E+0	180.80E+3
215	L1S4L005	Down-dip	1	4	5	13.80E-15	1.017	12.89E+6	123.00E-15	000.00E+0	1.00E+0	230.30E-3	30.30E-3	000.00E+0	1.64E+6
216	L1S4L018	Down-dip	1	4	18	11.75E-15	1.023	12.00E+6	6.03E-12	000.00E+0	1.00E+0	30.47E-3	297.50E-3	000.00E+0	173.40E+3
217	L1S4L020	Down-dip	1	4	20	14.13E-15	1.019	13.43E+6	2.04E-12	000.00E+0	1.00E+0	39.18E-6	827.80E-3	000.00E+0	185.50E+3
218	L1S4L026	Down-dip	1	4	26	23.99E-15	1.040	14.18E+6	104.70E-15	000.00E+0	1.00E+0	174.30E-3	33.12E-3	000.00E+0	860.30E+3
219	L1S4L046	Down-dip	1	4	46	10.96E-15	1.084	14.94E+6	26.92E-12	5.48E-9	987.10E-3	689.00E-3	414.00E-9	221.80E+3	7.98E+6
220	L1S5F009	Down-dip	1	5	9	2.88E-12	1.068	15.57E+6	81.28E-15	000.00E+0	1.00E+0	263.10E-6	777.10E-3	000.00E+0	200.80E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
177	L1S3I046	Down-dip	1	3	46	3.59E+6	8	26.49E-6	32.13E-3	78.55E-6	111.50E-3	833.30E+0	0.000	27.51E+3	22.920
178	L1S3I048	Down-dip	1	3	48	232.40E+3	11	4.78E-6	66.14E-3	16.65E-6	762.40E-3	54.56E+0	0.000	107.40E+3	5.860
179	L1S3I049	Down-dip	1	3	49	7.98E+6	3	11.88E-6	144.20E-9	35.46E-6	237.40E-9	88.01E+6	0.000	39.50E-3	3.476
180	L1S3I055	Down-dip	1	3	55	227.80E+3	11	309.70E-12	127.40E-3	1.78E-9	7.77E+0	1.18E-3	0.000	389.40E+3	0.000
181	L1S3I067	Down-dip	1	3	67	167.00E+3	11	111.50E-9	130.80E-3	586.00E-9	3.47E+0	540.80E-3	0.000	288.30E+3	0.156
182	L1S3I070	Down-dip	1	3	70	168.70E+3	11	41.08E-9	156.90E-3	229.50E-9	4.53E+0	168.60E-3	0.000	339.60E+3	0.057
183	L1S3K005	Down-dip	1	3	5	7.60E+6	3	12.66E-6	1.23E-3	25.70E-6	2.11E-3	10.85E+3	0.000	350.90E+0	3.806
184	L1S3K018	Down-dip	1	3	18	173.00E+3	11	2.20E-6	127.40E-3	9.41E-6	1.99E+0	12.80E+0	0.000	220.50E+3	2.824
185	L1S3K026	Down-dip	1	3	26	230.80E+3	11	5.95E-6	138.20E-3	22.29E-6	1.50E+0	34.84E+0	0.000	212.50E+3	7.401
186	L1S3K038	Down-dip	1	3	38	261.80E+3	11	11.43E-6	57.40E-3	34.03E-6	333.90E-3	181.10E+0	0.000	75.24E+3	13.630
187	L1S3K046	Down-dip	1	3	46	7.98E+6	3	13.08E-6	1.36E-6	27.64E-6	1.36E-6	14.41E+6	0.000	274.50E-3	3.944
188	L1S3K048	Down-dip	1	3	48	178.30E+3	11	11.61E-9	99.31E-3	69.10E-9	4.06E+0	64.69E-3	0.000	264.20E+3	0.017
189	L1S3K049	Down-dip	1	3	49	7.98E+6	3	22.77E-6	421.30E-9	68.47E-6	518.10E-9	60.04E+6	0.000	111.10E-3	8.667
190	L1S3K067	Down-dip	1	3	67	169.60E+3	11	103.00E-9	134.80E-3	548.90E-9	3.68E+0	481.30E-3	0.000	300.80E+3	0.145
191	L1S3L005	Down-dip	1	3	5	7.67E+6	3	12.01E-6	977.00E-6	24.19E-6	1.65E-3	12.96E+3	0.000	278.70E+0	3.610
192	L1S3L018	Down-dip	1	3	18	182.00E+3	11	3.18E-6	115.60E-3	13.25E-6	1.68E+0	20.93E+0	0.000	194.20E+3	4.064
193	L1S3L026	Down-dip	1	3	26	8.01E+6	3	3.62E-6	17.09E-6	6.14E-6	22.55E-6	231.10E+3	0.000	4.58E+0	1.058
194	L1S3L046	Down-dip	1	3	46	7.98E+6	3	6.85E-6	303.40E-9	14.36E-6	303.40E-9	30.43E+6	0.000	67.91E-3	2.063
195	L1S3L049	Down-dip	1	3	49	7.98E+6	3	17.51E-6	267.60E-9	52.45E-6	365.10E-9	71.44E+6	0.000	71.77E-3	5.125
196	L1S3L055	Down-dip	1	3	55	226.90E+3	11	11.97E-12	113.40E-3	42.12E-12	6.45E+0	47.84E-6	0.000	336.80E+3	0.000
197	L1S3L099	Down-dip	1	3	99	7.98E+6	3	611.60E-9	5.05E-9	958.70E-9	5.05E-9	153.20E+6	0.000	1.15E-3	0.176
198	L1S4C030	Down-dip	1	4	30	000.00E+0	11	10.52E-9	250.90E-3	49.45E-9	5.04E+0	28.67E-3	0.000	489.70E+3	0.014
199	L1S4C034	Down-dip	1	4	34	000.00E+0	11	6.20E-9	369.80E-3	33.10E-9	9.49E+0	10.91E-3	0.000	787.20E+3	0.009
200	L1S4C064	Down-dip	1	4	64	000.00E+0	11	507.70E-9	238.20E-3	2.41E-6	4.83E+0	1.48E+0	0.000	457.10E+3	0.674
201	L1S4C092	Down-dip	1	4	92	000.00E+0	11	1.54E-9	450.70E-3	7.99E-9	10.77E+0	2.23E-3	0.000	961.50E+3	0.002
202	L1S4C100	Down-dip	1	4	100	000.00E+0	11	79.05E-9	323.60E-3	407.80E-9	7.75E+0	163.10E-3	0.000	658.70E+3	0.107
203	L1S4D034	Down-dip	1	4	34	000.00E+0	11	30.38E-9	235.40E-3	143.30E-9	4.77E+0	88.35E-3	0.000	458.20E+3	0.040
204	L1S4D037	Down-dip	1	4	37	000.00E+0	11	10.97E-12	335.20E-3	58.78E-12	10.56E+0	20.18E-6	0.000	769.10E+3	0.000
205	L1S4D046	Down-dip	1	4	46	000.00E+0	11	9.61E-6	97.09E-3	32.77E-6	825.50E-3	84.27E+0	0.000	138.60E+3	11.680
206	L1S4H026	Down-dip	1	4	26	000.00E+0	11	1.44E-6	191.20E-3	6.15E-6	3.05E+0	5.53E+0	0.000	334.00E+3	1.847
207	L1S4H037	Down-dip	1	4	37	000.00E+0	11	1.49E-9	250.00E-3	8.12E-9	6.92E+0	3.82E-3	0.000	544.80E+3	0.002
208	L1S4H046	Down-dip	1	4	46	000.00E+0	11	24.95E-6	65.89E-3	85.47E-6	385.60E-3	359.40E+0	0.000	85.75E+3	30.820
209	L1S4H070	Down-dip	1	4	70	000.00E+0	11	23.91E-9	173.20E-3	138.20E-9	5.38E+0	87.44E-3	0.000	386.00E+3	0.034
210	L1S4J018	Down-dip	1	4	18	000.00E+0	11	938.90E-9	138.20E-3	4.18E-6	2.42E+0	4.90E+0	0.000	248.80E+3	1.218
211	L1S4J026	Down-dip	1	4	26	000.00E+0	11	701.90E-9	226.50E-3	3.24E-6	4.29E+0	2.19E+0	0.000	420.60E+3	0.921
212	L1S4J038	Down-dip	1	4	38	000.00E+0	11	3.26E-6	106.90E-3	10.99E-6	1.01E+0	24.66E+0	0.000	160.40E+3	3.956
213	L1S4J046	Down-dip	1	4	46	000.00E+0	3	16.27E-6	106.60E-6	32.01E-6	111.00E-6	183.30E+3	0.000	26.69E+0	4.888
214	L1S4J067	Down-dip	1	4	67	000.00E+0	11	23.34E-9	149.10E-3	132.50E-9	4.70E+0	95.49E-3	0.000	350.80E+3	0.034
215	L1S4L005	Down-dip	1	4	5	000.00E+0	9	20.05E-6	32.85E-3	61.84E-6	149.10E-3	595.00E+0	0.000	32.90E+3	19.580
216	L1S4L018	Down-dip	1	4	18	000.00E+0	11	2.40E-6	120.90E-3	10.14E-6	1.83E+0	14.85E+0	0.000	206.80E+3	3.072
217	L1S4L020	Down-dip	1	4	20	000.00E+0	11	2.04E-9	108.80E-3	12.99E-9	5.07E+0	10.53E-3	0.000	285.60E+3	0.003
218	L1S4L026	Down-dip	1	4	26	000.00E+0	11	16.51E-6	36.32E-3	51.48E-6	177.20E-3	439.00E+0	0.000	45.41E+3	19.940
219	L1S4L046	Down-dip	1	4	46	000.00E+0	3	8.05E-6	425.70E-9	16.91E-6	425.70E-9	26.22E+6	0.000	92.69E-3	2.425
220	L1S5F009	Down-dip	1	5	9	000.00E+0	11	19.89E-9	243.40E-3	118.50E-9	7.91E+0	51.35E-3	0.000	550.10E+3	0.028

		*	*	*	*	Cum Brine Releases (m^3)	Avg Brine Pressure Panel 5 (Pa)	Avg Brine Saturation Panel 5 (fraction)	Avg Brine Pressure Panel 0 (Pa)	Avg Brine Saturation Panel 0 (fraction)	Total Excavated Waste Pore Volume (m^3)	Total Excavated Brine Volume (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BRIN_REL	BRNPRES5	SATBRN5	BRNPRES0	SATBRN0	WASTE_PV	TOT_BRIN
177	L1S3I046	Down-dip	1	3	46	21.530	9.13E+6	0.711	10.04E+6	0.087	75.81E+3	28.34E+3
178	L1S3I048	Down-dip	1	3	48	5.466	5.63E+6	0.734	9.48E+6	0.008	73.51E+3	24.16E+3
179	L1S3I049	Down-dip	1	3	49	3.404	8.70E+6	0.981	8.76E+6	0.279	69.49E+3	43.23E+3
180	L1S3I055	Down-dip	1	3	55	0.000	2.72E+6	0.540	10.19E+6	0.088	76.51E+3	15.53E+3
181	L1S3I067	Down-dip	1	3	67	0.148	3.44E+6	0.493	8.82E+6	0.041	70.04E+3	10.89E+3
182	L1S3I070	Down-dip	1	3	70	0.056	3.35E+6	0.374	8.48E+6	0.027	67.82E+3	7.72E+3
183	L1S3K005	Down-dip	1	3	5	3.730	8.83E+6	0.842	8.86E+6	0.109	69.65E+3	29.92E+3
184	L1S3K018	Down-dip	1	3	18	2.700	4.57E+6	0.461	8.51E+6	0.033	67.10E+3	10.30E+3
185	L1S3K026	Down-dip	1	3	26	6.957	6.38E+6	0.495	10.11E+6	0.002	76.07E+3	14.47E+3
186	L1S3K038	Down-dip	1	3	38	13.020	6.60E+6	0.590	8.41E+6	0.036	66.31E+3	16.65E+3
187	L1S3K046	Down-dip	1	3	46	3.865	8.89E+6	0.906	8.89E+6	0.053	69.96E+3	28.43E+3
188	L1S3K048	Down-dip	1	3	48	0.016	2.75E+6	0.570	8.72E+6	0.000	68.69E+3	14.58E+3
189	L1S3K049	Down-dip	1	3	49	6.530	9.33E+6	0.981	9.51E+6	0.106	73.64E+3	39.71E+3
190	L1S3K067	Down-dip	1	3	67	0.144	3.45E+6	0.490	8.99E+6	0.000	70.71E+3	8.82E+3
191	L1S3L005	Down-dip	1	3	5	3.538	8.81E+6	0.847	8.83E+6	0.038	69.36E+3	24.04E+3
192	L1S3L018	Down-dip	1	3	18	3.891	4.73E+6	0.493	8.47E+6	0.004	66.72E+3	8.89E+3
193	L1S3L026	Down-dip	1	3	26	1.036	8.31E+6	0.845	8.29E+6	0.000	65.41E+3	18.91E+3
194	L1S3L046	Down-dip	1	3	46	2.022	8.47E+6	0.907	8.43E+6	0.003	66.52E+3	25.30E+3
195	L1S3L049	Down-dip	1	3	49	5.020	9.03E+6	0.981	9.15E+6	0.015	71.83E+3	31.75E+3
196	L1S3L055	Down-dip	1	3	55	0.000	2.53E+6	0.529	9.15E+6	0.000	71.81E+3	9.69E+3
197	L1S3L099	Down-dip	1	3	99	0.172	8.05E+6	0.864	7.94E+6	0.785	63.11E+3	51.69E+3
198	L1S4C030	Down-dip	1	4	30	0.013	3.78E+6	0.158	8.39E+6	0.078	83.66E+3	8.19E+3
199	L1S4C034	Down-dip	1	4	34	0.008	4.29E+6	0.147	10.79E+6	0.091	96.32E+3	10.20E+3
200	L1S4C064	Down-dip	1	4	64	0.641	4.61E+6	0.360	10.02E+6	0.184	92.48E+3	21.43E+3
201	L1S4C092	Down-dip	1	4	92	0.002	4.62E+6	0.092	11.80E+6	0.027	101.20E+3	4.23E+3
202	L1S4C100	Down-dip	1	4	100	0.103	4.37E+6	0.203	10.38E+6	0.131	94.29E+3	14.42E+3
203	L1S4D034	Down-dip	1	4	34	0.038	3.90E+6	0.190	8.65E+6	0.107	78.11E+3	10.34E+3
204	L1S4D037	Down-dip	1	4	37	0.000	3.91E+6	0.175	10.87E+6	0.098	88.59E+3	10.12E+3
205	L1S4D046	Down-dip	1	4	46	11.180	6.12E+6	0.530	8.71E+6	0.154	77.91E+3	28.30E+3
206	L1S4H026	Down-dip	1	4	26	1.821	5.24E+6	0.377	9.95E+6	0.078	75.41E+3	17.02E+3
207	L1S4H037	Down-dip	1	4	37	0.002	3.69E+6	0.210	9.65E+6	0.048	74.12E+3	6.39E+3
208	L1S4H046	Down-dip	1	4	46	29.450	8.28E+6	0.650	10.50E+6	0.105	77.67E+3	28.73E+3
209	L1S4H070	Down-dip	1	4	70	0.032	3.36E+6	0.360	8.89E+6	0.044	70.66E+3	8.67E+3
210	L1S4J018	Down-dip	1	4	18	1.167	4.15E+6	0.400	8.18E+6	0.048	65.50E+3	9.90E+3
211	L1S4J026	Down-dip	1	4	26	0.869	4.97E+6	0.328	10.35E+6	0.013	77.12E+3	11.36E+3
212	L1S4J038	Down-dip	1	4	38	3.784	5.39E+6	0.458	8.27E+6	0.052	65.93E+3	15.26E+3
213	L1S4J046	Down-dip	1	4	46	4.790	9.21E+6	0.877	9.21E+6	0.071	72.10E+3	29.46E+3
214	L1S4J067	Down-dip	1	4	67	0.032	3.28E+6	0.454	9.17E+6	0.005	71.99E+3	8.54E+3
215	L1S4L005	Down-dip	1	4	5	18.520	7.11E+6	0.708	8.29E+6	0.032	65.39E+3	18.40E+3
216	L1S4L018	Down-dip	1	4	18	2.943	4.56E+6	0.469	8.38E+6	0.004	66.04E+3	8.38E+3
217	L1S4L020	Down-dip	1	4	20	0.003	2.64E+6	0.507	8.36E+6	0.000	65.98E+3	8.51E+3
218	L1S4L026	Down-dip	1	4	26	19.070	6.85E+6	0.654	8.19E+6	0.000	64.64E+3	15.46E+3
219	L1S4L046	Down-dip	1	4	46	2.376	8.55E+6	0.907	8.52E+6	0.007	67.16E+3	25.78E+3
220	L1S5F009	Down-dip	1	5	9	0.027	3.82E+6	0.289	10.37E+6	0.180	77.14E+3	17.36E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
221	L1S5F019	Down-dip	1	5	19	1,200	0.509	0.107	0.285	1.223	8.74E+6	0.231	8.67E+6	0.331	-0.942	75.96E-15
222	L1S5F021	Down-dip	1	5	21	1,200	0.515	0.034	0.164	1.238	9.06E+6	0.095	9.06E+6	0.262	-1.273	87.44E-15
223	L1S5F026	Down-dip	1	5	26	1,200	0.518	0.127	0.062	1.247	9.26E+6	0.143	9.26E+6	0.388	-1.310	89.46E-15
224	L1S5F030	Down-dip	1	5	30	1,200	0.553	0.031	0.047	1.345	11.98E+6	0.065	11.98E+6	0.147	-1.091	88.29E-15
225	L1S5F034	Down-dip	1	5	34	1,200	0.558	0.060	0.052	1.358	12.37E+6	0.078	12.37E+6	0.139	-1.129	90.52E-15
226	L1S5F046	Down-dip	1	5	46	1,200	0.560	0.090	0.003	1.365	12.54E+6	0.120	12.55E+6	0.486	-1.357	99.87E-15
227	L1S5F059	Down-dip	1	5	59	1,200	0.514	0.081	0.028	1.236	9.01E+6	0.070	9.01E+6	0.206	-0.948	76.92E-15
228	L1S5F064	Down-dip	1	5	64	1,200	0.552	0.101	0.134	1.340	11.85E+6	0.198	11.81E+6	0.390	-1.315	96.28E-15
229	L1S5F083	Down-dip	1	5	83	1,200	0.500	0.097	0.102	1.201	8.22E+6	0.011	8.22E+6	0.139	-1.257	84.27E-15
230	L1S5F089	Down-dip	1	5	89	1,200	0.505	0.056	0.074	1.212	8.48E+6	0.025	8.47E+6	0.094	-0.837	72.51E-15
231	L1S5F092	Down-dip	1	5	92	1,200	0.573	0.143	0.017	1.405	13.71E+6	0.003	13.59E+6	0.047	-0.803	83.06E-15
232	L1S5F100	Down-dip	1	5	100	1,200	0.547	0.019	0.040	1.327	11.49E+6	0.139	11.48E+6	0.229	-1.310	95.18E-15
233	L1S5G026	Down-dip	1	5	26	1,400	0.521	0.127	0.062	1.254	9.45E+6	0.124	9.45E+6	0.380	-1.313	90.04E-15
234	L1S5G034	Down-dip	1	5	34	1,400	0.515	0.060	0.052	1.237	9.16E+6	0.092	9.13E+6	0.186	-1.105	81.69E-15
235	L1S5G046	Down-dip	1	5	46	1,400	0.556	0.090	0.003	1.352	12.16E+6	0.113	12.17E+6	0.501	-1.355	98.83E-15
236	L1S5G059	Down-dip	1	5	59	1,400	0.507	0.081	0.028	1.218	8.61E+6	0.060	8.61E+6	0.217	-0.946	75.70E-15
237	L1S5G083	Down-dip	1	5	83	1,400	0.498	0.097	0.102	1.195	8.11E+6	0.000	8.11E+6	0.137	-1.256	83.83E-15
238	L1S5I026	Down-dip	1	5	26	3,000	0.536	0.127	0.062	1.295	10.56E+6	0.042	10.56E+6	0.318	-1.324	93.42E-15
239	L1S5I037	Down-dip	1	5	37	3,000	0.514	0.063	0.141	1.235	9.12E+6	0.013	9.12E+6	0.175	-1.070	80.45E-15
240	L1S5I046	Down-dip	1	5	46	3,000	0.529	0.090	0.003	1.275	10.02E+6	0.112	10.02E+6	0.713	-1.338	92.52E-15
241	L1S5I067	Down-dip	1	5	67	3,000	0.510	0.087	0.361	1.226	8.90E+6	0.034	8.91E+6	0.448	-0.898	74.95E-15
242	L1S5I070	Down-dip	1	5	70	3,000	0.501	0.026	0.253	1.205	8.49E+6	0.025	8.49E+6	0.375	-1.302	86.11E-15
243	L1S5K005	Down-dip	1	5	5	5,000	0.488	0.072	0.092	1.173	8.06E+6	0.082	8.07E+6	0.686	-1.295	83.58E-15
244	L1S5K018	Down-dip	1	5	18	5,000	0.497	0.002	0.108	1.194	8.46E+6	0.032	8.46E+6	0.390	-1.300	85.31E-15
245	L1S5K026	Down-dip	1	5	26	5,000	0.528	0.127	0.062	1.273	9.97E+6	0.000	9.97E+6	0.337	-1.318	91.62E-15
246	L1S5K038	Down-dip	1	5	38	5,000	0.492	0.146	0.055	1.182	8.27E+6	0.030	8.27E+6	0.453	-1.042	76.17E-15
247	L1S5K046	Down-dip	1	5	46	5,000	0.509	0.090	0.003	1.224	8.89E+6	0.081	8.94E+6	0.904	-1.329	88.50E-15
248	L1S5K067	Down-dip	1	5	67	5,000	0.511	0.087	0.361	1.229	8.99E+6	0.000	8.99E+6	0.465	-0.899	75.15E-15
249	L1S5L005	Down-dip	1	5	5	10,000	0.493	0.072	0.092	1.184	8.30E+6	0.023	8.31E+6	0.699	-1.297	84.44E-15
250	L1S5L018	Down-dip	1	5	18	10,000	0.496	0.002	0.108	1.191	8.42E+6	0.000	8.42E+6	0.450	-1.300	85.07E-15
251	L1S5L026	Down-dip	1	5	26	10,000	0.491	0.127	0.062	1.179	8.23E+6	0.000	8.24E+6	0.640	-1.308	84.49E-15
252	L1S5L046	Down-dip	1	5	46	10,000	0.497	0.090	0.003	1.193	8.43E+6	0.004	8.49E+6	0.904	-1.328	86.24E-15
253	L2S1B022	Down-dip	2	1	22	350	0.623	0.095	0.017	1.591	8.88E+6	0.114	8.88E+6	0.130	-0.710	91.09E-15
254	L2S1B055	Down-dip	2	1	55	350	0.627	0.065	0.002	1.610	9.42E+6	0.030	9.42E+6	0.053	-0.927	99.41E-15
255	L2S1B058	Down-dip	2	1	58	350	0.630	0.025	0.045	1.623	9.56E+6	0.067	9.56E+6	0.072	-1.264	114.20E-15
256	L2S1B081	Down-dip	2	1	81	350	0.636	0.003	0.203	1.649	9.91E+6	0.213	9.91E+6	0.223	-0.705	94.26E-15
257	L2S1B090	Down-dip	2	1	90	350	0.636	0.049	0.044	1.649	10.07E+6	0.071	10.07E+6	0.076	-1.156	111.00E-15
258	L2S1E016	Down-dip	2	1	16	1,000	0.517	0.102	0.156	1.244	8.09E+6	0.235	8.10E+6	0.372	-1.264	87.48E-15
259	L2S1E022	Down-dip	2	1	22	1,000	0.559	0.095	0.017	1.361	11.53E+6	0.119	11.53E+6	0.178	-0.805	80.47E-15
260	L2S1E030	Down-dip	2	1	30	1,000	0.532	0.105	0.079	1.284	9.95E+6	0.056	9.96E+6	0.467	-1.282	91.01E-15
261	L2S1E051	Down-dip	2	1	51	1,000	0.510	0.101	0.057	1.226	8.46E+6	0.130	8.46E+6	0.319	-0.994	77.60E-15
262	L2S1E055	Down-dip	2	1	55	1,000	0.585	0.065	0.002	1.447	12.47E+6	0.011	12.47E+6	0.047	-1.026	92.71E-15
263	L2S1E058	Down-dip	2	1	58	1,000	0.568	0.025	0.045	1.390	12.37E+6	0.061	12.37E+6	0.071	-1.369	102.20E-15
264	L2S1E075	Down-dip	2	1	75	1,000	0.557	0.053	0.225	1.357	11.99E+6	0.152	11.99E+6	0.274	-1.322	97.80E-15

		*	*	*	*	BC well Sand Permeability (m^2)	Total Area solids released (m^2)	Castile Reservoir Pressure (Pa)	Castile Reservoir Permeability (m^3)	Up-dip Brine Relative Permeability (m^2)	Up-dip Gas Relative Permeability (m^3)	Down-dip Brine Relative Permeability (m^2)	Down-dip Gas Relative Permeability (m^3)	Up-dip Flowing Bottom-hole Pressure (Pa)	Down-dip Flowing Bottom-hole Pressure (Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	PRM_SAND	AREA_TOT	CAST_RE	PRM_CAST	KRW2	KRG2	KRW4	KRG4	FBHP2	FBHP4
221	L1S5F019	Down-dip	1	5	19	8.32E-12	0.500	12.92E+6	208.90E-15	000.00E+0	1.00E+0	41.41E-6	842.00E-3	000.00E+0	189.50E+3
222	L1S5F021	Down-dip	1	5	21	691.80E-15	0.969	13.26E+6	660.70E-15	000.00E+0	1.00E+0	372.90E-6	747.40E-3	000.00E+0	179.90E+3
223	L1S5F026	Down-dip	1	5	26	23.99E-15	1.045	14.18E+6	104.70E-15	118.20E-6	793.70E-3	20.17E-3	281.10E-3	190.70E+3	180.00E+3
224	L1S5F030	Down-dip	1	5	30	363.10E-15	0.674	12.72E+6	446.70E-15	443.70E-9	959.80E-3	241.00E-6	776.60E-3	271.10E+3	224.90E+3
225	L1S5F034	Down-dip	1	5	34	85.11E-15	0.727	15.03E+6	2.75E-12	1.66E-6	940.40E-3	144.00E-6	799.10E-3	270.60E+3	235.30E+3
226	L1S5F046	Down-dip	1	5	46	10.96E-15	1.148	14.94E+6	26.92E-12	365.30E-6	735.20E-3	68.61E-3	143.70E-3	229.50E+3	289.10E+3
227	L1S5F059	Down-dip	1	5	59	25.70E-15	0.507	12.77E+6	41.69E-15	8.73E-6	904.10E-3	1.88E-3	599.70E-3	204.60E+3	169.30E+3
228	L1S5F064	Down-dip	1	5	64	2.82E-12	1.055	12.26E+6	1.18E-12	69.53E-6	825.00E-3	11.16E-3	372.70E-3	233.70E+3	205.80E+3
229	L1S5F083	Down-dip	1	5	83	30.20E-15	0.939	11.71E+6	3.02E-12	000.00E+0	1.00E+0	7.89E-6	904.10E-3	000.00E+0	193.10E+3
230	L1S5F089	Down-dip	1	5	89	549.50E-15	0.406	13.95E+6	11.48E-12	000.00E+0	1.00E+0	679.00E-9	953.50E-3	000.00E+0	209.00E+3
231	L1S5F092	Down-dip	1	5	92	6.17E-12	0.379	13.15E+6	1.29E-12	000.00E+0	1.00E+0	2.48E-6	927.00E-3	000.00E+0	289.60E+3
232	L1S5F100	Down-dip	1	5	100	1.10E-12	1.045	13.69E+6	3.47E-15	225.00E-6	783.70E-3	2.45E-3	597.80E-3	218.40E+3	200.80E+3
233	L1S5G026	Down-dip	1	5	26	23.99E-15	1.050	14.18E+6	104.70E-15	43.92E-6	842.00E-3	18.41E-3	293.70E-3	200.70E+3	180.80E+3
234	L1S5G034	Down-dip	1	5	34	85.11E-15	0.694	15.03E+6	2.75E-12	7.70E-6	909.30E-3	713.20E-6	693.30E-3	207.80E+3	176.40E+3
235	L1S5G046	Down-dip	1	5	46	10.96E-15	1.142	14.94E+6	26.92E-12	295.50E-6	749.60E-3	77.04E-3	129.70E-3	225.70E+3	290.50E+3
236	L1S5G059	Down-dip	1	5	59	25.70E-15	0.504	12.77E+6	41.69E-15	3.15E-6	927.50E-3	2.35E-3	576.80E-3	204.10E+3	163.20E+3
237	L1S5G083	Down-dip	1	5	83	30.20E-15	0.937	11.71E+6	3.02E-12	000.00E+0	1.00E+0	6.12E-6	910.50E-3	000.00E+0	192.70E+3
238	L1S5I026	Down-dip	1	5	26	23.99E-15	1.075	14.18E+6	104.70E-15	000.00E+0	1.00E+0	8.27E-3	401.70E-3	000.00E+0	187.30E+3
239	L1S5I037	Down-dip	1	5	37	43.65E-15	0.647	15.13E+6	16.60E-12	000.00E+0	1.00E+0	7.00E-6	910.70E-3	000.00E+0	207.70E+3
240	L1S5I046	Down-dip	1	5	46	10.96E-15	1.104	14.94E+6	26.92E-12	281.10E-6	752.90E-3	285.80E-3	15.96E-3	195.20E+3	4.00E+6
241	L1S5I067	Down-dip	1	5	67	20.42E-15	0.458	13.37E+6	87.10E-12	000.00E+0	1.00E+0	621.90E-6	680.10E-3	000.00E+0	174.10E+3
242	L1S5I070	Down-dip	1	5	70	32.36E-15	1.028	13.53E+6	109.60E-15	000.00E+0	1.00E+0	1.24E-3	656.60E-3	000.00E+0	164.90E+3
243	L1S5K005	Down-dip	1	5	5	13.80E-15	1.013	12.89E+6	123.00E-15	000.00E+0	1.00E+0	209.20E-3	36.74E-3	000.00E+0	1.01E+6
244	L1S5K018	Down-dip	1	5	18	11.75E-15	1.023	12.00E+6	6.03E-12	000.00E+0	1.00E+0	14.26E-3	399.90E-3	000.00E+0	162.70E+3
245	L1S5K026	Down-dip	1	5	26	23.99E-15	1.062	14.18E+6	104.70E-15	000.00E+0	1.00E+0	10.80E-3	366.30E-3	000.00E+0	181.10E+3
246	L1S5K038	Down-dip	1	5	38	26.30E-15	0.611	14.43E+6	812.80E-15	000.00E+0	1.00E+0	40.77E-3	175.40E-3	000.00E+0	190.10E+3
247	L1S5K046	Down-dip	1	5	46	10.96E-15	1.085	14.94E+6	26.92E-12	83.97E-6	821.20E-3	689.00E-3	414.40E-9	188.00E+3	7.98E+6
248	L1S5K067	Down-dip	1	5	67	20.42E-15	0.459	13.37E+6	87.10E-12	000.00E+0	1.00E+0	1.21E-3	621.20E-3	000.00E+0	171.20E+3
249	L1S5L005	Down-dip	1	5	5	13.80E-15	1.017	12.89E+6	123.00E-15	000.00E+0	1.00E+0	226.30E-3	31.42E-3	000.00E+0	1.51E+6
250	L1S5L018	Down-dip	1	5	18	11.75E-15	1.024	12.00E+6	6.03E-12	000.00E+0	1.00E+0	28.88E-3	304.90E-3	000.00E+0	172.60E+3
251	L1S5L026	Down-dip	1	5	26	23.99E-15	1.040	14.18E+6	104.70E-15	000.00E+0	1.00E+0	167.50E-3	35.82E-3	000.00E+0	670.80E+3
252	L1S5L046	Down-dip	1	5	46	10.96E-15	1.084	14.94E+6	26.92E-12	31.50E-12	996.80E-3	688.90E-3	418.10E-9	218.40E+3	7.98E+6
253	L2S1B022	Down-dip	2	1	22	000.00E+0	0.315	12.09E+6	1.00E-12	189.00E-6	776.20E-3	338.30E-6	738.80E-3	182.10E+3	178.00E+3
254	L2S1B055	Down-dip	2	1	55	000.00E+0	0.485	15.10E+6	1.00E-12	1.98E-6	937.30E-3	16.87E-6	887.40E-3	219.60E+3	206.90E+3
255	L2S1B058	Down-dip	2	1	58	000.00E+0	0.952	14.55E+6	1.00E-12	861.00E-9	952.10E-3	1.77E-6	941.70E-3	226.00E+3	222.50E+3
256	L2S1B081	Down-dip	2	1	81	000.00E+0	0.311	16.27E+6	1.00E-12	99.24E-9	974.10E-3	1.23E-6	948.40E-3	240.40E+3	230.20E+3
257	L2S1B090	Down-dip	2	1	90	000.00E+0	0.768	14.51E+6	1.00E-12	2.06E-6	937.60E-3	3.82E-6	926.10E-3	230.10E+3	226.60E+3
258	L2S1E016	Down-dip	2	1	16	000.00E+0	0.952	12.63E+6	1.00E-12	156.10E-6	781.50E-3	6.49E-3	441.00E-3	172.40E+3	155.00E+3
259	L2S1E022	Down-dip	2	1	22	000.00E+0	0.380	12.09E+6	1.00E-12	231.30E-6	763.80E-3	1.25E-3	633.30E-3	218.40E+3	205.10E+3
260	L2S1E030	Down-dip	2	1	30	000.00E+0	0.987	12.51E+6	1.00E-12	000.00E+0	1.00E+0	41.21E-3	196.60E-3	000.00E+0	212.80E+3
261	L2S1E051	Down-dip	2	1	51	000.00E+0	0.555	14.74E+6	1.00E-12	78.92E-6	820.90E-3	8.88E-3	408.30E-3	182.20E+3	160.40E+3
262	L2S1E055	Down-dip	2	1	55	000.00E+0	0.592	15.10E+6	1.00E-12	31.44E-9	979.80E-3	10.70E-6	900.50E-3	290.10E+3	259.20E+3
263	L2S1E058	Down-dip	2	1	58	000.00E+0	1.175	14.55E+6	1.00E-12	233.70E-9	966.50E-3	1.68E-6	942.50E-3	281.00E+3	270.50E+3
264	L2S1E075	Down-dip	2	1	75	000.00E+0	1.069	14.35E+6	1.00E-12	000.00E+0	1.00E+0	38.19E-6	858.90E-3	000.00E+0	241.10E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
221	L1S5F019	Down-dip	1	5	19	000.00E+0	11	2.34E-9	169.90E-3	12.73E-9	4.94E+0	8.60E-3	0.000	384.00E+3	0.003
222	L1S5F021	Down-dip	1	5	21	000.00E+0	11	25.39E-9	203.40E-3	138.20E-9	5.51E+0	81.37E-3	0.000	431.70E+3	0.035
223	L1S5F026	Down-dip	1	5	26	000.00E+0	11	1.95E-6	159.00E-3	7.82E-6	2.22E+0	9.25E+0	0.000	265.10E+3	2.454
224	L1S5F030	Down-dip	1	5	30	000.00E+0	11	21.46E-9	359.60E-3	119.50E-9	9.96E+0	38.30E-3	0.000	784.20E+3	0.030
225	L1S5F034	Down-dip	1	5	34	000.00E+0	11	13.15E-9	379.80E-3	75.56E-9	11.17E+0	22.00E-3	0.000	843.50E+3	0.019
226	L1S5F046	Down-dip	1	5	46	000.00E+0	11	9.94E-6	192.50E-3	40.16E-6	2.27E+0	41.64E+0	0.000	304.60E+3	12.680
227	L1S5F059	Down-dip	1	5	59	000.00E+0	10	143.80E-9	235.70E-3	608.60E-9	3.86E+0	433.90E-3	0.000	389.90E+3	0.169
228	L1S5F064	Down-dip	1	5	64	000.00E+0	11	1.21E-6	239.10E-3	5.95E-6	5.08E+0	3.49E+0	0.000	465.30E+3	1.625
229	L1S5F083	Down-dip	1	5	83	000.00E+0	11	486.10E-12	209.60E-3	2.55E-9	5.30E+0	1.54E-3	0.000	433.30E+3	0.001
230	L1S5F089	Down-dip	1	5	89	000.00E+0	11	40.13E-12	231.90E-3	194.10E-12	5.09E+0	115.10E-6	0.000	475.00E+3	0.000
231	L1S5F092	Down-dip	1	5	92	000.00E+0	11	228.40E-12	492.70E-3	1.31E-9	14.23E+0	291.50E-6	0.000	1.12E+6	0.000
232	L1S5F100	Down-dip	1	5	100	000.00E+0	11	235.30E-9	301.40E-3	1.26E-6	7.62E+0	517.70E-3	0.000	622.90E+3	0.323
233	L1S5G026	Down-dip	1	5	26	000.00E+0	11	1.79E-6	167.50E-3	7.33E-6	2.42E+0	8.03E+0	0.000	282.90E+3	2.273
234	L1S5G034	Down-dip	1	5	34	000.00E+0	11	51.59E-9	229.70E-3	249.00E-9	4.85E+0	152.90E-3	0.000	451.90E+3	0.069
235	L1S5G046	Down-dip	1	5	46	000.00E+0	11	10.97E-6	173.60E-3	43.22E-6	1.91E+0	51.83E+0	0.000	268.20E+3	13.900
236	L1S5G059	Down-dip	1	5	59	000.00E+0	11	167.20E-9	199.40E-3	716.40E-9	3.34E+0	593.50E-3	0.000	366.10E+3	0.217
237	L1S5G083	Down-dip	1	5	83	000.00E+0	11	371.40E-12	205.70E-3	1.94E-9	5.17E+0	1.20E-3	0.000	424.20E+3	0.001
238	L1S5I026	Down-dip	1	5	26	000.00E+0	11	831.70E-9	228.30E-3	3.83E-6	4.28E+0	2.58E+0	0.000	422.80E+3	1.091
239	L1S5I037	Down-dip	1	5	37	000.00E+0	11	448.20E-12	232.00E-3	2.40E-9	6.24E+0	1.25E-3	0.000	500.80E+3	0.001
240	L1S5I046	Down-dip	1	5	46	000.00E+0	4	30.89E-6	32.95E-3	76.09E-6	93.08E-3	940.00E+0	0.000	13.66E+3	12.840
241	L1S5I067	Down-dip	1	5	67	000.00E+0	11	35.09E-9	139.80E-3	194.30E-9	4.16E+0	155.20E-3	0.000	321.90E+3	0.050
242	L1S5I070	Down-dip	1	5	70	000.00E+0	11	77.26E-9	151.80E-3	423.40E-9	4.21E+0	330.70E-3	0.000	323.70E+3	0.107
243	L1S5K005	Down-dip	1	5	5	000.00E+0	11	17.96E-6	34.51E-3	58.97E-6	184.80E-3	498.30E+0	0.000	43.85E+3	21.850
244	L1S5K018	Down-dip	1	5	18	000.00E+0	11	1.08E-6	142.80E-3	4.82E-6	2.52E+0	5.43E+0	0.000	258.00E+3	1.400
245	L1S5K026	Down-dip	1	5	26	000.00E+0	11	1.05E-6	201.40E-3	4.62E-6	3.42E+0	3.79E+0	0.000	359.30E+3	1.362
246	L1S5K038	Down-dip	1	5	38	000.00E+0	11	3.59E-6	102.50E-3	11.98E-6	941.50E-3	28.54E+0	0.000	152.20E+3	4.345
247	L1S5K046	Down-dip	1	5	46	000.00E+0	3	13.12E-6	1.33E-6	27.74E-6	1.33E-6	14.89E+6	0.000	266.50E-3	3.956
248	L1S5K067	Down-dip	1	5	67	000.00E+0	11	70.37E-9	137.10E-3	381.20E-9	3.88E+0	320.70E-3	0.000	310.00E+3	0.099
249	L1S5L005	Down-dip	1	5	5	000.00E+0	10	19.44E-6	32.95E-3	62.11E-6	158.30E-3	573.40E+0	0.000	37.19E+3	21.320
250	L1S5L018	Down-dip	1	5	18	000.00E+0	11	2.27E-6	123.40E-3	9.67E-6	1.90E+0	13.75E+0	0.000	212.10E+3	2.918
251	L1S5L026	Down-dip	1	5	26	000.00E+0	11	16.36E-6	39.05E-3	51.15E-6	199.10E-3	401.30E+0	0.000	49.22E+3	19.750
252	L1S5L046	Down-dip	1	5	46	000.00E+0	3	6.83E-6	301.10E-9	14.31E-6	301.10E-9	30.53E+6	0.000	67.45E-3	2.056
253	L2S1B022	Down-dip	2	1	22	000.00E+0	11	30.36E-9	335.60E-3	128.00E-9	5.46E+0	63.60E-3	0.000	622.70E+3	0.040
254	L2S1B055	Down-dip	2	1	55	000.00E+0	11	1.56E-9	400.70E-3	7.38E-9	8.02E+0	2.66E-3	0.000	787.10E+3	0.002
255	L2S1B058	Down-dip	2	1	58	000.00E+0	11	171.30E-12	402.20E-3	898.80E-12	10.05E+0	282.70E-6	0.000	828.90E+3	0.000
256	L2S1B081	Down-dip	2	1	81	000.00E+0	11	108.90E-12	350.50E-3	535.80E-12	8.96E+0	196.40E-6	0.000	772.20E+3	0.000
257	L2S1B090	Down-dip	2	1	90	000.00E+0	11	382.10E-12	431.10E-3	2.00E-9	10.63E+0	585.60E-6	0.000	895.10E+3	0.001
258	L2S1E016	Down-dip	2	1	16	000.00E+0	11	492.60E-9	151.20E-3	2.15E-6	2.62E+0	2.34E+0	0.000	271.40E+3	0.636
259	L2S1E022	Down-dip	2	1	22	000.00E+0	11	115.60E-9	343.30E-3	545.10E-9	6.88E+0	227.90E-3	0.000	682.90E+3	0.156
260	L2S1E030	Down-dip	2	1	30	000.00E+0	11	4.52E-6	150.00E-3	17.45E-6	1.81E+0	23.71E+0	0.000	238.30E+3	5.651
261	L2S1E051	Down-dip	2	1	51	000.00E+0	11	691.80E-9	166.70E-3	2.73E-6	2.34E+0	3.07E+0	0.000	285.60E+3	0.875
262	L2S1E055	Down-dip	2	1	55	000.00E+0	11	1.03E-9	474.40E-3	5.79E-9	13.08E+0	1.40E-3	0.000	1.04E+6	0.001
263	L2S1E058	Down-dip	2	1	58	000.00E+0	11	159.80E-12	430.40E-3	991.90E-12	14.84E+0	232.30E-6	0.000	983.50E+3	0.000
264	L2S1E075	Down-dip	2	1	75	000.00E+0	11	3.23E-9	302.00E-3	20.97E-9	12.21E+0	6.40E-3	0.000	738.40E+3	0.005

No.	File (*.TXT)	ID	Rep	Scen	Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
221	L1S5F019	Down-dip	1	5	19	0.003	3.21E+6	0.350	8.72E+6	0.238	69.92E+3	18.67E+3
222	L1S5F021	Down-dip	1	5	21	0.033	3.62E+6	0.283	9.04E+6	0.095	71.59E+3	13.48E+3
223	L1S5F026	Down-dip	1	5	26	2.330	5.22E+6	0.405	9.25E+6	0.133	72.57E+3	20.53E+3
224	L1S5F030	Down-dip	1	5	30	0.029	4.56E+6	0.170	11.93E+6	0.065	83.51E+3	7.72E+3
225	L1S5F034	Down-dip	1	5	34	0.018	4.54E+6	0.162	12.31E+6	0.075	85.07E+3	8.86E+3
226	L1S5F046	Down-dip	1	5	46	11.960	7.56E+6	0.499	12.54E+6	0.104	85.78E+3	27.58E+3
227	L1S5F059	Down-dip	1	5	59	0.169	4.47E+6	0.227	8.99E+6	0.056	71.31E+3	9.22E+3
228	L1S5F064	Down-dip	1	5	64	1.623	5.39E+6	0.407	11.83E+6	0.192	82.95E+3	21.30E+3
229	L1S5F083	Down-dip	1	5	83	0.001	3.42E+6	0.162	8.21E+6	0.009	67.43E+3	3.43E+3
230	L1S5F089	Down-dip	1	5	89	0.000	3.54E+6	0.119	8.46E+6	0.026	68.69E+3	3.18E+3
231	L1S5F092	Down-dip	1	5	92	0.000	4.79E+6	0.073	13.62E+6	0.002	90.35E+3	1.64E+3
232	L1S5F100	Down-dip	1	5	100	0.317	4.76E+6	0.250	11.46E+6	0.125	81.54E+3	14.57E+3
233	L1S5G026	Down-dip	1	5	26	2.143	5.23E+6	0.397	9.44E+6	0.115	73.34E+3	19.52E+3
234	L1S5G034	Down-dip	1	5	34	0.068	4.02E+6	0.208	9.14E+6	0.086	71.47E+3	9.14E+3
235	L1S5G046	Down-dip	1	5	46	13.630	7.56E+6	0.514	12.16E+6	0.100	84.35E+3	27.54E+3
236	L1S5G059	Down-dip	1	5	59	0.206	4.19E+6	0.238	8.60E+6	0.047	69.26E+3	8.88E+3
237	L1S5G083	Down-dip	1	5	83	0.000	3.39E+6	0.160	8.09E+6	0.000	66.78E+3	2.87E+3
238	L1S5I026	Down-dip	1	5	26	1.020	5.08E+6	0.337	10.54E+6	0.035	77.92E+3	13.37E+3
239	L1S5I037	Down-dip	1	5	37	0.001	3.52E+6	0.198	9.10E+6	0.013	71.22E+3	4.07E+3
240	L1S5I046	Down-dip	1	5	46	11.540	9.54E+6	0.720	10.02E+6	0.088	75.71E+3	28.50E+3
241	L1S5I067	Down-dip	1	5	67	0.049	3.26E+6	0.464	8.89E+6	0.039	70.24E+3	10.22E+3
242	L1S5I070	Down-dip	1	5	70	0.104	3.43E+6	0.392	8.48E+6	0.027	67.80E+3	8.04E+3
243	L1S5K005	Down-dip	1	5	5	20.910	6.57E+6	0.692	8.06E+6	0.085	64.22E+3	21.95E+3
244	L1S5K018	Down-dip	1	5	18	1.334	4.27E+6	0.407	8.45E+6	0.033	66.67E+3	9.27E+3
245	L1S5K026	Down-dip	1	5	26	1.333	5.08E+6	0.356	9.95E+6	0.001	75.47E+3	11.26E+3
246	L1S5K038	Down-dip	1	5	38	4.156	5.46E+6	0.467	8.26E+6	0.035	65.26E+3	13.84E+3
247	L1S5K046	Down-dip	1	5	46	3.876	8.90E+6	0.906	8.89E+6	0.053	69.97E+3	28.45E+3
248	L1S5K067	Down-dip	1	5	67	0.099	3.38E+6	0.480	8.97E+6	0.000	70.56E+3	8.61E+3
249	L1S5L005	Down-dip	1	5	5	20.300	6.99E+6	0.705	8.30E+6	0.032	65.48E+3	18.37E+3
250	L1S5L018	Down-dip	1	5	18	2.794	4.55E+6	0.465	8.41E+6	0.004	66.30E+3	8.32E+3
251	L1S5L026	Down-dip	1	5	26	18.890	6.81E+6	0.648	8.23E+6	0.000	64.94E+3	15.42E+3
252	L1S5L046	Down-dip	1	5	46	2.014	8.47E+6	0.907	8.43E+6	0.003	66.51E+3	25.29E+3
253	L2S1B022	Down-dip	2	1	22	0.037	4.26E+6	0.130	8.86E+6	0.108	111.20E+3	13.10E+3
254	L2S1B055	Down-dip	2	1	55	0.002	4.15E+6	0.053	9.39E+6	0.030	113.30E+3	4.19E+3
255	L2S1B058	Down-dip	2	1	58	0.000	3.95E+6	0.072	9.53E+6	0.067	114.80E+3	7.86E+3
256	L2S1B081	Down-dip	2	1	81	0.000	3.77E+6	0.224	9.88E+6	0.215	117.70E+3	25.50E+3
257	L2S1B090	Down-dip	2	1	90	0.001	4.10E+6	0.077	10.03E+6	0.072	117.60E+3	8.57E+3
258	L2S1E016	Down-dip	2	1	16	0.609	4.12E+6	0.372	8.09E+6	0.227	72.18E+3	22.07E+3
259	L2S1E022	Down-dip	2	1	22	0.150	4.97E+6	0.178	11.49E+6	0.106	85.35E+3	12.41E+3
260	L2S1E030	Down-dip	2	1	30	5.298	5.97E+6	0.467	9.94E+6	0.052	76.73E+3	13.30E+3
261	L2S1E051	Down-dip	2	1	51	0.839	4.54E+6	0.320	8.45E+6	0.116	70.23E+3	16.77E+3
262	L2S1E055	Down-dip	2	1	55	0.001	4.66E+6	0.047	12.40E+6	0.011	95.06E+3	2.02E+3
263	L2S1E058	Down-dip	2	1	58	0.000	4.31E+6	0.072	12.30E+6	0.061	88.63E+3	5.63E+3
264	L2S1E075	Down-dip	2	1	75	0.005	3.88E+6	0.275	11.94E+6	0.154	84.89E+3	15.73E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
265	L2S1E081	Down-dip	2	1	81	1,000	0.589	0.003	0.203	1.459	13.52E+6	0.196	13.53E+6	0.210	-0.791	85.88E-15
266	L2S1I003	Down-dip	2	1	3	3,000	0.544	0.040	0.184	1.318	11.20E+6	0.077	11.20E+6	0.257	-1.319	94.91E-15
267	L2S1I016	Down-dip	2	1	16	3,000	0.555	0.102	0.156	1.350	12.08E+6	0.046	12.08E+6	0.261	-1.321	97.31E-15
268	L2S1I018	Down-dip	2	1	18	3,000	0.522	0.142	0.062	1.257	9.57E+6	0.005	9.57E+6	0.265	-1.092	82.58E-15
269	L2S1I019	Down-dip	2	1	19	3,000	0.533	0.107	0.197	1.286	10.33E+6	0.137	10.33E+6	0.320	-1.289	91.45E-15
270	L2S1I021	Down-dip	2	1	21	3,000	0.518	0.073	0.348	1.247	9.29E+6	0.130	9.29E+6	0.551	-1.215	85.95E-15
271	L2S1I022	Down-dip	2	1	22	3,000	0.558	0.095	0.017	1.360	12.33E+6	0.051	12.34E+6	0.227	-0.817	80.73E-15
272	L2S1I024	Down-dip	2	1	24	3,000	0.502	0.085	0.094	1.206	8.49E+6	0.013	8.58E+6	0.909	-1.438	91.40E-15
273	L2S1I030	Down-dip	2	1	30	3,000	0.559	0.105	0.079	1.362	12.41E+6	0.000	12.41E+6	0.339	-1.295	97.08E-15
274	L2S1I033	Down-dip	2	1	33	3,000	0.551	0.041	0.206	1.338	11.74E+6	0.009	11.74E+6	0.412	-1.138	89.47E-15
275	L2S1I037	Down-dip	2	1	37	3,000	0.537	0.111	0.232	1.297	10.63E+6	0.043	10.64E+6	0.268	-1.292	92.32E-15
276	L2S1I044	Down-dip	2	1	44	3,000	0.543	0.150	0.172	1.313	11.07E+6	0.093	11.07E+6	0.309	-1.355	96.03E-15
277	L2S1I051	Down-dip	2	1	51	3,000	0.547	0.101	0.057	1.325	11.40E+6	0.018	11.40E+6	0.239	-1.021	84.74E-15
278	L2S1I055	Down-dip	2	1	55	3,000	0.571	0.065	0.002	1.400	13.45E+6	0.000	13.45E+6	0.026	-1.055	90.69E-15
279	L2S1I063	Down-dip	2	1	63	3,000	0.544	0.013	0.315	1.317	11.16E+6	0.089	11.16E+6	0.427	-1.058	85.36E-15
280	L2S1I078	Down-dip	2	1	78	3,000	0.540	0.076	0.127	1.305	10.85E+6	0.065	10.85E+6	0.343	-1.341	94.86E-15
281	L2S1I087	Down-dip	2	1	87	3,000	0.492	0.032	0.145	1.181	7.99E+6	0.124	8.00E+6	0.725	-0.928	72.97E-15
282	L2S1I095	Down-dip	2	1	95	3,000	0.496	0.028	0.024	1.190	8.19E+6	0.001	8.19E+6	0.128	-1.085	77.99E-15
283	L2S1I099	Down-dip	2	1	99	3,000	0.521	0.079	0.090	1.254	9.50E+6	0.097	9.51E+6	0.421	-1.090	82.32E-15
284	L2S1K003	Down-dip	2	1	3	5,000	0.564	0.040	0.184	1.378	12.84E+6	0.008	12.85E+6	0.201	-1.328	99.61E-15
285	L2S1K006	Down-dip	2	1	6	5,000	0.508	0.144	0.244	1.220	8.85E+6	0.067	8.85E+6	0.474	-1.028	78.19E-15
286	L2S1K014	Down-dip	2	1	14	5,000	0.488	0.026	0.171	1.173	8.10E+6	0.000	8.10E+6	0.214	-1.266	82.60E-15
287	L2S1K016	Down-dip	2	1	16	5,000	0.569	0.102	0.156	1.392	13.20E+6	0.000	13.20E+6	0.216	-1.329	100.60E-15
288	L2S1K018	Down-dip	2	1	18	5,000	0.537	0.142	0.062	1.296	10.60E+6	0.000	10.61E+6	0.246	-1.100	85.39E-15
289	L2S1K019	Down-dip	2	1	19	5,000	0.554	0.107	0.197	1.347	12.00E+6	0.073	12.00E+6	0.268	-1.304	96.40E-15
290	L2S1K021	Down-dip	2	1	21	5,000	0.541	0.073	0.346	1.309	10.95E+6	0.067	10.96E+6	0.563	-1.226	90.68E-15
291	L2S1K022	Down-dip	2	1	22	5,000	0.562	0.095	0.017	1.372	12.67E+6	0.016	12.67E+6	0.283	-0.818	81.51E-15
292	L2S1K024	Down-dip	2	1	24	5,000	0.541	0.085	0.094	1.309	10.95E+6	0.000	10.98E+6	0.905	-1.449	99.74E-15
293	L2S1K030	Down-dip	2	1	30	5,000	0.565	0.105	0.079	1.382	12.93E+6	0.000	12.94E+6	0.318	-1.295	98.50E-15
294	L2S1K033	Down-dip	2	1	33	5,000	0.561	0.041	0.206	1.367	12.54E+6	0.000	12.55E+6	0.260	-1.143	91.60E-15
295	L2S1K040	Down-dip	2	1	40	5,000	0.494	0.037	0.053	1.187	8.34E+6	0.017	8.35E+6	0.515	-1.262	83.44E-15
296	L2S1K044	Down-dip	2	1	44	5,000	0.565	0.150	0.172	1.379	12.86E+6	0.030	12.86E+6	0.236	-1.367	101.30E-15
297	L2S1K051	Down-dip	2	1	51	5,000	0.559	0.101	0.057	1.361	12.37E+6	0.000	12.37E+6	0.223	-1.027	87.18E-15
298	L2S1K052	Down-dip	2	1	52	5,000	0.515	0.008	0.181	1.237	9.12E+6	0.031	9.12E+6	0.324	-0.961	77.35E-15
299	L2S1K053	Down-dip	2	1	53	5,000	0.510	0.055	0.252	1.225	8.92E+6	0.071	8.92E+6	0.548	-1.322	88.30E-15
300	L2S1K055	Down-dip	2	1	55	5,000	0.572	0.065	0.002	1.403	13.49E+6	0.000	13.49E+6	0.011	-1.055	90.85E-15
301	L2S1K071	Down-dip	2	1	71	5,000	0.506	0.105	0.127	1.215	8.76E+6	0.085	8.77E+6	0.578	-1.301	86.79E-15
302	L2S1K078	Down-dip	2	1	78	5,000	0.560	0.076	0.127	1.365	12.50E+6	0.012	12.50E+6	0.282	-1.354	99.78E-15
303	L2S1K082	Down-dip	2	1	82	5,000	0.496	0.123	0.113	1.191	8.41E+6	0.000	8.41E+6	0.117	-1.073	77.66E-15
304	L2S1K087	Down-dip	2	1	87	5,000	0.530	0.032	0.145	1.278	10.10E+6	0.047	10.12E+6	0.617	-0.942	79.36E-15
305	L2S1K095	Down-dip	2	1	95	5,000	0.498	0.028	0.024	1.195	8.47E+6	0.000	8.47E+6	0.123	-1.090	78.44E-15
306	L2S1K098	Down-dip	2	1	98	5,000	0.516	0.045	0.069	1.241	9.23E+6	0.044	9.24E+6	0.758	-1.024	79.45E-15
307	L2S1K099	Down-dip	2	1	99	5,000	0.544	0.079	0.090	1.316	11.15E+6	0.038	11.16E+6	0.391	-1.103	86.85E-15
308	L2S1L006	Down-dip	2	1	6	10,000	0.543	0.144	0.244	1.313	11.03E+6	0.002	11.04E+6	0.535	-1.042	84.61E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
265	L2S1E081	Down-dip	2	1	81	000.00E+0	0.370	16.27E+6	1.00E-12	000.00E+0	1.00E+0	26.00E-9	982.00E-3	000.00E+0	310.70E+3
266	L2S1I003	Down-dip	2	1	3	000.00E+0	1.064	19.16E+6	1.00E-12	000.00E+0	1.00E+0	134.10E-6	806.00E-3	000.00E+0	218.40E+3
267	L2S1I016	Down-dip	2	1	16	000.00E+0	1.069	12.63E+6	1.00E-12	000.00E+0	1.00E+0	458.40E-6	709.50E-3	000.00E+0	220.60E+3
268	L2S1I018	Down-dip	2	1	18	000.00E+0	0.675	11.22E+6	1.00E-12	000.00E+0	1.00E+0	3.51E-3	500.00E-3	000.00E+0	174.00E+3
269	L2S1I019	Down-dip	2	1	19	000.00E+0	1.002	16.73E+6	1.00E-12	000.00E+0	1.00E+0	993.40E-6	640.60E-3	000.00E+0	190.20E+3
270	L2S1I021	Down-dip	2	1	21	000.00E+0	0.863	15.80E+6	1.00E-12	000.00E+0	1.00E+0	13.95E-3	345.80E-3	000.00E+0	174.30E+3
271	L2S1I022	Down-dip	2	1	22	000.00E+0	0.389	12.09E+6	1.00E-12	3.83E-6	922.30E-3	3.32E-3	533.30E-3	264.50E+3	211.10E+3
272	L2S1I024	Down-dip	2	1	24	000.00E+0	1.349	14.62E+6	1.00E-12	000.00E+0	1.00E+0	677.70E-3	513.90E-9	000.00E+0	7.98E+6
273	L2S1I030	Down-dip	2	1	30	000.00E+0	1.013	12.51E+6	1.00E-12	000.00E+0	1.00E+0	9.46E-3	396.10E-3	000.00E+0	212.80E+3
274	L2S1I033	Down-dip	2	1	33	000.00E+0	0.740	12.60E+6	1.00E-12	000.00E+0	1.00E+0	6.84E-3	469.20E-3	000.00E+0	202.20E+3
275	L2S1I037	Down-dip	2	1	37	000.00E+0	1.008	12.66E+6	1.00E-12	000.00E+0	1.00E+0	12.98E-6	885.50E-3	000.00E+0	227.70E+3
276	L2S1I044	Down-dip	2	1	44	000.00E+0	1.143	12.65E+6	1.00E-12	000.00E+0	1.00E+0	1.32E-3	593.20E-3	000.00E+0	198.30E+3
277	L2S1I051	Down-dip	2	1	51	000.00E+0	0.586	14.74E+6	1.00E-12	000.00E+0	1.00E+0	2.31E-3	568.40E-3	000.00E+0	199.80E+3
278	L2S1I055	Down-dip	2	1	55	000.00E+0	0.627	15.10E+6	1.00E-12	000.00E+0	1.00E+0	1.10E-6	946.60E-3	000.00E+0	292.50E+3
279	L2S1I063	Down-dip	2	1	63	000.00E+0	0.631	12.65E+6	1.00E-12	000.00E+0	1.00E+0	1.25E-3	661.00E-3	000.00E+0	200.40E+3
280	L2S1I078	Down-dip	2	1	78	000.00E+0	1.112	10.88E+6	1.00E-12	000.00E+0	1.00E+0	5.75E-3	473.20E-3	000.00E+0	190.20E+3
281	L2S1I087	Down-dip	2	1	87	000.00E+0	0.467	12.65E+6	1.00E-12	000.00E+0	1.00E+0	238.50E-3	38.96E-3	000.00E+0	1.15E+6
282	L2S1I095	Down-dip	2	1	95	000.00E+0	0.666	12.62E+6	1.00E-12	000.00E+0	1.00E+0	258.90E-6	773.30E-3	000.00E+0	170.60E+3
283	L2S1I099	Down-dip	2	1	99	000.00E+0	0.673	10.80E+6	1.00E-12	21.61E-9	981.40E-3	23.87E-3	286.20E-3	237.10E+3	185.50E+3
284	L2S1K003	Down-dip	2	1	3	000.00E+0	1.082	19.16E+6	1.00E-12	000.00E+0	1.00E+0	538.60E-9	956.90E-3	000.00E+0	285.70E+3
285	L2S1K006	Down-dip	2	1	6	000.00E+0	0.594	12.86E+6	1.00E-12	000.00E+0	1.00E+0	12.35E-3	315.60E-3	000.00E+0	168.40E+3
286	L2S1K014	Down-dip	2	1	14	000.00E+0	0.957	13.26E+6	1.00E-12	000.00E+0	1.00E+0	19.28E-6	887.40E-3	000.00E+0	186.00E+3
287	L2S1K016	Down-dip	2	1	16	000.00E+0	1.085	12.63E+6	1.00E-12	000.00E+0	1.00E+0	57.96E-6	832.60E-3	000.00E+0	256.70E+3
288	L2S1K018	Down-dip	2	1	18	000.00E+0	0.686	11.22E+6	1.00E-12	000.00E+0	1.00E+0	2.43E-3	542.00E-3	000.00E+0	188.80E+3
289	L2S1K019	Down-dip	2	1	19	000.00E+0	1.032	16.73E+6	1.00E-12	000.00E+0	1.00E+0	130.10E-6	789.00E-3	000.00E+0	230.50E+3
290	L2S1K021	Down-dip	2	1	21	000.00E+0	0.883	15.80E+6	1.00E-12	000.00E+0	1.00E+0	16.95E-3	319.30E-3	000.00E+0	199.40E+3
291	L2S1K022	Down-dip	2	1	22	000.00E+0	0.391	12.09E+6	1.00E-12	000.00E+0	1.00E+0	8.00E-3	427.20E-3	000.00E+0	215.50E+3
292	L2S1K024	Down-dip	2	1	24	000.00E+0	1.380	14.62E+6	1.00E-12	000.00E+0	1.00E+0	662.90E-3	3.39E-6	000.00E+0	8.00E+6
293	L2S1K030	Down-dip	2	1	30	000.00E+0	1.014	12.51E+6	1.00E-12	000.00E+0	1.00E+0	6.91E-3	436.70E-3	000.00E+0	218.70E+3
294	L2S1K033	Down-dip	2	1	33	000.00E+0	0.747	12.60E+6	1.00E-12	000.00E+0	1.00E+0	46.63E-6	853.70E-3	000.00E+0	248.20E+3
295	L2S1K040	Down-dip	2	1	40	000.00E+0	0.949	12.62E+6	1.00E-12	000.00E+0	1.00E+0	70.55E-3	165.40E-3	000.00E+0	210.80E+3
296	L2S1K044	Down-dip	2	1	44	000.00E+0	1.171	12.65E+6	1.00E-12	000.00E+0	1.00E+0	78.40E-6	805.20E-3	000.00E+0	248.20E+3
297	L2S1K051	Down-dip	2	1	51	000.00E+0	0.593	14.74E+6	1.00E-12	000.00E+0	1.00E+0	1.65E-3	602.80E-3	000.00E+0	215.00E+3
298	L2S1K052	Down-dip	2	1	52	000.00E+0	0.520	12.70E+6	1.00E-12	000.00E+0	1.00E+0	1.58E-3	642.90E-3	000.00E+0	171.70E+3
299	L2S1K053	Down-dip	2	1	53	000.00E+0	1.070	12.61E+6	1.00E-12	000.00E+0	1.00E+0	32.74E-3	249.60E-3	000.00E+0	185.60E+3
300	L2S1K055	Down-dip	2	1	55	000.00E+0	0.627	15.10E+6	1.00E-12	000.00E+0	1.00E+0	28.79E-9	980.30E-3	000.00E+0	309.80E+3
301	L2S1K071	Down-dip	2	1	71	000.00E+0	1.027	14.57E+6	1.00E-12	000.00E+0	1.00E+0	87.42E-3	100.80E-3	000.00E+0	225.70E+3
302	L2S1K078	Down-dip	2	1	78	000.00E+0	1.140	10.88E+6	1.00E-12	000.00E+0	1.00E+0	1.72E-3	606.60E-3	000.00E+0	216.60E+3
303	L2S1K082	Down-dip	2	1	82	000.00E+0	0.650	16.39E+6	1.00E-12	000.00E+0	1.00E+0	3.43E-9	988.00E-3	000.00E+0	220.30E+3
304	L2S1K087	Down-dip	2	1	87	000.00E+0	0.501	12.65E+6	1.00E-12	000.00E+0	1.00E+0	111.60E-3	110.80E-3	000.00E+0	702.50E+3
305	L2S1K095	Down-dip	2	1	95	000.00E+0	0.672	12.62E+6	1.00E-12	000.00E+0	1.00E+0	210.60E-6	785.50E-3	000.00E+0	175.80E+3
306	L2S1K098	Down-dip	2	1	98	000.00E+0	0.590	12.64E+6	1.00E-12	000.00E+0	1.00E+0	329.80E-3	17.04E-3	000.00E+0	4.21E+6
307	L2S1K099	Down-dip	2	1	99	000.00E+0	0.691	10.80E+6	1.00E-12	000.00E+0	1.00E+0	16.94E-3	333.20E-3	000.00E+0	201.60E+3
308	L2S1L006	Down-dip	2	1	6	000.00E+0	0.611	12.86E+6	1.00E-12	000.00E+0	1.00E+0	29.54E-3	196.80E-3	000.00E+0	219.80E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
265	L2S1E081	Down-dip	2	1	81	000.00E+0	11	3.04E-12	415.80E-3	14.10E-12	15.42E+0	4.17E-6	0.000	1.04E+6	0.000
266	L2S1I003	Down-dip	2	1	3	000.00E+0	11	10.86E-9	281.20E-3	66.76E-9	9.76E+0	24.00E-3	0.000	650.10E+3	0.016
267	L2S1I016	Down-dip	2	1	16	000.00E+0	11	42.24E-9	313.60E-3	252.80E-9	10.20E+0	84.68E-3	0.000	708.20E+3	0.060
268	L2S1I018	Down-dip	2	1	18	000.00E+0	11	295.40E-9	220.80E-3	1.30E-6	3.89E+0	946.50E-3	0.000	406.60E+3	0.385
269	L2S1I019	Down-dip	2	1	19	000.00E+0	11	79.53E-9	227.80E-3	439.80E-9	6.39E+0	226.00E-3	0.000	489.20E+3	0.111
270	L2S1I021	Down-dip	2	1	21	000.00E+0	11	1.07E-6	121.90E-3	5.22E-6	2.64E+0	6.01E+0	0.000	239.80E+3	1.442
271	L2S1I022	Down-dip	2	1	22	000.00E+0	11	334.00E-9	342.80E-3	1.55E-6	6.64E+0	664.60E-3	0.000	674.10E+3	0.448
272	L2S1I024	Down-dip	2	1	24	000.00E+0	3	8.13E-6	544.40E-9	17.70E-6	544.40E-9	20.55E+6	0.000	120.30E-3	2.466
273	L2S1I030	Down-dip	2	1	30	000.00E+0	11	1.10E-6	287.80E-3	5.36E-6	5.99E+0	2.65E+0	0.000	554.80E+3	1.468
274	L2S1I033	Down-dip	2	1	33	000.00E+0	11	637.20E-9	233.10E-3	3.38E-6	5.88E+0	1.80E+0	0.000	491.40E+3	0.882
275	L2S1I037	Down-dip	2	1	37	000.00E+0	11	971.10E-12	254.40E-3	5.96E-9	9.41E+0	2.32E-3	0.000	603.80E+3	0.001
276	L2S1I044	Down-dip	2	1	44	000.00E+0	11	119.30E-9	256.60E-3	658.00E-9	7.12E+0	302.90E-3	0.000	545.10E+3	0.165
277	L2S1I051	Down-dip	2	1	51	000.00E+0	11	215.70E-9	300.20E-3	1.05E-6	6.37E+0	486.10E-3	0.000	597.90E+3	0.291
278	L2S1I055	Down-dip	2	1	55	000.00E+0	11	105.10E-12	503.20E-3	628.50E-12	15.54E+0	131.60E-6	0.000	1.14E+6	0.000
279	L2S1I063	Down-dip	2	1	63	000.00E+0	11	91.82E-9	204.80E-3	558.80E-9	7.15E+0	270.60E-3	0.000	493.60E+3	0.134
280	L2S1I078	Down-dip	2	1	78	000.00E+0	11	547.90E-9	235.50E-3	2.78E-6	5.39E+0	1.58E+0	0.000	466.80E+3	0.739
281	L2S1I087	Down-dip	2	1	87	000.00E+0	10	18.72E-6	32.94E-3	56.91E-6	164.60E-3	538.00E+0	0.000	37.73E+3	20.300
282	L2S1I095	Down-dip	2	1	95	000.00E+0	11	16.59E-9	212.10E-3	77.30E-9	4.18E+0	54.06E-3	0.000	406.10E+3	0.022
283	L2S1I099	Down-dip	2	1	99	000.00E+0	11	2.20E-6	160.00E-3	8.75E-6	2.19E+0	10.34E+0	0.000	269.60E+3	2.787
284	L2S1K003	Down-dip	2	1	3	000.00E+0	11	52.01E-12	371.00E-3	322.00E-12	15.79E+0	82.70E-6	0.000	917.50E+3	0.000
285	L2S1K006	Down-dip	2	1	6	000.00E+0	11	978.20E-9	131.50E-3	4.00E-6	1.99E+0	5.43E+0	0.000	230.50E+3	1.252
286	L2S1K014	Down-dip	2	1	14	000.00E+0	11	1.12E-9	183.90E-3	6.01E-9	4.95E+0	3.99E-3	0.000	387.20E+3	0.002
287	L2S1K016	Down-dip	2	1	16	000.00E+0	11	5.58E-9	380.80E-3	36.08E-9	14.67E+0	8.90E-3	0.000	910.20E+3	0.008
288	L2S1K018	Down-dip	2	1	18	000.00E+0	11	220.10E-9	266.70E-3	1.03E-6	5.32E+0	568.60E-3	0.000	514.20E+3	0.292
289	L2S1K019	Down-dip	2	1	19	000.00E+0	11	11.28E-9	305.80E-3	70.54E-9	11.09E+0	22.63E-3	0.000	718.90E+3	0.016
290	L2S1K021	Down-dip	2	1	21	000.00E+0	11	1.55E-6	149.80E-3	7.90E-6	3.55E+0	6.91E+0	0.000	306.40E+3	2.117
291	L2S1K022	Down-dip	2	1	22	000.00E+0	11	876.80E-9	325.20E-3	3.88E-6	5.65E+0	1.89E+0	0.000	615.50E+3	1.161
292	L2S1K024	Down-dip	2	1	24	000.00E+0	3	41.55E-6	84.41E-6	94.24E-6	84.41E-6	792.70E+3	0.000	16.07E+0	12.690
293	L2S1K030	Down-dip	2	1	30	000.00E+0	11	813.20E-9	319.00E-3	4.14E-6	7.27E+0	1.73E+0	0.000	635.40E+3	1.101
294	L2S1K033	Down-dip	2	1	33	000.00E+0	11	3.98E-9	329.30E-3	25.10E-9	12.41E+0	7.28E-3	0.000	798.40E+3	0.006
295	L2S1K040	Down-dip	2	1	40	000.00E+0	11	6.23E-6	95.12E-3	22.88E-6	988.80E-3	53.54E+0	0.000	143.70E+3	7.694
296	L2S1K044	Down-dip	2	1	44	000.00E+0	11	7.45E-9	355.70E-3	47.87E-9	13.58E+0	12.77E-3	0.000	844.20E+3	0.011
297	L2S1K051	Down-dip	2	1	51	000.00E+0	11	163.60E-9	347.40E-3	835.90E-9	8.14E+0	312.10E-3	0.000	717.30E+3	0.224
298	L2S1K052	Down-dip	2	1	52	000.00E+0	11	105.90E-9	189.90E-3	523.20E-9	4.26E+0	372.10E-3	0.000	386.90E+3	0.144
299	L2S1K053	Down-dip	2	1	53	000.00E+0	11	2.76E-6	111.70E-3	12.06E-6	1.80E+0	18.35E+0	0.000	194.60E+3	3.571
300	L2S1K055	Down-dip	2	1	55	000.00E+0	11	2.72E-12	514.00E-3	16.48E-12	16.21E+0	3.33E-6	0.000	1.17E+6	0.000
301	L2S1K071	Down-dip	2	1	71	000.00E+0	11	8.89E-6	79.69E-3	30.96E-6	689.50E-3	95.52E+0	0.000	113.60E+3	10.860
302	L2S1K078	Down-dip	2	1	78	000.00E+0	11	174.60E-9	320.90E-3	1.01E-6	9.56E+0	349.70E-3	0.000	699.30E+3	0.245
303	L2S1K082	Down-dip	2	1	82	000.00E+0	11	233.90E-15	222.00E-3	1.04E-12	5.56E+0	679.20E-9	0.000	464.90E+3	0.000
304	L2S1K087	Down-dip	2	1	87	000.00E+0	11	10.86E-6	97.18E-3	39.81E-6	873.20E-3	94.24E+0	0.000	144.70E+3	13.640
305	L2S1K095	Down-dip	2	1	95	000.00E+0	11	13.76E-9	222.90E-3	65.39E-9	4.56E+0	42.38E-3	0.000	432.30E+3	0.018
306	L2S1K098	Down-dip	2	1	98	000.00E+0	3	28.20E-6	25.21E-3	63.01E-6	66.08E-3	1.10E+3	0.000	7.47E+3	8.244
307	L2S1K099	Down-dip	2	1	99	000.00E+0	11	1.76E-6	220.90E-3	7.70E-6	3.67E+0	5.75E+0	0.000	399.60E+3	2.299
308	L2S1L006	Down-dip	2	1	6	000.00E+0	11	3.27E-6	155.10E-3	12.92E-6	2.07E+0	15.95E+0	0.000	260.40E+3	4.155

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
265	L2S1E081	Down-dip	2	1	81	0.000	4.26E+6	0.211	13.44E+6	0.201	96.41E+3	19.54E+3
266	L2S1I003	Down-dip	2	1	3	0.016	4.00E+6	0.258	11.16E+6	0.086	80.55E+3	12.92E+3
267	L2S1I016	Down-dip	2	1	16	0.059	4.40E+6	0.262	12.03E+6	0.049	84.15E+3	12.80E+3
268	L2S1I018	Down-dip	2	1	18	0.379	4.62E+6	0.266	9.55E+6	0.004	73.73E+3	9.06E+3
269	L2S1I019	Down-dip	2	1	19	0.110	4.09E+6	0.321	10.30E+6	0.146	76.96E+3	16.90E+3
270	L2S1I021	Down-dip	2	1	21	1.391	4.22E+6	0.552	9.28E+6	0.137	72.51E+3	17.63E+3
271	L2S1I022	Down-dip	2	1	22	0.433	5.43E+6	0.227	12.30E+6	0.039	85.20E+3	11.80E+3
272	L2S1I024	Down-dip	2	1	24	2.417	8.56E+6	0.909	8.49E+6	0.048	67.92E+3	23.66E+3
273	L2S1I030	Down-dip	2	1	30	1.387	5.68E+6	0.340	12.38E+6	0.000	85.50E+3	7.85E+3
274	L2S1I033	Down-dip	2	1	33	0.845	4.82E+6	0.413	11.71E+6	0.015	82.76E+3	12.27E+3
275	L2S1I037	Down-dip	2	1	37	0.001	3.67E+6	0.269	10.60E+6	0.053	78.15E+3	12.83E+3
276	L2S1I044	Down-dip	2	1	44	0.156	4.46E+6	0.310	11.04E+6	0.104	80.02E+3	15.94E+3
277	L2S1I051	Down-dip	2	1	51	0.281	4.93E+6	0.240	11.37E+6	0.015	81.37E+3	10.19E+3
278	L2S1I055	Down-dip	2	1	55	0.000	4.75E+6	0.026	13.36E+6	0.000	89.76E+3	########
279	L2S1I063	Down-dip	2	1	63	0.133	3.87E+6	0.428	11.13E+6	0.120	80.37E+3	17.63E+3
280	L2S1I078	Down-dip	2	1	78	0.696	4.78E+6	0.343	10.82E+6	0.071	79.09E+3	14.44E+3
281	L2S1I087	Down-dip	2	1	87	19.320	6.52E+6	0.723	7.99E+6	0.124	65.16E+3	26.58E+3
282	L2S1I095	Down-dip	2	1	95	0.021	3.75E+6	0.129	8.18E+6	0.001	66.21E+3	2.41E+3
283	L2S1I099	Down-dip	2	1	99	2.621	5.24E+6	0.421	9.50E+6	0.093	73.36E+3	19.34E+3
284	L2S1K003	Down-dip	2	1	3	0.000	4.08E+6	0.201	12.77E+6	0.015	87.31E+3	7.74E+3
285	L2S1K006	Down-dip	2	1	6	1.185	4.65E+6	0.474	8.84E+6	0.084	69.52E+3	13.90E+3
286	L2S1K014	Down-dip	2	1	14	0.002	3.28E+6	0.215	8.08E+6	0.000	64.23E+3	3.57E+3
287	L2S1K016	Down-dip	2	1	16	0.008	4.41E+6	0.217	13.13E+6	0.002	88.81E+3	9.02E+3
288	L2S1K018	Down-dip	2	1	18	0.285	4.77E+6	0.246	10.58E+6	0.000	78.08E+3	7.40E+3
289	L2S1K019	Down-dip	2	1	19	0.016	4.11E+6	0.269	11.95E+6	0.087	83.83E+3	12.92E+3
290	L2S1K021	Down-dip	2	1	21	2.084	4.77E+6	0.564	10.94E+6	0.072	79.52E+3	15.77E+3
291	L2S1K022	Down-dip	2	1	22	1.121	5.89E+6	0.283	12.64E+6	0.015	86.59E+3	12.38E+3
292	L2S1K024	Down-dip	2	1	24	12.440	10.85E+6	0.903	10.95E+6	0.037	79.51E+3	26.26E+3
293	L2S1K030	Down-dip	2	1	30	1.087	5.61E+6	0.319	12.90E+6	0.000	87.69E+3	7.23E+3
294	L2S1K033	Down-dip	2	1	33	0.006	4.10E+6	0.260	12.49E+6	0.000	86.05E+3	7.27E+3
295	L2S1K040	Down-dip	2	1	40	7.367	5.37E+6	0.514	8.34E+6	0.019	65.82E+3	14.88E+3
296	L2S1K044	Down-dip	2	1	44	0.010	4.34E+6	0.237	12.79E+6	0.044	87.36E+3	10.73E+3
297	L2S1K051	Down-dip	2	1	51	0.218	5.08E+6	0.224	12.32E+6	0.000	85.33E+3	8.20E+3
298	L2S1K052	Down-dip	2	1	52	0.139	3.85E+6	0.324	9.10E+6	0.042	71.42E+3	10.53E+3
299	L2S1K053	Down-dip	2	1	53	3.360	4.76E+6	0.548	8.91E+6	0.092	70.06E+3	16.07E+3
300	L2S1K055	Down-dip	2	1	55	0.000	4.72E+6	0.011	13.41E+6	0.000	90.04E+3	########
301	L2S1K071	Down-dip	2	1	71	10.390	6.13E+6	0.577	8.76E+6	0.088	68.92E+3	20.43E+3
302	L2S1K078	Down-dip	2	1	78	0.235	4.75E+6	0.283	12.45E+6	0.018	85.86E+3	10.19E+3
303	L2S1K082	Down-dip	2	1	82	0.000	3.40E+6	0.118	8.39E+6	0.000	66.28E+3	2.02E+3
304	L2S1K087	Down-dip	2	1	87	12.880	6.62E+6	0.616	10.10E+6	0.055	76.04E+3	22.31E+3
305	L2S1K095	Down-dip	2	1	95	0.017	3.80E+6	0.123	8.45E+6	0.000	66.74E+3	2.12E+3
306	L2S1K098	Down-dip	2	1	98	8.074	8.89E+6	0.758	9.23E+6	0.034	71.90E+3	25.02E+3
307	L2S1K099	Down-dip	2	1	99	2.259	5.53E+6	0.392	11.14E+6	0.043	80.34E+3	16.01E+3
308	L2S1L006	Down-dip	2	1	6	3.975	6.11E+6	0.536	11.02E+6	0.018	79.97E+3	12.84E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
309	L2S1L011	Down-dip	2	1	11	10,000	0.549	0.117	0.326	1.331	11.50E+6	0.000	11.51E+6	0.344	-1.310	95.42E-15
310	L2S1L013	Down-dip	2	1	13	10,000	0.489	0.080	0.272	1.176	8.19E+6	0.000	8.20E+6	0.535	-0.810	69.69E-15
311	L2S1L014	Down-dip	2	1	14	10,000	0.501	0.026	0.171	1.204	8.61E+6	0.000	8.62E+6	0.266	-1.269	84.90E-15
312	L2S1L016	Down-dip	2	1	16	10,000	0.570	0.102	0.156	1.396	13.25E+6	0.000	13.25E+6	0.236	-1.329	100.90E-15
313	L2S1L018	Down-dip	2	1	18	10,000	0.543	0.142	0.062	1.314	11.06E+6	0.000	11.07E+6	0.364	-1.102	86.67E-15
314	L2S1L019	Down-dip	2	1	19	10,000	0.575	0.107	0.197	1.414	13.72E+6	0.003	13.72E+6	0.317	-1.315	101.60E-15
315	L2S1L021	Down-dip	2	1	21	10,000	0.566	0.073	0.346	1.384	12.94E+6	0.000	12.95E+6	0.495	-1.235	96.27E-15
316	L2S1L022	Down-dip	2	1	22	10,000	0.568	0.095	0.017	1.391	13.13E+6	0.000	13.13E+6	0.406	-0.820	82.71E-15
317	L2S1L024	Down-dip	2	1	24	10,000	0.573	0.085	0.094	1.406	13.52E+6	0.000	13.53E+6	0.655	-1.459	107.60E-15
318	L2S1L027	Down-dip	2	1	27	10,000	0.539	0.129	0.499	1.302	10.75E+6	0.000	10.76E+6	0.507	-1.313	93.55E-15
319	L2S1L028	Down-dip	2	1	28	10,000	0.509	0.126	0.029	1.222	8.85E+6	0.866	8.97E+6	0.904	-1.260	85.87E-15
320	L2S1L030	Down-dip	2	1	30	10,000	0.569	0.105	0.079	1.393	13.16E+6	0.000	13.17E+6	0.457	-1.295	99.26E-15
321	L2S1L033	Down-dip	2	1	33	10,000	0.557	0.041	0.206	1.355	12.15E+6	0.000	12.15E+6	0.347	-1.140	90.66E-15
322	L2S1L037	Down-dip	2	1	37	10,000	0.566	0.111	0.232	1.385	12.96E+6	0.000	12.96E+6	0.315	-1.305	99.13E-15
323	L2S1L040	Down-dip	2	1	40	10,000	0.529	0.037	0.053	1.275	10.02E+6	0.000	10.02E+6	0.469	-1.270	89.92E-15
324	L2S1L041	Down-dip	2	1	41	10,000	0.494	0.056	0.037	1.186	8.32E+6	0.104	8.39E+6	0.941	-0.853	71.35E-15
325	L2S1L044	Down-dip	2	1	44	10,000	0.575	0.150	0.172	1.411	13.66E+6	0.000	13.67E+6	0.307	-1.371	103.90E-15
326	L2S1L048	Down-dip	2	1	48	10,000	0.559	0.051	0.294	1.361	12.32E+6	0.153	12.32E+6	0.369	-1.378	100.50E-15
327	L2S1L051	Down-dip	2	1	51	10,000	0.563	0.101	0.057	1.373	12.64E+6	0.000	12.64E+6	0.341	-1.027	88.00E-15
328	L2S1L052	Down-dip	2	1	52	10,000	0.538	0.008	0.181	1.299	10.66E+6	0.000	10.66E+6	0.361	-0.973	81.56E-15
329	L2S1L053	Down-dip	2	1	53	10,000	0.546	0.055	0.252	1.322	11.27E+6	0.002	11.29E+6	0.560	-1.341	96.08E-15
330	L2S1L059	Down-dip	2	1	59	10,000	0.502	0.131	0.422	1.205	8.62E+6	0.057	8.63E+6	0.660	-1.272	85.06E-15
331	L2S1L063	Down-dip	2	1	63	10,000	0.576	0.013	0.315	1.415	13.75E+6	0.000	13.76E+6	0.332	-1.071	92.20E-15
332	L2S1L066	Down-dip	2	1	66	10,000	0.517	0.098	0.393	1.243	9.20E+6	0.000	9.21E+6	0.460	-1.276	87.89E-15
333	L2S1L067	Down-dip	2	1	67	10,000	0.496	0.072	0.256	1.191	8.41E+6	0.000	8.42E+6	0.409	-1.016	75.99E-15
334	L2S1L071	Down-dip	2	1	71	10,000	0.538	0.105	0.127	1.300	10.69E+6	0.015	10.70E+6	0.587	-1.318	93.56E-15
335	L2S1L073	Down-dip	2	1	73	10,000	0.495	0.116	0.292	1.189	8.39E+6	0.000	8.40E+6	0.609	-1.125	79.13E-15
336	L2S1L078	Down-dip	2	1	78	10,000	0.571	0.076	0.127	1.398	13.32E+6	0.000	13.32E+6	0.358	-1.358	102.40E-15
337	L2S1L082	Down-dip	2	1	82	10,000	0.505	0.123	0.113	1.213	8.75E+6	0.000	8.75E+6	0.207	-1.074	79.10E-15
338	L2S1L087	Down-dip	2	1	67	10,000	0.562	0.032	0.145	1.370	12.56E+6	0.000	12.57E+6	0.484	-0.957	85.53E-15
339	L2S1L089	Down-dip	2	1	89	10,000	0.504	0.092	0.014	1.209	8.69E+6	0.000	8.70E+6	0.471	-0.859	72.91E-15
340	L2S1L095	Down-dip	2	1	95	10,000	0.503	0.028	0.024	1.209	8.68E+6	0.000	8.68E+6	0.106	-1.090	79.34E-15
341	L2S1L098	Down-dip	2	1	98	10,000	0.550	0.045	0.069	1.336	11.64E+6	0.000	11.65E+6	0.652	-1.038	85.95E-15
342	L2S1L099	Down-dip	2	1	99	10,000	0.564	0.079	0.090	1.376	12.71E+6	0.000	12.71E+6	0.397	-1.112	91.08E-15
343	L2S2C004	Down-dip	2	2	4	550	0.586	0.005	0.075	1.450	10.62E+6	0.069	10.62E+6	0.290	-1.225	100.40E-15
344	L2S2C008	Down-dip	2	2	8	550	0.552	0.007	0.193	1.341	8.22E+6	0.057	8.54E+6	0.987	-1.270	94.57E-15
345	L2S2C011	Down-dip	2	2	11	550	0.572	0.117	0.326	1.402	9.17E+6	0.286	10.80E+6	0.878	-1.257	98.38E-15
346	L2S2C022	Down-dip	2	2	22	550	0.585	0.095	0.017	1.445	10.51E+6	0.125	10.52E+6	0.121	-0.769	84.40E-15
347	L2S2C026	Down-dip	2	2	26	550	0.591	0.112	0.473	1.470	11.10E+6	0.255	11.08E+6	0.591	-1.240	102.40E-15
348	L2S2C028	Down-dip	2	2	28	550	0.569	0.126	0.029	1.396	8.83E+6	0.902	11.42E+6	0.922	-1.229	96.80E-15
349	L2S2C029	Down-dip	2	2	29	550	0.579	0.148	0.134	1.425	10.04E+6	0.075	10.04E+6	0.302	-1.388	105.70E-15
350	L2S2C048	Down-dip	2	2	48	550	0.586	0.051	0.294	1.449	10.60E+6	0.161	10.60E+6	0.474	-1.327	104.70E-15
351	L2S2C055	Down-dip	2	2	55	550	0.598	0.065	0.002	1.493	11.62E+6	0.021	11.62E+6	0.048	-0.999	94.64E-15
352	L2S2C058	Down-dip	2	2	58	550	0.592	0.025	0.045	1.473	11.16E+6	0.072	11.16E+6	0.267	-1.328	106.40E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
309	L2S1L011	Down-dip	2	1	11	000.00E+0	1.044	15.70E+6	1.00E-12	000.00E+0	1.00E+0	1.50E-6	934.30E-3	000.00E+0	256.10E+3
310	L2S1L013	Down-dip	2	1	13	000.00E+0	0.385	12.68E+6	1.00E-12	000.00E+0	1.00E+0	23.28E-3	276.40E-3	000.00E+0	167.90E+3
311	L2S1L014	Down-dip	2	1	14	000.00E+0	0.962	13.26E+6	1.00E-12	000.00E+0	1.00E+0	340.20E-6	755.70E-3	000.00E+0	174.50E+3
312	L2S1L016	Down-dip	2	1	16	000.00E+0	1.084	12.63E+6	1.00E-12	000.00E+0	1.00E+0	169.00E-6	776.90E-3	000.00E+0	247.30E+3
313	L2S1L018	Down-dip	2	1	18	000.00E+0	0.690	11.22E+6	1.00E-12	000.00E+0	1.00E+0	15.29E-3	309.80E-3	000.00E+0	200.00E+3
314	L2S1L019	Down-dip	2	1	19	000.00E+0	1.054	16.73E+6	1.00E-12	000.00E+0	1.00E+0	883.50E-6	651.20E-3	000.00E+0	239.00E+3
315	L2S1L021	Down-dip	2	1	21	000.00E+0	0.900	15.80E+6	1.00E-12	000.00E+0	1.00E+0	4.32E-3	495.90E-3	000.00E+0	218.80E+3
316	L2S1L022	Down-dip	2	1	22	000.00E+0	0.392	12.09E+6	1.00E-12	000.00E+0	1.00E+0	32.62E-3	237.80E-3	000.00E+0	249.50E+3
317	L2S1L024	Down-dip	2	1	24	000.00E+0	1.406	14.62E+6	1.00E-12	000.00E+0	1.00E+0	170.10E-3	47.75E-3	000.00E+0	227.40E+3
318	L2S1L027	Down-dip	2	1	27	000.00E+0	1.052	11.41E+6	1.00E-12	000.00E+0	1.00E+0	319.70E-9	952.10E-3	000.00E+0	250.80E+3
319	L2S1L028	Down-dip	2	1	28	000.00E+0	0.946	17.04E+6	1.00E-12	576.80E-3	1.89E-6	680.20E-3	000.00E+0	7.99E+6	8.00E+6
320	L2S1L030	Down-dip	2	1	30	000.00E+0	1.013	12.51E+6	1.00E-12	000.00E+0	1.00E+0	37.31E-3	209.90E-3	000.00E+0	258.30E+3
321	L2S1L033	Down-dip	2	1	33	000.00E+0	0.743	12.60E+6	1.00E-12	000.00E+0	1.00E+0	1.68E-3	622.50E-3	000.00E+0	212.00E+3
322	L2S1L037	Down-dip	2	1	37	000.00E+0	1.034	12.66E+6	1.00E-12	000.00E+0	1.00E+0	278.80E-6	738.30E-3	000.00E+0	238.10E+3
323	L2S1L040	Down-dip	2	1	40	000.00E+0	0.964	12.62E+6	1.00E-12	000.00E+0	1.00E+0	47.70E-3	216.90E-3	000.00E+0	215.20E+3
324	L2S1L041	Down-dip	2	1	41	000.00E+0	0.419	12.22E+6	1.00E-12	53.57E-6	847.00E-3	791.60E-3	63.42E-9	182.80E+3	7.99E+6
325	L2S1L044	Down-dip	2	1	44	000.00E+0	1.179	12.65E+6	1.00E-12	000.00E+0	1.00E+0	1.22E-3	600.80E-3	000.00E+0	235.30E+3
326	L2S1L048	Down-dip	2	1	48	000.00E+0	1.198	14.19E+6	1.00E-12	000.00E+0	1.00E+0	250.00E-6	765.00E-3	000.00E+0	229.60E+3
327	L2S1L051	Down-dip	2	1	51	000.00E+0	0.593	14.74E+6	1.00E-12	000.00E+0	1.00E+0	11.93E-3	369.40E-3	000.00E+0	217.90E+3
328	L2S1L052	Down-dip	2	1	52	000.00E+0	0.532	12.70E+6	1.00E-12	000.00E+0	1.00E+0	3.75E-3	557.20E-3	000.00E+0	188.30E+3
329	L2S1L053	Down-dip	2	1	53	000.00E+0	1.111	12.61E+6	1.00E-12	000.00E+0	1.00E+0	37.74E-3	230.20E-3	000.00E+0	225.90E+3
330	L2S1L059	Down-dip	2	1	59	000.00E+0	0.968	12.69E+6	1.00E-12	000.00E+0	1.00E+0	37.66E-3	144.10E-3	000.00E+0	199.10E+3
331	L2S1L063	Down-dip	2	1	63	000.00E+0	0.648	12.65E+6	1.00E-12	000.00E+0	1.00E+0	1.37E-6	946.10E-3	000.00E+0	296.80E+3
332	L2S1L066	Down-dip	2	1	66	000.00E+0	0.976	14.60E+6	1.00E-12	000.00E+0	1.00E+0	294.90E-6	728.90E-3	000.00E+0	183.30E+3
333	L2S1L067	Down-dip	2	1	67	000.00E+0	0.580	14.80E+6	1.00E-12	000.00E+0	1.00E+0	2.91E-3	548.10E-3	000.00E+0	160.00E+3
334	L2S1L071	Down-dip	2	1	71	000.00E+0	1.061	14.57E+6	1.00E-12	000.00E+0	1.00E+0	94.06E-3	92.92E-3	000.00E+0	689.40E+3
335	L2S1L073	Down-dip	2	1	73	000.00E+0	0.721	16.47E+6	1.00E-12	000.00E+0	1.00E+0	51.30E-3	141.40E-3	000.00E+0	206.00E+3
336	L2S1L078	Down-dip	2	1	78	000.00E+0	1.150	10.88E+6	1.00E-12	000.00E+0	1.00E+0	7.45E-3	441.00E-3	000.00E+0	224.20E+3
337	L2S1L082	Down-dip	2	1	82	000.00E+0	0.651	16.39E+6	1.00E-12	000.00E+0	1.00E+0	251.60E-6	746.90E-3	000.00E+0	178.20E+3
338	L2S1L087	Down-dip	2	1	87	000.00E+0	0.515	12.65E+6	1.00E-12	000.00E+0	1.00E+0	33.05E-3	267.80E-3	000.00E+0	237.90E+3
339	L2S1L089	Down-dip	2	1	89	000.00E+0	0.424	15.90E+6	1.00E-12	000.00E+0	1.00E+0	58.42E-3	162.20E-3	000.00E+0	210.70E+3
340	L2S1L095	Down-dip	2	1	95	000.00E+0	0.673	12.62E+6	1.00E-12	000.00E+0	1.00E+0	108.20E-6	820.60E-3	000.00E+0	183.40E+3
341	L2S1L098	Down-dip	2	1	98	000.00E+0	0.606	12.64E+6	1.00E-12	000.00E+0	1.00E+0	177.60E-3	59.35E-3	000.00E+0	225.50E+3
342	L2S1L099	Down-dip	2	1	99	000.00E+0	0.703	10.80E+6	1.00E-12	000.00E+0	1.00E+0	18.24E-3	323.10E-3	000.00E+0	224.80E+3
343	L2S2C004	Down-dip	2	2	4	223.90E-15	0.881	12.14E+6	1.41E-12	000.00E+0	1.00E+0	4.61E-3	536.40E-3	000.00E+0	187.30E+3
344	L2S2C008	Down-dip	2	2	8	120.20E-15	0.964	12.12E+6	3.09E-15	000.00E+0	1.00E+0	942.10E-3	627.00E-9	000.00E+0	7.98E+6
345	L2S2C011	Down-dip	2	2	11	5.89E-12	0.939	14.42E+6	30.90E-15	000.00E+0	1.00E+0	478.90E-3	1.15E-6	000.00E+0	7.99E+6
346	L2S2C022	Down-dip	2	2	22	28.84E-15	0.354	12.14E+6	87.10E-15	289.30E-6	749.40E-3	245.50E-6	760.10E-3	202.00E+3	203.30E+3
347	L2S2C026	Down-dip	2	2	26	1.05E-12	0.908	14.09E+6	346.70E-15	000.00E+0	1.00E+0	3.97E-3	451.20E-3	000.00E+0	193.40E+3
348	L2S2C028	Down-dip	2	2	28	616.60E-15	0.888	15.08E+6	26.30E-15	674.00E-3	000.00E+0	733.90E-3	000.00E+0	8.00E+6	8.01E+6
349	L2S2C029	Down-dip	2	2	29	16.22E-15	1.220	11.47E+6	416.90E-15	000.00E+0	1.00E+0	2.38E-3	535.10E-3	000.00E+0	181.40E+3
350	L2S2C048	Down-dip	2	2	48	41.69E-15	1.080	13.75E+6	109.60E-15	000.00E+0	1.00E+0	6.38E-3	467.60E-3	000.00E+0	186.90E+3
351	L2S2C055	Down-dip	2	2	55	58.88E-15	0.561	15.16E+6	85.11E-12	443.80E-9	958.40E-3	11.32E-6	899.00E-3	264.70E+3	244.80E+3
352	L2S2C058	Down-dip	2	2	58	30.90E-15	1.083	13.72E+6	186.20E-15	1.70E-6	942.30E-3	4.57E-3	528.20E-3	249.60E+3	194.50E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
309	L2S1L011	Down-dip	2	1	11	000.00E+0	11	124.30E-12	244.70E-3	767.20E-12	11.93E+0	285.70E-6	0.000	643.80E+3	0.000
310	L2S1L013	Down-dip	2	1	13	000.00E+0	11	1.60E-6	99.49E-3	6.22E-6	1.34E+0	11.97E+0	0.000	169.90E+3	2.035
311	L2S1L014	Down-dip	2	1	14	000.00E+0	11	21.88E-9	189.00E-3	116.40E-9	4.91E+0	76.35E-3	0.000	392.70E+3	0.030
312	L2S1L016	Down-dip	2	1	16	000.00E+0	11	16.63E-9	373.70E-3	106.00E-9	13.84E+0	27.25E-3	0.000	881.80E+3	0.024
313	L2S1L018	Down-dip	2	1	18	000.00E+0	11	1.67E-6	225.90E-3	6.88E-6	3.35E+0	5.45E+0	0.000	392.10E+3	2.137
314	L2S1L019	Down-dip	2	1	19	000.00E+0	11	91.80E-9	345.90E-3	578.50E-9	12.51E+0	162.80E-3	0.000	814.70E+3	0.133
315	L2S1L021	Down-dip	2	1	21	000.00E+0	11	404.80E-9	219.30E-3	2.53E-6	8.08E+0	1.11E+0	0.000	532.20E+3	0.590
316	L2S1L022	Down-dip	2	1	22	000.00E+0	11	4.23E-6	266.40E-3	16.61E-6	3.41E+0	11.98E+0	0.000	452.10E+3	5.418
317	L2S1L024	Down-dip	2	1	24	000.00E+0	11	29.76E-6	117.70E-3	116.40E-6	946.90E-3	230.50E+0	0.000	164.20E+3	37.850
318	L2S1L027	Down-dip	2	1	27	000.00E+0	11	33.99E-12	145.00E-3	150.10E-12	10.45E+0	105.90E-6	0.000	452.20E+3	0.000
319	L2S1L028	Down-dip	2	1	28	000.00E+0	3	13.07E-6	000.00E+0	27.10E-6	000.00E+0	3.92E+21	0.000	000.00E+0	3.924
320	L2S1L030	Down-dip	2	1	30	000.00E+0	11	5.27E-6	242.30E-3	22.86E-6	3.64E+0	16.44E+0	0.000	416.00E+3	6.840
321	L2S1L033	Down-dip	2	1	33	000.00E+0	11	149.90E-9	275.30E-3	869.00E-9	8.44E+0	342.10E-3	0.000	622.70E+3	0.213
322	L2S1L037	Down-dip	2	1	37	000.00E+0	11	25.89E-9	315.70E-3	168.10E-9	12.39E+0	49.36E-3	0.000	766.00E+3	0.038
323	L2S1L040	Down-dip	2	1	40	000.00E+0	11	4.98E-6	153.20E-3	20.09E-6	2.00E+0	25.25E+0	0.000	250.10E+3	6.315
324	L2S1L041	Down-dip	2	1	41	000.00E+0	3	5.05E-6	25.14E-9	10.76E-6	25.14E-9	248.70E+6	0.000	5.98E-3	1.486
325	L2S1L044	Down-dip	2	1	44	000.00E+0	11	134.50E-9	352.00E-3	815.90E-9	11.71E+0	239.70E-3	0.000	798.10E+3	0.191
326	L2S1L048	Down-dip	2	1	48	000.00E+0	11	21.11E-9	261.60E-3	145.10E-9	11.79E+0	47.16E-3	0.000	665.20E+3	0.031
327	L2S1L051	Down-dip	2	1	51	000.00E+0	11	1.38E-6	294.40E-3	6.23E-6	5.25E+0	3.31E+0	0.000	551.60E+3	1.824
328	L2S1L052	Down-dip	2	1	52	000.00E+0	11	300.20E-9	223.50E-3	1.53E-6	5.27E+0	885.90E-3	0.000	465.90E+3	0.413
329	L2S1L053	Down-dip	2	1	53	000.00E+0	11	4.06E-6	155.90E-3	19.16E-6	2.86E+0	18.89E+0	0.000	285.70E+3	5.397
330	L2S1L059	Down-dip	2	1	59	000.00E+0	11	3.37E-6	72.75E-3	12.90E-6	938.90E-3	35.64E+0	0.000	117.30E+3	4.180
331	L2S1L063	Down-dip	2	1	63	000.00E+0	11	132.20E-12	323.50E-3	811.80E-12	16.49E+0	223.50E-6	0.000	883.80E+3	0.000
332	L2S1L066	Down-dip	2	1	66	000.00E+0	11	17.90E-9	143.60E-3	111.60E-9	5.58E+0	74.19E-3	0.000	351.10E+3	0.026
333	L2S1L067	Down-dip	2	1	67	000.00E+0	11	180.70E-9	141.90E-3	869.80E-9	3.05E+0	859.70E-3	0.000	283.10E+3	0.243
334	L2S1L071	Down-dip	2	1	71	000.00E+0	11	11.24E-6	107.90E-3	42.08E-6	968.30E-3	89.77E+0	0.000	156.60E+3	14.060
335	L2S1L073	Down-dip	2	1	73	000.00E+0	11	4.41E-6	77.10E-3	15.87E-6	811.20E-3	46.07E+0	0.000	117.90E+3	5.430
336	L2S1L078	Down-dip	2	1	78	000.00E+0	11	878.80E-9	311.60E-3	4.77E-6	8.07E+0	1.87E+0	0.000	646.90E+3	1.212
337	L2S1L082	Down-dip	2	1	82	000.00E+0	11	16.63E-9	211.90E-3	81.41E-9	4.65E+0	52.98E-3	0.000	422.60E+3	0.022
338	L2S1L067	Down-dip	2	1	87	000.00E+0	11	3.73E-6	219.40E-3	16.66E-6	3.65E+0	12.25E+0	0.000	404.90E+3	4.960
339	L2S1L089	Down-dip	2	1	89	000.00E+0	11	5.30E-6	108.00E-3	17.27E-6	918.70E-3	40.55E+0	0.000	158.20E+3	6.416
340	L2S1L095	Down-dip	2	1	95	000.00E+0	11	7.17E-9	237.40E-3	34.83E-9	5.05E+0	20.56E-3	0.000	467.80E+3	0.010
341	L2S1L098	Down-dip	2	1	98	000.00E+0	11	23.89E-6	96.16E-3	83.36E-6	702.80E-3	222.30E+0	0.000	133.60E+3	29.710
342	L2S1L099	Down-dip	2	1	99	000.00E+0	11	2.17E-6	267.40E-3	9.92E-6	4.80E+0	5.76E+0	0.000	498.80E+3	2.872
343	L2S2C004	Down-dip	2	2	4	8.98E+6	11	467.40E-9	285.10E-3	2.30E-6	6.20E+0	1.12E+0	0.000	561.80E+3	0.628
344	L2S2C008	Down-dip	2	2	8	8.09E+6	3	8.33E-6	132.00E-9	23.81E-6	298.50E-9	64.84E+6	0.000	37.23E-3	2.414
345	L2S2C011	Down-dip	2	2	11	9.70E+6	3	32.82E-6	150.90E-6	63.34E-6	150.90E-6	430.50E+3	0.000	23.20E+0	9.909
346	L2S2C022	Down-dip	2	2	22	6.71E+6	11	21.52E-9	355.90E-3	102.10E-9	7.24E+0	40.63E-3	0.000	715.80E+3	0.029
347	L2S2C026	Down-dip	2	2	26	10.17E+6	11	354.70E-9	155.20E-3	2.12E-6	5.78E+0	1.34E+0	0.000	381.80E+3	0.511
348	L2S2C028	Down-dip	2	2	28	9.87E+6	3	51.36E-6	000.00E+0	116.00E-6	000.00E+0	15.45E+21	0.000	000.00E+0	15.450
349	L2S2C029	Down-dip	2	2	29	7.91E+6	11	236.00E-9	256.60E-3	1.18E-6	5.84E+0	626.20E-3	0.000	505.10E+3	0.316
350	L2S2C048	Down-dip	2	2	48	8.34E+6	11	601.10E-9	200.70E-3	3.32E-6	5.62E+0	1.94E+0	0.000	432.50E+3	0.838
351	L2S2C055	Down-dip	2	2	55	12.20E+6	11	1.08E-9	452.60E-3	5.83E-9	11.64E+0	1.55E-3	0.000	968.30E+3	0.002
352	L2S2C058	Down-dip	2	2	58	9.15E+6	11	507.10E-9	317.10E-3	2.55E-6	7.14E+0	1.09E+0	0.000	626.20E+3	0.682

		*	*	*	*	Cum Brine Releases (m^3)	Avg Brine Pressure Panel 5 (Pa)	Avg Brine Saturation Panel 5 (fraction)	Avg Brine Pressure Panel 0 (Pa)	Avg Brine Saturation Panel 0 (fraction)	Total Excavated Waste Pore Volume (m^3)	Total Excavated Brine Volume (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BRIN_REL	BRNPRES5	SATBRN5	BRNPRES0	SATBRN0	WASTE_PV	TOT_BRIN
309	L2S1L011	Down-dip	2	1	11	0.000	3.41E+6	0.344	11.46E+6	0.000	81.94E+3	7.30E+3
310	L2S1L013	Down-dip	2	1	13	1.948	4.46E+6	0.535	8.18E+6	0.000	64.61E+3	8.95E+3
311	L2S1L014	Down-dip	2	1	14	0.029	3.54E+6	0.266	8.60E+6	0.000	67.75E+3	4.67E+3
312	L2S1L016	Down-dip	2	1	16	0.024	4.52E+6	0.237	13.19E+6	0.000	89.29E+3	8.23E+3
313	L2S1L018	Down-dip	2	1	18	2.014	5.78E+6	0.365	11.05E+6	0.000	80.10E+3	9.96E+3
314	L2S1L019	Down-dip	2	1	19	0.125	4.75E+6	0.317	13.66E+6	0.012	91.26E+3	9.77E+3
315	L2S1L021	Down-dip	2	1	21	0.573	4.47E+6	0.497	12.91E+6	0.000	88.00E+3	11.30E+3
316	L2S1L022	Down-dip	2	1	22	5.172	7.09E+6	0.406	13.11E+6	0.001	88.78E+3	13.99E+3
317	L2S1L024	Down-dip	2	1	24	36.790	9.61E+6	0.652	13.52E+6	0.011	90.43E+3	21.12E+3
318	L2S1L027	Down-dip	2	1	27	0.000	2.70E+6	0.509	10.73E+6	0.000	78.78E+3	10.36E+3
319	L2S1L028	Down-dip	2	1	28	3.845	8.93E+6	0.903	8.84E+6	0.555	69.78E+3	49.40E+3
320	L2S1L030	Down-dip	2	1	30	6.639	7.07E+6	0.457	13.14E+6	0.000	88.92E+3	10.52E+3
321	L2S1L033	Down-dip	2	1	33	0.211	4.46E+6	0.348	12.11E+6	0.000	84.65E+3	9.30E+3
322	L2S1L037	Down-dip	2	1	37	0.036	4.30E+6	0.316	12.90E+6	0.000	88.06E+3	9.87E+3
323	L2S1L040	Down-dip	2	1	40	6.303	5.78E+6	0.468	10.01E+6	0.000	75.70E+3	12.30E+3
324	L2S1L041	Down-dip	2	1	41	1.455	8.37E+6	0.941	8.32E+6	0.080	65.74E+3	32.39E+3
325	L2S1L044	Down-dip	2	1	44	0.186	4.98E+6	0.307	13.61E+6	0.003	91.03E+3	10.31E+3
326	L2S1L048	Down-dip	2	1	48	0.031	3.88E+6	0.370	12.27E+6	0.164	85.36E+3	18.35E+3
327	L2S1L051	Down-dip	2	1	51	1.760	5.98E+6	0.342	12.61E+6	0.000	86.71E+3	10.94E+3
328	L2S1L052	Down-dip	2	1	52	0.410	4.39E+6	0.362	10.63E+6	0.004	78.39E+3	8.55E+3
329	L2S1L053	Down-dip	2	1	53	5.146	5.61E+6	0.560	11.26E+6	0.022	80.99E+3	14.03E+3
330	L2S1L059	Down-dip	2	1	59	3.975	5.14E+6	0.660	8.62E+6	0.090	67.84E+3	17.08E+3
331	L2S1L063	Down-dip	2	1	63	0.000	3.80E+6	0.333	13.68E+6	0.000	91.40E+3	9.78E+3
332	L2S1L066	Down-dip	2	1	66	0.025	3.14E+6	0.461	9.19E+6	0.000	72.10E+3	8.60E+3
333	L2S1L067	Down-dip	2	1	67	0.243	3.71E+6	0.409	8.40E+6	0.000	66.28E+3	7.01E+3
334	L2S1L071	Down-dip	2	1	71	13.180	7.30E+6	0.586	10.69E+6	0.022	78.53E+3	18.16E+3
335	L2S1L073	Down-dip	2	1	73	5.197	5.33E+6	0.609	8.39E+6	0.000	66.10E+3	10.42E+3
336	L2S1L078	Down-dip	2	1	78	1.174	5.45E+6	0.359	13.28E+6	0.000	89.57E+3	10.52E+3
337	L2S1L082	Down-dip	2	1	82	0.022	3.78E+6	0.207	8.73E+6	0.000	68.72E+3	3.68E+3
338	L2S1L087	Down-dip	2	1	87	4.933	6.15E+6	0.485	12.54E+6	0.003	86.39E+3	15.60E+3
339	L2S1L089	Down-dip	2	1	89	6.137	5.80E+6	0.471	8.69E+6	0.000	68.35E+3	9.16E+3
340	L2S1L095	Down-dip	2	1	95	0.010	3.81E+6	0.107	8.66E+6	0.000	68.27E+3	1.88E+3
341	L2S1L098	Down-dip	2	1	98	29.300	8.27E+6	0.650	11.64E+6	0.000	82.54E+3	19.99E+3
342	L2S1L099	Down-dip	2	1	99	2.751	6.09E+6	0.398	12.68E+6	0.004	87.01E+3	13.36E+3
343	L2S2C004	Down-dip	2	2	4	0.606	4.71E+6	0.313	10.60E+6	0.069	95.33E+3	12.31E+3
344	L2S2C008	Down-dip	2	2	8	2.363	8.46E+6	0.987	8.22E+6	0.057	83.08E+3	42.55E+3
345	L2S2C011	Down-dip	2	2	11	9.712	10.73E+6	0.880	9.17E+6	0.193	89.96E+3	47.89E+3
346	L2S2C022	Down-dip	2	2	22	0.028	4.48E+6	0.146	10.48E+6	0.117	94.81E+3	12.20E+3
347	L2S2C026	Down-dip	2	2	26	0.508	3.99E+6	0.610	11.08E+6	0.258	97.58E+3	33.73E+3
348	L2S2C028	Down-dip	2	2	28	15.140	11.24E+6	0.923	8.79E+6	0.658	89.17E+3	69.29E+3
349	L2S2C029	Down-dip	2	2	29	0.316	4.47E+6	0.324	10.02E+6	0.076	92.53E+3	12.64E+3
350	L2S2C048	Down-dip	2	2	48	0.822	4.32E+6	0.492	10.58E+6	0.162	95.21E+3	23.31E+3
351	L2S2C055	Down-dip	2	2	55	0.001	4.59E+6	0.083	11.57E+6	0.021	100.10E+3	3.26E+3
352	L2S2C058	Down-dip	2	2	58	0.671	4.95E+6	0.291	11.13E+6	0.072	97.92E+3	12.23E+3

No.	File (*.TXT)	ID	Rep	Scen	Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
353	L2S2C075	Down-dip	2	2	75	550	0.549	0.053	0.225	1.331	8.11E+6	0.168	8.11E+6	0.506	-1.239	92.70E-15
354	L2S2C076	Down-dip	2	2	76	550	0.562	0.058	0.453	1.369	8.90E+6	0.118	8.90E+6	0.554	-1.230	95.03E-15
355	L2S2C077	Down-dip	2	2	77	550	0.518	0.120	0.402	1.248	5.85E+6	0.876	8.31E+6	0.876	-1.253	87.40E-15
356	L2S2C081	Down-dip	2	2	81	550	0.601	0.003	0.203	1.505	11.93E+6	0.230	11.90E+6	0.462	-0.761	87.65E-15
357	L2S2C090	Down-dip	2	2	90	550	0.601	0.049	0.044	1.504	11.91E+6	0.060	11.89E+6	0.067	-1.232	104.50E-15
358	L2S2D008	Down-dip	2	2	8	750	0.540	0.007	0.193	1.306	8.87E+6	0.055	8.99E+6	0.987	-1.294	93.02E-15
359	L2S2D011	Down-dip	2	2	11	750	0.555	0.117	0.326	1.349	9.38E+6	0.327	9.50E+6	0.878	-1.264	94.90E-15
360	L2S2D022	Down-dip	2	2	22	750	0.557	0.095	0.017	1.354	9.97E+6	0.132	9.95E+6	0.143	-0.781	79.45E-15
361	L2S2D028	Down-dip	2	2	28	750	0.552	0.126	0.029	1.340	9.65E+6	0.905	9.98E+6	0.917	-1.241	93.40E-15
362	L2S2D029	Down-dip	2	2	29	750	0.572	0.148	0.134	1.402	11.26E+6	0.069	11.25E+6	0.294	-1.412	105.10E-15
363	L2S2D048	Down-dip	2	2	48	750	0.550	0.051	0.294	1.333	9.62E+6	0.186	9.61E+6	0.567	-1.339	96.81E-15
364	L2S2D055	Down-dip	2	2	55	750	0.556	0.065	0.002	1.351	10.04E+6	0.016	10.03E+6	0.065	-1.009	86.03E-15
365	L2S2D058	Down-dip	2	2	58	750	0.568	0.025	0.045	1.389	10.68E+6	0.070	10.67E+6	0.295	-1.343	101.00E-15
366	L2S2D076	Down-dip	2	2	76	750	0.560	0.058	0.453	1.366	10.39E+6	0.115	10.38E+6	0.543	-1.264	96.12E-15
367	L2S2H028	Down-dip	2	2	28	2,000	0.526	0.126	0.029	1.268	9.82E+6	0.894	9.89E+6	0.913	-1.266	89.32E-15
368	L2S2H029	Down-dip	2	2	29	2,000	0.522	0.148	0.134	1.257	9.54E+6	0.031	9.54E+6	0.275	-1.420	94.56E-15
369	L2S2H033	Down-dip	2	2	33	2,000	0.532	0.041	0.206	1.283	10.23E+6	0.043	10.24E+6	0.659	-1.127	85.43E-15
370	L2S2H036	Down-dip	2	2	36	2,000	0.522	0.074	0.163	1.257	9.52E+6	0.000	9.53E+6	0.739	-0.952	78.32E-15
371	L2S2H046	Down-dip	2	2	46	2,000	0.529	0.017	0.354	1.275	10.02E+6	0.161	10.02E+6	0.535	-1.314	91.61E-15
372	L2S2H051	Down-dip	2	2	51	2,000	0.532	0.101	0.057	1.282	10.22E+6	0.060	10.23E+6	0.694	-1.013	81.73E-15
373	L2S2H058	Down-dip	2	2	58	2,000	0.502	0.025	0.045	1.205	8.37E+6	0.028	8.37E+6	0.401	-1.353	88.03E-15
374	L2S2H067	Down-dip	2	2	67	2,000	0.515	0.072	0.256	1.238	9.06E+6	0.280	9.08E+6	0.887	-1.015	78.98E-15
375	L2S2H068	Down-dip	2	2	68	2,000	0.505	0.097	0.351	1.213	8.55E+6	0.151	8.55E+6	0.389	-0.874	73.51E-15
376	L2S2H074	Down-dip	2	2	74	2,000	0.540	0.129	0.007	1.304	10.81E+6	0.677	10.84E+6	0.864	-0.792	76.81E-15
377	L2S2H076	Down-dip	2	2	76	2,000	0.536	0.058	0.453	1.295	10.58E+6	0.105	10.58E+6	0.529	-1.291	92.16E-15
378	L2S2H081	Down-dip	2	2	81	2,000	0.494	0.003	0.203	1.187	7.97E+6	0.132	8.08E+6	0.991	-0.773	69.45E-15
379	L2S2J023	Down-dip	2	2	23	4,000	0.492	0.082	0.547	1.182	8.16E+6	0.205	8.16E+6	0.597	-0.896	72.20E-15
380	L2S2J028	Down-dip	2	2	28	4,000	0.516	0.126	0.029	1.241	9.15E+6	0.880	9.21E+6	0.908	-1.260	87.18E-15
381	L2S2J029	Down-dip	2	2	29	4,000	0.494	0.148	0.134	1.186	8.25E+6	0.003	8.25E+6	0.231	-1.414	88.98E-15
382	L2S2J033	Down-dip	2	2	33	4,000	0.541	0.041	0.206	1.308	10.91E+6	0.000	10.92E+6	0.462	-1.132	87.25E-15
383	L2S2J036	Down-dip	2	2	36	4,000	0.524	0.074	0.163	1.262	9.66E+6	0.000	9.66E+6	0.499	-0.953	78.66E-15
384	L2S2J037	Down-dip	2	2	37	4,000	0.500	0.111	0.232	1.201	8.55E+6	0.017	8.56E+6	0.587	-1.281	85.08E-15
385	L2S2J046	Down-dip	2	2	46	4,000	0.548	0.017	0.354	1.329	11.51E+6	0.080	11.51E+6	0.398	-1.327	96.05E-15
386	L2S2J051	Down-dip	2	2	51	4,000	0.541	0.101	0.057	1.307	10.91E+6	0.004	10.92E+6	0.497	-1.018	83.50E-15
387	L2S2J067	Down-dip	2	2	67	4,000	0.529	0.072	0.256	1.274	10.00E+6	0.079	10.01E+6	0.814	-1.023	81.51E-15
388	L2S2J074	Down-dip	2	2	74	4,000	0.537	0.129	0.007	1.297	10.60E+6	0.270	10.83E+6	0.861	-0.791	76.32E-15
389	L2S2J076	Down-dip	2	2	76	4,000	0.527	0.058	0.453	1.268	9.84E+6	0.078	9.84E+6	0.512	-1.284	89.99E-15
390	L2S2L028	Down-dip	2	2	28	10,000	0.508	0.126	0.029	1.220	8.84E+6	0.873	8.89E+6	0.894	-1.260	85.68E-15
391	L2S2L033	Down-dip	2	2	33	10,000	0.517	0.041	0.206	1.242	9.19E+8	0.000	9.21E+6	0.827	-1.118	82.44E-15
392	L2S2L046	Down-dip	2	2	46	10,000	0.530	0.017	0.354	1.277	10.07E+6	0.000	10.08E+6	0.540	-1.315	91.78E-15
393	L2S2L051	Down-dip	2	2	51	10,000	0.496	0.101	0.057	1.193	8.43E+6	0.000	8.45E+6	0.733	-1.004	75.76E-15
394	L2S2L076	Down-dip	2	2	76	10,000	0.498	0.058	0.453	1.196	8.50E+6	0.025	8.50E+6	0.565	-1.278	84.66E-15
395	L2S3F003	Down-dip	2	3	3	1,200	0.502	0.040	0.184	1.205	8.33E+6	0.231	8.28E+6	0.424	-1.295	85.91E-15
396	L2S3F008	Down-dip	2	3	8	1,200	0.531	0.007	0.193	1.280	10.00E+6	0.026	10.76E+6	0.988	-1.336	92.85E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
353	L2S2C075	Down-dip	2	2	75	204.20E-15	0.906	11.67E+6	588.80E-15	000.00E+0	1.00E+0	23.57E-3	297.80E-3	000.00E+0	165.90E+3
354	L2S2C076	Down-dip	2	2	76	19.05E-15	0.891	11.15E+6	8.91E-12	000.00E+0	1.00E+0	1.95E-3	586.60E-3	000.00E+0	167.60E+3
355	L2S2C077	Down-dip	2	2	77	812.80E-15	0.933	11.92E+6	147.90E-15	424.80E-3	870.60E-9	423.50E-3	1.17E-6	000.00E+0	7.99E+6
356	L2S2C081	Down-dip	2	2	81	933.30E-15	0.348	15.33E+6	125.90E-15	3.63E-6	930.70E-3	15.79E-3	385.80E-3	257.90E+3	209.60E+3
357	L2S2C090	Down-dip	2	2	90	1.74E-12	0.894	14.28E+6	3.47E-12	303.00E-9	963.10E-3	1.04E-6	948.30E-3	271.60E+3	264.90E+3
358	L2S2D008	Down-dip	2	2	8	120.20E-15	1.012	12.14E+6	3.09E-15	000.00E+0	1.00E+0	942.60E-3	586.30E-9	000.00E+0	7.98E+6
359	L2S2D011	Down-dip	2	2	11	5.89E-12	0.952	14.30E+6	30.90E-15	134.50E-12	994.80E-3	479.20E-3	1.08E-6	236.90E+3	7.99E+6
360	L2S2D022	Down-dip	2	2	22	28.84E-15	0.363	12.14E+6	87.10E-15	365.40E-6	733.40E-3	498.60E-6	710.80E-3	192.40E+3	190.00E+3
361	L2S2D028	Down-dip	2	2	28	616.60E-15	0.910	15.04E+6	26.30E-15	684.40E-3	000.00E+0	720.20E-3	000.00E+0	8.00E+6	8.00E+6
362	L2S2D029	Down-dip	2	2	29	16.22E-15	1.282	11.48E+6	416.90E-15	000.00E+0	1.00E+0	1.96E-3	556.30E-3	000.00E+0	198.40E+3
363	L2S2D048	Down-dip	2	2	48	41.69E-15	1.106	13.75E+6	109.60E-15	000.00E+0	1.00E+0	29.92E-3	262.70E-3	000.00E+0	192.40E+3
384	L2S2D055	Down-dip	2	2	55	58.88E-15	0.573	14.88E+6	85.11E-12	148.50E-9	969.20E-3	36.74E-6	860.80E-3	241.40E+3	210.80E+3
365	L2S2D058	Down-dip	2	2	58	30.90E-15	1.115	13.72E+6	186.20E-15	1.38E-6	945.50E-3	7.10E-3	476.60E-3	242.50E+3	188.00E+3
366	L2S2D076	Down-dip	2	2	76	19.05E-15	0.953	11.20E+6	8.91E-12	000.00E+0	1.00E+0	1.29E-3	627.40E-3	000.00E+0	189.30E+3
367	L2S2H028	Down-dip	2	2	28	616.60E-15	0.957	14.99E+6	26.30E-15	652.00E-3	000.00E+0	708.20E-3	000.00E+0	8.00E+6	8.00E+6
368	L2S2H029	Down-dip	2	2	29	16.22E-15	1.301	11.52E+6	416.90E-15	000.00E+0	1.00E+0	1.25E-3	602.80E-3	000.00E+0	178.10E+3
369	L2S2H033	Down-dip	2	2	33	10.23E-15	0.724	8.65E+6	43.65E-12	000.00E+0	1.00E+0	125.50E-3	91.91E-3	000.00E+0	427.10E+3
370	L2S2H036	Down-dip	2	2	36	13.18E-15	0.510	9.77E+6	33.11E-15	000.00E+0	1.00E+0	251.20E-3	22.78E-3	000.00E+0	2.62E+6
371	L2S2H046	Down-dip	2	2	46	13.18E-15	1.053	10.19E+6	17.38E-15	000.00E+0	1.00E+0	9.00E-3	447.20E-3	000.00E+0	180.20E+3
372	L2S2H051	Down-dip	2	2	51	11.75E-15	0.576	9.50E+6	2.34E-12	1.08E-9	991.60E-3	235.00E-3	22.42E-3	252.90E+3	2.47E+6
373	L2S2H058	Down-dip	2	2	58	30.90E-15	1.139	13.71E+6	186.20E-15	000.00E+0	1.00E+0	26.07E-3	306.20E-3	000.00E+0	170.40E+3
374	L2S2H067	Down-dip	2	2	67	16.98E-15	0.579	9.31E+6	741.30E-15	3.49E-6	924.30E-3	543.60E-3	388.70E-6	210.80E+3	7.97E+6
375	L2S2H068	Down-dip	2	2	68	42.66E-15	0.436	11.30E+6	52.48E-12	000.00E+0	1.00E+0	29.04E-6	856.60E-3	000.00E+0	190.10E+3
376	L2S2H074	Down-dip	2	2	74	22.91E-15	0.371	10.29E+6	436.50E-15	233.10E-3	17.75E-3	580.80E-3	774.20E-9	3.12E+6	7.99E+6
377	L2S2H076	Down-dip	2	2	76	19.05E-15	1.005	11.46E+6	8.91E-12	000.00E+0	1.00E+0	710.80E-6	679.90E-3	000.00E+0	196.00E+3
378	L2S2H081	Down-dip	2	2	81	933.30E-15	0.357	14.66E+6	125.90E-15	000.00E+0	1.00E+0	958.00E-3	918.70E-9	000.00E+0	7.98E+6
379	L2S2J023	Down-dip	2	2	23	33.88E-15	0.456	13.37E+6	3.98E-12	000.00E+0	1.00E+0	296.70E-6	722.80E-3	000.00E+0	168.90E+3
380	L2S2J028	Down-dip	2	2	28	616.60E-15	0.945	14.97E+6	26.30E-15	614.20E-3	000.00E+0	691.20E-3	000.00E+0	8.00E+6	8.00E+6
381	L2S2J029	Down-dip	2	2	29	16.22E-15	1.285	11.53E+6	416.90E-15	000.00E+0	1.00E+0	312.10E-6	722.00E-3	000.00E+0	169.80E+3
382	L2S2J033	Down-dip	2	2	33	10.23E-15	0.732	8.85E+6	43.65E-12	000.00E+0	1.00E+0	15.24E-3	366.10E-3	000.00E+0	196.20E+3
383	L2S2J036	Down-dip	2	2	36	13.18E-15	0.512	9.78E+6	33.11E-15	000.00E+0	1.00E+0	34.34E-3	235.10E-3	000.00E+0	198.60E+3
384	L2S2J037	Down-dip	2	2	37	26.30E-15	0.985	7.85E+6	831.80E-15	000.00E+0	1.00E+0	57.70E-3	137.30E-3	000.00E+0	213.60E+3
385	L2S2J046	Down-dip	2	2	46	13.18E-15	1.081	10.26E+6	17.38E-15	000.00E+0	1.00E+0	49.35E-6	855.30E-3	000.00E+0	231.40E+3
386	L2S2J051	Down-dip	2	2	51	11.75E-15	0.582	9.53E+6	2.34E-12	000.00E+0	1.00E+0	59.97E-3	152.20E-3	000.00E+0	251.50E+3
387	L2S2J067	Down-dip	2	2	67	16.98E-15	0.588	9.32E+6	741.30E-15	000.00E+0	1.00E+0	346.80E-3	7.72E-3	000.00E+0	6.06E+6
388	L2S2J074	Down-dip	2	2	74	22.91E-15	0.370	10.30E+6	436.50E-15	7.41E-3	419.10E-3	573.00E-3	2.44E-6	187.40E+3	7.99E+6
389	L2S2J076	Down-dip	2	2	76	19.05E-15	0.992	11.51E+6	8.91E-12	000.00E+0	1.00E+0	269.60E-6	751.70E-3	000.00E+0	192.90E+3
390	L2S2L028	Down-dip	2	2	28	616.60E-15	0.946	14.89E+6	26.30E-15	596.60E-3	3.98E-9	652.10E-3	000.00E+0	8.02E+6	8.00E+6
391	L2S2L033	Down-dip	2	2	33	10.23E-15	0.712	9.34E+6	43.65E-12	000.00E+0	1.00E+0	404.10E-3	8.52E-3	000.00E+0	6.14E+6
392	L2S2L046	Down-dip	2	2	46	13.18E-15	1.054	10.47E+6	17.38E-15	000.00E+0	1.00E+0	10.01E-3	433.80E-3	000.00E+0	181.40E+3
393	L2S2L051	Down-dip	2	2	51	11.75E-15	0.566	9.61E+6	2.34E-12	000.00E+0	1.00E+0	292.20E-3	12.20E-3	000.00E+0	4.75E+6
394	L2S2L076	Down-dip	2	2	76	19.05E-15	0.979	11.60E+6	8.91E-12	000.00E+0	1.00E+0	2.86E-3	545.80E-3	000.00E+0	161.00E+3
395	L2S3F003	Down-dip	2	3	3	4.07E-12	1.014	11.89E+6	25.70E-12	25.27E-6	876.50E-3	10.82E-3	412.90E-3	187.70E+3	158.80E+3
396	L2S3F008	Down-dip	2	3	8	120.20E-15	1.100	14.42E+6	3.09E-15	000.00E+0	1.00E+0	943.90E-3	496.80E-9	000.00E+0	7.99E+6

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
353	L2S2C075	Down-dip	2	2	75	8.30E+6	11	1.99E-6	123.40E-3	8.28E-6	1.88E+0	11.96E+0	0.000	212.30E+3	2.540
354	L2S2C076	Down-dip	2	2	76	8.17E+6	11	128.80E-9	125.80E-3	771.70E-9	4.55E+0	611.00E-3	0.000	303.50E+3	0.186
355	L2S2C077	Down-dip	2	2	77	8.81E+6	3	3.31E-6	598.20E-9	5.64E-6	598.20E-9	7.85E+6	0.000	124.20E-3	0.973
356	L2S2C081	Down-dip	2	2	81	9.77E+6	11	1.64E-6	245.30E-3	7.73E-6	4.86E+0	4.52E+0	0.000	492.90E+3	2.230
357	L2S2C090	Down-dip	2	2	90	11.22E+6	11	102.50E-12	454.70E-3	601.20E-12	14.13E+0	142.60E-6	0.000	1.02E+6	0.000
358	L2S2D008	Down-dip	2	2	8	7.98E+6	3	14.60E-6	269.60E-9	42.32E-6	520.70E-9	56.60E+6	0.000	74.69E-3	4.227
359	L2S2D011	Down-dip	2	2	11	8.08E+6	3	17.85E-6	23.35E-6	32.82E-6	23.35E-6	1.42E+6	0.000	3.78E+0	5.324
360	L2S2D022	Down-dip	2	2	22	191.30E+3	11	40.23E-9	299.50E-3	184.70E-9	5.73E+0	91.50E-3	0.000	588.20E+3	0.054
361	L2S2D028	Down-dip	2	2	28	8.02E+6	3	29.07E-6	000.00E+0	63.43E-6	000.00E+0	8.75E+21	0.000	000.00E+0	8.751
362	L2S2D029	Down-dip	2	2	29	199.00E+3	11	201.80E-9	287.00E-3	1.09E-6	7.54E+0	464.80E-3	0.000	595.10E+3	0.277
363	L2S2D048	Down-dip	2	2	48	194.60E+3	11	2.80E-6	128.90E-3	13.02E-6	2.41E+0	15.54E+0	0.000	237.80E+3	3.696
364	L2S2D055	Down-dip	2	2	55	214.20E+3	11	2.92E-9	331.80E-3	14.82E-9	7.61E+0	5.86E-3	0.000	680.60E+3	0.004
365	L2S2D058	Down-dip	2	2	58	189.50E+3	11	736.70E-9	266.40E-3	3.59E-6	5.60E+0	1.92E+0	0.000	512.40E+3	0.981
366	L2S2D076	Down-dip	2	2	76	190.10E+3	11	90.05E-9	144.70E-3	602.30E-9	6.64E+0	350.10E-3	0.000	384.30E+3	0.135
367	L2S2H028	Down-dip	2	2	28	8.01E+6	3	26.15E-6	000.00E+0	56.96E-6	000.00E+0	7.87E+21	0.000	000.00E+0	7.871
368	L2S2H029	Down-dip	2	2	29	178.20E+3	11	101.50E-9	215.50E-3	529.50E-9	5.33E+0	316.10E-3	0.000	434.50E+3	0.137
369	L2S2H033	Down-dip	2	2	33	427.20E+3	11	13.30E-6	86.45E-3	50.28E-6	822.90E-3	129.80E+0	0.000	129.20E+3	16.780
370	L2S2H036	Down-dip	2	2	36	2.62E+6	8	23.17E-6	33.15E-3	64.88E-6	122.90E-3	688.00E+0	0.000	28.65E+3	19.710
371	L2S2H046	Down-dip	2	2	46	180.20E+3	11	671.60E-9	137.20E-3	3.87E-6	4.22E+0	3.09E+0	0.000	307.80E+3	0.952
372	L2S2H051	Down-dip	2	2	51	2.47E+6	11	23.25E-6	38.26E-3	71.17E-6	151.60E-3	603.60E+0	0.000	46.65E+3	28.160
373	L2S2H058	Down-dip	2	2	58	170.60E+3	11	2.18E-6	134.60E-3	8.99E-6	1.95E+0	12.25E+0	0.000	225.60E+3	2.764
374	L2S2H067	Down-dip	2	2	67	7.97E+6	3	11.91E-6	246.10E-6	22.87E-6	326.60E-6	53.59E+3	0.000	66.30E+0	3.552
375	L2S2H068	Down-dip	2	2	68	190.30E+3	11	1.52E-9	147.10E-3	8.52E-9	4.73E+0	6.28E-3	0.000	349.00E+3	0.002
376	L2S2H074	Down-dip	2	2	74	7.99E+6	3	34.23E-6	56.36E-6	60.75E-6	56.36E-6	1.19E+6	0.000	8.48E+0	10.020
377	L2S2H076	Down-dip	2	2	76	196.10E+3	11	46.39E-9	140.10E-3	324.70E-9	7.15E+0	182.30E-3	0.000	385.10E+3	0.070
378	L2S2H081	Down-dip	2	2	81	7.98E+6	3	1.20E-6	21.12E-9	3.16E-6	54.19E-9	57.12E+6	0.000	5.99E-3	0.342
379	L2S2J023	Down-dip	2	2	23	169.10E+3	11	13.45E-9	78.78E-3	81.66E-9	3.59E+0	91.39E-3	0.000	216.60E+3	0.020
380	L2S2J028	Down-dip	2	2	28	8.00E+6	3	16.49E-6	000.00E+0	34.75E-6	000.00E+0	4.96E+21	0.000	000.00E+0	4.957
381	L2S2J029	Down-dip	2	2	29	169.90E+3	11	20.58E-9	182.60E-3	107.10E-9	4.51E+0	75.80E-3	0.000	367.10E+3	0.028
382	L2S2J033	Down-dip	2	2	33	196.30E+3	11	1.40E-6	185.60E-3	6.81E-6	3.88E+0	5.16E+0	0.000	365.90E+3	1.890
383	L2S2J036	Down-dip	2	2	36	198.70E+3	11	3.13E-6	136.80E-3	12.21E-6	1.77E+0	17.31E+0	0.000	229.60E+3	3.975
384	L2S2J037	Down-dip	2	2	37	213.70E+3	11	5.29E-6	82.31E-3	19.55E-6	877.50E-3	52.24E+0	0.000	125.30E+3	6.546
385	L2S2J046	Down-dip	2	2	46	231.40E+3	11	3.62E-9	214.10E-3	25.53E-9	11.03E+0	9.49E-3	0.000	578.40E+3	0.005
386	L2S2J051	Down-dip	2	2	51	251.50E+3	11	7.04E-6	151.40E-3	25.52E-6	1.54E+0	37.60E+0	0.000	233.50E+3	8.782
387	L2S2J067	Down-dip	2	2	67	6.06E+6	3	24.25E-6	11.76E-3	53.31E-6	25.96E-3	2.08E+3	0.000	3.45E+3	7.165
388	L2S2J074	Down-dip	2	2	74	7.99E+6	3	31.43E-6	65.74E-6	55.12E-6	65.74E-6	875.30E+3	0.000	10.56E+0	9.180
389	L2S2J076	Down-dip	2	2	76	193.00E+3	11	16.19E-9	132.20E-3	111.70E-9	6.70E+0	67.57E-3	0.000	361.50E+3	0.024
390	L2S2L028	Down-dip	2	2	28	8.00E+6	3	11.87E-6	000.00E+0	23.77E-6	000.00E+0	3.55E+21	0.000	000.00E+0	3.554
391	L2S2L033	Down-dip	2	2	33	6.14E+6	3	21.37E-6	8.83E-3	48.87E-6	20.84E-3	2.42E+3	0.000	2.62E+3	6.327
392	L2S2L046	Down-dip	2	2	46	181.50E+3	11	756.80E-9	136.70E-3	4.34E-6	4.15E+0	3.51E+0	0.000	305.10E+3	1.070
393	L2S2L051	Down-dip	2	2	51	4.75E+6	3	19.01E-6	14.06E-3	39.09E-6	30.40E-3	1.36E+3	0.000	4.09E+3	5.564
394	L2S2L076	Down-dip	2	2	76	161.10E+3	11	161.30E-9	96.67E-3	963.60E-9	3.44E+0	1.01E+0	0.000	230.00E+3	0.231
395	L2S3F003	Down-dip	2	3	3	8.93E+6	11	788.80E-9	134.80E-3	3.60E-6	2.51E+0	4.16E+0	0.000	247.70E+3	1.031
396	L2S3F008	Down-dip	2	3	8	8.32E+6	3	38.85E-6	1.25E-6	116.40E-6	1.55E-6	34.24E+6	0.000	328.70E-3	11.250

No.	File (*.TXT)	ID	Rep	Scen	Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
353	L2S2C075	Down-dip	2	2	75	2.435	4.44E+6	0.524	8.10E+6	0.169	82.01E+3	21.18E+3
354	L2S2C076	Down-dip	2	2	76	0.181	3.19E+6	0.572	8.89E+6	0.119	86.31E+3	20.15E+3
355	L2S2C077	Down-dip	2	2	77	0.953	8.32E+6	0.879	5.82E+6	0.876	72.51E+3	63.55E+3
356	L2S2C081	Down-dip	2	2	81	2.091	5.27E+6	0.481	11.90E+6	0.233	101.50E+3	30.05E+3
357	L2S2C090	Down-dip	2	2	90	0.000	4.41E+6	0.100	11.85E+6	0.060	101.50E+3	6.66E+3
358	L2S2D008	Down-dip	2	2	8	4.139	8.84E+6	0.987	8.87E+6	0.050	79.14E+3	40.92E+3
359	L2S2D011	Down-dip	2	2	11	5.217	9.46E+6	0.881	9.38E+6	0.212	84.00E+3	45.39E+3
360	L2S2D022	Down-dip	2	2	22	0.051	4.36E+6	0.166	9.94E+6	0.121	84.63E+3	12.27E+3
361	L2S2D028	Down-dip	2	2	28	8.575	9.88E+6	0.919	9.63E+6	0.735	83.01E+3	67.98E+3
362	L2S2D029	Down-dip	2	2	29	0.260	4.69E+6	0.313	11.22E+6	0.069	90.01E+3	11.66E+3
363	L2S2D048	Down-dip	2	2	48	3.604	4.78E+6	0.579	9.61E+6	0.187	82.26E+3	23.65E+3
364	L2S2D055	Down-dip	2	2	55	0.004	4.13E+6	0.090	10.01E+6	0.016	84.28E+3	2.81E+3
385	L2S2D058	Down-dip	2	2	58	0.957	4.87E+6	0.315	10.66E+6	0.070	88.49E+3	11.56E+3
366	L2S2D076	Down-dip	2	2	76	0.129	3.32E+6	0.557	10.37E+6	0.116	85.93E+3	19.60E+3
367	L2S2H028	Down-dip	2	2	28	7.713	9.80E+6	0.915	9.80E+6	0.846	74.94E+3	65.78E+3
368	L2S2H029	Down-dip	2	2	29	0.130	4.08E+6	0.295	9.52E+6	0.032	73.74E+3	7.14E+3
369	L2S2H033	Down-dip	2	2	33	15.720	6.68E+6	0.667	10.23E+6	0.058	76.60E+3	19.01E+3
370	L2S2H036	Down-dip	2	2	36	18.490	8.41E+6	0.744	9.52E+6	0.000	73.66E+3	21.09E+3
371	L2S2H046	Down-dip	2	2	46	0.950	3.89E+6	0.548	10.01E+6	0.176	75.71E+3	20.27E+3
372	L2S2H051	Down-dip	2	2	51	26.930	8.78E+6	0.699	10.22E+6	0.048	76.53E+3	22.41E+3
373	L2S2H058	Down-dip	2	2	58	2.649	4.68E+6	0.417	8.37E+6	0.028	67.83E+3	8.61E+3
374	L2S2H067	Down-dip	2	2	67	3.480	9.05E+6	0.889	9.06E+6	0.160	71.54E+3	36.77E+3
375	L2S2H068	Down-dip	2	2	68	0.002	2.99E+6	0.406	8.54E+6	0.154	68.80E+3	14.91E+3
376	L2S2H074	Down-dip	2	2	74	9.809	10.76E+6	0.867	10.80E+6	0.439	79.02E+3	50.52E+3
377	L2S2H076	Down-dip	2	2	76	0.069	3.21E+6	0.543	10.56E+6	0.106	77.99E+3	16.96E+3
378	L2S2H081	Down-dip	2	2	81	0.335	8.07E+6	0.991	7.97E+6	0.118	65.86E+3	32.99E+3
379	L2S2J023	Down-dip	2	2	23	0.020	2.48E+6	0.609	8.15E+6	0.219	65.30E+3	20.76E+3
380	L2S2J028	Down-dip	2	2	28	4.857	9.16E+6	0.909	9.13E+6	0.877	71.90E+3	64.02E+3
381	L2S2J029	Down-dip	2	2	29	0.026	3.57E+6	0.252	8.23E+6	0.003	65.76E+3	4.24E+3
382	L2S2J033	Down-dip	2	2	33	1.790	4.90E+6	0.477	10.90E+6	0.002	79.36E+3	12.13E+3
383	L2S2J036	Down-dip	2	2	36	3.715	5.38E+6	0.513	9.65E+6	0.000	74.21E+3	13.16E+3
384	L2S2J037	Down-dip	2	2	37	6.267	5.48E+6	0.597	8.55E+6	0.022	67.38E+3	15.96E+3
385	L2S2J046	Down-dip	2	2	46	0.005	3.34E+6	0.416	11.47E+6	0.070	81.80E+3	12.68E+3
388	L2S2J051	Down-dip	2	2	51	8.697	6.79E+6	0.510	10.90E+6	0.003	79.35E+3	14.97E+3
387	L2S2J067	Down-dip	2	2	67	7.018	9.78E+6	0.819	10.00E+6	0.044	75.61E+3	29.09E+3
388	L2S2J074	Down-dip	2	2	74	8.990	10.57E+6	0.864	10.60E+6	0.164	78.14E+3	39.75E+3
389	L2S2J076	Down-dip	2	2	76	0.024	2.99E+6	0.526	9.82E+6	0.079	74.95E+3	14.42E+3
390	L2S2L028	Down-dip	2	2	28	3.482	8.86E+6	0.896	8.82E+6	0.873	69.49E+3	61.16E+3
391	L2S2L033	Down-dip	2	2	33	6.197	9.01E+6	0.831	9.19E+6	0.000	72.05E+3	18.35E+3
392	L2S2L046	Down-dip	2	2	46	1.068	3.94E+6	0.553	10.06E+6	0.000	75.94E+3	10.73E+3
393	L2S2L051	Down-dip	2	2	51	5.449	8.26E+6	0.739	8.43E+6	0.000	66.45E+3	17.51E+3
394	L2S2L076	Down-dip	2	2	76	0.219	3.06E+6	0.578	8.49E+6	0.027	66.87E+3	11.16E+3
395	L2S3F003	Down-dip	2	3	3	0.983	4.12E+6	0.447	8.32E+6	0.228	67.88E+3	21.09E+3
396	L2S3F008	Down-dip	2	3	8	11.010	10.30E+6	0.987	10.00E+6	0.027	76.30E+3	32.70E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
397	L2S3F011	Down-dip	2	3	11	1,200	0.536	0.117	0.326	1.296	10.41E+6	0.046	11.22E+6	0.878	-1.309	92.90E-15
398	L2S3F016	Down-dip	2	3	16	1,200	0.513	0.102	0.156	1.232	8.93E+6	0.213	8.90E+6	0.489	-1.290	87.64E-15
399	L2S3F019	Down-dip	2	3	19	1,200	0.503	0.107	0.197	1.209	8.38E+6	0.248	8.48E+6	0.887	-1.269	85.26E-15
400	L2S3F022	Down-dip	2	3	22	1,200	0.551	0.095	0.017	1.338	11.79E+6	0.113	11.79E+6	0.157	-0.815	79.38E-15
401	L2S3F025	Down-dip	2	3	25	1,200	0.504	0.022	0.478	1.212	6.44E+6	0.237	8.52E+6	0.975	-1.284	85.96E-15
402	L2S3F028	Down-dip	2	3	28	1,200	0.530	0.126	0.029	1.279	9.65E+6	0.901	11.69E+6	0.958	-1.281	90.66E-15
403	L2S3F030	Down-dip	2	3	30	1,200	0.535	0.105	0.079	1.291	10.50E+6	0.038	10.46E+6	0.222	-1.289	91.77E-15
404	L2S3F033	Down-dip	2	3	33	1,200	0.497	0.041	0.206	1.194	8.07E+6	0.159	8.08E+6	0.757	-1.206	82.08E-15
405	L2S3F036	Down-dip	2	3	36	1,200	0.509	0.074	0.163	1.223	8.70E+6	0.002	8.72E+6	0.855	-0.945	76.01E-15
406	L2S3F044	Down-dip	2	3	44	1,200	0.505	0.150	0.172	1.213	8.48E+6	0.209	8.50E+6	0.817	-1.331	87.76E-15
407	L2S3F046	Down-dip	2	3	46	1,200	0.510	0.017	0.354	1.225	8.75E+6	0.232	8.75E+6	0.446	-1.301	87.49E-15
408	L2S3F047	Down-dip	2	3	47	1,200	0.510	0.047	0.415	1.225	8.68E+6	0.174	9.02E+6	0.948	-1.085	80.26E-15
409	L2S3F051	Down-dip	2	3	51	1,200	0.519	0.101	0.057	1.247	9.26E+6	0.104	9.27E+6	0.588	-1.005	79.26E-15
410	L2S3F055	Down-dip	2	3	55	1,200	0.568	0.065	0.002	1.389	13.22E+6	0.005	13.22E+6	0.031	-1.055	89.96E-15
411	L2S3F058	Down-dip	2	3	58	1,200	0.563	0.025	0.045	1.373	12.76E+6	0.054	12.76E+6	0.062	-1.380	101.40E-15
412	L2S3F074	Down-dip	2	3	74	1,200	0.478	0.129	0.007	1.151	6.76E+6	0.864	8.05E+6	0.863	-0.772	67.29E-15
413	L2S3F075	Down-dip	2	3	75	1,200	0.558	0.053	0.225	1.357	12.34E+6	0.148	12.34E+6	0.253	-1.328	98.12E-15
414	L2S3F077	Down-dip	2	3	77	1,200	0.484	0.120	0.402	1.166	6.90E+6	0.876	8.99E+6	0.876	-1.307	83.54E-15
415	L2S3F078	Down-dip	2	3	78	1,200	0.499	0.076	0.127	1.198	8.14E+6	0.190	8.14E+6	0.305	-1.314	86.03E-15
416	L2S3F096	Down-dip	2	3	96	1,200	0.509	0.088	0.302	1.223	8.73E+6	0.003	8.70E+6	0.317	-1.260	85.94E-15
417	L2S3G008	Down-dip	2	3	8	1,400	0.525	0.007	0.193	1.264	9.71E+6	0.020	9.82E+6	0.987	-1.327	91.29E-15
418	L2S3G011	Down-dip	2	3	11	1,400	0.524	0.117	0.326	1.262	9.64E+6	0.039	9.76E+6	0.878	-1.299	90.10E-15
419	L2S3G022	Down-dip	2	3	22	1,400	0.536	0.095	0.017	1.293	10.55E+6	0.114	10.54E+6	0.175	-0.807	76.54E-15
420	L2S3G028	Down-dip	2	3	28	1,400	0.526	0.126	0.029	1.266	9.75E+6	0.901	9.84E+6	0.945	-1.266	89.12E-15
421	L2S3G033	Down-dip	2	3	33	1,400	0.507	0.041	0.206	1.218	8.62E+6	0.122	8.63E+6	0.717	-1.204	83.64E-15
422	L2S3G036	Down-dip	2	3	36	1,400	0.508	0.074	0.163	1.221	8.67E+6	0.000	8.69E+6	0.833	-0.945	75.89E-15
423	L2S3G046	Down-dip	2	3	46	1,400	0.514	0.017	0.354	1.236	9.01E+6	0.212	9.01E+6	0.432	-1.303	88.40E-15
424	L2S3G047	Down-dip	2	3	47	1,400	0.506	0.047	0.415	1.214	8.51E+6	0.154	8.64E+6	0.948	-1.082	79.47E-15
425	L2S3G051	Down-dip	2	3	51	1,400	0.521	0.101	0.057	1.253	9.41E+6	0.091	9.42E+6	0.568	-1.006	79.65E-15
426	L2S3G055	Down-dip	2	3	55	1,400	0.536	0.065	0.002	1.293	10.53E+6	0.002	10.51E+6	0.053	-1.037	83.16E-15
427	L2S3G058	Down-dip	2	3	58	1,400	0.548	0.025	0.045	1.328	11.52E+6	0.049	11.51E+6	0.060	-1.374	97.91E-15
428	L2S3I028	Down-dip	2	3	28	3,000	0.517	0.126	0.029	1.242	9.17E+6	0.887	9.25E+6	0.934	-1.260	87.26E-15
429	L2S3I033	Down-dip	2	3	33	3,000	0.540	0.041	0.206	1.305	10.84E+6	0.005	10.85E+6	0.478	-1.132	87.07E-15
430	L2S3I036	Down-dip	2	3	36	3,000	0.497	0.074	0.163	1.193	8.24E+6	0.000	8.25E+6	0.627	-0.944	74.12E-15
431	L2S3I037	Down-dip	2	3	37	3,000	0.498	0.111	0.232	1.195	8.30E+6	0.046	8.30E+6	0.588	-1.277	84.55E-15
432	L2S3I051	Down-dip	2	3	51	3,000	0.533	0.101	0.057	1.285	10.29E+6	0.020	10.29E+6	0.430	-1.013	81.90E-15
433	L2S3I067	Down-dip	2	3	67	3,000	0.508	0.072	0.256	1.220	8.78E+6	0.000	8.80E+6	0.856	-1.015	77.82E-15
434	L2S3I074	Down-dip	2	3	74	3,000	0.534	0.129	0.007	1.287	10.35E+6	0.329	10.37E+6	0.823	-0.789	75.72E-15
435	L2S3K023	Down-dip	2	3	23	5,000	0.486	0.082	0.547	1.169	8.01E+6	0.185	8.01E+6	0.610	-0.897	71.38E-15
436	L2S3K028	Down-dip	2	3	28	5,000	0.509	0.126	0.029	1.223	8.88E+6	0.877	8.95E+6	0.922	-1.260	85.93E-15
437	L2S3K033	Down-dip	2	3	33	5,000	0.538	0.041	0.206	1.301	10.72E+6	0.000	10.73E+6	0.407	-1.131	86.73E-15
438	L2S3K037	Down-dip	2	3	37	5,000	0.486	0.111	0.232	1.169	8.02E+6	0.000	8.02E+6	0.466	-1.279	82.79E-15
439	L2S3K051	Down-dip	2	3	51	5,000	0.530	0.101	0.057	1.278	10.12E+6	0.000	10.12E+6	0.387	-1.012	81.45E-15
440	L2S3K067	Down-dip	2	3	67	5,000	0.512	0.072	0.256	1.230	8.99E+6	0.000	9.00E+6	0.785	-1.016	78.47E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
397	L2S3F011	Down-dip	2	3	11	5.89E-12	1.043	14.82E+6	30.90E-15	000.00E+0	1.00E+0	479.60E-3	1.00E-6	000.00E+0	7.99E+6
398	L2S3F016	Down-dip	2	3	16	2.63E-12	1.004	12.49E+6	154.90E-15	47.82E-6	841.10E-3	32.31E-3	225.40E-3	192.40E+3	187.10E+3
399	L2S3F019	Down-dip	2	3	19	50.12E-15	0.962	12.05E+6	371.50E-15	38.65E-6	847.90E-3	571.80E-3	1.09E-6	185.80E+3	7.99E+6
400	L2S3F022	Down-dip	2	3	22	26.84E-15	0.388	12.13E+6	87.10E-15	186.50E-6	777.00E-3	737.70E-6	679.80E-3	224.30E+3	212.70E+3
401	L2S3F025	Down-dip	2	3	25	3.02E-12	0.992	12.10E+6	38.90E-15	000.00E+0	1.00E+0	831.90E-3	589.50E-9	000.00E+0	7.98E+6
402	L2S3F028	Down-dip	2	3	28	616.60E-15	0.986	15.33E+6	26.30E-15	670.90E-3	000.00E+0	849.50E-3	000.00E+0	8.00E+6	8.01E+6
403	L2S3F030	Down-dip	2	3	30	3.09E-12	1.001	12.91E+6	9.77E-15	000.00E+0	1.00E+0	1.04E-3	644.00E-3	000.00E+0	191.70E+3
404	L2S3F033	Down-dip	2	3	33	10.23E-15	0.849	11.65E+6	43.65E-12	000.00E+0	1.00E+0	260.10E-3	29.42E-3	000.00E+0	2.03E+6
405	L2S3F036	Down-dip	2	3	36	13.18E-15	0.504	12.29E+6	33.11E-15	000.00E+0	1.00E+0	494.00E-3	1.34E-3	000.00E+0	7.75E+6
406	L2S3F044	Down-dip	2	3	44	93.33E-15	1.088	12.07E+6	46.77E-15	10.77E-6	886.20E-3	398.10E-3	193.70E-6	195.20E+3	7.99E+6
407	L2S3F046	Down-dip	2	3	46	13.18E-15	1.025	12.23E+6	17.38E-15	000.00E+0	1.00E+0	744.70E-6	701.10E-3	000.00E+0	171.20E+3
408	L2S3F047	Down-dip	2	3	47	691.80E-15	0.666	12.60E+6	15.85E-15	000.00E+0	1.00E+0	710.40E-3	986.40E-9	000.00E+0	7.98E+6
409	L2S3F051	Down-dip	2	3	51	11.75E-15	0.567	12.84E+6	2.34E-12	16.05E-6	883.80E-3	119.80E-3	74.29E-3	204.80E+3	327.60E+3
410	L2S3F055	Down-dip	2	3	55	58.88E-15	0.627	16.32E+6	85.11E-12	895.40E-12	992.40E-3	2.16E-6	935.80E-3	309.20E+3	284.00E+3
411	L2S3F058	Down-dip	2	3	58	30.90E-15	1.201	14.28E+6	186.20E-15	27.37E-9	981.40E-3	295.10E-9	964.30E-3	296.00E+3	287.20E+3
412	L2S3F074	Down-dip	2	3	74	22.91E-15	0.356	11.64E+6	436.50E-15	579.60E-3	940.60E-9	578.60E-3	1.12E-6	000.00E+0	7.98E+6
413	L2S3F075	Down-dip	2	3	75	204.20E-15	1.083	14.22E+6	588.80E-15	000.00E+0	1.00E+0	4.56E-6	921.00E-3	000.00E+0	263.40E+3
414	L2S3F077	Down-dip	2	3	77	812.80E-15	1.039	12.60E+6	147.90E-15	424.60E-3	910.30E-9	424.40E-3	962.20E-9	000.00E+0	7.99E+6
415	L2S3F078	Down-dip	2	3	78	102.30E-15	1.053	11.61E+6	131.80E-15	63.44E-6	834.70E-3	2.81E-3	555.70E-3	179.10E+3	156.60E+3
416	L2S3F096	Down-dip	2	3	96	2.24E-12	0.946	12.27E+6	1.74E-12	000.00E+0	1.00E+0	711.60E-9	949.30E-3	000.00E+0	212.60E+3
417	L2S3G008	Down-dip	2	3	8	120.20E-15	1.080	14.38E+6	3.09E-15	000.00E+0	1.00E+0	943.20E-3	543.80E-9	000.00E+0	7.98E+6
418	L2S3G011	Down-dip	2	3	11	5.89E-12	1.022	14.72E+6	30.90E-15	000.00E+0	1.00E+0	479.20E-3	1.09E-6	000.00E+0	7.99E+6
419	L2S3G022	Down-dip	2	3	22	28.84E-15	0.382	12.13E+6	87.10E-15	195.80E-6	774.10E-3	1.16E-3	640.60E-3	205.50E+3	192.10E+3
420	L2S3G028	Down-dip	2	3	28	616.60E-15	0.957	15.30E+6	26.30E-15	673.00E-3	000.00E+0	806.90E-3	000.00E+0	8.00E+6	8.00E+6
421	L2S3G033	Down-dip	2	3	33	10.23E-15	0.845	11.67E+6	43.65E-12	000.00E+0	1.00E+0	195.80E-3	50.00E-3	000.00E+0	439.60E+3
422	L2S3G036	Down-dip	2	3	36	13.18E-15	0.504	12.29E+6	33.11E-15	000.00E+0	1.00E+0	439.60E-3	2.92E-3	000.00E+0	7.36E+6
423	L2S3G046	Down-dip	2	3	46	13.18E-15	1.031	12.23E+6	17.38E-15	000.00E+0	1.00E+0	404.00E-6	745.50E-3	000.00E+0	178.70E+3
424	L2S3G047	Down-dip	2	3	47	691.80E-15	0.662	12.59E+6	15.85E-15	000.00E+0	1.00E+0	710.30E-3	994.80E-9	000.00E+0	7.98E+6
425	L2S3G051	Down-dip	2	3	51	11.75E-15	0.569	12.85E+6	2.34E-12	4.78E-6	916.50E-3	104.50E-3	88.02E-3	214.60E+3	559.20E+3
426	L2S3G055	Down-dip	2	3	55	58.88E-15	0.605	15.92E+6	85.11E-12	000.00E+0	1.00E+0	17.53E-6	886.20E-3	000.00E+0	223.70E+3
427	L2S3G058	Down-dip	2	3	58	30.90E-15	1.187	14.28E+6	186.20E-15	1.29E-9	991.90E-3	175.30E-9	969.00E-3	276.70E+3	266.60E+3
428	L2S3I028	Down-dip	2	3	28	616.60E-15	0.946	15.23E+6	26.30E-15	632.40E-3	000.00E+0	771.50E-3	000.00E+0	8.00E+6	8.00E+6
429	L2S3I033	Down-dip	2	3	33	10.23E-15	0.731	11.90E+6	43.65E-12	000.00E+0	1.00E+0	19.01E-3	336.20E-3	000.00E+0	198.50E+3
430	L2S3I036	Down-dip	2	3	36	13.18E-15	0.503	12.29E+6	33.11E-15	000.00E+0	1.00E+0	113.40E-3	87.15E-3	000.00E+0	500.90E+3
431	L2S3I037	Down-dip	2	3	37	26.30E-15	0.977	10.38E+6	831.80E-15	000.00E+0	1.00E+0	58.59E-3	135.50E-3	000.00E+0	210.40E+3
432	L2S3I051	Down-dip	2	3	51	11.75E-15	0.577	12.86E+6	2.34E-12	000.00E+0	1.00E+0	32.58E-3	232.30E-3	000.00E+0	206.80E+3
433	L2S3I067	Down-dip	2	3	67	16.98E-15	0.579	11.19E+6	741.30E-15	000.00E+0	1.00E+0	451.80E-3	2.03E-3	000.00E+0	7.57E+6
434	L2S3I074	Down-dip	2	3	74	22.91E-15	0.369	11.65E+6	436.50E-15	15.60E-3	319.70E-3	484.70E-3	278.20E-6	190.10E+3	7.99E+6
435	L2S3K023	Down-dip	2	3	23	33.88E-15	0.457	14.22E+6	3.98E-12	000.00E+0	1.00E+0	677.40E-6	656.50E-3	000.00E+0	161.60E+3
436	L2S3K028	Down-dip	2	3	28	616.60E-15	0.945	15.21E+6	26.30E-15	607.00E-3	000.00E+0	735.20E-3	000.00E+0	8.00E+6	8.00E+6
437	L2S3K033	Down-dip	2	3	33	10.23E-15	0.730	11.99E+6	43.65E-12	000.00E+0	1.00E+0	6.20E-3	481.30E-3	000.00E+0	188.60E+3
438	L2S3K037	Down-dip	2	3	37	26.30E-15	0.982	10.42E+6	831.80E-15	000.00E+0	1.00E+0	12.54E-3	341.20E-3	000.00E+0	157.30E+3
439	L2S3K051	Down-dip	2	3	51	11.75E-15	0.575	12.87E+6	2.34E-12	000.00E+0	1.00E+0	20.78E-3	293.90E-3	000.00E+0	191.50E+3
440	L2S3K067	Down-dip	2	3	67	16.98E-15	0.580	11.20E+6	741.30E-15	000.00E+0	1.00E+0	284.60E-3	15.02E-3	000.00E+0	4.15E+6

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
397	L2S3F011	Down-dip	2	3	11	9.97E+6	3	34.20E-6	223.10E-6	68.83E-6	223.10E-6	305.50E+3	0.000	34.33E+0	10.410
398	L2S3F016	Down-dip	2	3	16	8.10E+6	11	2.97E-6	121.80E-3	11.77E-6	1.61E+0	18.77E+0	0.000	198.90E+3	3.734
399	L2S3F019	Down-dip	2	3	19	9.02E+6	3	6.04E-6	849.00E-9	11.47E-6	849.00E-9	9.96E+6	0.000	181.10E-3	1.800
400	L2S3F022	Down-dip	2	3	22	6.85E+6	11	65.59E-9	347.20E-3	324.00E-9	7.62E+0	125.30E-3	0.000	715.40E+3	0.090
401	L2S3F025	Down-dip	2	3	25	8.66E+6	3	6.98E-6	187.60E-9	18.21E-6	246.50E-9	40.63E+6	0.000	49.89E-3	2.026
402	L2S3F028	Down-dip	2	3	28	10.08E+6	3	52.25E-6	000.00E+0	135.40E-6	000.00E+0	15.44E+21	0.000	000.00E+0	15.440
403	L2S3F030	Down-dip	2	3	30	2.62E+6	11	89.17E-9	267.10E-3	466.90E-9	6.61E+0	222.10E-3	0.000	547.20E+3	0.122
404	L2S3F033	Down-dip	2	3	33	8.69E+6	5	23.13E-6	31.94E-3	61.68E-6	124.60E-3	697.70E+0	0.000	17.07E+3	11.920
405	L2S3F036	Down-dip	2	3	36	8.61E+6	3	9.35E-6	577.40E-6	17.36E-6	902.90E-6	17.06E+3	0.000	161.90E+0	2.761
406	L2S3F044	Down-dip	2	3	44	8.70E+6	3	5.41E-6	72.40E-6	8.58E-6	78.24E-6	85.51E+3	0.000	18.25E+0	1.560
407	L2S3F046	Down-dip	2	3	46	3.66E+6	11	43.74E-9	136.40E-3	266.80E-9	4.84E+0	196.00E-3	0.000	321.40E+3	0.063
408	L2S3F047	Down-dip	2	3	47	8.59E+6	3	12.46E-6	1.80E-6	28.11E-6	1.80E-6	8.94E+6	0.000	413.20E-3	3.689
409	L2S3F051	Down-dip	2	3	51	9.77E+6	11	12.81E-6	76.57E-3	40.55E-6	512.10E-3	148.80E+0	0.000	103.90E+3	15.470
410	L2S3F055	Down-dip	2	3	55	13.36E+6	11	202.30E-12	480.90E-3	1.20E-9	14.76E+0	265.20E-6	0.000	1.09E+6	0.000
411	L2S3F058	Down-dip	2	3	58	9.74E+6	11	28.07E-12	435.10E-3	178.40E-12	16.00E+0	39.86E-6	0.000	1.02E+6	0.000
412	L2S3F074	Down-dip	2	3	74	8.65E+6	3	731.10E-9	30.67E-9	1.20E-6	41.34E-9	25.43E+6	0.000	8.27E-3	0.210
413	L2S3F075	Down-dip	2	3	75	10.71E+6	11	395.40E-12	316.20E-3	2.58E-9	13.86E+0	734.60E-6	0.000	792.80E+3	0.001
414	L2S3F077	Down-dip	2	3	77	9.40E+6	3	9.43E-6	8.95E-6	17.02E-6	8.95E-6	1.93E+6	0.000	1.46E+0	2.797
415	L2S3F078	Down-dip	2	3	78	7.19E+6	11	195.20E-9	161.80E-3	921.20E-9	3.28E+0	840.30E-3	0.000	306.20E+3	0.257
416	L2S3F096	Down-dip	2	3	96	9.17E+6	11	44.96E-12	173.80E-3	247.70E-12	6.33E+0	155.80E-6	0.000	411.30E+3	0.000
417	L2S3G008	Down-dip	2	3	8	7.99E+6	3	25.48E-6	625.40E-9	75.46E-6	935.80E-9	43.69E+6	0.000	168.80E-3	7.375
418	L2S3G011	Down-dip	2	3	11	8.10E+6	3	19.32E-6	37.32E-6	36.57E-6	37.32E-6	983.40E+3	0.000	5.93E+0	5.789
419	L2S3G022	Down-dip	2	3	22	193.40E+3	11	94.68E-9	287.30E-3	437.80E-9	5.56E+0	224.30E-3	0.000	565.10E+3	0.127
420	L2S3G028	Down-dip	2	3	28	8.02E+6	3	26.19E-6	000.00E+0	63.12E-6	000.00E+0	7.81E+21	0.000	000.00E+0	7.814
421	L2S3G033	Down-dip	2	3	33	440.00E+3	11	18.49E-6	44.91E-3	64.00E-6	310.80E-3	375.40E+0	0.000	60.54E+3	22.730
422	L2S3G036	Down-dip	2	3	36	7.36E+6	3	10.95E-6	1.56E-3	21.08E-6	2.68E-3	7.26E+3	0.000	445.80E+0	3.236
423	L2S3G046	Down-dip	2	3	46	179.40E+3	11	24.04E-9	145.80E-3	150.50E-9	5.50E+0	99.40E-3	0.000	351.30E+3	0.035
424	L2S3G047	Down-dip	2	3	47	7.99E+6	3	7.86E-6	675.90E-9	17.58E-6	675.90E-9	14.19E+6	0.000	164.00E-3	2.325
425	L2S3G051	Down-dip	2	3	51	559.80E+3	11	10.77E-6	85.53E-3	35.22E-6	612.90E-3	110.30E+0	0.000	118.80E+3	13.110
426	L2S3G055	Down-dip	2	3	55	227.50E+3	11	1.35E-9	333.20E-3	7.16E-9	8.29E+0	2.66E-3	0.000	702.40E+3	0.002
427	L2S3G058	Down-dip	2	3	58	268.30E+3	11	15.17E-12	374.50E-3	92.15E-12	12.69E+0	25.41E-6	0.000	850.40E+3	0.000
428	L2S3I028	Down-dip	2	3	28	8.00E+6	3	17.45E-6	000.00E+0	40.16E-6	000.00E+0	5.23E+21	0.000	000.00E+0	5.233
429	L2S3I033	Down-dip	2	3	33	198.60E+3	11	1.77E-6	177.50E-3	8.42E-6	3.51E+0	6.93E+0	0.000	342.70E+3	2.374
430	L2S3I036	Down-dip	2	3	36	501.00E+3	11	9.52E-6	60.04E-3	31.07E-6	435.20E-3	138.40E+0	0.000	83.55E+3	11.570
431	L2S3I037	Down-dip	2	3	37	210.50E+3	11	5.24E-6	78.02E-3	19.13E-6	810.90E-3	54.89E+0	0.000	117.80E+3	6.466
432	L2S3I051	Down-dip	2	3	51	206.90E+3	11	3.38E-6	169.50E-3	12.85E-6	2.06E+0	15.33E+0	0.000	277.40E+3	4.254
433	L2S3I067	Down-dip	2	3	67	7.57E+6	3	10.50E-6	1.07E-3	20.62E-6	1.79E-3	10.30E+3	0.000	303.70E+0	3.127
434	L2S3I074	Down-dip	2	3	74	7.99E+6	3	24.85E-6	739.00E-6	41.64E-6	739.00E-6	43.18E+3	0.000	168.20E+0	7.252
435	L2S3K023	Down-dip	2	3	23	161.90E+3	11	30.53E-9	74.58E-3	181.00E-9	3.11E+0	225.00E-3	0.000	197.60E+3	0.044
436	L2S3K028	Down-dip	2	3	28	8.00E+6	3	13.02E-6	000.00E+0	28.70E-6	000.00E+0	3.91E+21	0.000	000.00E+0	3.912
437	L2S3K033	Down-dip	2	3	33	188.60E+3	11	522.60E-9	202.70E-3	2.71E-6	4.90E+0	1.71E+0	0.000	421.50E+3	0.719
438	L2S3K037	Down-dip	2	3	37	157.40E+3	11	899.80E-9	111.90E-3	3.90E-6	1.88E+0	5.83E+0	0.000	198.70E+3	1.160
439	L2S3K051	Down-dip	2	3	51	191.50E+3	11	2.03E-6	184.70E-3	8.02E-6	2.51E+0	8.21E+0	0.000	314.00E+3	2.577
440	L2S3K067	Down-dip	2	3	67	4.15E+6	3	23.10E-6	20.65E-3	51.73E-6	54.03E-3	1.10E+3	0.000	6.14E+3	6.748

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
397	L2S3F011	Down-dip	2	3	11	10.200	11.13E+6	0.880	10.41E+6	0.046	78.01E+3	28.36E+3
398	L2S3F016	Down-dip	2	3	16	3.562	5.18E+6	0.505	8.92E+6	0.205	70.89E+3	23.28E+3
399	L2S3F019	Down-dip	2	3	19	1.763	8.49E+6	0.890	8.38E+6	0.244	68.33E+3	31.54E+3
400	L2S3F022	Down-dip	2	3	22	0.088	4.87E+6	0.180	11.75E+6	0.099	82.76E+3	11.83E+3
401	L2S3F025	Down-dip	2	3	25	1.984	8.47E+6	0.975	8.44E+6	0.246	68.58E+3	30.27E+3
402	L2S3F028	Down-dip	2	3	28	15.130	11.34E+6	0.958	9.62E+6	0.649	76.16E+3	59.53E+3
403	L2S3F030	Down-dip	2	3	30	0.115	4.36E+6	0.243	10.47E+6	0.035	77.51E+3	7.81E+3
404	L2S3F033	Down-dip	2	3	33	10.700	7.31E+6	0.764	8.07E+6	0.166	66.66E+3	23.67E+3
405	L2S3F036	Down-dip	2	3	36	2.705	8.69E+6	0.858	8.70E+6	0.002	69.83E+3	16.10E+3
406	L2S3F044	Down-dip	2	3	44	1.527	8.50E+6	0.822	8.48E+6	0.201	68.74E+3	29.20E+3
407	L2S3F046	Down-dip	2	3	46	0.062	3.12E+6	0.462	8.74E+6	0.242	70.04E+3	20.68E+3
408	L2S3F047	Down-dip	2	3	47	3.613	8.95E+6	0.949	8.68E+6	0.180	70.09E+3	31.44E+3
409	L2S3F051	Down-dip	2	3	51	14.790	6.92E+6	0.600	9.26E+6	0.092	72.60E+3	21.06E+3
410	L2S3F055	Down-dip	2	3	55	0.000	4.74E+6	0.069	13.14E+6	0.005	88.51E+3	1.51E+3
411	L2S3F058	Down-dip	2	3	58	0.000	4.39E+6	0.092	12.69E+6	0.054	86.66E+3	5.14E+3
412	L2S3F074	Down-dip	2	3	74	0.206	8.07E+6	0.867	6.74E+6	0.742	61.74E+3	49.18E+3
413	L2S3F075	Down-dip	2	3	75	0.001	3.91E+6	0.281	12.28E+6	0.150	84.96E+3	15.26E+3
414	L2S3F077	Down-dip	2	3	77	2.740	8.99E+6	0.879	6.87E+6	0.669	63.41E+3	48.26E+3
415	L2S3F078	Down-dip	2	3	78	0.245	3.87E+6	0.327	8.13E+6	0.186	67.01E+3	17.78E+3
416	L2S3F096	Down-dip	2	3	96	0.000	3.05E+6	0.346	8.71E+6	0.003	69.90E+3	6.13E+3
417	L2S3G008	Down-dip	2	3	8	7.222	9.52E+6	0.987	9.71E+6	0.021	74.45E+3	32.32E+3
418	L2S3G011	Down-dip	2	3	11	5.673	9.72E+6	0.881	9.64E+6	0.039	74.25E+3	27.25E+3
419	L2S3G022	Down-dip	2	3	22	0.123	4.60E+6	0.197	10.52E+6	0.099	77.78E+3	11.97E+3
420	L2S3G028	Down-dip	2	3	28	7.655	9.71E+6	0.946	9.72E+6	0.679	74.65E+3	59.34E+3
421	L2S3G033	Down-dip	2	3	33	21.750	6.42E+6	0.722	8.62E+6	0.134	69.33E+3	22.16E+3
422	L2S3G036	Down-dip	2	3	36	3.170	8.64E+6	0.837	8.67E+6	0.000	69.62E+3	15.24E+3
423	L2S3G046	Down-dip	2	3	46	0.034	3.12E+6	0.448	8.99E+6	0.224	71.32E+3	19.81E+3
424	L2S3G047	Down-dip	2	3	47	2.278	8.60E+6	0.949	8.51E+6	0.161	68.90E+3	30.47E+3
425	L2S3G051	Down-dip	2	3	51	12.550	6.81E+6	0.579	9.41E+6	0.078	73.21E+3	19.95E+3
426	L2S3G055	Down-dip	2	3	55	0.002	4.18E+6	0.079	10.49E+6	0.002	77.70E+3	1.49E+3
427	L2S3G058	Down-dip	2	3	58	0.000	4.14E+6	0.085	11.46E+6	0.049	81.69E+3	4.46E+3
428	L2S3I028	Down-dip	2	3	28	5.127	9.18E+6	0.935	9.15E+6	0.755	72.00E+3	59.93E+3
429	L2S3I033	Down-dip	2	3	33	2.288	5.00E+6	0.492	10.83E+6	0.014	79.08E+3	13.38E+3
430	L2S3I036	Down-dip	2	3	36	11.070	5.93E+6	0.636	8.24E+6	0.000	66.47E+3	10.86E+3
431	L2S3I037	Down-dip	2	3	37	6.190	5.38E+6	0.599	8.29E+6	0.059	66.76E+3	17.72E+3
432	L2S3I051	Down-dip	2	3	51	4.233	5.90E+6	0.445	10.28E+6	0.016	76.80E+3	13.98E+3
433	L2S3I067	Down-dip	2	3	67	3.063	8.76E+6	0.859	8.78E+6	0.000	69.54E+3	26.13E+3
434	L2S3I074	Down-dip	2	3	74	7.102	10.32E+6	0.827	10.35E+6	0.210	77.10E+3	40.23E+3
435	L2S3K023	Down-dip	2	3	23	0.042	2.56E+6	0.622	8.00E+6	0.198	63.76E+3	19.52E+3
436	L2S3K028	Down-dip	2	3	28	3.833	8.91E+6	0.924	8.85E+6	0.806	69.89E+3	59.76E+3
437	L2S3K033	Down-dip	2	3	33	0.713	4.48E+6	0.423	10.70E+6	0.000	78.57E+3	10.13E+3
438	L2S3K037	Down-dip	2	3	37	1.112	4.17E+6	0.481	8.01E+6	0.004	63.83E+3	11.50E+3
439	L2S3K051	Down-dip	2	3	51	2.552	5.50E+6	0.404	10.10E+6	0.000	76.08E+3	11.27E+3
440	L2S3K067	Down-dip	2	3	67	6.608	8.66E+6	0.790	8.99E+6	0.000	70.60E+3	21.44E+3

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
441	L2S3K074	Down-dip	2	3	74	5,000	0.530	0.129	0.007	1.279	10.12E+6	0.100	10.14E+6	0.761	-0.788	75.18E-15
442	L2S3L028	Down-dip	2	3	28	10,000	0.503	0.126	0.029	1.209	8.68E+6	0.873	8.74E+6	0.899	-1.260	84.96E-15
443	L2S3L033	Down-dip	2	3	33	10,000	0.518	0.041	0.206	1.245	9.23E+6	0.000	9.24E+6	0.794	-1.118	82.58E-15
444	L2S3L046	Down-dip	2	3	46	10,000	0.530	0.017	0.354	1.278	10.10E+6	0.000	10.11E+6	0.424	-1.315	91.87E-15
445	L2S3L051	Down-dip	2	3	51	10,000	0.495	0.101	0.057	1.190	8.39E+6	0.000	8.40E+6	0.571	-1.004	75.57E-15
446	L2S4C004	Down-dip	2	4	4	550	0.584	0.005	0.075	1.442	10.43E+6	0.070	10.43E+6	0.092	-1.223	99.75E-15
447	L2S4C022	Down-dip	2	4	22	550	0.585	0.095	0.017	1.446	10.53E+6	0.125	10.53E+6	0.154	-0.769	84.45E-15
448	L2S4C055	Down-dip	2	4	55	550	0.598	0.065	0.002	1.493	11.63E+6	0.021	11.63E+6	0.051	-0.999	94.65E-15
449	L2S4C058	Down-dip	2	4	58	550	0.591	0.025	0.045	1.468	11.05E+6	0.072	11.05E+6	0.078	-1.327	106.10E-15
450	L2S4C081	Down-dip	2	4	81	550	0.599	0.003	0.203	1.497	11.72E+6	0.232	11.71E+6	0.244	-0.760	87.13E-15
451	L2S4C090	Down-dip	2	4	90	550	0.601	0.049	0.044	1.505	11.91E+6	0.060	11.89E+6	0.066	-1.232	104.50E-15
452	L2S4D022	Down-dip	2	4	22	750	0.556	0.095	0.017	1.352	9.99E+6	0.133	9.98E+6	0.183	-0.782	79.35E-15
453	L2S4D055	Down-dip	2	4	55	750	0.557	0.065	0.002	1.355	10.07E+6	0.016	10.05E+6	0.066	-1.009	86.22E-15
454	L2S4D058	Down-dip	2	4	58	750	0.564	0.025	0.045	1.377	10.58E+6	0.071	10.57E+6	0.085	-1.344	100.20E-15
455	L2S4H033	Down-dip	2	4	33	2,000	0.531	0.041	0.206	1.281	10.18E+6	0.043	10.19E+6	0.568	-1.126	85.28E-15
456	L2S4H051	Down-dip	2	4	51	2,000	0.524	0.101	0.057	1.262	9.66E+6	0.057	9.67E+6	0.286	-1.008	80.30E-15
457	L2S4H058	Down-dip	2	4	58	2,000	0.502	0.025	0.045	1.207	8.43E+6	0.028	8.43E+6	0.124	-1.354	88.19E-15
458	L2S4H068	Down-dip	2	4	68	2,000	0.505	0.097	0.351	1.214	8.55E+6	0.151	8.55E+6	0.369	-0.873	73.53E-15
459	L2S4J023	Down-dip	2	4	23	4,000	0.492	0.082	0.547	1.182	8.16E+6	0.205	8.16E+6	0.554	-0.896	72.19E-15
460	L2S4J033	Down-dip	2	4	33	4,000	0.540	0.041	0.206	1.306	10.87E+6	0.000	10.87E+6	0.418	-1.132	87.13E-15
461	L2S4J037	Down-dip	2	4	37	4,000	0.495	0.111	0.232	1.188	8.28E+6	0.010	8.28E+6	0.325	-1.279	84.10E-15
462	L2S4J051	Down-dip	2	4	51	4,000	0.532	0.101	0.057	1.282	10.23E+6	0.001	10.23E+6	0.263	-1.013	81.74E-15
463	L2S4L033	Down-dip	2	4	33	10,000	0.517	0.041	0.206	1.243	9.20E+6	0.000	9.22E+6	0.799	-1.118	82.47E-15
464	L2S4L046	Down-dip	2	4	46	10,000	0.529	0.017	0.354	1.276	10.04E+6	0.000	10.05E+6	0.402	-1.314	91.68E-15
465	L2S4L051	Down-dip	2	4	51	10,000	0.494	0.101	0.057	1.186	8.33E+6	0.000	8.34E+6	0.466	-1.004	75.32E-15
466	L2S5F003	Down-dip	2	5	3	1,200	0.501	0.040	0.184	1.204	8.31E+6	0.231	8.26E+6	0.378	-1.295	85.84E-15
467	L2S5F016	Down-dip	2	5	16	1,200	0.512	0.102	0.156	1.230	8.88E+6	0.214	8.86E+6	0.382	-1.290	87.48E-15
468	L2S5F022	Down-dip	2	5	22	1,200	0.551	0.095	0.017	1.339	11.81E+6	0.113	11.81E+6	0.188	-0.815	79.43E-15
469	L2S5F030	Down-dip	2	5	30	1,200	0.536	0.105	0.079	1.296	10.62E+6	0.038	10.58E+6	0.455	-1.289	92.11E-15
470	L2S5F033	Down-dip	2	5	33	1,200	0.497	0.041	0.206	1.194	8.05E+6	0.159	8.07E+6	0.725	-1.206	82.05E-15
471	L2S5F044	Down-dip	2	5	44	1,200	0.500	0.150	0.172	1.202	8.23E+6	0.213	8.23E+6	0.427	-1.328	86.83E-15
472	L2S5F046	Down-dip	2	5	46	1,200	0.509	0.017	0.354	1.223	8.72E+6	0.232	8.72E+6	0.380	-1.300	87.37E-15
473	L2S5F051	Down-dip	2	5	51	1,200	0.516	0.101	0.057	1.241	9.12E+6	0.106	9.12E+6	0.307	-1.003	78.82E-15
474	L2S5F055	Down-dip	2	5	55	1,200	0.568	0.065	0.002	1.390	13.24E+6	0.005	13.24E+6	0.047	-1.055	89.99E-15
475	L2S5F058	Down-dip	2	5	58	1,200	0.563	0.025	0.045	1.373	12.77E+6	0.054	12.77E+6	0.068	-1.380	101.40E-15
476	L2S5F075	Down-dip	2	5	75	1,200	0.558	0.053	0.225	1.358	12.36E+6	0.148	12.35E+6	0.267	-1.328	98.16E-15
477	L2S5F078	Down-dip	2	5	78	1,200	0.499	0.076	0.127	1.200	8.19E+6	0.190	8.19E+6	0.421	-1.314	86.21E-15
478	L2S5G022	Down-dip	2	5	22	1,400	0.536	0.095	0.017	1.294	10.57E+6	0.114	10.56E+6	0.213	-0.807	76.59E-15
479	L2S5G033	Down-dip	2	5	33	1,400	0.507	0.041	0.206	1.219	8.61E+6	0.122	8.62E+6	0.685	-1.204	83.65E-15
480	L2S5G046	Down-dip	2	5	46	1,400	0.513	0.017	0.354	1.234	8.97E+6	0.213	8.97E+6	0.369	-1.303	88.24E-15
481	L2S5G051	Down-dip	2	5	51	1,400	0.518	0.101	0.057	1.246	9.25E+6	0.092	9.25E+6	0.301	-1.004	79.19E-15
482	L2S5G055	Down-dip	2	5	55	1,400	0.536	0.065	0.002	1.293	10.53E+6	0.002	10.51E+6	0.067	-1.037	83.17E-15
483	L2S5G058	Down-dip	2	5	58	1,400	0.549	0.025	0.045	1.330	11.57E+6	0.049	11.56E+6	0.072	-1.374	98.06E-15
484	L2S5I033	Down-dip	2	5	33	3,000	0.540	0.041	0.206	1.306	10.86E+6	0.000	10.86E+6	0.469	-1.132	87.10E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
441	L2S3K074	Down-dip	2	3	74	22.91E-15	0.368	11.65E+6	436.50E-15	160.20E-6	777.70E-3	361.30E-3	3.35E-3	200.90E+3	7.14E+6
442	L2S3L028	Down-dip	2	3	28	616.60E-15	0.946	15.14E+6	26.30E-15	596.80E-3	3.25E-9	666.10E-3	000.00E+0	8.02E+6	8.00E+6
443	L2S3L033	Down-dip	2	3	33	10.23E-15	0.712	12.13E+6	43.65E-12	000.00E+0	1.00E+0	329.40E-3	16.50E-3	000.00E+0	4.29E+6
444	L2S3L046	Down-dip	2	3	46	13.18E-15	1.055	12.44E+6	17.38E-15	000.00E+0	1.00E+0	267.80E-6	771.80E-3	000.00E+0	196.90E+3
445	L2S3L051	Down-dip	2	3	51	11.75E-15	0.566	12.87E+6	2.34E-12	000.00E+0	1.00E+0	106.80E-3	85.78E-3	000.00E+0	534.80E+3
446	L2S4C004	Down-dip	2	4	4	223.90E-15	0.878	12.47E+6	1.41E-12	000.00E+0	1.00E+0	439.80E-9	961.00E-3	000.00E+0	243.80E+3
447	L2S4C022	Down-dip	2	4	22	28.84E-15	0.354	12.07E+6	87.10E-15	287.70E-6	749.80E-3	685.00E-6	685.90E-3	202.30E+3	195.70E+3
448	L2S4C055	Down-dip	2	4	55	58.88E-15	0.561	14.78E+6	85.11E-12	444.10E-9	958.40E-3	14.80E-6	891.40E-3	264.70E+3	242.80E+3
449	L2S4C058	Down-dip	2	4	58	30.90E-15	1.081	14.25E+6	186.20E-15	1.78E-6	941.50E-3	3.94E-6	927.40E-3	247.30E+3	242.50E+3
450	L2S4C081	Down-dip	2	4	81	933.30E-15	0.347	15.48E+6	125.90E-15	4.70E-6	925.60E-3	16.79E-6	894.60E-3	252.70E+3	243.20E+3
451	L2S4C090	Down-dip	2	4	90	1.74E-12	0.894	14.05E+6	3.47E-12	303.20E-9	963.10E-3	942.20E-9	949.70E-3	271.60E+3	265.50E+3
452	L2S4D022	Down-dip	2	4	22	28.84E-15	0.364	12.07E+6	87.10E-15	372.20E-6	732.20E-3	1.40E-3	622.70E-3	192.70E+3	183.50E+3
453	L2S4D055	Down-dip	2	4	55	58.88E-15	0.572	14.78E+6	85.11E-12	145.60E-9	969.30E-3	39.13E-6	858.40E-3	241.90E+3	210.70E+3
454	L2S4D058	Down-dip	2	4	58	30.90E-15	1.118	14.25E+6	186.20E-15	1.60E-6	943.30E-3	7.98E-6	911.90E-3	240.00E+3	230.00E+3
455	L2S4H033	Down-dip	2	4	33	10.23E-15	0.724	12.67E+6	43.65E-12	000.00E+0	1.00E+0	54.68E-3	192.40E-3	000.00E+0	226.50E+3
456	L2S4H051	Down-dip	2	4	51	11.75E-15	0.571	14.56E+6	2.34E-12	38.83E-15	999.50E-3	5.42E-3	470.80E-3	220.30E+3	174.70E+3
457	L2S4H058	Down-dip	2	4	58	30.90E-15	1.141	14.25E+6	186.20E-15	000.00E+0	1.00E+0	98.02E-6	825.70E-3	000.00E+0	180.40E+3
458	L2S4H068	Down-dip	2	4	68	42.68E-15	0.436	11.78E+6	52.48E-12	000.00E+0	1.00E+0	2.10E-6	930.00E-3	000.00E+0	205.20E+3
459	L2S4J023	Down-dip	2	4	23	33.88E-15	0.456	14.83E+6	3.98E-12	000.00E+0	1.00E+0	254.30E-9	959.20E-3	000.00E+0	207.40E+3
460	L2S4J033	Down-dip	2	4	33	10.23E-15	0.732	12.67E+6	43.65E-12	000.00E+0	1.00E+0	7.52E-3	457.60E-3	000.00E+0	190.80E+3
461	L2S4J037	Down-dip	2	4	37	26.30E-15	0.982	13.23E+6	831.80E-15	000.00E+0	1.00E+0	412.10E-6	710.10E-3	000.00E+0	168.40E+3
462	L2S4J051	Down-dip	2	4	51	11.75E-15	0.576	14.56E+6	2.34E-12	000.00E+0	1.00E+0	3.65E-3	517.80E-3	000.00E+0	182.50E+3
463	L2S4L033	Down-dip	2	4	33	10.23E-15	0.712	12.67E+6	43.65E-12	000.00E+0	1.00E+0	339.70E-3	15.11E-3	000.00E+0	4.60E+6
464	L2S4L046	Down-dip	2	4	46	13.18E-15	1.054	12.93E+6	17.38E-15	000.00E+0	1.00E+0	65.86E-6	843.50E-3	000.00E+0	206.80E+3
465	L2S4L051	Down-dip	2	4	51	11.75E-15	0.566	14.56E+6	2.34E-12	000.00E+0	1.00E+0	45.63E-3	187.20E-3	000.00E+0	192.50E+3
466	L2S5F003	Down-dip	2	5	3	4.07E-12	1.013	16.59E+6	25.70E-12	25.97E-6	875.60E-3	4.91E-3	510.40E-3	187.30E+3	157.00E+3
467	L2S5F016	Down-dip	2	5	16	2.63E-12	1.003	12.90E+6	154.90E-15	50.05E-6	839.10E-3	7.65E-3	420.00E-3	191.40E+3	164.90E+3
468	L2S5F022	Down-dip	2	5	22	28.84E-15	0.388	12.07E+6	87.10E-15	185.60E-6	777.30E-3	1.58E-3	611.10E-3	224.60E+3	207.60E+3
469	L2S5F030	Down-dip	2	5	30	3.09E-12	1.002	12.56E+6	9.77E-15	000.00E+0	1.00E+0	36.78E-3	211.80E-3	000.00E+0	216.80E+3
470	L2S5F033	Down-dip	2	5	33	10.23E-15	0.849	12.67E+6	43.65E-12	000.00E+0	1.00E+0	208.50E-3	44.99E-3	000.00E+0	661.50E+3
471	L2S5F044	Down-dip	2	5	44	93.33E-15	1.082	13.10E+6	46.77E-15	15.67E-6	874.00E-3	12.98E-3	314.50E-3	189.10E+3	160.80E+3
472	L2S5F046	Down-dip	2	5	46	13.18E-15	1.025	12.93E+6	17.38E-15	000.00E+0	1.00E+0	6.44E-6	916.90E-3	000.00E+0	201.90E+3
473	L2S5F051	Down-dip	2	5	51	11.75E-15	0.566	14.56E+6	2.34E-12	17.59E-6	880.80E-3	7.46E-3	430.90E-3	202.00E+3	168.20E+3
474	L2S5F055	Down-dip	2	5	55	58.88E-15	0.627	14.78E+6	85.11E-12	892.70E-12	992.40E-3	10.84E-6	900.20E-3	309.50E+3	272.10E+3
475	L2S5F058	Down-dip	2	5	58	30.90E-15	1.201	14.25E+6	186.20E-15	27.18E-9	981.40E-3	1.01E-6	950.00E-3	296.20E+3	280.80E+3
476	L2S5F075	Down-dip	2	5	75	204.20E-15	1.084	13.99E+6	588.80E-15	000.00E+0	1.00E+0	21.29E-6	879.60E-3	000.00E+0	251.80E+3
477	L2S5F078	Down-dip	2	5	78	102.30E-15	1.054	11.45E+6	131.80E-15	61.02E-6	836.50E-3	17.97E-3	324.60E-3	180.00E+3	162.80E+3
478	L2S5G022	Down-dip	2	5	22	28.84E-15	0.382	12.07E+6	87.10E-15	195.00E-6	774.30E-3	2.61E-3	559.60E-3	205.90E+3	188.00E+3
479	L2S5G033	Down-dip	2	5	33	10.23E-15	0.845	12.67E+6	43.65E-12	000.00E+0	1.00E+0	154.60E-3	70.91E-3	000.00E+0	225.50E+3
480	L2S5G046	Down-dip	2	5	46	13.18E-15	1.030	12.93E+6	17.38E-15	000.00E+0	1.00E+0	883.80E-9	951.80E-3	000.00E+0	216.10E+3
481	L2S5G051	Down-dip	2	5	51	11.75E-15	0.567	14.56E+6	2.34E-12	5.23E-6	914.40E-3	6.85E-3	441.70E-3	211.50E+3	169.70E+3
482	L2S5G055	Down-dip	2	5	55	58.88E-15	0.605	14.78E+6	85.11E-12	000.00E+0	1.00E+0	42.29E-6	855.40E-3	000.00E+0	217.20E+3
483	L2S5G058	Down-dip	2	5	58	30.90E-15	1.188	14.25E+6	186.20E-15	1.07E-9	992.30E-3	1.71E-6	942.20E-3	277.70E+3	256.30E+3
484	L2S5I033	Down-dip	2	5	33	10.23E-15	0.731	12.67E+6	43.65E-12	000.00E+0	1.00E+0	16.92E-3	352.00E-3	000.00E+0	196.90E+3

No.	File (*.TXT)	ID	Rep	Scen	Vector	BC well Injection Pressure (Pa) BHP_ABAN	Blowout Duration (Days) time	Brine Rate (m^3/s) BRINEFLW	Gas Rate (ref m^3/s) GASFLW	Max Brine Rate (m^3/s) MAX_BRN	Max Gas Rate (ref m^3/s) MAX_GAS	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s) LGR_MET	Cum Brine from Boundary Condition Well (m^3) BRINE_BC	Cum Gas Produced (ref m^3) GASOUT	Cum Brine Produced (m^3) BRINEOUT
441	L2S3K074	Down-dip	2	3	74	7.14E+6	3	21.78E-6	5.57E-3	38.99E-6	8.00E-3	4.21E+3	0.000	1.52E+3	6.380
442	L2S3L028	Down-dip	2	3	28	8.00E+6	3	9.86E-6	000.00E+0	20.02E-6	000.00E+0	2.96E+21	0.000	000.00E+0	2.956
443	L2S3L033	Down-dip	2	3	33	4.29E+6	3	27.35E-6	23.20E-3	64.31E-6	65.37E-3	1.16E+3	0.000	6.94E+3	8.014
444	L2S3L046	Down-dip	2	3	46	197.00E+3	11	17.53E-9	172.40E-3	116.40E-9	7.40E+0	59.49E-3	0.000	436.40E+3	0.026
445	L2S3L051	Down-dip	2	3	51	534.90E+3	11	9.56E-6	66.80E-3	30.30E-6	451.20E-3	126.40E+0	0.000	91.19E+3	11.530
446	L2S4C004	Down-dip	2	4	4	000.00E+0	11	38.29E-12	362.20E-3	213.40E-12	10.60E+0	67.48E-6	0.000	796.00E+3	0.000
447	L2S4C022	Down-dip	2	4	22	000.00E+0	11	62.05E-9	341.70E-3	285.70E-9	6.57E+0	123.50E-3	0.000	673.10E+3	0.083
448	L2S4C055	Down-dip	2	4	55	000.00E+0	11	1.41E-9	447.40E-3	7.62E-9	11.55E+0	2.04E-3	0.000	961.20E+3	0.002
449	L2S4C058	Down-dip	2	4	58	000.00E+0	11	369.30E-12	399.90E-3	2.15E-9	12.18E+0	589.90E-6	0.000	881.80E+3	0.001
450	L2S4C081	Down-dip	2	4	81	000.00E+0	11	1.42E-9	347.20E-3	8.01E-9	10.81E+0	2.49E-3	0.000	820.10E+3	0.002
451	L2S4C090	Down-dip	2	4	90	000.00E+0	11	92.84E-12	452.30E-3	546.80E-12	14.16E+0	129.50E-6	0.000	1.02E+6	0.000
452	L2S4D022	Down-dip	2	4	22	000.00E+0	11	117.80E-9	283.90E-3	520.70E-9	5.05E+0	287.20E-3	0.000	542.10E+3	0.156
453	L2S4D055	Down-dip	2	4	55	000.00E+0	11	3.13E-9	333.20E-3	15.85E-9	7.64E+0	6.25E-3	0.000	683.60E+3	0.004
454	L2S4D058	Down-dip	2	4	58	000.00E+0	11	684.50E-12	349.40E-3	3.95E-9	10.38E+0	1.26E-3	0.000	760.80E+3	0.001
455	L2S4H033	Down-dip	2	4	33	000.00E+0	11	5.34E-6	125.60E-3	22.19E-6	1.74E+0	32.44E+0	0.000	212.60E+3	6.897
456	L2S4H051	Down-dip	2	4	51	000.00E+0	11	453.40E-9	212.60E-3	1.97E-6	3.63E+0	1.51E+0	0.000	391.90E+3	0.592
457	L2S4H058	Down-dip	2	4	58	000.00E+0	11	6.56E-9	220.20E-3	34.01E-9	5.33E+0	20.05E-3	0.000	443.10E+3	0.009
458	L2S4H068	Down-dip	2	4	68	000.00E+0	11	115.60E-12	151.90E-3	616.30E-12	5.13E+0	451.90E-6	0.000	366.80E+3	0.000
459	L2S4J023	Down-dip	2	4	23	000.00E+0	11	19.94E-12	85.06E-3	69.64E-12	4.73E+0	103.90E-6	0.000	252.50E+3	0.000
460	L2S4J033	Down-dip	2	4	33	000.00E+0	11	650.50E-9	202.50E-3	3.34E-6	4.81E+0	2.14E+0	0.000	418.30E+3	0.893
461	L2S4J037	Down-dip	2	4	37	000.00E+0	11	25.00E-9	158.20E-3	134.10E-9	4.22E+0	103.40E-3	0.000	333.30E+3	0.034
462	L2S4J051	Down-dip	2	4	51	000.00E+0	11	313.60E-9	241.10E-3	1.43E-6	4.53E+0	901.50E-3	0.000	460.70E+3	0.415
463	L2S4L033	Down-dip	2	4	33	000.00E+0	3	26.37E-6	20.32E-3	61.82E-6	55.65E-3	1.28E+3	0.000	6.07E+3	7.737
464	L2S4L046	Down-dip	2	4	46	000.00E+0	11	4.26E-9	177.70E-3	28.36E-9	7.97E+0	13.87E-3	0.000	456.40E+3	0.006
465	L2S4L051	Down-dip	2	4	51	000.00E+0	11	3.90E-6	104.40E-3	13.37E-6	1.01E+0	30.13E+0	0.000	158.00E+3	4.762
466	L2S5F003	Down-dip	2	5	3	000.00E+0	11	337.60E-9	146.30E-3	1.63E-6	3.09E+0	1.59E+0	0.000	282.40E+3	0.450
467	L2S5F016	Down-dip	2	5	16	000.00E+0	11	609.30E-9	159.10E-3	2.78E-6	2.97E+0	2.71E+0	0.000	294.20E+3	0.798
468	L2S5F022	Down-dip	2	5	22	000.00E+0	11	145.40E-9	333.20E-3	696.40E-9	6.88E+0	293.00E-3	0.000	672.20E+3	0.197
469	L2S5F030	Down-dip	2	5	30	000.00E+0	11	4.16E-6	168.00E-3	16.77E-6	2.23E+0	19.10E+0	0.000	276.00E+3	5.273
470	L2S5F033	Down-dip	2	5	33	000.00E+0	11	17.80E-6	36.55E-3	60.45E-6	232.60E-3	451.00E+0	0.000	48.24E+3	21.760
471	L2S5F044	Down-dip	2	5	44	000.00E+0	11	1.05E-6	126.30E-3	4.34E-6	1.91E+0	6.19E+0	0.000	215.60E+3	1.334
472	L2S5F046	Down-dip	2	5	46	000.00E+0	11	374.70E-12	152.30E-3	2.29E-9	6.25E+0	1.45E-3	0.000	377.80E+3	0.001
473	L2S5F051	Down-dip	2	5	51	000.00E+0	11	604.30E-9	186.90E-3	2.51E-6	2.91E+0	2.33E+0	0.000	333.40E+3	0.778
474	L2S5F055	Down-dip	2	5	55	000.00E+0	11	1.02E-9	469.40E-3	6.04E-9	14.24E+0	1.37E-3	0.000	1.06E+6	0.001
475	L2S5F058	Down-dip	2	5	58	000.00E+0	11	95.24E-12	430.90E-3	609.20E-12	15.79E+0	136.60E-6	0.000	1.01E+6	0.000
476	L2S5F075	Down-dip	2	5	75	000.00E+0	11	1.81E-9	308.00E-3	12.08E-9	13.29E+0	3.47E-3	0.000	771.00E+3	0.003
477	L2S5F078	Down-dip	2	5	78	000.00E+0	11	1.42E-6	127.40E-3	5.93E-6	1.94E+0	8.30E+0	0.000	218.10E+3	1.811
478	L2S5G022	Down-dip	2	5	22	000.00E+0	11	222.70E-9	272.10E-3	991.50E-9	4.88E+0	566.20E-3	0.000	520.80E+3	0.295
479	L2S5G033	Down-dip	2	5	33	000.00E+0	11	14.67E-6	55.76E-3	51.86E-6	451.90E-3	230.90E+0	0.000	78.40E+3	18.100
480	L2S5G046	Down-dip	2	5	46	000.00E+0	11	56.84E-12	160.90E-3	325.90E-12	6.92E+0	203.20E-6	0.000	406.60E+3	0.000
481	L2S5G051	Down-dip	2	5	51	000.00E+0	11	559.20E-9	193.20E-3	2.35E-6	3.08E+0	2.08E+0	0.000	347.70E+3	0.723
482	L2S5G055	Down-dip	2	5	55	000.00E+0	11	3.30E-9	328.00E-3	17.29E-9	8.01E+0	6.62E-3	0.000	687.00E+3	0.005
483	L2S5G058	Down-dip	2	5	58	000.00E+0	11	147.90E-12	372.10E-3	905.50E-12	12.48E+0	250.10E-6	0.000	841.90E+3	0.000
484	L2S5I033	Down-dip	2	5	33	000.00E+0	11	1.56E-6	181.30E-3	7.50E-6	3.69E+0	5.94E+0	0.000	353.60E+3	2.100

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
441	L2S3K074	Down-dip	2	3	74	6.249	10.06E+6	0.766	10.12E+6	0.061	76.14E+3	31.22E+3
442	L2S3L028	Down-dip	2	3	28	2.897	8.72E+6	0.901	8.66E+6	0.873	68.34E+3	60.22E+3
443	L2S3L033	Down-dip	2	3	33	7.849	8.84E+6	0.799	9.22E+6	0.000	72.28E+3	17.57E+3
444	L2S3L046	Down-dip	2	3	46	0.026	3.31E+6	0.440	10.08E+6	0.000	76.06E+3	8.48E+3
445	L2S3L051	Down-dip	2	3	51	11.030	6.23E+6	0.582	8.39E+6	0.000	66.12E+3	13.99E+3
446	L2S4C004	Down-dip	2	4	4	0.000	3.96E+6	0.117	10.39E+6	0.070	94.42E+3	7.40E+3
447	L2S4C022	Down-dip	2	4	22	0.081	4.60E+6	0.177	10.50E+6	0.116	94.90E+3	13.00E+3
448	L2S4C055	Down-dip	2	4	55	0.002	4.53E+6	0.077	11.57E+6	0.021	100.10E+3	3.24E+3
449	L2S4C058	Down-dip	2	4	58	0.001	4.18E+6	0.103	11.00E+6	0.072	97.36E+3	7.43E+3
450	L2S4C081	Down-dip	2	4	81	0.002	4.05E+6	0.265	11.67E+6	0.234	100.60E+3	23.99E+3
451	L2S4C090	Down-dip	2	4	90	0.000	4.34E+6	0.091	11.85E+6	0.060	101.50E+3	6.56E+3
452	L2S4D022	Down-dip	2	4	22	0.149	4.56E+6	0.205	9.97E+6	0.122	84.39E+3	13.11E+3
453	L2S4D055	Down-dip	2	4	55	0.004	4.14E+6	0.091	10.03E+6	0.016	84.64E+3	2.85E+3
454	L2S4D058	Down-dip	2	4	58	0.001	4.05E+6	0.110	10.53E+6	0.071	87.20E+3	6.76E+3
455	L2S4H033	Down-dip	2	4	33	6.765	5.63E+6	0.579	10.17E+6	0.058	76.37E+3	17.10E+3
456	L2S4H051	Down-dip	2	4	51	0.580	4.69E+6	0.306	9.65E+6	0.046	74.25E+3	12.82E+3
457	L2S4H058	Down-dip	2	4	58	0.009	3.63E+6	0.148	8.41E+6	0.028	68.05E+3	3.78E+3
458	L2S4H068	Down-dip	2	4	68	0.000	2.92E+6	0.387	8.54E+6	0.153	68.84E+3	14.56E+3
459	L2S4J023	Down-dip	2	4	23	0.000	2.25E+6	0.568	8.15E+6	0.219	65.29E+3	20.03E+3
460	L2S4J033	Down-dip	2	4	33	0.880	4.58E+6	0.434	10.85E+6	0.001	79.18E+3	11.03E+3
461	L2S4J037	Down-dip	2	4	37	0.034	3.39E+6	0.343	8.27E+6	0.020	65.93E+3	10.47E+3
462	L2S4J051	Down-dip	2	4	51	0.389	4.68E+6	0.283	10.21E+6	0.001	76.54E+3	9.09E+3
463	L2S4L033	Down-dip	2	4	33	7.578	8.86E+6	0.803	9.20E+6	0.000	72.10E+3	17.64E+3
464	L2S4L046	Down-dip	2	4	46	0.006	3.21E+6	0.419	10.02E+6	0.000	75.81E+3	8.03E+3
465	L2S4L051	Down-dip	2	4	51	4.557	5.35E+6	0.480	8.33E+6	0.000	65.70E+3	11.72E+3
466	L2S5F003	Down-dip	2	5	3	0.426	3.83E+6	0.395	8.30E+6	0.228	67.79E+3	20.23E+3
467	L2S5F016	Down-dip	2	5	16	0.750	4.34E+6	0.399	8.87E+6	0.206	70.67E+3	21.29E+3
468	L2S5F022	Down-dip	2	5	22	0.196	5.03E+6	0.211	11.78E+6	0.099	82.84E+3	12.51E+3
469	L2S5F030	Down-dip	2	5	30	5.172	6.05E+6	0.470	10.61E+6	0.035	78.01E+3	12.49E+3
470	L2S5F033	Down-dip	2	5	33	20.820	6.19E+6	0.731	8.05E+6	0.166	66.60E+3	23.10E+3
471	L2S5F044	Down-dip	2	5	44	1.279	4.51E+6	0.443	8.23E+6	0.205	67.48E+3	21.90E+3
472	L2S5F046	Down-dip	2	5	46	0.001	2.88E+6	0.397	8.70E+6	0.243	69.88E+3	19.47E+3
473	L2S5F051	Down-dip	2	5	51	0.734	4.65E+6	0.326	9.11E+6	0.093	71.88E+3	15.76E+3
474	L2S5F055	Down-dip	2	5	55	0.001	4.71E+6	0.073	13.16E+6	0.005	88.56E+3	1.76E+3
475	L2S5F058	Down-dip	2	5	58	0.000	4.36E+6	0.093	12.70E+6	0.054	86.69E+3	5.23E+3
476	L2S5F075	Down-dip	2	5	75	0.003	3.90E+6	0.287	12.30E+6	0.150	85.02E+3	15.51E+3
477	L2S5F078	Down-dip	2	5	78	1.736	4.46E+6	0.437	8.18E+6	0.186	67.25E+3	19.77E+3
478	L2S5G022	Down-dip	2	5	22	0.291	4.79E+6	0.235	10.54E+6	0.099	77.86E+3	12.75E+3
479	L2S5G033	Down-dip	2	5	33	17.330	6.09E+6	0.692	8.61E+6	0.134	69.37E+3	21.62E+3
480	L2S5G046	Down-dip	2	5	46	0.000	2.90E+6	0.387	8.95E+6	0.225	71.09E+3	18.65E+3
481	L2S5G051	Down-dip	2	5	51	0.677	4.66E+6	0.321	9.24E+6	0.079	72.49E+3	14.88E+3
482	L2S5G055	Down-dip	2	5	55	0.005	4.22E+6	0.092	10.49E+6	0.002	77.71E+3	1.77E+3
483	L2S5G058	Down-dip	2	5	58	0.000	4.18E+6	0.097	11.51E+6	0.049	81.90E+3	4.72E+3
484	L2S5I033	Down-dip	2	5	33	2.009	4.94E+6	0.484	10.84E+6	0.011	79.13E+3	13.11E+3

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
485	L2S5I037	Down-dip	2	5	37	3,000	0.495	0.111	0.232	1.190	8.19E+6	0.048	8.19E+6	0.344	-1.276	84.15E-15
486	L2S5I051	Down-dip	2	5	51	3,000	0.530	0.101	0.057	1.276	10.06E+6	0.020	10.06E+6	0.274	-1.011	81.31E-15
487	L2S5K023	Down-dip	2	5	23	5,000	0.486	0.082	0.547	1.169	8.01E+6	0.185	8.01E+6	0.587	-0.897	71.38E-15
488	L2S5K033	Down-dip	2	5	33	5,000	0.538	0.041	0.206	1.301	10.74E+6	0.000	10.74E+6	0.399	-1.131	86.77E-15
489	L2S5K051	Down-dip	2	5	51	5,000	0.527	0.101	0.057	1.271	9.91E+6	0.000	9.91E+6	0.283	-1.010	80.91E-15
490	L2S5L033	Down-dip	2	5	33	10,000	0.518	0.041	0.206	1.245	9.23E+6	0.000	9.24E+6	0.793	-1.118	82.59E-15
491	L2S5L046	Down-dip	2	5	46	10,000	0.530	0.017	0.354	1.278	10.09E+6	0.000	10.10E+6	0.396	-1.315	91.84E-15
492	L2S5L051	Down-dip	2	5	51	10,000	0.494	0.101	0.057	1.187	8.35E+6	0.000	8.36E+6	0.465	-1.004	75.39E-15
493	L3S1B029	Down-dip	3	1	29	350	0.610	0.045	0.139	1.538	8.21E+6	0.131	8.21E+6	0.151	-0.884	93.53E-15
494	L3S1B064	Down-dip	3	1	64	350	0.627	0.022	0.108	1.608	9.27E+6	0.204	9.27E+6	0.232	-0.711	92.12E-15
495	L3S1B082	Down-dip	3	1	82	350	0.625	0.071	0.156	1.600	9.15E+6	0.222	9.15E+6	0.248	-1.107	105.70E-15
496	L3S1E004	Down-dip	3	1	4	1,000	0.556	0.002	0.112	1.351	11.72E+6	0.108	11.72E+6	0.139	-1.130	90.10E-15
497	L3S1E005	Down-dip	3	1	5	1,000	0.561	0.068	0.079	1.368	11.52E+6	0.071	11.52E+6	0.084	-1.271	96.54E-15
498	L3S1E040	Down-dip	3	1	40	1,000	0.574	0.040	0.017	1.411	13.44E+6	0.085	13.44E+6	0.171	-1.179	95.90E-15
499	L3S1E062	Down-dip	3	1	62	1,000	0.525	0.135	0.091	1.264	8.92E+6	0.043	8.92E+6	0.109	-1.264	88.93E-15
500	L3S1E064	Down-dip	3	1	64	1,000	0.565	0.022	0.108	1.380	12.60E+6	0.212	12.60E+6	0.289	-0.802	81.49E-15
501	L3S1E082	Down-dip	3	1	82	1,000	0.556	0.071	0.156	1.353	11.41E+6	0.271	11.41E+6	0.352	-1.129	90.16E-15
502	L3S1I002	Down-dip	3	1	2	3,000	0.543	0.076	0.054	1.314	11.09E+6	0.031	11.10E+6	0.762	-1.287	93.36E-15
503	L3S1I004	Down-dip	3	1	4	3,000	0.556	0.002	0.112	1.352	12.12E+6	0.097	12.13E+6	0.167	-1.137	90.39E-15
504	L3S1I013	Down-dip	3	1	13	3,000	0.517	0.043	0.130	1.244	9.20E+6	0.002	9.20E+6	0.163	-1.300	88.86E-15
505	L3S1I031	Down-dip	3	1	31	3,000	0.514	0.127	0.250	1.236	9.13E+6	0.068	9.13E+6	0.400	-1.265	87.04E-15
506	L3S1I033	Down-dip	3	1	33	3,000	0.515	0.078	0.172	1.238	9.19E+6	0.130	9.20E+6	0.502	-0.879	75.17E-15
507	L3S1I035	Down-dip	3	1	35	3,000	0.514	0.090	0.523	1.236	9.08E+6	0.182	9.09E+6	0.628	-1.299	88.23E-15
508	L3S1I040	Down-dip	3	1	40	3,000	0.590	0.040	0.017	1.465	15.16E+6	0.005	15.17E+6	0.129	-1.185	99.79E-15
509	L3S1I042	Down-dip	3	1	42	3,000	0.539	0.000	0.013	1.302	10.76E+6	0.002	10.77E+6	0.330	-1.041	83.89E-15
510	L3S1I056	Down-dip	3	1	56	3,000	0.541	0.033	0.254	1.308	10.93E+6	0.170	10.93E+6	0.340	-0.992	82.73E-15
511	L3S1I060	Down-dip	3	1	60	3,000	0.532	0.102	0.190	1.283	10.23E+6	0.177	10.27E+6	0.887	-1.126	85.41E-15
512	L3S1I061	Down-dip	3	1	61	3,000	0.517	0.083	0.065	1.244	9.21E+6	0.000	9.22E+6	0.193	-0.903	76.18E-15
513	L3S1I064	Down-dip	3	1	64	3,000	0.585	0.022	0.108	1.448	14.73E+6	0.098	14.73E+6	0.218	-0.811	85.83E-15
514	L3S1I072	Down-dip	3	1	72	3,000	0.507	0.032	0.474	1.217	8.72E+6	0.144	8.72E+6	0.482	-1.259	85.46E-15
515	L3S1I078	Down-dip	3	1	78	3,000	0.494	0.131	0.117	1.186	8.08E+6	0.182	8.09E+6	0.644	-1.302	84.76E-15
516	L3S1I079	Down-dip	3	1	79	3,000	0.500	0.027	0.202	1.201	8.41E+6	0.129	8.41E+6	0.360	-1.272	84.78E-15
517	L3S1I082	Down-dip	3	1	82	3,000	0.556	0.071	0.156	1.353	12.15E+6	0.231	12.16E+6	0.460	-1.142	90.62E-15
518	L3S1I083	Down-dip	3	1	83	3,000	0.534	0.126	0.184	1.290	10.42E+6	0.101	10.42E+6	0.351	-1.308	92.40E-15
519	L3S1I093	Down-dip	3	1	93	3,000	0.514	0.099	0.033	1.237	9.08E+6	0.000	9.11E+6	0.853	-0.831	73.80E-15
520	L3S1I099	Down-dip	3	1	99	3,000	0.544	0.138	0.260	1.317	11.16E+6	0.111	11.16E+6	0.265	-1.137	88.03E-15
521	L3S1K002	Down-dip	3	1	2	5,000	0.568	0.076	0.054	1.389	13.12E+6	0.000	13.13E+6	0.587	-1.300	99.21E-15
522	L3S1K004	Down-dip	3	1	4	5,000	0.559	0.002	0.112	1.362	12.41E+6	0.085	12.41E+6	0.190	-1.139	91.13E-15
523	L3S1K013	Down-dip	3	1	13	5,000	0.528	0.043	0.130	1.273	9.97E+6	0.000	9.97E+6	0.161	-1.309	91.25E-15
524	L3S1K017	Down-dip	3	1	17	5,000	0.508	0.111	0.241	1.220	8.83E+6	0.041	8.84E+6	0.368	-0.826	72.66E-15
525	L3S1K031	Down-dip	3	1	31	5,000	0.542	0.127	0.250	1.311	11.01E+6	0.004	11.01E+6	0.324	-1.270	92.47E-15
526	L3S1K033	Down-dip	3	1	33	5,000	0.544	0.078	0.172	1.317	11.18E+6	0.065	11.18E+6	0.392	-0.893	80.34E-15
527	L3S1K035	Down-dip	3	1	35	5,000	0.537	0.090	0.523	1.296	10.61E+6	0.123	10.61E+6	0.594	-1.313	93.11E-15
528	L3S1K038	Down-dip	3	1	38	5,000	0.493	0.146	0.163	1.185	8.28E+6	0.001	8.28E+6	0.163	-1.269	83.55E-15

No.	File (*.TXT)	ID	Rep	Scen	Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
485	L2S5I037	Down-dip	2	5	37	26.30E-15	0.976	13.23E+6	831.80E-15	000.00E+0	1.00E+0	824.90E-6	653.00E-3	000.00E+0	162.90E+3
486	L2S5I051	Down-dip	2	5	51	11.75E-15	0.575	14.56E+6	2.34E-12	000.00E+0	1.00E+0	4.39E-3	496.10E-3	000.00E+0	180.00E+3
487	L2S5K023	Down-dip	2	5	23	33.88E-15	0.457	14.83E+6	3.98E-12	000.00E+0	1.00E+0	132.20E-6	776.20E-3	000.00E+0	172.20E+3
488	L2S5K033	Down-dip	2	5	33	10.23E-15	0.730	12.67E+6	43.65E-12	000.00E+0	1.00E+0	5.32E-3	499.60E-3	000.00E+0	188.70E+3
489	L2S5K051	Down-dip	2	5	51	11.75E-15	0.573	14.56E+6	2.34E-12	000.00E+0	1.00E+0	5.11E-3	477.90E-3	000.00E+0	177.90E+3
490	L2S5L033	Down-dip	2	5	33	10.23E-15	0.712	12.67E+6	43.65E-12	000.00E+0	1.00E+0	326.50E-3	16.91E-3	000.00E+0	4.20E+6
491	L2S5L046	Down-dip	2	5	46	13.18E-15	1.055	12.93E+6	17.38E-15	000.00E+0	1.00E+0	41.63E-6	861.80E-3	000.00E+0	211.00E+3
492	L2S5L051	Down-dip	2	5	51	11.75E-15	0.566	14.56E+6	2.34E-12	000.00E+0	1.00E+0	45.34E-3	188.00E-3	000.00E+0	192.50E+3
493	L3S1B029	Down-dip	3	1	29	000.00E+0	0.445	16.08E+6	1.00E-12	000.00E+0	1.00E+0	134.10E-9	970.40E-3	000.00E+0	210.40E+3
494	L3S1B064	Down-dip	3	1	64	000.00E+0	0.315	12.64E+6	1.00E-12	268.50E-6	772.00E-3	679.10E-6	708.70E-3	185.20E+3	178.80E+3
495	L3S1B082	Down-dip	3	1	82	000.00E+0	0.696	12.64E+6	1.00E-12	80.76E-6	824.10E-3	275.40E-6	755.80E-3	192.10E+3	183.30E+3
496	L3S1E004	Down-dip	3	1	4	000.00E+0	0.729	12.52E+6	1.00E-12	000.00E+0	1.00E+0	2.41E-6	938.10E-3	000.00E+0	257.00E+3
497	L3S1E005	Down-dip	3	1	5	000.00E+0	0.967	14.32E+6	1.00E-12	000.00E+0	1.00E+0	4.32E-9	988.10E-3	000.00E+0	276.00E+3
498	L3S1E040	Down-dip	3	1	40	000.00E+0	0.804	14.58E+6	1.00E-12	52.65E-6	850.50E-3	1.08E-3	666.30E-3	261.50E+3	233.50E+3
499	L3S1E062	Down-dip	3	1	62	000.00E+0	0.953	14.53E+6	1.00E-12	000.00E+0	1.00E+0	520.30E-9	952.30E-3	000.00E+0	217.50E+3
500	L3S1E064	Down-dip	3	1	64	000.00E+0	0.378	12.64E+6	1.00E-12	351.50E-6	755.10E-3	2.79E-3	582.30E-3	230.90E+3	215.60E+3
501	L3S1E082	Down-dip	3	1	82	000.00E+0	0.727	12.64E+6	1.00E-12	643.60E-6	694.70E-3	4.54E-3	502.70E-3	208.40E+3	197.80E+3
502	L3S1I002	Down-dip	3	1	2	000.00E+0	0.998	14.88E+6	1.00E-12	000.00E+0	1.00E+0	342.30E-3	10.27E-3	000.00E+0	5.52E+6
503	L3S1I004	Down-dip	3	1	4	000.00E+0	0.740	12.52E+6	1.00E-12	000.00E+0	1.00E+0	35.72E-6	870.70E-3	000.00E+0	243.80E+3
504	L3S1I013	Down-dip	3	1	13	000.00E+0	1.023	12.11E+6	1.00E-12	000.00E+0	1.00E+0	5.77E-6	917.40E-3	000.00E+0	210.10E+3
505	L3S1I031	Down-dip	3	1	31	000.00E+0	0.955	12.67E+6	1.00E-12	000.00E+0	1.00E+0	2.62E-3	524.70E-3	000.00E+0	169.20E+3
506	L3S1I033	Down-dip	3	1	33	000.00E+0	0.441	14.65E+6	1.00E-12	000.00E+0	1.00E+0	33.52E-3	235.50E-3	000.00E+0	191.20E+3
507	L3S1I035	Down-dip	3	1	35	000.00E+0	1.022	13.74E+6	1.00E-12	000.00E+0	1.00E+0	3.69E-3	474.80E-3	000.00E+0	167.70E+3
508	L3S1I040	Down-dip	3	1	40	000.00E+0	0.813	14.58E+6	1.00E-12	000.00E+0	1.00E+0	325.80E-6	756.10E-3	000.00E+0	271.00E+3
509	L3S1I042	Down-dip	3	1	42	000.00E+0	0.610	12.62E+6	1.00E-12	000.00E+0	1.00E+0	15.08E-3	393.30E-3	000.00E+0	193.50E+3
510	L3S1I056	Down-dip	3	1	56	000.00E+0	0.552	12.68E+6	1.00E-12	000.00E+0	1.00E+0	341.90E-6	751.90E-3	000.00E+0	206.70E+3
511	L3S1I060	Down-dip	3	1	60	000.00E+0	0.723	12.64E+6	1.00E-12	000.00E+0	1.00E+0	573.10E-3	7.35E-6	000.00E+0	8.00E+6
512	L3S1I061	Down-dip	3	1	61	000.00E+0	0.463	12.80E+6	1.00E-12	000.00E+0	1.00E+0	651.60E-6	692.60E-3	000.00E+0	178.10E+3
513	L3S1I064	Down-dip	3	1	64	000.00E+0	0.385	12.64E+6	1.00E-12	000.00E+0	1.00E+0	447.00E-6	739.00E-3	000.00E+0	261.00E+3
514	L3S1I072	Down-dip	3	1	72	000.00E+0	0.943	11.35E+6	1.00E-12	000.00E+0	1.00E+0	191.20E-9	967.10E-3	000.00E+0	217.80E+3
515	L3S1I078	Down-dip	3	1	78	000.00E+0	1.027	15.25E+6	1.00E-12	64.44E-6	822.30E-3	148.80E-3	40.55E-3	178.10E+3	390.30E+3
516	L3S1I079	Down-dip	3	1	79	000.00E+0	0.969	14.96E+6	1.00E-12	000.00E+0	1.00E+0	2.56E-3	588.00E-3	000.00E+0	160.50E+3
517	L3S1I082	Down-dip	3	1	82	000.00E+0	0.746	12.64E+6	1.00E-12	129.80E-6	800.20E-3	23.12E-3	291.50E-3	232.90E+3	222.10E+3
518	L3S1I083	Down-dip	3	1	83	000.00E+0	1.039	12.66E+6	1.00E-12	000.00E+0	1.00E+0	2.83E-3	523.50E-3	000.00E+0	185.70E+3
519	L3S1I093	Down-dip	3	1	93	000.00E+0	0.401	12.42E+6	1.00E-12	000.00E+0	1.00E+0	544.50E-3	269.60E-6	000.00E+0	7.99E+6
520	L3S1I099	Down-dip	3	1	99	000.00E+0	0.739	14.59E+6	1.00E-12	000.00E+0	1.00E+0	10.34E-9	982.90E-3	000.00E+0	268.20E+3
521	L3S1K002	Down-dip	3	1	2	000.00E+0	1.024	14.88E+6	1.00E-12	000.00E+0	1.00E+0	119.90E-3	84.84E-3	000.00E+0	347.00E+3
522	L3S1K004	Down-dip	3	1	4	000.00E+0	0.742	12.52E+6	1.00E-12	000.00E+0	1.00E+0	128.00E-6	817.30E-3	000.00E+0	237.10E+3
523	L3S1K013	Down-dip	3	1	13	000.00E+0	1.041	12.11E+6	1.00E-12	000.00E+0	1.00E+0	4.49E-6	922.90E-3	000.00E+0	224.10E+3
524	L3S1K017	Down-dip	3	1	17	000.00E+0	0.396	14.70E+6	1.00E-12	000.00E+0	1.00E+0	1.36E-3	605.40E-3	000.00E+0	168.50E+3
525	L3S1K031	Down-dip	3	1	31	000.00E+0	0.964	12.67E+6	1.00E-12	000.00E+0	1.00E+0	199.40E-6	753.30E-3	000.00E+0	212.00E+3
526	L3S1K033	Down-dip	3	1	33	000.00E+0	0.453	14.65E+6	1.00E-12	000.00E+0	1.00E+0	7.46E-3	437.40E-3	000.00E+0	195.00E+3
527	L3S1K035	Down-dip	3	1	35	000.00E+0	1.052	13.74E+6	1.00E-12	000.00E+0	1.00E+0	863.30E-6	631.40E-3	000.00E+0	194.80E+3
528	L3S1K038	Down-dip	3	1	38	000.00E+0	0.962	12.91E+6	1.00E-12	000.00E+0	1.00E+0	383.20E-15	998.90E-3	000.00E+0	205.70E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
485	L2S5I037	Down-dip	2	5	37	000.00E+0	11	51.03E-9	151.50E-3	265.70E-9	3.80E+0	223.00E-3	0.000	312.50E+3	0.070
486	L2S5I051	Down-dip	2	5	51	000.00E+0	11	376.20E-9	231.00E-3	1.69E-6	4.18E+0	1.14E+0	0.000	435.10E+3	0.495
487	L2S5K023	Down-dip	2	5	23	000.00E+0	11	5.84E-9	77.61E-3	35.27E-9	3.67E+0	39.75E-3	0.000	216.30E+3	0.009
488	L2S5K033	Down-dip	2	5	33	000.00E+0	11	444.50E-9	206.40E-3	2.33E-6	5.11E+0	1.42E+0	0.000	432.60E+3	0.613
489	L2S5K051	Down-dip	2	5	51	000.00E+0	11	436.30E-9	222.50E-3	1.92E-6	3.89E+0	1.38E+0	0.000	413.60E+3	0.571
490	L2S5L033	Down-dip	2	5	33	000.00E+0	3	27.59E-6	24.01E-3	64.91E-6	68.20E-3	1.12E+3	0.000	7.19E+3	8.081
491	L2S5L046	Down-dip	2	5	46	000.00E+0	11	2.71E-9	180.70E-3	18.04E-9	8.24E+0	8.65E-3	0.000	466.50E+3	0.004
492	L2S5L051	Down-dip	2	5	51	000.00E+0	11	3.88E-6	105.10E-3	13.33E-6	1.02E+0	29.79E+0	0.000	159.20E+3	4.741
493	L3S1B029	Down-dip	3	1	29	000.00E+0	11	10.56E-12	291.50E-3	47.89E-12	6.29E+0	24.04E-6	0.000	591.40E+3	0.000
494	L3S1B064	Down-dip	3	1	64	000.00E+0	11	60.81E-9	313.80E-3	271.60E-9	5.77E+0	132.70E-3	0.000	609.40E+3	0.081
495	L3S1B082	Down-dip	3	1	82	000.00E+0	11	25.04E-9	300.50E-3	124.70E-9	6.88E+0	55.65E-3	0.000	610.00E+3	0.034
496	L3S1E004	Down-dip	3	1	4	000.00E+0	11	203.10E-12	361.60E-3	1.19E-9	11.73E+0	349.40E-6	0.000	829.20E+3	0.000
497	L3S1E005	Down-dip	3	1	5	000.00E+0	11	425.60E-15	385.50E-3	2.24E-12	12.79E+0	680.30E-9	0.000	877.90E+3	0.000
498	L3S1E040	Down-dip	3	1	40	000.00E+0	11	117.70E-9	424.60E-3	654.10E-9	11.61E+0	179.40E-3	0.000	914.90E+3	0.164
499	L3S1E062	Down-dip	3	1	62	000.00E+0	11	36.28E-12	259.00E-3	192.30E-12	6.90E+0	91.74E-6	0.000	544.20E+3	0.000
500	L3S1E064	Down-dip	3	1	64	000.00E+0	11	264.00E-9	324.70E-3	1.35E-6	7.62E+0	531.10E-3	0.000	688.00E+3	0.366
501	L3S1E082	Down-dip	3	1	82	000.00E+0	11	430.50E-9	256.50E-3	2.19E-6	6.01E+0	1.12E+0	0.000	526.20E+3	0.589
502	L3S1I002	Down-dip	3	1	2	000.00E+0	3	36.93E-6	25.61E-3	85.28E-6	61.73E-3	1.46E+3	0.000	7.56E+3	11.020
503	L3S1I004	Down-dip	3	1	4	000.00E+0	11	3.08E-9	362.20E-3	18.33E-9	11.69E+0	5.31E-3	0.000	828.20E+3	0.004
504	L3S1I013	Down-dip	3	1	13	000.00E+0	11	395.70E-12	244.00E-3	2.20E-9	7.06E+0	1.05E-3	0.000	526.70E+3	0.001
505	L3S1I031	Down-dip	3	1	31	000.00E+0	11	192.70E-9	165.50E-3	976.10E-9	3.92E+0	781.10E-3	0.000	333.90E+3	0.261
506	L3S1I033	Down-dip	3	1	33	000.00E+0	11	2.87E-6	126.70E-3	10.83E-6	1.54E+0	17.37E+0	0.000	208.20E+3	3.617
507	L3S1I035	Down-dip	3	1	35	000.00E+0	11	232.80E-9	91.28E-3	1.39E-6	3.56E+0	1.48E+0	0.000	225.10E+3	0.332
508	L3S1I040	Down-dip	3	1	40	000.00E+0	11	38.06E-9	534.20E-3	231.60E-9	17.28E+0	44.62E-3	0.000	1.22E+6	0.054
509	L3S1I042	Down-dip	3	1	42	000.00E+0	11	1.46E-6	234.40E-3	6.39E-6	3.90E+0	4.48E+0	0.000	427.10E+3	1.913
510	L3S1I056	Down-dip	3	1	56	000.00E+0	11	24.80E-9	236.10E-3	144.90E-9	7.57E+0	64.63E-3	0.000	551.40E+3	0.036
511	L3S1I060	Down-dip	3	1	60	000.00E+0	3	27.13E-6	77.93E-6	52.96E-6	77.93E-6	559.20E+3	0.000	14.57E+0	8.114
512	L3S1I061	Down-dip	3	1	61	000.00E+0	11	46.34E-9	236.30E-3	214.20E-9	4.61E+0	134.40E-3	0.000	458.80E+3	0.062
513	L3S1I064	Down-dip	3	1	64	000.00E+0	11	45.64E-9	451.40E-3	265.50E-9	13.74E+0	62.59E-3	0.000	1.05E+6	0.066
514	L3S1I072	Down-dip	3	1	72	000.00E+0	11	15.12E-12	118.60E-3	66.32E-12	6.44E+0	63.50E-6	0.000	332.40E+3	0.000
515	L3S1I078	Down-dip	3	1	78	000.00E+0	11	14.84E-6	41.10E-3	46.37E-6	226.10E-3	340.60E+0	0.000	52.44E+3	17.860
516	L3S1I079	Down-dip	3	1	79	000.00E+0	11	169.20E-9	156.60E-3	853.30E-9	3.64E+0	729.20E-3	0.000	313.10E+3	0.228
517	L3S1I082	Down-dip	3	1	82	000.00E+0	11	2.60E-6	219.40E-3	11.95E-6	3.95E+0	8.44E+0	0.000	408.90E+3	3.453
518	L3S1I083	Down-dip	3	1	83	000.00E+0	11	246.70E-9	219.60E-3	1.28E-6	5.37E+0	750.70E-3	0.000	447.30E+3	0.336
519	L3S1I093	Down-dip	3	1	93	000.00E+0	3	12.56E-6	191.70E-6	21.51E-6	213.20E-6	75.03E+3	0.000	48.82E+0	3.661
520	L3S1I099	Down-dip	3	1	99	000.00E+0	11	1.15E-12	271.90E-3	4.74E-12	10.91E+0	2.38E-6	0.000	675.40E+3	0.000
521	L3S1K002	Down-dip	3	1	2	000.00E+0	11	18.71E-6	152.90E-3	72.71E-6	1.45E+0	105.10E+0	0.000	226.10E+3	23.770
522	L3S1K004	Down-dip	3	1	4	000.00E+0	11	11.44E-9	364.10E-3	67.82E-9	11.58E+0	19.67E-3	0.000	828.40E+3	0.016
523	L3S1K013	Down-dip	3	1	13	000.00E+0	11	331.20E-12	274.50E-3	1.91E-9	8.55E+0	768.80E-6	0.000	608.20E+3	0.000
524	L3S1K017	Down-dip	3	1	17	000.00E+0	11	85.59E-9	167.00E-3	407.70E-9	3.54E+0	342.80E-3	0.000	337.70E+3	0.116
525	L3S1K031	Down-dip	3	1	31	000.00E+0	11	15.61E-9	245.80E-3	95.10E-9	8.60E+0	39.07E-3	0.000	573.90E+3	0.022
526	L3S1K033	Down-dip	3	1	33	000.00E+0	11	670.80E-9	225.60E-3	3.15E-6	4.48E+0	2.03E+0	0.000	445.20E+3	0.903
527	L3S1K035	Down-dip	3	1	35	000.00E+0	11	57.17E-9	117.90E-3	399.80E-9	6.76E+0	253.80E-3	0.000	340.40E+3	0.086
528	L3S1K038	Down-dip	3	1	38	000.00E+0	11	243.40E-18	204.50E-3	332.30E-18	5.88E+0	########	0.000	440.70E+3	0.000

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
485	L2S5I037	Down-dip	2	5	37	0.070	3.47E+6	0.362	8.18E+6	0.061	66.18E+3	13.32E+3
486	L2S5I051	Down-dip	2	5	51	0.472	4.71E+6	0.294	10.04E+6	0.017	75.86E+3	10.67E+3
487	L2S5K023	Down-dip	2	5	23	0.009	2.39E+6	0.600	8.00E+6	0.198	63.76E+3	19.15E+3
488	L2S5K033	Down-dip	2	5	33	0.604	4.43E+6	0.415	10.72E+6	0.000	78.64E+3	9.90E+3
489	L2S5K051	Down-dip	2	5	51	0.552	4.73E+6	0.303	9.89E+6	0.000	75.22E+3	8.95E+3
490	L2S5L033	Down-dip	2	5	33	7.914	8.83E+6	0.797	9.23E+6	0.000	72.30E+3	17.55E+3
491	L2S5L046	Down-dip	2	5	46	0.004	3.20E+6	0.413	10.07E+6	0.000	76.03E+3	7.94E+3
492	L2S5L051	Down-dip	2	5	51	4.537	5.36E+6	0.479	8.35E+6	0.000	65.82E+3	11.72E+3
493	L3S1B029	Down-dip	3	1	29	0.000	3.52E+6	0.151	8.19E+6	0.132	105.30E+3	14.36E+3
494	L3S1B064	Down-dip	3	1	64	0.080	4.19E+6	0.232	9.25E+6	0.201	113.10E+3	24.03E+3
495	L3S1B082	Down-dip	3	1	82	0.033	3.91E+6	0.248	9.13E+6	0.219	112.20E+3	25.68E+3
496	L3S1E004	Down-dip	3	1	4	0.000	4.15E+6	0.139	11.66E+6	0.109	84.27E+3	9.80E+3
497	L3S1E005	Down-dip	3	1	5	0.000	4.13E+6	0.085	11.46E+6	0.071	86.14E+3	6.44E+3
498	L3S1E040	Down-dip	3	1	40	0.164	5.16E+6	0.172	13.38E+6	0.074	90.97E+3	12.25E+3
499	L3S1E062	Down-dip	3	1	62	0.000	3.58E+6	0.109	8.90E+6	0.043	74.47E+3	4.52E+3
500	L3S1E064	Down-dip	3	1	64	0.347	5.03E+6	0.290	12.56E+6	0.205	87.44E+3	21.82E+3
501	L3S1E082	Down-dip	3	1	82	0.557	4.83E+6	0.352	11.38E+6	0.264	84.47E+3	26.18E+3
502	L3S1I002	Down-dip	3	1	2	10.790	10.76E+6	0.760	11.09E+6	0.025	80.11E+3	25.43E+3
503	L3S1I004	Down-dip	3	1	4	0.004	4.27E+6	0.168	12.06E+6	0.098	84.34E+3	9.77E+3
504	L3S1I013	Down-dip	3	1	13	0.001	3.54E+6	0.164	9.17E+6	0.002	72.25E+3	4.29E+3
505	L3S1I031	Down-dip	3	1	31	0.252	3.95E+6	0.400	9.12E+6	0.082	71.37E+3	13.32E+3
506	L3S1I033	Down-dip	3	1	33	3.433	5.25E+6	0.502	9.19E+6	0.140	71.59E+3	22.08E+3
507	L3S1I035	Down-dip	3	1	35	0.321	3.18E+6	0.629	9.07E+6	0.203	71.32E+3	22.27E+3
508	L3S1I040	Down-dip	3	1	40	0.053	5.26E+6	0.129	15.07E+6	0.004	97.01E+3	6.90E+3
509	L3S1I042	Down-dip	3	1	42	1.787	5.26E+6	0.330	10.75E+6	0.001	78.76E+3	12.67E+3
510	L3S1I056	Down-dip	3	1	56	0.035	3.89E+6	0.341	10.90E+6	0.185	79.44E+3	20.55E+3
511	L3S1I060	Down-dip	3	1	60	7.950	10.20E+6	0.886	10.23E+6	0.205	76.61E+3	36.16E+3
512	L3S1I061	Down-dip	3	1	61	0.060	4.11E+6	0.193	9.19E+6	0.000	72.27E+3	3.63E+3
513	L3S1I064	Down-dip	3	1	64	0.065	5.07E+6	0.219	14.64E+6	0.100	95.16E+3	15.49E+3
514	L3S1I072	Down-dip	3	1	72	0.000	2.54E+6	0.483	8.70E+6	0.172	69.21E+3	17.34E+3
515	L3S1I078	Down-dip	3	1	78	17.080	6.58E+6	0.642	8.08E+6	0.163	65.70E+3	26.70E+3
516	L3S1I079	Down-dip	3	1	79	0.228	3.69E+6	0.361	8.40E+6	0.135	67.37E+3	12.97E+3
517	L3S1I082	Down-dip	3	1	82	3.271	5.88E+6	0.461	12.14E+6	0.220	84.45E+3	28.45E+3
518	L3S1I083	Down-dip	3	1	83	0.321	4.42E+6	0.351	10.40E+6	0.108	77.34E+3	16.91E+3
519	L3S1I093	Down-dip	3	1	93	3.585	9.08E+6	0.853	9.08E+6	0.000	71.41E+3	17.48E+3
520	L3S1I099	Down-dip	3	1	99	0.000	3.60E+6	0.266	11.11E+6	0.127	80.39E+3	13.43E+3
521	L3S1K002	Down-dip	3	1	2	23.730	8.63E+6	0.585	13.12E+6	0.000	88.50E+3	19.55E+3
522	L3S1K004	Down-dip	3	1	4	0.015	4.37E+6	0.191	12.35E+6	0.086	85.49E+3	9.66E+3
523	L3S1K013	Down-dip	3	1	13	0.000	3.72E+6	0.162	9.94E+6	0.000	75.49E+3	3.25E+3
524	L3S1K017	Down-dip	3	1	17	0.113	3.79E+6	0.368	8.82E+6	0.052	69.52E+3	10.10E+3
525	L3S1K031	Down-dip	3	1	31	0.021	3.91E+6	0.325	10.98E+6	0.014	79.75E+3	8.87E+3
526	L3S1K033	Down-dip	3	1	33	0.898	4.96E+6	0.392	11.16E+6	0.085	80.44E+3	17.22E+3
527	L3S1K035	Down-dip	3	1	35	0.083	3.08E+6	0.595	10.59E+6	0.150	78.10E+3	20.71E+3
528	L3S1K038	Down-dip	3	1	38	0.000	3.23E+6	0.164	8.26E+6	0.002	65.60E+3	3.07E+3

No.	File (*.TXT)	ID	Rep	Scen	Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
529	L3S1K040	Down-dip	3	1	40	5,000	0.596	0.040	0.017	1.486	15.66E+6	0.000	15.66E+6	0.109	-1.180	101.00E-15
530	L3S1K041	Down-dip	3	1	41	5,000	0.487	0.029	0.327	1.171	8.01E+6	0.007	8.02E+6	0.540	-1.286	83.15E-15
531	L3S1K042	Down-dip	3	1	42	5,000	0.549	0.000	0.013	1.332	11.58E+6	0.000	11.58E+6	0.333	-1.047	85.97E-15
532	L3S1K043	Down-dip	3	1	43	5,000	0.488	0.092	0.321	1.173	8.04E+6	0.123	8.04E+6	0.436	-1.269	82.66E-15
533	L3S1K052	Down-dip	3	1	52	5,000	0.501	0.113	0.043	1.204	8.60E+6	0.004	8.62E+6	0.726	-1.311	86.44E-15
534	L3S1K055	Down-dip	3	1	55	5,000	0.510	0.050	0.212	1.227	8.94E+6	0.036	8.96E+6	0.817	-0.807	72.58E-15
535	L3S1K056	Down-dip	3	1	56	5,000	0.565	0.033	0.254	1.379	12.86E+6	0.088	12.86E+6	0.269	-1.002	87.54E-15
536	L3S1K058	Down-dip	3	1	58	5,000	0.505	0.080	0.154	1.213	8.72E+6	0.039	8.73E+6	0.602	-0.924	74.84E-15
537	L3S1K060	Down-dip	3	1	60	5,000	0.561	0.102	0.190	1.368	12.57E+6	0.135	12.58E+6	0.648	-1.138	91.50E-15
538	L3S1K061	Down-dip	3	1	61	5,000	0.521	0.083	0.065	1.254	9.45E+6	0.000	9.45E+6	0.213	-0.905	76.82E-15
539	L3S1K070	Down-dip	3	1	70	5,000	0.509	0.030	0.059	1.224	8.90E+6	0.018	8.90E+6	0.203	-1.095	80.46E-15
540	L3S1K078	Down-dip	3	1	78	5,000	0.520	0.131	0.117	1.250	9.35E+6	0.102	9.36E+6	0.659	-1.312	89.73E-15
541	L3S1K079	Down-dip	3	1	79	5,000	0.523	0.027	0.202	1.259	9.59E+6	0.077	9.59E+6	0.344	-1.279	89.12E-15
542	L3S1K080	Down-dip	3	1	80	5,000	0.504	0.118	0.103	1.211	8.71E+6	0.044	8.74E+6	0.868	-1.264	85.24E-15
543	L3S1K082	Down-dip	3	1	82	5,000	0.562	0.071	0.156	1.371	12.66E+6	0.199	12.67E+6	0.552	-1.145	91.97E-15
544	L3S1K083	Down-dip	3	1	83	5,000	0.557	0.126	0.184	1.357	12.26E+6	0.022	12.27E+6	0.289	-1.323	97.87E-15
545	L3S1K084	Down-dip	3	1	84	5,000	0.487	0.073	0.095	1.171	8.04E+6	0.000	8.04E+6	0.502	-0.865	70.74E-15
546	L3S1K093	Down-dip	3	1	93	5,000	0.539	0.099	0.033	1.303	10.79E+6	0.000	10.80E+6	0.669	-0.843	78.09E-15
547	L3S1L002	Down-dip	3	1	2	10,000	0.575	0.076	0.054	1.413	13.71E+6	0.000	13.72E+6	0.572	-1.302	101.00E-15
548	L3S1L004	Down-dip	3	1	4	10,000	0.567	0.002	0.112	1.388	13.03E+6	0.056	13.03E+6	0.224	-1.141	92.94E-15
549	L3S1L009	Down-dip	3	1	9	10,000	0.532	0.059	0.271	1.284	10.26E+6	0.052	10.27E+6	0.784	-0.838	76.82E-15
550	L3S1L013	Down-dip	3	1	13	10,000	0.533	0.043	0.130	1.286	10.31E+6	0.000	10.31E+6	0.302	-1.312	92.29E-15
551	L3S1L016	Down-dip	3	1	16	10,000	0.533	0.129	0.207	1.286	10.32E+6	0.000	10.33E+6	0.229	-0.973	80.80E-15
552	L3S1L017	Down-dip	3	1	17	10,000	0.536	0.111	0.241	1.293	10.50E+6	0.000	10.50E+6	0.413	-0.835	77.26E-15
553	L3S1L022	Down-dip	3	1	22	10,000	0.497	0.140	0.481	1.194	8.45E+6	0.213	8.47E+6	0.845	-1.359	87.40E-15
554	L3S1L028	Down-dip	3	1	28	10,000	0.519	0.095	0.548	1.249	9.32E+6	0.000	9.33E+6	0.684	-1.060	81.03E-15
555	L3S1L031	Down-dip	3	1	31	10,000	0.558	0.127	0.250	1.358	12.24E+6	0.000	12.25E+6	0.341	-1.270	95.81E-15
556	L3S1L032	Down-dip	3	1	32	10,000	0.490	0.005	0.343	1.178	8.22E+6	0.000	8.22E+6	0.502	-1.358	86.26E-15
557	L3S1L033	Down-dip	3	1	33	10,000	0.562	0.078	0.172	1.372	12.60E+6	0.005	12.61E+6	0.449	-0.900	83.90E-15
558	L3S1L035	Down-dip	3	1	35	10,000	0.566	0.090	0.523	1.382	12.88E+6	0.050	12.88E+6	0.526	-1.330	99.95E-15
559	L3S1L038	Down-dip	3	1	38	10,000	0.505	0.146	0.163	1.212	8.73E+6	0.000	8.74E+6	0.217	-1.270	85.49E-15
560	L3S1L040	Down-dip	3	1	40	10,000	0.599	0.040	0.017	1.498	15.55E+6	0.000	15.55E+6	0.148	-1.177	101.80E-15
561	L3S1L041	Down-dip	3	1	41	10,000	0.516	0.029	0.327	1.240	9.16E+6	0.000	9.17E+6	0.642	-1.287	88.07E-15
562	L3S1L042	Down-dip	3	1	42	10,000	0.553	0.000	0.013	1.344	11.86E+6	0.000	11.86E+6	0.488	-1.048	86.80E-15
563	L3S1L043	Down-dip	3	1	43	10,000	0.521	0.092	0.321	1.254	9.46E+6	0.058	9.46E+6	0.434	-1.275	88.64E-15
564	L3S1L051	Down-dip	3	1	51	10,000	0.571	0.079	0.462	1.400	13.36E+6	0.216	13.36E+6	0.529	-1.342	101.80E-15
565	L3S1L052	Down-dip	3	1	52	10,000	0.524	0.113	0.043	1.261	9.64E+6	0.000	9.66E+6	0.772	-1.314	90.60E-15
566	L3S1L055	Down-dip	3	1	55	10,000	0.545	0.050	0.212	1.320	11.23E+6	0.000	11.24E+6	0.720	-0.820	78.51E-15
567	L3S1L056	Down-dip	3	1	56	10,000	0.588	0.033	0.254	1.456	14.71E+6	0.000	14.71E+6	0.285	-1.006	92.59E-15
568	L3S1L058	Down-dip	3	1	58	10,000	0.541	0.080	0.154	1.309	10.94E+6	0.000	10.94E+6	0.454	-0.935	81.11E-15
569	L3S1L060	Down-dip	3	1	60	10,000	0.570	0.102	0.190	1.396	13.26E+6	0.065	13.26E+6	0.485	-1.139	93.43E-15
570	L3S1L061	Down-dip	3	1	61	10,000	0.528	0.083	0.065	1.273	9.96E+6	0.000	9.96E+6	0.247	-0.909	78.06E-15
571	L3S1L062	Down-dip	3	1	62	10,000	0.539	0.135	0.091	1.303	10.75E+6	0.000	10.76E+6	0.127	-1.291	92.67E-15
572	L3S1L070	Down-dip	3	1	70	10,000	0.525	0.030	0.059	1.264	9.73E+6	0.000	9.73E+6	0.263	-1.100	83.29E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
529	L3S1K040	Down-dip	3	1	40	000.00E+0	0.805	14.58E+6	1.00E-12	000.00E+0	1.00E+0	161.40E-6	797.80E-3	000.00E+0	286.60E+3
530	L3S1K041	Down-dip	3	1	41	000.00E+0	0.995	15.08E+6	1.00E-12	000.00E+0	1.00E+0	14.18E-3	379.80E-3	000.00E+0	157.30E+3
531	L3S1K042	Down-dip	3	1	42	000.00E+0	0.617	12.62E+6	1.00E-12	000.00E+0	1.00E+0	15.61E-3	388.80E-3	000.00E+0	205.00E+3
532	L3S1K043	Down-dip	3	1	43	000.00E+0	0.961	13.89E+6	1.00E-12	000.00E+0	1.00E+0	1.39E-3	608.10E-3	000.00E+0	158.20E+3
533	L3S1K052	Down-dip	3	1	52	000.00E+0	1.047	12.21E+6	1.00E-12	000.00E+0	1.00E+0	288.30E-3	10.87E-3	000.00E+0	4.99E+6
534	L3S1K055	Down-dip	3	1	55	000.00E+0	0.382	17.70E+6	1.00E-12	000.00E+0	1.00E+0	378.00E-3	9.23E-3	000.00E+0	5.89E+6
535	L3S1K056	Down-dip	3	1	56	000.00E+0	0.564	12.68E+6	1.00E-12	000.00E+0	1.00E+0	498.10E-9	958.00E-3	000.00E+0	286.40E+3
536	L3S1K058	Down-dip	3	1	58	000.00E+0	0.482	19.22E+6	1.00E-12	000.00E+0	1.00E+0	96.00E-3	102.50E-3	000.00E+0	215.40E+3
537	L3S1K060	Down-dip	3	1	60	000.00E+0	0.740	12.64E+6	1.00E-12	000.00E+0	1.00E+0	121.40E-3	65.43E-3	000.00E+0	225.50E+3
538	L3S1K061	Down-dip	3	1	61	000.00E+0	0.464	12.80E+6	1.00E-12	000.00E+0	1.00E+0	1.12E-3	647.00E-3	000.00E+0	177.90E+3
539	L3S1K070	Down-dip	3	1	70	000.00E+0	0.679	15.14E+6	1.00E-12	000.00E+0	1.00E+0	989.30E-6	676.50E-3	000.00E+0	171.50E+3
540	L3S1K078	Down-dip	3	1	78	000.00E+0	1.049	15.25E+6	1.00E-12	000.00E+0	1.00E+0	165.30E-3	33.13E-3	000.00E+0	745.40E+3
541	L3S1K079	Down-dip	3	1	79	000.00E+0	0.981	14.96E+6	1.00E-12	000.00E+0	1.00E+0	1.72E-3	627.00E-3	000.00E+0	177.40E+3
542	L3S1K080	Down-dip	3	1	80	000.00E+0	0.952	12.69E+6	1.00E-12	000.00E+0	1.00E+0	555.00E-3	11.01E-6	000.00E+0	8.00E+6
543	L3S1K082	Down-dip	3	1	82	000.00E+0	0.751	12.64E+6	1.00E-12	17.55E-6	883.80E-3	61.25E-3	160.70E-3	258.30E+3	281.00E+3
544	L3S1K083	Down-dip	3	1	83	000.00E+0	1.073	12.66E+6	1.00E-12	000.00E+0	1.00E+0	523.30E-6	687.90E-3	000.00E+0	222.10E+3
545	L3S1K084	Down-dip	3	1	84	000.00E+0	0.429	16.59E+6	1.00E-12	000.00E+0	1.00E+0	52.29E-3	183.20E-3	000.00E+0	192.60E+3
546	L3S1K093	Down-dip	3	1	93	000.00E+0	0.410	12.42E+6	1.00E-12	000.00E+0	1.00E+0	213.40E-3	28.94E-3	000.00E+0	1.52E+6
547	L3S1L002	Down-dip	3	1	2	000.00E+0	1.028	14.88E+6	1.00E-12	000.00E+0	1.00E+0	108.50E-3	95.33E-3	000.00E+0	528.60E+3
548	L3S1L004	Down-dip	3	1	4	000.00E+0	0.746	12.52E+6	1.00E-12	000.00E+0	1.00E+0	482.90E-6	739.50E-3	000.00E+0	234.50E+3
549	L3S1L009	Down-dip	3	1	9	000.00E+0	0.406	12.61E+6	1.00E-12	000.00E+0	1.00E+0	272.10E-3	20.20E-3	000.00E+0	3.19E+6
550	L3S1L013	Down-dip	3	1	13	000.00E+0	1.048	12.11E+6	1.00E-12	000.00E+0	1.00E+0	2.49E-3	584.50E-3	000.00E+0	185.00E+3
551	L3S1L016	Down-dip	3	1	16	000.00E+0	0.533	12.70E+6	1.00E-12	000.00E+0	1.00E+0	1.86E-6	931.10E-3	000.00E+0	234.90E+3
552	L3S1L017	Down-dip	3	1	17	000.00E+0	0.404	14.70E+6	1.00E-12	000.00E+0	1.00E+0	4.16E-3	482.20E-3	000.00E+0	185.80E+3
553	L3S1L022	Down-dip	3	1	22	000.00E+0	1.151	14.22E+6	1.00E-12	000.00E+0	1.00E+0	270.10E-3	104.60E-6	000.00E+0	8.00E+6
554	L3S1L028	Down-dip	3	1	28	000.00E+0	0.633	16.00E+6	1.00E-12	000.00E+0	1.00E+0	11.93E-3	307.90E-3	000.00E+0	174.50E+3
555	L3S1L031	Down-dip	3	1	31	000.00E+0	0.964	12.67E+6	1.00E-12	000.00E+0	1.00E+0	416.70E-6	700.60E-3	000.00E+0	223.70E+3
556	L3S1L032	Down-dip	3	1	32	000.00E+0	1.150	12.63E+6	1.00E-12	000.00E+0	1.00E+0	5.32E-3	519.10E-3	000.00E+0	156.50E+3
557	L3S1L033	Down-dip	3	1	33	000.00E+0	0.460	14.65E+6	1.00E-12	000.00E+0	1.00E+0	17.65E-3	323.40E-3	000.00E+0	222.90E+3
558	L3S1L035	Down-dip	3	1	35	000.00E+0	1.086	13.74E+6	1.00E-12	000.00E+0	1.00E+0	9.98E-9	983.00E-3	000.00E+0	300.50E+3
559	L3S1L038	Down-dip	3	1	38	000.00E+0	0.965	12.91E+6	1.00E-12	000.00E+0	1.00E+0	39.59E-6	839.30E-3	000.00E+0	190.80E+3
560	L3S1L040	Down-dip	3	1	40	000.00E+0	0.801	14.58E+6	1.00E-12	000.00E+0	1.00E+0	591.20E-6	714.60E-3	000.00E+0	270.90E+3
561	L3S1L041	Down-dip	3	1	41	000.00E+0	0.997	15.08E+6	1.00E-12	000.00E+0	1.00E+0	60.27E-3	183.70E-3	000.00E+0	215.00E+3
562	L3S1L042	Down-dip	3	1	42	000.00E+0	0.618	12.62E+6	1.00E-12	000.00E+0	1.00E+0	67.07E-3	191.10E-3	000.00E+0	263.10E+3
563	L3S1L043	Down-dip	3	1	43	000.00E+0	0.974	13.89E+6	1.00E-12	000.00E+0	1.00E+0	1.32E-3	612.60E-3	000.00E+0	176.80E+3
564	L3S1L051	Down-dip	3	1	51	000.00E+0	1.115	15.32E+6	1.00E-12	000.00E+0	1.00E+0	456.90E-6	701.30E-3	000.00E+0	239.40E+3
565	L3S1L052	Down-dip	3	1	52	000.00E+0	1.053	12.21E+6	1.00E-12	000.00E+0	1.00E+0	365.50E-3	4.10E-3	000.00E+0	6.96E+6
566	L3S1L055	Down-dip	3	1	55	000.00E+0	0.392	17.70E+6	1.00E-12	000.00E+0	1.00E+0	197.70E-3	45.61E-3	000.00E+0	494.70E+3
567	L3S1L056	Down-dip	3	1	56	000.00E+0	0.569	12.68E+6	1.00E-12	000.00E+0	1.00E+0	7.75E-6	910.90E-3	000.00E+0	300.90E+3
568	L3S1L058	Down-dip	3	1	58	000.00E+0	0.494	19.22E+6	1.00E-12	000.00E+0	1.00E+0	21.71E-3	294.80E-3	000.00E+0	203.50E+3
569	L3S1L060	Down-dip	3	1	60	000.00E+0	0.743	12.64E+6	1.00E-12	000.00E+0	1.00E+0	23.94E-3	263.50E-3	000.00E+0	241.20E+3
570	L3S1L061	Down-dip	3	1	61	000.00E+0	0.468	12.80E+6	1.00E-12	000.00E+0	1.00E+0	2.38E-3	573.10E-3	000.00E+0	180.50E+3
571	L3S1L062	Down-dip	3	1	62	000.00E+0	1.005	14.53E+6	1.00E-12	000.00E+0	1.00E+0	6.93E-6	903.10E-3	000.00E+0	233.90E+3
572	L3S1L070	Down-dip	3	1	70	000.00E+0	0.686	15.14E+6	1.00E-12	000.00E+0	1.00E+0	3.54E-3	554.40E-3	000.00E+0	176.30E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
529	L3S1K040	Down-dip	3	1	40	000.00E+0	11	19.16E-9	576.10E-3	119.90E-9	19.62E+0	20.63E-3	0.000	1.34E+6	0.028
530	L3S1K041	Down-dip	3	1	41	000.00E+0	11	912.70E-9	98.62E-3	4.42E-6	2.10E+0	6.39E+0	0.000	190.50E+3	1.218
531	L3S1K042	Down-dip	3	1	42	000.00E+0	11	1.63E-6	260.70E-3	7.29E-6	4.56E+0	4.43E+0	0.000	483.70E+3	2.143
532	L3S1K043	Down-dip	3	1	43	000.00E+0	11	80.62E-9	125.10E-3	430.90E-9	3.36E+0	420.20E-3	0.000	264.30E+3	0.111
533	L3S1K052	Down-dip	3	1	52	000.00E+0	3	20.07E-6	14.04E-3	43.22E-6	30.98E-3	1.45E+3	0.000	4.11E+3	5.958
534	L3S1K055	Down-dip	3	1	55	000.00E+0	3	18.90E-6	8.77E-3	40.18E-6	19.32E-3	2.15E+3	0.000	2.57E+3	5.525
535	L3S1K056	Down-dip	3	1	56	000.00E+0	11	45.90E-12	331.00E-3	262.10E-12	13.92E+0	79.21E-6	0.000	848.60E+3	0.000
536	L3S1K058	Down-dip	3	1	58	000.00E+0	11	8.90E-6	75.57E-3	29.20E-6	599.50E-3	100.40E+0	0.000	107.60E+3	10.810
537	L3S1K060	Down-dip	3	1	60	000.00E+0	11	18.14E-6	115.20E-3	65.62E-6	958.00E-3	137.20E+0	0.000	165.30E+3	22.690
538	L3S1K061	Down-dip	3	1	61	000.00E+0	11	82.78E-9	238.20E-3	379.30E-9	4.56E+0	239.10E-3	0.000	459.60E+3	0.110
539	L3S1K070	Down-dip	3	1	70	000.00E+0	11	70.18E-9	218.70E-3	331.80E-9	4.44E+0	220.40E-3	0.000	423.40E+3	0.093
540	L3S1K078	Down-dip	3	1	78	000.00E+0	11	18.95E-6	47.83E-3	61.01E-6	251.10E-3	379.80E+0	0.000	60.67E+3	23.040
541	L3S1K079	Down-dip	3	1	79	000.00E+0	11	127.20E-9	197.40E-3	688.10E-9	5.28E+0	421.90E-3	0.000	416.10E+3	0.176
542	L3S1K080	Down-dip	3	1	80	000.00E+0	3	9.11E-6	9.53E-6	16.62E-6	9.53E-6	1.27E+6	0.000	2.13E+0	2.699
543	L3S1K082	Down-dip	3	1	82	000.00E+0	11	8.00E-6	180.30E-3	33.35E-6	2.39E+0	34.45E+0	0.000	300.80E+3	10.360
544	L3S1K083	Down-dip	3	1	83	000.00E+0	11	48.73E-9	306.40E-3	294.70E-9	10.24E+0	99.35E-3	0.000	699.20E+3	0.069
545	L3S1K084	Down-dip	3	1	84	000.00E+0	11	4.12E-6	92.80E-3	13.86E-6	864.10E-3	35.97E+0	0.000	139.40E+3	5.016
546	L3S1K093	Down-dip	3	1	93	000.00E+0	11	24.60E-6	54.01E-3	73.91E-6	235.60E-3	442.20E+0	0.000	67.21E+3	29.720
547	L3S1L002	Down-dip	3	1	2	000.00E+0	11	17.22E-6	175.20E-3	69.13E-6	1.78E+0	83.15E+0	0.000	265.20E+3	22.060
548	L3S1L004	Down-dip	3	1	4	000.00E+0	11	46.43E-9	374.10E-3	274.50E-9	11.76E+0	77.82E-3	0.000	849.20E+3	0.066
549	L3S1L009	Down-dip	3	1	9	000.00E+0	7	25.84E-6	32.56E-3	70.66E-6	117.60E-3	776.00E+0	0.000	24.45E+3	18.970
550	L3S1L013	Down-dip	3	1	13	000.00E+0	11	211.40E-9	235.80E-3	1.11E-6	5.87E+0	598.00E-3	0.000	481.80E+3	0.288
551	L3S1L016	Down-dip	3	1	16	000.00E+0	11	132.30E-12	262.00E-3	724.40E-12	8.17E+0	311.90E-6	0.000	602.10E+3	0.000
552	L3S1L017	Down-dip	3	1	17	000.00E+0	11	331.40E-9	198.90E-3	1.59E-6	4.20E+0	1.12E+0	0.000	403.20E+3	0.450
553	L3S1L022	Down-dip	3	1	22	000.00E+0	3	3.47E-6	44.58E-6	5.35E-6	44.58E-6	94.72E+3	0.000	10.57E+0	1.000
554	L3S1L028	Down-dip	3	1	28	000.00E+0	11	859.80E-9	81.37E-3	4.22E-6	2.23E+0	6.48E+0	0.000	179.40E+3	1.162
555	L3S1L031	Down-dip	3	1	31	000.00E+0	11	36.69E-9	278.90E-3	229.30E-9	10.18E+0	80.14E-3	0.000	662.70E+3	0.053
556	L3S1L032	Down-dip	3	1	32	000.00E+0	11	321.50E-9	111.60E-3	1.77E-6	3.13E+0	1.87E+0	0.000	237.40E+3	0.445
557	L3S1L033	Down-dip	3	1	33	000.00E+0	11	1.92E-6	239.70E-3	8.76E-6	4.36E+0	5.60E+0	0.000	459.00E+3	2.569
558	L3S1L035	Down-dip	3	1	35	000.00E+0	11	4.81E-12	169.50E-3	8.33E-12	16.33E+0	9.57E-6	0.000	590.60E+3	0.000
559	L3S1L038	Down-dip	3	1	38	000.00E+0	11	2.56E-9	208.20E-3	13.80E-9	5.63E+0	8.04E-3	0.000	438.70E+3	0.004
560	L3S1L040	Down-dip	3	1	40	000.00E+0	11	73.06E-9	552.30E-3	439.70E-9	17.48E+0	83.19E-3	0.000	1.25E+6	0.104
561	L3S1L041	Down-dip	3	1	41	000.00E+0	11	5.19E-6	89.65E-3	22.69E-6	1.39E+0	43.55E+0	0.000	154.70E+3	6.737
562	L3S1L042	Down-dip	3	1	42	000.00E+0	11	8.03E-6	189.70E-3	32.27E-6	2.36E+0	33.02E+0	0.000	312.00E+3	10.300
563	L3S1L043	Down-dip	3	1	43	000.00E+0	11	90.93E-9	162.00E-3	519.60E-9	4.99E+0	354.40E-3	0.000	361.40E+3	0.128
564	L3S1L051	Down-dip	3	1	51	000.00E+0	11	37.73E-9	192.20E-3	291.60E-9	12.80E+0	100.90E-3	0.000	582.80E+3	0.059
565	L3S1L052	Down-dip	3	1	52	000.00E+0	3	21.02E-6	5.90E-3	42.77E-6	10.15E-3	3.77E+3	0.000	1.67E+3	6.311
566	L3S1L055	Down-dip	3	1	55	000.00E+0	11	23.88E-6	69.09E-3	79.71E-6	448.50E-3	313.30E+0	0.000	93.89E+3	29.420
567	L3S1L056	Down-dip	3	1	56	000.00E+0	11	756.20E-12	397.30E-3	4.95E-9	18.17E+0	1.08E-3	0.000	1.05E+6	0.001
568	L3S1L058	Down-dip	3	1	58	000.00E+0	11	2.15E-6	189.90E-3	9.03E-6	2.92E+0	8.23E+0	0.000	339.40E+3	2.793
569	L3S1L060	Down-dip	3	1	60	000.00E+0	11	2.99E-6	237.50E-3	13.92E-6	4.36E+0	8.95E+0	0.000	446.70E+3	3.998
570	L3S1L061	Down-dip	3	1	61	000.00E+0	11	191.30E-9	243.80E-3	867.00E-9	4.55E+0	543.00E-3	0.000	466.40E+3	0.253
571	L3S1L062	Down-dip	3	1	62	000.00E+0	11	557.70E-12	320.60E-3	3.23E-9	9.84E+0	1.11E-3	0.000	707.80E+3	0.001
572	L3S1L070	Down-dip	3	1	70	000.00E+0	11	288.70E-9	229.80E-3	1.34E-6	4.49E+0	871.10E-3	0.000	438.70E+3	0.382

No.	File (*.TXT)	ID	Rep	Scen	Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
529	L3S1K040	Down-dip	3	1	40	0.026	5.33E+6	0.110	15.55E+6	0.000	99.39E+3	5.18E+3
530	L3S1K041	Down-dip	3	1	41	1.153	3.75E+6	0.540	8.00E+6	0.007	64.06E+3	9.30E+3
531	L3S1K042	Down-dip	3	1	42	2.009	5.54E+6	0.333	11.55E+6	0.000	82.07E+3	12.02E+3
532	L3S1K043	Down-dip	3	1	43	0.111	3.31E+6	0.436	8.03E+6	0.130	64.21E+3	13.36E+3
533	L3S1K052	Down-dip	3	1	52	5.837	8.45E+6	0.726	8.60E+6	0.007	67.79E+3	13.91E+3
534	L3S1K055	Down-dip	3	1	55	5.410	8.77E+6	0.817	8.94E+6	0.055	70.27E+3	22.86E+3
535	L3S1K056	Down-dip	3	1	56	0.000	3.93E+6	0.270	12.79E+6	0.108	87.40E+3	15.22E+3
536	L3S1K058	Down-dip	3	1	58	10.340	6.05E+6	0.601	8.72E+6	0.049	68.77E+3	18.09E+3
537	L3S1K060	Down-dip	3	1	60	22.400	8.58E+6	0.646	12.57E+6	0.175	86.20E+3	30.67E+3
538	L3S1K061	Down-dip	3	1	61	0.107	4.25E+6	0.214	9.43E+6	0.000	73.35E+3	4.05E+3
539	L3S1K070	Down-dip	3	1	70	0.093	4.01E+6	0.204	8.88E+6	0.019	69.93E+3	6.00E+3
540	L3S1K078	Down-dip	3	1	78	22.040	7.65E+6	0.657	9.35E+6	0.100	72.91E+3	25.85E+3
541	L3S1K079	Down-dip	3	1	79	0.173	3.87E+6	0.345	9.57E+6	0.086	73.92E+3	11.21E+3
542	L3S1K080	Down-dip	3	1	80	2.644	8.72E+6	0.868	8.71E+6	0.080	68.58E+3	23.97E+3
543	L3S1K082	Down-dip	3	1	82	10.190	7.09E+6	0.552	12.65E+6	0.187	86.54E+3	29.84E+3
544	L3S1K083	Down-dip	3	1	83	0.066	4.38E+6	0.290	12.22E+6	0.029	84.90E+3	11.85E+3
545	L3S1K084	Down-dip	3	1	84	4.800	5.18E+6	0.502	8.03E+6	0.003	64.08E+3	9.64E+3
546	L3S1K093	Down-dip	3	1	93	28.420	8.95E+6	0.666	10.79E+6	0.000	78.86E+3	14.44E+3
547	L3S1L002	Down-dip	3	1	2	20.980	8.75E+6	0.571	13.70E+6	0.000	91.22E+3	19.85E+3
548	L3S1L004	Down-dip	3	1	4	0.062	4.65E+6	0.225	12.97E+6	0.058	88.37E+3	8.90E+3
549	L3S1L009	Down-dip	3	1	9	17.610	9.13E+6	0.782	10.26E+6	0.083	76.73E+3	25.45E+3
550	L3S1L013	Down-dip	3	1	13	0.277	4.32E+6	0.302	10.28E+6	0.000	76.92E+3	6.01E+3
551	L3S1L016	Down-dip	3	1	16	0.000	3.69E+6	0.230	10.29E+6	0.000	76.99E+3	4.58E+3
552	L3S1L017	Down-dip	3	1	17	0.430	4.49E+6	0.414	10.48E+6	0.006	77.73E+3	8.85E+3
553	L3S1L022	Down-dip	3	1	22	0.979	8.47E+6	0.845	8.45E+6	0.250	66.58E+3	31.68E+3
554	L3S1L028	Down-dip	3	1	28	1.154	3.77E+6	0.686	9.31E+6	0.010	72.76E+3	13.61E+3
555	L3S1L031	Down-dip	3	1	31	0.053	4.15E+6	0.342	12.20E+6	0.000	85.06E+3	7.51E+3
556	L3S1L032	Down-dip	3	1	32	0.438	3.38E+6	0.503	8.21E+6	0.000	64.84E+3	8.43E+3
557	L3S1L033	Down-dip	3	1	33	2.471	5.87E+6	0.450	12.58E+6	0.016	86.57E+3	15.63E+3
558	L3S1L035	Down-dip	3	1	35	0.000	2.77E+6	0.528	12.84E+6	0.071	87.72E+3	16.47E+3
559	L3S1L038	Down-dip	3	1	38	0.003	3.50E+6	0.217	8.71E+6	0.000	68.62E+3	3.85E+3
560	L3S1L040	Down-dip	3	1	40	0.102	5.48E+6	0.149	15.45E+6	0.000	100.80E+3	6.15E+3
561	L3S1L041	Down-dip	3	1	41	6.721	4.98E+6	0.642	9.15E+6	0.000	71.77E+3	11.93E+3
562	L3S1L042	Down-dip	3	1	42	10.200	6.69E+6	0.487	11.85E+6	0.000	83.45E+3	15.78E+3
563	L3S1L043	Down-dip	3	1	43	0.124	3.59E+6	0.435	9.44E+6	0.062	73.34E+3	11.55E+3
564	L3S1L051	Down-dip	3	1	51	0.058	3.45E+6	0.531	13.31E+6	0.245	89.73E+3	28.39E+3
565	L3S1L052	Down-dip	3	1	52	6.184	9.57E+6	0.771	9.64E+6	0.003	74.13E+3	15.99E+3
566	L3S1L055	Down-dip	3	1	55	27.620	8.19E+6	0.718	11.23E+6	0.009	80.80E+3	19.84E+3
567	L3S1L056	Down-dip	3	1	56	0.001	4.25E+6	0.286	14.62E+6	0.010	96.05E+3	10.36E+3
568	L3S1L058	Down-dip	3	1	58	2.611	5.52E+6	0.454	10.92E+6	0.006	79.57E+3	12.65E+3
569	L3S1L060	Down-dip	3	1	60	3.853	6.34E+6	0.486	13.24E+6	0.097	89.32E+3	23.40E+3
570	L3S1L061	Down-dip	3	1	61	0.241	4.52E+6	0.247	9.93E+6	0.000	75.44E+3	4.83E+3
571	L3S1L062	Down-dip	3	1	62	0.001	4.03E+6	0.127	10.71E+6	0.000	78.80E+3	2.60E+3
572	L3S1L070	Down-dip	3	1	70	0.368	4.45E+6	0.263	9.71E+6	0.001	74.49E+3	5.47E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
573	L3S1L075	Down-dip	3	1	75	10,000	0.528	0.107	0.074	1.272	9.92E+6	0.041	9.95E+6	0.888	-1.283	90.18E-15
574	L3S1L078	Down-dip	3	1	78	10,000	0.551	0.131	0.117	1.338	11.69E+6	0.022	11.70E+6	0.669	-1.334	96.90E-15
575	L3S1L079	Down-dip	3	1	79	10,000	0.549	0.027	0.202	1.333	11.56E+6	0.006	11.57E+6	0.284	-1.292	94.89E-15
576	L3S1L080	Down-dip	3	1	80	10,000	0.553	0.118	0.103	1.344	11.86E+6	0.008	11.87E+6	0.637	-1.287	95.47E-15
577	L3S1L082	Down-dip	3	1	82	10,000	0.575	0.071	0.156	1.414	13.74E+6	0.120	13.75E+6	0.682	-1.149	94.99E-15
578	L3S1L083	Down-dip	3	1	83	10,000	0.572	0.126	0.184	1.403	13.43E+6	0.000	13.43E+6	0.249	-1.330	101.50E-15
579	L3S1L084	Down-dip	3	1	84	10,000	0.521	0.073	0.095	1.254	9.46E+6	0.000	9.47E+6	0.493	-0.870	75.87E-15
580	L3S1L093	Down-dip	3	1	93	10,000	0.547	0.099	0.033	1.324	11.33E+6	0.000	11.34E+6	0.667	-0.846	79.44E-15
581	L3S2C004	Down-dip	3	2	4	550	0.588	0.002	0.112	1.456	10.77E+6	0.097	10.77E+6	0.338	-1.083	95.31E-15
582	L3S2C005	Down-dip	3	2	5	550	0.573	0.068	0.079	1.406	9.65E+6	0.073	9.65E+6	0.361	-1.220	97.18E-15
583	L3S2C006	Down-dip	3	2	6	550	0.566	0.004	0.365	1.384	9.14E+6	0.170	9.36E+6	0.989	-1.233	96.14E-15
584	L3S2C012	Down-dip	3	2	12	550	0.556	0.150	0.170	1.352	8.54E+6	0.089	8.55E+6	0.356	-1.221	93.49E-15
585	L3S2C029	Down-dip	3	2	29	550	0.608	0.045	0.139	1.533	12.59E+6	0.107	12.59E+6	0.382	-0.966	96.04E-15
586	L3S2C040	Down-dip	3	2	40	550	0.583	0.040	0.017	1.441	10.44E+6	0.128	10.33E+6	0.264	-1.130	96.05E-15
587	L3S2C051	Down-dip	3	2	51	550	0.586	0.079	0.462	1.452	10.67E+6	0.255	10.68E+6	0.726	-1.276	102.70E-15
588	L3S2C056	Down-dip	3	2	56	550	0.544	0.033	0.254	1.318	7.57E+6	0.466	8.59E+6	0.961	-0.938	81.71E-15
589	L3S2C057	Down-dip	3	2	57	550	0.560	0.105	0.336	1.365	8.80E+6	0.225	8.80E+6	0.427	-0.763	79.55E-15
590	L3S2C064	Down-dip	3	2	64	550	0.590	0.022	0.108	1.464	10.95E+6	0.225	10.95E+6	0.235	-0.762	85.29E-15
591	L3S2C066	Down-dip	3	2	66	550	0.586	0.067	0.297	1.449	10.64E+6	0.112	10.53E+6	0.313	-1.248	101.30E-15
592	L3S2C076	Down-dip	3	2	76	550	0.568	0.120	0.540	1.390	9.24E+6	0.050	9.56E+6	0.876	-0.728	80.07E-15
593	L3S2C082	Down-dip	3	2	82	550	0.583	0.071	0.156	1.441	10.42E+6	0.260	10.42E+6	0.298	-1.084	94.38E-15
594	L3S2C083	Down-dip	3	2	83	550	0.542	0.126	0.184	1.311	7.34E+6	0.528	8.70E+6	0.869	-1.242	91.40E-15
595	L3S2D006	Down-dip	3	2	6	750	0.574	0.004	0.365	1.411	11.43E+6	0.148	11.51E+6	0.989	-1.272	99.58E-15
596	L3S2D012	Down-dip	3	2	12	750	0.551	0.150	0.170	1.336	9.64E+6	0.086	9.63E+6	0.351	-1.254	93.63E-15
597	L3S2D029	Down-dip	3	2	29	750	0.573	0.045	0.139	1.407	11.35E+6	0.094	11.33E+6	0.442	-0.979	88.57E-15
598	L3S2D039	Down-dip	3	2	39	750	0.528	0.124	0.386	1.271	8.08E+6	0.051	8.09E+6	0.489	-1.260	89.29E-15
599	L3S2D051	Down-dip	3	2	51	750	0.557	0.079	0.462	1.354	10.10E+6	0.289	10.11E+6	0.839	-1.294	96.50E-15
600	L3S2D056	Down-dip	3	2	56	750	0.527	0.033	0.254	1.269	8.00E+6	0.576	8.11E+6	0.961	-0.949	79.04E-15
601	L3S2D064	Down-dip	3	2	64	750	0.576	0.022	0.108	1.416	11.03E+6	0.222	11.02E+6	0.250	-0.773	82.83E-15
602	L3S2D074	Down-dip	3	2	74	750	0.533	0.122	0.355	1.285	8.05E+6	0.088	8.07E+6	0.819	-1.061	83.42E-15
603	L3S2D076	Down-dip	3	2	76	750	0.560	0.120	0.540	1.366	10.35E+6	0.038	10.43E+6	0.877	-0.747	79.17E-15
604	L3S2D082	Down-dip	3	2	82	750	0.527	0.071	0.156	1.268	8.06E+6	0.316	8.04E+6	0.411	-1.191	86.63E-15
605	L3S2D083	Down-dip	3	2	83	750	0.529	0.126	0.184	1.276	8.20E+6	0.648	8.33E+6	0.870	-1.259	89.56E-15
606	L3S2H006	Down-dip	3	2	6	2,000	0.588	0.004	0.365	1.456	14.97E+6	0.073	14.97E+6	0.840	-1.318	104.80E-15
607	L3S2H032	Down-dip	3	2	32	2,000	0.519	0.005	0.343	1.247	9.30E+6	0.000	9.31E+6	0.771	-1.362	91.46E-15
608	L3S2H046	Down-dip	3	2	46	2,000	0.499	0.048	0.544	1.200	8.26E+6	0.021	8.28E+6	0.904	-1.290	85.33E-15
609	L3S2H050	Down-dip	3	2	50	2,000	0.500	0.047	0.087	1.202	8.29E+6	0.577	8.32E+6	0.947	-0.783	70.54E-15
610	L3S2H064	Down-dip	3	2	64	2,000	0.533	0.022	0.108	1.285	10.30E+6	0.167	10.30E+6	0.305	-0.792	75.67E-15
611	L3S2H067	Down-dip	3	2	67	2,000	0.495	0.051	0.004	1.190	8.03E+6	0.944	8.11E+6	0.944	-1.104	78.54E-15
612	L3S2H071	Down-dip	3	2	71	2,000	0.539	0.137	0.126	1.303	10.78E+6	0.046	10.78E+6	0.185	-1.243	90.87E-15
613	L3S2H074	Down-dip	3	2	74	2,000	0.516	0.122	0.355	1.241	9.13E+6	0.023	9.14E+6	0.746	-1.094	81.59E-15
614	L3S2H083	Down-dip	3	2	83	2,000	0.534	0.126	0.184	1.288	10.35E+6	0.539	10.43E+6	0.870	-1.308	92.29E-15
615	L3S2J006	Down-dip	3	2	6	4,000	0.567	0.004	0.365	1.388	13.12E+6	0.016	13.12E+6	0.717	-1.309	99.52E-15
616	L3S2J022	Down-dip	3	2	22	4,000	0.512	0.140	0.481	1.230	8.98E+6	0.858	9.06E+6	0.858	-1.360	90.12E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
573	L3S1L075	Down-dip	3	1	75	000.00E+0	0.990	12.47E+6	1.00E-12	000.00E+0	1.00E+0	621.90E-3	276.40E-9	000.00E+0	7.98E+6
574	L3S1L078	Down-dip	3	1	78	000.00E+0	1.095	15.25E+6	1.00E-12	000.00E+0	1.00E+0	176.70E-3	28.84E-3	000.00E+0	1.08E+6
575	L3S1L079	Down-dip	3	1	79	000.00E+0	1.008	14.96E+6	1.00E-12	000.00E+0	1.00E+0	228.20E-6	779.70E-3	000.00E+0	219.30E+3
576	L3S1L080	Down-dip	3	1	80	000.00E+0	0.998	12.69E+6	1.00E-12	000.00E+0	1.00E+0	147.40E-3	46.80E-3	000.00E+0	225.50E+3
577	L3S1L082	Down-dip	3	1	82	000.00E+0	0.757	12.64E+6	1.00E-12	000.00E+0	1.00E+0	174.30E-3	48.81E-3	000.00E+0	225.50E+3
578	L3S1L083	Down-dip	3	1	83	000.00E+0	1.087	12.66E+6	1.00E-12	000.00E+0	1.00E+0	88.34E-6	805.00E-3	000.00E+0	256.30E+3
579	L3S1L084	Down-dip	3	1	84	000.00E+0	0.433	16.59E+6	1.00E-12	000.00E+0	1.00E+0	48.35E-3	193.50E-3	000.00E+0	210.70E+3
580	L3S1L093	Down-dip	3	1	93	000.00E+0	0.413	12.42E+6	1.00E-12	000.00E+0	1.00E+0	210.20E-3	29.91E-3	000.00E+0	1.40E+6
581	L3S2C004	Down-dip	3	2	4	131.80E-15	0.663	12.52E+6	10.96E-15	000.00E+0	1.00E+0	6.42E-3	499.60E-3	000.00E+0	189.10E+3
582	L3S2C005	Down-dip	3	2	5	169.80E-15	0.873	12.90E+6	138.00E-15	000.00E+0	1.00E+0	12.57E-3	379.90E-3	000.00E+0	177.50E+3
583	L3S2C006	Down-dip	3	2	6	13.80E-15	0.895	12.93E+6	26.30E-15	000.00E+0	1.00E+0	936.40E-3	2.51E-6	000.00E+0	7.99E+6
584	L3S2C012	Down-dip	3	2	12	22.39E-15	0.874	11.27E+6	398.10E-15	000.00E+0	1.00E+0	4.01E-3	468.70E-3	000.00E+0	160.70E+3
585	L3S2C029	Down-dip	3	2	29	56.23E-15	0.525	15.07E+6	93.33E-15	000.00E+0	1.00E+0	9.41E-3	428.80E-3	000.00E+0	214.90E+3
586	L3S2C040	Down-dip	3	2	40	9.33E-12	0.728	13.67E+6	912.00E-15	316.00E-6	758.10E-3	6.13E-3	487.80E-3	200.40E+3	183.30E+3
587	L3S2C051	Down-dip	3	2	51	30.90E-15	0.976	14.24E+6	2.51E-12	000.00E+0	1.00E+0	71.77E-3	110.40E-3	000.00E+0	264.80E+3
588	L3S2C056	Down-dip	3	2	56	3.72E-12	0.496	12.17E+6	549.50E-15	9.50E-3	431.50E-3	818.70E-3	999.60E-9	000.00E+0	7.98E+6
589	L3S2C057	Down-dip	3	2	57	117.50E-15	0.350	10.75E+6	1.78E-12	000.00E+0	1.00E+0	652.20E-6	668.30E-3	000.00E+0	172.30E+3
590	L3S2C064	Down-dip	3	2	64	12.88E-15	0.349	13.31E+6	831.80E-15	555.30E-6	723.70E-3	755.00E-6	700.60E-3	203.20E+3	200.90E+3
591	L3S2C066	Down-dip	3	2	66	8.51E-12	0.922	13.09E+6	977.20E-15	000.00E+0	1.00E+0	775.40E-9	949.90E-3	000.00E+0	242.80E+3
592	L3S2C076	Down-dip	3	2	76	104.70E-15	0.326	13.14E+6	70.79E-15	000.00E+0	1.00E+0	314.70E-3	2.72E-6	000.00E+0	8.00E+6
593	L3S2C082	Down-dip	3	2	82	120.20E-15	0.665	12.98E+6	6.17E-12	443.50E-6	723.00E-3	1.38E-3	629.00E-3	197.30E+3	189.40E+3
594	L3S2C083	Down-dip	3	2	83	10.72E-15	0.912	12.47E+6	2.40E-15	41.02E-3	174.60E-3	524.90E-3	533.70E-9	000.00E+0	7.98E+6
595	L3S2D006	Down-dip	3	2	6	13.80E-15	0.968	12.93E+6	26.30E-15	000.00E+0	1.00E+0	939.00E-3	2.06E-6	000.00E+0	7.99E+6
596	L3S2D012	Down-dip	3	2	12	22.39E-15	0.935	11.28E+6	398.10E-15	000.00E+0	1.00E+0	3.63E-3	481.10E-3	000.00E+0	174.70E+3
597	L3S2D029	Down-dip	3	2	29	56.23E-15	0.539	15.07E+6	93.33E-15	000.00E+0	1.00E+0	21.21E-3	320.70E-3	000.00E+0	207.30E+3
598	L3S2D039	Down-dip	3	2	39	14.45E-15	0.945	10.07E+6	3.16E-12	000.00E+0	1.00E+0	1.36E-3	580.40E-3	000.00E+0	158.70E+3
599	L3S2D051	Down-dip	3	2	51	30.90E-15	1.012	14.24E+6	2.51E-12	000.00E+0	1.00E+0	268.70E-3	9.09E-3	000.00E+0	5.25E+6
600	L3S2D056	Down-dip	3	2	56	3.72E-12	0.508	12.12E+6	549.50E-15	44.96E-3	222.10E-3	818.60E-3	1.01E-6	182.30E+3	7.98E+6
601	L3S2D064	Down-dip	3	2	64	12.88E-15	0.357	13.33E+6	831.80E-15	498.80E-6	731.40E-3	1.14E-3	666.70E-3	205.20E+3	199.00E+3
602	L3S2D074	Down-dip	3	2	74	18.62E-15	0.635	11.32E+6	166.00E-15	000.00E+0	1.00E+0	295.90E-3	2.38E-3	000.00E+0	7.22E+6
603	L3S2D076	Down-dip	3	2	76	104.70E-15	0.339	13.14E+6	70.79E-15	000.00E+0	1.00E+0	315.30E-3	2.38E-6	000.00E+0	8.00E+6
604	L3S2D082	Down-dip	3	2	82	120.20E-15	0.824	12.96E+6	6.17E-12	2.16E-3	584.70E-3	12.09E-3	379.60E-3	156.60E+3	156.70E+3
605	L3S2D083	Down-dip	3	2	83	10.72E-15	0.942	12.38E+6	2.40E-15	124.10E-3	52.66E-3	526.30E-3	388.60E-9	225.50E+3	7.98E+6
606	L3S2H006	Down-dip	3	2	6	13.80E-15	1.061	12.96E+6	26.30E-15	000.00E+0	1.00E+0	342.80E-3	23.26E-3	000.00E+0	3.45E+6
607	L3S2H032	Down-dip	3	2	32	15.49E-15	1.158	9.39E+6	1.95E-12	000.00E+0	1.00E+0	206.50E-3	59.87E-3	000.00E+0	310.50E+3
608	L3S2H046	Down-dip	3	2	46	23.99E-15	1.004	10.09E+6	1.20E-12	000.00E+0	1.00E+0	417.60E-3	2.65E-3	000.00E+0	7.39E+6
609	L3S2H050	Down-dip	3	2	50	24.55E-15	0.364	7.76E+6	16.98E-15	107.20E-3	109.60E-3	804.90E-3	538.20E-9	196.30E+3	7.98E+6
610	L3S2H064	Down-dip	3	2	64	12.88E-15	0.371	13.37E+6	831.80E-15	44.59E-6	859.40E-3	3.80E-3	549.50E-3	213.60E+3	183.50E+3
611	L3S2H067	Down-dip	3	2	67	186.20E-15	0.691	10.71E+6	20.42E-15	806.00E-3	293.30E-9	806.10E-3	289.20E-9	7.98E+6	7.98E+6
612	L3S2H071	Down-dip	3	2	71	12.02E-15	0.914	10.18E+6	12.59E-12	000.00E+0	1.00E+0	47.18E-6	834.90E-3	000.00E+0	220.20E+3
613	L3S2H074	Down-dip	3	2	74	18.62E-15	0.678	11.34E+6	166.00E-15	000.00E+0	1.00E+0	157.90E-3	24.70E-3	000.00E+0	1.22E+6
614	L3S2H083	Down-dip	3	2	83	10.72E-15	1.039	12.38E+6	2.40E-15	46.35E-3	159.00E-3	527.00E-3	325.50E-9	230.10E+3	7.99E+6
615	L3S2J006	Down-dip	3	2	6	13.80E-15	1.042	12.97E+6	26.30E-15	000.00E+0	1.00E+0	112.50E-3	123.50E-3	000.00E+0	298.50E+3
616	L3S2J022	Down-dip	3	2	22	72.44E-15	1.153	9.37E+6	100.00E-15	308.70E-3	137.60E-9	308.70E-3	135.70E-9	7.98E+6	7.98E+6

No.	File (*.TXT)	ID	Rep	Scen	Vector	BC well Injection Pressure (Pa) BHP_ABAN	Blowout Duration (Days) time	Brine Rate (m^3/s) BRINEFLW	Gas Rate (ref m^3/s) GASFLW	Max Brine Rate (m^3/s) MAX_BRN	Max Gas Rate (ref m^3/s) MAX_GAS	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s) LGR_MET	Cum Brine from Boundary Condition Well (m^3) BRINE_BC	Cum Gas Produced (ref m^3) GASOUT	Cum Brine Produced (m^3) BRINEOUT
573	L3S1L075	Down-dip	3	1	75	000.00E+0	3	26.11E-6	14.57E-6	52.74E-6	14.57E-6	3.34E+6	0.000	2.37E+0	7.845
574	L3S1L078	Down-dip	3	1	78	000.00E+0	11	25.45E-6	67.10E-3	86.88E-6	359.10E-3	366.40E+0	0.000	85.84E+3	31.450
575	L3S1L079	Down-dip	3	1	79	000.00E+0	11	18.94E-9	283.30E-3	117.40E-9	10.04E+0	41.18E-3	0.000	661.50E+3	0.027
576	L3S1L080	Down-dip	3	1	80	000.00E+0	11	22.49E-6	93.50E-3	78.34E-6	638.10E-3	220.90E+0	0.000	126.10E+3	27.860
577	L3S1L082	Down-dip	3	1	82	000.00E+0	11	28.89E-6	114.30E-3	107.00E-6	881.20E-3	226.90E+0	0.000	160.80E+3	38.480
578	L3S1L083	Down-dip	3	1	83	000.00E+0	11	8.62E-9	372.00E-3	56.43E-9	14.79E+0	13.97E-3	0.000	899.80E+3	0.013
579	L3S1L084	Down-dip	3	1	84	000.00E+0	11	4.56E-6	129.50E-3	16.22E-6	1.35E+0	27.92E+0	0.000	202.20E+3	5.646
580	L3S1L093	Down-dip	3	1	93	000.00E+0	11	26.04E-6	61.34E-3	79.34E-6	277.60E-3	410.30E+0	0.000	76.94E+3	31.570
581	L3S2C004	Down-dip	3	2	4	2.52E+6	11	637.50E-9	267.70E-3	3.09E-6	5.64E+0	1.62E+0	0.000	531.00E+3	0.860
582	L3S2C005	Down-dip	3	2	5	8.10E+6	11	1.28E-6	214.00E-3	5.52E-6	3.53E+0	4.33E+0	0.000	381.50E+3	1.654
583	L3S2C006	Down-dip	3	2	6	8.89E+6	3	20.45E-6	1.58E-6	58.87E-6	3.24E-6	13.42E+6	0.000	440.10E-3	5.906
584	L3S2C012	Down-dip	3	2	12	7.73E+6	11	338.50E-9	183.20E-3	1.50E-6	3.30E+0	1.31E+0	0.000	336.20E+3	0.440
585	L3S2C029	Down-dip	3	2	29	8.87E+6	11	1.09E-6	311.00E-3	5.34E-6	6.60E+0	2.37E+0	0.000	628.20E+3	1.490
586	L3S2C040	Down-dip	3	2	40	10.34E+6	11	636.10E-9	284.10E-3	2.85E-6	5.11E+0	1.58E+0	0.000	527.10E+3	0.833
587	L3S2C051	Down-dip	3	2	51	11.14E+6	11	9.02E-6	94.32E-3	36.66E-6	1.31E+0	72.90E+0	0.000	156.70E+3	11.430
588	L3S2C056	Down-dip	3	2	56	9.16E+6	3	8.51E-6	380.30E-9	19.21E-6	453.00E-9	24.89E+6	0.000	99.44E-3	2.474
589	L3S2C057	Down-dip	3	2	57	7.66E+6	11	41.86E-9	168.90E-3	213.60E-9	4.24E+0	158.10E-3	0.000	368.70E+3	0.058
590	L3S2C064	Down-dip	3	2	64	9.97E+6	11	66.69E-9	325.40E-3	330.60E-9	7.30E+0	134.80E-3	0.000	678.90E+3	0.092
591	L3S2C066	Down-dip	3	2	66	9.81E+6	11	67.50E-12	264.90E-3	385.70E-12	10.83E+0	148.60E-6	0.000	658.20E+3	0.000
592	L3S2C076	Down-dip	3	2	76	9.51E+6	3	11.97E-6	48.84E-6	18.81E-6	48.84E-6	467.30E+3	0.000	7.46E+0	3.457
593	L3S2C082	Down-dip	3	2	82	9.97E+6	11	123.90E-9	274.40E-3	634.60E-9	6.58E+0	298.00E-3	0.000	569.80E+3	0.170
594	L3S2C083	Down-dip	3	2	83	8.10E+6	3	9.21E-6	1.76E-6	16.31E-6	1.76E-6	8.75E+6	0.000	312.50E-3	2.719
595	L3S2D006	Down-dip	3	2	6	7.99E+6	3	52.89E-6	6.11E-6	157.20E-6	8.61E-6	9.34E+6	0.000	1.64E+0	15.280
596	L3S2D012	Down-dip	3	2	12	175.60E+3	11	321.80E-9	207.30E-3	1.53E-6	4.29E+0	1.07E+0	0.000	399.80E+3	0.428
597	L3S2D029	Down-dip	3	2	29	210.50E+3	11	2.26E-6	219.60E-3	9.98E-6	3.71E+0	7.35E+0	0.000	406.20E+3	2.986
598	L3S2D039	Down-dip	3	2	39	159.20E+3	11	84.39E-9	122.70E-3	458.50E-9	3.50E+0	438.60E-3	0.000	267.50E+3	0.117
599	L3S2D051	Down-dip	3	2	51	5.25E+6	3	24.97E-6	16.80E-3	60.12E-6	44.91E-3	1.46E+3	0.000	5.08E+3	7.397
600	L3S2D056	Down-dip	3	2	56	8.01E+6	3	1.75E-6	45.38E-9	3.98E-6	87.87E-9	39.74E+6	0.000	12.90E-3	0.512
601	L3S2D064	Down-dip	3	2	64	199.70E+3	11	98.69E-9	305.10E-3	489.50E-9	6.84E+0	212.70E-3	0.000	637.20E+3	0.136
602	L3S2D074	Down-dip	3	2	74	7.22E+6	3	5.60E-6	911.60E-6	9.91E-6	1.42E-3	6.41E+3	0.000	257.30E+0	1.648
603	L3S2D076	Down-dip	3	2	76	8.00E+6	3	17.52E-6	164.00E-6	29.06E-6	164.00E-6	214.90E+3	0.000	24.14E+0	5.141
604	L3S2D082	Down-dip	3	2	82	162.90E+3	11	938.90E-9	139.40E-3	3.94E-6	2.20E+0	4.91E+0	0.000	244.80E+3	1.203
605	L3S2D083	Down-dip	3	2	83	7.98E+6	3	4.49E-6	272.60E-9	7.90E-6	272.60E-9	24.21E+6	0.000	54.82E-3	1.323
606	L3S2H006	Down-dip	3	2	6	3.45E+6	11	45.11E-6	55.73E-3	197.90E-6	426.80E-3	737.20E+0	0.000	79.06E+3	58.290
607	L3S2H032	Down-dip	3	2	32	310.50E+3	11	20.04E-6	48.35E-3	81.11E-6	480.40E-3	357.70E+0	0.000	71.16E+3	25.450
608	L3S2H046	Down-dip	3	2	46	7.39E+6	3	6.52E-6	811.30E-6	15.14E-6	1.76E-3	8.10E+3	0.000	243.40E+0	1.971
609	L3S2H050	Down-dip	3	2	50	7.98E+6	3	4.34E-6	89.45E-9	9.25E-6	113.60E-9	53.61E+6	0.000	23.70E-3	1.270
610	L3S2H064	Down-dip	3	2	64	183.60E+3	11	298.20E-9	229.10E-3	1.39E-6	4.51E+0	882.60E-3	0.000	454.90E+3	0.402
611	L3S2H067	Down-dip	3	2	67	7.98E+6	3	1.69E-6	14.10E-9	3.80E-6	24.42E-9	126.20E+6	0.000	3.96E-3	0.500
612	L3S2H071	Down-dip	3	2	71	220.20E+3	11	3.74E-9	292.40E-3	21.61E-9	8.97E+0	8.10E-3	0.000	651.00E+3	0.005
613	L3S2H074	Down-dip	3	2	74	1.22E+6	10	16.33E-6	33.09E-3	48.72E-6	153.10E-3	473.30E+0	0.000	37.18E+3	17.600
614	L3S2H083	Down-dip	3	2	83	7.99E+6	3	29.45E-6	59.59E-6	56.75E-6	59.59E-6	1.02E+6	0.000	8.76E+0	8.836
615	L3S2J006	Down-dip	3	2	6	298.50E+3	11	13.78E-6	116.40E-3	68.61E-6	2.12E+0	87.04E+0	0.000	216.10E+3	18.820
616	L3S2J022	Down-dip	3	2	22	7.98E+6	3	8.76E-6	12.18E-6	14.31E-6	12.18E-6	1.61E+6	0.000	1.61E+0	2.558

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
573	L3S1L075	Down-dip	3	1	75	7.687	9.89E+6	0.887	9.92E+6	0.031	75.33E+3	29.71E+3
574	L3S1L078	Down-dip	3	1	78	29.730	9.42E+6	0.666	11.69E+6	0.025	82.73E+3	22.35E+3
575	L3S1L079	Down-dip	3	1	79	0.026	4.05E+6	0.285	11.52E+6	0.015	82.20E+3	6.84E+3
576	L3S1L080	Down-dip	3	1	80	27.140	8.85E+6	0.635	11.86E+6	0.042	83.45E+3	20.55E+3
577	L3S1L082	Down-dip	3	1	82	35.870	9.59E+6	0.679	13.73E+6	0.125	91.34E+3	30.71E+3
578	L3S1L083	Down-dip	3	1	83	0.012	4.43E+6	0.250	13.36E+6	0.000	90.03E+3	8.20E+3
579	L3S1L084	Down-dip	3	1	84	5.371	5.77E+6	0.493	9.45E+6	0.000	73.36E+3	9.38E+3
580	L3S1L093	Down-dip	3	1	93	30.170	9.28E+6	0.664	11.33E+6	0.000	81.22E+3	15.09E+3
581	L3S2C004	Down-dip	3	2	4	0.821	4.74E+6	0.356	10.75E+6	0.097	96.04E+3	15.55E+3
582	L3S2C005	Down-dip	3	2	5	1.644	4.96E+6	0.381	9.64E+6	0.074	90.43E+3	16.71E+3
583	L3S2C006	Down-dip	3	2	6	5.783	9.14E+6	0.989	9.14E+6	0.172	87.96E+3	49.51E+3
584	L3S2C012	Down-dip	3	2	12	0.418	4.24E+6	0.377	8.53E+6	0.089	84.39E+3	13.99E+3
585	L3S2C029	Down-dip	3	2	29	1.464	5.48E+6	0.401	12.55E+6	0.107	104.70E+3	21.27E+3
586	L3S2C040	Down-dip	3	2	40	0.791	4.97E+6	0.290	10.42E+6	0.117	94.33E+3	17.43E+3
587	L3S2C051	Down-dip	3	2	51	11.000	6.20E+6	0.739	10.67E+6	0.258	95.58E+3	36.33E+3
588	L3S2C056	Down-dip	3	2	56	2.422	8.59E+6	0.962	7.57E+6	0.404	80.50E+3	54.79E+3
589	L3S2C057	Down-dip	3	2	57	0.056	3.48E+6	0.447	8.78E+6	0.227	85.77E+3	24.06E+3
590	L3S2C064	Down-dip	3	2	64	0.089	4.50E+6	0.262	10.91E+6	0.220	96.89E+3	22.79E+3
591	L3S2C066	Down-dip	3	2	66	0.000	3.50E+6	0.339	10.60E+6	0.112	95.28E+3	15.88E+3
592	L3S2C076	Down-dip	3	2	76	3.385	9.54E+6	0.879	9.24E+6	0.050	88.64E+3	36.60E+3
593	L3S2C082	Down-dip	3	2	82	0.161	4.34E+6	0.323	10.39E+6	0.255	94.34E+3	25.95E+3
594	L3S2C083	Down-dip	3	2	83	2.664	8.68E+6	0.873	7.34E+6	0.412	79.71E+3	50.66E+3
595	L3S2D006	Down-dip	3	2	6	14.960	10.91E+6	0.989	11.43E+6	0.151	90.94E+3	49.30E+3
596	L3S2D012	Down-dip	3	2	12	0.412	4.42E+6	0.369	9.62E+6	0.087	82.56E+3	13.39E+3
597	L3S2D029	Down-dip	3	2	29	2.877	5.50E+6	0.458	11.34E+6	0.096	90.55E+3	19.47E+3
598	L3S2D039	Down-dip	3	2	39	0.116	3.25E+6	0.503	8.07E+6	0.052	75.29E+3	12.51E+3
599	L3S2D051	Down-dip	3	2	51	7.245	9.76E+6	0.843	10.10E+6	0.294	84.61E+3	36.80E+3
600	L3S2D056	Down-dip	3	2	56	0.502	8.10E+6	0.962	8.00E+6	0.470	75.08E+3	53.36E+3
601	L3S2D064	Down-dip	3	2	64	0.132	4.51E+6	0.271	11.00E+6	0.216	91.54E+3	22.26E+3
602	L3S2D074	Down-dip	3	2	74	1.614	8.04E+6	0.824	8.05E+6	0.089	76.85E+3	21.56E+3
603	L3S2D076	Down-dip	3	2	76	5.036	10.40E+6	0.879	10.35E+6	0.039	85.88E+3	35.21E+3
604	L3S2D082	Down-dip	3	2	82	1.154	4.24E+6	0.427	8.06E+6	0.307	74.96E+3	27.00E+3
605	L3S2D083	Down-dip	3	2	83	1.296	8.33E+6	0.873	8.19E+6	0.478	75.79E+3	50.41E+3
606	L3S2H006	Down-dip	3	2	6	55.300	10.76E+6	0.843	14.96E+6	0.075	96.00E+3	39.27E+3
607	L3S2H032	Down-dip	3	2	32	24.200	6.15E+6	0.777	9.30E+6	0.000	72.61E+3	22.46E+3
608	L3S2H046	Down-dip	3	2	46	1.932	8.22E+6	0.906	8.26E+6	0.021	67.25E+3	21.86E+3
609	L3S2H050	Down-dip	3	2	50	1.244	8.30E+6	0.948	8.28E+6	0.383	67.50E+3	44.23E+3
610	L3S2H064	Down-dip	3	2	64	0.394	4.49E+6	0.324	10.28E+6	0.165	76.85E+3	19.01E+3
611	L3S2H067	Down-dip	3	2	67	0.490	8.10E+6	0.945	8.01E+6	0.825	66.19E+3	58.10E+3
612	L3S2H071	Down-dip	3	2	71	0.005	4.02E+6	0.207	10.74E+6	0.047	78.81E+3	6.70E+3
613	L3S2H074	Down-dip	3	2	74	16.740	7.66E+6	0.752	9.13E+6	0.024	71.90E+3	15.32E+3
614	L3S2H083	Down-dip	3	2	83	8.659	10.36E+6	0.873	10.35E+6	0.392	77.18E+3	48.14E+3
615	L3S2J006	Down-dip	3	2	6	18.430	6.58E+6	0.725	13.11E+6	0.016	88.42E+3	26.67E+3
616	L3S2J022	Down-dip	3	2	22	2.505	9.04E+6	0.862	8.96E+6	0.836	70.69E+3	59.82E+3

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
617	L3S2J025	Down-dip	3	2	25	4,000	0.497	0.065	0.374	1.195	8.35E+6	0.934	8.43E+6	0.934	-1.281	84.65E-15
618	L3S2J032	Down-dip	3	2	32	4,000	0.530	0.005	0.343	1.277	10.07E+6	0.000	10.08E+6	0.514	-1.369	93.92E-15
619	L3S2J046	Down-dip	3	2	46	4,000	0.495	0.048	0.544	1.189	8.31E+6	0.000	8.32E+6	0.870	-1.294	84.74E-15
620	L3S2J050	Down-dip	3	2	50	4,000	0.515	0.047	0.067	1.237	9.09E+6	0.232	9.13E+6	0.946	-0.788	72.75E-15
621	L3S2J064	Down-dip	3	2	64	4,000	0.514	0.022	0.108	1.236	9.12E+6	0.076	9.12E+6	0.351	-0.786	72.63E-15
622	L3S2J067	Down-dip	3	2	67	4,000	0.493	0.051	0.004	1.184	8.17E+6	0.944	8.26E+6	0.944	-1.109	78.30E-15
623	L3S2J071	Down-dip	3	2	71	4,000	0.497	0.137	0.126	1.194	8.40E+6	0.000	8.40E+6	0.173	-1.233	82.93E-15
624	L3S2J074	Down-dip	3	2	74	4,000	0.504	0.122	0.355	1.210	8.69E+6	0.000	8.70E+6	0.625	-1.094	79.57E-15
625	L3S2J083	Down-dip	3	2	83	4,000	0.545	0.126	0.184	1.319	11.20E+6	0.345	11.25E+6	0.870	-1.315	94.79E-15
626	L3S2L006	Down-dip	3	2	6	10,000	0.517	0.004	0.365	1.242	9.18E+6	0.000	9.24E+6	0.996	-1.277	87.89E-15
627	L3S2L022	Down-dip	3	2	22	10,000	0.520	0.140	0.481	1.251	9.35E+6	0.858	9.44E+6	0.858	-1.362	91.71E-15
628	L3S2L025	Down-dip	3	2	25	10,000	0.541	0.065	0.374	1.309	10.90E+6	0.934	10.98E+6	0.934	-1.304	93.61E-15
629	L3S2L039	Down-dip	3	2	39	10,000	0.488	0.124	0.386	1.174	8.15E+6	0.000	8.16E+6	0.523	-1.297	83.73E-15
630	L3S2L050	Down-dip	3	2	50	10,000	0.490	0.047	0.067	1.178	8.20E+6	0.035	8.27E+6	0.952	-0.788	69.26E-15
631	L3S2L083	Down-dip	3	2	83	10,000	0.536	0.126	0.184	1.294	10.53E+6	0.053	10.56E+6	0.869	-1.309	92.79E-15
632	L3S3F004	Down-dip	3	3	4	1,200	0.552	0.002	0.112	1.340	11.85E+6	0.109	11.64E+6	0.133	-1.136	89.53E-15
633	L3S3F005	Down-dip	3	3	5	1,200	0.555	0.068	0.079	1.350	12.14E+6	0.070	12.14E+6	0.083	-1.289	95.98E-15
634	L3S3F006	Down-dip	3	3	6	1,200	0.568	0.004	0.365	1.388	13.21E+6	0.120	13.21E+6	0.420	-1.310	99.60E-15
635	L3S3F017	Down-dip	3	3	17	1,200	0.477	0.111	0.241	1.149	6.69E+6	0.884	8.05E+6	0.883	-0.818	68.23E-15
636	L3S3F025	Down-dip	3	3	25	1,200	0.462	0.065	0.374	1.118	5.77E+6	0.958	8.09E+6	0.973	-1.272	78.94E-15
637	L3S3F040	Down-dip	3	3	40	1,200	0.574	0.040	0.017	1.409	13.82E+6	0.072	13.65E+6	0.147	-1.183	95.92E-15
638	L3S3F053	Down-dip	3	3	53	1,200	0.486	0.075	0.429	1.169	7.31E+6	0.055	8.05E+6	0.921	-1.279	82.80E-15
639	L3S3F056	Down-dip	3	3	56	1,200	0.515	0.033	0.254	1.238	8.97E+6	0.299	9.30E+6	0.961	-0.980	77.94E-15
640	L3S3F062	Down-dip	3	3	62	1,200	0.530	0.135	0.091	1.277	10.09E+6	0.011	10.09E+6	0.493	-1.286	90.65E-15
641	L3S3F064	Down-dip	3	3	64	1,200	0.564	0.022	0.108	1.378	12.92E+6	0.197	12.92E+6	0.255	-0.806	81.53E-15
642	L3S3F074	Down-dip	3	3	74	1,200	0.522	0.122	0.355	1.256	9.52E+6	0.064	9.53E+6	0.410	-1.097	82.69E-15
643	L3S3F082	Down-dip	3	3	82	1,200	0.549	0.071	0.156	1.332	11.63E+6	0.266	11.63E+6	0.315	-1.139	89.13E-15
644	L3S3F083	Down-dip	3	3	83	1,200	0.510	0.126	0.184	1.225	8.60E+6	0.245	9.21E+6	0.870	-1.294	87.25E-15
645	L3S3F090	Down-dip	3	3	90	1,200	0.488	0.024	0.304	1.173	7.11E+6	0.972	8.97E+6	0.972	-1.062	76.15E-15
646	L3S3F099	Down-dip	3	3	99	1,200	0.506	0.138	0.260	1.215	8.52E+6	0.247	8.53E+6	0.730	-1.115	80.52E-15
647	L3S3G006	Down-dip	3	3	6	1,400	0.569	0.004	0.365	1.394	13.34E+6	0.108	13.33E+6	0.394	-1.311	100.00E-15
648	L3S3G056	Down-dip	3	3	56	1,400	0.505	0.033	0.254	1.214	8.50E+6	0.300	8.60E+6	0.961	-0.975	76.31E-15
649	L3S3G057	Down-dip	3	3	57	1,400	0.502	0.105	0.336	1.206	8.35E+6	0.271	8.32E+6	0.336	-0.791	70.98E-15
650	L3S3G064	Down-dip	3	3	64	1,400	0.560	0.022	0.108	1.364	12.50E+6	0.189	12.50E+6	0.258	-0.604	80.64E-15
651	L3S3G074	Down-dip	3	3	74	1,400	0.519	0.122	0.355	1.250	9.33E+6	0.053	9.33E+6	0.396	-1.095	82.19E-15
652	L3S3G082	Down-dip	3	3	82	1,400	0.501	0.071	0.156	1.203	8.30E+6	0.320	8.27E+6	0.432	-1.217	83.00E-15
653	L3S3G083	Down-dip	3	3	83	1,400	0.513	0.126	0.184	1.234	8.93E+6	0.231	9.05E+6	0.870	-1.293	87.83E-15
654	L3S3I032	Down-dip	3	3	32	3,000	0.522	0.005	0.343	1.255	9.48E+6	0.000	9.48E+6	0.609	-1.363	92.10E-15
655	L3S3I046	Down-dip	3	3	46	3,000	0.497	0.048	0.544	1.193	8.24E+6	0.003	8.27E+6	0.697	-1.292	84.94E-15
656	L3S3I050	Down-dip	3	3	50	3,000	0.501	0.047	0.067	1.203	8.45E+6	0.344	8.48E+6	0.946	-0.786	70.68E-15
657	L3S3I064	Down-dip	3	3	64	3,000	0.532	0.022	0.108	1.283	10.24E+6	0.124	10.24E+6	0.295	-0.792	75.54E-15
658	L3S3I083	Down-dip	3	3	83	3,000	0.535	0.126	0.184	1.292	10.47E+6	0.138	10.51E+6	0.870	-1.308	92.61E-15
659	L3S3K022	Down-dip	3	3	22	5,000	0.512	0.140	0.481	1.230	8.98E+6	0.858	9.07E+6	0.858	-1.360	90.13E-15
660	L3S3K025	Down-dip	3	3	25	5,000	0.486	0.065	0.374	1.168	7.96E+6	0.933	8.04E+6	0.933	-1.280	82.71E-15

		*	*	*	*	BC well Sand Permeability (m^2)	Total Area solids released (m^2)	Castile Reservoir Pressure (Pa)	Castile Reservoir Permeability (m^3)	Up-dip Brine Relative Permeability (m^2)	Up-dip Gas Relative Permeability (m^3)	Down-dip Brine Relative Permeability (m^2)	Down-dip Gas Relative Permeability (m^3)	Up-dip Flowing Bottom-hole Pressure (Pa)	Down-dip Flowing Bottom-hole Pressure (Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	PRM_SAND	AREA_TOT	CAST_RE	PRM_CAST	KRW2	KRG2	KRW4	KRG4	FBHP2	FBHP4
617	L3S2J025	Down-dip	3	2	25	39.81E-15	0.986	11.46E+6	63.10E-15	660.20E-3	75.15E-9	660.30E-3	74.06E-9	7.99E+6	7.99E+6
618	L3S2J032	Down-dip	3	2	32	15.49E-15	1.176	9.40E+6	1.95E-12	000.00E+0	1.00E+0	6.94E-3	488.00E-3	000.00E+0	180.10E+3
619	L3S2J046	Down-dip	3	2	46	23.99E-15	1.012	10.11E+6	1.20E-12	000.00E+0	1.00E+0	290.10E-3	12.71E-3	000.00E+0	4.63E+6
620	L3S2J050	Down-dip	3	2	50	24.55E-15	0.368	7.79E+6	16.98E-15	1.66E-3	624.10E-3	803.80E-3	626.80E-9	171.10E+3	7.98E+6
621	L3S2J064	Down-dip	3	2	64	12.88E-15	0.366	13.37E+6	831.80E-15	000.00E+0	1.00E+0	8.20E-3	459.70E-3	000.00E+0	168.20E+3
622	L3S2J067	Down-dip	3	2	67	186.20E-15	0.699	10.72E+6	20.42E-15	806.00E-3	294.70E-9	806.10E-3	289.60E-9	7.98E+6	7.98E+6
623	L3S2J071	Down-dip	3	2	71	12.02E-15	0.895	10.29E+6	12.59E-12	000.00E+0	1.00E+0	19.67E-6	869.80E-3	000.00E+0	190.30E+3
624	L3S2J074	Down-dip	3	2	74	18.62E-15	0.678	11.35E+6	166.00E-15	000.00E+0	1.00E+0	40.29E-3	157.30E-3	000.00E+0	199.50E+3
625	L3S2J083	Down-dip	3	2	83	10.72E-15	1.056	12.38E+6	2.40E-15	2.51E-3	537.10E-3	527.10E-3	313.10E-9	196.50E+3	7.99E+6
626	L3S2L006	Down-dip	3	2	6	13.80E-15	0.978	12.97E+6	26.30E-15	000.00E+0	1.00E+0	975.30E-3	194.70E-12	000.00E+0	8.03E+6
627	L3S2L022	Down-dip	3	2	22	72.44E-15	1.159	9.44E+6	100.00E-15	308.60E-3	147.70E-9	308.60E-3	145.10E-9	7.98E+6	7.98E+6
628	L3S2L025	Down-dip	3	2	25	39.81E-15	1.031	11.46E+6	63.10E-15	660.90E-3	59.61E-9	660.90E-3	58.86E-9	7.99E+6	7.99E+6
629	L3S2L039	Down-dip	3	2	39	14.45E-15	1.018	10.20E+6	3.16E-12	000.00E+0	1.00E+0	3.96E-3	458.10E-3	000.00E+0	155.80E+3
630	L3S2L050	Down-dip	3	2	50	24.55E-15	0.367	7.86E+6	16.98E-15	000.00E+0	1.00E+0	821.10E-3	5.34E-9	000.00E+0	8.02E+6
631	L3S2L083	Down-dip	3	2	83	10.72E-15	1.042	12.38E+6	2.40E-15	000.00E+0	1.00E+0	525.30E-3	488.50E-9	000.00E+0	7.99E+6
632	L3S3F004	Down-dip	3	3	4	131.80E-15	0.738	12.56E+6	10.96E-15	000.00E+0	1.00E+0	1.05E-6	950.70E-3	000.00E+0	264.10E+3
633	L3S3F005	Down-dip	3	3	5	169.80E-15	1.001	13.99E+6	138.00E-15	000.00E+0	1.00E+0	1.41E-9	991.30E-3	000.00E+0	288.40E+3
634	L3S3F006	Down-dip	3	3	6	13.80E-15	1.045	15.66E+6	26.30E-15	000.00E+0	1.00E+0	119.20E-6	820.00E-3	000.00E+0	250.20E+3
635	L3S3F017	Down-dip	3	3	17	1.59E-12	0.390	11.65E+6	195.00E-15	541.30E-3	711.70E-9	540.30E-3	861.70E-9	000.00E+0	7.98E+6
636	L3S3F025	Down-dip	3	3	25	39.81E-15	0.968	11.72E+6	63.10E-15	771.60E-3	000.00E+0	850.30E-3	000.00E+0	000.00E+0	8.00E+6
637	L3S3F040	Down-dip	3	3	40	9.33E-12	0.811	14.59E+6	912.00E-15	24.83E-6	878.10E-3	574.10E-6	716.80E-3	274.80E+3	242.10E+3
638	L3S3F053	Down-dip	3	3	53	1.05E-12	0.982	11.63E+6	269.20E-15	000.00E+0	1.00E+0	576.70E-3	1.15E-6	000.00E+0	7.98E+6
639	L3S3F056	Down-dip	3	3	56	3.72E-12	0.539	12.89E+6	549.50E-15	31.03E-6	870.00E-3	819.60E-3	896.80E-9	196.10E+3	7.98E+6
640	L3S3F062	Down-dip	3	3	62	436.50E-15	0.995	13.66E+6	588.80E-15	000.00E+0	1.00E+0	49.10E-3	155.30E-3	000.00E+0	228.80E+3
641	L3S3F064	Down-dip	3	3	64	12.88E-15	0.381	13.28E+6	831.80E-15	201.40E-6	788.90E-3	1.27E-3	657.60E-3	240.70E+3	224.80E+3
642	L3S3F074	Down-dip	3	3	74	18.62E-15	0.682	12.91E+6	166.00E-15	000.00E+0	1.00E+0	112.10E-6	783.50E-3	000.00E+0	194.80E+3
643	L3S3F082	Down-dip	3	3	82	120.20E-15	0.742	13.19E+6	6.17E-12	534.30E-6	709.20E-3	2.10E-3	587.40E-3	213.10E+3	203.50E+3
644	L3S3F083	Down-dip	3	3	83	10.72E-15	1.012	12.88E+6	2.40E-15	70.12E-6	816.80E-3	526.30E-3	384.80E-9	184.90E+3	7.98E+6
645	L3S3F090	Down-dip	3	3	90	562.30E-15	0.636	12.57E+6	239.90E-15	859.30E-3	356.00E-9	859.70E-3	332.60E-9	000.00E+0	7.98E+6
646	L3S3F099	Down-dip	3	3	99	263.00E-15	0.708	12.11E+6	3.72E-12	000.00E+0	1.00E+0	186.90E-3	16.47E-3	000.00E+0	2.71E+6
647	L3S3G006	Down-dip	3	3	6	13.80E-15	1.046	15.66E+6	26.30E-15	000.00E+0	1.00E+0	10.88E-6	906.10E-3	000.00E+0	273.70E+3
648	L3S3G056	Down-dip	3	3	56	3.72E-12	0.534	12.82E+6	549.50E-15	34.44E-6	866.20E-3	819.00E-3	966.20E-9	188.40E+3	7.98E+6
649	L3S3G057	Down-dip	3	3	57	117.50E-15	0.370	13.93E+6	1.78E-12	000.00E+0	1.00E+0	15.65E-15	999.60E-3	000.00E+0	195.60E+3
650	L3S3G064	Down-dip	3	3	64	12.88E-15	0.380	13.30E+6	831.80E-15	140.80E-6	808.20E-3	1.39E-3	649.60E-3	237.70E+3	218.20E+3
651	L3S3G074	Down-dip	3	3	74	18.62E-15	0.680	12.91E+6	166.00E-15	000.00E+0	1.00E+0	39.34E-6	836.60E-3	000.00E+0	199.60E+3
652	L3S3G082	Down-dip	3	3	82	120.20E-15	0.867	13.18E+6	6.17E-12	2.35E-3	575.60E-3	16.05E-3	341.40E-3	159.20E+3	162.30E+3
653	L3S3G083	Down-dip	3	3	83	10.72E-15	1.009	12.83E+6	2.40E-15	27.12E-6	858.30E-3	526.60E-3	360.50E-9	196.20E+3	7.98E+6
654	L3S3I032	Down-dip	3	3	32	15.49E-15	1.162	10.95E+6	1.95E-12	000.00E+0	1.00E+0	35.49E-3	273.90E-3	000.00E+0	193.30E+3
655	L3S3I046	Down-dip	3	3	46	23.99E-15	1.008	11.51E+6	1.20E-12	000.00E+0	1.00E+0	389.10E-3	3.93E-3	000.00E+0	7.04E+6
656	L3S3I050	Down-dip	3	3	50	24.55E-15	0.366	9.01E+6	16.98E-15	11.28E-3	406.40E-3	803.00E-3	701.30E-9	161.20E+3	7.98E+6
657	L3S3I064	Down-dip	3	3	64	12.88E-15	0.371	13.36E+6	831.80E-15	385.90E-9	961.60E-3	3.14E-3	570.00E-3	241.10E+3	183.30E+3
658	L3S3I083	Down-dip	3	3	83	10.72E-15	1.041	12.83E+6	2.40E-15	000.00E+0	1.00E+0	526.60E-3	357.90E-9	000.00E+0	7.99E+6
659	L3S3K022	Down-dip	3	3	22	72.44E-15	1.153	10.25E+6	100.00E-15	308.60E-3	147.40E-9	308.60E-3	143.70E-9	7.98E+6	7.98E+6
660	L3S3K025	Down-dip	3	3	25	39.81E-15	0.983	11.71E+6	63.10E-15	660.10E-3	79.01E-9	660.10E-3	77.36E-9	000.00E+0	7.99E+6

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
617	L3S2J025	Down-dip	3	2	25	7.99E+6	3	5.38E-6	90.71E-9	11.91E-6	90.71E-9	83.26E+6	0.000	19.44E-3	1.615
618	L3S2J032	Down-dip	3	2	32	180.20E+3	11	515.90E-9	144.90E-3	3.08E-6	4.77E+0	2.23E+0	0.000	330.90E+3	0.736
619	L3S2J046	Down-dip	3	2	46	4.63E+6	3	16.94E-6	11.13E-3	43.36E-6	34.92E-3	1.45E+3	0.000	3.41E+3	4.961
620	L3S2J050	Down-dip	3	2	50	7.98E+6	3	14.83E-6	895.00E-9	31.98E-6	895.00E-9	20.72E+6	0.000	209.90E-3	4.344
621	L3S2J064	Down-dip	3	2	64	168.20E+3	11	599.10E-9	175.40E-3	2.54E-6	2.86E+0	2.42E+0	0.000	324.20E+3	0.784
622	L3S2J067	Down-dip	3	2	67	7.98E+6	3	3.67E-6	41.52E-9	8.31E-6	54.47E-9	98.23E+6	0.000	11.09E-3	1.088
623	L3S2J071	Down-dip	3	2	71	190.30E+3	11	1.21E-9	203.80E-3	6.39E-9	5.23E+0	3.92E-3	0.000	424.30E+3	0.002
624	L3S2J074	Down-dip	3	2	74	199.60E+3	11	3.47E-6	80.88E-3	13.01E-6	974.10E-3	33.24E+0	0.000	130.10E+3	4.326
625	L3S2J083	Down-dip	3	2	83	7.99E+6	3	39.29E-6	150.70E-6	77.92E-6	150.70E-6	546.70E+3	0.000	21.93E+0	11.870
626	L3S2L006	Down-dip	3	2	6	8.03E+6	3	15.72E-6	706.90E-12	49.50E-6	716.60E-12	25.65E+9	0.000	175.40E-6	4.497
627	L3S2L022	Down-dip	3	2	22	7.98E+6	3	11.75E-6	33.22E-6	19.62E-6	33.22E-6	812.70E+3	0.000	4.32E+0	3.457
628	L3S2L025	Down-dip	3	2	25	7.99E+6	3	37.63E-6	28.10E-6	88.42E-6	28.10E-6	2.29E+6	0.000	4.99E+0	11.360
629	L3S2L039	Down-dip	3	2	39	155.90E+3	11	244.60E-9	102.90E-3	1.27E-6	2.64E+0	1.56E+0	0.000	213.90E+3	0.334
630	L3S2L050	Down-dip	3	2	50	8.02E+6	3	3.20E-6	1.62E-9	6.95E-6	1.62E-9	2.46E+9	0.000	380.20E-6	0.934
631	L3S2L083	Down-dip	3	2	83	7.99E+6	3	30.99E-6	76.64E-6	59.92E-6	76.64E-6	824.70E+3	0.000	11.39E+0	9.311
632	L3S3F004	Down-dip	3	3	4	2.73E+6	11	87.85E-12	356.00E-3	520.10E-12	12.06E+0	151.80E-6	0.000	830.90E+3	0.000
633	L3S3F005	Down-dip	3	3	5	9.07E+6	11	149.50E-15	393.50E-3	764.90E-15	14.11E+0	228.80E-9	0.000	919.40E+3	0.000
634	L3S3F006	Down-dip	3	3	6	5.90E+6	11	9.77E-9	246.20E-3	73.49E-9	14.32E+0	21.59E-3	0.000	697.00E+3	0.015
635	L3S3F017	Down-dip	3	3	17	8.61E+6	3	657.80E-9	23.73E-9	1.12E-6	31.72E-9	29.87E+6	0.000	6.39E-3	0.191
636	L3S3F025	Down-dip	3	3	25	8.55E+6	3	1.22E-6	000.00E+0	2.83E-6	000.00E+0	########	0.000	000.00E+0	0.330
637	L3S3F040	Down-dip	3	3	40	11.25E+6	11	61.26E-9	439.60E-3	353.00E-9	12.67E+0	88.97E-3	0.000	968.60E+3	0.086
638	L3S3F053	Down-dip	3	3	53	8.62E+6	3	705.30E-9	31.11E-9	1.44E-6	51.00E-9	23.99E+6	0.000	8.77E-3	0.210
639	L3S3F056	Down-dip	3	3	56	9.84E+6	3	17.24E-6	1.41E-6	40.22E-6	1.41E-6	14.70E+6	0.000	341.80E-3	5.018
640	L3S3F062	Down-dip	3	3	62	10.21E+6	11	5.65E-6	135.80E-3	20.96E-6	1.46E+0	33.68E+0	0.000	207.90E+3	7.003
641	L3S3F064	Down-dip	3	3	64	9.96E+6	11	116.50E-9	345.10E-3	627.20E-9	9.02E+0	215.40E-3	0.000	760.70E+3	0.164
642	L3S3F074	Down-dip	3	3	74	8.52E+6	11	6.86E-9	165.90E-3	41.30E-9	6.02E+0	24.75E-3	0.000	402.30E+3	0.010
643	L3S3F082	Down-dip	3	3	82	10.19E+6	11	188.20E-9	268.60E-3	1.02E-6	7.20E+0	453.30E-3	0.000	578.50E+3	0.262
644	L3S3F083	Down-dip	3	3	83	8.14E+6	3	14.51E-6	7.05E-6	26.80E-6	7.05E-6	3.88E+6	0.000	1.12E+0	4.311
645	L3S3F090	Down-dip	3	3	90	9.46E+6	3	12.45E-6	289.60E-9	30.78E-6	304.20E-9	49.03E+6	0.000	73.08E-3	3.580
646	L3S3F099	Down-dip	3	3	99	9.10E+6	3	19.56E-6	26.54E-3	41.84E-6	69.36E-3	721.20E+0	0.000	7.92E+3	5.713
647	L3S3G006	Down-dip	3	3	6	274.60E+3	11	943.70E-12	261.50E-3	6.79E-9	16.14E+0	1.92E-3	0.000	753.30E+3	0.001
648	L3S3G056	Down-dip	3	3	56	8.02E+6	3	7.98E-6	358.90E-9	18.52E-6	426.20E-9	24.86E+6	0.000	93.89E-3	2.332
649	L3S3G057	Down-dip	3	3	57	202.60E+3	11	1.01E-15	155.70E-3	1.04E-15	5.05E+0	2.49E-9	0.000	372.40E+3	0.000
650	L3S3G064	Down-dip	3	3	64	218.80E+3	11	124.00E-9	325.90E-3	657.00E-9	8.27E+0	244.00E-3	0.000	712.20E+3	0.174
651	L3S3G074	Down-dip	3	3	74	200.50E+3	11	2.34E-9	163.70E-3	14.09E-9	6.13E+0	8.47E-3	0.000	402.70E+3	0.003
652	L3S3G082	Down-dip	3	3	82	169.00E+3	11	1.22E-6	127.90E-3	5.15E-6	2.00E+0	7.03E+0	0.000	223.40E+3	1.570
653	L3S3G083	Down-dip	3	3	83	7.98E+6	3	12.85E-6	4.60E-6	23.56E-6	4.60E-6	5.17E+6	0.000	742.50E-3	3.813
654	L3S3I032	Down-dip	3	3	32	193.40E+3	11	2.86E-6	105.40E-3	14.50E-6	2.33E+0	18.81E+0	0.000	206.40E+3	3.884
655	L3S3I046	Down-dip	3	3	46	7.04E+6	3	8.09E-6	1.54E-3	19.36E-6	3.57E-3	5.23E+3	0.000	465.30E+0	2.435
656	L3S3I050	Down-dip	3	3	50	7.98E+6	3	6.33E-6	202.40E-9	13.51E-6	227.50E-9	35.49E+6	0.000	52.23E-3	1.852
857	L3S3I064	Down-dip	3	3	64	183.30E+3	11	243.00E-9	231.20E-3	1.14E-6	4.62E+0	710.50E-3	0.000	461.20E+3	0.328
658	L3S3I083	Down-dip	3	3	83	7.99E+6	3	30.49E-6	67.91E-6	58.91E-6	67.91E-6	924.40E+3	0.000	10.00E+0	9.155
659	L3S3K022	Down-dip	3	3	22	7.98E+6	3	8.82E-6	12.62E-6	14.41E-6	12.62E-6	1.57E+6	0.000	1.67E+0	2.576
660	L3S3K025	Down-dip	3	3	25	7.99E+6	3	659.50E-9	1.97E-9	1.45E-6	3.02E-9	363.10E+6	0.000	545.20E-6	0.198

No.	File (*.TXT)	ID	Rep	Scen	Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
617	L3S2J025	Down-dip	3	2	25	1.583	8.41E+6	0.935	8.33E+6	0.933	66.70E+3	62.27E+3
618	L3S2J032	Down-dip	3	2	32	0.726	3.81E+6	0.528	10.06E+6	0.000	75.91E+3	13.38E+3
619	L3S2J046	Down-dip	3	2	46	4.859	7.96E+6	0.873	8.31E+6	0.000	66.09E+3	18.62E+3
620	L3S2J050	Down-dip	3	2	50	4.254	9.06E+6	0.947	9.09E+6	0.154	71.47E+3	39.06E+3
621	L3S2J064	Down-dip	3	2	64	0.783	4.43E+6	0.369	9.11E+6	0.082	71.37E+3	14.36E+3
622	L3S2J067	Down-dip	3	2	67	1.066	8.24E+6	0.945	8.15E+6	0.744	65.50E+3	54.55E+3
623	L3S2J071	Down-dip	3	2	71	0.002	3.45E+6	0.195	8.38E+6	0.000	66.60E+3	3.14E+3
624	L3S2J074	Down-dip	3	2	74	4.120	5.18E+6	0.636	8.69E+6	0.000	68.45E+3	11.16E+3
625	L3S2J083	Down-dip	3	2	83	11.640	11.16E+6	0.872	11.20E+6	0.238	80.61E+3	44.29E+3
626	L3S2L006	Down-dip	3	2	6	4.402	8.99E+6	0.996	9.18E+6	0.000	72.03E+3	26.55E+3
627	L3S2L022	Down-dip	3	2	22	3.387	9.41E+6	0.862	9.33E+6	0.790	72.98E+3	59.92E+3
628	L3S2L025	Down-dip	3	2	25	11.130	10.82E+6	0.934	10.88E+6	0.921	79.49E+3	73.67E+3
629	L3S2L039	Down-dip	3	2	39	0.331	3.48E+6	0.537	8.14E+6	0.000	64.34E+3	8.81E+3
630	L3S2L050	Down-dip	3	2	50	0.915	8.26E+6	0.953	8.20E+6	0.024	64.84E+3	26.71E+3
631	L3S2L083	Down-dip	3	2	83	9.125	10.49E+6	0.872	10.53E+6	0.030	77.89E+3	31.21E+3
632	L3S3F004	Down-dip	3	3	4	0.000	4.09E+6	0.157	11.79E+6	0.109	82.97E+3	9.78E+3
633	L3S3F005	Down-dip	3	3	5	0.000	4.15E+6	0.112	12.08E+6	0.070	84.16E+3	6.47E+3
634	L3S3F006	Down-dip	3	3	6	0.015	3.63E+6	0.438	13.15E+6	0.122	88.45E+3	17.76E+3
635	L3S3F017	Down-dip	3	3	17	0.187	8.07E+6	0.887	6.67E+6	0.695	61.48E+3	47.91E+3
636	L3S3F025	Down-dip	3	3	25	0.322	8.13E+6	0.974	5.74E+6	0.958	58.00E+3	55.78E+3
637	L3S3F040	Down-dip	3	3	40	0.082	5.12E+6	0.176	13.74E+6	0.061	90.73E+3	11.28E+3
638	L3S3F053	Down-dip	3	3	53	0.206	8.08E+6	0.923	7.31E+6	0.038	63.85E+3	30.72E+3
639	L3S3F056	Down-dip	3	3	56	4.913	9.24E+6	0.962	8.97E+6	0.296	71.55E+3	39.79E+3
640	L3S3F062	Down-dip	3	3	62	6.583	6.40E+6	0.510	10.09E+6	0.011	75.91E+3	10.50E+3
641	L3S3F064	Down-dip	3	3	64	0.155	4.84E+6	0.279	12.87E+6	0.192	87.28E+3	20.67E+3
642	L3S3F074	Down-dip	3	3	74	0.010	3.30E+6	0.433	9.50E+6	0.065	73.63E+3	11.52E+3
643	L3S3F082	Down-dip	3	3	82	0.250	4.64E+6	0.340	11.60E+6	0.259	82.11E+3	25.45E+3
644	L3S3F083	Down-dip	3	3	83	4.223	9.17E+6	0.873	8.60E+6	0.236	70.05E+3	36.18E+3
645	L3S3F090	Down-dip	3	3	90	3.504	8.92E+6	0.973	7.08E+6	0.574	64.17E+3	48.19E+3
646	L3S3F099	Down-dip	3	3	99	5.595	8.22E+6	0.737	8.52E+6	0.252	68.93E+3	26.41E+3
647	L3S3G006	Down-dip	3	3	6	0.001	3.50E+6	0.412	13.27E+6	0.110	89.06E+3	16.48E+3
648	L3S3G056	Down-dip	3	3	56	2.284	8.55E+6	0.962	8.50E+6	0.299	68.89E+3	39.24E+3
649	L3S3G057	Down-dip	3	3	57	0.000	2.86E+6	0.355	8.33E+6	0.279	67.96E+3	20.03E+3
650	L3S3G064	Down-dip	3	3	64	0.173	4.78E+6	0.279	12.46E+6	0.184	85.69E+3	20.13E+3
651	L3S3G074	Down-dip	3	3	74	0.003	3.14E+6	0.414	9.31E+6	0.053	72.86E+3	10.47E+3
652	L3S3G082	Down-dip	3	3	82	1.504	4.38E+6	0.447	8.29E+6	0.306	67.58E+3	26.71E+3
653	L3S3G083	Down-dip	3	3	83	3.735	9.02E+6	0.873	8.93E+6	0.221	71.06E+3	36.86E+3
654	L3S3I032	Down-dip	3	3	32	3.719	4.38E+6	0.620	9.47E+6	0.000	73.49E+3	11.91E+3
655	L3S3I046	Down-dip	3	3	46	2.386	8.19E+6	0.900	8.24E+6	0.003	66.51E+3	18.36E+3
656	L3S3I050	Down-dip	3	3	50	1.814	8.45E+6	0.947	8.45E+6	0.229	67.66E+3	39.44E+3
657	L3S3I064	Down-dip	3	3	64	0.321	4.43E+6	0.315	10.22E+6	0.125	76.61E+3	16.31E+3
658	L3S3I083	Down-dip	3	3	83	8.972	10.44E+6	0.872	10.47E+6	0.129	77.62E+3	35.10E+3
859	L3S3K022	Down-dip	3	3	22	2.523	9.05E+6	0.862	8.96E+6	0.805	70.70E+3	58.63E+3
660	L3S3K025	Down-dip	3	3	25	0.194	8.04E+6	0.935	7.94E+6	0.933	63.68E+3	59.45E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
661	L3S3K032	Down-dip	3	3	32	5,000	0.509	0.005	0.343	1.222	8.88E+6	0.000	8.88E+6	0.509	-1.360	89.53E-15
662	L3S3K050	Down-dip	3	3	50	5,000	0.509	0.047	0.067	1.223	8.89E+6	0.130	8.91E+6	0.944	-0.788	71.92E-15
663	L3S3K064	Down-dip	3	3	64	5,000	0.509	0.022	0.108	1.223	8.89E+6	0.048	8.89E+6	0.352	-0.785	71.83E-15
664	L3S3K083	Down-dip	3	3	83	5,000	0.541	0.126	0.184	1.307	10.90E+6	0.056	10.92E+6	0.855	-1.312	93.85E-15
665	L3S3L006	Down-dip	3	3	6	10,000	0.512	0.004	0.365	1.230	9.01E+6	0.000	9.01E+6	0.430	-1.277	87.02E-15
666	L3S3L022	Down-dip	3	3	22	10,000	0.508	0.140	0.481	1.220	8.83E+6	0.858	8.92E+6	0.858	-1.360	89.35E-15
667	L3S3L025	Down-dip	3	3	25	10,000	0.528	0.065	0.374	1.273	9.94E+6	0.934	10.02E+6	0.934	-1.294	90.69E-15
668	L3S3L050	Down-dip	3	3	50	10,000	0.493	0.047	0.067	1.185	8.31E+6	0.030	8.33E+6	0.929	-0.788	69.64E-15
669	L3S3L083	Down-dip	3	3	83	10,000	0.529	0.126	0.184	1.276	10.04E+6	0.000	10.06E+6	0.780	-1.304	91.28E-15
670	L3S4C004	Down-dip	3	4	4	550	0.586	0.002	0.112	1.450	10.63E+6	0.098	10.63E+6	0.118	-1.082	94.88E-15
671	L3S4C005	Down-dip	3	4	5	550	0.558	0.068	0.079	1.359	8.68E+6	0.078	8.68E+6	0.094	-1.212	93.62E-15
672	L3S4C040	Down-dip	3	4	40	550	0.583	0.040	0.017	1.439	10.38E+6	0.128	10.29E+6	0.192	-1.129	95.89E-15
673	L3S4C064	Down-dip	3	4	64	550	0.590	0.022	0.108	1.465	10.97E+6	0.225	10.97E+6	0.269	-0.762	85.35E-15
674	L3S4C082	Down-dip	3	4	82	550	0.583	0.071	0.156	1.441	10.42E+6	0.260	10.42E+6	0.301	-1.084	94.39E-15
675	L3S4D064	Down-dip	3	4	64	750	0.572	0.022	0.108	1.402	11.19E+6	0.226	11.18E+6	0.291	-0.778	82.16E-15
676	L3S4D082	Down-dip	3	4	82	750	0.528	0.071	0.156	1.271	8.15E+6	0.317	8.12E+6	0.412	-1.191	86.82E-15
677	L3S4H064	Down-dip	3	4	64	2,000	0.534	0.022	0.108	1.287	10.37E+6	0.169	10.37E+6	0.346	-0.793	75.81E-15
678	L3S4H083	Down-dip	3	4	83	2,000	0.508	0.126	0.184	1.219	8.66E+6	0.183	8.66E+6	0.422	-1.289	86.68E-15
679	L3S4J064	Down-dip	3	4	64	4,000	0.515	0.022	0.108	1.238	9.14E+6	0.076	9.14E+6	0.382	-0.786	72.71E-15
680	L3S4J083	Down-dip	3	4	83	4,000	0.532	0.126	0.184	1.282	10.21E+6	0.054	10.21E+6	0.359	-1.305	91.76E-15
681	L3S4L039	Down-dip	3	4	39	10,000	0.485	0.124	0.386	1.167	8.05E+6	0.000	8.05E+6	0.393	-1.297	83.23E-15
682	L3S4L083	Down-dip	3	4	83	10,000	0.518	0.126	0.184	1.247	9.27E+6	0.000	9.27E+6	0.434	-1.295	88.86E-15
683	L3S5F004	Down-dip	3	5	4	1,200	0.552	0.002	0.112	1.340	11.86E+6	0.109	11.86E+6	0.145	-1.136	89.56E-15
684	L3S5F005	Down-dip	3	5	5	1,200	0.555	0.068	0.079	1.350	12.15E+6	0.070	12.14E+6	0.084	-1.289	95.99E-15
685	L3S5F040	Down-dip	3	5	40	1,200	0.574	0.040	0.017	1.409	13.83E+6	0.072	13.66E+6	0.170	-1.183	95.96E-15
686	L3S5F056	Down-dip	3	5	56	1,200	0.499	0.033	0.254	1.198	8.16E+6	0.314	8.13E+6	0.454	-0.971	75.17E-15
687	L3S5F064	Down-dip	3	5	64	1,200	0.565	0.022	0.108	1.379	12.94E+6	0.197	12.94E+6	0.287	-0.806	81.58E-15
688	L3S5F082	Down-dip	3	5	82	1,200	0.550	0.071	0.156	1.333	11.67E+6	0.265	11.67E+6	0.369	-1.140	89.21E-15
689	L3S5F099	Down-dip	3	5	99	1,200	0.502	0.138	0.260	1.207	8.35E+6	0.250	8.35E+6	0.379	-1.114	79.95E-15
690	L3S5G064	Down-dip	3	5	64	1,400	0.560	0.022	0.108	1.365	12.55E+6	0.189	12.54E+6	0.292	-0.804	80.73E-15
891	L3S5G082	Down-dip	3	5	82	1,400	0.500	0.071	0.156	1.202	8.26E+6	0.321	8.24E+6	0.495	-1.217	82.92E-15
692	L3S5I064	Down-dip	3	5	64	3,000	0.532	0.022	0.108	1.284	10.28E+6	0.124	10.28E+6	0.332	-0.792	75.62E-15
693	L3S5I083	Down-dip	3	5	83	3,000	0.524	0.126	0.184	1.261	9.65E+6	0.105	9.65E+6	0.383	-1.299	90.05E-15
694	L3S5K064	Down-dip	3	5	64	5,000	0.510	0.022	0.108	1.224	8.91E+6	0.048	8.91E+6	0.381	-0.785	71.91E-15
695	L3S5K083	Down-dip	3	5	83	5,000	0.533	0.126	0.184	1.285	10.31E+6	0.026	10.31E+6	0.350	-1.306	92.06E-15
696	L3S5L039	Down-dip	3	5	39	10,000	0.486	0.124	0.386	1.169	8.08E+6	0.000	8.08E+6	0.387	-1.297	83.39E-15
697	L3S5L083	Down-dip	3	5	83	10,000	0.519	0.126	0.184	1.248	9.29E+6	0.000	9.29E+6	0.430	-1.295	88.93E-15
698	U1S1B100	Up-dip	1	1	100	350	0.617	0.019	0.040	1.569	8.61E+6	0.125	8.61E+6	0.153	-1.181	106.80E-15
699	U1S1E009	Up-dip	1	1	9	1,000	0.532	0.006	0.181	1.284	9.54E+6	0.211	9.54E+6	0.289	-1.303	91.82E-15
700	U1S1E026	Up-dip	1	1	26	1,000	0.520	0.127	0.062	1.252	8.40E+6	0.174	8.40E+6	0.389	-1.286	88.91E-15
701	U1S1E030	Up-dip	1	1	30	1,000	0.555	0.031	0.047	1.349	10.14E+6	0.070	10.14E+6	0.142	-1.056	87.42E-15
702	U1S1E034	Up-dip	1	1	34	1,000	0.568	0.060	0.052	1.391	11.87E+6	0.084	11.87E+6	0.132	-1.111	92.07E-15
703	U1S1E046	Up-dip	1	1	46	1,000	0.550	0.090	0.003	1.333	11.07E+6	0.144	11.09E+6	0.503	-1.340	96.86E-15
704	U1S1E059	Up-dip	1	1	59	1,000	0.524	0.081	0.028	1.262	8.39E+6	0.082	8.40E+6	0.202	-0.928	77.96E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
661	L3S3K032	Down-dip	3	3	32	15.49E-15	1.154	10.95E+6	1.95E-12	000.00E+0	1.00E+0	6.21E-3	501.20E-3	000.00E+0	164.70E+3
662	L3S3K050	Down-dip	3	3	50	24.55E-15	0.368	9.02E+6	16.98E-15	48.80E-6	852.00E-3	796.90E-3	1.46E-6	191.80E+3	7.99E+6
663	L3S3K064	Down-dip	3	3	64	12.88E-15	0.366	13.36E+6	831.80E-15	000.00E+0	1.00E+0	8.34E-3	457.50E-3	000.00E+0	165.40E+3
664	L3S3K083	Down-dip	3	3	83	10.72E-15	1.049	12.83E+6	2.40E-15	000.00E+0	1.00E+0	484.20E-3	38.04E-6	000.00E+0	8.02E+6
665	L3S3L006	Down-dip	3	3	6	13.80E-15	0.978	15.65E+6	26.30E-15	000.00E+0	1.00E+0	212.50E-6	789.80E-3	000.00E+0	183.30E+3
666	L3S3L022	Down-dip	3	3	22	72.44E-15	1.153	10.28E+6	100.00E-15	308.50E-3	158.10E-9	308.50E-3	154.90E-9	7.98E+6	7.98E+6
667	L3S3L025	Down-dip	3	3	25	39.81E-15	1.012	11.71E+6	63.10E-15	660.60E-3	65.03E-9	660.70E-3	64.18E-9	7.99E+6	7.99E+6
668	L3S3L050	Down-dip	3	3	50	24.55E-15	0.368	9.06E+6	16.98E-15	000.00E+0	1.00E+0	745.10E-3	34.46E-6	000.00E+0	8.01E+6
669	L3S3L083	Down-dip	3	3	83	10.72E-15	1.031	12.83E+6	2.40E-15	000.00E+0	1.00E+0	313.10E-3	4.10E-3	000.00E+0	6.80E+6
670	L3S4C004	Down-dip	3	4	4	131.80E-15	0.662	12.56E+6	10.96E-15	000.00E+0	1.00E+0	9.17E-9	986.50E-3	000.00E+0	258.70E+3
671	L3S4C005	Down-dip	3	4	5	169.80E-15	0.859	13.98E+6	138.00E-15	000.00E+0	1.00E+0	208.20E-9	965.80E-3	000.00E+0	216.90E+3
672	L3S4C040	Down-dip	3	4	40	9.33E-12	0.728	14.37E+6	912.00E-15	318.80E-6	757.50E-3	1.73E-3	623.90E-3	199.50E+3	186.60E+3
673	L3S4C064	Down-dip	3	4	64	12.88E-15	0.349	13.00E+6	831.80E-15	550.10E-6	724.40E-3	1.79E-3	626.20E-3	203.60E+3	195.50E+3
674	L3S4C082	Down-dip	3	4	82	120.20E-15	0.665	12.96E+6	6.17E-12	442.00E-6	723.30E-3	1.51E-3	620.00E-3	197.40E+3	188.90E+3
675	L3S4D064	Down-dip	3	4	64	12.88E-15	0.361	13.00E+6	831.80E-15	573.30E-6	721.40E-3	2.87E-3	579.60E-3	206.40E+3	196.10E+3
676	L3S4D082	Down-dip	3	4	82	120.20E-15	0.824	12.96E+6	6.17E-12	2.19E-3	583.40E-3	12.21E-3	378.30E-3	157.60E+3	157.80E+3
677	L3S4H064	Down-dip	3	4	64	12.88E-15	0.371	13.00E+6	831.80E-15	48.48E-6	856.20E-3	7.58E-3	469.30E-3	214.00E+3	184.10E+3
678	L3S4H083	Down-dip	3	4	83	10.72E-15	1.001	13.22E+6	2.40E-15	000.00E+0	1.00E+0	10.62E-3	357.70E-3	000.00E+0	164.20E+3
679	L3S4J064	Down-dip	3	4	64	12.88E-15	0.366	13.00E+6	831.80E-15	000.00E+0	1.00E+0	12.88E-3	402.10E-3	000.00E+0	170.80E+3
680	L3S4J083	Down-dip	3	4	83	10.72E-15	1.035	13.22E+6	2.40E-15	000.00E+0	1.00E+0	3.37E-3	503.40E-3	000.00E+0	182.40E+3
681	L3S4L039	Down-dip	3	4	39	14.45E-15	1.018	11.64E+6	3.16E-12	000.00E+0	1.00E+0	77.07E-9	969.80E-3	000.00E+0	209.10E+3
682	L3S4L083	Down-dip	3	4	83	10.72E-15	1.013	13.22E+6	2.40E-15	000.00E+0	1.00E+0	12.58E-3	334.80E-3	000.00E+0	173.50E+3
683	L3S5F004	Down-dip	3	5	4	131.80E-15	0.738	12.56E+6	10.96E-15	000.00E+0	1.00E+0	5.18E-6	923.70E-3	000.00E+0	254.30E+3
684	L3S5F005	Down-dip	3	5	5	169.80E-15	1.001	13.98E+6	138.00E-15	000.00E+0	1.00E+0	3.68E-9	988.70E-3	000.00E+0	287.80E+3
685	L3S5F040	Down-dip	3	5	40	9.33E-12	0.811	14.37E+6	912.00E-15	24.68E-6	878.40E-3	1.06E-3	668.30E-3	275.20E+3	236.90E+3
686	L3S5F056	Down-dip	3	5	56	3.72E-12	0.530	13.39E+6	549.50E-15	88.15E-6	827.40E-3	7.68E-3	458.30E-3	177.20E+3	155.60E+3
687	L3S5F064	Down-dip	3	5	64	12.88E-15	0.381	13.00E+6	831.80E-15	199.50E-6	789.40E-3	2.66E-3	587.50E-3	241.20E+3	220.60E+3
688	L3S5F082	Down-dip	3	5	82	120.20E-15	0.743	12.96E+6	6.17E-12	527.20E-6	710.20E-3	6.17E-3	465.80E-3	213.60E+3	201.10E+3
689	L3S5F099	Down-dip	3	5	99	263.00E-15	0.705	14.44E+6	3.72E-12	000.00E+0	1.00E+0	1.17E-3	602.40E-3	000.00E+0	162.90E+3
690	L3S5G064	Down-dip	3	5	64	12.88E-15	0.380	13.00E+6	831.80E-15	140.20E-6	808.40E-3	2.96E-3	576.20E-3	238.40E+3	214.50E+3
691	L3S5G082	Down-dip	3	5	82	120.20E-15	0.867	12.96E+6	6.17E-12	2.41E-3	573.20E-3	34.62E-3	236.20E-3	158.70E+3	178.10E+3
692	L3S5I064	Down-dip	3	5	64	12.88E-15	0.371	13.00E+6	831.80E-15	377.10E-9	961.90E-3	6.05E-3	496.50E-3	241.90E+3	182.60E+3
693	L3S5I083	Down-dip	3	5	83	10.72E-15	1.022	13.22E+6	2.40E-15	000.00E+0	1.00E+0	5.42E-3	445.50E-3	000.00E+0	174.50E+3
694	L3S5K064	Down-dip	3	5	84	12.88E-15	0.366	13.00E+6	831.80E-15	000.00E+0	1.00E+0	12.61E-3	404.80E-3	000.00E+0	167.70E+3
695	L3S5K083	Down-dip	3	5	83	10.72E-15	1.037	13.22E+6	2.40E-15	000.00E+0	1.00E+0	2.77E-3	525.90E-3	000.00E+0	184.40E+3
696	L3S5L039	Down-dip	3	5	39	14.45E-15	1.018	11.64E+6	3.16E-12	000.00E+0	1.00E+0	134.30E-12	994.70E-3	000.00E+0	214.20E+3
697	L3S5L083	Down-dip	3	5	83	10.72E-15	1.014	13.22E+6	2.40E-15	000.00E+0	1.00E+0	12.01E-3	341.10E-3	000.00E+0	173.40E+3
698	U1S1B100	Up-dip	1	1	100	000.00E+0	0.807	13.04E+6	1.00E-12	126.00E-6	814.80E-3	366.50E-6	753.70E-3	181.20E+3	174.00E+3
699	U1S1E009	Up-dip	1	1	9	000.00E+0	1.029	16.40E+6	1.00E-12	4.92E-6	924.30E-3	563.70E-6	727.30E-3	216.50E+3	183.70E+3
700	U1S1E026	Up-dip	1	1	26	000.00E+0	0.996	14.54E+6	1.00E-12	385.30E-6	717.80E-3	20.43E-3	279.40E-3	170.50E+3	168.70E+3
701	U1S1E030	Up-dip	1	1	30	000.00E+0	0.628	12.61E+6	1.00E-12	1.02E-6	949.50E-3	200.30E-6	787.40E-3	235.00E+3	199.70E+3
702	U1S1E034	Up-dip	1	1	34	000.00E+0	0.701	15.48E+6	1.00E-12	3.48E-6	927.00E-3	108.10E-6	814.10E-3	257.20E+3	230.30E+3
703	U1S1E046	Up-dip	1	1	46	000.00E+0	1.110	15.34E+6	1.00E-12	737.80E-6	681.90E-3	78.17E-3	127.90E-3	202.60E+3	270.90E+3
704	U1S1E059	Up-dip	1	1	59	000.00E+0	0.487	12.61E+6	1.00E-12	23.34E-6	874.60E-3	1.73E-3	607.60E-3	189.20E+3	161.80E+3

No.	File (*.TXT)	ID	Rep	Scen	Vector	BC well Injection Pressure (Pa) BHP_ABAN	Blowout Duration (Days) time	Brine Rate (m^3/s) BRINEFLW	Gas Rate (ref m^3/s) GASFLW	Max Brine Rate (m^3/s) MAX_BRN	Max Gas Rate (ref m^3/s) MAX_GAS	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s) LGR_MET	Cum Brine from Boundary Condition Well (m^3) BRINE_BC	Cum Gas Produced (ref m^3) GASOUT	Cum Brine Produced (m^3) BRINEOUT
661	L3S3K032	Down-dip	3	3	32	164.80E+3	11	407.40E-9	122.20E-3	2.31E-6	3.65E+0	2.13E+0	0.000	267.90E+3	0.571
662	L3S3K050	Down-dip	3	3	50	7.99E+6	3	11.87E-6	1.08E-6	25.36E-6	1.09E-6	13.05E+6	0.000	266.80E-3	3.478
663	L3S3K064	Down-dip	3	3	64	165.50E+3	11	594.30E-9	167.90E-3	2.50E-6	2.68E+0	2.52E+0	0.000	307.70E+3	0.774
664	L3S3K083	Down-dip	3	3	83	8.02E+6	3	32.71E-6	472.30E-6	62.90E-6	472.30E-6	110.90E+3	0.000	89.65E+0	9.908
665	L3S3L006	Down-dip	3	3	6	183.40E+3	11	12.25E-9	144.70E-3	77.92E-9	5.74E+0	50.30E-3	0.000	356.40E+3	0.018
666	L3S3L022	Down-dip	3	3	22	7.98E+6	3	7.59E-6	7.88E-6	12.31E-6	7.88E-6	2.12E+6	0.000	1.06E+0	2.213
667	L3S3L025	Down-dip	3	3	25	7.99E+6	3	25.34E-6	7.94E-6	58.21E-6	7.94E-6	5.35E+6	0.000	1.43E+0	7.635
668	L3S3L050	Down-dip	3	3	50	8.01E+6	3	3.95E-6	3.95E-6	7.99E-6	6.80E-6	1.04E+6	0.000	1.12E+0	1.163
669	L3S3L083	Down-dip	3	3	83	6.80E+6	3	21.46E-6	7.44E-3	44.54E-6	12.83E-3	3.06E+3	0.000	2.12E+3	6.471
670	L3S4C004	Down-dip	3	4	4	000.00E+0	11	880.50E-15	360.30E-3	4.31E-12	10.73E+0	1.51E-6	0.000	809.40E+3	0.000
671	L3S4C005	Down-dip	3	4	5	000.00E+0	11	15.33E-12	276.50E-3	78.77E-12	6.99E+0	36.48E-6	0.000	575.70E+3	0.000
672	L3S4C040	Down-dip	3	4	40	000.00E+0	11	167.20E-9	313.90E-3	800.10E-9	6.48E+0	363.90E-3	0.000	613.80E+3	0.223
673	L3S4C064	Down-dip	3	4	64	000.00E+0	11	162.80E-9	308.10E-3	787.10E-9	6.56E+0	351.10E-3	0.000	632.70E+3	0.222
674	L3S4C082	Down-dip	3	4	82	000.00E+0	11	136.20E-9	270.90E-3	697.50E-9	6.49E+0	331.30E-3	0.000	563.80E+3	0.187
675	L3S4D064	Down-dip	3	4	64	000.00E+0	11	256.20E-9	287.10E-3	1.24E-6	6.07E+0	594.50E-3	0.000	587.10E+3	0.349
676	L3S4D082	Down-dip	3	4	82	000.00E+0	11	957.00E-9	141.20E-3	4.03E-6	2.24E+0	4.94E+0	0.000	248.50E+3	1.228
677	L3S4H064	Down-dip	3	4	64	000.00E+0	11	621.70E-9	215.20E-3	2.79E-6	3.91E+0	2.00E+0	0.000	415.10E+3	0.829
678	L3S4H083	Down-dip	3	4	83	000.00E+0	11	855.30E-9	140.70E-3	3.73E-6	2.40E+0	4.39E+0	0.000	251.60E+3	1.105
679	L3S4J064	Down-dip	3	4	64	000.00E+0	11	972.60E-9	165.30E-3	4.01E-6	2.51E+0	4.23E+0	0.000	297.90E+3	1.261
680	L3S4J083	Down-dip	3	4	83	000.00E+0	11	288.60E-9	206.30E-3	1.48E-6	4.93E+0	938.20E-3	0.000	417.70E+3	0.392
681	L3S4L039	Down-dip	3	4	39	000.00E+0	11	5.23E-12	127.20E-3	24.00E-12	5.37E+0	22.96E-6	0.000	319.00E+3	0.000
682	L3S4L083	Down-dip	3	4	83	000.00E+0	11	1.10E-6	152.60E-3	4.86E-6	2.63E+0	5.21E+0	0.000	274.10E+3	1.429
683	L3S5F004	Down-dip	3	5	4	000.00E+0	11	429.60E-12	351.70E-3	2.57E-9	11.75E+0	754.90E-6	0.000	816.90E+3	0.001
684	L3S5F005	Down-dip	3	5	5	000.00E+0	11	370.40E-15	391.80E-3	2.00E-12	14.08E+0	572.20E-9	0.000	917.70E+3	0.000
685	L3S5F040	Down-dip	3	5	40	000.00E+0	11	114.80E-9	425.50E-3	649.50E-9	12.01E+0	173.40E-3	0.000	927.40E+3	0.161
686	L3S5F056	Down-dip	3	5	56	000.00E+0	11	480.90E-9	123.20E-3	2.20E-6	2.35E+0	2.70E+0	0.000	237.10E+3	0.639
687	L3S5F064	Down-dip	3	5	64	000.00E+0	11	251.40E-9	328.10E-3	1.32E-6	8.10E+0	494.50E-3	0.000	710.00E+3	0.351
688	L3S5F082	Down-dip	3	5	82	000.00E+0	11	588.70E-9	244.60E-3	3.02E-6	5.75E+0	1.60E+0	0.000	503.80E+3	0.808
689	L3S5F099	Down-dip	3	5	99	000.00E+0	11	73.18E-9	148.50E-3	366.10E-9	3.47E+0	327.60E-3	0.000	303.70E+3	0.100
690	L3S5G064	Down-dip	3	5	64	000.00E+0	11	274.00E-9	311.10E-3	1.41E-6	7.40E+0	573.10E-3	0.000	664.10E+3	0.381
691	L3S5G082	Down-dip	3	5	82	000.00E+0	11	2.83E-6	106.50E-3	11.04E-6	1.37E+0	20.44E+0	0.000	173.60E+3	3.551
692	L3S5I064	Down-dip	3	5	64	000.00E+0	11	486.00E-9	218.20E-3	2.21E-6	4.06E+0	1.53E+0	0.000	424.20E+3	0.649
693	L3S5I083	Down-dip	3	5	83	000.00E+0	11	456.90E-9	181.40E-3	2.21E-6	3.64E+0	1.74E+0	0.000	351.10E+3	0.609
694	L3S5K064	Down-dip	3	5	64	000.00E+0	11	925.70E-9	158.90E-3	3.79E-6	2.38E+0	4.20E+0	0.000	284.70E+3	1.197
695	L3S5K083	Down-dip	3	5	83	000.00E+0	11	236.70E-9	212.60E-3	1.24E-6	5.27E+0	740.50E-3	0.000	436.30E+3	0.323
696	L3S5L039	Down-dip	3	5	39	000.00E+0	11	40.89E-15	129.20E-3	66.12E-15	5.56E+0	147.90E-9	0.000	326.50E+3	0.000
697	L3S5L083	Down-dip	3	5	83	000.00E+0	11	1.05E-6	154.40E-3	4.65E-6	2.69E+0	4.90E+0	0.000	278.60E+3	1.364
698	U1S1B100	Up-dip	1	1	100	000.00E+0	11	14.14E-9	492.40E-3	53.99E-9	6.61E+0	22.00E-3	0.000	778.40E+3	0.017
699	U1S1E009	Up-dip	1	1	9	000.00E+0	11	464.20E-12	424.50E-3	2.00E-9	7.83E+0	800.30E-6	0.000	720.10E+3	0.001
700	U1S1E026	Up-dip	1	1	26	000.00E+0	11	34.33E-9	331.80E-3	134.20E-9	4.62E+0	78.54E-3	0.000	536.90E+3	0.042
701	U1S1E030	Up-dip	1	1	30	000.00E+0	11	107.40E-12	597.60E-3	421.40E-12	8.64E+0	137.00E-6	0.000	947.60E+3	0.000
702	U1S1E034	Up-dip	1	1	34	000.00E+0	11	432.40E-12	770.00E-3	1.77E-9	12.06E+0	426.70E-6	0.000	1.23E+6	0.001
703	U1S1E046	Up-dip	1	1	46	000.00E+0	11	88.50E-9	530.30E-3	369.90E-9	8.20E+0	125.70E-3	0.000	873.50E+3	0.110
704	U1S1E059	Up-dip	1	1	59	000.00E+0	11	1.96E-9	404.70E-3	7.11E-9	4.92E+0	3.74E-3	0.000	631.00E+3	0.002

No.	File (*.TXT)	ID	Rep	Scen	Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
661	L3S3K032	Down-dip	3	3	32	0.541	3.50E+6	0.523	8.87E+6	0.000	69.75E+3	9.29E+3
662	L3S3K050	Down-dip	3	3	50	3.406	8.85E+6	0.946	8.89E+6	0.092	69.90E+3	34.69E+3
663	L3S3K064	Down-dip	3	3	64	0.729	4.37E+6	0.370	8.88E+6	0.056	69.88E+3	12.39E+3
664	L3S3K083	Down-dip	3	3	83	9.712	10.85E+6	0.857	10.90E+6	0.048	79.32E+3	30.39E+3
665	L3S3L006	Down-dip	3	3	6	0.017	3.03E+6	0.446	8.99E+6	0.000	70.67E+3	7.99E+3
666	L3S3L022	Down-dip	3	3	22	2.167	8.90E+6	0.862	8.81E+6	0.746	69.50E+3	55.35E+3
667	L3S3L025	Down-dip	3	3	25	7.481	9.91E+6	0.935	9.92E+6	0.866	75.47E+3	67.64E+3
668	L3S3L050	Down-dip	3	3	50	1.139	8.32E+6	0.930	8.31E+6	0.021	65.57E+3	24.93E+3
669	L3S3L083	Down-dip	3	3	83	6.342	9.94E+6	0.785	10.04E+6	0.000	75.83E+3	22.16E+3
670	L3S4C004	Down-dip	3	4	4	0.000	3.92E+6	0.142	10.59E+6	0.098	95.38E+3	10.09E+3
671	L3S4C005	Down-dip	3	4	5	0.000	3.57E+6	0.118	8.66E+6	0.078	85.14E+3	7.22E+3
672	L3S4C040	Down-dip	3	4	40	0.221	4.56E+6	0.215	10.35E+6	0.117	94.07E+3	15.61E+3
673	L3S4C064	Down-dip	3	4	64	0.219	4.60E+6	0.289	10.94E+6	0.220	96.99E+3	23.57E+3
674	L3S4C082	Down-dip	3	4	82	0.178	4.31E+6	0.321	10.39E+6	0.255	94.35E+3	25.97E+3
675	L3S4D064	Down-dip	3	4	64	0.340	4.72E+6	0.310	11.16E+6	0.220	89.98E+3	23.07E+3
676	L3S4D082	Down-dip	3	4	82	1.177	4.27E+6	0.428	8.14E+6	0.306	75.26E+3	27.11E+3
677	L3S4H064	Down-dip	3	4	64	0.822	4.70E+6	0.364	10.35E+6	0.166	77.09E+3	19.82E+3
678	L3S4H083	Down-dip	3	4	83	1.049	4.45E+6	0.438	8.65E+6	0.180	69.47E+3	20.38E+3
679	L3S4J064	Down-dip	3	4	64	1.183	4.60E+6	0.399	9.13E+6	0.082	71.53E+3	14.96E+3
680	L3S4J083	Down-dip	3	4	83	0.381	4.37E+6	0.377	10.19E+6	0.062	76.47E+3	14.62E+3
681	L3S4L039	Down-dip	3	4	39	0.000	2.63E+6	0.410	8.03E+6	0.000	63.56E+3	6.59E+3
682	L3S4L083	Down-dip	3	4	83	1.427	4.73E+6	0.449	9.26E+6	0.000	72.54E+3	11.26E+3
683	L3S5F004	Down-dip	3	5	4	0.001	4.12E+6	0.168	11.80E+6	0.109	83.01E+3	10.03E+3
684	L3S5F005	Down-dip	3	5	5	0.000	4.11E+6	0.109	12.08E+6	0.070	84.17E+3	6.46E+3
685	L3S5F040	Down-dip	3	5	40	0.154	5.17E+6	0.193	13.78E+6	0.061	90.79E+3	11.77E+3
686	L3S5F056	Down-dip	3	5	56	0.607	3.79E+6	0.469	8.15E+6	0.313	67.06E+3	26.27E+3
687	L3S5F064	Down-dip	3	5	64	0.336	4.98E+6	0.307	12.89E+6	0.191	87.37E+3	21.36E+3
688	L3S5F082	Down-dip	3	5	82	0.794	4.94E+6	0.386	11.64E+6	0.258	82.24E+3	26.54E+3
689	L3S5F099	Down-dip	3	5	99	0.099	3.58E+6	0.397	8.34E+6	0.255	68.07E+3	20.10E+3
690	L3S5G064	Down-dip	3	5	64	0.361	4.97E+6	0.312	12.51E+6	0.184	85.85E+3	20.89E+3
691	L3S5G082	Down-dip	3	5	82	3.402	4.80E+6	0.509	8.26E+6	0.307	67.46E+3	27.78E+3
692	L3S5I064	Down-dip	3	5	64	0.644	4.61E+6	0.350	10.26E+6	0.125	76.76E+3	17.04E+3
693	L3S5I083	Down-dip	3	5	83	0.584	4.41E+6	0.400	9.63E+6	0.112	74.17E+3	17.41E+3
694	L3S5K064	Down-dip	3	5	64	1.131	4.52E+6	0.398	8.90E+6	0.056	70.02E+3	12.96E+3
695	L3S5K083	Down-dip	3	5	83	0.310	4.34E+6	0.368	10.29E+6	0.032	76.88E+3	12.80E+3
696	L3S5L039	Down-dip	3	5	39	0.000	2.61E+6	0.404	8.07E+6	0.000	63.81E+3	6.52E+3
697	L3S5L083	Down-dip	3	5	83	1.360	4.71E+6	0.446	9.28E+6	0.000	72.64E+3	11.19E+3
698	U1S1B100	Up-dip	1	1	100	0.016	8.59E+6	0.153	4.32E+6	0.120	108.80E+3	14.33E+3
699	U1S1E009	Up-dip	1	1	9	0.001	9.52E+6	0.289	4.15E+6	0.210	76.74E+3	19.08E+3
700	U1S1E026	Up-dip	1	1	26	0.040	8.40E+6	0.389	4.19E+6	0.160	73.12E+3	21.70E+3
701	U1S1E030	Up-dip	1	1	30	0.000	10.10E+6	0.142	4.78E+6	0.070	84.07E+3	7.71E+3
702	U1S1E034	Up-dip	1	1	34	0.001	11.81E+6	0.132	5.44E+6	0.080	88.78E+3	9.03E+3
703	U1S1E046	Up-dip	1	1	46	0.104	11.08E+6	0.503	5.23E+6	0.123	82.24E+3	27.85E+3
704	U1S1E059	Up-dip	1	1	59	0.002	8.38E+6	0.202	4.28E+6	0.071	74.24E+3	9.74E+3

No.	File (*.TXT)	• ID	• Rep	• Scen	• Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
705	U1S1E064	Up-dip	1	1	64	1,000	0.566	0.101	0.134	1.385	11.36E+6	0.191	11.36E+6	0.364	-1.291	98.57E-15
706	U1S1E100	Up-dip	1	1	100	1,000	0.558	0.019	0.040	1.359	11.19E+6	0.140	11.19E+6	0.212	-1.294	96.87E-15
707	U1S1I038	Up-dip	1	1	38	3,000	0.511	0.146	0.055	1.228	8.90E+6	0.075	8.91E+6	0.426	-1.042	79.11E-15
708	U1S1I046	Up-dip	1	1	46	3,000	0.572	0.090	0.003	1.403	13.51E+6	0.076	13.51E+6	0.458	-1.362	102.80E-15
709	U1S1I064	Up-dip	1	1	64	3,000	0.558	0.101	0.134	1.358	12.30E+6	0.165	12.31E+6	0.411	-1.318	97.77E-15
710	U1S1I100	Up-dip	1	1	100	3,000	0.549	0.019	0.040	1.331	11.54E+6	0.098	11.55E+6	0.300	-1.310	95.44E-15
711	U1S1K046	Up-dip	1	1	46	5,000	0.574	0.090	0.003	1.411	13.71E+6	0.047	13.71E+6	0.444	-1.362	103.50E-15
712	U1S1K064	Up-dip	1	1	64	5,000	0.563	0.101	0.134	1.375	12.76E+6	0.135	12.76E+6	0.429	-1.321	99.10E-15
713	U1S1K100	Up-dip	1	1	100	5,000	0.549	0.019	0.040	1.333	11.60E+6	0.061	11.60E+6	0.390	-1.311	95.60E-15
714	U1S1L023	Up-dip	1	1	23	10,000	0.502	0.120	0.158	1.206	8.62E+6	0.879	8.74E+6	0.879	-0.970	75.67E-15
715	U1S1L100	Up-dip	1	1	100	10,000	0.551	0.019	0.040	1.339	11.72E+6	0.050	11.73E+6	0.584	-1.311	96.05E-15
716	U1S2C009	Up-dip	1	2	9	550	0.568	0.006	0.181	1.391	9.10E+6	0.303	10.01E+6	0.987	-1.270	98.11E-15
717	U1S2C030	Up-dip	1	2	30	550	0.555	0.031	0.047	1.349	8.48E+6	0.078	8.48E+6	0.225	-1.020	86.24E-15
718	U1S2C034	Up-dip	1	2	34	550	0.591	0.060	0.052	1.469	11.08E+6	0.093	11.08E+6	0.318	-1.075	95.88E-15
719	U1S2C059	Up-dip	1	2	59	550	0.551	0.081	0.028	1.338	8.09E+6	0.125	8.72E+6	0.912	-0.908	82.05E-15
720	U1S2C064	Up-dip	1	2	64	550	0.580	0.101	0.134	1.430	10.16E+6	0.188	10.12E+6	0.347	-1.252	100.10E-15
721	U1S2C092	Up-dip	1	2	92	550	0.601	0.143	0.017	1.505	11.95E+6	0.028	11.85E+6	0.190	-0.763	87.73E-15
722	U1S2C100	Up-dip	1	2	100	550	0.584	0.019	0.040	1.443	10.47E+6	0.138	10.45E+6	0.279	-1.255	101.20E-15
723	U1S2D009	Up-dip	1	2	9	750	0.548	0.006	0.181	1.330	9.38E+6	0.389	9.47E+6	0.987	-1.286	94.39E-15
724	U1S2D034	Up-dip	1	2	34	750	0.539	0.060	0.052	1.302	8.80E+6	0.113	8.77E+6	0.426	-1.077	85.01E-15
725	U1S2D040	Up-dip	1	2	40	750	0.538	0.013	0.449	1.301	8.80E+6	0.637	8.92E+6	0.982	-1.009	82.79E-15
726	U1S2D046	Up-dip	1	2	46	750	0.537	0.090	0.003	1.296	8.74E+6	0.181	8.75E+6	0.557	-1.301	92.62E-15
727	U1S2D048	Up-dip	1	2	48	750	0.527	0.108	0.505	1.270	8.08E+6	0.856	8.17E+6	0.888	-0.762	74.01E-15
728	U1S2D059	Up-dip	1	2	59	750	0.542	0.081	0.028	1.312	9.06E+6	0.110	9.19E+6	0.913	-0.929	81.11E-15
729	U1S2H026	Up-dip	1	2	26	2,000	0.538	0.127	0.062	1.299	10.67E+6	0.086	10.69E+6	0.779	-1.326	93.78E-15
730	U1S2H046	Up-dip	1	2	46	2,000	0.536	0.090	0.003	1.293	10.52E+6	0.127	10.53E+6	0.667	-1.342	94.03E-15
731	U1S2H049	Up-dip	1	2	49	2,000	0.511	0.014	0.119	1.229	8.85E+6	0.962	8.91E+6	0.981	-1.522	96.78E-15
732	U1S2H059	Up-dip	1	2	59	2,000	0.523	0.081	0.028	1.259	9.56E+6	0.067	9.60E+6	0.913	-0.953	78.47E-15
733	U1S2J005	Up-dip	1	2	5	4,000	0.505	0.072	0.092	1.213	8.72E+6	0.167	8.74E+6	0.879	-1.297	86.52E-15
734	U1S2J038	Up-dip	1	2	38	4,000	0.502	0.146	0.055	1.207	8.61E+6	0.057	8.62E+6	0.566	-1.042	77.75E-15
735	U1S2J046	Up-dip	1	2	46	4,000	0.517	0.090	0.003	1.244	9.22E+6	0.101	9.25E+6	0.887	-1.330	89.98E-15
736	U1S2J049	Up-dip	1	2	49	4,000	0.530	0.014	0.119	1.277	10.05E+6	0.651	10.12E+6	0.981	-1.526	100.80E-15
737	U1S2L046	Up-dip	1	2	46	10,000	0.499	0.090	0.003	1.200	8.53E+6	0.011	8.59E+6	0.904	-1.329	86.73E-15
738	U1S2L049	Up-dip	1	2	49	10,000	0.524	0.014	0.119	1.261	9.64E+6	0.145	9.69E+6	0.981	-1.524	99.46E-15
739	U1S2L099	Up-dip	1	2	99	10,000	0.497	0.138	0.379	1.194	8.44E+6	0.860	8.52E+6	0.860	-1.082	78.13E-15
740	U1S3F026	Up-dip	1	3	26	1,200	0.521	0.127	0.062	1.254	9.46E+6	0.142	9.48E+6	0.738	-1.313	90.08E-15
741	U1S3F030	Up-dip	1	3	30	1,200	0.553	0.031	0.047	1.344	11.97E+6	0.065	11.96E+6	0.121	-1.091	88.25E-15
742	U1S3F034	Up-dip	1	3	34	1,200	0.558	0.060	0.052	1.358	12.35E+6	0.078	12.35E+6	0.113	-1.129	90.47E-15
743	U1S3F046	Up-dip	1	3	46	1,200	0.560	0.090	0.003	1.364	12.53E+6	0.120	12.54E+6	0.475	-1.357	99.85E-15
744	U1S3F059	Up-dip	1	3	59	1,200	0.517	0.081	0.028	1.243	9.16E+6	0.069	9.17E+6	0.482	-0.950	77.38E-15
745	U1S3F064	Up-dip	1	3	64	1,200	0.551	0.101	0.134	1.337	11.80E+6	0.199	11.74E+6	0.300	-1.315	96.11E-15
746	U1S3F100	Up-dip	1	3	100	1,200	0.547	0.019	0.040	1.326	11.48E+6	0.139	11.46E+6	0.195	-1.310	95.12E-15
747	U1S3G026	Up-dip	1	3	26	1,400	0.523	0.127	0.062	1.260	9.61E+6	0.123	9.62E+6	0.718	-1.315	90.54E-15
748	U1S3G034	Up-dip	1	3	34	1,400	0.515	0.060	0.052	1.237	9.16E+6	0.092	9.13E+6	0.168	-1.105	81.69E-15

		•	•	•	•	BC well Sand Permeability (m^2)	Total Area solids released (m^2)	Castile Reservoir Pressure (Pa)	Castile Reservoir Permeability (m^3)	Up-dip Brine Relative Permeability (m^2)	Up-dip Gas Relative Permeability (m^3)	Down-dip Brine Relative Permeability (m^2)	Down-dip Gas Relative Permeability (m^3)	Up-dip Flowing Bottom-hole Pressure (Pa)	Down-dip Flowing Bottom-hole Pressure (Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	PRM_SAND	AREA_TOT	CAST_RE	PRM_CAST	KRW2	KRG2	KRW4	KRG4	FBHP2	FBHP4
705	U1S1E064	Up-dip	1	1	64	000.00E+0	1.006	12.24E+6	1.00E-12	42.94E-6	846.40E-3	7.49E-3	424.90E-3	230.00E+3	197.40E+3
706	U1S1E100	Up-dip	1	1	100	000.00E+0	1.012	13.04E+6	1.00E-12	232.30E-6	781.80E-3	1.76E-3	629.90E-3	213.70E+3	198.70E+3
707	U1S1I038	Up-dip	1	1	38	000.00E+0	0.611	14.59E+6	1.00E-12	659.70E-9	948.70E-3	31.52E-3	209.30E-3	216.20E+3	188.40E+3
708	U1S1I046	Up-dip	1	1	46	000.00E+0	1.158	15.34E+6	1.00E-12	64.29E-6	833.60E-3	55.12E-3	171.30E-3	260.70E+3	288.30E+3
709	U1S1I064	Up-dip	1	1	64	000.00E+0	1.061	12.24E+6	1.00E-12	4.94E-6	914.80E-3	15.01E-3	332.70E-3	262.20E+3	216.30E+3
710	U1S1I100	Up-dip	1	1	100	000.00E+0	1.045	13.04E+6	1.00E-12	30.64E-6	873.80E-3	8.00E-3	465.20E-3	235.80E+3	199.90E+3
711	U1S1K046	Up-dip	1	1	46	000.00E+0	1.159	15.34E+6	1.00E-12	10.34E-6	898.80E-3	49.05E-3	186.50E-3	280.60E+3	282.70E+3
712	U1S1K064	Up-dip	1	1	64	000.00E+0	1.068	12.24E+6	1.00E-12	75.73E-12	995.90E-3	18.79E-3	301.90E-3	298.20E+3	227.00E+3
713	U1S1K100	Up-dip	1	1	100	000.00E+0	1.046	13.04E+6	1.00E-12	741.60E-9	954.40E-3	24.14E-3	320.40E-3	261.70E+3	213.30E+3
714	U1S1L023	Up-dip	1	1	23	000.00E+0	0.529	11.27E+6	1.00E-12	563.60E-3	21.57E-9	563.60E-3	21.19E-9	8.00E+6	8.00E+6
715	U1S1L100	Up-dip	1	1	100	000.00E+0	1.046	13.04E+6	1.00E-12	37.44E-9	979.80E-3	122.30E-3	108.20E-3	275.60E+3	567.30E+3
716	U1S2C009	Up-dip	1	2	9	2.88E-12	0.964	13.60E+6	81.28E-15	898.70E-6	692.00E-3	941.70E-3	1.11E-6	174.70E+3	7.99E+6
717	U1S2C030	Up-dip	1	2	30	363.10E-15	0.585	10.81E+6	446.70E-15	3.19E-6	931.00E-3	2.03E-3	611.40E-3	202.10E+3	162.30E+3
718	U1S2C034	Up-dip	1	2	34	85.11E-15	0.653	14.47E+6	2.75E-12	8.72E-6	906.20E-3	9.13E-3	427.30E-3	237.80E+3	194.30E+3
719	U1S2C059	Up-dip	1	2	59	25.70E-15	0.467	12.30E+6	41.69E-15	203.70E-6	775.00E-3	705.00E-3	918.20E-9	170.60E+3	7.98E+6
720	U1S2C064	Up-dip	1	2	64	2.82E-12	0.931	12.19E+6	1.18E-12	35.17E-6	854.50E-3	5.68E-3	459.80E-3	213.10E+3	180.70E+3
721	U1S2C092	Up-dip	1	2	92	6.17E-12	0.350	12.40E+6	1.29E-12	54.29E-9	974.40E-3	1.64E-3	587.00E-3	278.90E+3	207.60E+3
722	U1S2C100	Up-dip	1	2	100	1.10E-12	0.936	13.56E+6	3.47E-15	219.10E-6	785.20E-3	5.87E-3	502.40E-3	203.60E+3	184.90E+3
723	U1S2D009	Up-dip	1	2	9	2.88E-12	0.995	13.53E+6	81.28E-15	6.33E-3	498.80E-3	941.20E-3	1.16E-6	171.20E+3	7.99E+6
724	U1S2D034	Up-dip	1	2	34	85.11E-15	0.655	14.46E+6	2.75E-12	38.55E-6	859.30E-3	32.24E-3	257.50E-3	192.00E+3	182.40E+3
725	U1S2D040	Up-dip	1	2	40	234.40E-15	0.572	12.56E+6	25.70E-15	18.84E-3	351.70E-3	885.80E-3	941.80E-9	170.40E+3	7.98E+6
726	U1S2D046	Up-dip	1	2	46	10.96E-15	1.026	10.80E+6	26.92E-12	1.74E-3	604.30E-3	113.90E-3	85.97E-3	166.20E+3	477.40E+3
727	U1S2D048	Up-dip	1	2	48	22.39E-15	0.349	12.51E+6	10.47E-15	280.50E-3	1.31E-3	389.70E-3	931.70E-9	7.55E+6	7.99E+6
728	U1S2D059	Up-dip	1	2	59	25.70E-15	0.488	12.30E+6	41.69E-15	105.80E-6	811.20E-3	706.10E-3	786.80E-9	188.90E+3	7.98E+6
729	U1S2H026	Up-dip	1	2	26	23.99E-15	1.077	10.83E+6	104.70E-15	1.31E-6	939.50E-3	370.60E-3	2.52E-3	242.60E+3	7.37E+6
730	U1S2H046	Up-dip	1	2	46	10.96E-15	1.114	11.97E+6	26.92E-12	448.10E-6	720.60E-3	222.60E-3	29.53E-3	198.60E+3	1.58E+6
731	U1S2H049	Up-dip	1	2	49	12.59E-15	1.595	10.31E+6	32.36E-15	847.90E-3	38.46E-6	923.40E-3	314.40E-9	8.01E+6	7.98E+6
732	U1S2H059	Up-dip	1	2	59	25.70E-15	0.512	12.30E+6	41.69E-15	7.10E-6	909.40E-3	705.90E-3	807.00E-9	214.50E+3	7.99E+6
733	U1S2J005	Up-dip	1	2	5	13.80E-15	1.017	6.39E+6	123.00E-15	100.60E-6	814.60E-3	590.10E-3	338.80E-6	184.30E+3	7.98E+6
734	U1S2J038	Up-dip	1	2	38	26.30E-15	0.611	7.39E+6	812.80E-15	36.31E-12	996.50E-3	102.90E-3	69.41E-3	221.70E+3	395.70E+3
735	U1S2J046	Up-dip	1	2	46	10.96E-15	1.088	12.10E+6	26.92E-12	188.60E-6	777.80E-3	642.30E-3	26.08E-6	186.90E+3	8.01E+6
736	U1S2J049	Up-dip	1	2	49	12.59E-15	1.609	10.31E+6	32.38E-15	155.10E-3	84.16E-3	924.10E-3	280.60E-9	239.00E+3	7.99E+6
737	U1S2L046	Up-dip	1	2	46	10.96E-15	1.084	12.16E+6	26.92E-12	14.90E-9	983.10E-3	689.00E-3	413.40E-9	220.80E+3	7.98E+6
738	U1S2L049	Up-dip	1	2	49	12.59E-15	1.604	10.32E+6	32.36E-15	2.38E-6	937.40E-3	923.80E-3	293.30E-9	222.20E+3	7.98E+6
739	U1S2L099	Up-dip	1	2	99	85.11E-15	0.662	8.30E+6	50.12E-15	390.70E-3	83.47E-9	390.80E-3	81.94E-9	7.98E+6	7.98E+6
740	U1S3F026	Up-dip	1	3	26	23.99E-15	1.051	13.05E+6	104.70E-15	109.40E-6	798.00E-3	298.80E-3	7.26E-3	194.20E+3	5.91E+6
741	U1S3F030	Up-dip	1	3	30	363.10E-15	0.674	13.28E+6	446.70E-15	447.10E-9	959.70E-3	81.43E-6	833.10E-3	270.70E+3	234.10E+3
742	U1S3F034	Up-dip	1	3	34	85.11E-15	0.727	15.06E+6	2.75E-12	1.68E-6	940.20E-3	39.00E-6	858.90E-3	270.20E+3	246.60E+3
743	U1S3F046	Up-dip	1	3	46	10.96E-15	1.148	16.12E+6	26.92E-12	366.60E-6	735.00E-3	63.42E-3	153.50E-3	229.30E+3	282.40E+3
744	U1S3F059	Up-dip	1	3	59	25.70E-15	0.508	12.73E+6	41.69E-15	7.98E-6	906.50E-3	60.02E-3	164.30E-3	207.60E+3	218.80E+3
745	U1S3F064	Up-dip	1	3	64	2.82E-12	1.054	12.31E+8	1.18E-12	72.05E-6	823.30E-3	2.26E-3	566.20E-3	232.50E+3	204.40E+3
746	U1S3F100	Up-dip	1	3	100	1.10E-12	1.044	13.72E+6	3.47E-15	226.40E-6	783.30E-3	1.19E-3	664.90E-3	218.10E+3	204.80E+3
747	U1S3G026	Up-dip	1	3	26	23.99E-15	1.054	13.05E+6	104.70E-15	39.25E-6	846.80E-3	267.10E-3	10.95E-3	203.90E+3	4.80E+6
748	U1S3G034	Up-dip	1	3	34	85.11E-15	0.694	15.05E+6	2.75E-12	7.71E-6	909.30E-3	416.30E-6	733.60E-3	207.80E+3	180.10E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
705	U1S1E064	Up-dip	1	1	64	000.00E+0	11	5.18E-9	613.10E-3	22.41E-9	10.83E+0	6.29E-3	0.000	1.01E+6	0.006
706	U1S1E100	Up-dip	1	1	100	000.00E+0	11	28.48E-9	619.80E-3	117.60E-9	9.58E+0	35.03E-3	0.000	988.50E+3	0.035
707	U1S1I038	Up-dip	1	1	38	000.00E+0	11	54.82E-12	413.70E-3	215.70E-12	6.06E+0	99.01E-6	0.000	681.70E+3	0.000
708	U1S1I046	Up-dip	1	1	46	000.00E+0	11	9.17E-9	843.90E-3	41.66E-9	15.55E+0	8.05E-3	0.000	1.41E+6	0.011
709	U1S1I064	Up-dip	1	1	64	000.00E+0	11	620.60E-12	697.60E-3	2.76E-9	13.52E+0	655.30E-6	0.000	1.17E+6	0.001
710	U1S1I100	Up-dip	1	1	100	000.00E+0	11	3.67E-9	664.40E-3	15.73E-9	11.17E+0	4.14E-3	0.000	1.08E+6	0.004
711	U1S1K046	Up-dip	1	1	46	000.00E+0	11	1.49E-9	923.40E-3	6.84E-9	17.34E+0	1.20E-3	0.000	1.54E+6	0.002
712	U1S1K064	Up-dip	1	1	64	000.00E+0	11	21.64E-15	773.70E-3	45.45E-15	15.96E+0	19.05E-9	0.000	1.30E+6	0.000
713	U1S1K100	Up-dip	1	1	100	000.00E+0	11	87.14E-12	687.40E-3	382.40E-12	12.30E+0	94.17E-6	0.000	1.14E+6	0.000
714	U1S1L023	Up-dip	1	1	23	000.00E+0	3	7.34E-6	154.40E-9	12.69E-6	154.40E-9	65.72E+6	0.000	30.88E-3	2.024
715	U1S1L100	Up-dip	1	1	100	000.00E+0	11	4.52E-12	709.70E-3	19.58E-12	12.93E+0	4.71E-6	0.000	1.18E+6	0.000
716	U1S2C009	Up-dip	1	2	9	9.90E+6	11	85.34E-9	330.50E-3	374.50E-9	5.75E+0	186.60E-3	0.000	586.50E+3	0.110
717	U1S2C030	Up-dip	1	2	30	7.36E+6	11	289.20E-12	448.90E-3	1.09E-9	5.91E+0	493.50E-6	0.000	707.60E+3	0.000
718	U1S2C034	Up-dip	1	2	34	11.38E+6	11	1.07E-9	711.10E-3	4.32E-9	10.76E+0	1.14E-3	0.000	1.14E+6	0.001
719	U1S2C059	Up-dip	1	2	59	8.77E+6	11	17.14E-9	344.00E-3	63.01E-9	4.28E+0	37.63E-3	0.000	560.20E+3	0.021
720	U1S2C064	Up-dip	1	2	64	8.99E+6	11	3.96E-9	535.20E-3	16.67E-9	8.96E+0	5.51E-3	0.000	883.00E+3	0.005
721	U1S2C092	Up-dip	1	2	92	9.21E+6	11	6.95E-12	902.40E-3	26.48E-12	12.24E+0	5.92E-6	0.000	1.41E+6	0.000
722	U1S2C100	Up-dip	1	2	100	1.18E+6	11	26.87E-9	597.10E-3	108.30E-9	8.83E+0	34.39E-3	0.000	947.80E+3	0.033
723	U1S2D009	Up-dip	1	2	9	8.02E+6	11	628.40E-9	298.10E-3	2.62E-6	4.24E+0	1.61E+0	0.000	499.90E+3	0.803
724	U1S2D034	Up-dip	1	2	34	187.30E+3	11	3.52E-9	429.40E-3	13.43E-9	5.78E+0	6.26E-3	0.000	681.90E+3	0.004
725	U1S2D040	Up-dip	1	2	40	7.99E+6	11	1.59E-6	181.30E-3	6.41E-6	2.31E+0	6.73E+0	0.000	303.40E+3	2.041
726	U1S2D046	Up-dip	1	2	46	477.90E+3	11	172.70E-9	345.30E-3	657.00E-9	4.39E+0	386.70E-3	0.000	548.70E+3	0.212
727	U1S2D048	Up-dip	1	2	48	7.99E+6	3	3.33E-6	301.30E-6	5.30E-6	440.70E-6	11.16E+3	0.000	80.17E+0	0.895
728	U1S2D059	Up-dip	1	2	59	7.98E+6	11	9.46E-9	408.80E-3	36.27E-9	5.53E+0	17.28E-3	0.000	677.00E+3	0.012
729	U1S2H026	Up-dip	1	2	26	7.37E+6	11	138.70E-12	560.90E-3	607.40E-12	10.11E+0	181.60E-6	0.000	951.20E+3	0.000
730	U1S2H046	Up-dip	1	2	46	1.58E+6	11	49.80E-9	492.40E-3	207.00E-9	7.61E+0	75.99E-3	0.000	812.10E+3	0.062
731	U1S2H049	Up-dip	1	2	49	7.98E+6	3	15.59E-6	16.25E-6	32.68E-6	28.87E-6	970.00E+3	0.000	4.32E+0	4.194
732	U1S2H059	Up-dip	1	2	59	7.99E+6	11	626.80E-12	460.00E-3	2.48E-9	6.63E+0	1.01E-3	0.000	765.30E+3	0.001
733	U1S2J005	Up-dip	1	2	5	7.98E+6	11	8.48E-9	341.60E-3	35.35E-9	5.48E+0	18.28E-3	0.000	580.70E+3	0.011
734	U1S2J038	Up-dip	1	2	38	395.70E+3	11	3.68E-15	398.80E-3	11.28E-15	5.85E+0	6.70E-9	0.000	657.20E+3	0.000
735	U1S2J046	Up-dip	1	2	46	8.01E+6	11	18.17E-9	415.50E-3	72.97E-9	6.08E+0	32.99E-3	0.000	678.30E+3	0.022
736	U1S2J049	Up-dip	1	2	49	7.99E+6	11	21.93E-6	192.40E-3	73.16E-6	871.00E-3	120.90E+0	0.000	219.50E+3	26.540
737	U1S2L046	Up-dip	1	2	46	7.98E+6	11	1.22E-12	397.20E-3	5.11E-12	6.32E+0	2.29E-6	0.000	662.50E+3	0.000
738	U1S2L049	Up-dip	1	2	49	7.98E+6	11	234.00E-12	442.20E-3	1.06E-9	8.77E+0	382.60E-6	0.000	770.60E+3	0.000
739	U1S2L099	Up-dip	1	2	99	7.98E+6	3	4.06E-6	258.90E-9	6.61E-6	258.90E-9	20.83E+6	0.000	53.11E-3	1.104
740	U1S3F026	Up-dip	1	3	26	9.19E+6	11	10.49E-9	418.70E-3	43.44E-9	6.55E+0	18.81E-3	0.000	689.40E+3	0.013
741	U1S3F030	Up-dip	1	3	30	9.68E+6	11	54.06E-12	775.60E-3	219.60E-12	12.14E+0	53.03E-6	0.000	1.23E+6	0.000
742	U1S3F034	Up-dip	1	3	34	11.98E+6	11	211.00E-12	806.00E-3	873.30E-12	12.96E+0	198.70E-6	0.000	1.28E+6	0.000
743	U1S3F046	Up-dip	1	3	46	13.15E+6	11	48.84E-9	675.70E-3	214.40E-9	11.56E+0	53.87E-3	0.000	1.13E+6	0.061
744	U1S3F059	Up-dip	1	3	59	5.90E+6	11	703.80E-12	464.40E-3	2.63E-9	6.00E+0	1.16E-3	0.000	731.00E+3	0.001
745	U1S3F064	Up-dip	1	3	64	9.12E+6	11	8.70E-9	616.00E-3	38.10E-9	11.06E+0	10.53E-3	0.000	1.02E+6	0.011
746	U1S3F100	Up-dip	1	3	100	1.29E+6	11	27.65E-9	627.50E-3	115.40E-9	9.89E+0	33.55E-3	0.000	1.00E+6	0.034
747	U1S3G026	Up-dip	1	3	26	4.80E+6	11	3.79E-9	443.30E-3	15.90E-9	7.20E+0	6.36E-3	0.000	737.10E+3	0.005
748	U1S3G034	Up-dip	1	3	34	185.50E+3	11	692.30E-12	454.40E-3	2.68E-9	6.35E+0	1.16E-3	0.000	719.90E+3	0.001

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
705	U1S1E064	Up-dip	1	1	64	0.006	11.32E+6	0.364	5.03E+6	0.185	88.07E+3	21.17E+3
706	U1S1E100	Up-dip	1	1	100	0.034	11.15E+6	0.212	5.27E+6	0.128	85.18E+3	14.32E+3
707	U1S1I038	Up-dip	1	1	38	0.000	8.90E+6	0.426	4.21E+6	0.071	70.40E+3	17.63E+3
708	U1S1I046	Up-dip	1	1	46	0.011	13.50E+6	0.458	5.87E+6	0.061	90.02E+3	25.11E+3
709	U1S1I064	Up-dip	1	1	64	0.001	12.27E+6	0.411	5.23E+6	0.161	85.08E+3	21.51E+3
710	U1S1I100	Up-dip	1	1	100	0.004	11.51E+6	0.300	5.23E+6	0.084	81.95E+3	15.78E+3
711	U1S1K046	Up-dip	1	1	46	0.002	13.70E+6	0.444	5.88E+6	0.033	90.96E+3	22.38E+3
712	U1S1K064	Up-dip	1	1	64	0.000	12.72E+6	0.429	5.26E+6	0.138	86.97E+3	21.59E+3
713	U1S1K100	Up-dip	1	1	100	0.000	11.58E+6	0.390	5.13E+6	0.060	82.16E+3	17.64E+3
714	U1S1L023	Up-dip	1	1	23	1.980	8.74E+6	0.879	8.58E+6	0.879	68.00E+3	59.76E+3
715	U1S1L100	Up-dip	1	1	100	0.000	11.71E+6	0.584	5.15E+6	0.051	82.86E+3	21.59E+3
716	U1S2C009	Up-dip	1	2	9	0.105	10.01E+6	0.987	4.03E+6	0.276	88.71E+3	56.01E+3
717	U1S2C030	Up-dip	1	2	30	0.000	8.46E+6	0.246	4.22E+6	0.078	84.06E+3	10.15E+3
718	U1S2C034	Up-dip	1	2	34	0.001	11.05E+6	0.337	5.14E+6	0.090	97.52E+3	16.15E+3
719	U1S2C059	Up-dip	1	2	59	0.020	8.72E+6	0.915	4.08E+6	0.113	82.77E+3	38.45E+3
720	U1S2C064	Up-dip	1	2	64	0.005	10.10E+6	0.365	4.59E+6	0.183	93.08E+3	22.16E+3
721	U1S2C092	Up-dip	1	2	92	0.000	11.79E+6	0.212	5.63E+6	0.027	101.60E+3	7.44E+3
722	U1S2C100	Up-dip	1	2	100	0.032	10.42E+6	0.298	5.00E+6	0.130	94.56E+3	16.81E+3
723	U1S2D009	Up-dip	1	2	9	0.778	9.47E+6	0.987	4.48E+6	0.321	81.84E+3	53.33E+3
724	U1S2D034	Up-dip	1	2	34	0.004	8.76E+6	0.442	4.35E+6	0.107	78.71E+3	16.67E+3
725	U1S2D040	Up-dip	1	2	40	2.016	8.92E+6	0.983	4.19E+6	0.512	78.60E+3	58.19E+3
726	U1S2D046	Up-dip	1	2	46	0.200	8.75E+6	0.569	4.53E+6	0.154	78.08E+3	29.11E+3
727	U1S2D048	Up-dip	1	2	48	0.874	8.17E+6	0.891	8.06E+6	0.527	75.15E+3	51.85E+3
728	U1S2D059	Up-dip	1	2	59	0.012	9.19E+6	0.915	4.38E+6	0.092	79.91E+3	37.22E+3
729	U1S2H026	Up-dip	1	2	26	0.000	10.69E+6	0.785	4.70E+6	0.076	78.40E+3	28.01E+3
730	U1S2H046	Up-dip	1	2	46	0.061	10.53E+6	0.676	4.96E+6	0.105	77.76E+3	29.25E+3
731	U1S2H049	Up-dip	1	2	49	4.097	8.91E+6	0.982	8.78E+6	0.652	70.54E+3	56.41E+3
732	U1S2H059	Up-dip	1	2	59	0.001	9.60E+6	0.915	4.48E+6	0.041	73.86E+3	31.81E+3
733	U1S2J005	Up-dip	1	2	5	0.011	8.74E+6	0.882	4.05E+6	0.138	68.75E+3	33.70E+3
734	U1S2J038	Up-dip	1	2	38	0.000	8.62E+6	0.577	4.08E+6	0.055	68.02E+3	18.66E+3
735	U1S2J046	Up-dip	1	2	46	0.022	9.25E+6	0.890	4.48E+6	0.071	72.20E+3	29.76E+3
736	U1S2J049	Up-dip	1	2	49	25.380	10.12E+6	0.982	7.20E+6	0.401	75.93E+3	51.63E+3
737	U1S2L046	Up-dip	1	2	46	0.000	8.59E+6	0.907	4.04E+6	0.008	67.25E+3	25.86E+3
738	U1S2L049	Up-dip	1	2	49	0.000	9.69E+6	0.982	4.19E+6	0.082	74.18E+3	39.24E+3
739	U1S2L099	Up-dip	1	2	99	1.079	8.52E+6	0.864	8.41E+6	0.790	66.62E+3	54.75E+3
740	U1S3F026	Up-dip	1	3	26	0.013	9.48E+6	0.745	4.45E+6	0.131	73.39E+3	27.23E+3
741	U1S3F030	Up-dip	1	3	30	0.000	11.89E+6	0.145	5.47E+6	0.065	83.44E+3	7.16E+3
742	U1S3F034	Up-dip	1	3	34	0.000	12.27E+6	0.137	5.59E+6	0.075	85.00E+3	8.29E+3
743	U1S3F046	Up-dip	1	3	46	0.058	12.56E+6	0.491	5.68E+6	0.105	85.75E+3	27.36E+3
744	U1S3F059	Up-dip	1	3	59	0.001	9.16E+6	0.496	4.53E+6	0.056	72.09E+3	14.36E+3
745	U1S3F064	Up-dip	1	3	64	0.010	11.69E+6	0.319	5.20E+6	0.193	82.72E+3	19.38E+3
746	U1S3F100	Up-dip	1	3	100	0.033	11.42E+6	0.217	5.36E+6	0.126	81.46E+3	13.87E+3
747	U1S3G026	Up-dip	1	3	26	0.004	9.62E+6	0.726	4.45E+6	0.114	74.01E+3	26.05E+3
748	U1S3G034	Up-dip	1	3	34	0.001	9.11E+6	0.190	4.45E+6	0.086	71.46E+3	8.80E+3

No.	File (*.TXT)	ID	Rep	Scen	Vector	Intrusion Time (Years) INTR_TME	Excavated Waste Porosity (fraction) POROSITY	Residual Gas Sat. (fraction) SAT_RGAS	Residual Brine Sat. (fraction) SAT_RBRN	Crushed Panel Height (m) HEIGHT	Up-dip Avg Pressure (Pa) PRESPAN2	Up-dip Avg Sat. (fraction) BSATPAN2	Down-dip Avg Pressure (Pa) PRESPAN4	Down-dip Avg Sat. (fraction) BSATPAN4	Skin factor SKIN	Well Productivity Index (m^3/s-Pa) WELLPI
749	U1S3G046	Up-dip	1	3	46	1,400	0.556	0.090	0.003	1.352	12.16E+6	0.114	12.16E+6	0.491	-1.355	98.81E-15
750	U1S3G059	Up-dip	1	3	59	1,400	0.509	0.081	0.028	1.222	8.70E+6	0.060	8.71E+6	0.485	-0.946	76.01E-15
751	U1S3I038	Up-dip	1	3	38	3,000	0.495	0.146	0.055	1.190	8.17E+6	0.083	8.18E+6	0.661	-1.037	76.52E-15
752	U1S3I046	Up-dip	1	3	46	3,000	0.529	0.090	0.003	1.276	10.04E+6	0.111	10.05E+6	0.706	-1.338	92.60E-15
753	U1S3I049	Up-dip	1	3	49	3,000	0.508	0.014	0.119	1.220	8.76E+6	0.444	8.82E+6	0.981	-1.522	96.07E-15
754	U1S3K005	Up-dip	1	3	5	5,000	0.508	0.072	0.092	1.221	8.86E+6	0.124	8.88E+6	0.838	-1.297	87.10E-15
755	U1S3K046	Up-dip	1	3	46	5,000	0.509	0.090	0.003	1.224	8.89E+6	0.081	8.93E+6	0.904	-1.329	88.49E-15
756	U1S3K049	Up-dip	1	3	49	5,000	0.522	0.014	0.119	1.257	9.51E+6	0.169	9.55E+6	0.981	-1.524	99.05E-15
757	U1S3L046	Up-dip	1	3	46	10,000	0.497	0.090	0.003	1.193	8.43E+6	0.004	8.49E+6	0.904	-1.329	86.25E-15
758	U1S4C030	Up-dip	1	4	30	550	0.554	0.031	0.047	1.346	8.41E+6	0.078	8.41E+6	0.134	-1.019	85.99E-15
759	U1S4C034	Up-dip	1	4	34	550	0.588	0.060	0.052	1.459	10.83E+6	0.095	10.83E+6	0.123	-1.073	95.12E-15
760	U1S4C064	Up-dip	1	4	64	550	0.578	0.101	0.134	1.424	10.04E+6	0.189	10.01E+6	0.342	-1.251	99.70E-15
761	U1S4C092	Up-dip	1	4	92	550	0.600	0.143	0.017	1.502	11.87E+6	0.028	11.77E+6	0.067	-0.763	87.52E-15
762	U1S4C100	Up-dip	1	4	100	550	0.583	0.019	0.040	1.441	10.41E+6	0.139	10.39E+6	0.181	-1.255	101.00E-15
763	U1S4D034	Up-dip	1	4	34	750	0.537	0.060	0.052	1.296	8.67E+6	0.115	8.64E+6	0.168	-1.075	84.62E-15
764	U1S4D046	Up-dip	1	4	46	750	0.536	0.090	0.003	1.295	8.71E+6	0.182	8.71E+6	0.518	-1.301	92.49E-15
765	U1S4H026	Up-dip	1	4	26	2,000	0.528	0.127	0.062	1.272	9.96E+6	0.088	9.96E+6	0.360	-1.318	91.58E-15
766	U1S4H046	Up-dip	1	4	46	2,000	0.535	0.090	0.003	1.293	10.50E+6	0.127	10.51E+6	0.643	-1.342	93.97E-15
767	U1S4J046	Up-dip	1	4	46	4,000	0.517	0.090	0.003	1.243	9.21E+6	0.100	9.24E+6	0.874	-1.330	89.92E-15
768	U1S4L046	Up-dip	1	4	46	10,000	0.499	0.090	0.003	1.199	8.52E+6	0.009	8.58E+6	0.904	-1.329	86.67E-15
769	U1S5F026	Up-dip	1	5	26	1,200	0.518	0.127	0.062	1.247	9.26E+6	0.143	9.26E+6	0.388	-1.310	89.46E-15
770	U1S5F030	Up-dip	1	5	30	1,200	0.553	0.031	0.047	1.345	11.98E+6	0.065	11.98E+6	0.147	-1.091	88.29E-15
771	U1S5F034	Up-dip	1	5	34	1,200	0.558	0.060	0.052	1.358	12.37E+6	0.078	12.37E+6	0.139	-1.129	90.52E-15
772	U1S5F046	Up-dip	1	5	46	1,200	0.560	0.090	0.003	1.365	12.54E+6	0.120	12.55E+6	0.486	-1.357	99.87E-15
773	U1S5F059	Up-dip	1	5	59	1,200	0.514	0.081	0.028	1.236	9.01E+6	0.070	9.01E+6	0.206	-0.948	76.92E-15
774	U1S5F064	Up-dip	1	5	64	1,200	0.552	0.101	0.134	1.340	11.85E+6	0.198	11.81E+6	0.390	-1.315	96.28E-15
775	U1S5F100	Up-dip	1	5	100	1,200	0.547	0.019	0.040	1.327	11.49E+6	0.139	11.48E+6	0.229	-1.310	95.18E-15
776	U1S5G026	Up-dip	1	5	26	1,400	0.521	0.127	0.062	1.254	9.45E+6	0.124	9.45E+6	0.380	-1.313	90.04E-15
777	U1S5G034	Up-dip	1	5	34	1,400	0.515	0.060	0.052	1.237	9.16E+6	0.092	9.13E+6	0.186	-1.105	81.69E-15
778	U1S5G046	Up-dip	1	5	46	1,400	0.556	0.090	0.003	1.352	12.16E+6	0.113	12.17E+6	0.501	-1.355	98.83E-15
779	U1S5G059	Up-dip	1	5	59	1,400	0.507	0.081	0.028	1.218	8.61E+6	0.060	8.61E+6	0.217	-0.946	75.70E-15
780	U1S5I046	Up-dip	1	5	46	3,000	0.529	0.090	0.003	1.275	10.02E+6	0.112	10.02E+6	0.713	-1.338	92.52E-15
781	U1S5K046	Up-dip	1	5	46	5,000	0.509	0.090	0.003	1.224	8.89E+6	0.081	8.94E+6	0.904	-1.329	88.50E-15
782	U1S5L046	Up-dip	1	5	46	10,000	0.497	0.090	0.003	1.193	8.43E+6	0.004	8.49E+6	0.904	-1.328	86.24E-15
783	U2S1B022	Up-dip	2	1	22	350	0.623	0.095	0.017	1.591	8.88E+6	0.114	8.88E+6	0.130	-0.710	91.09E-15
784	U2S1B055	Up-dip	2	1	55	350	0.627	0.065	0.002	1.610	9.42E+6	0.030	9.42E+6	0.053	-0.927	99.41E-15
785	U2S1B058	Up-dip	2	1	58	350	0.630	0.025	0.045	1.623	9.56E+6	0.067	9.56E+6	0.072	-1.264	114.20E-15
786	U2S1B081	Up-dip	2	1	81	350	0.636	0.003	0.203	1.649	9.91E+6	0.213	9.91E+6	0.223	-0.705	94.26E-15
787	U2S1B090	Up-dip	2	1	90	350	0.636	0.049	0.044	1.649	10.07E+6	0.071	10.07E+6	0.076	-1.156	111.00E-15
788	U2S1E016	Up-dip	2	1	16	1,000	0.517	0.102	0.156	1.244	8.09E+6	0.235	8.10E+6	0.372	-1.264	87.48E-15
789	U2S1E022	Up-dip	2	1	22	1,000	0.559	0.095	0.017	1.361	11.53E+6	0.119	11.53E+6	0.178	-0.805	80.47E-15
790	U2S1E051	Up-dip	2	1	51	1,000	0.510	0.101	0.057	1.226	8.46E+6	0.130	8.46E+6	0.319	-0.994	77.60E-15
791	U2S1E055	Up-dip	2	1	55	1,000	0.585	0.065	0.002	1.447	12.47E+6	0.011	12.47E+6	0.047	-1.026	92.71E-15
792	U2S1E058	Up-dip	2	1	58	1,000	0.568	0.025	0.045	1.390	12.37E+6	0.061	12.37E+6	0.071	-1.369	102.20E-15

		*	*	*	*	BC well Sand Permeability (m^2)	Total Area solids released (m^2)	Castile Reservoir Pressure (Pa)	Castile Reservoir Permeability (m^3)	Up-dip Brine Relative Permeability (m^2)	Up-dip Gas Relative Permeability (m^3)	Down-dip Brine Relative Permeability (m^2)	Down-dip Gas Relative Permeability (m^3)	Up-dip Flowing Bottom-hole Pressure (Pa)	Down-dip Flowing Bottom-hole Pressure (Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	PRM_SAND	AREA_TOT	CAST_RE	PRM_CAST	KRW2	KRG2	KRW4	KRG4	FBHP2	FBHP4
749	U1S3G046	Up-dip	1	3	46	10.96E-15	1.142	16.09E+6	26.92E-12	298.80E-6	748.90E-3	71.56E-3	138.60E-3	225.60E+3	285.30E+3
750	U1S3G059	Up-dip	1	3	59	25.70E-15	0.505	12.73E+6	41.69E-15	3.16E-6	927.40E-3	61.54E-3	161.10E-3	205.60E+3	212.80E+3
751	U1S3I038	Up-dip	1	3	38	26.30E-15	0.605	9.65E+6	812.80E-15	2.01E-6	930.30E-3	193.10E-3	22.07E-3	199.30E+3	2.00E+6
752	U1S3I046	Up-dip	1	3	46	10.96E-15	1.104	15.67E+6	26.92E-12	271.50E-6	755.20E-3	275.00E-3	17.77E-3	195.70E+3	3.59E+6
753	U1S3I049	Up-dip	1	3	49	12.59E-15	1.597	11.40E+6	32.36E-15	25.09E-3	317.10E-3	923.30E-3	318.40E-9	174.60E+3	7.98E+6
754	U1S3K005	Up-dip	1	3	5	13.80E-15	1.017	8.35E+6	123.00E-15	4.68E-6	919.50E-3	484.60E-3	2.04E-3	205.90E+3	7.60E+6
755	U1S3K046	Up-dip	1	3	46	10.96E-15	1.085	15.42E+6	26.92E-12	81.96E-6	822.30E-3	688.60E-3	441.50E-9	188.20E+3	7.98E+6
756	U1S3K049	Up-dip	1	3	49	12.59E-15	1.602	11.40E+6	32.36E-15	25.51E-6	880.40E-3	923.70E-3	298.30E-9	205.50E+3	7.98E+6
757	U1S3L046	Up-dip	1	3	46	10.96E-15	1.084	14.73E+6	26.92E-12	23.69E-12	997.10E-3	688.90E-3	418.00E-9	218.00E+3	7.98E+6
758	U1S4C030	Up-dip	1	4	30	363.10E-15	0.584	12.72E+6	446.70E-15	3.33E-6	930.20E-3	146.40E-6	804.60E-3	200.70E+3	177.40E+3
759	U1S4C034	Up-dip	1	4	34	85.11E-15	0.650	15.03E+6	2.75E-12	10.25E-6	901.90E-3	68.65E-6	835.50E-3	232.60E+3	218.20E+3
760	U1S4C064	Up-dip	1	4	64	2.82E-12	0.929	12.26E+6	1.18E-12	39.01E-6	850.30E-3	5.14E-3	472.10E-3	210.40E+3	179.20E+3
761	U1S4C092	Up-dip	1	4	92	6.17E-12	0.349	13.15E+6	1.29E-12	56.25E-9	974.10E-3	16.57E-6	877.40E-3	277.20E+3	244.20E+3
762	U1S4C100	Up-dip	1	4	100	1.10E-12	0.935	13.69E+6	3.47E-15	222.80E-6	784.20E-3	829.10E-6	694.80E-3	202.70E+3	192.60E+3
763	U1S4D034	Up-dip	1	4	34	85.11E-15	0.653	15.03E+6	2.75E-12	42.48E-6	855.50E-3	419.20E-6	733.10E-3	189.40E+3	173.40E+3
764	U1S4D046	Up-dip	1	4	46	10.96E-15	1.025	14.94E+6	26.92E-12	1.76E-3	603.00E-3	87.47E-3	114.80E-3	165.70E+3	229.80E+3
765	U1S4H026	Up-dip	1	4	26	23.99E-15	1.062	14.18E+6	104.70E-15	1.72E-6	934.70E-3	14.38E-3	327.50E-3	229.20E+3	183.90E+3
766	U1S4H046	Up-dip	1	4	46	10.96E-15	1.113	14.94E+6	26.92E-12	449.10E-6	720.50E-3	195.10E-3	38.44E-3	198.40E+3	747.50E+3
767	U1S4J046	Up-dip	1	4	46	10.96E-15	1.088	14.94E+6	26.92E-12	183.10E-6	779.50E-3	607.60E-3	102.90E-6	187.00E+3	8.02E+6
768	U1S4L046	Up-dip	1	4	46	10.96E-15	1.084	14.94E+6	26.92E-12	5.48E-9	987.10E-3	689.00E-3	414.00E-9	221.80E+3	7.98E+6
769	U1S5F026	Up-dip	1	5	26	23.99E-15	1.045	14.18E+6	104.70E-15	118.20E-6	793.70E-3	20.17E-3	281.10E-3	190.70E+3	180.00E+3
770	U1S5F030	Up-dip	1	5	30	363.10E-15	0.674	12.72E+6	446.70E-15	443.70E-9	959.80E-3	241.00E-6	776.60E-3	271.10E+3	224.90E+3
771	U1S5F034	Up-dip	1	5	34	85.11E-15	0.727	15.03E+6	2.75E-12	1.66E-6	940.40E-3	144.00E-6	799.10E-3	270.60E+3	235.30E+3
772	U1S5F046	Up-dip	1	5	46	10.96E-15	1.148	14.94E+6	26.92E-12	365.30E-6	735.20E-3	68.61E-3	143.70E-3	229.50E+3	289.10E+3
773	U1S5F059	Up-dip	1	5	59	25.70E-15	0.507	12.77E+6	41.69E-15	8.73E-6	904.10E-3	1.88E-3	599.70E-3	204.60E+3	169.30E+3
774	U1S5F064	Up-dip	1	5	64	2.82E-12	1.055	12.26E+6	1.18E-12	69.53E-6	825.00E-3	11.16E-3	372.70E-3	233.70E+3	205.80E+3
775	U1S5F100	Up-dip	1	5	100	1.10E-12	1.045	13.69E+6	3.47E-15	225.00E-6	783.70E-3	2.45E-3	597.80E-3	218.40E+3	200.80E+3
776	U1S5G026	Up-dip	1	5	26	23.99E-15	1.050	14.18E+6	104.70E-15	43.92E-6	842.00E-3	18.41E-3	293.70E-3	200.70E+3	180.80E+3
777	U1S5G034	Up-dip	1	5	34	85.11E-15	0.694	15.03E+6	2.75E-12	7.70E-6	909.30E-3	713.20E-6	693.30E-3	207.80E+3	176.40E+3
778	U1S5G046	Up-dip	1	5	46	10.96E-15	1.142	14.94E+6	26.92E-12	295.50E-6	749.60E-3	77.04E-3	129.70E-3	225.70E+3	290.50E+3
779	U1S5G059	Up-dip	1	5	59	25.70E-15	0.504	12.77E+6	41.69E-15	3.15E-6	927.50E-3	2.35E-3	576.80E-3	204.10E+3	163.20E+3
780	U1S5I046	Up-dip	1	5	46	10.96E-15	1.104	14.94E+6	26.92E-12	281.10E-6	752.90E-3	285.80E-3	15.96E-3	195.20E+3	4.00E+6
781	U1S5K046	Up-dip	1	5	46	10.96E-15	1.085	14.94E+6	26.92E-12	83.97E-6	821.20E-3	689.00E-3	414.40E-9	188.00E+3	7.98E+6
782	U1S5L046	Up-dip	1	5	46	10.96E-15	1.084	14.94E+6	26.92E-12	31.50E-12	996.80E-3	688.90E-3	418.10E-9	218.40E+3	7.98E+6
783	U2S1B022	Up-dip	2	1	22	000.00E+0	0.315	12.09E+6	1.00E-12	189.00E-6	776.20E-3	338.30E-6	738.80E-3	182.10E+3	178.00E+3
784	U2S1B055	Up-dip	2	1	55	000.00E+0	0.485	15.10E+6	1.00E-12	1.98E-6	937.30E-3	16.87E-6	887.40E-3	219.60E+3	206.90E+3
785	U2S1B058	Up-dip	2	1	58	000.00E+0	0.952	14.55E+6	1.00E-12	861.00E-9	952.10E-3	1.77E-6	941.70E-3	226.00E+3	222.50E+3
786	U2S1B081	Up-dip	2	1	81	000.00E+0	0.311	16.27E+6	1.00E-12	99.24E-9	974.10E-3	1.23E-6	948.40E-3	240.40E+3	230.20E+3
787	U2S1B090	Up-dip	2	1	90	000.00E+0	0.768	14.51E+6	1.00E-12	2.06E-6	937.60E-3	3.82E-6	926.10E-3	230.10E+3	226.60E+3
788	U2S1E016	Up-dip	2	1	16	000.00E+0	0.952	12.63E+6	1.00E-12	156.10E-6	781.50E-3	6.49E-3	441.00E-3	172.40E+3	155.00E+3
789	U2S1E022	Up-dip	2	1	22	000.00E+0	0.380	12.09E+6	1.00E-12	231.30E-6	763.80E-3	1.25E-3	633.30E-3	218.40E+3	205.10E+3
790	U2S1E051	Up-dip	2	1	51	000.00E+0	0.555	14.74E+6	1.00E-12	78.92E-6	820.90E-3	8.88E-3	408.30E-3	182.20E+3	160.40E+3
791	U2S1E055	Up-dip	2	1	55	000.00E+0	0.592	15.10E+6	1.00E-12	31.44E-9	979.80E-3	10.70E-6	900.50E-3	290.10E+3	259.20E+3
792	U2S1E058	Up-dip	2	1	58	000.00E+0	1.175	14.55E+6	1.00E-12	233.70E-9	966.50E-3	1.68E-6	942.50E-3	281.00E+3	270.50E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
749	U1S3G046	Up-dip	1	3	46	285.90E+3	11	38.30E-9	643.50E-3	167.70E-9	10.99E+0	44.28E-3	0.000	1.08E+6	0.048
750	U1S3G059	Up-dip	1	3	59	214.20E+3	11	262.50E-12	428.40E-3	972.30E-12	5.45E+0	470.30E-6	0.000	673.90E+3	0.000
751	U1S3I038	Up-dip	1	3	38	2.00E+6	11	151.50E-12	348.30E-3	584.70E-12	4.86E+0	326.40E-6	0.000	570.70E+3	0.000
752	U1S3I046	Up-dip	1	3	46	3.59E+6	11	28.62E-9	469.40E-3	117.80E-9	7.17E+0	45.81E-3	0.000	772.40E+3	0.035
753	U1S3I049	Up-dip	1	3	49	7.98E+6	11	2.66E-6	248.80E-3	9.86E-6	2.40E+0	9.04E+0	0.000	361.50E+3	3.267
754	U1S3K005	Up-dip	1	3	5	7.60E+6	11	394.60E-12	376.10E-3	1.68E-9	6.40E+0	767.80E-6	0.000	643.60E+3	0.000
755	U1S3K046	Up-dip	1	3	46	7.98E+6	11	7.48E-9	399.90E-3	30.04E-9	5.88E+0	14.07E-3	0.000	654.10E+3	0.009
756	U1S3K049	Up-dip	1	3	49	7.98E+6	11	2.46E-9	416.50E-3	11.17E-9	8.00E+0	4.30E-3	0.000	723.40E+3	0.003
757	U1S3L046	Up-dip	1	3	46	7.98E+6	11	1.93E-15	392.00E-3	7.98E-15	6.23E+0	3.66E-9	0.000	653.40E+3	0.000
758	U1S4C030	Up-dip	1	4	30	000.00E+0	11	298.80E-12	441.90E-3	1.12E-9	5.79E+0	518.20E-6	0.000	696.00E+3	0.000
759	U1S4C034	Up-dip	1	4	34	000.00E+0	11	1.23E-9	688.60E-3	4.92E-9	10.16E+0	1.36E-3	0.000	1.09E+6	0.001
760	U1S4C064	Up-dip	1	4	64	000.00E+0	11	4.35E-9	525.60E-3	18.19E-9	8.66E+0	6.18E-3	0.000	863.20E+3	0.005
761	U1S4C092	Up-dip	1	4	92	000.00E+0	11	7.15E-12	891.20E-3	27.17E-12	12.03E+0	6.17E-6	0.000	1.39E+6	0.000
762	U1S4C100	Up-dip	1	4	100	000.00E+0	11	27.18E-9	591.10E-3	109.30E-9	8.71E+0	35.16E-3	0.000	937.80E+3	0.033
763	U1S4D034	Up-dip	1	4	34	000.00E+0	11	3.85E-9	422.80E-3	14.51E-9	5.56E+0	6.99E-3	0.000	665.10E+3	0.005
764	U1S4D046	Up-dip	1	4	46	000.00E+0	11	174.50E-9	342.70E-3	662.60E-9	4.34E+0	393.90E-3	0.000	544.00E+3	0.214
765	U1S4H026	Up-dip	1	4	26	000.00E+0	11	172.10E-12	508.10E-3	730.60E-12	8.59E+0	251.60E-6	0.000	845.00E+3	0.000
766	U1S4H046	Up-dip	1	4	46	000.00E+0	11	49.82E-9	490.80E-3	206.90E-9	7.57E+0	76.27E-3	0.000	809.30E+3	0.062
767	U1S4J046	Up-dip	1	4	46	000.00E+0	11	17.61E-9	414.70E-3	70.75E-9	6.07E+0	32.01E-3	0.000	677.30E+3	0.022
768	U1S4L046	Up-dip	1	4	46	000.00E+0	11	446.50E-15	396.80E-3	1.87E-12	6.32E+0	838.20E-9	0.000	662.00E+3	0.000
769	U1S5F026	Up-dip	1	5	26	000.00E+0	11	11.10E-9	400.40E-3	45.62E-9	6.21E+0	20.74E-3	0.000	660.80E+3	0.014
770	U1S5F030	Up-dip	1	5	30	000.00E+0	11	53.73E-12	777.40E-3	218.30E-12	12.18E+0	52.58E-6	0.000	1.23E+6	0.000
771	U1S5F034	Up-dip	1	5	34	000.00E+0	11	208.60E-12	808.00E-3	864.00E-12	13.01E+0	196.00E-6	0.000	1.29E+6	0.000
772	U1S5F046	Up-dip	1	5	46	000.00E+0	11	48.69E-9	676.50E-3	213.80E-9	11.58E+0	53.64E-3	0.000	1.13E+6	0.061
773	U1S5F059	Up-dip	1	5	59	000.00E+0	11	756.40E-12	449.90E-3	2.81E-9	5.75E+0	1.29E-3	0.000	706.70E+3	0.001
774	U1S5F064	Up-dip	1	5	64	000.00E+0	11	8.43E-9	621.70E-3	37.00E-9	11.20E+0	10.11E-3	0.000	1.02E+6	0.010
775	U1S5F100	Up-dip	1	5	100	000.00E+0	11	27.52E-9	629.50E-3	114.90E-9	9.93E+0	33.28E-3	0.000	1.01E+6	0.034
776	U1S5G026	Up-dip	1	5	26	000.00E+0	11	4.17E-9	429.80E-3	17.40E-9	6.89E+0	7.24E-3	0.000	712.60E+3	0.005
777	U1S5G034	Up-dip	1	5	34	000.00E+0	11	691.50E-12	454.40E-3	2.68E-9	6.35E+0	1.16E-3	0.000	719.90E+3	0.001
778	U1S5G046	Up-dip	1	5	46	000.00E+0	11	37.89E-9	643.90E-3	166.00E-9	11.01E+0	43.76E-3	0.000	1.08E+6	0.047
779	U1S5G059	Up-dip	1	5	59	000.00E+0	11	258.00E-12	420.50E-3	952.80E-12	5.32E+0	471.50E-6	0.000	660.20E+3	0.000
780	U1S5I046	Up-dip	1	5	46	000.00E+0	11	29.57E-9	466.80E-3	121.60E-9	7.11E+0	47.61E-3	0.000	767.70E+3	0.037
781	U1S5K046	Up-dip	1	5	46	000.00E+0	11	7.66E-9	399.60E-3	30.78E-9	5.87E+0	14.44E-3	0.000	653.60E+3	0.009
782	U1S5L046	Up-dip	1	5	46	000.00E+0	11	2.56E-15	391.90E-3	10.61E-15	6.22E+0	4.87E-9	0.000	653.10E+3	0.000
783	U2S1B022	Up-dip	2	1	22	000.00E+0	11	20.68E-9	519.10E-3	71.36E-9	5.71E+0	30.98E-3	0.000	798.50E+3	0.025
784	U2S1B055	Up-dip	2	1	55	000.00E+0	11	230.80E-12	659.30E-3	861.90E-12	8.41E+0	269.80E-6	0.000	1.03E+6	0.000
785	U2S1B058	Up-dip	2	1	58	000.00E+0	11	108.00E-12	659.40E-3	436.90E-12	10.09E+0	124.20E-6	0.000	1.06E+6	0.000
786	U2S1B081	Up-dip	2	1	81	000.00E+0	11	12.20E-12	583.80E-3	43.09E-12	9.13E+0	15.15E-6	0.000	980.00E+3	0.000
787	U2S1B090	Up-dip	2	1	90	000.00E+0	11	268.30E-12	717.40E-3	1.07E-9	10.70E+0	284.00E-6	0.000	1.15E+6	0.000
788	U2S1E016	Up-dip	2	1	16	000.00E+0	11	12.66E-9	298.30E-3	51.45E-9	4.59E+0	31.65E-3	0.000	495.50E+3	0.016
789	U2S1E022	Up-dip	2	1	22	000.00E+0	11	27.04E-9	656.90E-3	100.30E-9	8.24E+0	31.84E-3	0.000	1.02E+6	0.032
790	U2S1E051	Up-dip	2	1	51	000.00E+0	11	6.43E-9	358.30E-3	24.12E-9	4.67E+0	13.63E-3	0.000	575.80E+3	0.008
791	U2S1E055	Up-dip	2	1	55	000.00E+0	11	4.18E-12	952.50E-3	16.90E-12	14.09E+0	3.38E-6	0.000	1.48E+6	0.000
792	U2S1E058	Up-dip	2	1	58	000.00E+0	11	31.94E-12	856.40E-3	137.40E-12	15.07E+0	28.28E-6	0.000	1.36E+6	0.000

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
749	U1S3G046	Up-dip	1	3	46	0.047	12.16E+6	0.505	5.52E+6	0.100	84.33E+3	27.33E+3
750	U1S3G059	Up-dip	1	3	59	0.000	8.70E+6	0.499	4.34E+6	0.046	69.78E+3	13.73E+3
751	U1S3I038	Up-dip	1	3	38	0.000	8.18E+6	0.670	3.96E+6	0.076	66.12E+3	21.52E+3
752	U1S3I046	Up-dip	1	3	46	0.033	10.05E+6	0.714	4.76E+6	0.087	75.81E+3	28.36E+3
753	U1S3I049	Up-dip	1	3	49	3.110	8.82E+6	0.982	5.03E+6	0.279	69.49E+3	43.23E+3
754	U1S3K005	Up-dip	1	3	5	0.000	8.88E+6	0.843	4.02E+6	0.109	69.65E+3	29.92E+3
755	U1S3K046	Up-dip	1	3	46	0.009	8.93E+6	0.907	4.32E+6	0.053	69.96E+3	28.44E+3
756	U1S3K049	Up-dip	1	3	49	0.003	9.55E+6	0.982	4.18E+6	0.107	73.64E+3	39.72E+3
757	U1S3L046	Up-dip	1	3	46	0.000	8.49E+6	0.907	4.00E+6	0.003	66.52E+3	25.31E+3
758	U1S4C030	Up-dip	1	4	30	0.000	8.39E+6	0.158	4.20E+6	0.078	83.66E+3	8.19E+3
759	U1S4C034	Up-dip	1	4	34	0.001	10.78E+6	0.147	5.07E+6	0.091	96.32E+3	10.20E+3
760	U1S4C064	Up-dip	1	4	64	0.005	9.98E+6	0.359	4.56E+6	0.185	92.48E+3	21.43E+3
761	U1S4C092	Up-dip	1	4	92	0.000	11.71E+6	0.092	5.60E+6	0.027	101.20E+3	4.23E+3
762	U1S4C100	Up-dip	1	4	100	0.033	10.36E+6	0.203	4.98E+6	0.131	94.29E+3	14.42E+3
763	U1S4D034	Up-dip	1	4	34	0.004	8.62E+6	0.190	4.33E+6	0.108	78.11E+3	10.34E+3
764	U1S4D046	Up-dip	1	4	46	0.202	8.71E+6	0.531	4.52E+6	0.154	77.91E+3	28.31E+3
765	U1S4H026	Up-dip	1	4	26	0.000	9.95E+6	0.377	4.51E+6	0.079	75.41E+3	17.02E+3
766	U1S4H046	Up-dip	1	4	46	0.061	10.51E+6	0.653	4.95E+6	0.105	77.67E+3	28.76E+3
767	U1S4J046	Up-dip	1	4	46	0.021	9.24E+6	0.878	4.48E+6	0.071	72.10E+3	29.47E+3
768	U1S4L046	Up-dip	1	4	46	0.000	8.58E+6	0.907	4.03E+6	0.007	67.16E+3	25.78E+3
769	U1S5F026	Up-dip	1	5	26	0.013	9.26E+6	0.405	4.39E+6	0.133	72.57E+3	20.53E+3
770	U1S5F030	Up-dip	1	5	30	0.000	11.91E+6	0.170	5.48E+6	0.065	83.51E+3	7.72E+3
771	U1S5F034	Up-dip	1	5	34	0.000	12.29E+6	0.162	5.60E+6	0.075	85.07E+3	8.86E+3
772	U1S5F046	Up-dip	1	5	46	0.058	12.55E+6	0.499	5.68E+6	0.104	85.78E+3	27.58E+3
773	U1S5F059	Up-dip	1	5	59	0.001	8.99E+6	0.227	4.48E+6	0.056	71.31E+3	9.22E+3
774	U1S5F064	Up-dip	1	5	64	0.010	11.77E+6	0.406	5.22E+6	0.192	82.95E+3	21.30E+3
775	U1S5F100	Up-dip	1	5	100	0.033	11.44E+6	0.249	5.36E+6	0.126	81.54E+3	14.57E+3
776	U1S5G026	Up-dip	1	5	26	0.005	9.44E+6	0.397	4.41E+6	0.116	73.34E+3	19.52E+3
777	U1S5G034	Up-dip	1	5	34	0.001	9.11E+6	0.208	4.45E+6	0.086	71.47E+3	9.14E+3
778	U1S5G046	Up-dip	1	5	46	0.046	12.16E+6	0.514	5.51E+6	0.100	84.35E+3	27.55E+3
779	U1S5G059	Up-dip	1	5	59	0.000	8.59E+6	0.238	4.31E+6	0.047	69.26E+3	8.88E+3
780	U1S5I046	Up-dip	1	5	46	0.035	10.02E+6	0.721	4.76E+6	0.088	75.71E+3	28.51E+3
781	U1S5K046	Up-dip	1	5	46	0.009	8.94E+6	0.907	4.32E+6	0.053	69.97E+3	28.45E+3
782	U1S5L046	Up-dip	1	5	46	0.000	8.49E+6	0.907	4.00E+6	0.003	66.51E+3	25.29E+3
783	U2S1B022	Up-dip	2	1	22	0.023	8.86E+6	0.130	4.64E+6	0.108	111.20E+3	13.10E+3
784	U2S1B055	Up-dip	2	1	55	0.000	9.39E+6	0.053	4.68E+6	0.030	113.30E+3	4.19E+3
785	U2S1B058	Up-dip	2	1	58	0.000	9.53E+6	0.072	4.53E+6	0.067	114.80E+3	7.86E+3
786	U2S1B081	Up-dip	2	1	81	0.000	9.88E+6	0.223	4.34E+6	0.215	117.70E+3	25.50E+3
787	U2S1B090	Up-dip	2	1	90	0.000	10.03E+6	0.076	4.74E+6	0.072	117.60E+3	8.57E+3
788	U2S1E016	Up-dip	2	1	16	0.015	8.09E+6	0.372	3.86E+6	0.228	72.18E+3	22.07E+3
789	U2S1E022	Up-dip	2	1	22	0.030	11.48E+6	0.178	5.63E+6	0.106	85.35E+3	12.41E+3
790	U2S1E051	Up-dip	2	1	51	0.007	8.45E+6	0.319	4.20E+6	0.117	70.23E+3	16.77E+3
791	U2S1E055	Up-dip	2	1	55	0.000	12.38E+6	0.047	5.80E+6	0.011	95.06E+3	2.02E+3
792	U2S1E058	Up-dip	2	1	58	0.000	12.28E+6	0.071	5.54E+6	0.061	88.63E+3	5.63E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
793	U2S1I022	Up-dip	2	1	22	3,000	0.558	0.095	0.017	1.360	12.33E+6	0.051	12.34E+6	0.227	-0.817	80.73E-15
794	U2S1I099	Up-dip	2	1	99	3,000	0.521	0.079	0.090	1.254	9.50E+6	0.097	9.51E+6	0.421	-1.090	82.32E-15
795	U2S1L028	Up-dip	2	1	28	10,000	0.509	0.126	0.029	1.222	8.85E+6	0.866	8.97E+6	0.904	-1.260	85.87E-15
796	U2S1L041	Up-dip	2	1	41	10,000	0.494	0.056	0.037	1.186	8.32E+6	0.104	8.39E+6	0.941	-0.853	71.35E-15
797	U2S2C022	Up-dip	2	2	22	550	0.585	0.095	0.017	1.445	10.51E+6	0.125	10.52E+6	0.121	-0.769	84.40E-15
798	U2S2C028	Up-dip	2	2	28	550	0.569	0.126	0.029	1.396	8.83E+6	0.902	11.42E+6	0.922	-1.229	96.80E-15
799	U2S2C055	Up-dip	2	2	55	550	0.598	0.065	0.002	1.493	11.62E+6	0.021	11.62E+6	0.048	-0.999	94.64E-15
800	U2S2C058	Up-dip	2	2	58	550	0.592	0.025	0.045	1.473	11.16E+6	0.072	11.16E+6	0.267	-1.328	106.40E-15
801	U2S2C081	Up-dip	2	2	81	550	0.601	0.003	0.203	1.505	11.93E+6	0.230	11.90E+6	0.462	-0.761	87.65E-15
802	U2S2C090	Up-dip	2	2	90	550	0.601	0.049	0.044	1.504	11.91E+6	0.060	11.89E+6	0.067	-1.232	104.50E-15
803	U2S2D011	Up-dip	2	2	11	750	0.555	0.117	0.326	1.349	9.38E+6	0.327	9.50E+6	0.878	-1.264	94.90E-15
804	U2S2D022	Up-dip	2	2	22	750	0.557	0.095	0.017	1.354	9.97E+6	0.132	9.95E+6	0.143	-0.781	79.45E-15
805	U2S2D028	Up-dip	2	2	28	750	0.552	0.126	0.029	1.340	9.65E+6	0.905	9.98E+6	0.917	-1.241	93.40E-15
806	U2S2D055	Up-dip	2	2	55	750	0.556	0.065	0.002	1.351	10.04E+6	0.016	10.03E+6	0.065	-1.009	86.03E-15
807	U2S2D058	Up-dip	2	2	58	750	0.568	0.025	0.045	1.389	10.68E+6	0.070	10.67E+6	0.295	-1.343	101.00E-15
808	U2S2H028	Up-dip	2	2	28	2,000	0.526	0.126	0.029	1.268	9.82E+6	0.894	9.89E+6	0.913	-1.266	89.32E-15
809	U2S2H051	Up-dip	2	2	51	2,000	0.532	0.101	0.057	1.282	10.22E+6	0.060	10.23E+6	0.694	-1.013	81.73E-15
810	U2S2H067	Up-dip	2	2	67	2,000	0.515	0.072	0.256	1.238	9.06E+6	0.280	9.08E+6	0.887	-1.015	78.98E-15
811	U2S2H074	Up-dip	2	2	74	2,000	0.540	0.129	0.007	1.304	10.81E+6	0.677	10.84E+6	0.864	-0.792	76.81E-15
812	U2S2J028	Up-dip	2	2	28	4,000	0.516	0.126	0.029	1.241	9.15E+6	0.880	9.21E+6	0.908	-1.260	87.18E-15
813	U2S2J074	Up-dip	2	2	74	4,000	0.537	0.129	0.007	1.297	10.60E+6	0.270	10.63E+6	0.861	-0.791	76.32E-15
814	U2S2L028	Up-dip	2	2	28	10,000	0.508	0.126	0.029	1.220	8.84E+6	0.873	8.89E+6	0.894	-1.260	85.68E-15
815	U2S3F003	Up-dip	2	3	3	1,200	0.502	0.040	0.184	1.205	8.33E+6	0.231	8.28E+6	0.424	-1.295	85.91E-15
816	U2S3F016	Up-dip	2	3	16	1,200	0.513	0.102	0.156	1.232	8.93E+6	0.213	8.90E+6	0.489	-1.290	87.64E-15
817	U2S3F019	Up-dip	2	3	19	1,200	0.503	0.107	0.197	1.209	8.38E+6	0.248	8.48E+6	0.887	-1.269	85.26E-15
818	U2S3F022	Up-dip	2	3	22	1,200	0.551	0.095	0.017	1.338	11.79E+6	0.113	11.79E+6	0.157	-0.815	79.38E-15
819	U2S3F028	Up-dip	2	3	28	1,200	0.530	0.126	0.029	1.279	9.65E+6	0.901	11.69E+6	0.958	-1.281	90.66E-15
820	U2S3F044	Up-dip	2	3	44	1,200	0.505	0.150	0.172	1.213	8.48E+6	0.209	8.50E+6	0.817	-1.331	87.76E-15
821	U2S3F051	Up-dip	2	3	51	1,200	0.519	0.101	0.057	1.247	9.26E+6	0.104	9.27E+6	0.588	-1.005	79.26E-15
822	U2S3F055	Up-dip	2	3	55	1,200	0.568	0.065	0.002	1.389	13.22E+6	0.005	13.22E+6	0.031	-1.055	89.96E-15
823	U2S3F058	Up-dip	2	3	58	1,200	0.563	0.025	0.045	1.373	12.76E+6	0.054	12.76E+6	0.062	-1.380	101.40E-15
824	U2S3F078	Up-dip	2	3	78	1,200	0.499	0.076	0.127	1.198	8.14E+6	0.190	8.14E+6	0.305	-1.314	86.03E-15
825	U2S3G022	Up-dip	2	3	22	1,400	0.536	0.095	0.017	1.293	10.55E+6	0.114	10.54E+6	0.175	-0.807	76.54E-15
826	U2S3G028	Up-dip	2	3	28	1,400	0.526	0.126	0.029	1.266	9.75E+6	0.901	9.84E+6	0.945	-1.266	89.12E-15
827	U2S3G051	Up-dip	2	3	51	1,400	0.521	0.101	0.057	1.253	9.41E+6	0.091	9.42E+6	0.568	-1.006	79.65E-15
828	U2S3G058	Up-dip	2	3	58	1,400	0.548	0.025	0.045	1.328	11.52E+6	0.049	11.51E+6	0.060	-1.374	97.91E-15
829	U2S3I028	Up-dip	2	3	28	3,000	0.517	0.126	0.029	1.242	9.17E+6	0.887	9.25E+6	0.934	-1.260	87.26E-15
830	U2S3I074	Up-dip	2	3	74	3,000	0.534	0.129	0.007	1.287	10.35E+6	0.329	10.37E+6	0.823	-0.789	75.72E-15
831	U2S3K028	Up-dip	2	3	28	5,000	0.509	0.126	0.029	1.223	8.88E+6	0.877	8.95E+6	0.922	-1.260	85.93E-15
832	U2S3K074	Up-dip	2	3	74	5,000	0.530	0.129	0.007	1.279	10.12E+6	0.100	10.14E+6	0.761	-0.788	75.18E-15
833	U2S3L028	Up-dip	2	3	28	10,000	0.503	0.126	0.029	1.209	8.68E+6	0.873	8.74E+6	0.899	-1.260	84.96E-15
834	U2S4C022	Up-dip	2	4	22	550	0.585	0.095	0.017	1.446	10.53E+6	0.125	10.53E+6	0.154	-0.769	84.45E-15
835	U2S4C055	Up-dip	2	4	55	550	0.598	0.065	0.002	1.493	11.63E+6	0.021	11.63E+6	0.051	-0.999	94.65E-15
836	U2S4C058	Up-dip	2	4	58	550	0.591	0.025	0.045	1.468	11.05E+6	0.072	11.05E+6	0.078	-1.327	106.10E-15

		*	*	*	*	BC well Sand Permeability (m^2)	Total Area solids released (m^2)	Castile Reservoir Pressure (Pa)	Castile Reservoir Permeability (m^3)	Up-dip Brine Relative Permeability (m^2)	Up-dip Gas Relative Permeability (m^3)	Down-dip Brine Relative Permeability (m^2)	Down-dip Gas Relative Permeability (m^3)	Up-dip Flowing Bottom-hole Pressure (Pa)	Down-dip Flowing Bottom-hole Pressure (Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	PRM_SAND	AREA_TOT	CAST_RE	PRM_CAST	KRW2	KRG2	KRW4	KRG4	FBHP2	FBHP4
793	U2S1I022	Up-dip	2	1	22	000.00E+0	0.389	12.09E+6	1.00E-12	3.83E-6	922.30E-3	3.32E-3	533.30E-3	264.50E+3	211.10E+3
794	U2S1I099	Up-dip	2	1	99	000.00E+0	0.673	10.80E+6	1.00E-12	21.61E-9	981.40E-3	23.87E-3	286.20E-3	237.10E+3	185.50E+3
795	U2S1L028	Up-dip	2	1	28	000.00E+0	0.946	17.04E+6	1.00E-12	576.80E-3	1.89E-6	680.20E-3	000.00E+0	7.99E+6	8.00E+6
796	U2S1L041	Up-dip	2	1	41	000.00E+0	0.419	12.22E+6	1.00E-12	53.57E-6	847.00E-3	791.60E-3	63.42E-9	182.80E+3	7.99E+6
797	U2S2C022	Up-dip	2	2	22	28.84E-15	0.354	12.14E+6	87.10E-15	289.30E-6	749.40E-3	245.50E-6	760.10E-3	202.00E+3	203.30E+3
798	U2S2C028	Up-dip	2	2	28	616.60E-15	0.888	15.08E+6	26.30E-15	674.00E-3	000.00E+0	733.90E-3	000.00E+0	8.00E+6	8.01E+6
799	U2S2C055	Up-dip	2	2	55	58.88E-15	0.561	15.16E+6	85.11E-12	443.80E-9	958.40E-3	11.32E-6	899.00E-3	264.70E+3	244.80E+3
800	U2S2C058	Up-dip	2	2	58	30.90E-15	1.083	13.72E+6	186.20E-15	1.70E-6	942.30E-3	4.57E-3	528.20E-3	249.60E+3	194.50E+3
801	U2S2C081	Up-dip	2	2	81	933.30E-15	0.348	15.33E+6	125.90E-15	3.63E-6	930.70E-3	15.79E-3	385.80E-3	257.90E+3	209.60E+3
802	U2S2C090	Up-dip	2	2	90	1.74E-12	0.894	14.28E+6	3.47E-12	303.00E-9	963.10E-3	1.04E-6	948.30E-3	271.60E+3	264.90E+3
803	U2S2D011	Up-dip	2	2	11	5.89E-12	0.952	14.30E+6	30.90E-15	134.50E-12	994.80E-3	479.20E-3	1.08E-6	236.90E+3	7.99E+6
804	U2S2D022	Up-dip	2	2	22	28.84E-15	0.363	12.14E+6	87.10E-15	365.40E-6	733.40E-3	498.60E-6	710.80E-3	192.40E+3	190.00E+3
805	U2S2D028	Up-dip	2	2	28	616.60E-15	0.910	15.04E+6	26.30E-15	684.40E-3	000.00E+0	720.20E-3	000.00E+0	8.00E+6	8.00E+6
806	U2S2D055	Up-dip	2	2	55	58.88E-15	0.573	14.88E+6	85.11E-12	148.50E-9	969.20E-3	36.74E-6	860.80E-3	241.40E+3	210.80E+3
807	U2S2D058	Up-dip	2	2	58	30.90E-15	1.115	13.72E+6	186.20E-15	1.38E-6	945.50E-3	7.10E-3	476.60E-3	242.50E+3	188.00E+3
808	U2S2H028	Up-dip	2	2	28	616.60E-15	0.957	14.99E+6	26.30E-15	652.00E-3	000.00E+0	708.20E-3	000.00E+0	8.00E+6	8.00E+6
809	U2S2H051	Up-dip	2	2	51	11.75E-15	0.576	9.50E+6	2.34E-12	1.08E-9	991.60E-3	235.00E-3	22.42E-3	252.90E+3	2.47E+6
810	U2S2H067	Up-dip	2	2	67	16.98E-15	0.579	9.31E+6	741.30E-15	3.49E-6	924.30E-3	543.60E-3	388.70E-6	210.80E+3	7.97E+6
811	U2S2H074	Up-dip	2	2	74	22.91E-15	0.371	10.29E+6	436.50E-15	233.10E-3	17.75E-3	580.80E-3	774.20E-9	3.12E+6	7.99E+6
812	U2S2J028	Up-dip	2	2	28	616.60E-15	0.945	14.97E+6	26.30E-15	614.20E-3	000.00E+0	691.20E-3	000.00E+0	8.00E+6	8.00E+6
813	U2S2J074	Up-dip	2	2	74	22.91E-15	0.370	10.30E+6	436.50E-15	7.41E-3	419.10E-3	573.00E-3	2.44E-6	187.40E+3	7.99E+6
814	U2S2L028	Up-dip	2	2	28	616.60E-15	0.946	14.89E+6	26.30E-15	596.60E-3	3.98E-9	652.10E-3	000.00E+0	8.02E+6	8.00E+6
815	U2S3F003	Up-dip	2	3	3	4.07E-12	1.014	11.89E+6	25.70E-12	25.27E-6	876.50E-3	10.82E-3	412.90E-3	187.70E+3	158.80E+3
816	U2S3F016	Up-dip	2	3	16	2.63E-12	1.004	12.49E+6	154.90E-15	47.82E-6	841.10E-3	32.31E-3	225.40E-3	192.40E+3	187.10E+3
817	U2S3F019	Up-dip	2	3	19	50.12E-15	0.962	12.05E+6	371.50E-15	38.65E-6	847.90E-3	571.80E-3	1.09E-6	185.80E+3	7.99E+6
818	U2S3F022	Up-dip	2	3	22	28.84E-15	0.388	12.13E+6	87.10E-15	186.50E-6	777.00E-3	737.70E-6	679.80E-3	224.30E+3	212.70E+3
819	U2S3F028	Up-dip	2	3	28	616.60E-15	0.986	15.33E+6	26.30E-15	670.90E-3	000.00E+0	849.50E-3	000.00E+0	8.00E+6	8.01E+6
820	U2S3F044	Up-dip	2	3	44	93.33E-15	1.088	12.07E+6	46.77E-15	10.77E-6	886.20E-3	398.10E-3	193.70E-6	195.20E+3	7.99E+6
821	U2S3F051	Up-dip	2	3	51	11.75E-15	0.567	12.84E+6	2.34E-12	16.05E-6	883.80E-3	119.80E-3	74.29E-3	204.80E+3	327.60E+3
822	U2S3F055	Up-dip	2	3	55	58.88E-15	0.627	16.32E+6	85.11E-12	895.40E-12	992.40E-3	2.16E-6	935.80E-3	309.20E+3	284.00E+3
823	U2S3F058	Up-dip	2	3	58	30.90E-15	1.201	14.28E+6	186.20E-15	27.37E-9	981.40E-3	295.10E-9	964.30E-3	296.00E+3	287.20E+3
824	U2S3F078	Up-dip	2	3	78	102.30E-15	1.053	11.61E+6	131.80E-15	63.44E-6	834.70E-3	2.81E-3	555.70E-3	179.10E+3	156.60E+3
825	U2S3G022	Up-dip	2	3	22	28.84E-15	0.382	12.13E+6	87.10E-15	195.80E-6	774.10E-3	1.16E-3	640.60E-3	205.50E+3	192.10E+3
826	U2S3G028	Up-dip	2	3	28	616.60E-15	0.957	15.30E+6	26.30E-15	673.00E-3	000.00E+0	806.90E-3	000.00E+0	8.00E+6	8.00E+6
827	U2S3G051	Up-dip	2	3	51	11.75E-15	0.569	12.85E+6	2.34E-12	4.78E-6	916.50E-3	104.50E-3	88.02E-3	214.60E+3	559.20E+3
828	U2S3G058	Up-dip	2	3	58	30.90E-15	1.187	14.28E+6	186.20E-15	1.29E-9	991.90E-3	175.30E-9	969.00E-3	276.70E+3	266.60E+3
829	U2S3I028	Up-dip	2	3	28	616.60E-15	0.946	15.23E+6	26.30E-15	632.40E-3	000.00E+0	771.50E-3	000.00E+0	8.00E+6	8.00E+6
830	U2S3I074	Up-dip	2	3	74	22.91E-15	0.369	11.65E+6	436.50E-15	15.60E-3	319.70E-3	484.70E-3	278.20E-6	190.10E+3	7.99E+6
831	U2S3K028	Up-dip	2	3	28	616.60E-15	0.945	15.21E+6	26.30E-15	607.00E-3	000.00E+0	735.20E-3	000.00E+0	8.00E+6	8.00E+6
832	U2S3K074	Up-dip	2	3	74	22.91E-15	0.368	11.65E+6	436.50E-15	160.20E-6	777.70E-3	361.30E-3	3.35E-3	200.90E+3	7.14E+6
833	U2S3L028	Up-dip	2	3	28	616.60E-15	0.946	15.14E+6	26.30E-15	596.80E-3	3.25E-9	666.10E-3	000.00E+0	8.02E+6	8.00E+6
834	U2S4C022	Up-dip	2	4	22	28.84E-15	0.354	12.07E+6	87.10E-15	287.70E-6	749.80E-3	685.00E-6	685.90E-3	202.30E+3	195.70E+3
835	U2S4C055	Up-dip	2	4	55	58.88E-15	0.561	14.78E+6	85.11E-12	444.10E-9	958.40E-3	14.80E-6	891.40E-3	264.70E+3	242.80E+3
836	U2S4C058	Up-dip	2	4	58	30.90E-15	1.081	14.25E+6	186.20E-15	1.78E-6	941.50E-3	3.94E-6	927.40E-3	247.30E+3	242.50E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
793	U2S1I022	Up-dip	2	1	22	000.00E+0	11	451.10E-12	799.10E-3	1.78E-9	11.34E+0	429.50E-6	0.000	1.27E+6	0.001
794	U2S1I099	Up-dip	2	1	99	000.00E+0	11	2.03E-12	455.50E-3	7.84E-12	7.39E+0	3.26E-6	0.000	766.40E+3	0.000
795	U2S1L028	Up-dip	2	1	28	000.00E+0	3	11.84E-6	2.95E-6	20.39E-6	2.95E-6	4.64E+6	0.000	691.40E-3	3.208
796	U2S1L041	Up-dip	2	1	41	000.00E+0	11	3.97E-9	333.60E-3	14.80E-9	4.29E+0	8.93E-3	0.000	548.10E+3	0.005
797	U2S2C022	Up-dip	2	2	22	6.71E+6	11	33.38E-9	600.30E-3	120.00E-9	7.10E+0	43.19E-3	0.000	925.90E+3	0.040
798	U2S2C028	Up-dip	2	2	28	9.87E+6	3	13.97E-6	000.00E+0	25.76E-6	000.00E+0	3.84E+21	0.000	000.00E+0	3.844
799	U2S2C055	Up-dip	2	2	55	12.20E+6	11	57.34E-12	864.60E-3	227.20E-12	12.31E+0	51.06E-6	0.000	1.35E+6	0.000
800	U2S2C058	Up-dip	2	2	58	9.15E+6	11	222.00E-12	756.10E-3	938.60E-12	12.58E+0	222.40E-6	0.000	1.21E+6	0.000
801	U2S2C081	Up-dip	2	2	81	9.77E+6	11	436.50E-12	678.00E-3	1.77E-9	11.63E+0	470.40E-6	0.000	1.14E+6	0.001
802	U2S2C090	Up-dip	2	2	90	11.22E+6	11	42.11E-12	870.20E-3	175.40E-12	14.30E+0	36.73E-6	0.000	1.38E+6	0.000
803	U2S2D011	Up-dip	2	2	11	8.08E+6	11	51.83E-15	382.90E-3	78.85E-15	8.40E+0	83.02E-9	0.000	699.70E+3	0.000
804	U2S2D022	Up-dip	2	2	22	191.30E+3	11	38.07E-9	511.20E-3	135.20E-9	5.90E+0	57.99E-3	0.000	786.80E+3	0.046
805	U2S2D028	Up-dip	2	2	28	8.02E+6	3	27.08E-6	000.00E+0	50.38E-6	000.00E+0	7.41E+21	0.000	000.00E+0	7.414
806	U2S2D055	Up-dip	2	2	55	214.20E+3	11	15.46E-12	628.90E-3	59.62E-12	8.51E+0	18.95E-6	0.000	980.00E+3	0.000
807	U2S2D058	Up-dip	2	2	58	189.50E+3	11	164.70E-12	668.30E-3	691.70E-12	10.98E+0	186.80E-6	0.000	1.07E+6	0.000
808	U2S2H028	Up-dip	2	2	28	8.01E+6	3	26.08E-6	000.00E+0	50.45E-6	000.00E+0	7.31E+21	0.000	000.00E+0	7.305
809	U2S2H051	Up-dip	2	2	51	2.47E+6	11	115.40E-15	552.60E-3	417.00E-15	8.54E+0	153.80E-9	0.000	910.80E+3	0.000
810	U2S2H067	Up-dip	2	2	67	7.97E+6	11	289.40E-12	359.00E-3	1.16E-9	6.10E+0	582.10E-6	0.000	621.00E+3	0.000
811	U2S2H074	Up-dip	2	2	74	7.99E+6	11	29.43E-6	67.93E-3	65.81E-6	117.90E-3	527.90E+0	0.000	61.84E+3	32.630
812	U2S2J028	Up-dip	2	2	28	8.00E+6	3	15.81E-6	2.37E-9	29.38E-6	2.37E-9	25.86E+9	0.000	182.60E-6	4.409
813	U2S2J074	Up-dip	2	2	74	7.99E+6	11	860.00E-9	414.80E-3	2.81E-6	3.66E+0	1.69E+0	0.000	614.90E+3	1.038
814	U2S2L028	Up-dip	2	2	28	8.00E+6	3	10.96E-6	234.00E-9	19.98E-6	234.00E-9	68.08E+6	0.000	44.89E-3	3.047
815	U2S3F003	Up-dip	2	3	3	8.93E+6	11	1.99E-9	311.20E-3	8.40E-9	5.34E+0	4.70E-3	0.000	526.40E+3	0.002
816	U2S3F016	Up-dip	2	3	16	8.10E+6	11	4.11E-9	354.40E-3	17.41E-9	5.99E+0	8.56E-3	0.000	598.10E+3	0.005
817	U2S3F019	Up-dip	2	3	19	9.02E+6	11	3.01E-9	297.90E-3	12.84E-9	5.19E+0	7.36E-3	0.000	512.50E+3	0.004
818	U2S3F022	Up-dip	2	3	22	6.85E+6	11	21.77E-9	674.40E-3	81.59E-9	8.64E+0	24.91E-3	0.000	1.05E+6	0.026
819	U2S3F028	Up-dip	2	3	28	10.08E+6	3	25.68E-6	000.00E+0	47.93E-6	000.00E+0	7.03E+21	0.000	000.00E+0	7.028
820	U2S3F044	Up-dip	2	3	44	8.70E+6	11	870.90E-12	323.70E-3	3.72E-9	5.71E+0	1.96E-3	0.000	555.50E+3	0.001
821	U2S3F051	Up-dip	2	3	51	9.77E+6	11	1.41E-9	435.90E-3	5.49E-9	6.12E+0	2.44E-3	0.000	708.50E+3	0.002
822	U2S3F055	Up-dip	2	3	55	13.36E+6	11	120.50E-15	1.01E+0	495.10E-15	15.50E+0	91.65E-9	0.000	1.57E+6	0.000
823	U2S3F058	Up-dip	2	3	58	9.74E+6	11	3.89E-12	899.70E-3	16.47E-12	16.12E+0	3.27E-6	0.000	1.43E+6	0.000
824	U2S3F078	Up-dip	2	3	78	7.19E+6	11	5.04E-9	310.50E-3	20.67E-9	4.88E+0	12.12E-3	0.000	513.50E+3	0.006
825	U2S3G022	Up-dip	2	3	22	193.40E+3	11	20.19E-9	546.00E-3	73.84E-9	6.69E+0	28.56E-3	0.000	851.00E+3	0.024
826	U2S3G028	Up-dip	2	3	28	8.02E+6	3	26.87E-6	000.00E+0	49.91E-6	000.00E+0	7.34E+21	0.000	000.00E+0	7.337
827	U2S3G051	Up-dip	2	3	51	559.80E+3	11	426.60E-12	460.80E-3	1.67E-9	6.58E+0	696.60E-6	0.000	749.70E+3	0.001
828	U2S3G058	Up-dip	2	3	58	268.30E+3	11	172.30E-15	747.10E-3	673.10E-15	12.90E+0	173.40E-9	0.000	1.19E+6	0.000
829	U2S3I028	Up-dip	2	3	28	8.00E+6	3	16.93E-6	000.00E+0	30.75E-6	000.00E+0	4.64E+21	0.000	000.00E+0	4.635
830	U2S3I074	Up-dip	2	3	74	7.99E+6	11	1.85E-6	352.50E-3	5.72E-6	2.64E+0	4.42E+0	0.000	500.20E+3	2.211
831	U2S3K028	Up-dip	2	3	28	8.00E+6	3	12.02E-6	14.18E-9	21.77E-6	14.18E-9	1.81E+9	0.000	1.86E-3	3.315
832	U2S3K074	Up-dip	2	3	74	7.14E+6	11	15.33E-9	482.90E-3	56.90E-9	6.09E+0	23.98E-3	0.000	784.00E+3	0.019
833	U2S3L028	Up-dip	2	3	28	8.00E+6	3	8.75E-6	107.90E-9	15.90E-6	107.90E-9	116.90E+6	0.000	20.88E-3	2.432
834	U2S4C022	Up-dip	2	4	22	000.00E+0	11	33.25E-9	602.40E-3	119.60E-9	7.14E+0	42.87E-3	0.000	929.40E+3	0.040
835	U2S4C055	Up-dip	2	4	55	000.00E+0	11	57.38E-12	864.80E-3	227.40E-12	12.31E+0	51.09E-6	0.000	1.35E+6	0.000
836	U2S4C058	Up-dip	2	4	58	000.00E+0	11	230.60E-12	742.10E-3	972.20E-12	12.27E+0	235.80E-6	0.000	1.19E+6	0.000

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
793	U2S1I022	Up-dip	2	1	22	0.001	12.29E+6	0.227	5.71E+6	0.039	85.20E+3	11.80E+3
794	U2S1I099	Up-dip	2	1	99	0.000	9.50E+6	0.421	4.28E+6	0.093	73.36E+3	19.34E+3
795	U2S1L028	Up-dip	2	1	28	3.135	8.97E+6	0.904	8.82E+6	0.554	69.78E+3	49.40E+3
796	U2S1L041	Up-dip	2	1	41	0.005	8.39E+6	0.941	4.09E+6	0.080	65.74E+3	32.39E+3
797	U2S2C022	Up-dip	2	2	22	0.038	10.48E+6	0.144	5.27E+6	0.117	94.81E+3	12.19E+3
798	U2S2C028	Up-dip	2	2	28	3.759	11.42E+6	0.924	8.76E+6	0.658	89.17E+3	69.30E+3
799	U2S2C055	Up-dip	2	2	55	0.000	11.57E+6	0.074	5.49E+6	0.021	100.10E+3	3.16E+3
800	U2S2C058	Up-dip	2	2	58	0.000	11.12E+6	0.287	5.12E+6	0.072	97.92E+3	12.19E+3
801	U2S2C081	Up-dip	2	2	81	0.001	11.86E+6	0.477	5.05E+6	0.233	101.50E+3	30.01E+3
802	U2S2C090	Up-dip	2	2	90	0.000	11.81E+6	0.092	5.42E+6	0.061	101.50E+3	6.57E+3
803	U2S2D011	Up-dip	2	2	11	0.000	9.50E+6	0.882	3.80E+6	0.212	84.00E+3	45.40E+3
804	U2S2D022	Up-dip	2	2	22	0.044	9.93E+6	0.166	5.08E+6	0.121	84.63E+3	12.27E+3
805	U2S2D028	Up-dip	2	2	28	7.248	9.98E+6	0.920	9.56E+6	0.734	83.01E+3	67.98E+3
806	U2S2D055	Up-dip	2	2	55	0.000	9.99E+6	0.090	4.87E+6	0.016	84.28E+3	2.81E+3
807	U2S2D058	Up-dip	2	2	58	0.000	10.63E+6	0.314	4.93E+6	0.070	88.49E+3	11.55E+3
808	U2S2H028	Up-dip	2	2	28	7.146	9.89E+6	0.916	9.72E+6	0.845	74.94E+3	65.78E+3
809	U2S2H051	Up-dip	2	2	51	0.000	10.23E+6	0.702	4.66E+6	0.048	76.53E+3	22.44E+3
810	U2S2H067	Up-dip	2	2	67	0.000	9.08E+6	0.890	4.00E+6	0.161	71.54E+3	36.78E+3
811	U2S2H074	Up-dip	2	2	74	31.080	10.84E+6	0.868	9.83E+6	0.434	79.02E+3	50.49E+3
812	U2S2J028	Up-dip	2	2	28	4.313	9.21E+6	0.910	9.09E+6	0.876	71.90E+3	64.02E+3
813	U2S2J074	Up-dip	2	2	74	1.019	10.63E+6	0.865	5.90E+6	0.165	78.14E+3	39.76E+3
814	U2S2L028	Up-dip	2	2	28	2.980	8.89E+6	0.897	8.79E+6	0.873	69.49E+3	61.16E+3
815	U2S3F003	Up-dip	2	3	3	0.002	8.29E+6	0.441	3.78E+6	0.228	67.88E+3	21.05E+3
816	U2S3F016	Up-dip	2	3	16	0.005	8.89E+6	0.503	4.06E+6	0.206	70.89E+3	23.27E+3
817	U2S3F019	Up-dip	2	3	19	0.004	8.54E+6	0.891	3.77E+6	0.244	68.33E+3	31.55E+3
818	U2S3F022	Up-dip	2	3	22	0.026	11.75E+8	0.179	5.71E+6	0.099	82.76E+3	11.82E+3
819	U2S3F028	Up-dip	2	3	28	6.870	11.69E+6	0.959	9.56E+6	0.648	76.16E+3	59.53E+3
820	U2S3F044	Up-dip	2	3	44	0.001	8.52E+6	0.822	3.81E+6	0.201	68.74E+3	29.21E+3
821	U2S3F051	Up-dip	2	3	51	0.002	9.29E+6	0.600	4.43E+6	0.092	72.60E+3	21.06E+3
822	U2S3F055	Up-dip	2	3	55	0.000	13.12E+6	0.057	6.06E+6	0.005	88.51E+3	1.40E+3
823	U2S3F058	Up-dip	2	3	58	0.000	12.67E+6	0.087	5.67E+6	0.054	86.66E+3	5.09E+3
824	U2S3F078	Up-dip	2	3	78	0.006	8.13E+6	0.323	3.87E+6	0.187	67.01E+3	17.75E+3
825	U2S3G022	Up-dip	2	3	22	0.023	10.51E+6	0.197	5.21E+6	0.099	77.78E+3	11.96E+3
826	U2S3G028	Up-dip	2	3	28	7.172	9.84E+6	0.947	9.68E+6	0.678	74.65E+3	59.34E+3
827	U2S3G051	Up-dip	2	3	51	0.001	9.42E+6	0.580	4.46E+6	0.078	73.21E+3	19.96E+3
828	U2S3G058	Up-dip	2	3	58	0.000	11.44E+6	0.085	5.22E+6	0.049	81.69E+3	4.46E+3
829	U2S3I028	Up-dip	2	3	28	4.531	9.25E+6	0.936	9.11E+6	0.755	72.00E+3	59.93E+3
830	U2S3I074	Up-dip	2	3	74	2.066	10.37E+6	0.828	6.15E+6	0.210	77.10E+3	40.24E+3
831	U2S3K028	Up-dip	2	3	28	3.241	8.95E+6	0.924	8.82E+6	0.806	69.89E+3	59.76E+3
832	U2S3K074	Up-dip	2	3	74	0.018	10.14E+6	0.767	4.90E+6	0.062	76.14E+3	31.23E+3
833	U2S3L028	Up-dip	2	3	28	2.379	8.74E+6	0.902	8.63E+6	0.873	68.34E+3	60.22E+3
834	U2S4C022	Up-dip	2	4	22	0.037	10.50E+6	0.177	5.28E+6	0.117	94.90E+3	12.99E+3
835	U2S4C055	Up-dip	2	4	55	0.000	11.56E+6	0.077	5.49E+6	0.021	100.10E+3	3.24E+3
836	U2S4C058	Up-dip	2	4	58	0.000	10.99E+6	0.103	5.08E+6	0.072	97.36E+3	7.43E+3

		•	•	•	•	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
837	U2S4C081	Up-dip	2	4	81	550	0.599	0.003	0.203	1.497	11.72E+6	0.232	11.71E+6	0.244	-0.760	87.13E-15
838	U2S4C090	Up-dip	2	4	90	550	0.601	0.049	0.044	1.505	11.91E+6	0.060	11.89E+6	0.066	-1.232	104.50E-15
839	U2S4D022	Up-dip	2	4	22	750	0.556	0.095	0.017	1.352	9.99E+6	0.133	9.98E+6	0.183	-0.782	79.35E-15
840	U2S4D055	Up-dip	2	4	55	750	0.557	0.065	0.002	1.355	10.07E+6	0.016	10.05E+6	0.066	-1.009	86.22E-15
841	U2S4D058	Up-dip	2	4	58	750	0.564	0.025	0.045	1.377	10.58E+6	0.071	10.57E+6	0.085	-1.344	100.20E-15
842	U2S4H051	Up-dip	2	4	51	2,000	0.524	0.101	0.057	1.262	9.66E+6	0.057	9.67E+6	0.286	-1.008	80.30E-15
843	U2S5F003	Up-dip	2	5	3	1,200	0.501	0.040	0.184	1.204	8.31E+6	0.231	8.26E+6	0.378	-1.295	85.84E-15
844	U2S5F016	Up-dip	2	5	16	1,200	0.512	0.102	0.156	1.230	8.88E+6	0.214	8.86E+6	0.382	-1.290	87.48E-15
845	U2S5F022	Up-dip	2	5	22	1,200	0.551	0.095	0.017	1.339	11.81E+6	0.113	11.81E+6	0.188	-0.815	79.43E-15
846	U2S5F044	Up-dip	2	5	44	1,200	0.500	0.150	0.172	1.202	8.23E+6	0.213	8.23E+6	0.427	-1.328	86.83E-15
847	U2S5F051	Up-dip	2	5	51	1,200	0.516	0.101	0.057	1.241	9.12E+6	0.106	9.12E+6	0.307	-1.003	78.82E-15
848	U2S5F055	Up-dip	2	5	55	1,200	0.568	0.065	0.002	1.390	13.24E+6	0.005	13.24E+6	0.047	-1.055	89.99E-15
849	U2S5F058	Up-dip	2	5	58	1,200	0.563	0.025	0.045	1.373	12.77E+6	0.054	12.77E+6	0.068	-1.380	101.40E-15
850	U2S5F078	Up-dip	2	5	78	1,200	0.499	0.076	0.127	1.200	8.19E+6	0.190	8.19E+6	0.421	-1.314	86.21E-15
851	U2S5G022	Up-dip	2	5	22	1,400	0.536	0.095	0.017	1.294	10.57E+6	0.114	10.56E+6	0.213	-0.807	76.59E-15
852	U2S5G051	Up-dip	2	5	51	1,400	0.518	0.101	0.057	1.246	9.25E+6	0.092	9.25E+6	0.301	-1.004	79.19E-15
853	U2S5G058	Up-dip	2	5	58	1,400	0.549	0.025	0.045	1.330	11.57E+6	0.049	11.56E+6	0.072	-1.374	98.06E-15
854	U3S1B064	Up-dip	3	1	64	350	0.627	0.022	0.108	1.608	9.27E+6	0.204	9.27E+6	0.232	-0.711	92.12E-15
855	U3S1B082	Up-dip	3	1	82	350	0.625	0.071	0.156	1.600	9.15E+6	0.222	9.15E+6	0.248	-1.107	105.70E-15
856	U3S1E040	Up-dip	3	1	40	1,000	0.574	0.040	0.017	1.411	13.44E+6	0.085	13.44E+6	0.171	-1.179	95.90E-15
857	U3S1E064	Up-dip	3	1	64	1,000	0.565	0.022	0.108	1.380	12.60E+6	0.212	12.60E+6	0.289	-0.802	81.49E-15
858	U3S1E082	Up-dip	3	1	82	1,000	0.556	0.071	0.156	1.353	11.41E+6	0.271	11.41E+6	0.352	-1.129	90.16E-15
859	U3S1I078	Up-dip	3	1	78	3,000	0.494	0.131	0.117	1.186	8.08E+6	0.182	8.09E+6	0.644	-1.302	84.76E-15
860	U3S1I082	Up-dip	3	1	82	3,000	0.556	0.071	0.156	1.353	12.15E+6	0.231	12.16E+6	0.460	-1.142	90.62E-15
861	U3S1K082	Up-dip	3	1	82	5,000	0.562	0.071	0.156	1.371	12.66E+6	0.199	12.67E+6	0.552	-1.145	91.97E-15
862	U3S2C040	Up-dip	3	2	40	550	0.583	0.040	0.017	1.441	10.44E+6	0.128	10.33E+6	0.264	-1.130	96.05E-15
863	U3S2C064	Up-dip	3	2	64	550	0.590	0.022	0.108	1.464	10.95E+6	0.225	10.95E+6	0.235	-0.762	85.29E-15
864	U3S2C082	Up-dip	3	2	82	550	0.583	0.071	0.156	1.441	10.42E+6	0.260	10.42E+6	0.298	-1.084	94.38E-15
865	U3S2D056	Up-dip	3	2	56	750	0.527	0.033	0.254	1.269	8.00E+6	0.576	8.11E+6	0.961	-0.949	79.04E-15
866	U3S2D064	Up-dip	3	2	64	750	0.576	0.022	0.108	1.416	11.03E+6	0.222	11.02E+6	0.250	-0.773	82.83E-15
867	U3S2D082	Up-dip	3	2	82	750	0.527	0.071	0.156	1.268	8.06E+6	0.316	8.04E+6	0.411	-1.191	86.63E-15
868	U3S2D083	Up-dip	3	2	83	750	0.529	0.126	0.184	1.276	8.20E+6	0.848	8.33E+6	0.870	-1.259	89.56E-15
869	U3S2H050	Up-dip	3	2	50	2,000	0.500	0.047	0.067	1.202	8.29E+6	0.577	8.32E+6	0.947	-0.783	70.54E-15
870	U3S2H064	Up-dip	3	2	64	2,000	0.533	0.022	0.108	1.285	10.30E+6	0.167	10.30E+6	0.305	-0.792	75.67E-15
871	U3S2H067	Up-dip	3	2	67	2,000	0.495	0.051	0.004	1.190	8.03E+6	0.944	8.11E+6	0.944	-1.104	78.54E-15
872	U3S2H083	Up-dip	3	2	83	2,000	0.534	0.126	0.184	1.288	10.35E+6	0.539	10.43E+6	0.870	-1.308	92.29E-15
873	U3S2J022	Up-dip	3	2	22	4,000	0.512	0.140	0.481	1.230	8.98E+6	0.858	9.06E+6	0.858	-1.360	90.12E-15
874	U3S2J025	Up-dip	3	2	25	4,000	0.497	0.065	0.374	1.195	8.35E+6	0.934	8.43E+6	0.934	-1.281	84.65E-15
875	U3S2J050	Up-dip	3	2	50	4,000	0.515	0.047	0.067	1.237	9.09E+6	0.232	9.13E+6	0.946	-0.788	72.75E-15
876	U3S2J067	Up-dip	3	2	67	4,000	0.493	0.051	0.004	1.184	8.17E+6	0.944	8.26E+6	0.944	-1.109	78.30E-15
877	U3S2J083	Up-dip	3	2	83	4,000	0.545	0.126	0.184	1.319	11.20E+6	0.345	11.25E+6	0.870	-1.315	94.79E-15
878	U3S2L022	Up-dip	3	2	22	10,000	0.520	0.140	0.481	1.251	9.35E+6	0.858	9.44E+6	0.858	-1.362	91.71E-15
879	U3S2L025	Up-dip	3	2	25	10,000	0.541	0.065	0.374	1.309	10.90E+6	0.934	10.98E+6	0.934	-1.304	93.61E-15
880	U3S3F040	Up-dip	3	3	40	1,200	0.574	0.040	0.017	1.409	13.82E+6	0.072	13.65E+6	0.147	-1.183	95.92E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
837	U2S4C081	Up-dip	2	4	81	933.30E-15	0.347	15.48E+6	125.90E-15	4.70E-6	925.60E-3	16.79E-6	894.60E-3	252.70E+3	243.20E+3
838	U2S4C090	Up-dip	2	4	90	1.74E-12	0.894	14.05E+6	3.47E-12	303.20E-9	963.10E-3	942.20E-9	949.70E-3	271.60E+3	265.50E+3
839	U2S4D022	Up-dip	2	4	22	28.84E-15	0.364	12.07E+6	87.10E-15	372.20E-6	732.20E-3	1.40E-3	622.70E-3	192.70E+3	183.50E+3
840	U2S4D055	Up-dip	2	4	55	58.88E-15	0.572	14.78E+6	85.11E-12	145.60E-9	969.30E-3	39.13E-6	858.40E-3	241.90E+3	210.70E+3
841	U2S4D058	Up-dip	2	4	58	30.90E-15	1.118	14.25E+6	186.20E-15	1.60E-6	943.30E-3	7.98E-6	911.90E-3	240.00E+3	230.00E+3
842	U2S4H051	Up-dip	2	4	51	11.75E-15	0.571	14.56E+6	2.34E-12	38.83E-15	999.50E-3	5.42E-3	470.80E-3	220.30E+3	174.70E+3
843	U2S5F003	Up-dip	2	5	3	4.07E-12	1.013	16.59E+6	25.70E-12	25.97E-6	875.60E-3	4.91E-3	510.40E-3	187.30E+3	157.00E+3
844	U2S5F016	Up-dip	2	5	16	2.63E-12	1.003	12.90E+6	154.90E-15	50.05E-6	839.10E-3	7.65E-3	420.00E-3	191.40E+3	164.90E+3
845	U2S5F022	Up-dip	2	5	22	28.84E-15	0.388	12.07E+6	87.10E-15	185.60E-6	777.30E-3	1.58E-3	611.10E-3	224.60E+3	207.60E+3
846	U2S5F044	Up-dip	2	5	44	93.33E-15	1.082	13.10E+6	46.77E-15	15.67E-6	874.00E-3	12.98E-3	314.50E-3	189.10E+3	160.80E+3
847	U2S5F051	Up-dip	2	5	51	11.75E-15	0.566	14.56E+6	2.34E-12	17.59E-6	880.80E-3	7.46E-3	430.90E-3	202.00E+3	168.20E+3
848	U2S5F055	Up-dip	2	5	55	58.88E-15	0.627	14.78E+6	85.11E-12	892.70E-12	992.40E-3	10.84E-6	900.20E-3	309.50E+3	272.10E+3
849	U2S5F058	Up-dip	2	5	58	30.90E-15	1.201	14.25E+6	186.20E-15	27.18E-9	981.40E-3	1.01E-6	950.00E-3	296.20E+3	280.80E+3
850	U2S5F078	Up-dip	2	5	78	102.30E-15	1.054	11.45E+6	131.80E-15	61.02E-6	836.50E-3	17.97E-3	324.60E-3	180.00E+3	162.80E+3
851	U2S5G022	Up-dip	2	5	22	28.84E-15	0.382	12.07E+6	87.10E-15	195.00E-6	774.30E-3	2.61E-3	559.60E-3	205.90E+3	188.00E+3
852	U2S5G051	Up-dip	2	5	51	11.75E-15	0.567	14.56E+6	2.34E-12	5.23E-6	914.40E-3	6.85E-3	441.70E-3	211.50E+3	169.70E+3
853	U2S5G058	Up-dip	2	5	58	30.90E-15	1.188	14.25E+6	186.20E-15	1.07E-9	992.30E-3	1.71E-6	942.20E-3	277.70E+3	256.30E+3
854	U3S1B064	Up-dip	3	1	64	000.00E+0	0.315	12.64E+6	1.00E-12	268.50E-6	772.00E-3	679.10E-6	708.70E-3	185.20E+3	178.80E+3
855	U3S1B082	Up-dip	3	1	82	000.00E+0	0.696	12.64E+6	1.00E-12	80.76E-6	824.10E-3	275.40E-6	755.80E-3	192.10E+3	183.30E+3
856	U3S1E040	Up-dip	3	1	40	000.00E+0	0.804	14.58E+6	1.00E-12	52.65E-6	850.50E-3	1.08E-3	666.30E-3	261.50E+3	233.50E+3
857	U3S1E064	Up-dip	3	1	64	000.00E+0	0.378	12.64E+6	1.00E-12	351.50E-6	755.10E-3	2.79E-3	582.30E-3	230.90E+3	215.60E+3
858	U3S1E082	Up-dip	3	1	82	000.00E+0	0.727	12.64E+6	1.00E-12	643.60E-6	694.70E-3	4.54E-3	502.70E-3	208.40E+3	197.80E+3
859	U3S1I078	Up-dip	3	1	78	000.00E+0	1.027	15.25E+6	1.00E-12	64.44E-6	822.30E-3	148.80E-3	40.55E-3	178.10E+3	390.30E+3
860	U3S1I082	Up-dip	3	1	82	000.00E+0	0.746	12.64E+6	1.00E-12	129.80E-6	800.20E-3	23.12E-3	291.50E-3	232.90E+3	222.10E+3
861	U3S1K082	Up-dip	3	1	82	000.00E+0	0.751	12.64E+6	1.00E-12	17.55E-6	883.80E-3	61.25E-3	160.70E-3	258.30E+3	281.00E+3
862	U3S2C040	Up-dip	3	2	40	9.33E-12	0.728	13.67E+6	912.00E-15	316.00E-6	758.10E-3	6.13E-3	487.80E-3	200.40E+3	183.30E+3
863	U3S2C064	Up-dip	3	2	64	12.88E-15	0.349	13.31E+6	831.80E-15	555.30E-6	723.70E-3	755.00E-6	700.60E-3	203.20E+3	200.90E+3
864	U3S2C082	Up-dip	3	2	82	120.20E-15	0.665	12.98E+6	6.17E-12	443.50E-6	723.00E-3	1.38E-3	629.00E-3	197.30E+3	189.40E+3
865	U3S2D056	Up-dip	3	2	56	3.72E-12	0.508	12.12E+6	549.50E-15	44.96E-3	222.10E-3	818.60E-3	1.01E-6	182.30E+3	7.98E+6
866	U3S2D064	Up-dip	3	2	64	12.88E-15	0.357	13.33E+6	831.80E-15	498.80E-6	731.40E-3	1.14E-3	666.70E-3	205.20E+3	199.00E+3
867	U3S2D082	Up-dip	3	2	82	120.20E-15	0.824	12.96E+6	6.17E-12	2.16E-3	584.70E-3	12.09E-3	379.60E-3	156.60E+3	156.70E+3
868	U3S2D083	Up-dip	3	2	83	10.72E-15	0.942	12.38E+6	2.40E-15	124.10E-3	52.66E-3	526.30E-3	388.60E-9	225.50E+3	7.98E+6
869	U3S2H050	Up-dip	3	2	50	24.55E-15	0.364	7.76E+6	16.98E-15	107.20E-3	109.60E-3	804.90E-3	538.20E-9	196.30E+3	7.98E+6
870	U3S2H064	Up-dip	3	2	64	12.88E-15	0.371	13.37E+6	831.80E-15	44.59E-6	859.40E-3	3.80E-3	549.50E-3	213.60E+3	183.50E+3
871	U3S2H067	Up-dip	3	2	67	186.20E-15	0.691	10.71E+6	20.42E-15	806.00E-3	293.30E-9	806.10E-3	289.20E-9	7.98E+6	7.98E+6
872	U3S2H083	Up-dip	3	2	83	10.72E-15	1.039	12.38E+6	2.40E-15	46.35E-3	159.00E-3	527.00E-3	325.50E-9	230.10E+3	7.99E+6
873	U3S2J022	Up-dip	3	2	22	72.44E-15	1.153	9.37E+6	100.00E-15	308.70E-3	137.60E-9	308.70E-3	135.70E-9	7.98E+6	7.98E+6
874	U3S2J025	Up-dip	3	2	25	39.81E-15	0.986	11.46E+6	63.10E-15	660.20E-3	75.15E-9	660.30E-3	74.06E-9	7.99E+6	7.99E+6
875	U3S2J050	Up-dip	3	2	50	24.55E-15	0.368	7.79E+6	16.98E-15	1.66E-3	624.10E-3	803.80E-3	626.80E-9	171.10E+3	7.98E+6
876	U3S2J067	Up-dip	3	2	67	186.20E-15	0.699	10.72E+6	20.42E-15	806.00E-3	294.70E-9	806.10E-3	289.60E-9	7.98E+6	7.98E+6
877	U3S2J083	Up-dip	3	2	83	10.72E-15	1.056	12.38E+6	2.40E-15	2.51E-3	537.10E-3	527.10E-3	313.10E-9	196.50E+3	7.99E+6
878	U3S2L022	Up-dip	3	2	22	72.44E-15	1.159	9.44E+6	100.00E-15	308.60E-3	147.70E-9	308.60E-3	145.10E-9	7.98E+6	7.98E+6
879	U3S2L025	Up-dip	3	2	25	39.81E-15	1.031	11.46E+6	63.10E-15	660.90E-3	59.61E-9	660.90E-3	58.86E-9	7.99E+6	7.99E+6
880	U3S3F040	Up-dip	3	3	40	9.33E-12	0.811	14.59E+6	912.00E-15	24.83E-6	878.10E-3	574.10E-6	716.80E-3	274.80E+3	242.10E+3

		*	*	*	*	BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
837	U2S4C081	Up-dip	2	4	81	000.00E+0	11	554.70E-12	659.00E-3	2.24E-9	11.12E+0	617.00E-6	0.000	1.10E+6	0.001
838	U2S4C090	Up-dip	2	4	90	000.00E+0	11	42.15E-12	870.60E-3	175.50E-12	14.30E+0	36.75E-6	0.000	1.38E+6	0.000
839	U2S4D022	Up-dip	2	4	22	000.00E+0	11	38.82E-9	512.10E-3	137.90E-9	5.91E+0	59.02E-3	0.000	788.20E+3	0.047
840	U2S4D055	Up-dip	2	4	55	000.00E+0	11	15.22E-12	632.70E-3	58.72E-12	8.57E+0	18.54E-6	0.000	985.90E+3	0.000
841	U2S4D058	Up-dip	2	4	58	000.00E+0	11	188.30E-12	653.30E-3	788.80E-12	10.67E+0	218.70E-6	0.000	1.04E+6	0.000
842	U2S4H051	Up-dip	2	4	51	000.00E+0	11	18.37E-18	511.60E-3	23.09E-18	7.61E+0	23.18E-12	0.000	833.20E+3	0.000
843	U2S5F003	Up-dip	2	5	3	000.00E+0	11	2.04E-9	309.80E-3	8.61E-9	5.30E+0	4.84E-3	0.000	523.80E+3	0.003
844	U2S5F016	Up-dip	2	5	16	000.00E+0	11	4.28E-9	350.80E-3	18.10E-9	5.91E+0	9.01E-3	0.000	591.60E+3	0.005
845	U2S5F022	Up-dip	2	5	22	000.00E+0	11	21.70E-9	676.50E-3	81.37E-9	8.68E+0	24.75E-3	0.000	1.05E+6	0.026
846	U2S5F044	Up-dip	2	5	44	000.00E+0	11	1.23E-9	306.10E-3	5.20E-9	5.26E+0	2.94E-3	0.000	522.00E+3	0.002
847	U2S5F051	Up-dip	2	5	51	000.00E+0	11	1.52E-9	423.20E-3	5.89E-9	5.89E+0	2.71E-3	0.000	686.60E+3	0.002
848	U2S5F055	Up-dip	2	5	55	000.00E+0	11	120.30E-15	1.02E+0	494.30E-15	15.53E+0	91.31E-9	0.000	1.58E+6	0.000
849	U2S5F058	Up-dip	2	5	58	000.00E+0	11	3.86E-12	900.70E-3	16.36E-12	16.14E+0	3.25E-6	0.000	1.43E+6	0.000
850	U2S5F078	Up-dip	2	5	78	000.00E+0	11	4.88E-9	314.00E-3	20.04E-9	4.95E+0	11.59E-3	0.000	519.80E+3	0.006
851	U2S5G022	Up-dip	2	5	22	000.00E+0	11	20.14E-9	547.80E-3	73.70E-9	6.72E+0	28.39E-3	0.000	854.10E+3	0.024
852	U2S5G051	Up-dip	2	5	51	000.00E+0	11	458.50E-12	446.40E-3	1.78E-9	6.31E+0	773.70E-6	0.000	725.10E+3	0.001
853	U2S5G058	Up-dip	2	5	58	000.00E+0	11	145.10E-15	753.70E-3	563.70E-15	13.04E+0	144.60E-9	0.000	1.20E+6	0.000
854	U3S1B064	Up-dip	3	1	64	000.00E+0	11	29.19E-9	499.60E-3	107.00E-9	6.25E+0	44.46E-3	0.000	798.60E+3	0.036
855	U3S1B082	Up-dip	3	1	82	000.00E+0	11	9.02E-9	484.30E-3	36.42E-9	7.45E+0	13.87E-3	0.000	800.60E+3	0.011
856	U3S1E040	Up-dip	3	1	40	000.00E+0	11	7.50E-9	910.50E-3	31.67E-9	14.66E+0	6.27E-3	0.000	1.45E+6	0.009
857	U3S1E064	Up-dip	3	1	64	000.00E+0	11	42.02E-9	662.40E-3	168.70E-9	9.80E+0	47.86E-3	0.000	1.07E+6	0.051
858	U3S1E082	Up-dip	3	1	82	000.00E+0	11	72.80E-9	502.00E-3	309.40E-9	8.23E+0	108.20E-3	0.000	836.20E+3	0.091
859	U3S1I078	Up-dip	3	1	78	000.00E+0	11	4.99E-9	296.20E-3	20.53E-9	4.67E+0	12.46E-3	0.000	500.10E+3	0.006
860	U3S1I082	Up-dip	3	1	82	000.00E+0	11	15.04E-9	583.90E-3	66.72E-9	10.74E+0	18.80E-3	0.000	1.00E+6	0.019
861	U3S1K082	Up-dip	3	1	82	000.00E+0	11	2.12E-9	667.90E-3	9.52E-9	12.99E+0	2.30E-3	0.000	1.15E+6	0.003
862	U3S2C040	Up-dip	3	2	40	10.34E+6	11	38.01E-9	585.70E-3	148.00E-9	8.06E+0	49.74E-3	0.000	927.20E+3	0.046
863	U3S2C064	Up-dip	3	2	64	9.97E+6	11	63.36E-9	559.10E-3	242.40E-9	7.50E+0	86.21E-3	0.000	896.90E+3	0.077
864	U3S2C082	Up-dip	3	2	82	9.97E+6	11	49.73E-9	487.00E-3	203.60E-9	7.52E+0	76.56E-3	0.000	801.10E+3	0.061
865	U3S2D056	Up-dip	3	2	56	8.01E+6	11	4.05E-6	153.50E-3	13.24E-6	1.16E+0	22.48E+0	0.000	219.50E+3	4.936
866	U3S2D064	Up-dip	3	2	64	199.70E+3	11	55.21E-9	546.80E-3	213.00E-9	7.46E+0	76.58E-3	0.000	881.60E+3	0.068
867	U3S2D082	Up-dip	3	2	82	162.90E+3	11	181.60E-9	256.60E-3	704.00E-9	3.39E+0	544.70E-3	0.000	412.40E+3	0.225
868	U3S2D083	Up-dip	3	2	83	7.98E+6	11	15.82E-6	97.09E-3	42.29E-6	324.90E-3	174.10E+0	0.000	104.30E+3	18.150
869	U3S2H050	Up-dip	3	2	50	7.98E+6	11	11.17E-6	135.50E-3	29.18E-6	545.40E-3	81.11E+0	0.000	158.40E+3	12.850
870	U3S2H064	Up-dip	3	2	64	183.60E+3	11	4.13E-9	484.10E-3	16.21E-9	7.00E+0	6.38E-3	0.000	795.40E+3	0.005
871	U3S2H067	Up-dip	3	2	67	7.98E+6	3	540.00E-9	3.95E-9	1.56E-6	10.10E-9	140.00E+6	0.000	1.24E-3	0.174
872	U3S2H083	Up-dip	3	2	83	7.99E+6	11	6.37E-6	243.70E-3	20.65E-6	1.60E+0	23.71E+0	0.000	323.10E+3	7.660
873	U3S2J022	Up-dip	3	2	22	7.98E+6	3	7.87E-6	5.59E-6	13.27E-6	5.59E-6	1.92E+6	0.000	1.12E+0	2.150
874	U3S2J025	Up-dip	3	2	25	7.99E+6	3	4.63E-6	50.50E-9	9.74E-6	50.50E-9	111.90E+6	0.000	11.87E-3	1.327
875	U3S2J050	Up-dip	3	2	50	7.98E+6	11	145.60E-9	345.70E-3	513.00E-9	3.85E+0	324.90E-3	0.000	549.20E+3	0.178
876	U3S2J067	Up-dip	3	2	67	7.98E+6	3	2.78E-6	25.93E-9	5.79E-6	38.22E-9	111.80E+6	0.000	6.93E-3	0.774
877	U3S2J083	Up-dip	3	2	83	7.99E+6	11	301.20E-9	439.20E-3	1.25E-6	6.46E+0	521.70E-3	0.000	725.90E+3	0.379
878	U3S2L022	Up-dip	3	2	22	7.98E+6	3	10.87E-6	13.53E-6	18.44E-6	13.53E-6	1.05E+6	0.000	2.82E+0	2.956
879	U3S2L025	Up-dip	3	2	25	7.99E+6	3	39.44E-6	16.05E-6	85.95E-6	16.05E-6	3.34E+6	0.000	3.37E+0	11.250
880	U3S3F040	Up-dip	3	3	40	11.25E+6	11	3.60E-9	968.20E-3	15.35E-9	15.96E+0	2.82E-3	0.000	1.54E+6	0.004

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
837	U2S4C081	Up-dip	2	4	81	0.001	11.65E+6	0.264	5.00E+6	0.235	100.60E+3	23.99E+3
838	U2S4C090	Up-dip	2	4	90	0.000	11.82E+6	0.091	5.42E+6	0.061	101.50E+3	6.56E+3
839	U2S4D022	Up-dip	2	4	22	0.045	9.96E+6	0.205	5.10E+6	0.122	84.39E+3	13.11E+3
840	U2S4D055	Up-dip	2	4	55	0.000	10.01E+6	0.091	4.88E+6	0.016	84.64E+3	2.85E+3
841	U2S4D058	Up-dip	2	4	58	0.000	10.52E+6	0.110	4.89E+6	0.071	87.20E+3	6.76E+3
842	U2S4H051	Up-dip	2	4	51	0.000	9.65E+6	0.306	4.50E+6	0.046	74.25E+3	12.82E+3
843	U2S5F003	Up-dip	2	5	3	0.003	8.25E+6	0.394	3.78E+6	0.228	67.79E+3	20.23E+3
844	U2S5F016	Up-dip	2	5	16	0.005	8.85E+6	0.398	4.05E+6	0.206	70.67E+3	21.29E+3
845	U2S5F022	Up-dip	2	5	22	0.026	11.77E+6	0.210	5.72E+6	0.099	82.84E+3	12.51E+3
846	U2S5F044	Up-dip	2	5	44	0.002	8.23E+6	0.443	3.75E+6	0.205	67.48E+3	21.90E+3
847	U2S5F051	Up-dip	2	5	51	0.002	9.11E+6	0.326	4.38E+6	0.094	71.88E+3	15.75E+3
848	U2S5F055	Up-dip	2	5	55	0.000	13.13E+6	0.073	6.07E+6	0.005	88.56E+3	1.76E+3
849	U2S5F058	Up-dip	2	5	58	0.000	12.68E+6	0.093	5.67E+6	0.054	86.69E+3	5.23E+3
850	U2S5F078	Up-dip	2	5	78	0.006	8.18E+6	0.436	3.89E+6	0.186	67.25E+3	19.77E+3
851	U2S5G022	Up-dip	2	5	22	0.023	10.53E+6	0.235	5.21E+6	0.099	77.86E+3	12.75E+3
852	U2S5G051	Up-dip	2	5	51	0.001	9.24E+6	0.320	4.41E+6	0.079	72.49E+3	14.88E+3
853	U2S5G058	Up-dip	2	5	58	0.000	11.49E+6	0.097	5.24E+6	0.049	81.90E+3	4.72E+3
854	U3S1B064	Up-dip	3	1	64	0.035	9.25E+6	0.232	4.55E+6	0.201	113.10E+3	24.03E+3
855	U3S1B082	Up-dip	3	1	82	0.011	9.13E+6	0.248	4.25E+6	0.220	112.20E+3	25.68E+3
856	U3S1E040	Up-dip	3	1	40	0.009	13.36E+6	0.171	6.08E+6	0.074	90.97E+3	12.25E+3
857	U3S1E064	Up-dip	3	1	64	0.049	12.55E+6	0.289	5.72E+6	0.206	87.44E+3	21.82E+3
858	U3S1E082	Up-dip	3	1	82	0.086	11.38E+6	0.352	5.13E+6	0.265	84.47E+3	26.18E+3
859	U3S1I078	Up-dip	3	1	78	0.006	8.09E+6	0.644	3.81E+6	0.163	65.70E+3	26.71E+3
860	U3S1I082	Up-dip	3	1	82	0.018	12.13E+6	0.460	5.18E+6	0.220	84.45E+3	28.45E+3
861	U3S1K082	Up-dip	3	1	82	0.002	12.65E+6	0.552	5.23E+6	0.187	86.54E+3	29.85E+3
862	U3S2C040	Up-dip	3	2	40	0.046	10.31E+6	0.284	5.07E+6	0.117	94.33E+3	17.37E+3
863	U3S2C064	Up-dip	3	2	64	0.074	10.91E+6	0.256	5.18E+6	0.220	96.89E+3	22.73E+3
864	U3S2C082	Up-dip	3	2	82	0.059	10.39E+6	0.317	4.78E+6	0.256	94.34E+3	25.88E+3
865	U3S2D056	Up-dip	3	2	56	4.723	8.11E+6	0.962	4.77E+6	0.470	75.08E+3	53.36E+3
866	U3S2D064	Up-dip	3	2	64	0.064	10.99E+6	0.271	5.18E+6	0.217	91.54E+3	22.26E+3
867	U3S2D082	Up-dip	3	2	82	0.214	8.03E+6	0.427	4.09E+6	0.307	74.96E+3	27.00E+3
868	U3S2D083	Up-dip	3	2	83	17.320	8.33E+6	0.873	6.51E+6	0.475	75.79E+3	50.40E+3
869	U3S2H050	Up-dip	3	2	50	12.260	8.32E+6	0.948	6.13E+6	0.381	67.50E+3	44.22E+3
870	U3S2H064	Up-dip	3	2	64	0.005	10.28E+6	0.324	4.72E+6	0.165	76.85E+3	19.01E+3
871	U3S2H067	Up-dip	3	2	67	0.170	8.11E+6	0.945	8.01E+6	0.825	66.19E+3	58.10E+3
872	U3S2H083	Up-dip	3	2	83	7.239	10.43E+6	0.874	6.59E+6	0.391	77.18E+3	48.14E+3
873	U3S2J022	Up-dip	3	2	22	2.101	9.06E+6	0.862	8.94E+6	0.836	70.69E+3	59.82E+3
874	U3S2J025	Up-dip	3	2	25	1.299	8.43E+6	0.935	8.31E+6	0.933	66.70E+3	62.27E+3
875	U3S2J050	Up-dip	3	2	50	0.166	9.13E+6	0.948	4.65E+6	0.154	71.47E+3	39.07E+3
876	U3S2J067	Up-dip	3	2	67	0.757	8.26E+6	0.945	8.14E+6	0.744	65.50E+3	54.55E+3
877	U3S2J083	Up-dip	3	2	83	0.354	11.25E+6	0.874	5.25E+6	0.238	80.61E+3	44.31E+3
878	U3S2L022	Up-dip	3	2	22	2.890	9.44E+6	0.862	9.31E+6	0.790	72.98E+3	59.92E+3
879	U3S2L025	Up-dip	3	2	25	11.010	10.98E+6	0.935	10.68E+6	0.920	79.49E+3	73.67E+3
880	U3S3F040	Up-dip	3	3	40	0.004	13.59E+6	0.170	6.16E+6	0.061	90.73E+3	11.22E+3

		*	*	*	*	Intrusion Time (Years)	Excavated Waste Porosity (fraction)	Residual Gas Sat. (fraction)	Residual Brine Sat. (fraction)	Crushed Panel Height (m)	Up-dip Avg Pressure (Pa)	Up-dip Avg Sat. (fraction)	Down-dip Avg Pressure (Pa)	Down-dip Avg Sat. (fraction)	Skin factor	Well Productivity Index (m^3/s-Pa)
No.	File (*.TXT)	ID	Rep	Scen	Vector	INTR_TME	POROSITY	SAT_RGAS	SAT_RBRN	HEIGHT	PRESPAN2	BSATPAN2	PRESPAN4	BSATPAN4	SKIN	WELLPI
881	U3S3F056	Up-dip	3	3	56	1,200	0.515	0.033	0.254	1.238	8.97E+6	0.299	9.30E+6	0.961	-0.980	77.94E-15
882	U3S3F064	Up-dip	3	3	64	1,200	0.564	0.022	0.108	1.378	12.92E+6	0.197	12.92E+6	0.255	-0.806	81.53E-15
883	U3S3F082	Up-dip	3	3	82	1,200	0.549	0.071	0.156	1.332	11.63E+6	0.266	11.63E+6	0.315	-1.139	89.13E-15
884	U3S3F083	Up-dip	3	3	83	1,200	0.510	0.126	0.184	1.225	8.60E+6	0.245	9.21E+6	0.870	-1.294	87.25E-15
685	U3S3G056	Up-dip	3	3	56	1,400	0.505	0.033	0.254	1.214	8.50E+6	0.300	8.60E+6	0.961	-0.975	76.31E-15
886	U3S3G064	Up-dip	3	3	64	1,400	0.560	0.022	0.108	1.364	12.50E+6	0.189	12.50E+6	0.258	-0.804	80.64E-15
887	U3S3G082	Up-dip	3	3	82	1,400	0.501	0.071	0.156	1.203	8.30E+6	0.320	8.27E+6	0.432	-1.217	83.00E-15
888	U3S3G083	Up-dip	3	3	83	1,400	0.513	0.126	0.184	1.234	8.93E+6	0.231	9.05E+6	0.870	-1.293	87.83E-15
889	U3S3I050	Up-dip	3	3	50	3,000	0.501	0.047	0.067	1.203	8.45E+6	0.344	8.48E+6	0.946	-0.786	70.68E-15
890	U3S3I064	Up-dip	3	3	64	3,000	0.532	0.022	0.108	1.283	10.24E+6	0.124	10.24E+6	0.295	-0.792	75.54E-15
891	U3S3K022	Up-dip	3	3	22	5,000	0.512	0.140	0.481	1.230	8.98E+6	0.858	9.07E+6	0.858	-1.360	90.13E-15
892	U3S3K050	Up-dip	3	3	50	5,000	0.509	0.047	0.067	1.223	8.89E+6	0.130	8.91E+6	0.944	-0.788	71.92E-15
893	U3S3L022	Up-dip	3	3	22	10,000	0.508	0.140	0.481	1.220	8.83E+6	0.858	8.92E+6	0.858	-1.360	89.35E-15
894	U3S3L025	Up-dip	3	3	25	10,000	0.528	0.065	0.374	1.273	9.94E+6	0.934	10.02E+6	0.934	-1.294	90.69E-15
895	U3S4C040	Up-dip	3	4	40	550	0.583	0.040	0.017	1.439	10.38E+6	0.128	10.29E+6	0.192	-1.129	95.89E-15
896	U3S4C064	Up-dip	3	4	64	550	0.590	0.022	0.108	1.465	10.97E+6	0.225	10.97E+8	0.269	-0.762	85.35E-15
897	U3S4C082	Up-dip	3	4	82	550	0.583	0.071	0.156	1.441	10.42E+6	0.260	10.42E+6	0.301	-1.084	94.39E-15
898	U3S4D064	Up-dip	3	4	64	750	0.572	0.022	0.108	1.402	11.19E+6	0.226	11.18E+6	0.291	-0.778	82.16E-15
899	U3S4D082	Up-dip	3	4	82	750	0.528	0.071	0.156	1.271	8.15E+6	0.317	8.12E+6	0.412	-1.191	86.82E-15
900	U3S4H064	Up-dip	3	4	64	2,000	0.534	0.022	0.108	1.287	10.37E+6	0.169	10.37E+6	0.346	-0.793	75.81E-15
901	U3S5F040	Up-dip	3	5	40	1,200	0.574	0.040	0.017	1.409	13.83E+6	0.072	13.66E+6	0.170	-1.183	95.96E-15
902	U3S5F056	Up-dip	3	5	56	1,200	0.499	0.033	0.254	1.198	8.16E+6	0.314	8.13E+6	0.454	-0.971	75.17E-15
903	U3S5F064	Up-dip	3	5	64	1,200	0.565	0.022	0.108	1.379	12.94E+6	0.197	12.94E+6	0.287	-0.806	81.58E-15
904	U3S5F082	Up-dip	3	5	82	1,200	0.550	0.071	0.156	1.333	11.67E+6	0.265	11.67E+6	0.369	-1.140	89.21E-15
905	U3S5G064	Up-dip	3	5	64	1,400	0.560	0.022	0.108	1.365	12.55E+6	0.189	12.54E+6	0.292	-0.804	80.73E-15
906	U3S5G082	Up-dip	3	5	82	1,400	0.500	0.071	0.156	1.202	8.26E+6	0.321	8.24E+6	0.495	-1.217	82.92E-15
907	U3S5I064	Up-dip	3	5	64	3,000	0.532	0.022	0.108	1.284	10.28E+6	0.124	10.28E+6	0.332	-0.792	75.62E-15

No.	File (*.TXT)	* ID	* Rep	* Scen	* Vector	BC well Sand Permeability (m^2) PRM_SAND	Total Area solids released (m^2) AREA_TOT	Castile Reservoir Pressure (Pa) CAST_RE	Castile Reservoir Permeability (m^3) PRM_CAST	Up-dip Brine Relative Permeability (m^2) KRW2	Up-dip Gas Relative Permeability (m^3) KRG2	Down-dip Brine Relative Permeability (m^2) KRW4	Down-dip Gas Relative Permeability (m^3) KRG4	Up-dip Flowing Bottom-hole Pressure (Pa) FBHP2	Down-dip Flowing Bottom-hole Pressure (Pa) FBHP4
881	U3S3F056	Up-dip	3	3	56	3.72E-12	0.539	12.89E+6	549.50E-15	31.03E-6	870.00E-3	819.60E-3	896.80E-9	196.10E+3	7.98E+6
882	U3S3F064	Up-dip	3	3	64	12.88E-15	0.381	13.28E+6	831.80E-15	201.40E-6	788.90E-3	1.27E-3	657.60E-3	240.70E+3	224.80E+3
883	U3S3F082	Up-dip	3	3	82	120.20E-15	0.742	13.19E+6	6.17E-12	534.30E-6	709.20E-3	2.10E-3	587.40E-3	213.10E+3	203.50E+3
884	U3S3F083	Up-dip	3	3	83	10.72E-15	1.012	12.88E+6	2.40E-15	70.12E-6	816.80E-3	526.30E-3	384.80E-9	184.90E+3	7.98E+6
885	U3S3G056	Up-dip	3	3	56	3.72E-12	0.534	12.82E+6	549.50E-15	34.44E-6	866.20E-3	819.00E-3	966.20E-9	188.40E+3	7.98E+6
886	U3S3G064	Up-dip	3	3	64	12.88E-15	0.380	13.30E+6	831.80E-15	140.80E-6	808.20E-3	1.39E-3	649.60E-3	237.70E+3	218.20E+3
887	U3S3G082	Up-dip	3	3	82	120.20E-15	0.867	13.18E+6	6.17E-12	2.35E-3	575.80E-3	16.05E-3	341.40E-3	159.20E+3	162.30E+3
888	U3S3G083	Up-dip	3	3	83	10.72E-15	1.009	12.83E+6	2.40E-15	27.12E-6	858.30E-3	526.60E-3	360.50E-9	196.20E+3	7.98E+6
889	U3S3I050	Up-dip	3	3	50	24.55E-15	0.366	9.01E+6	16.98E-15	11.28E-3	406.40E-3	803.00E-3	701.30E-9	161.20E+3	7.98E+6
890	U3S3I064	Up-dip	3	3	64	12.88E-15	0.371	13.36E+6	831.80E-15	385.90E-9	961.60E-3	3.14E-3	570.00E-3	241.10E+3	183.30E+3
891	U3S3K022	Up-dip	3	3	22	72.44E-15	1.153	10.25E+6	100.00E-15	308.60E-3	147.40E-9	308.60E-3	143.70E-9	7.98E+6	7.98E+6
892	U3S3K050	Up-dip	3	3	50	24.55E-15	0.368	9.02E+6	16.98E-15	48.80E-6	852.00E-3	796.90E-3	1.46E-6	191.80E+3	7.99E+6
893	U3S3L022	Up-dip	3	3	22	72.44E-15	1.153	10.28E+6	100.00E-15	308.50E-3	158.10E-9	308.50E-3	154.90E-9	7.98E+6	7.98E+6
894	U3S3L025	Up-dip	3	3	25	39.81E-15	1.012	11.71E+6	63.10E-15	660.60E-3	65.03E-9	660.70E-3	64.18E-9	7.99E+6	7.99E+6
895	U3S4C040	Up-dip	3	4	40	9.33E-12	0.728	14.37E+6	912.00E-15	318.80E-6	757.50E-3	1.73E-3	623.90E-3	199.50E+3	186.60E+3
896	U3S4C064	Up-dip	3	4	64	12.88E-15	0.349	13.00E+6	831.80E-15	550.10E-6	724.40E-3	1.79E-3	626.20E-3	203.60E+3	195.50E+3
897	U3S4C082	Up-dip	3	4	82	120.20E-15	0.665	12.96E+6	6.17E-12	442.00E-6	723.30E-3	1.51E-3	620.00E-3	197.40E+3	188.90E+3
898	U3S4D064	Up-dip	3	4	64	12.88E-15	0.361	13.00E+6	831.80E-15	573.30E-6	721.40E-3	2.87E-3	579.60E-3	206.40E+3	196.10E+3
899	U3S4D082	Up-dip	3	4	82	120.20E-15	0.824	12.96E+6	6.17E-12	2.19E-3	583.40E-3	12.21E-3	378.30E-3	157.60E+3	157.80E+3
900	U3S4H064	Up-dip	3	4	64	12.88E-15	0.371	13.00E+6	831.80E-15	48.48E-6	856.20E-3	7.58E-3	469.30E-3	214.00E+3	184.10E+3
901	U3S5F040	Up-dip	3	5	40	9.33E-12	0.811	14.37E+6	912.00E-15	24.68E-6	878.40E-3	1.06E-3	668.30E-3	275.20E+3	236.90E+3
902	U3S5F056	Up-dip	3	5	56	3.72E-12	0.530	13.39E+6	549.50E-15	88.15E-6	827.40E-3	7.68E-3	458.30E-3	177.20E+3	155.60E+3
903	U3S5F064	Up-dip	3	5	84	12.88E-15	0.381	13.00E+6	831.80E-15	199.50E-6	789.40E-3	2.66E-3	587.50E-3	241.20E+3	220.60E+3
904	U3S5F082	Up-dip	3	5	82	120.20E-15	0.743	12.96E+6	6.17E-12	527.20E-6	710.20E-3	6.17E-3	465.80E-3	213.60E+3	201.10E+3
905	U3S5G064	Up-dip	3	5	64	12.88E-15	0.380	13.00E+6	831.80E-15	140.20E-6	808.40E-3	2.96E-3	576.20E-3	238.40E+3	214.50E+3
906	U3S5G082	Up-dip	3	5	82	120.20E-15	0.867	12.96E+6	6.17E-12	2.41E-3	573.20E-3	34.62E-3	236.20E-3	158.70E+3	178.10E+3
907	U3S5I064	Up-dip	3	5	64	12.88E-15	0.371	13.00E+6	831.80E-15	377.10E-9	961.90E-3	6.05E-3	496.50E-3	241.90E+3	182.60E+3

						BC well Injection Pressure (Pa)	Blowout Duration (Days)	Brine Rate (m^3/s)	Gas Rate (ref m^3/s)	Max Brine Rate (m^3/s)	Max Gas Rate (ref m^3/s)	Produced Liquid/Gas Ratio (m^3/s / ref m^3/s)	Cum Brine from Boundary Condition Well (m^3)	Cum Gas Produced (ref m^3)	Cum Brine Produced (m^3)
No.	File (*.TXT)	ID	Rep	Scen	Vector	BHP_ABAN	time	BRINEFLW	GASFLW	MAX_BRN	MAX_GAS	LGR_MET	BRINE_BC	GASOUT	BRINEOUT
881	U3S3F056	Up-dip	3	3	56	9.84E+6	11	2.31E-9	294.70E-3	10.10E-9	5.56E+0	5.51E-3	0.000	537.10E+3	0.003
882	U3S3F064	Up-dip	3	3	64	9.96E+8	11	24.40E-9	704.90E-3	99.10E-9	10.73E+0	26.03E-3	0.000	1.15E+6	0.030
883	U3S3F082	Up-dip	3	3	82	10.19E+6	11	59.93E-9	507.60E-3	258.80E-9	8.62E+0	87.53E-3	0.000	854.50E+3	0.075
884	U3S3F083	Up-dip	3	3	83	8.14E+6	11	5.59E-9	297.80E-3	24.48E-9	5.38E+0	13.51E-3	0.000	525.60E+3	0.007
885	U3S3G056	Up-dip	3	3	56	8.02E+6	11	2.39E-9	265.00E-3	10.40E-9	4.89E+0	6.37E-3	0.000	482.40E+3	0.003
886	U3S3G064	Up-dip	3	3	64	218.80E+3	11	16.38E-9	671.70E-3	66.30E-9	10.21E+0	18.30E-3	0.000	1.10E+6	0.020
887	U3S3G082	Up-dip	3	3	82	169.00E+3	11	190.50E-9	246.30E-3	756.20E-9	3.38E+0	591.30E-3	0.000	402.10E+3	0.238
888	U3S3G083	Up-dip	3	3	83	7.98E+6	11	2.22E-9	323.60E-3	9.89E-9	6.12E+0	4.91E-3	0.000	577.60E+3	0.003
889	U3S3I050	Up-dip	3	3	50	7.98E+6	11	988.40E-9	254.40E-3	3.15E-6	2.11E+0	3.20E+0	0.000	372.90E+3	1.192
890	U3S3I064	Up-dip	3	3	64	183.30E+3	11	36.25E-12	518.60E-3	138.80E-12	7.70E+0	51.98E-6	0.000	852.50E+3	0.000
891	U3S3K022	Up-dip	3	3	22	7.98E+6	3	7.92E-6	5.62E-6	13.29E-6	5.62E-6	1.89E+6	0.000	1.14E+0	2.155
892	U3S3K050	Up-dip	3	3	50	7.99E+6	11	3.85E-9	372.90E-3	14.53E-9	4.95E+0	7.70E-3	0.000	618.70E+3	0.005
893	U3S3L022	Up-dip	3	3	22	7.98E+6	3	6.66E-6	3.45E-6	11.09E-6	3.45E-6	2.59E+6	0.000	701.10E-3	1.810
894	U3S3L025	Up-dip	3	3	25	7.99E+6	3	28.03E-6	4.47E-6	55.88E-6	4.47E-6	8.09E+6	0.000	955.90E-3	7.722
895	U3S4C040	Up-dip	3	4	40	000.00E+0	11	38.13E-9	579.90E-3	148.30E-9	7.96E+0	50.42E-3	0.000	917.40E+3	0.046
896	U3S4C064	Up-dip	3	4	64	000.00E+0	11	62.90E-9	561.30E-3	240.80E-9	7.54E+0	85.23E-3	0.000	900.60E+3	0.077
897	U3S4C082	Up-dip	3	4	82	000.00E+0	11	49.58E-9	487.30E-3	203.00E-9	7.52E+0	78.29E-3	0.000	801.60E+3	0.061
898	U3S4D064	Up-dip	3	4	64	000.00E+0	11	63.65E-9	548.30E-3	246.40E-9	7.51E+0	88.10E-3	0.000	884.40E+3	0.078
899	U3S4D082	Up-dip	3	4	82	000.00E+0	11	186.00E-9	261.00E-3	722.00E-9	3.46E+0	548.10E-3	0.000	419.80E+3	0.230
900	U3S4H064	Up-dip	3	4	64	000.00E+0	11	4.53E-9	489.00E-3	17.76E-9	7.07E+0	6.92E-3	0.000	802.90E+3	0.006
901	U3S5F040	Up-dip	3	5	40	000.00E+0	11	3.58E-9	970.20E-3	15.28E-9	16.01E+0	2.80E-3	0.000	1.55E+6	0.004
902	U3S5F056	Up-dip	3	5	56	000.00E+0	11	6.03E-9	253.80E-3	25.15E-9	4.24E+0	17.21E-3	0.000	442.60E+3	0.008
903	U3S5F064	Up-dip	3	5	64	000.00E+0	11	24.22E-9	707.30E-3	98.41E-9	10.78E+0	25.74E-3	0.000	1.15E+6	0.030
904	U3S5F082	Up-dip	3	5	82	000.00E+0	11	59.31E-9	510.50E-3	256.40E-9	8.69E+0	86.11E-3	0.000	859.50E+3	0.074
905	U3S5G064	Up-dip	3	5	84	000.00E+0	11	16.38E-9	676.10E-3	66.35E-9	10.30E+0	18.17E-3	0.000	1.10E+6	0.020
906	U3S5G082	Up-dip	3	5	82	000.00E+0	11	194.70E-9	244.10E-3	771.20E-9	3.34E+0	610.20E-3	0.000	398.00E+3	0.243
907	U3S5I064	Up-dip	3	5	64	000.00E+0	11	35.57E-12	521.90E-3	136.30E-12	7.77E+0	50.67E-6	0.000	858.10E+3	0.000

No.	File (*.TXT)	ID	Rep	Scen	Vector	Cum Brine Releases (m^3) BRIN_REL	Avg Brine Pressure Panel 5 (Pa) BRNPRES5	Avg Brine Saturation Panel 5 (fraction) SATBRN5	Avg Brine Pressure Panel 0 (Pa) BRNPRES0	Avg Brine Saturation Panel 0 (fraction) SATBRN0	Total Excavated Waste Pore Volume (m^3) WASTE_PV	Total Excavated Brine Volume (m^3) TOT_BRIN
881	U3S3F056	Up-dip	3	3	56	0.003	9.42E+6	0.962	3.72E+6	0.297	71.55E+3	39.80E+3
882	U3S3F064	Up-dip	3	3	64	0.029	12.86E+6	0.275	5.78E+6	0.192	87.28E+3	20.63E+3
883	U3S3F082	Up-dip	3	3	82	0.075	11.60E+6	0.333	5.16E+6	0.259	82.11E+3	25.40E+3
884	U3S3F083	Up-dip	3	3	83	0.007	9.21E+6	0.873	3.80E+6	0.236	70.05E+3	36.19E+3
885	U3S3G056	Up-dip	3	3	56	0.003	8.60E+6	0.962	3.59E+6	0.299	68.89E+3	39.25E+3
886	U3S3G064	Up-dip	3	3	64	0.019	12.44E+6	0.278	5.61E+6	0.185	85.69E+3	20.13E+3
887	U3S3G082	Up-dip	3	3	82	0.224	8.27E+6	0.447	4.13E+6	0.306	67.58E+3	26.71E+3
888	U3S3G083	Up-dip	3	3	83	0.003	9.05E+6	0.873	3.84E+6	0.221	71.06E+3	36.86E+3
889	U3S3I050	Up-dip	3	3	50	1.138	8.48E+6	0.948	4.86E+6	0.229	67.66E+3	39.45E+3
890	U3S3I064	Up-dip	3	3	64	0.000	10.21E+6	0.314	4.64E+6	0.125	76.61E+3	16.31E+3
891	U3S3K022	Up-dip	3	3	22	2.106	9.07E+6	0.862	8.95E+6	0.805	70.70E+3	58.63E+3
892	U3S3K050	Up-dip	3	3	50	0.005	8.91E+6	0.946	4.26E+6	0.092	69.90E+3	34.70E+3
893	U3S3L022	Up-dip	3	3	22	1.769	8.92E+6	0.862	8.79E+6	0.746	69.50E+3	55.35E+3
894	U3S3L025	Up-dip	3	3	25	7.550	10.02E+6	0.935	9.81E+6	0.865	75.47E+3	67.64E+3
895	U3S4C040	Up-dip	3	4	40	0.043	10.27E+6	0.214	5.05E+6	0.117	94.07E+3	15.61E+3
896	U3S4C064	Up-dip	3	4	64	0.073	10.94E+6	0.289	5.19E+6	0.220	96.99E+3	23.57E+3
897	U3S4C082	Up-dip	3	4	82	0.059	10.39E+6	0.320	4.78E+6	0.256	94.35E+3	25.97E+3
898	U3S4D064	Up-dip	3	4	64	0.072	11.15E+6	0.310	5.26E+6	0.220	89.98E+3	23.07E+3
899	U3S4D082	Up-dip	3	4	82	0.219	8.11E+6	0.428	4.12E+6	0.307	75.26E+3	27.11E+3
900	U3S4H064	Up-dip	3	4	64	0.005	10.34E+6	0.363	4.75E+6	0.167	77.09E+3	19.82E+3
901	U3S5F040	Up-dip	3	5	40	0.004	13.60E+6	0.193	6.17E+6	0.061	90.79E+3	11.77E+3
902	U3S5F056	Up-dip	3	5	56	0.008	8.12E+6	0.468	3.61E+6	0.313	67.06E+3	26.27E+3
903	U3S5F064	Up-dip	3	5	64	0.029	12.88E+6	0.306	5.79E+6	0.192	87.37E+3	21.36E+3
904	U3S5F082	Up-dip	3	5	82	0.074	11.64E+6	0.386	5.17E+6	0.259	82.24E+3	26.54E+3
905	U3S5G064	Up-dip	3	5	64	0.019	12.49E+6	0.311	5.63E+6	0.185	85.85E+3	20.89E+3
906	U3S5G082	Up-dip	3	5	82	0.230	8.23E+6	0.509	4.12E+6	0.307	67.46E+3	27.79E+3
907	U3S5I064	Up-dip	3	5	64	0.000	10.25E+6	0.350	4.65E+6	0.125	76.76E+3	17.04E+3

Attachment 1: Conceptual Model Description for BRAGFLO Direct Brine Release Calculations to Support the Compliance Certification Application

Model Purpose

This model has been developed to support the Direct Brine Release portion of the 1996 performance assessment (PA) of the WIPP repository site. The calculations will be performed to contribute to the complimentary cumulative distribution function (CCDF), the probability distribution of exceeding normalized cumulative radionuclide releases to the accessible environment, that will become part of the Compliance Certification Application (CCA). Direct brine releases may occur when a future driller penetrates the WIPP and contaminated brine is unknowingly brought to surface during the drilling process. These releases are not specifically accounted for in the cuttings, cavings and spallings calculations (CUTTINGS_S), as that code only models the solids removed during the drilling process. Certain conditions must exist within the waste in order for contaminated brine to flow directly to the surface during a drilling intrusion:

- Pressure in the waste must be greater than that exerted by the column of drilling mud that penetrates a waste panel. Drillers in the Delaware Basin currently use a salt saturated mud while drilling through the Salado, with a specific gravity of 1.23 [McTigue, et. al., 1991]. This corresponds to ~8.0E+06 Pascals (which is the conversion of specific gravity of the brine to an equivalent pressure at the depth of the repository horizon), which is the minimum pressure needed to overcome a static column of drilling mud.

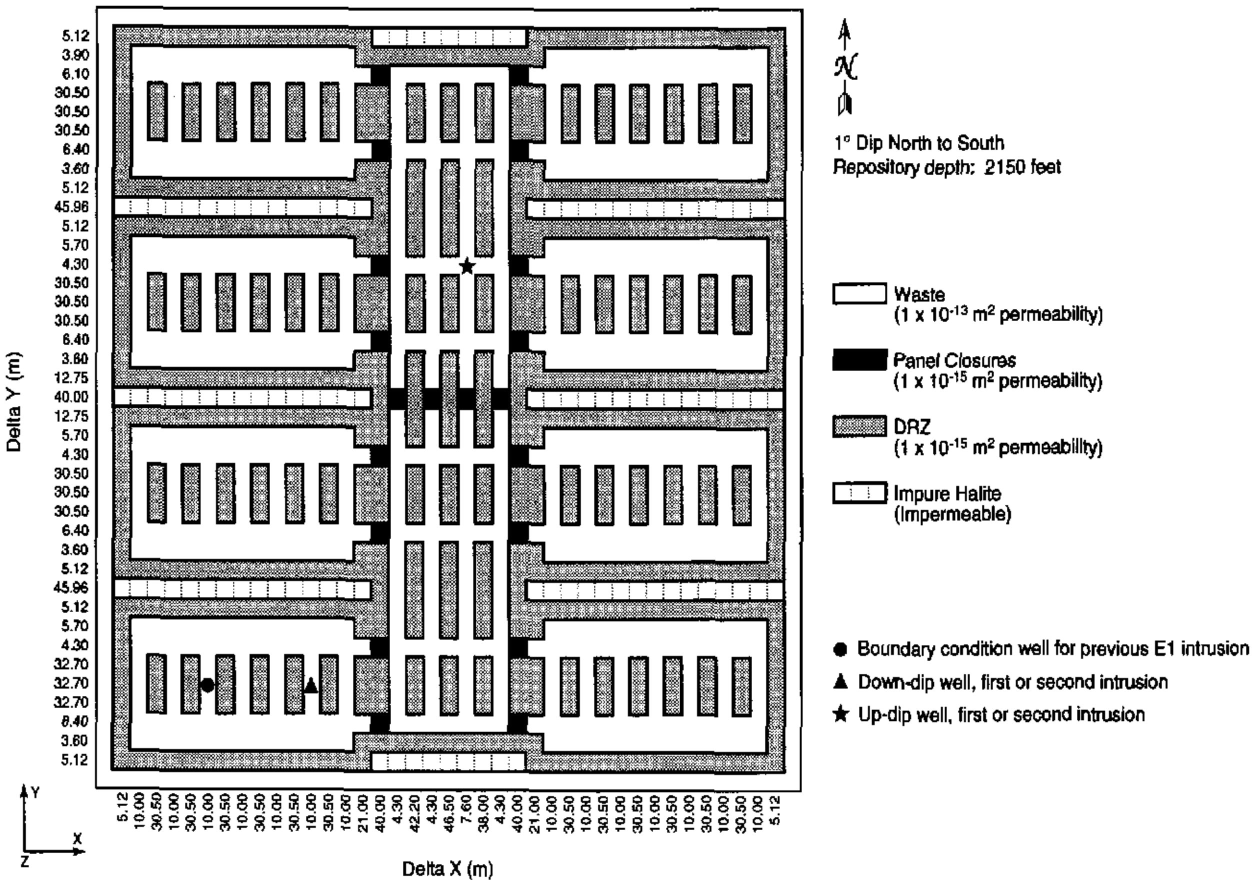
- There must be mobile brine present in the waste panels to flow to the surface. Corrosion and biodegradation processes consume brine and release gasses as by-products, and it is possible for the brine volume in the waste pores to drop below its "mobile" (residual) saturation. It is likely for gas-only flows to occur up a drill hole, but these flows are only of concern for the solids releases (Spalls).

Model Description

The model is set up as a two-dimensional finite difference mesh of 39 X 39 grid blocks to be solved using the BRAGFLO code (hereafter called DBR_BRAGFLO - see Figure 1). The mesh compares to the regional 10,000 year model (hereafter called BRAGFLO) in the following ways:

- The DBR_BRAGFLO mesh is oriented in the areal plane, with the z-dimension (height) one element thick. BRAGFLO is oriented as a cross-section, with multiple layers in height and the thickness (y-dimension) one element thick.
- DBR_BRAGFLO models flow only in the waste area. The BRAGFLO model includes the surrounding geology as well as the entire WIPP excavation (including operations, experimental, and shaft regions).

- Local scale heterogeneities are included in the DBR_BRAGFLO model, including the salt pillars, rooms, panel seals, and passageways which contain waste. These are not fully represented in the BRAGFLO mesh.
- The DBR_BRAGFLO mesh uses constant thickness, while BRAGFLO radially flares the element thickness to account for 3-dimensional volumes in 2-D space.
- The disturbed rock zone (DRZ) is included in both models, but exists above and below the excavated regions in the BRAGFLO model, whereas the DRZ surrounds the waste rooms on the sides for the DBR_BRAGFLO model.
- Both models include one degree formation dip through the excavated regions.



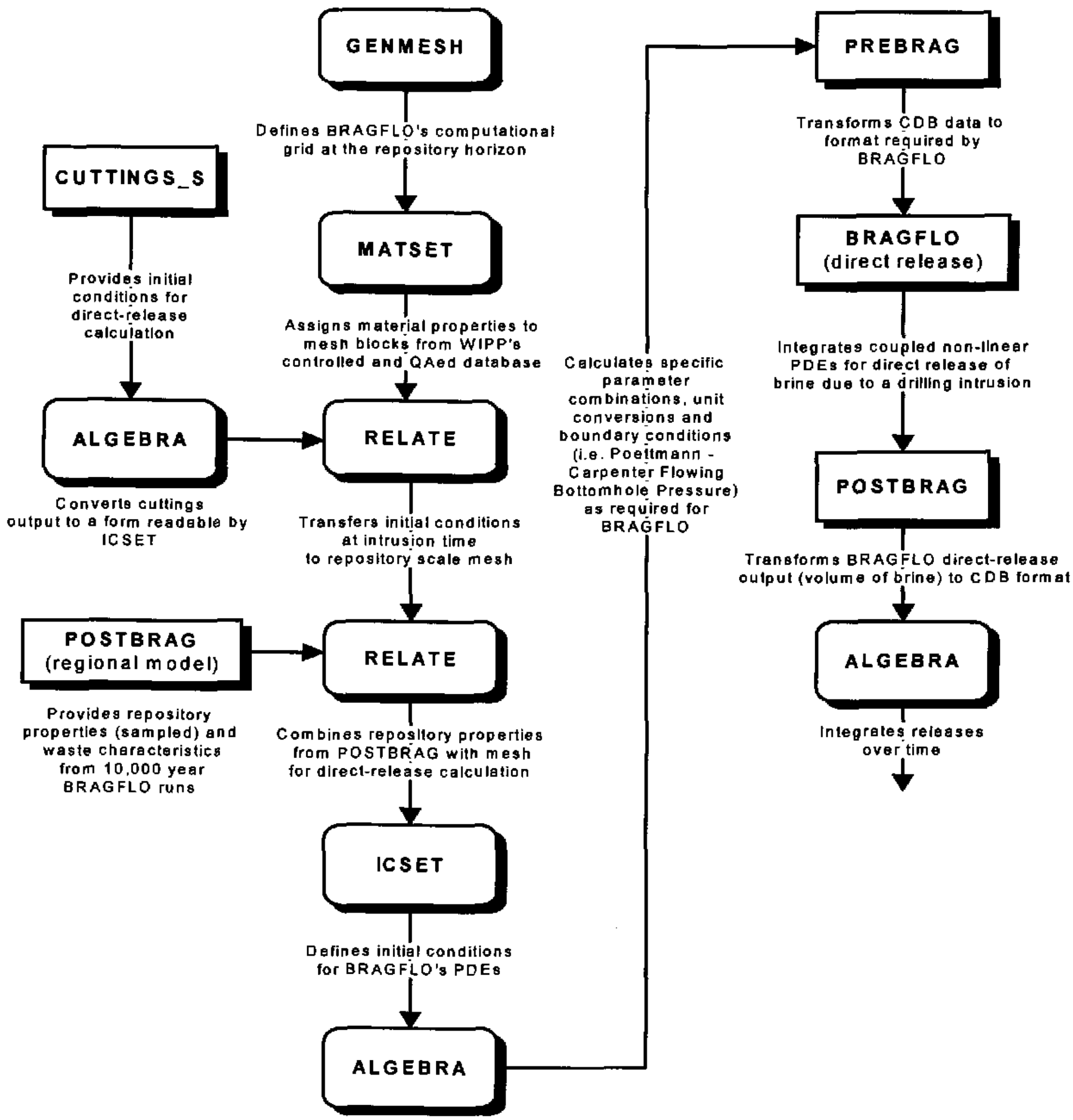
Note: Model cells are not to scale. The actual dimensions of the grid blocks, are indicated along the edge of the diagram.

Figure 1: Direct Brine Release (DBR_BRAGFLO) Mesh

Principal Parameters Defined By Model

The pressure and saturation time-histories for each realization (3 replicates of 5 scenarios of 100 consequences) from the 10,000 year BRAGFLO calculations will provide the basic input needed for the direct brine releases. The pressure and saturation at specified times for each consequence will provide the initial conditions needed for the DBR_BRAGFLO model. These values are also used to calculate the boundary conditions which represent flow up the intrusion borehole.

The input parameters that will be used for the direct brine release calculations will come from four sources: the 10,000 year BRAGFLO output files, the CUTTINGS_S code, the WIPP database and a correlation to simulate flow up the borehole (Figure 2).



The code sequence for the BRAGFLO direct-release calculation in the 1996 CCA PA.

Figure 2: Calculational Flowchart for DBR_BRAGFLO

- The initial brine saturation and pressure, porosity, and crushed panel height within the waste used in the direct release model are determined from the 10,000 year BRAGFLO results, and therefore vary with time. These parameters are calculated by time interpolation in the CUTTINGS_S code, and RELATEd to the direct release model. An intermediate ALGEBRACDB step is required to convert time-history variables to material properties.
- Unsampled material properties which remain constant are read directly from the parameters database (through MATSET).
- Sampled material properties are RELATEd from the 10,000 year BRAGFLO output files.
- The pressure (boundary condition) that drives the wellbore model has been developed from a commonly used petroleum industry multi-phase vertical pipe flow correlation [Poettmann and Carpenter, 1952], which is tied to the well deliverability expression used by DBR_BRAGFLO.

The two RELATE steps accomplish the same function as the LHS sequence for the 10,000 year BRAGFLO calculations. DBR_BRAGFLO does not require a separate sampling, as all needed variables are extracted from the previously run BRAGFLO and CUTTINGS_S files. Hence, important flow parameters for the waste region (such as residual brine and gas saturation) are the same for each realization in the BRAGFLO and DBR_BRAGFLO models. The DRZ, panel seal, and halite relative permeability and capillary pressure parameters are set equal to those used in the waste region. This was done to ease the DBR_BRAGFLO computation. The intrinsic permeability of the DRZ and panel seals are the median values read from the database.

The element thickness of the DBR_BRAGFLO mesh is adjusted to equal the crushed room height, which is passed on from the CUTTINGS_S code. This arbitrarily sets all elements in the mesh to the same height, therefore, the porosity in the non-waste regions (DRZ, halite, and seals) are increased proportionally to maintain equal pore volume with the corresponding 10,000 year BRAGFLO regions.

Integration with other PA codes

The DBR_BRAGFLO mesh is coupled to BRAGFLO by subdividing the waste area in BRAGFLO into four regions. Region one represents the farthest up-dip repository grid blocks in BRAGFLO which contain waste. This corresponds roughly to the up-dip quarter of the DBR_BRAGFLO mesh. Region four represents the farthest down-dip section of waste in BRAGFLO, which is the "panel" region in the 1996 CCA mesh. This corresponds to the farthest down-dip quarter of the DBR_BRAGFLO mesh. Similar subdivisions are made for the middle two sections of each grid (Figure 3). Pore-volume averaged brine saturation and pressure within each region of the BRAGFLO model are used to initialize similar regions in the DBR_BRAGFLO mesh at each intrusion time.

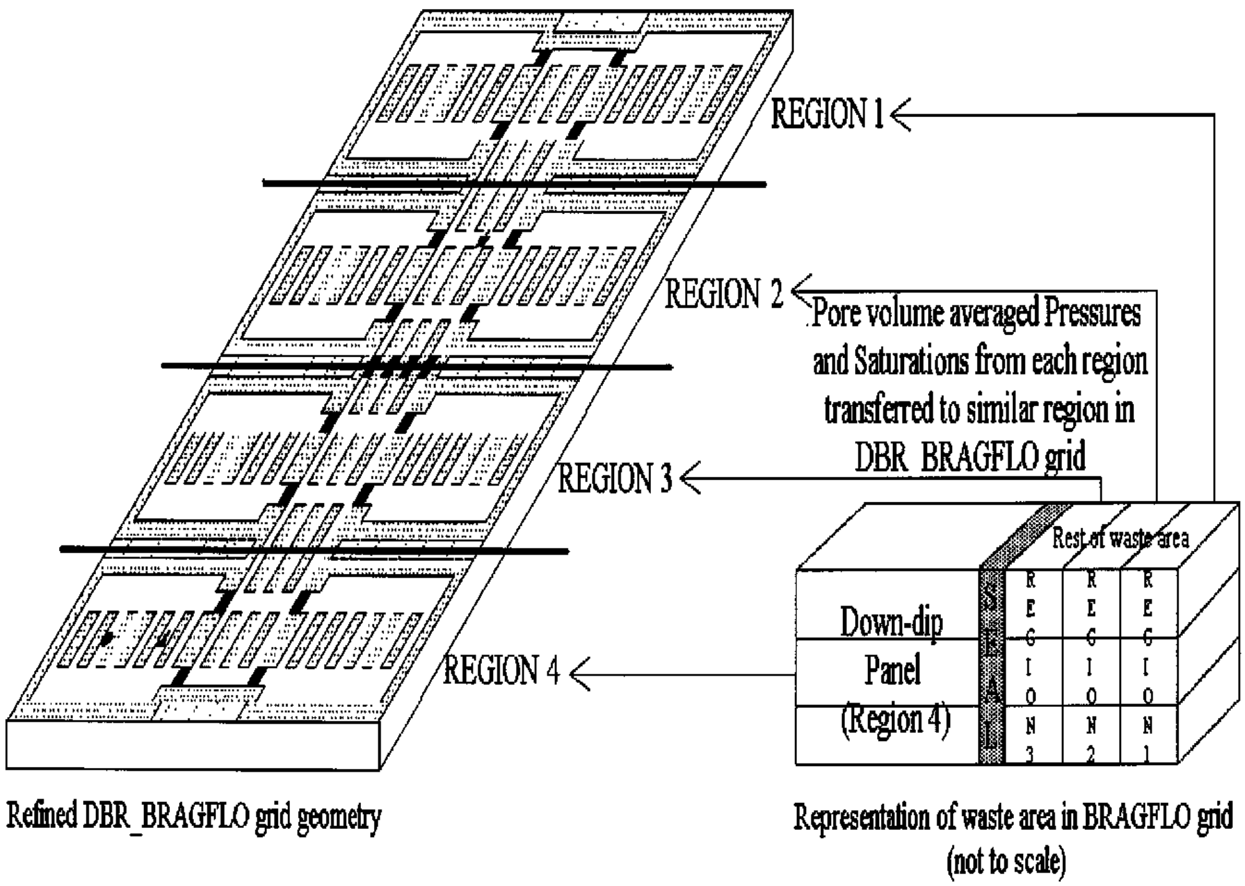


Figure 3: Representation of coupling between the two grids to obtain initial conditions for the DBR_BRAGFLO mesh at each intrusion time

The DBR_BRAGFLO model uses the same intrusion times as is used by the CUTTINGS_S code to provide brine releases for the CCDF generation. Intrusion times differ for each scenario, and two calculations are performed at each time: one for an up dip intrusion, and one for a down dip intrusion. For all subsequent intrusions following an initial intrusion into the Castile brine pocket, the boundary condition well is "turned on" to simulate an abandoned borehole connection to the brine pocket (a more detailed explanation can be found in Chapter A). Since thousands of probabilistic time histories are possible for each replicate-scenario-realization, the actual releases are determined by time interpolating between the given times at which the DBR_BRAGFLO calculations were performed. A more detailed description of how this is accomplished is provided in the CCDFGF code description (see Analysis Package WPO #40524). A summary of the direct release calculational scheme follows:

- **Scenario 1 (From Undisturbed BRAGFLO runs):** Up dip and down dip first intrusions are modeled at 100, 350, 1000, 3000, 5000, and 10000 years (12 calculations X 100 realizations = 1200 calculations).
- **Scenario 2 (From 350 year first intrusion to brine pocket BRAGFLO runs - E1):** Up dip and down dip second intrusions are modeled at 550, 750, 2000, 4000, and 10000 years (10 calculations X 100 realizations = 1000 calculations).

- **Scenario 3 (From 1000 year first intrusion to brine pocket BRAGFLO runs - E1):** Up dip and down dip second intrusions are modeled at 1200, 1400, 3000, 5000, and 10000 years (10 calculations X 100 realizations = 1000 calculations).
- **Scenario 4 (From 350 year first intrusion, no brine pocket BRAGFLO runs - E2):** Up dip and down dip second intrusions are modeled at 550, 750, 2000, 4000, and 10000 years (10 calculations X 100 realizations = 1000 calculations).
- **Scenario 5 (From 1000 year first intrusion, no brine pocket BRAGFLO runs - E2):** Up dip and down dip second intrusions are modeled at 1200, 1400, 3000, 5000, and 10000 years (10 calculations X 100 realizations = 1000 calculations).
- A total of 5,200 calculations will be performed per replicate, or 15,600 calculations for the 3 replicates to be submitted in the CCA. A replicate represents an independently generated Latin Hypercube Sampling (LHS).

The DBR_BRAGFLO is also coupled to the CUTTINGS_S code to account for the possibility of enhanced near wellbore flow due to solids removal. This is accomplished through the use of the skin factor parameter (S) in the DBR_BRAGFLO well deliverability equation, and is included in the determination of flowing bottom-hole pressure.

Flowing bottom-hole pressure using Poettmann-Carpenter wellbore model

Flow up the intrusion borehole during drilling is governed by complex physics dependent on frictional effects and two-phase fluid properties. This phenomena is much studied in petroleum engineering, and many correlations have been developed to predict flow rates and pressures in vertical two-phase pipe flow. The Poettmann-Carpenter approach was chosen to calculate the necessary flowing bottom hole pressures (FBHP) to be used in the DBR_BRAGFLO model. The wellbore is descritized into finite delta lengths of 25 feet, each being described by the diameters of the open hole, drill pipe, drill collars, and casing(s). Note that for the DBR_BRAGFLO model, brine is assumed to flow to surface through the annular area only (between the drill string and open hole). Figure 4 shows the wellbore configuration used for the CCA calculations.

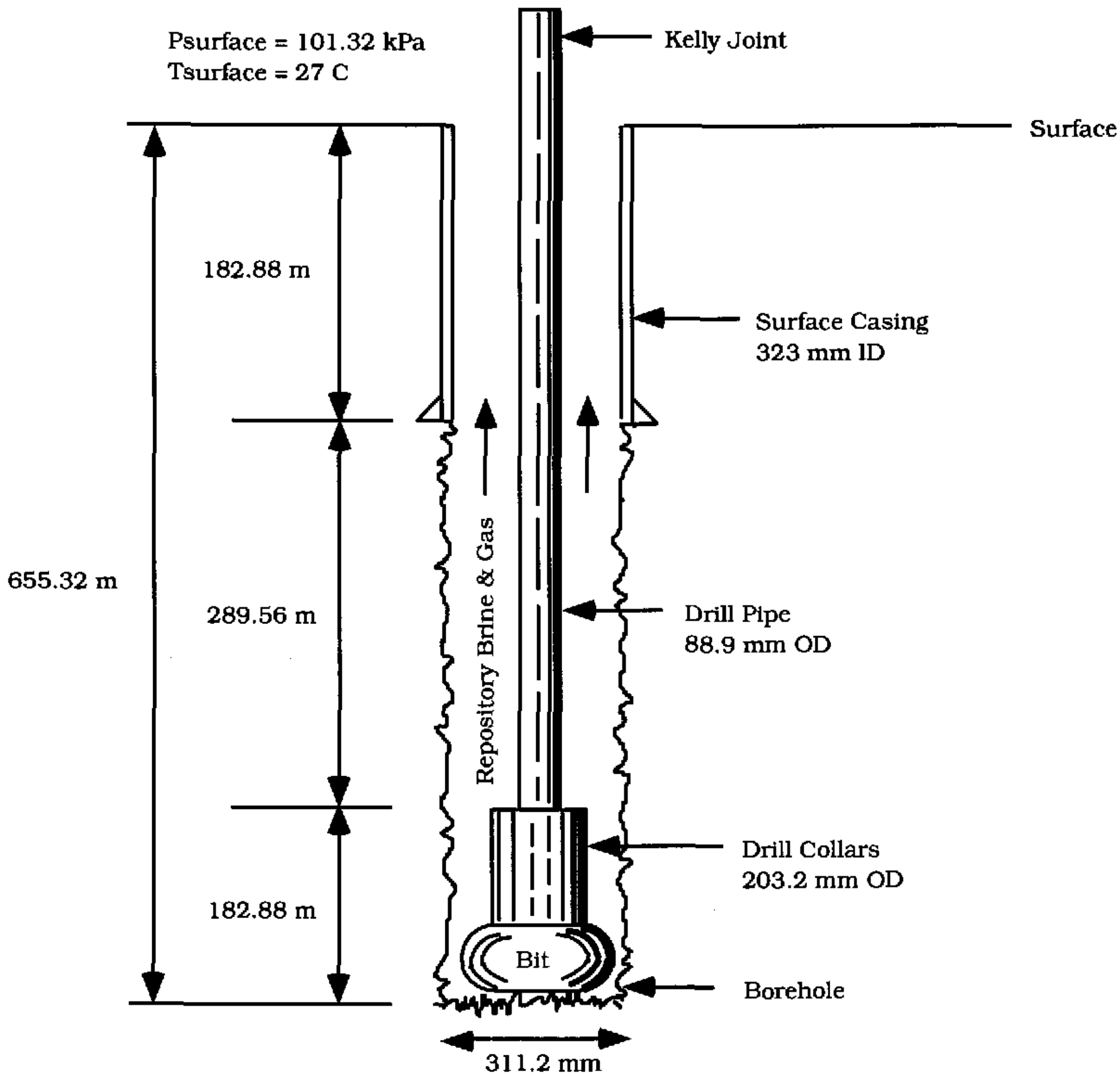


Figure 4: Borehole representation used for Poettmann-Carpenter correlation

The Poettmann-Carpenter model (P-C mod) was chosen because it accounts for multi-phase frictional effects based on empirical (field) data from flowing wells, and is one of the few correlations that includes annular flow data in its development and it is easy to implement. To calculate the flowing bottom hole pressures to be used in the CCA calculations, the flow rates used in P-C mod have to match those predicted by the DBR_BRAGFLO well model. Since the fluid saturations and panel pressures are known for each realization at each intrusion time, it is possible to calculate the FBHP iteratively. A starting FBHP is assumed, and the gas and brine flow rates are calculated from the DBR_BRAGFLO well deliverability equation. These flow rates are then used in the P-C mod to determine finite pressure drops up the wellbore to the surface. If the resulting surface flowing pressure does not equal atmospheric, a new FBHP is assumed and the process repeated until the surface pressure is calculated to within 5% tolerance of atmospheric. A 5% tolerance amounts to a 0.7 psi (4827 Pa, or ~0.005 MPa) allowance for convergence of the Poettmann-Carpenter method to achieve atmospheric pressure. A detailed description of the equations used can be found in Chapter B. Figure 5 shows a flowchart of this process.

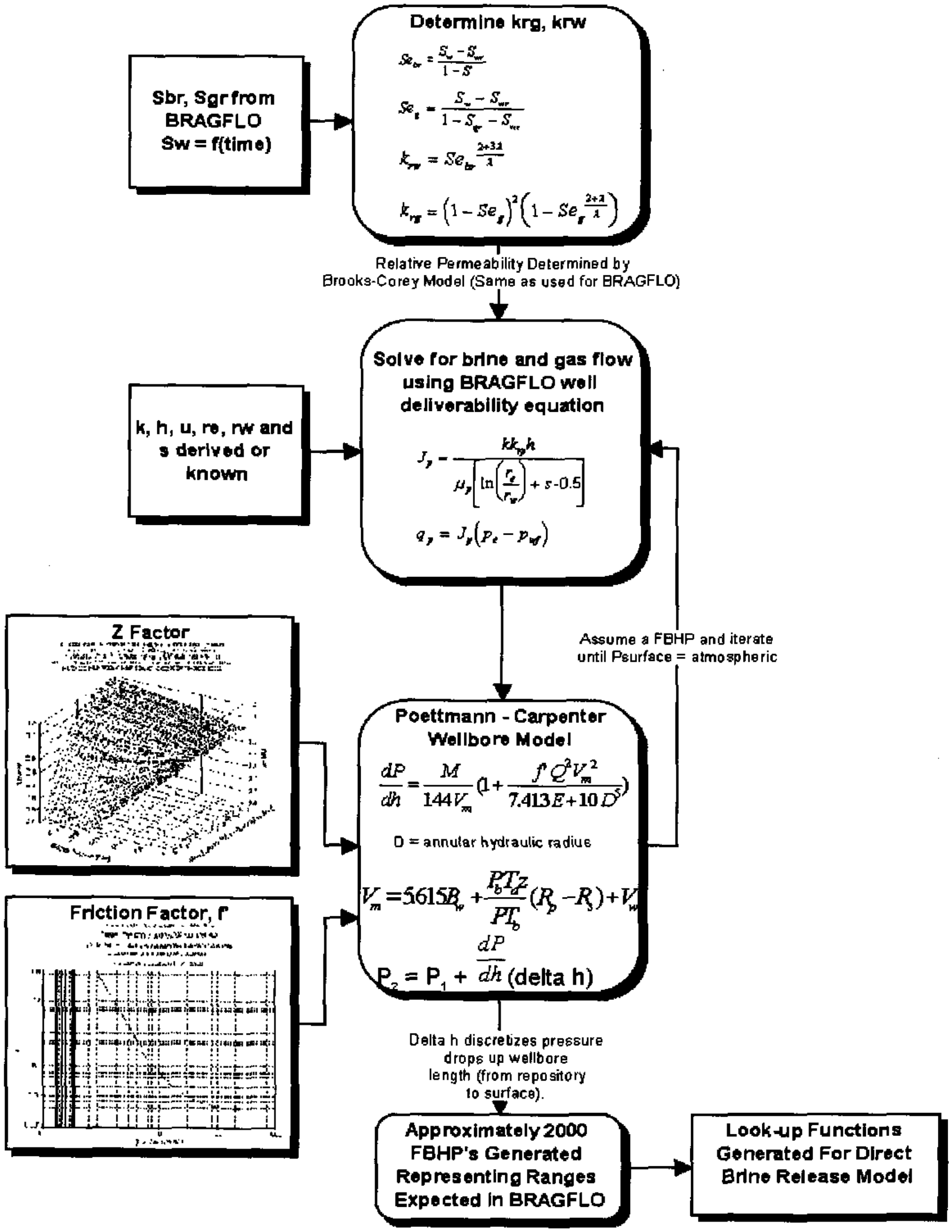


Figure 5: Flowchart of iterative process used to estimate flowing bottom hole pressure

An Excel spreadsheet was developed to perform the iterative procedure and create a table of FBHPs based on randomly generated crushed panel heights, initial panel pressures, and residual fluid saturations. These variables are expected to vary with time, or are sampled in the CCA calculations. The resulting (2,000 plus) FBHPs were curve-fitted to three look-up functions, which were used to predict the starting FBHP in the intruded grid block in each DBR_BRAGFLO calculation (the second ALGEBRA step in Figure 2). Skin factor (based on spall removed) was kept at zero and mole fraction Hydrogen was kept at 100% for development of the lookup functions, even though these may vary in the BRAGFLO runs. Ideally, the FBHP should be updated at each time step in the DBR_BRAGFLO calculation, but the current version of BRAGFLO is unable to achieve this. Therefore, the FBHP is held constant for the duration of the direct release flow time period. This is a conservative modeling constraint, since the FBHP should realistically increase with time (thereby reducing flow) as the panel pressure decreases.

Uncertainty in Conceptual Models and a Qualitative Discussion of the Relative Significance of Parameters

The DBR_BRAGFLO model uncertainties are captured in the 10,000 year BRAGFLO calculations from which the initial and boundary conditions are derived. The model parameters that have the most influence on the brine direct releases are repository pressures and brine saturations at time of intrusion. High brine saturations are influenced by many factors, including Salado and marker bed permeability and gas generation rates (for undisturbed calculations). For intrusion scenarios, Castile brine pocket pressures and volumes (E1) and abandoned borehole permeabilities (E1 and E2) influence conditions for the 2nd and subsequent intrusions. Additionally, dip in the repository (hence location of intrusions), two-phase flow parameters (residual brine and gas saturation, etc.), and time of intrusion have lesser impacts on brine releases.

Duration of flow for DBR_BRAGFLO model

The DBR_BRAGFLO model is run for 50 days for each realization that meets the blowout criteria (adequate pressure and saturation). The cumulative brine releases to contribute to the CCDF construction are determined in a post processing step (the last ALGEBRA run in Figure 2) by the following criteria:

- Every realization will accumulate brine for a minimum of three days. This is based on the estimated length of time it will take to drill through the Castile and cement the intermediate casing (see Attachment 5). If there is little or no gas flow associated with the brine flow, current practice is to allow the brine to "seep" into the drilling mud and flow to the mud pits (the "seepage" may even go undetected), until the salt section is cased.
- If there is a significant amount of gas flow associated with the brine releases, it is possible that the driller will lose control of the well. In such cases the brine releases will accumulate until the gas rate drops below a predetermined gas "cut-off" rate. This rate is arbitrarily set by the author at 100 thousand standard cubic feet per day (MSCF/D), and represents a gas flow rate (in oil field units) at which control of the well could be regained.

- Should the gas flow rate continue above the cut-off rate, the brine releases will accumulate for a maximum of eleven days. This is based on the amount of time it took to control the South Culebra Bluff Unit #1 well, which blew out in January, 1978 (see Attachment 5). Eleven days was the response time needed to gather the equipment and personnel necessary to regain control of that well

Model output and integration with CCA results

The output from the repository-scale direct release model is volume of brine (m^3) released to the surface. The number of intrusions into the waste area, location (updip or downdip), and scenario (E1 or E2) are determined stochastically in the CCDFGF (Analysis Package WPO #40524) code for each BRAGFLO realization. The actual brine released directly for each time history is then calculated by linear time interpolation from the DBR_BRAGFLO results.

CHAPTER A

A1: E1-E2 SCENARIOS

The following definitions for the E1-E2 scenarios are paraphrased from the SPM-2 Decision Aiding Tool, Prepared for the DOE's Waste Isolation Pilot Plant (WIPP) by Sandia National Laboratories, March 31, 1995, Report Volume 1, Glossary (Section 9):

E1 Intrusion Scenario - A characterization of an alternative future state of the WIPP disposal system that models an inadvertent exploratory borehole intersecting the repository and a hypothetical pressurized brine reservoir (pocket) in the underlying Castile formation.

E2 Intrusion Scenario - A characterization of an alternative future state of the WIPP disposal system that models an inadvertent exploratory borehole intersecting the repository but missing the hypothetical brine reservoir.

E1E2 Intrusion Scenario - A characterization of an alternative future state of the WIPP disposal system that models two or more inadvertent exploratory boreholes intersecting the repository, at least one of which hits an underlying brine reservoir. With robust panel seals the boreholes must intersect the same panel, one of which is a previously abandoned well through the brine reservoir. With degraded or failed seals, communication to the abandoned brine pocket well could exist across multiple panels. For the 1996 CCA, panel seals are given a 10^{-15} m^2 permeability, which is robust enough to inhibit short-term (days) brine flow between panels, but can allow significant gas flow through the waste area.

The 1996 CCA calculations (see Salado Flow Analysis Package WPO #40514) treat future abandoned intrusion boreholes the following way:

- The first 200 years after abandonment are characterized by two cement plugs ($5X10^{-17}$ m^2 permeability) across the top of the Salado and bottom of the Castile formations. Between the two plugs, the borehole is treated as corroded, brine-filled pipe open to flow between the brine pocket and WIPP panel.
- From 200 to 1,200 years after abandonment, the cement plugs are assumed to degrade and the entire borehole is filled with debris, with permeability sampled from 10^{-11} to 10^{-14} m^2.
- From 1,200 to 10,000 years after abandonment, the lower section of borehole in the Salado between the WIPP horizon and Castile is assumed to be affected by salt creep, and its permeability is reduced one order of magnitude.

The material name, value, property names (and Ids) for the cement plug permeability in the first 200 years according to the CCA6.SDB is:

Plug: CONC_PLG = -16.301
PRMX_LOG (3185)
PRMY_LOG (3192)
PRMZ_LOG (3193)

The degraded cement plug permeability from 200 to 1200 years according to the CCA6.SDB is:

Plug: BH_SAND = -11 to -14 (uniform distribution)
PRMX_LOG (3184)
PRMX_LOG (3190)
PRMZ_LOG (3191)

The amount of brine that can flow from the brine pocket, through an abandoned borehole, into a WIPP panel, and out a nearby (blowout) well in the same panel is a function of the following, assuming steady-state flow for the duration of the blowout:

- Castile brine reservoir properties:
    1. Height (h_{BP}) is assumed to be 12.34 meters for all calculations, which is equivalent to that used in the BRAGFLO model
    2. Areal extent expressed as external drainage radius ($r_{e\ BP}$), set equal to 114 meters for all calculations, which corresponds to the highest brine pocket size possible that could fit underneath a single waste panel.
    3. Brine pocket pressure (P_{BP} - Pascals), which is taken from BRAGFLO at the blowout well intrusion time.
    4. The brine pocket permeability (K_{BP} - m^2), which is a sampled parameter obtained from BRAGFLO.
    5. Flowing pressure at the wellbore in the brine pocket ($P_{wf\ BP}$ - Pascals).
- Waste panel properties:
    6. Flowing pressure at the wellbore in the abandoned borehole grid block for boundary condition treatment ($P_{wf\ BC}$ - Pascals).
    7. Equivalent radius representing area of abandoned borehole grid block ($r_{e\ BC}=[(delx*dely)/\pi]^{0.5}$, meters)
    8. Flowing pressure at the wellbore for the intrusion well ($P_{wf\ BO}$ - Pascals), which is calculated separately using the Poettmann-Carpenter correlation.
    9. Wellbore radius (r_w - meters, from bit size parameter off the database) is assumed to be equal for the abandoned wellbore and intrusion borehole.
    10. Flow up the abandoned borehole from the brine pocket (Q_{BP} - m^3/s) is assumed to be equal to flow "injection" into the panel (Q_{BC} - m^3/s), for steady state conditions.

E1-E2 Illustrations/Terminology

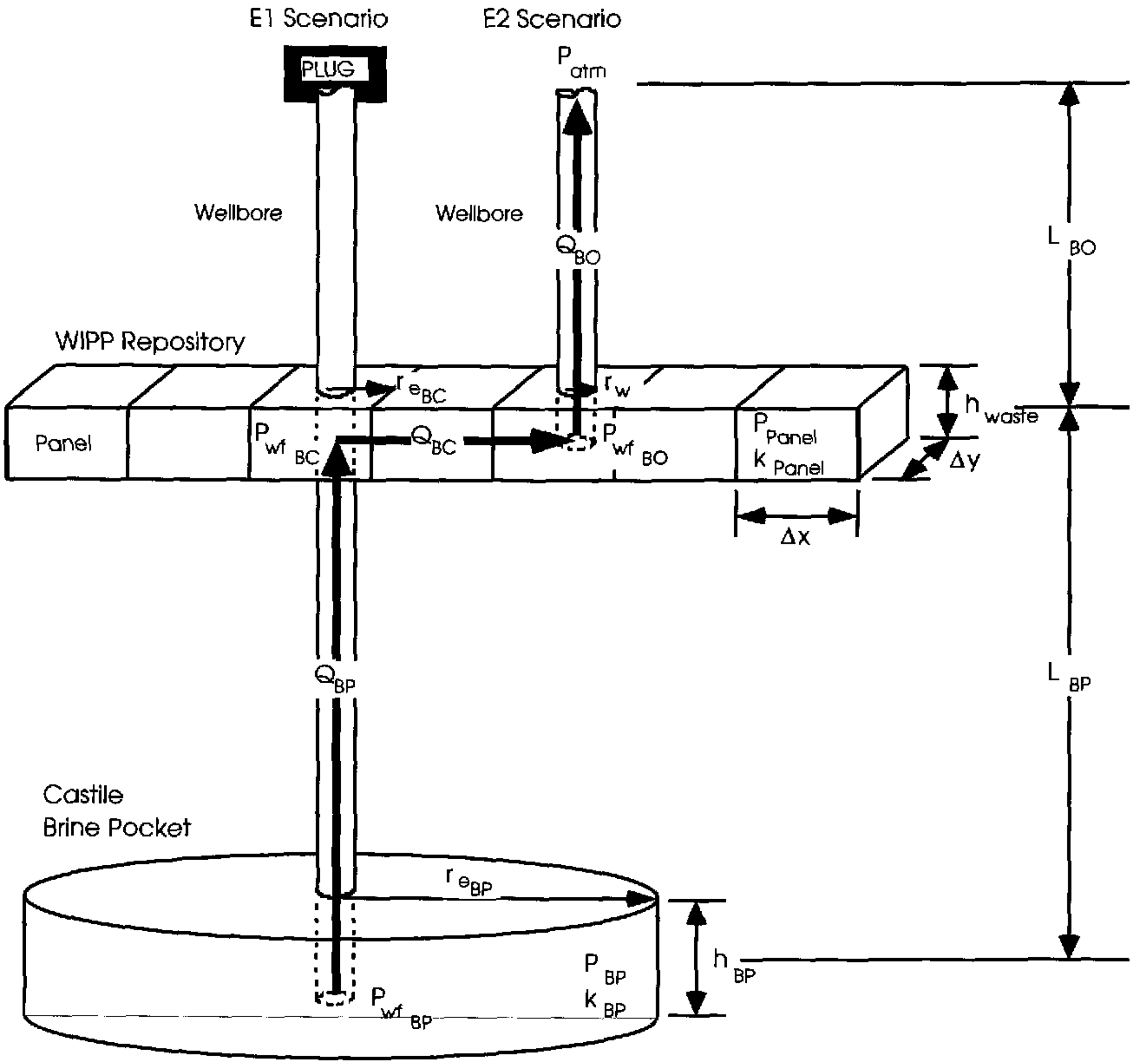
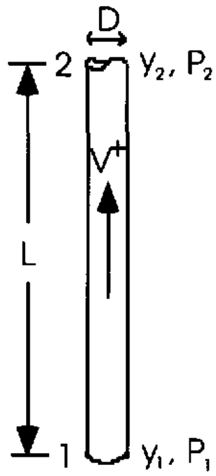


FIGURE A1: Representation of assumed flow path for E1E2 scenario

A2: THEORETICAL CONSIDERATIONS

A. Frictional Effects

Consider the flow rate necessary to achieve laminar flow from the brine pocket to the repository as depicted by the following:



Assuming the flow is positive between location 1 (brine pocket) to 2 (repository panel), the following equation describes linear flow according to Poiseuille's Law 15. {see ref. [Prasuhn, 1980] (either of Prasuhn's equations 7-21 or 7-22 can be used for Equation A1 and Prasuhn's equation 3-7 is used for Equation A2}:

$$\left(\frac{P_1}{\gamma}+y_1\right)-\left(\frac{P_2}{\gamma}+y_2\right)=\frac{32\mu VL_{BP}}{\gamma D^2}$$ [Equation A1]

$$Q = VA, V = \frac{Q}{A} = \frac{4Q}{\pi D^2}$$ [Equation A2]

$$\left(\frac{P_1}{\gamma}+y_1\right)-\left(\frac{P_2}{\gamma}+y_2\right)=\frac{128\mu QL_{BP}}{\gamma\pi D^4}$$

or by separating and combining terms:

$$(P_1 - P_2)+\gamma(y_1 - y_2)=\frac{128\mu QL_{BP}}{\pi D^4}$$ [Equation A3]

Using the following WIPP properties (brine density reference [McTigue, et. al., 1991]):

$$\gamma = 9.8\frac{m}{\sec^2} * 1230\frac{kg}{m^3} = 12{,}054\frac{kg}{\sec^2 m^2} = 12{,}054\frac{Pascal}{m}$$

$$L_{BP} = y_1 - y_2 = -247m$$

$$\mu = 1.8E-03\,Pascal-\sec$$

For 9 5/8 inch OD casing (8.921 inch ID) (ref. . [Gatlin, 1960]:):

$$D = 0.2266m$$

Substituting these values into Equation A3 results in the following relationship for P_2 as a function of P_1 and Q as follows:

$$P_2 = P_1 - 2.9773E06 - 6.8705E03Q \quad \text{[Equation A4]}$$

where:
P_1 = Pressure at the brine pocket end of the wellbore (Pa)
P_2 = Pressure at the repository end of the wellbore (Pa)
Q = Poiselle laminar flow rate from the brine pocket to the repository (m^3/sec)

Since Q must be $\geq$ 100 m^3/sec for frictional forces to have an effect on flow, frictional forces will be neglected in the remainder of the equations developed (6.8705E03*Q = 0).

B. Coupled Open Borehole Connection Between Brine Pocket and Repository Panel

For open borehole flow where Q_{BC} is negative for injection [Williamson and Chappelear, 1981]:

$$P_{wf_{BC}} = P_{wf_{BO}} - Q_{BC}\left[\frac{\mu\left[\ln\left(\frac{r_{e_{BC}}}{r_w}\right) - 0.5\right]}{k_{waste}h_{waste}(1)}\right] \quad \text{[Equation A5]}$$

$$P_{wf_{BP}} = P_{wf_{BC}} + 2.9773E06 \quad \text{[Equation A6]}$$

$$Q_{BP} = -Q_{BC} \quad \text{[Equation A7]}$$

$$Q_{BP} = \left[\frac{k_{BP}h_{BP}(1)}{\mu\left[\ln\left(\frac{r_{e_{BP}}}{r_w}\right) - 0.5\right]}\right]\left(P_{BP} - P_{wf_{BP}}\right) \quad \text{[Equation A8]}$$

Substituting Equations A6 and A7 into Equation A8:

$$-Q_{BC} = \left[\frac{k_{BP}h_{BP}}{\mu\left[\ln\left(\frac{r_{e_{BP}}}{r_w}\right) - 0.5\right]}\right]\left(P_{BP} - P_{wf_{BC}} - 2.9773E06\right) \quad \text{[Equation A9]}$$

Substituting Equation A9 into Equation A5:

$$P_{wf_{BC}} = P_{wf_{BO}} + \left[\frac{k_{BP} h_{BP} \left(P_{BP} - P_{wf_{BC}} - 2.9773E06 \right)}{\mu \left[\ln\left(\frac{r_{e_{BP}}}{r_w} \right) - 0.5 \right]} \right] \left[\frac{\mu \left[\ln\left(\frac{r_{e_{BC}}}{r_w} \right) - 0.5 \right]}{k_{waste} h_{waste}} \right]$$

or by separating and combining terms:

$$P_{wf_{BC}} = P_{wf_{BO}} + \left[\frac{k_{BP} h_{BP} \left[\ln\left(\frac{r_{e_{BC}}}{r_w} \right) - 0.5 \right]}{k_{waste} h_{waste} \left[\ln\left(\frac{r_{e_{BP}}}{r_w} \right) - 0.5 \right]} \right] \left(P_{BP} - P_{wf_{BC}} - 2.9773E06 \right) \quad \text{[Equation A10]}$$

Now define the following to be a constant:

$$Const1 = \left[\frac{k_{BP} h_{BP} \left[\ln\left(\frac{r_{e_{BC}}}{r_w} \right) - 0.5 \right]}{k_{waste} h_{waste} \left[\ln\left(\frac{r_{e_{BP}}}{r_w} \right) - 0.5 \right]} \right] \quad \text{[Equation A11]}$$

Substituting Equation A11 into Equation A10 and rearranging gives:

$$P_{wf_{BC}} = \left[\frac{P_{wf_{BO}} + Const1 P_{BP} - Const1(2.9773E06)}{(1 + Const1)} \right] \quad \text{[Equation A12]}$$

Equation A12 is the defining equation for open borehole flow between the brine pocket and repository panel.

C. Coupled Sand-filled Connection Between Brine Pocket and Repository Panel

For the sand-filled connection between the brine pocket and repository the borehole flow rate (for linear flow, neglecting drawdown in the brine pocket) according to Darcy's Law is:

$$Q_{BH} = \left\{ \frac{k_{BH} A_{BH} \left[\left(P_{wf_{BC}} - P_{BP} \right) + 2.9773E06 \right]}{\mu L} \right\} \quad \text{[Equation A13]}$$

Rearranging terms and solving for Pwf_{BC} gives:

$$P_{wf_{BC}} = \frac{Q_{BH} \mu L}{k_{BH} A_{BH}} + P_{BP} - 2.9773E06 \quad \text{[Equation A14]}$$

$Q_{BH} = Q_{BC}$ [Equation A15]

Substituting Equation A15 into Equation A14 and rearranging:

$$Q_{BC} = \left(P_{wf_{BC}} - P_{BP} + 2.9773E06\right)\left(\frac{k_{BH}A_{BH}}{\mu L}\right) \qquad \text{[Equation A16]}$$

Substituting Equation A16 into Equation A5:

$$P_{wf_{BC}} = P_{wf_{BO}} + \left[\frac{k_{BH}A_{BH}\left[\ln\left(\frac{r_{e_{BC}}}{r_w}\right) - 0.5\right]}{Lk_{waste}h_{waste}}\right]\left(P_{BP} - P_{wf_{BC}} - 2.9773E06\right) \qquad \text{[Equation A17]}$$

Now define the following to be a constant:

$$Const2 = \frac{k_{BH}}{h_{waste}}\left[\frac{\pi r_w^{\ 2}\left[\ln\left(\frac{r_{e_{BC}}}{r_w}\right) - 0.5\right]}{Lk_{waste}}\right] \qquad \text{[Equation A18]}$$

Substituting Equation A18 into Equation A17 and rearranging gives:

$$P_{wf_{BC}} = \left[\frac{P_{wf_{BO}} + Const2P_{BP} - Const2(2.9773E06)}{(1 + Const2)}\right] \qquad \text{[Equation A19]}$$

Equation A20 is the defining equation for sand-filled borehole flow between the brine pocket and repository panel.

A3: CONCLUSIONS

Equations A12 and A19 are the expressions that are used to determine the boundary condition pressure that represents abandoned E1 wells. This "injection" pressure simulates flow into the panel from the brine pocket, and is a function of brine pocket properties and abandoned borehole permeabilities at blowout well intrusion time.

CHAPTER B

B1. FLOWING BOTTOMHOLE PRESSURE ISSUE AND THEORY

The driving force behind expulsion of brine and gas from the WIPP repository to the surface via a wellbore during an uncontrolled blowout is determined by the static panel pressure and flowing bottomhole pressure at the time of intrusion. The flowing bottomhole pressure, defined as the dynamic pressure at the inlet to the wellbore adjacent to the point of entry into the repository, is less than the static pressure due to elevation, friction and acceleration effects. The ability of the well to produce brine and gas is governed by the drop in panel pressure and the productivity index (assuming steady-state flow) by the following well deliverability equation [Mattax and Dalton, 1990]:

$$q_p = J_p\left(p_e - p_{wf}\right) \qquad \text{[Equation B1]}$$

where:

q_p = well flow rate of the produced phase (brine or gas)
J_p = phase productivity index
p_e = phase pressure at the outer boundary of the well drainage area (panel pressure)
p_{wf} = flowing bottomhole pressure

In a radial drainage area where saturation is uniform over the drainage region (which is valid throughout the assumed blowout period), the productivity index, J_p can be determined from Darcy's law [Williamson and Chappelear, 1981]:

$$J_p = \frac{kk_{rp}h}{\mu_p\left[\ln\left(\frac{r_e}{r_w}\right) + s + c\right]} \qquad \text{[Equation B2]}$$

where:

k = absolute permeability (assumed to be constant through time at 1.7E-13 m^2) The material name, value, property names (and Ids) for k are as follows:
Waste: WAS_AREA = -12.769
PRMX_LOG (663)
PRMY_LOG (664)
PRMZ_LOG (665)
k_{rp} = relative permeability to phase (based upon the modified Brooks-Corey KRP = 4 model)
h = crushed panel height (calculated from porosity surface)
μ_p = viscosity of fluid phase (assumed to be constant through time for brine, μ_{brine} = 1.8E-03 Pa-sec, and for gas μ_{gas} = 8.92E-06 Pa-sec) [Kaufmann, 1960]
r_e = external drainage radius (which for rectangular gridblock dimensions, r_e is taken as the equivalent areal radius, i.e. for gridblock dimensions of 10 m by 32.7 m (these are the gridblock dimensions of BRAGFLO mesh which contains the downdip intrusion borehole).

$$r_e = \sqrt{\frac{(10)(32.7)}{\pi}} = 10.2023 \text{ m})$$

r_w = wellbore radius (assumed to be constant through time at 0.1556 m) [Gatlin, 1960]
c = -0.50 for pseudosteady-state flow
s = skin factor, incorporating well stimulation caused by spallings release

The CUTTINGS_S model can be coupled through the skin factor according to the petroleum engineering well testing relationship [Lee, 1982]:

$$s = \left(\frac{k}{k_{skin}} - 1\right)\ln\left(\frac{r_{skin}}{r_w}\right)$$ [Equation B3]

where:
s = skin factor
k = absolute permeability
k_{skin} = permeability of an open channel as a result of CUTTINGS_S releases (assumed to be infinite)
r_w = wellbore radius
r_{skin} = effective radius of the wellbore with CUTTINGS_S volume removed

The effective radius of the wellbore can be determined using the total area removed from the CUTTINGS_S model (AreaTotal) by assuming a radius (r_{skin}) such that:

$$AreaTotal = \pi r_{skin}^2$$ [Equation B4]

Rearranging Equation B4 to solve for r_{skin} gives:

$$r_{skin} = \sqrt{\frac{AreaTotal}{\pi}}$$ [Equation B5]

Substituting Equation B5 into Equation B3 and assigning infinity to k_{skin} gives the desired relationship between skin (s) and total area removed according to the CUTTINGS_S model (AreaTotal):

$$s = -1 \ln\left(\frac{\sqrt{\frac{AreaTotal}{\pi}}}{r_w}\right)$$ [Equation B6]

The relative permeability to a phase (k_{rp}) using the modified Brooks-Corey model (KRP = 4) shown in Equation B2 is defined using the following expressions for brine (br) and gas (g) respectively:

Calculate an effective saturation (Se) for each phase as follows:

$$Se_{br} = \frac{S_w - S_{wr}}{1 - S_{wr}} \left(0 \le S_{wr} \le 0.40\right)^*$$ [Equation B7]

$$Se_g = \frac{S_w - S_{wr}}{1 - S_{gr} - S_{wr}} \quad \left(0 \le S_{gr} \le 0.15\right)$$ [Equation B8]

where:
S_w = brine saturation in panel at time of intrusion
S_{wr} = residual brine saturation (sampled parameter, from 0% to 40%)*
S_{gr} = critical gas saturation (sampled parameter, from 0% to 15%)

*Note: At the time that this work was done, the range for Swr was between 0% and 40%. This range was subsequently expanded from 0% to 55.2% without the authors knowledge. Because of the smoothness of the impacted flowing bottom hole pressure (FBHP) "look up" functions (as discussed in Section B.3), the equations are robust even over the extended range. This has been demonstrated in Figures 38 and 39 (from the main document) which show comparisons of FBHP computations directly from the Poettmann-Carpenter correlation vs. the lookup functions which were used to compute FBHP in the CCA calculations. The 45° line drawn to show where the FBHP lookup function equals the FBHP obtained via correlation confirm that data is well constrained to the 45° line over the extended Swr sampled range.

Calculate the relative permeability for each phase as follows:

$$k_{rw} = Se_{br}^{\frac{2+3\lambda}{\lambda}} \qquad \text{[Equation B9]}$$

$$k_{rg} = \left(1 - Se_g\right)^2 \left(1 - Se_g^{\frac{2+\lambda}{\lambda}}\right) \qquad \text{[Equation B10]}$$

where:

k_{rw} = relative permeability to brine
k_{rg} = relative permeability to gas
λ = pore size distribution parameter

Sampled parameters in combination with Equations B6, B9 and B10 when used in Equation B2, yield the productivity index for brine and gas. These values are available with the panel pressure at the time of intrusion. The only variable unknown is the flowing bottomhole pressure which when used in the well deliverability equation (Equation B1) gives the expelled brine and gas flow rates. To determine the flowing bottomhole pressure, an iterative procedure is used based upon a petroleum engineering industry multiphase flow correlation developed by Poettmann and Carpenter (for a discussion of the Poettmann and Carpenter technique, refer to section B3). The method begins by assuming a gas composition comprised of hydrogen and carbon dioxide (CO_2 is assumed to be 0 because of its adsorption in the backfill) and a flowing bottomhole pressure less than the panel pressure. With the productivity index computed from Equation B2, flow rates for brine and gas are computed using Equation B1. Using the Poettmann and Carpenter method which takes into account elevation, friction and acceleration impacts on the flowing pressure gradient, a surface pressure is computed. If the surface pressure is equal to atmospheric pressure, the iteration ceases using the last flowing bottomhole pressure used. If the surface pressure is not equal to atmospheric pressure, another flowing bottomhole pressure is assumed and the process of computing the brine and gas flow rates and subsequent surface pressure is repeated until the surface pressure is at atmospheric pressure.

B2. RESULTS

Flowing bottomhole pressures (FBHP) were generated using the method described in Section B1 of this report to represent expected ranges of panel pressures, brine saturation, critical gas saturation, panel permeability, crushed panel height and skin factor due to spall releases. These results were then developed into correlations based upon relationships between FBHP versus panel pressure and log of well productivity index (as shown in Figure B1) and FBHP versus panel pressure and log (krg/krw) (as shown in Figures B2 and B3 for brine dominated and gas dominated flow, respectively). The continuous fit equations (shown in Figures B1-B3) are used as "look-up" functions in the BRAGFLO Direct Brine Release model to determine FBHP. Figures B4 and B5 demonstrate how the FBHP changes with log (krg/krw) and brine saturation, respectively.

B3. Discussion of curve fitting

To obtain the fits to these equations, two commercially available curve fitting packages developed by Jandel Scientific were used: TableCurve 2D™ and TableCurve 3D™. The criteria used to select the best fit curve were as follows:

• The r^2 value defined as the coefficient of determination between the two sets of data. The correlation coefficient is interpreted as the proportion of the variance in y attributable to the variance in x (for 2D data sets) or the proportion of the variance in z attributable to the variance in x and y (for 3D data sets). TableCurve 2D and TableCurve 3D rank orders the equations it develops by r^2. The rank number and value for r^2 are included with each plot (along with other statistical fit diagnostic information). The correlation coefficient is a widely used measure of goodness-of-fit.

• The expression selected was also based upon a visual inspection of the top ranked equations. Some equations which had high r^2 values may have had an anomalous shape (convex versus concave, hyperbolic versus parabolic, etc.) or were not smooth.

• Finally, polynomial expressions were preferred over transcendental expressions for ease of use in spreadsheet calculations.

FIGURE B1: FBHP as a Function of Brine Well Index and Panel Pressure (Krg=0, Brine only)

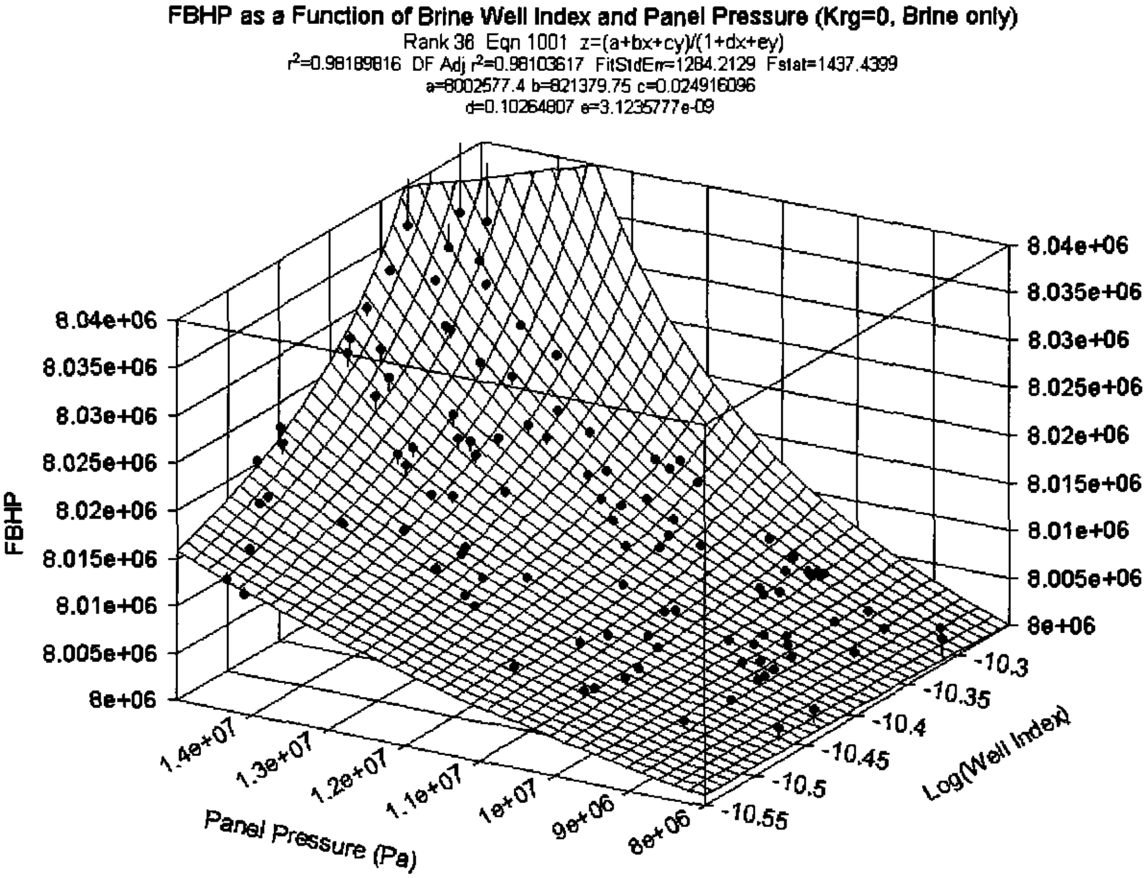


FIGURE B2: FBHP as a Function of Rel Permeabilities and Panel Pressure (brine dominated)

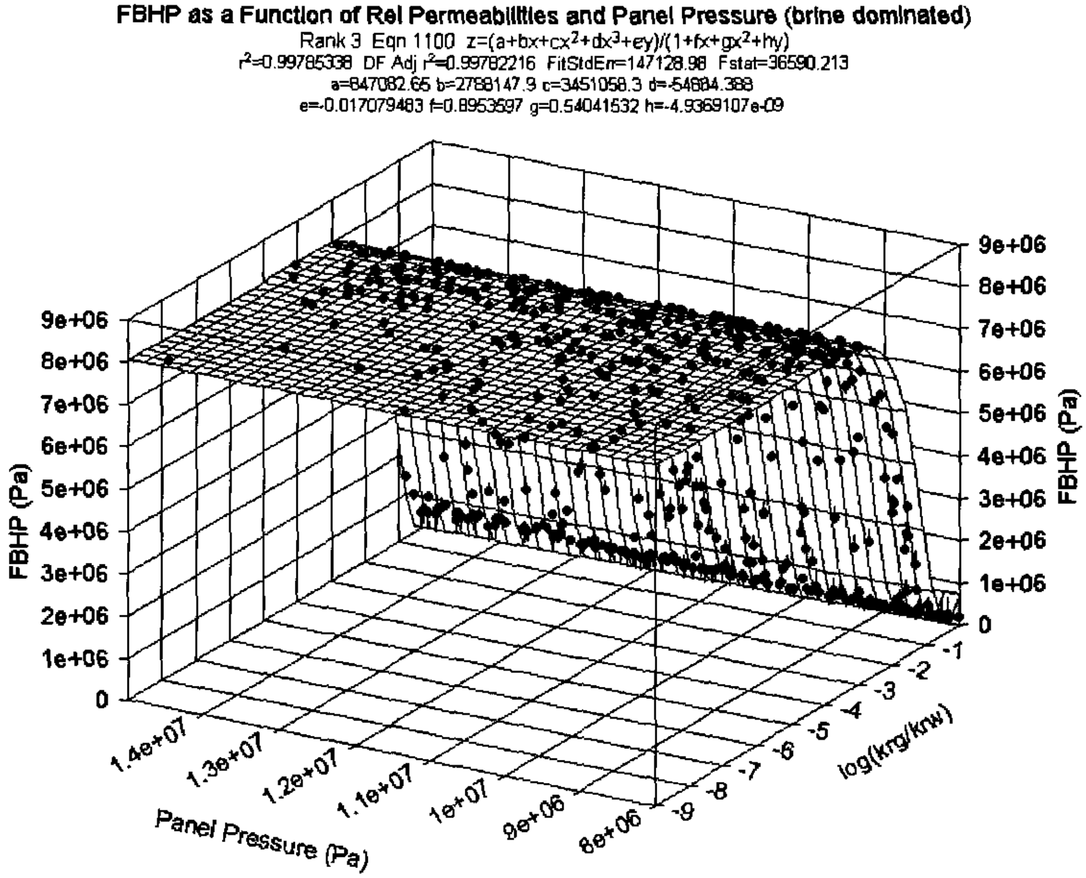


FIGURE B3: FBHP as a Function of Rel Permeabilities and Panel Pressure (gas dominated)

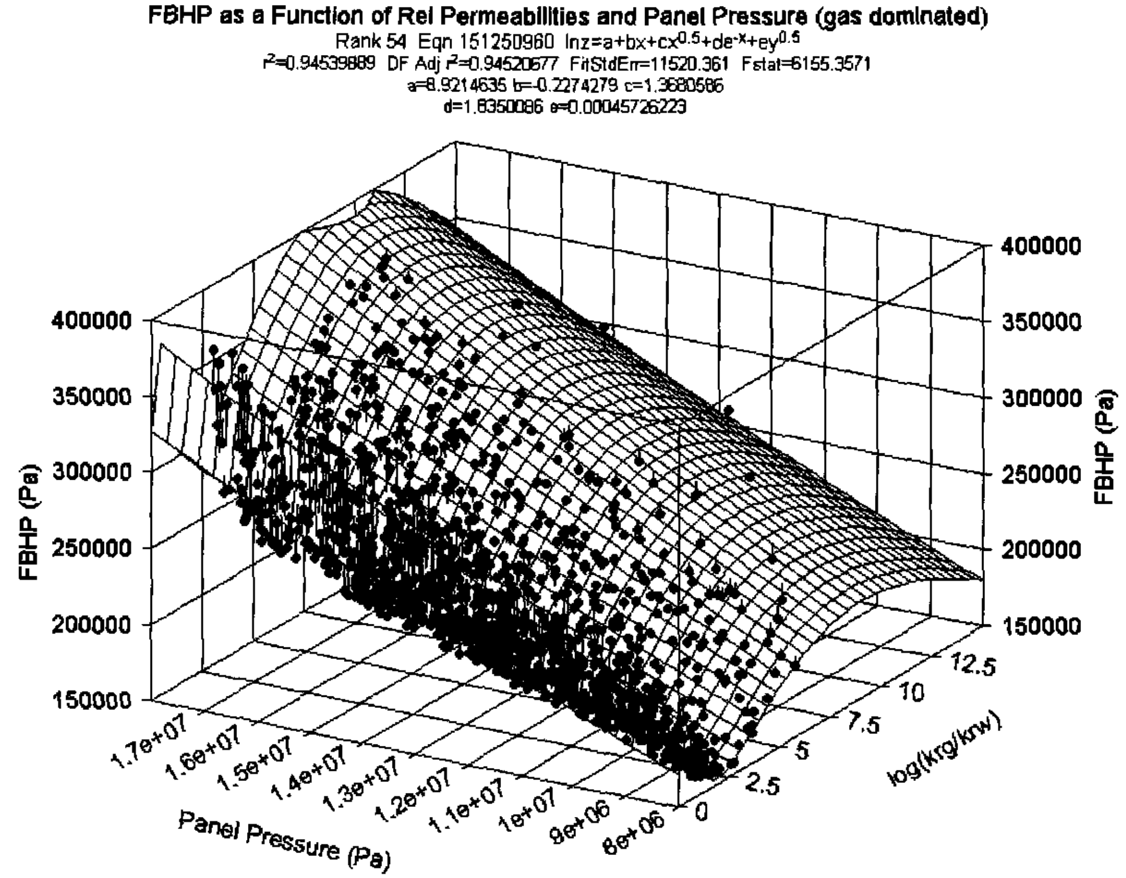


FIGURE B4: FBHP as a Function of log(Krg/Krw)

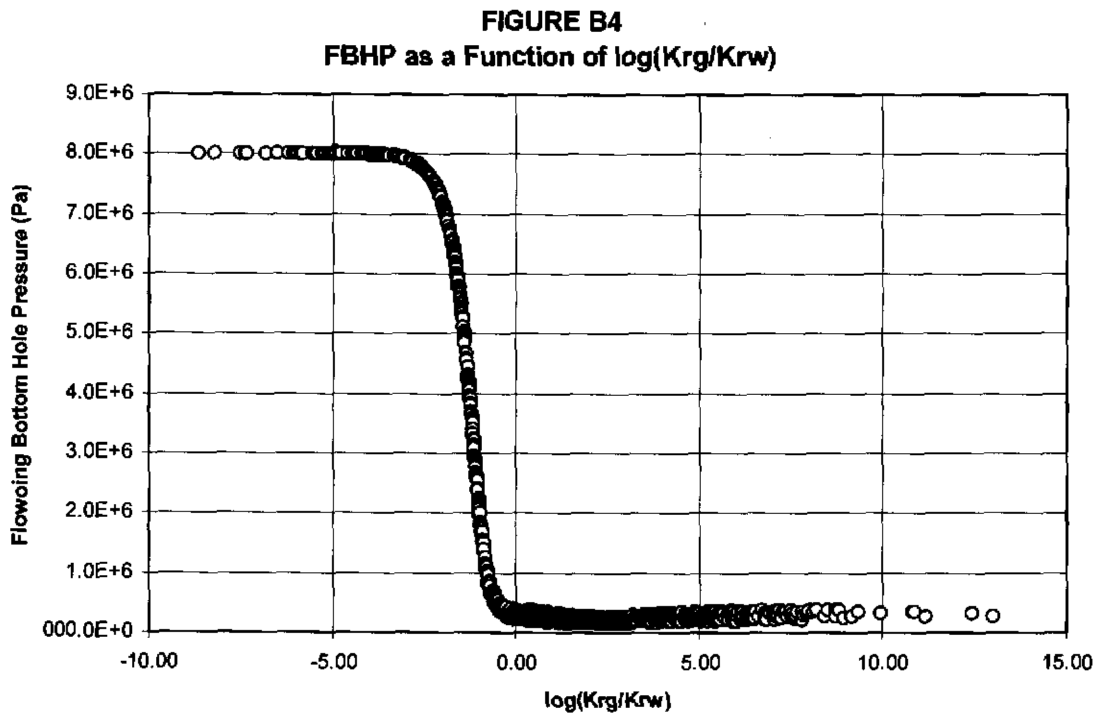
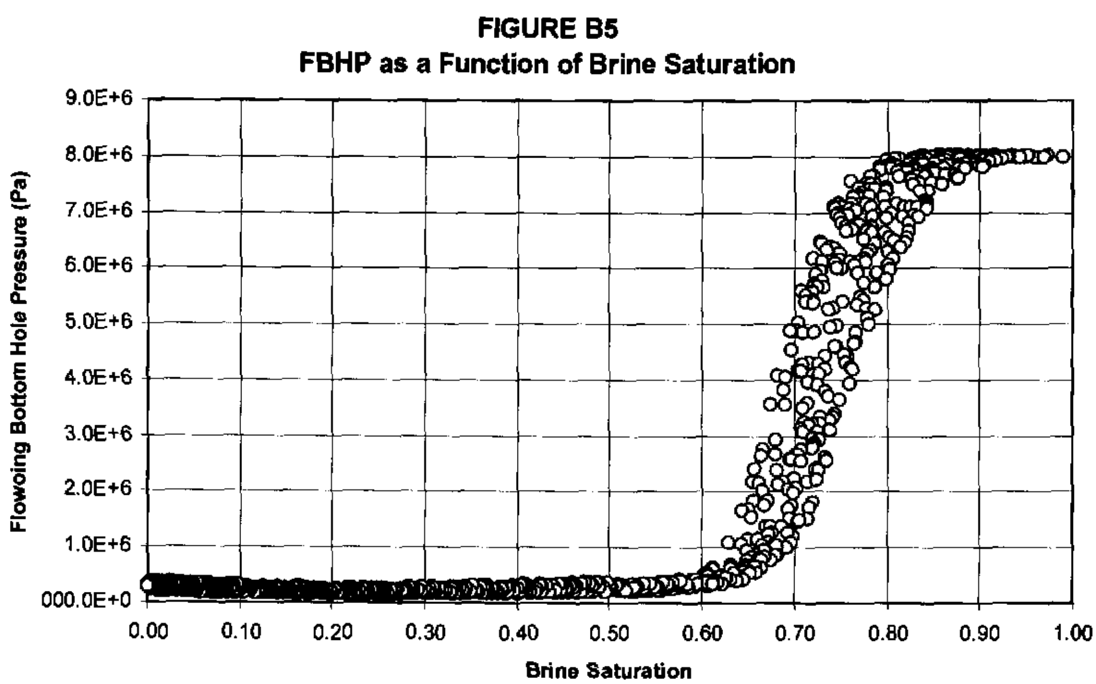


FIGURE B5: FBHP as a Function of Brine Saturation



B4. Poettmann and Carpenter Equations

For vertical flow, the general pressure gradient equation can be written as:

$$\frac{dp}{dh} = \left(\frac{dp}{dh}\right)_{el} + \left(\frac{dp}{dh}\right)_{f} + \left(\frac{dp}{dh}\right)_{acc}$$

The total pressure drop is the sum of the pressure drops due to elevation, friction and acceleration, respectively. The pressure drop caused by elevation change depends on the density of the mixture. The pressure drop caused by friction losses requires evaluation of a friction factor. The empirical correlations differ in the manner used to calculate the three components of the total pressure gradient.

To calculate the bottom-hole flowing pressure using the method of Poettmann and Carpenter, the following information is required:

$$\frac{dP}{dh} = \frac{M}{144V_m}\left(1 + \frac{f' Q^2 V_m^{\ 2}}{7.413E + 10D^5}\right)$$

where:

$\frac{dP}{dh}$ = pressure gradient (psia/ft)

D = annular diameter [using "hydraulic radius" concept] (ft)
$D^5 = (d_i + d_o)^2 (d_i - d_o)^3$

$$V_m = 5.615B_w + \frac{P_b T_a z}{PT_b}(R_p - R_s) + V_w$$

V_m = volume of mixed gas and brine at pressure P per barrel of stock-tank liquid, based on the ratio of fluids flowing into and out of the flow string (ft^3/stbl)

R_p = producing gas-liquid ratio (scf/stb)

B_w = formation volume factor of brine = 1 (rbl/stb)

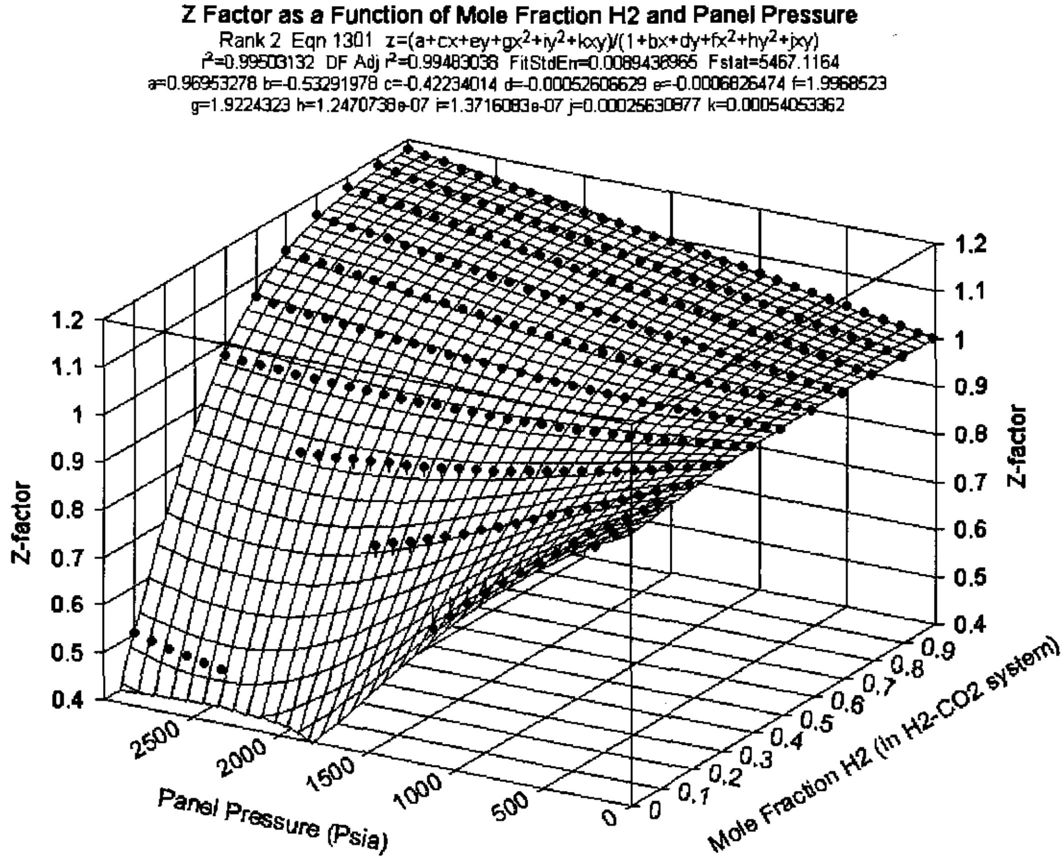
P_b = base pressure at which gas is measured (101.32 Pa)

T_a = average temperature of flow (300.1 °K)

T_b = base temperature at which gas is measured (300.1 °K)

z = compressibility factor of the gas in the annulus at temperature T_a (300.1 °K) and pressure P

FIGURE B6: Z Factor as a Function of Mole Fraction H2 and Panel Pressure

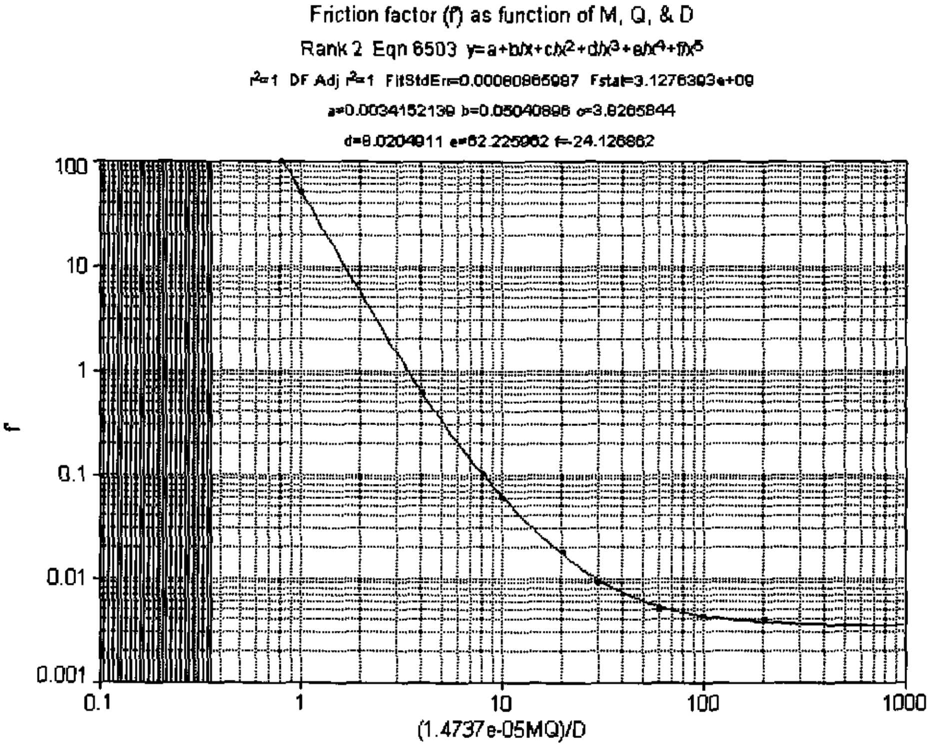


R_s = solution gas-liquid ratio at pressure P (scf/stb) [assumed to be 0]
V_w = cubic feet water produced (scf/stb) [assumed to be 0]
Q = bbl of stock-tank liquid produced per day (bbl/day)
M = $(5.615)(62.4)(G_{sto}) + 0.0764(G_g)(R_p) + 62.4(G_b)(V_w)$
M = total mass of gas and brine, lb, associated with 1 bbl stock-tank liquid flowing into and out of flow string.
G_{sto} = specific gravity of stock-tank oil = 0
G_g = separator gas gravity (air = 1.0) [function of the gas composition, determined with SUPERTRAPP program developed by NIST]
G_b = specific gravity of produced water = 1.23
M will remain constant at any point in the annulus
Defining the flowing density as follows:

$$\rho = \frac{M}{V_m}(lb/ft^3)$$

f' = determined empirically from the work of Poettmann and Carpenter as a function of M, Q & D

FIGURE B7: Friction factor (f') as a function of M, Q & D



$\frac{dP}{dh}$ is determined from the original expression above so that the new pressure may be obtained by the following:

For delta h increments up the wellbore, $P_2 = P_1 + \frac{dP}{dh}$(delta h)

Attachment 2: VERIFICATION OF THE USE OF SUPERTRAPP IN THE DIRECT BRINE RELEASE CALCULATION

Person Performing Verification: Harvey C. Ogden, SNL-6848

Program Name:	SUPERTRAPP
Version:	1.0
Release Date:	July 1992
Authors:	James F. Ely M. L. Huber
Vendor:	U. S. Department of Commerce National Institute of Standards and Technology (NIST) Standard Reference Data Program Gaithersburg, MD 20899

Description: SUPERTRAPP is commercially available software that may be purchased directly from the National Institute of Standards and Technology. It is widely used throughout the scientific community to predict the thermophysical properties of hydrocarbon mixtures. The following paragraph is quoted verbatim from the introduction section of the User's Guide.

SUPERTRAPP is an interactive computer program for the prediction of thermodynamic properties of mixtures. It may be used for pure fluids or for mixtures of up to 20 components. The components are selected from a database of 116 components, mostly hydrocarbons. SUPERTRAPP performs phase equilibria calculations and gives the thermodynamic properties of all phases and the feed. These results include both equilibrium properties (density, compressibility factor, enthalpy, entropy, Cp, Cp/Cv, sound speed, Joule-Thomson coefficient) and transport properties (viscosity and thermal conductivity). The program is user-friendly with many on-line help messages available. It is a very powerful yet easy to use program, which we hope you will find very useful.

Usage: SUPERTRAPP was used in the Direct Brine Release calculation to calculate the Compressibility Factors (Z-Factors) of the H2-CO2 gas mixture in the annulus at temperature 300.1 degrees K and for pressures of 0 to 3000 PSIA. As it turned out, the CO2 component of the gas mixture was assumed to be zero, because of the magnesium oxide backfill, and therefore only the numbers for pure hydrogen were actually used, but this is within the bounds of permitted usage for the program.

Verification: SUPERTRAPP is a widely used commercial program from a highly reliable source and it was used within the bounds of its permitted usage, therefore we believe that its results are completely reliable. However, as a reality check, the following verification was performed. The SUPERTRAPP computed Z-Factors for hydrogen are compared to hand-calculated values which are interpolated from a Generalized Compressibility Chart that is listed in the following reference:

THERMODYNAMICS (Second Edition)
William C. Reynolds
McGraw Hill
1968

A copy of this chart is attached.

The comparison was done at a temperature of 300.1 degrees K and over a pressure range of 1881 psia to 7524 psia in steps of 940.5 psia. This pressure range and increment was chosen to simplify the interpolation of values from the chart.

The critical point for hydrogen is given as:

Tc = 33.24 degrees K
Pc = 12.797 atm

The Reduced Temperature Tr = (T/Tc) = (300.1/33.24) = 9.03

The Reduced Pressure Pr = P/(Pc*14.696) = P/(12.797*14.696) = P/188.1

The following table is the actual output from SUPERTRAPP:

```
 Thermodynamic properties at T =  300.1000 K

Composition: H2     1.0000
```

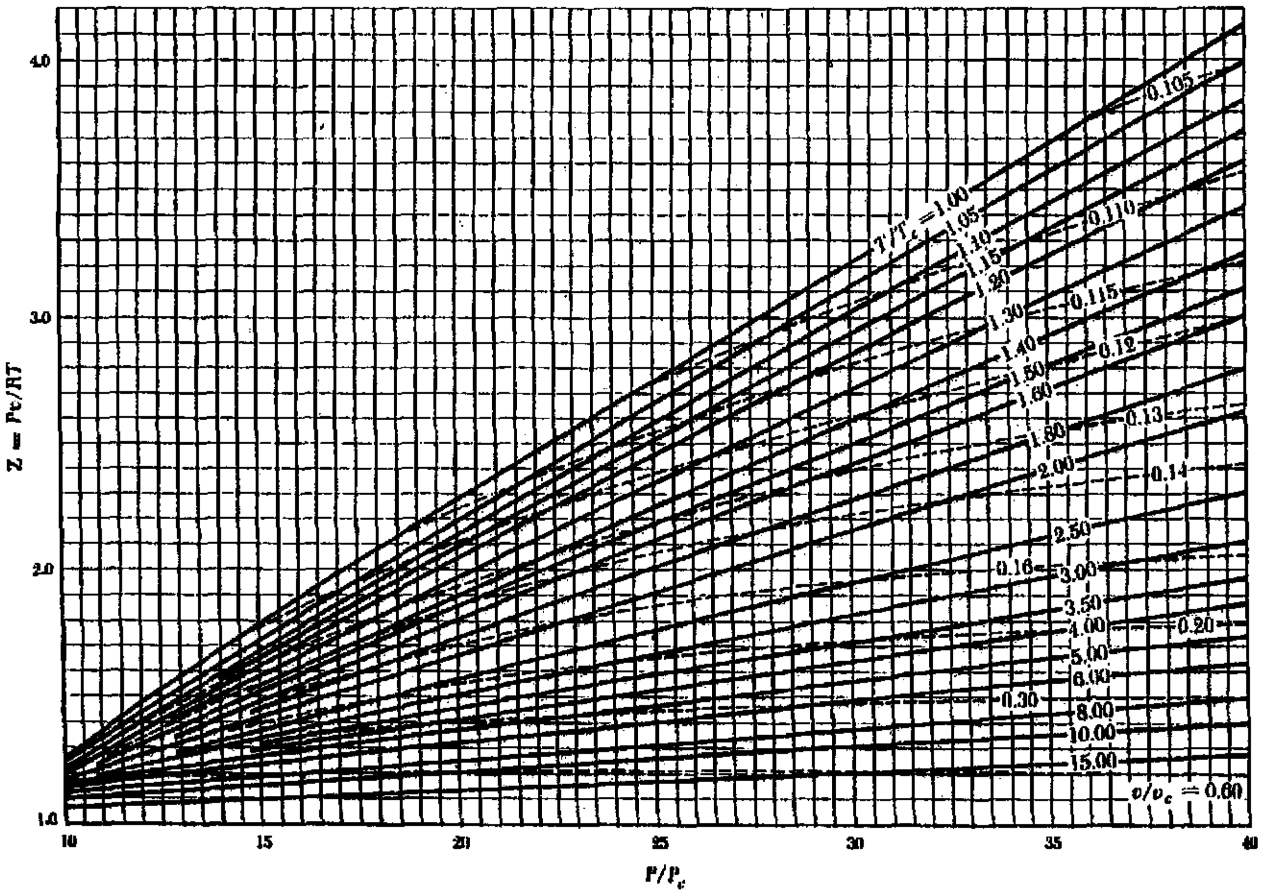
P Psia	Z	Density mol/liter	Enthalpy kJ/mol	Entropy J/mol.K	Cp J/mol.K	Cp/Cv
1881.000	1.11667	4.65469	0.32	90.716	29.5471	1.4032
2821.500	1.16954	6.66637	0.45	87.288	29.8468	1.3987
3762.000	1.22073	8.51574	0.57	84.850	30.0894	1.3928
4702.500	1.27099	10.22376	0.70	82.960	30.2854	1.3859
5643.000	1.32076	11.80620	0.82	81.420	30.4446	1.3785
6583.500	1.37030	13.27593	0.95	80.123	30.5753	1.3708
7524.000	1.41976	14.64402	1.08	79.006	30.6847	1.3630

The hand-calculated values are as follows:

Psia	Z	% Difference
1881.0	1.11	-0.60
2821.1	1.17	0.04
3762.2	1.22	-0.06
4702.3	1.28	0.70
5643.4	1.35	2.17
6583.5	1.40	2.12
7524.6	1.45	2.09

Conclusion: The hand-calculated values matched the SUPERTRAPP computed values to within 3%. It should be noted that the hand-calculated values were hand-interpolated from a fairly simple chart. Also, the Generalized Compressibility Chart is itself an approximation. The method employed by SUPERTRAPP is a much more accurate means of computing these values. Thus, the agreement is acceptable and demonstrates that SUPERTRAPP is functioning correctly.

FIG. B·14b *Generalized compressibility chart—high-pressure range. Adapted from E. F. Obert, Concepts of Thermodynamics, McGraw-Hill Book Company, New York, 1960. Note:* $v/v_c \equiv P_c v/RT_c$



Attachment 3: VERIFICATION OF THE USE OF TABLECURVE2D IN THE DIRECT BRINE RELEASE CALCULATION

Person Performing Verification: Harvey C. Ogden, SNL-6848

Program Name: TABLECURVE2D
Version: 3 for Win32

Vendor: Jandel Scientific
2591 Kerner Blvd.
San Rafael, CA 94901

Description: TableCurve2D is a specialized program that uses automated statistical methods to process and X,Y data table for the best possible curve-fit equations. Once and appropriate equation has been selected, TableCurve2D can produce printed graphs and reports, files for use with major spreadsheets, and ready-to-compile code for the major languages used by scientists.

Usage: TableCurve2D was used in the Direct Brine Release calculation to produce a function y = f(x) to model Friction Factor as a function of M, Q, and D. This function was obtained by fitting a curve to data obtained from field measurements on flowing and gas-lift wells through annuli by Poettmann and Carpenter. The acceptance criteria for the selection of the fitted curve were twofold:

(1) The goodness-of-fit parameter, r^2, which is called the Coefficient of Determination, must be greater then .99
(2) The graph of the function must be smooth between data points and at the boundaries. This is checked by visual inspection of the plot.

Verification: This usage of the TableCurve2D software is verified by taking the field Friction Factor data and using Microsoft Excel to independently calculate the values from the fitted curve function, the residual error, and the Coefficient of Determination. These values, computed by Excel, are then manually compared to the corresponding values calculated by TableCurve2D. Also, both the fitted curve values and the field Friction Factor data values are graphed by Excel. This graph is then manually compared to the corresponding graph produced by TableCurve2D. The resulting Excel spreadsheet and graph are attached.

Conclusion:

The fitted curve values calculated by Excel compare with those calculated by TableCurve2D to at least six significant digits. The Excel calculated residual errors compare with the TableCurve2D residual errors to less than 1.e-6 absolute difference. The Excel calculated Coefficient of Determination, r^2, compares with the TableCurve2D calculated value to more than seven significant digits. This represents very close agreement and is deemed to be acceptable. The graph generated by Excel almost indistinguishable from the TableCurve2D graph.

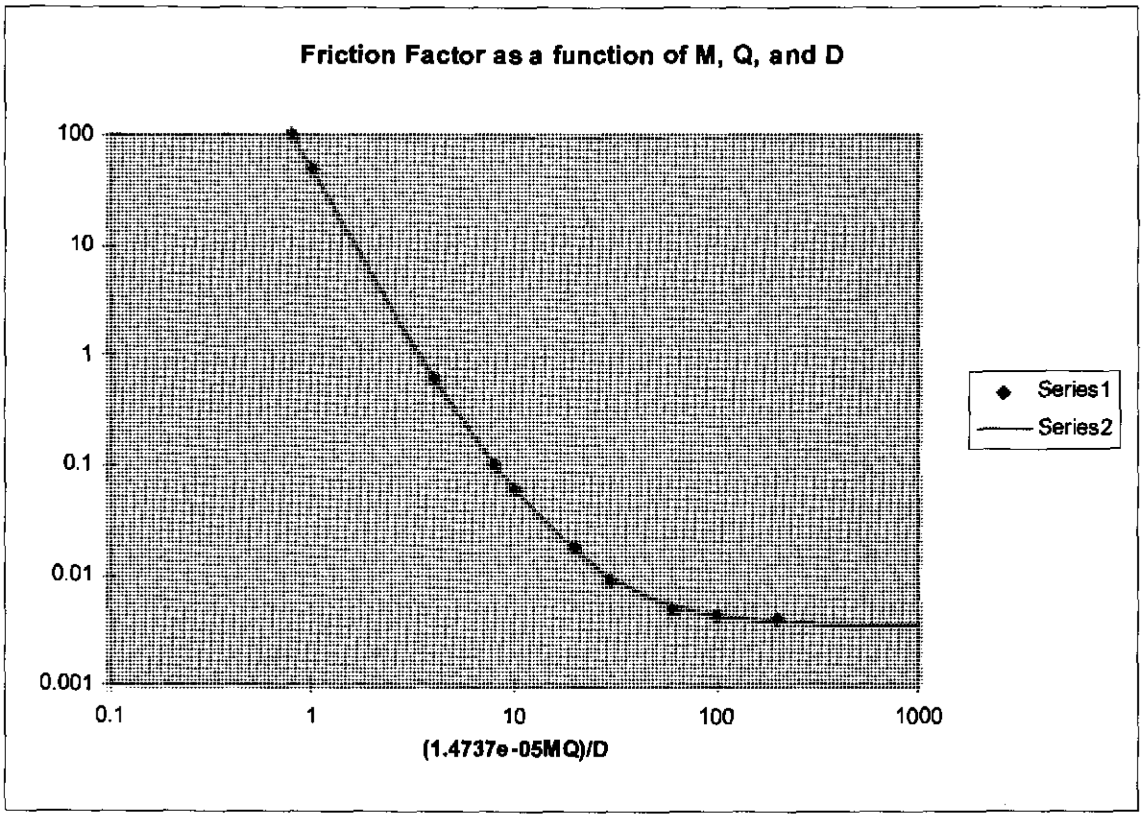
Thus, the agreement is acceptable and demonstrates that TableCurve2D is functioning correctly as used in this Direct Brine Release calculation.

The Microsoft Excel spreadsheet and graph are attached.

Y = a +b/x + c/x^2 + d/x^3 + e/x^4 + f/x^5		Mean =	15.08004
a =	0.0034152139	SSE=	2.62E-05
b=	0.0504089600	SSM=	10226.298
c=	3.8265844000	R^2=	1.000000
d=	8.0204911000		
e=	62.2259620000		
f=	-24.1268620000		

X	Y	Y Predict	Residual	Residual %	Residual^2	(Y-Mean)^2
0.8	100	100.00000	8.42E-06	8.41959E-06	7.08896E-12	7211.399606
1	50	50.000000	3.26E-06	6.52200E-06	1.06341E-12	1219.403606
4	0.6	0.6000079	-7.93E-05	-0.001321288	6.28489E-10	209.6715584
8	0.1	0.0996273	0.0003727	0.372671312	1.38884E-06	224.4015984
10	0.06	0.0607238	-0.000724	-1.206287633	5.23847E-06	225.6016016
20	0.018	0.0168861	0.0011139	6.188572747	1.24087E-05	226.865049
30	0.009	0.0097202	-0.000720	-8.001750415	5.18627E-06	227.1362467
60	0.005	0.0053602	-0.000360	-7.204112126	1.29748E-06	227.256831
100	0.0044	0.0043106	8.94E-04	2.031766408	7.99195E-08	227.2749214
200	0.004	0.0037640	0.0002360	5.90088282	5.57127E-07	227.2869821

X	Y Predict
0.8	99.9999992
0.9	69.7687879
1	49.9999997
2.5	2.4950693
4	0.6000079
6	0.2001537
8	0.0996273
9	0.0763357
10	0.0607238
15	0.0273567
20	0.0168861
25	0.0122242
30	0.0097202
45	0.0065281
60	0.0053602
80	0.0046604
100	0.0043106
150	0.0039238
200	0.0037640
500	0.0035314
1000	0.0034695


Friction Factor as a function of M, Q, and D
100
10
1
0.1
0.01
0.001
0.1
1
10
100
1000
(1.4737e-05MQ)/D
Series1
Series2

Attachment 4: VERIFICATION OF THE USE OF TABLECURVE3D IN THE DIRECT BRINE RELEASE CALCULATION

Person Performing Verification: Harvey C. Ogden, SNL-6848

Program Name: TABLECURVE3D
Version: 2 for Win32

Vendor: Jandel Scientific
2591 Kerner Blvd.
San Rafael, CA 94901

Description: TableCurve3D is a widely used automated surface fitting software package which is readily available through normal PC software outlets. The version used for this analysis was for an IBM-PC/AT compatible running either the Windows 3.1 or Windows 95 operating systems. The following paragraph is taken directly from the introduction section of the User's Manual.

TableCurve3D is a specialized program that uses automated statistical methods to process an X,Y,Z data table for the best possible surface-fit equations. Once and appropriate equation has been selected, TableCurve3D can produce printed graphs and reports, files for use with major spreadsheets, and ready-to-compile code for the major languages used by scientists. TableCurve3D is designed for the scientist or engineer who wants the highest quality automated surface-fitting available.

Usage: TableCurve3D was used in the Direct Brine Release calculation to produce surface-fit equations of the form, $z = f(x,y)$, for the following models:

(1) FBHP as a function of Brine Well Index and Panel Pressure (Krg=0, Brine only)
(2) FBHP as a function of Rel Permeabilities and Panel Pressure (brine dominated)
(3) FBHP as a function of Rel Permeabilities and Panel Pressure (gas dominated)
(4) Z-Factor as a function of Mole Fraction H2 and Panel Pressure

The acceptance criteria for the selection of the surface-fit equation were twofold:

(1) The goodness-of-fit parameter, r^2, which is called the Coefficient of Determination, must be greater then .9
(2) The graph of the fitted surface equation must be smooth between data points and at the boundaries. This is checked by a visual inspection of the graph as produced by TableCurve3D.

In each of the four cases listed above, the following information is provided in the analysis document:

(1) The graph of the fitted surface equation along with the discrete data values, as produced by TableCurve3D.
(2) A complete definition of the surface equation that was chosen along with the different goodness-of-fit parameters, including r^2.
(3) A table which lists the X,Y,Z coordinates of every discrete data value along with the computed value from the surface-fit equation and the calculated residual error.

From this information, it is readily verified how closely the selected surface-fit equation matches up with the individual discrete data values and how good the selected fit is overall.

Verification: Since the usage of TableCurve3D was essentially identical in all four instances, TableCurve3D is verified by taking the discrete data for one case, the Z-Factors, and using Microsoft Excel to independently calculate the values from the surface-fit equation, the residual error, and the Coefficient of Determination. These values, computed by Excel, are then manually compared to the corresponding values calculated by TableCurve3D and shown to be essentially identical. This verification demonstrates that TableCurve3D does calculate these values correctly.

Conclusion: The surface-fit values calculated by Excel compare with those calculated by TableCurve3D to at least six significant digits. The Excel calculated residual errors compare with the TableCurve3D residual errors to less than 1.e-6 absolute difference. The Excel calculated Coefficient of Determination, r^2, compares with the TableCurve3D calculated value to more than six significant digits.

Thus, the agreement between the Excel calculated values and those calculated by TableCurve3D is very close and clearly demonstrates that TableCurve3D is functioning correctly as used in the Direct Brine Release calculation.

The Microsoft Excel spreadsheet is attached.

Z = (a + cx + ey + gx^2 + iy^2 + kxy)/(1 + bx + dy + fx^2 + hy^2 + jxy)

X Value	Y Value	Z Value	Z Predict	Residual	Residual%	Residual^2	(z-mean)^2
0	14.7	0.995132	0.9669793	0.0281527	2.8290454	0.0007926	0.0001179
0	100	0.966427	0.9515087	0.0149183	1.5436538	0.0002226	0.0015654
0	200	0.931004	0.9318882	-0.0008842	-0.0949719	0.0000008	0.0056231
0.1	14.7	0.996606	0.9770316	0.0195744	1.9641092	0.0003832	0.0000881
0.1	100	0.976631	0.9642167	0.0124143	1.2711358	0.0001541	0.0008620
0.1	200	0.952587	0.9480402	0.0045468	0.4773152	0.0000207	0.0028520
0.1	300	0.927847	0.9305601	-0.0027131	-0.2924087	0.0000074	0.0061066
0.1	400	0.90239	0.9117250	-0.0093350	-1.0344766	0.0000871	0.0107333
0.1	500	0.876196	0.8914986	-0.0153028	-1.7464985	0.0002342	0.0168469
0.1	600	0.849245	0.8698663	-0.0206213	-2.4281933	0.0004252	0.0245695
0.1	700	0.821513	0.8468404	-0.0253274	-3.0830212	0.0006415	0.0340323
0.1	800	0.792977	0.8224688	-0.0294918	-3.7191297	0.0008698	0.0453752
0.1	900	0.763609	0.7968421	-0.0332331	-4.3521033	0.0011044	0.0587493
0.1	1000	0.733377	0.7701007	-0.0367237	-5.0074833	0.0013486	0.0743187
0.1	1100	0.702249	0.7424424	-0.0401934	-5.7235197	0.0016155	0.0922595
0.1	1200	0.670212	0.7141259	-0.0439139	-6.5522401	0.0019284	0.1127479
0.1	1300	0.63732	0.6854735	-0.0481535	-7.5556160	0.0023186	0.1359187
0.1	2500	0.464815	0.4692705	-0.0044555	-0.9585517	0.0000199	0.2928720
0.1	2600	0.470937	0.4707071	0.0002299	0.0488157	0.0000001	0.2862833
0.1	2700	0.477927	0.4750538	0.0028732	0.6011833	0.0000083	0.2788521
0.1	2800	0.485584	0.4819926	0.0035914	0.7395953	0.0000129	0.2708240
0.1	2900	0.493761	0.4911761	0.0025849	0.5235222	0.0000067	0.2623801
0.1	3000	0.502347	0.5022480	0.0001010	0.0200971	0.0000000	0.2536578
0.2	14.7	0.997731	0.9867629	0.0109681	1.0993060	0.0001203	0.0000682
0.2	100	0.984504	0.9771566	0.0073474	0.7463095	0.0000540	0.0004617
0.2	200	0.968888	0.9651573	0.0037307	0.3850514	0.0000139	0.0013767
0.2	300	0.953185	0.9523460	0.0008390	0.0880211	0.0000007	0.0027885
0.2	400	0.937437	0.9387169	-0.0012799	-0.1365366	0.0000016	0.0046997
0.2	500	0.921685	0.9242791	-0.0025941	-0.2814563	0.0000067	0.0071076
0.2	600	0.905978	0.9090599	-0.0030819	-0.3401783	0.0000095	0.0100027
0.2	700	0.890364	0.8931088	-0.0027448	-0.3082803	0.0000075	0.0133697
0.2	800	0.874895	0.8765011	-0.0016061	-0.1835726	0.0000026	0.0171863
0.2	900	0.859624	0.8593412	0.0002828	0.0329034	0.0000001	0.0214235
0.2	1000	0.844602	0.8417653	0.0028367	0.3358676	0.0000080	0.0260466
0.2	1100	0.829882	0.8239425	0.0059395	0.7156987	0.0000353	0.0310146
0.2	1200	0.815513	0.8060747	0.0094383	1.1573463	0.0000891	0.0362821
0.2	1300	0.801543	0.7883931	0.0131499	1.6405762	0.0001729	0.0417992
0.2	1400	0.788021	0.7711534	0.0168676	2.1404984	0.0002845	0.0475111
0.2	1500	0.774998	0.7546277	0.0203703	2.6284360	0.0004150	0.0533580
0.2	1600	0.76253	0.7390934	0.0234366	3.0735360	0.0005493	0.0592735
0.2	1700	0.75068	0.7248211	0.0258589	3.4447318	0.0006687	0.0651840
0.2	1800	0.73952	0.7120610	0.0274590	3.7130873	0.0007540	0.0710071
0.3	14.7	0.998626	0.9950292	0.0035968	0.3601759	0.0000129	0.0000543
0.3	100	0.990691	0.9887336	0.0019574	0.1975826	0.0000038	0.0002341
0.3	200	0.981486	0.9810098	0.0004762	0.0485173	0.0000002	0.0006005
0.3	300	0.972414	0.9729286	-0.0005146	-0.0529217	0.0000003	0.0011275

a=	0.96953278
b=	-0.53291978
c=	-0.42234014
d=	-0.000526066
e=	-0.000682647
f=	1.9968523
g=	1.9224323
h=	1.25E-07
I=	1.37E-07
j=	0.000256309
k=	0.000540534

SSE=	0.0218382
Mean Z=	1.005991525
SSM=	4.3951641
R^2=	0.995031319

Note: R^2 = 1.0 - SSE/SSM

SSE = Sum of squared error residuals

SSM = Sum of squares about mean

0.3	400	0.963506	0.9645121	-0.0010061	-0.1044176	0.0000010	0.0018050
0.3	500	0.954794	0.9557923	-0.0009983	-0.1045580	0.0000010	0.0026212
0.3	600	0.946309	0.9468129	-0.0005039	-0.0532442	0.0000003	0.0035620
0.3	700	0.938079	0.9376296	0.0004494	0.0479027	0.0000002	0.0046121
0.3	800	0.930132	0.9283118	0.0018202	0.1956963	0.0000033	0.0057547
0.3	900	0.922494	0.9189418	0.0035522	0.3850683	0.0000126	0.0069718
0.3	1000	0.915186	0.9096151	0.0055709	0.6087145	0.0000310	0.0082456
0.3	1100	0.90823	0.9004391	0.0077909	0.8578148	0.0000607	0.0095573
0.3	1200	0.901641	0.8915304	0.0101106	1.1213601	0.0001022	0.0108890
0.3	1300	0.895433	0.8830122	0.0124208	1.3871263	0.0001543	0.0122232
0.3	1400	0.889616	0.8750103	0.0146057	1.6418006	0.0002133	0.0135433
0.3	1500	0.8842	0.8676479	0.0165521	1.8719873	0.0002740	0.0148332
0.3	1600	0.87919	0.8610409	0.0181491	2.0642977	0.0003294	0.0160786
0.3	1700	0.874592	0.8552925	0.0192995	2.2066876	0.0003725	0.0172658
0.3	1800	0.87041	0.8504883	0.0199217	2.2887728	0.0003969	0.0183823
0.3	1900	0.866649	0.8466925	0.0199565	2.3027255	0.0003983	0.0194163
0.3	2000	0.863311	0.8439448	0.0193662	2.2432495	0.0003751	0.0203577
0.3	2100	0.860401	0.8422594	0.0181416	2.1085019	0.0003291	0.0211966
0.3	2200	0.857923	0.8416251	0.0162979	1.8996950	0.0002656	0.0219243
0.3	2300	0.855881	0.8420066	0.0138744	1.6210653	0.0001925	0.0225332
0.3	2400	0.85428	0.8433480	0.0109320	1.2796762	0.0001195	0.0230164
0.4	14.7	0.999355	1.0011177	-0.0017627	-0.1763849	0.0000031	0.0000440
0.4	100	0.99568	0.9978341	-0.0021541	-0.2163461	0.0000046	0.0001063
0.4	200	0.991525	0.9939386	-0.0024136	-0.2434253	0.0000058	0.0002093
0.4	300	0.98755	0.9900159	-0.0024659	-0.2497028	0.0000061	0.0003401
0.4	400	0.983772	0.9860937	-0.0023217	-0.2359961	0.0000054	0.0004937
0.4	500	0.980206	0.9822035	-0.0019975	-0.2037878	0.0000040	0.0006649
0.4	600	0.976866	0.9783814	-0.0015154	-0.1551250	0.0000023	0.0008483
0.4	700	0.973764	0.9746667	-0.0009027	-0.0926992	0.0000008	0.0010386
0.4	800	0.970909	0.9711022	-0.0001932	-0.0199007	0.0000000	0.0012308
0.4	900	0.968311	0.9677332	0.0005778	0.0596723	0.0000003	0.0014198
0.4	1000	0.965977	0.9646062	0.0013708	0.1419128	0.0000019	0.0016012
0.4	1100	0.963911	0.9617678	0.0021432	0.2223431	0.0000046	0.0017708
0.4	1200	0.962117	0.9592635	0.0028535	0.2965891	0.0000081	0.0019250
0.4	1300	0.960596	0.9571354	0.0034606	0.3602512	0.0000120	0.0020608
0.4	1400	0.95935	0.9554214	0.0039286	0.4095063	0.0000154	0.0021754
0.4	1500	0.958378	0.9541528	0.0042252	0.4408742	0.0000179	0.0022670
0.4	1600	0.957678	0.9533533	0.0043247	0.4515859	0.0000187	0.0023342
0.4	1700	0.957247	0.9530379	0.0042091	0.4397103	0.0000177	0.0023760
0.4	1800	0.957082	0.9532121	0.0038699	0.4043416	0.0000150	0.0023921
0.4	1900	0.957179	0.9538717	0.0033073	0.3455258	0.0000109	0.0023827
0.4	2000	0.957536	0.9550028	0.0025332	0.2645496	0.0000064	0.0023479
0.4	2100	0.958147	0.9565829	0.0015641	0.1632399	0.0000024	0.0022891
0.4	2200	0.959009	0.9585816	0.0004274	0.0445716	0.0000002	0.0022074
0.4	2300	0.960116	0.9609620	-0.0008440	-0.0879044	0.0000007	0.0021044
0.4	2400	0.96147	0.9636827	-0.0022127	-0.2301337	0.0000049	0.0019822
0.4	2500	0.96306	0.9666989	-0.0036389	-0.3778486	0.0000132	0.0018431
0.4	2600	0.964885	0.9699645	-0.0050795	-0.5264356	0.0000258	0.0016897
0.4	2700	0.966942	0.9734332	-0.0064912	-0.6713101	0.0000421	0.0015249
0.4	2800	0.969226	0.9770600	-0.0078340	-0.8082687	0.0000614	0.0013517
0.4	2900	0.971733	0.9808021	-0.0090691	-0.9332920	0.0000822	0.0011736
0.4	3000	0.974461	0.9846200	-0.0101590	-1.0425292	0.0001032	0.0009942

0.5	14.7	0.999938	1.0048964	-0.0049584	-0.4958754	0.0000246	0.0000366
0.5	100	0.999635	1.0040992	-0.0044642	-0.4465800	0.0000199	0.0000404
0.5	200	0.999413	1.0033001	-0.0038871	-0.3889349	0.0000151	0.0000433
0.5	300	0.99934	1.0026657	-0.0033257	-0.3327852	0.0000111	0.0000442
0.5	400	0.999423	1.0022154	-0.0027924	-0.2794054	0.0000078	0.0000431
0.5	500	0.999667	1.0019687	-0.0023017	-0.2302472	0.0000053	0.0000400
0.5	600	1.00008	1.0019440	-0.0018640	-0.1863859	0.0000035	0.0000349
0.5	700	1.00065	1.0021586	-0.0015086	-0.1507658	0.0000023	0.0000285
0.5	800	1.0014	1.0026280	-0.0012280	-0.1226290	0.0000015	0.0000211
0.5	900	1.00232	1.0033650	-0.0010450	-0.1042613	0.0000011	0.0000135
0.5	1000	1.00342	1.0043795	-0.0009595	-0.0956252	0.0000009	0.0000066
0.5	1100	1.00469	1.0056776	-0.0009876	-0.0983009	0.0000010	0.0000017
0.5	1200	1.00613	1.0072613	-0.0011313	-0.1124418	0.0000013	0.0000000
0.5	1300	1.00775	1.0091261	-0.0013761	-0.1367483	0.0000019	0.0000031
0.5	1400	1.00954	1.0112707	-0.0017307	-0.1714343	0.0000030	0.0000126
0.5	1500	1.01149	1.0136772	-0.0021872	-0.2162351	0.0000048	0.0000302
0.5	1600	1.01362	1.0163310	-0.0027110	-0.2674611	0.0000073	0.0000582
0.5	1700	1.0159	1.0192115	-0.0033115	-0.3259654	0.0000110	0.0000982
0.5	1800	1.01835	1.0222941	-0.0039441	-0.3873037	0.0000156	0.0001527
0.5	1900	1.02095	1.0255515	-0.0046015	-0.4507082	0.0000212	0.0002238
0.5	2000	1.02371	1.0289541	-0.0052441	-0.5122614	0.0000275	0.0003139
0.5	2100	1.02661	1.0324709	-0.0058609	-0.5708943	0.0000343	0.0004251
0.5	2200	1.02967	1.0360704	-0.0064004	-0.6216008	0.0000410	0.0005607
0.5	2300	1.03286	1.0397217	-0.0068617	-0.6643430	0.0000471	0.0007219
0.5	2400	1.0362	1.0433948	-0.0071948	-0.6943422	0.0000518	0.0009126
0.5	2500	1.03968	1.0470613	-0.0073813	-0.7099626	0.0000545	0.0011349
0.5	2600	1.04329	1.0506955	-0.0074055	-0.7098197	0.0000548	0.0013912
0.5	2700	1.04703	1.0542739	-0.0072439	-0.6918510	0.0000525	0.0016842
0.5	2800	1.05089	1.0577762	-0.0068862	-0.6552690	0.0000474	0.0020159
0.5	2900	1.05489	1.0611849	-0.0062949	-0.5967330	0.0000396	0.0023911
0.5	3000	1.059	1.0644856	-0.0054856	-0.5180028	0.0000301	0.0028099
0.6	14.7	1.00038	1.0066710	-0.0062910	-0.6286616	0.0000396	0.0000315
0.6	100	1.00263	1.0077830	-0.0051530	-0.5139488	0.0000266	0.0000113
0.6	200	1.00534	1.0093094	-0.0039694	-0.3948350	0.0000158	0.0000004
0.6	300	1.00815	1.0110856	-0.0029356	-0.2911832	0.0000086	0.0000047
0.6	400	1.01104	1.0131192	-0.0020792	-0.2056503	0.0000043	0.0000255
0.6	500	1.01402	1.0154158	-0.0013958	-0.1376532	0.0000019	0.0000645
0.6	600	1.01709	1.0179782	-0.0008882	-0.0873242	0.0000008	0.0001232
0.6	700	1.02026	1.0208058	-0.0005458	-0.0535010	0.0000003	0.0002036
0.6	800	1.02352	1.0238951	-0.0003751	-0.0366514	0.0000001	0.0003072
0.6	900	1.02667	1.0272387	-0.0003687	-0.0359010	0.0000001	0.0004359
0.6	1000	1.03032	1.0308253	-0.0005053	-0.0490437	0.0000003	0.0005919
0.6	1100	1.03386	1.0346402	-0.0007802	-0.0754656	0.0000006	0.0007767
0.6	1200	1.03749	1.0386648	-0.0011748	-0.1132370	0.0000014	0.0009922
0.6	1300	1.04122	1.0428772	-0.0016572	-0.1591574	0.0000027	0.0012410
0.6	1400	1.04503	1.0472522	-0.0022222	-0.2126476	0.0000049	0.0015240
0.6	1500	1.04893	1.0517623	-0.0028323	-0.2700210	0.0000080	0.0018437
0.6	1600	1.05292	1.0563778	-0.0034578	-0.3284015	0.0000120	0.0022023
0.6	1700	1.057	1.0610676	-0.0040676	-0.3848249	0.0000185	0.0026019
0.6	1800	1.06116	1.0658000	-0.0046400	-0.4372546	0.0000215	0.0030436
0.6	1900	1.0654	1.0705432	-0.0051432	-0.4827476	0.0000265	0.0035294
0.6	2000	1.06973	1.0752662	-0.0055362	-0.5175367	0.0000307	0.0040626

0.6	2100	1.07413	1.0799394	-0.0058094	-0.5408509	0.0000337	0.0046429
0.6	2200	1.07861	1.0845350	-0.0059250	-0.5493179	0.0000351	0.0052734
0.6	2300	1.08317	1.0890275	-0.0058575	-0.5407736	0.0000343	0.0059565
0.6	2400	1.0878	1.0933942	-0.0055942	-0.5142717	0.0000313	0.0066926
0.6	2500	1.0925	1.0976155	-0.0051155	-0.4682405	0.0000262	0.0074837
0.6	2600	1.09728	1.1016747	-0.0043947	-0.4005111	0.0000193	0.0083336
0.6	2700	1.10212	1.1055584	-0.0034384	-0.3119788	0.0000118	0.0092407
0.6	2800	1.10704	1.1092561	-0.0022161	-0.2001827	0.0000049	0.0102108
0.6	2900	1.11202	1.1127605	-0.0007405	-0.0665867	0.0000005	0.0112420
0.6	3000	1.11706	1.1160668	0.0009932	0.0889157	0.0000010	0.0123362
0.7	14.7	1.00071	1.0069350	-0.0062250	-0.6220557	0.0000388	0.0000279
0.7	100	1.0048	1.0094370	-0.0046370	-0.4614827	0.0000215	0.0000014
0.7	200	1.00963	1.0126186	-0.0029886	-0.2960063	0.0000089	0.0000132
0.7	300	1.01447	1.0160689	-0.0015989	-0.1576045	0.0000026	0.0000719
0.7	400	1.01933	1.0197859	-0.0004559	-0.0447228	0.0000002	0.0001779
0.7	500	1.02421	1.0237648	0.0004452	0.0434663	0.0000002	0.0003319
0.7	600	1.02912	1.0279978	0.0011222	0.1090446	0.0000013	0.0005349
0.7	700	1.03406	1.0324738	0.0015882	0.1533953	0.0000025	0.0007878
0.7	800	1.03902	1.0371788	0.0018414	0.1772264	0.0000034	0.0010909
0.7	900	1.04401	1.0420948	0.0019152	0.1834506	0.0000037	0.0014454
0.7	1000	1.04903	1.0472019	0.0018281	0.1742656	0.0000033	0.0018523
0.7	1100	1.05408	1.0524768	0.0016032	0.1520946	0.0000026	0.0023125
0.7	1200	1.05916	1.0578937	0.0012663	0.1195532	0.0000016	0.0028269
0.7	1300	1.06427	1.0634249	0.0008451	0.0794064	0.0000007	0.0033964
0.7	1400	1.0694	1.0690408	0.0003592	0.0335859	0.0000001	0.0040206
0.7	1500	1.07457	1.0747110	-0.0001410	-0.0131174	0.0000000	0.0047030
0.7	1600	1.07977	1.0804041	-0.0006341	-0.0587276	0.0000004	0.0054433
0.7	1700	1.085	1.0860892	-0.0010892	-0.1003866	0.0000012	0.0062423
0.7	1800	1.09025	1.0917356	-0.0014856	-0.1362600	0.0000022	0.0070995
0.7	1900	1.09554	1.0973138	-0.0017738	-0.1619082	0.0000031	0.0080169
0.7	2000	1.10086	1.1027959	-0.0019359	-0.1758497	0.0000037	0.0090000
0.7	2100	1.10621	1.1081559	-0.0019459	-0.1759097	0.0000038	0.0100437
0.7	2200	1.11159	1.1133704	-0.0017804	-0.1601687	0.0000032	0.0111510
0.7	2300	1.11699	1.1184184	-0.0014284	-0.1278783	0.0000020	0.0123207
0.7	2400	1.12243	1.1232817	-0.0008517	-0.0758799	0.0000007	0.0135579
0.7	2500	1.1279	1.1279451	-0.0000451	-0.0040005	0.0000000	0.0148617
0.7	2600	1.13339	1.1323964	0.0009936	0.0876704	0.0000010	0.0162304
0.7	2700	1.13891	1.1366260	0.0022840	0.2005462	0.0000052	0.0176673
0.7	2800	1.14446	1.1406273	0.0038327	0.3348936	0.0000147	0.0191735
0.7	2900	1.15004	1.1443962	0.0056438	0.4907449	0.0000319	0.0207500
0.7	3000	1.15564	1.1479312	0.0077088	0.6670614	0.0000594	0.0223947
0.8	14.7	1.00091	1.0061783	-0.0052683	-0.5283546	0.0000278	0.0000258
0.8	100	1.00517	1.0096508	-0.0034808	-0.3459443	0.0000121	0.0000000
0.8	200	1.0123	1.0139618	-0.0016618	-0.1641596	0.0000028	0.0000398
0.8	300	1.01839	1.0185264	-0.0001364	-0.0133935	0.0000000	0.0001537
0.8	400	1.02445	1.0233363	0.0011137	0.1087104	0.0000012	0.0003407
0.8	500	1.03048	1.0283806	0.0020994	0.2037273	0.0000044	0.0005997
0.8	600	1.03648	1.0336458	0.0028342	0.2734438	0.0000080	0.0009295
0.8	700	1.04246	1.0391157	0.0033443	0.3208058	0.0000112	0.0013299
0.8	800	1.04842	1.0447718	0.0036482	0.3479736	0.0000133	0.0018002
0.8	900	1.05435	1.0505930	0.0037570	0.3563325	0.0000141	0.0023385
0.8	1000	1.06027	1.0565584	0.0037136	0.3502522	0.0000138	0.0029462

0.8	1100	1.06617	1.0626370	0.0035330	0.3313720	0.0000125	0.0036214
0.8	1200	1.07206	1.0686085	0.0032515	0.3032924	0.0000106	0.0043850
0.8	1300	1.07793	1.0750434	0.0028866	0.2677898	0.0000083	0.0051751
0.8	1400	1.0838	1.0813135	0.0024865	0.2294283	0.0000062	0.0060542
0.8	1500	1.08965	1.0875901	0.0020599	0.1890396	0.0000042	0.0069987
0.8	1600	1.0955	1.0938450	0.0016550	0.1510681	0.0000027	0.0080118
0.8	1700	1.10134	1.1000504	0.0012896	0.1170955	0.0000017	0.0090913
0.8	1800	1.10717	1.1061793	0.0009907	0.0894843	0.0000010	0.0102371
0.8	1900	1.113	1.1122061	0.0007939	0.0713265	0.0000006	0.0114508
0.8	2000	1.11883	1.1181071	0.0007229	0.0646087	0.0000005	0.0127325
0.8	2100	1.12465	1.1238603	0.0007897	0.0702159	0.0000006	0.0140798
0.8	2200	1.13047	1.1294459	0.0010241	0.0905919	0.0000010	0.0154949
0.8	2300	1.13629	1.1348464	0.0014436	0.1270473	0.0000021	0.0169777
0.8	2400	1.14211	1.1400467	0.0020633	0.1806535	0.0000043	0.0185282
0.8	2500	1.14793	1.1450344	0.0028956	0.2522452	0.0000084	0.0201465
0.8	2600	1.15375	1.1497993	0.0039507	0.3424268	0.0000156	0.0218326
0.8	2700	1.15957	1.1543336	0.0052364	0.4515830	0.0000274	0.0235863
0.8	2800	1.1654	1.1586320	0.0067680	0.5807459	0.0000458	0.0254111
0.8	2900	1.17122	1.1626913	0.0085287	0.7281929	0.0000727	0.0273004
0.8	3000	1.17705	1.1665102	0.0105398	0.8954423	0.0001111	0.0292610
0.9	14.7	1.001	1.0047975	-0.0037975	-0.3793705	0.0000144	0.0000249
0.9	100	1.00678	1.0089218	-0.0021418	-0.2127425	0.0000046	0.0000006
0.9	200	1.01349	1.0139733	-0.0004833	-0.0476875	0.0000002	0.0000562
0.9	300	1.02013	1.0192491	0.0008609	0.0863505	0.0000008	0.0001999
0.9	400	1.02669	1.0247376	0.0019524	0.1901647	0.0000038	0.0004284
0.9	500	1.03319	1.0304250	0.0027650	0.2676161	0.0000076	0.0007398
0.9	600	1.03964	1.0362956	0.0033444	0.3216883	0.0000112	0.0011322
0.9	700	1.04603	1.0423317	0.0036983	0.3535597	0.0000137	0.0016031
0.9	800	1.05236	1.0485137	0.0038463	0.3654888	0.0000148	0.0021500
0.9	900	1.05865	1.0548208	0.0038292	0.3617055	0.0000147	0.0027729
0.9	1000	1.06489	1.0612304	0.0036596	0.3436553	0.0000134	0.0034690
0.9	1100	1.07109	1.0677192	0.0033708	0.3147104	0.0000114	0.0042378
0.9	1200	1.07725	1.0742626	0.0029874	0.2773142	0.0000089	0.0050778
0.9	1300	1.08338	1.0808360	0.0025440	0.2348213	0.0000065	0.0059890
0.9	1400	1.08946	1.0874142	0.0020458	0.1877821	0.0000042	0.0069670
0.9	1500	1.09552	1.0939723	0.0015477	0.1412777	0.0000024	0.0080153
0.9	1600	1.10155	1.1004857	0.0010643	0.0966163	0.0000011	0.0091314
0.9	1700	1.10754	1.1069307	0.0006093	0.0550111	0.0000004	0.0103121
0.9	1800	1.11351	1.1132845	0.0002255	0.0202521	0.0000001	0.0115602
0.9	1900	1.11946	1.1195255	-0.0000655	-0.0058471	0.0000000	0.0128751
0.9	2000	1.12538	1.1256335	-0.0002535	-0.0225298	0.0000001	0.0142536
0.9	2100	1.13128	1.1315903	-0.0003103	-0.0274322	0.0000001	0.0156972
0.9	2200	1.13716	1.1373792	-0.0002192	-0.0192761	0.0000000	0.0172052
0.9	2300	1.14302	1.1429854	0.0000346	0.0030253	0.0000000	0.0187768
0.9	2400	1.14887	1.1483962	0.0004738	0.0412369	0.0000002	0.0204143
0.9	2500	1.15469	1.1536009	0.0010891	0.0943193	0.0000012	0.0221112
0.9	2600	1.16051	1.1585906	0.0019194	0.1653900	0.0000037	0.0238760
0.9	2700	1.1663	1.1633586	0.0029414	0.2522000	0.0000087	0.0256988
0.9	2800	1.17209	1.1678998	0.0041902	0.3574964	0.0000176	0.0275867
0.9	2900	1.17786	1.1722111	0.0056489	0.4795871	0.0000319	0.0295388
0.9	3000	1.18362	1.1762910	0.0073290	0.6192006	0.0000537	0.0315519
1	14.7	1.00101	1.0030778	-0.0020678	-0.2065756	0.0000043	0.0000248

1	100	1.00681	1.0076209	-0.0008109	-0.0805424	0.0000007	0.0000007
1	200	1.01353	1.0131345	0.0003955	0.0390265	0.0000002	0.0000568
1	300	1.02015	1.0188396	0.0013104	0.1284502	0.0000017	0.0002005
1	400	1.0267	1.0247234	0.0019766	0.1925157	0.0000039	0.0004288
1	500	1.03317	1.0307714	0.0023986	0.2321571	0.0000058	0.0007387
1	600	1.03957	1.0369676	0.0026024	0.2503359	0.0000068	0.0011275
1	700	1.0459	1.0432846	0.0026054	0.2491060	0.0000068	0.0015927
1	800	1.05216	1.0497340	0.0024260	0.2305778	0.0000059	0.0021315
1	900	1.05836	1.0562661	0.0020939	0.1978445	0.0000044	0.0027425
1	1000	1.06451	1.0628706	0.0016394	0.1540017	0.0000027	0.0034244
1	1100	1.0706	1.0695266	0.0010734	0.1002643	0.0000012	0.0041743
1	1200	1.07665	1.0762125	0.0004375	0.0406370	0.0000002	0.0049926
1	1300	1.08264	1.0829068	-0.0002668	-0.0246412	0.0000001	0.0058750
1	1400	1.08859	1.0895879	-0.0009979	-0.0916705	0.0000010	0.0068225
1	1500	1.0945	1.0962347	-0.0017347	-0.1584881	0.0000030	0.0078338
1	1600	1.10036	1.1028262	-0.0024662	-0.2241300	0.0000061	0.0089054
1	1700	1.10619	1.1093426	-0.0031526	-0.2849999	0.0000099	0.0100397
1	1800	1.11198	1.1157647	-0.0037647	-0.3403602	0.0000143	0.0112336
1	1900	1.11774	1.1220745	-0.0043345	-0.3877901	0.0000188	0.0124877
1	2000	1.12347	1.1282551	-0.0047851	-0.4259183	0.0000229	0.0138012
1	2100	1.12916	1.1342910	-0.0051310	-0.4544095	0.0000263	0.0151705
1	2200	1.13483	1.1401683	-0.0053383	-0.4704055	0.0000285	0.0165994
1	2300	1.14047	1.1458744	-0.0054044	-0.4738784	0.0000292	0.0180845
1	2400	1.14609	1.1513985	-0.0053085	-0.4631822	0.0000282	0.0196276
1	2500	1.15168	1.1567311	-0.0050511	-0.4385830	0.0000255	0.0212251
1	2600	1.15725	1.1618644	-0.0046144	-0.3987396	0.0000213	0.0228791
1	2700	1.1628	1.1667923	-0.0039923	-0.3433319	0.0000159	0.0245889
1	2800	1.16833	1.1715099	-0.0031799	-0.2721724	0.0000101	0.0263538
1	2900	1.17384	1.1760139	-0.0021739	-0.1851977	0.0000047	0.0281731
1	3000	1.17933	1.1803025	-0.0009725	-0.0824588	0.0000009	0.0300462

Attachment 5: Memo from Dan Stoelzel to Mel Marietta "Response to Westinghouse Memo on Brine Blowout Duration", SNL, May 31, 1996.

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10/29/96 16:10 ☎ 001

Sandia National Laboratories

Albuquerque, New Mexico 87185-MS1328

date: May 31, 1996

to: Mel Marietta

from: Dan Stoelzel

subject: Response to Westinghouse Memo on brine blowout duration

The Westinghouse memo contains good statistical information on brine flows encountered by oil and gas Drillers in the Delaware Basin around the WIPP location. Apparently these flows always originate in the upper portion of the Castile formation. The brine flows are usually of small enough volume and duration as to go undetected by the driller. In those instances where the flows are noticed by the driller, common practice is to observe the flows until the rates drop off to a low enough "comfort level", at which point drilling commences. In rare cases, the flows cause enough concern for the driller to "kill" the well by weighting up and circulating higher density drilling mud into the hole.

There are two blowout conditions which remain to be addressed:

- The fact that the WIPP horizon is ~800 feet shallower depth than the Castile formation.
- The fact that a significant number of realizations in the PA models show high gas saturations and pressures in the waste panels at intrusion in the future.

Westinghouse states that the maximum reasonable time to drill and case through the Castile is 44 hours. However, because we are calculating direct releases from a penetration in the WIPP site, an additional 800 feet will need to be drilled which will add to the time that contaminated brine could "trickle" into the wellbore for the undetected case. Using their drilling rates (36 hours / 1200 feet = 0.03 hr/ft) times 2,000 feet gives 60 hours, plus 8 hours to case and cement the interval, gives a total of 68 hours. In Chapter 9 of the BID, the EPA states that the salt section will remain uncased for three days (72 hours) after a driller penetrates the WIPP horizon, which is very close to the Westinghouse estimate. I recommend we use 72 hours as a cut-off for the mostly brine flows (little or no gas) that may be encountered by the future driller. The current model used to calculate direct releases predicts fairly low brine rates, therefore the "kill" scenario need not be considered, and we can use 72 hours as the "minimum" flow duration for all blowout calculations.

Exceptional Service in the National Interest

Westinghouse makes no mention of the flow durations for unexpected gas encounters at the WIPP horizon. I recommend we use a "cut-off" gas flow rate, above which it is assumed the well flows uncontrolled. When the gas flow rate drops below this value, the well is controlled and releases stop. Should the gas rates stay above this cut-off, we can assume it takes 11 days to control the blowout. This number is based on the amount of time it took to control the South Culebra Bluff Unit #1 well, which took an unexpected gas kick and blew out of control in January, 1978 (see attached page from Powers report to Les Hill, dated 7/24/95, to be included in Wellbore Enlargement Investigation..... Sand report in progress).

Figures 1 and 2 show examples of expected releases for a high brine, low gas flow intrusion into a downdip panel. Figure 1 assumes a cut-off gas rate of 100 mscf/day (100,000 standard cubic feet per day), which results in the minimum flow duration of 72 hours, since the gas flows are below 100 mscf/d after 3 days. Figure 2 assumes a cut-off gas rate of 55 mscf/d, which results in ~7 days flow duration for the same realization. Figure 3 shows rates for the same realization in an updip panel, resulting in a high rate gas blowout. This type scenario flows for the maximum time of 11 days. Note that in this case, brine releases are minimal (fractions of a m^3), compared to the mostly brine flow realizations which result in releases of 7 and 13 m^3. I recommend using a cut-off gas rate of 100 mscf/d, as this is a reasonably low enough rate (in my opinion) for a future driller to gain control of the well, assuming it started out uncontrolled.

In conclusion, I recommend the flow duration for the direct brine release calculations to be a minimum of 3 days (72 hours), up to a maximum of 11 days for high rate gas blowouts. Between these two extremes, I recommend using a cut-off gas flow rate of 100 mscf/d, above which the well will continue to flow.

available from SWCF as WP03841 and 03842. WIPP 12 caliper logs (Activities 12.5 and 12.16) bracket about 30,000 bbls of flow during testing, with no drilling during this time. The earlier log was taken 11/27/81 and the later log was taken 1/1/82. It appears from the caliper logs that the drillhole diameter increased through the lower Salado (e.g., the vicinity of 2500 to 2700 ft depth) while borehole in the upper Salado (e.g., about 1000 ft) does not appear to have changed. The log scale differs, and we do not know the details of the caliper tool (3-arm, 4-arm, etc.). Nonetheless, these borehole character changes do appear to be significant in this instance.

Summary of Blowout at South Culebra Bluff Unit #1
(sec 23, T23S, R28E, 1980' fnl, 1650' fel)

At 10:30 am on January 3, 1978, Delta Drilling Company intercepted a high-pressure zone in the "Atoka" at a depth of 11, 769 ft in South Culebra Bluff Unit #1. The automatic choke failed, pressurizing the separator until it failed, disabling the choke and kill manifold. The crew was unable to get to the manifold valves to shut the well in. It ignited about 5:10 am on January 4, 1978, and the derrick fell 8:12 am on January 5, 1978. On January 11, a crew from Red Adair's company used 400# of nitroglycerine to blow off the damaged BOP and also blew out the fire. By January 14, the crew had regained control of the well and it was tested on the 18th. Gas was piped to an El Paso Natural Gas Company pipeline. Initial production estimates were 50 MMCFD. The well produced more than 4 billion cubic ft of gas from January 27 through June 7. The well was allowed to flow for several months because initial data indicated mud weights sufficient to control the gas flow would exceed the fracture gradient for the Bone Spring Limestone. In September, 1978, Delta plugged the hole to 11, 670 feet, installed additional casing, and drilled around the plug and drillpipe that had been left in the hole. The re-completed well tested 14.6 MMCFD.

Extensive records were available at the OCD office in Artesia relative to this blowout. I took additional notes, but they largely concern more details of actions and some of the institutional response. A form called "Notification of Fire, Breaks, Spills, Leaks, and Blowouts" was filed within a few hours of the occurrence. OCD keeps records by year of these forms. The drillhole file includes extensive correspondence and notification of the activities before and after the blowout occurred, and there are many details that can be added to my summary. There are several pages of test data, but I did not find any direct reference to the reservoir characteristics. OCD also maintains files of geophysical logs, and I am faxing a few pages from the relevant depths. The gamma and density logs show the shale zone over the producing horizon that likely cause over-pressuring, as commented on by both McKamey and Rempe.

The caliper logs for the South Culebra Bluff #1 appear to be composite logs from different episodes at different depths. There is limited information, probably of no value, about possible borehole enlargement during nearly uncontrolled high-pressure gas flow over a period of about 8 months. Any overlapping information is also likely to be suspect because of the workover required before it was possible to re-drill and log the lower part of the borehole.

Other Blowouts or Incidents

I inspected the annual records of "Notification of Fire, Breaks, Spills, Leaks, and Blowouts" for the years 1991 through 1995 and found no record of any blowouts

10/29/96 18:12 ☎ 004

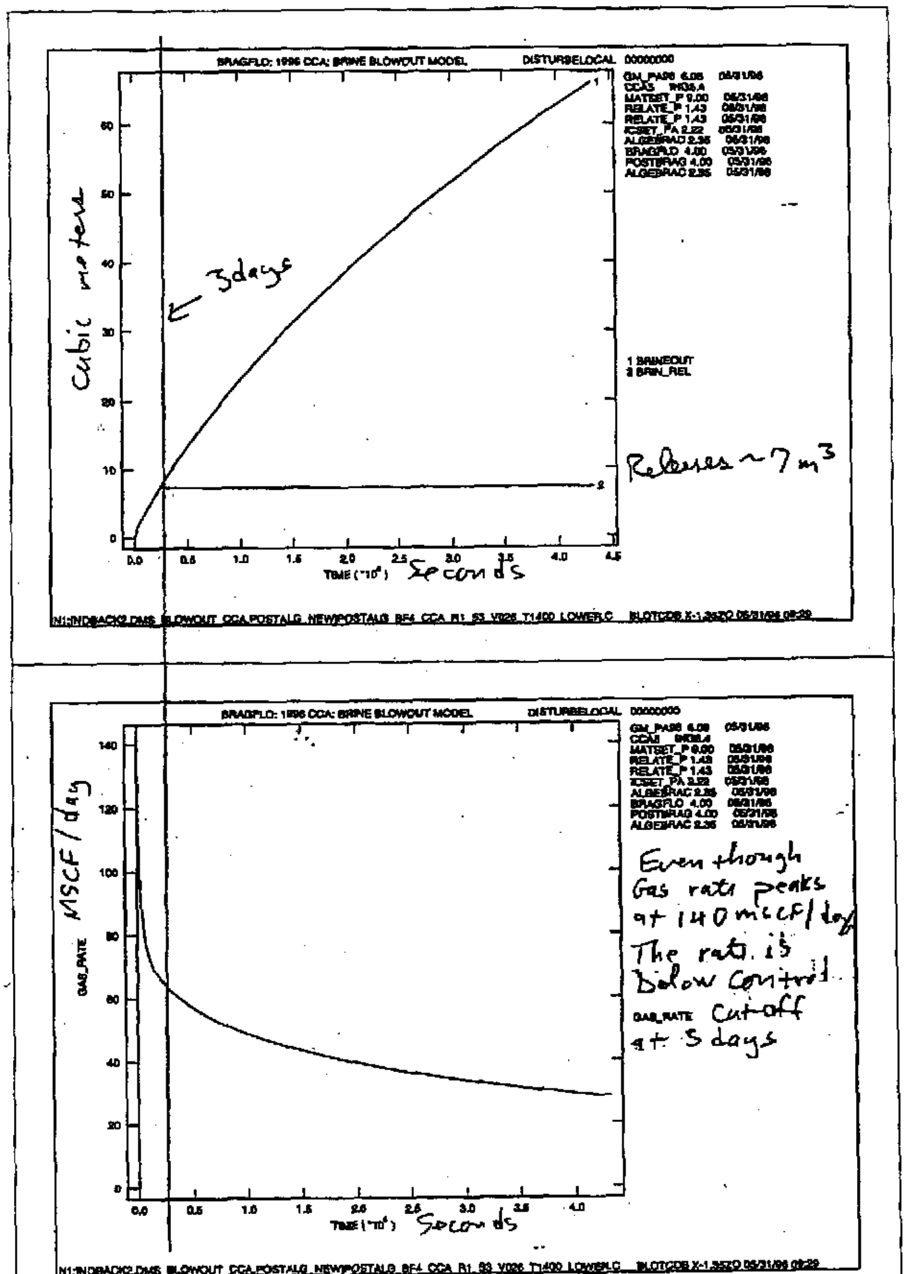

figure 1: Mostly brine blowout, 100 mscf/day control cut-off

10/28/96 18:12 ☎ 005

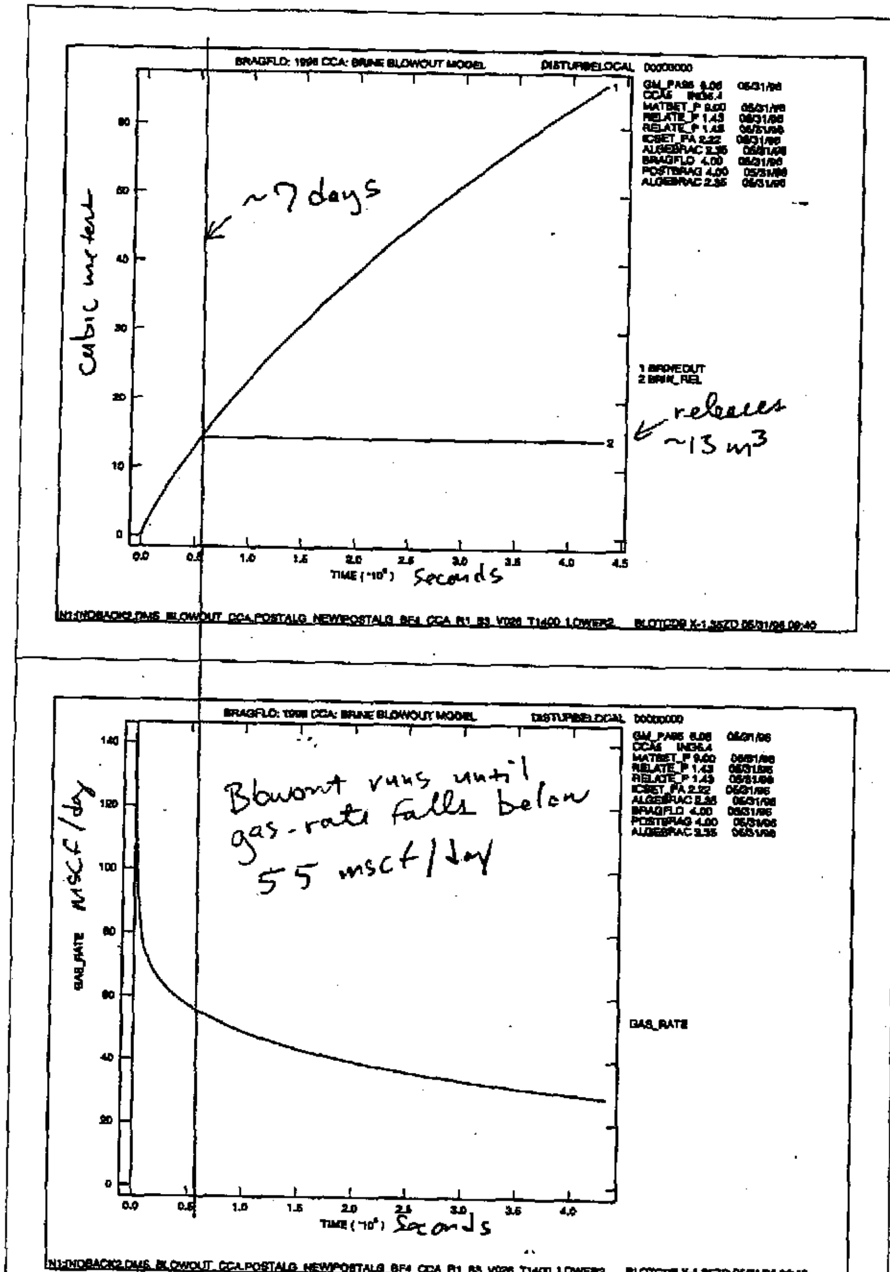

Figure 2: Mostly brine blowout, 55 mscf/day cut-off

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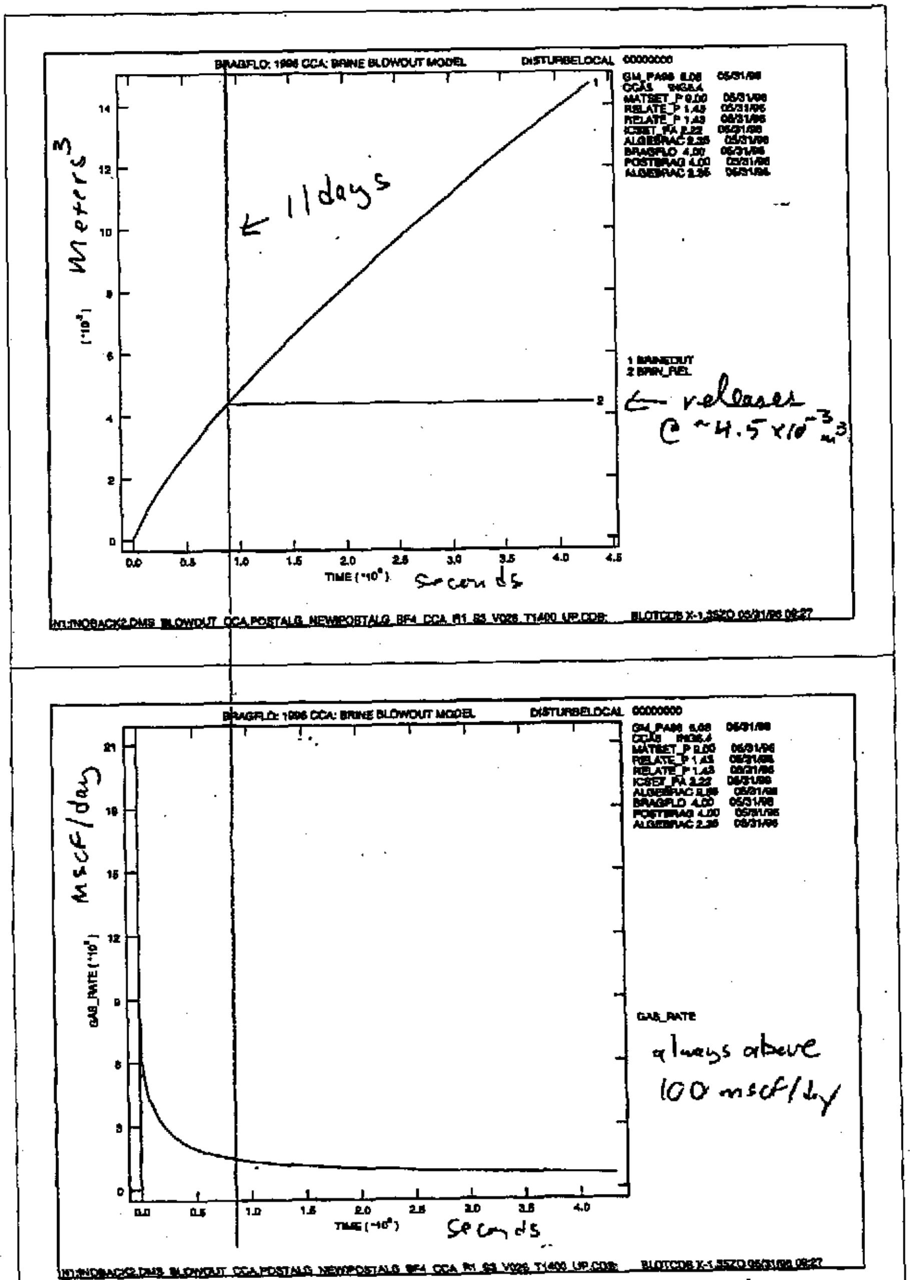

Figure 3: Mostly high-rate gas blowout.

A Copy of Westinghouse Memo
DMS 11/21/96
5/15/02
5/14

10/28/96 18:13 ☎ 007

COMMONALITY OF PRESSURIZED BRINE ENCOUNTERS WITHIN THE DELAWARE BASIN

Performance assessments for the demonstration of compliance with 40 CFR 191.13 must consider the effects of future disruptive events. As a result of the screening process used by the DOE, one type of future disruptive events explicitly accounted for in performance assessment calculations in drilling for resources. Because uncertainty exists about spatial distribution of any abnormally pressurized brine reservoir(s) which may exist beneath the repository, performance assessment must make various assumptions to account for this uncertainty. These assumptions typically err on the side of conservatism.

To identify reasonable assumptions for use in performance assessment commercial drillers and operators with experience in the Delaware Basin were surveyed to determine to frequency of occurrence and typical depths of abnormally pressurized brine zones within Delaware Basin. The following discussion reports the general conclusions of this survey and provides recommendations for the treatment of pressurized brine and related scenarios in performance assessment.

For the purpose of this survey, abnormally pressurized brine zones are defined as those areas that when drilled into, exhibit pressures exceeding those exerted hydrostatically by the drilling fluid column. Be definition, hydrostatic pressure exceeded by as little as one pound would be considered abnormally pressurized. Flow to the surface driven by differential pressures this low however, would typically not be noticed by a driller and would also be of little consequence in PA.

When asked how often abnormally pressurized brine zones were encountered, each of the drillers surveyed stated that it was an uncommon occurrence and that they believed the actual frequency was less than five percent. These were obviously occurrences where the differential pressure was great enough to drive a "noticeable" rate of drilling fluid low to the surface. When queried as to where these zones were most often located when encountered, they stated that they were typically encountered in the Castile Formation.

The Castile Formation within the Land Withdrawal area is approximately 1250 feet thick. It is an anhydride formation and has been found to have isolated areas that differential hold quantities of brine. Based on observed Castile porosity (amount of space in the formation to store brine) and permeability (ability of the formation to conduct fluids), brine present in the unit may be released into an intersecting well bore. This brine may be normally or abnormally pressured.

Hydrostatic pressure at any depth in the wellbore is calculated using the formula: Pm = MW x D X 0.052 (constant). For example, at 3000 feet the hydrostatic pressure in the wellbore is calculated at 1560 psi (based upon using a 10 lb./gal. saturated brine as the drilling fluid). Brine flow to the surface would be possible only if the brine source is pressured greater than 1560 psi.

Typically, the driller would become aware of abnormally pressurized brine only if the pressure of the brine exceeds hydrostatic pressure at an amount great enough to cause a noticeable gain of fluid in the mud pit. When this occurs, drilling will continue, but the driller will calculate the rate of brine flow. This is accomplished in a rather crude but effective way; by shutting off the pumps and using a five gallon bucket to catch the free-flowing brine and noting the time that it takes to fill the bucket. From this measurement, the driller can determine how large the flow is in barrels per minute. If the flow is not so large as to cause concern of over-filling the reserve pit, drilling would continue until reaching the Bell Canyon Formation and intermediate casing run and cemented. The casing string would isolate the overpressure zone and stop the flow.

A very heavy brine flow however, one that could fill the pit within one to two hours, would not be allowed to continue. Corrective action would have to be taken in the form of "killing" the flow of brine. This is accomplished by shutting in the blowout preventer (BOP) and calculating the downhole pressure. Using this pressure, the driller then determines the quantity of barite (mud additive most often used) that must be added to the drilling fluid (which is typically saturated brine) to sufficiently increase the hydrostatic pressure exerted by the columns of drilling fluid such that the differential pressure results in flow from the drilling fluid column into the formation.

When brine flow to the surface has been stopped, drilling will continue to the depth that had been determined in the well plan and intermediate casing will be run and cemented in place. Sufficient pressure to drive the cement from the bottom of the hole up the casing annulus is achieved by pumping. As cement passes the zone where pressure was killed to stop brine flow, the formation will take in some additional cement, but the casing string will have a continuous cement column behind the casing to the surface before pumping is stopped. This process is witnessed by Oil Conservation Division (OCD) personnel and must be completed to their satisfaction before drilling may be resume.

The survey has determined that such activities to kill the flow are very seldom required. It has been the experience of the participants, that they are able to drill through the Castile Formation while brine is flowing and successfully set the intermediate string in the Bell Canyon Formation (the usual drilling horizon). Using a typical drilling scenario based on a pressurized zone at a depth of 3000 feet with a hydrostatic pressure of 1560 psi, the quantities of brine that would have to be flowing to fill the pit in increments of one and two feet per hour have been calculated. The calculations show that a one foot per hour increase would be possible only if encountering bottom hole pressures of at least 1,654 psig. A two foot increase in the pit would require a pressure of 1,823 psig. Those surveyed have all stated pressures of this magnitude are seldom, if ever experienced.

The low rate of occurrence of abnormally pressured brine has been further supported by information documented in the drilling records. Using a database compiled by Petroleum Information Corporation and other sources of common information, a list of oil and gas wells drilled within the Delaware Basin portions of the state was developed. The wells on this list were located in the southern portions of Eddy and Lea Counties, which are the only New Mexico counties within the Delaware Basin. The WID personnel carefully reviewed the well files while at the OCD Offices in Artesia and Hobbs, NM, (the OCD maintains the records of all wells drilled on both state and federal leases in Eddy and Lea Counties). The files contain activity entered by the driller from initiation of drilling to completion of the well. It is within these reports that the driller will note unusual occurrences such as abnormally pressured brine. These incidents are written up in the form of daily reports. Although there is no requirement that they do so, drillers may include pressurized brine encounters in their daily reports, even if there has been no affect on drilling activities.

The well files of all oil and gas wells drilled in the New Mexico portion of the Delaware Basin were reviewed. The Texas portion of the Delaware Basin was not considered here. This is reasonable because there were a large number of New Mexico wells providing an acceptable sample size. The wells most nearly surrounding the land withdrawal areas were also of greatest relevance. 3406 well files were reviewed and 28 were found to have notations by the driller of having encountered pressurized brine. Assuming that pressurized brine zones are randomly distributed throughout the Delaware Basin, specifically that portion found in Eddy and Lea Counties, the expected relative probability of encountering these zones can be determined by dividing the 28 wells that encountered pressurized brine by 3406, the number of deep wells drilled. Using this method, future abnormally pressurized encounters will be limited to 0.08 percent of the wells drilled.

Encounters of abnormally pressurized brine in the Castile where the differential pressure is great enough that fluid flow to the surface would be noticed are not important. Their consequence is bounded by the higher flow situations where the driller elects to proceed without killing the pressure and drilling continues while the brine is allowed to flow into the pit. When the Bell Canyon Formation is reached, the drill string is removed from the hole, and the intermediate casing string is set. All of these activities are conducted as normal operations. The estimated duration of these activities are; 32-36 hours to drill through the entire Castile Formation (based upon an average thickness of 1200'-1300'), followed by an additional 6-8 hours remove the drill string, run and cement the casing. Therefore, in the bounding case where brine is encountered in the uppermost portion of the Castile, brine flow to the surface could occur for 38-44 hours before the intermediate casing is in place. This time should be reduced accordingly in those instances where PA predicts the brine is encountered while drilling in areas deeper into the Castile Formation.

It is recommended that performance assessment treat blowout cases using the following assumptions. The maximum amount of time, assuming the bounding case (Castile brine is encountered in the uppermost portion of the formation) from the time of occurrence to isolation of the pressurized zone is 38-44 hours. The minimum time that flow to the surface would occur is 1-2 hours. This lower bound value is derived from high pressure situations where the BOP would be used to stop the flow and the pressure would be killed by weighting the drilling fluids. PA should sample from this range of duration in time to calculate flows to the surface for blowout events.

Attachment 6: Listing of all Input Files Used in Direct Brine Release Calculations

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ALG_BF4_CCA_POST_DIR_REL.INP File Listing

```
delete all
TIMEHIS  = TIME
DELETE TIMEHIS
limit block 1
tmin 4e11
INTR_TME = MAKEPROP(TIMEHIS[T:1])
area_tot = makeprop(area_t[t:1])
volu_tot = makeprop(vol_t[t:1])
bitsize  = makeprop(drildiam[t:1])
!
poro_1   = makeprop(poros1[t:1])
height1  = makeprop(hfinal_1[t:1])
brnpres1 = makeprop(presbri1[t:1])
gaspres1 = makeprop(presgas1[t:1])
brn_sat1 = makeprop(satbrin1[t:1])
gas_sat1 = makeprop(satgas1[t:1])
!
poro_2   = makeprop(poros2[t:1])
height2  = makeprop(hfinal_2[t:1])
brnpres2 = makeprop(presbri2[t:1])
gaspres2 = makeprop(presgas2[t:1])
brn_sat2 = makeprop(satbrin2[t:1])
gas_sat2 = makeprop(satgas2[t:1])
!
poro_3   = makeprop(poros3[t:1])
height3  = makeprop(hfinal_3[t:1])
brnpres3 = makeprop(presbri3[t:1])
gaspres3 = makeprop(presgas3[t:1])
brn_sat3 = makeprop(satbrin3[t:1])
gas_sat3 = makeprop(satgas3[t:1])
!
poro_4   = makeprop(poros0[t:1])
height4  = makeprop(hfinal_0[t:1])
brnpres4 = makeprop(presbri0[t:1])
gaspres4 = makeprop(presgas0[t:1])
brn_sat4 = makeprop(satbrin0[t:1])
gas_sat4 = makeprop(satgas0[t:1])
!
cast_wb  = makeprop(presbri4[t:1])
cast_re  = makeprop(presbri5[t:1])
well_pan = makeprop(presbri7[t:1])
!
porosity = (poro_1+poro_2+poro_3+poro_4)/4
height   = (height1+height2+height3+height4)/4
exit
```

ALG_BF4_CCA_PRE_DIR_REL_S1_UND.INP File Listing

```
!===========================================================
!
!TITLE:BRAGFLO 1996 CCA CALCULATIONS: REPOSITORY SCALE BLOWOUT
!ANAYLST: Dan Stoelzel, SNL
!CREATED: NOV 2, 1995
!PURPOSE: ALGEBRA file computes properties that can not be obtained
!        from CAMDAT and/or assigns properties to element blocks.
!              THIS FILE PREPARES A .CDB FILE FOR PREBRAG TO READ
!IMPORTANT: This file originates from J.E. Bean's algebra file for his FEP
!        model. The methodologies to calculate dip were copied from his
!        file, with minor changes
!        made to account for the differences in the meshes.
!        ALGEBRA TO CALC. DIP IN REPOSITORY - SCALE BLOWOUT MODEL.
!        new version of bragflo
!
!           MODIFIED:
!                   MARCH 26, 1996
!                   BLOWOUT MODEL STRUGGLING IN PANEL SEAL REGION: TURNED OFF
!                   CAP PRESSURE IN PANEL SEAL AND HALITE BY SETTING EQUAL TO
!                   CAP PRESSURE IN WASTE REGION
!
!                   MAY 17, 1996
!                   ADDED BOUNDARY CONDITION WELL CALCULATION FOR E1-E2 SCEN.
!                   NEW CHANGES FOR LATEST CCA ANALYSIS
!===========================================================
!*********************************************************************
!CHAPTER 0:  DEFINE NEW VARIABLE NAMES AND SOME NEEDED CONSTANTS
!*********************************************************************
!===========================================================
!
!
! SET CONSTANTS AND PUT IN WASTE REGION
LIMIT BLOCK 1
THETA1  = MAKEPROP(DIP_DEG[B:8]*2.0*PI[B:8]/360.0)
THETA2  = MAKEPROP(0.0)
!
!
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
POR_COMP = COMP_RCK/POROSITY
! CALCULATE PROPERTIES FOR DRZ & HALITE
LIMIT BLOCK 2 3
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD  = CAP_MOD[ID:1]
PCT_A    = PCT_A[ID:1]
PCT_EXP  = PCT_EXP[ID:1]
! CALC PROPERTIES FOR PANEL SEALS
LIMIT BLOCK 4
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD  = CAP_MOD[ID:1]
PCT_A    = PCT_A[ID:1]
PCT_EXP  = PCT_EXP[ID:1]
!===========================================================
! SET WELLBORE PROPS
LIMIT BLOCK 7
SEBRINE1 = MAKEPROP(0.0)
SEGAS1   = MAKEPROP(0.0)
KRW1     = MAKEPROP(0.0)
KRG1     = MAKEPROP(0.0)
SEBRINE2 = MAKEPROP(0.0)
SEGAS2   = MAKEPROP(0.0)
KRW2     = MAKEPROP(0.0)
KRG2     = MAKEPROP(0.0)
SEBRINE3 = MAKEPROP(0.0)
SEGAS3   = MAKEPROP(0.0)
KRW3     = MAKEPROP(0.0)
KRG3     = MAKEPROP(0.0)
SEBRINE4 = MAKEPROP(0.0)
SEGAS4   = MAKEPROP(0.0)
KRW4     = MAKEPROP(0.0)
KRG4     = MAKEPROP(0.0)
! DEFINE CONSTANTS FOR THE THREE EQUATIONS TO BE USED TO CALCULATE FBHP
! EQUATION 1: (FOR BRINE FLOW ONLY, KRG = 0)
! FBHP = (A+BX+CY)/(1+DX+EY)
!   X = LOG10(BRINE CONST) LOG M^3/pA-S
!   Y = PANEL PRESSURE (Pa)
! 8,002,373 Pa < FBHP < 8,036,090 Pa
EQ1_A = MAKEPROP(8002577.4)
EQ1_B = MAKEPROP(821379.75)
EQ1_C = MAKEPROP(0.024916096)
EQ1_D = MAKEPROP(0.10264807)
EQ1_E = MAKEPROP(3.1235777E-9)
! EQUATION 2: (FOR LOG10(KRG/KRW) < 0  BRINE DOMINATED FLOW)
! FBHP = (A+BX+CX^2+DX^3+EY)/(1+FX+GX^2+HY)
!   X = LOG10(KRG/KRB)
!   Y = PANEL PRESSURE (Pa)
! 225,453 Pa < FBHP < 8,028,643 Pa
EQ2_A = MAKEPROP(847082.65)
EQ2_B = MAKEPROP(2788147.9)
EQ2_C = MAKEPROP(3451058.3)
EQ2_D = MAKEPROP(-54884.388)
EQ2_E = MAKEPROP(-0.017079483)
EQ2_F = MAKEPROP(0.8953597)
EQ2_G = MAKEPROP(0.54041532)
```

ALG_BF4_CCA_PRE_DIR_REL_S1_UND.INP File Listing

```
EQ2_H  = MAKEPROP(-4.9369107E-9)
! EQUATION 3: (FOR LOG10(KRG/KRW) > 0  GAS DOMINATED FLOW)
! FBHP = EXP(A+BX+CX^0.5+DE^-X+EY^0.5)
!   X = LOG10(KRG/KRB)
!   Y = PANEL PRESSURE (Pa)
! 153,271 Pa < FBHP < 385,493 pA
EQ3_A  = MAKEPROP(8.9214635)
EQ3_B  = MAKEPROP(-0.2274279)
EQ3_C  = MAKEPROP(1.3680586)
EQ3_D  = MAKEPROP(1.8350086)
EQ3_E  = MAKEPROP(0.00045726223)
!
! CALCULATE SKIN FROM SPALL REMOVED, & WELL PRODUCTIVITY INDEX
! ELEMENT 15 IS LOCATION OF WELL1 (1ST INTRUSION DOWN DIP)
WELLRAD  = BITSIZE/2
DRAINRAD = SQRT(DEL_X[E:15]*DEL_Y[E:15]/PI[B:8])
SKIN    = -1.0*LOG(SQRT(AREA_TOT/PI[B:8])/WELLRAD)
SKIN    = IFLT0(SKIN,SKIN,0)
! CHECK TO BE SURE WELLPI IS NOT 0 OR NEG, & SET TO 1.0 IF IT IS
! WELLPI  = PERM_X[ID:1] * HEIGHT[ID:1] / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5)
WELLPI  = IFGT0(LOG(DRAINRAD/WELLRAD) + SKIN - 0.5,PERM_X[ID:1]*HEIGHT[ID:1] &
          / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5),1.0)
! CALCULATE CONSTANTS NEEDED FOR WELLBORE MODEL:
! CALCULATE EFFECTIVE SATURATION USING KRP = 4 (BROOKS - COREY MODIFIED,
! WITH LAMBDA (PORE_DIS) = 2.89, NO CAP PRESSURE). DO FOR 4 COUPLED REGIONS
! REGION NO 1 (PANELS 1 & 8)
BRINE1  = IFLT0((BSATPAN1[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN1[ID:1])
SEBRINE1 = (BRINE1 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS1  = (BRINE1 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS1  = IFLT0((1.0 - SEGAS1),1.0,SEGAS1)
KRW1    = SEBRINE1**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG1    = (1.0-SEGAS1)**2*(1.0-SEGAS1**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR1  = WELLPI * KRW1 / VISCO[ID:5]
CONGAS1 = WELLPI * KRG1 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B1  = IFEQ0(KRW1,-10,LOG10(CONBR1+1E-24))
LOG_KR1 = IFEQ0(KRW1,10,LOG10((KRG1+1E-24)/(KRW1+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR1_EQ1 = (EQ1_A+EQ1_B*LOG_B1+EQ1_C*PRESPAN1[ID:1])/ &
          (1.0+EQ1_D*LOG_B1+EQ1_E*PRESPAN1[ID:1])
PR1_EQ1 = IFLT0(8002373.0 - PR1_EQ1,IFLT0(8036090.0 - PR1_EQ1,8036090.0, &
          PR1_EQ1),8002373.0)
PR1_EQ2 = (EQ2_A+EQ2_B*LOG_KR1+EQ2_C*LOG_KR1**2+EQ2_D*LOG_KR1**3+ &
          EQ2_E*PRESPAN1[ID:1])/(1.0+EQ2_F*LOG_KR1+EQ2_G*LOG_KR1**2+ &
          EQ2_H*PRESPAN1[ID:1])
PR1_EQ2 = IFLT0(225453.0 - PR1_EQ2,IFLT0(8028643.0 - PR1_EQ2,8028643.0, &
          PR1_EQ2),225453.0)
PR1_EQ3 = EXP(EQ3_A+EQ3_B*LOG_KR1+EQ3_C*ABS(LOG_KR1)**0.5+ &
          EQ3_D*EXP(-1.0*ABS(LOG_KR1))+EQ3_E*PRESPAN1[ID:1]**0.5)
PR1_EQ3 = IFLT0(153271.0 - PR1_EQ3,IFLT0(385493.0 - PR1_EQ3,385493.0, &
          PR1_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP1   = IFEQ0(KRW1,0,IFLT0(PRESPAN1[ID:1]-8.0E6,0, &
          IFEQ0(KRG1,PR1_EQ1,IFLT0(LOG_KR1,PR1_EQ2,PR1_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP1 = MAKEPROP(IFEQ0(FBHP1,1,1000))
! REGION NO 2 (PANELS 2 &7)
BRINE2  = IFLT0((BSATPAN2[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN2[ID:1])
SEBRINE2 = (BRINE2 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS2  = (BRINE2 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS2  = IFLT0((1.0 - SEGAS2),1.0,SEGAS2)
KRW2    = SEBRINE2**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG2    = (1.0-SEGAS2)**2*(1.0-SEGAS2**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR2  = WELLPI * KRW2 / VISCO[ID:5]
CONGAS2 = WELLPI * KRG2 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B2  = IFEQ0(KRW2,-10,LOG10(CONBR2+1E-24))
LOG_KR2 = IFEQ0(KRW2,10,LOG10((KRG2+1E-24)/(KRW2+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR2_EQ1 = (EQ1_A+EQ1_B*LOG_B2+EQ1_C*PRESPAN2[ID:1])/ &
          (1.0+EQ1_D*LOG_B2+EQ1_E*PRESPAN2[ID:1])
PR2_EQ1 = IFLT0(8002373.0 - PR2_EQ1,IFLT0(8036090.0 - PR2_EQ1,8036090.0, &
          PR2_EQ1),8002373.0)
PR2_EQ2 = (EQ2_A+EQ2_B*LOG_KR2+EQ2_C*LOG_KR2**2+EQ2_D*LOG_KR2**3+ &
          EQ2_E*PRESPAN2[ID:1])/(1.0+EQ2_F*LOG_KR2+EQ2_G*LOG_KR2**2+ &
          EQ2_H*PRESPAN2[ID:1])
PR2_EQ2 = IFLT0(225453.0 - PR2_EQ2,IFLT0(8028643.0 - PR2_EQ2,8028643.0, &
          PR2_EQ2),225453.0)
PR2_EQ3 = EXP(EQ3_A+EQ3_B*LOG_KR2+EQ3_C*ABS(LOG_KR2)**0.5+ &
          EQ3_D*EXP(-1.0*ABS(LOG_KR2))+EQ3_E*PRESPAN2[ID:1]**0.5)
PR2_EQ3 = IFLT0(153271.0 - PR2_EQ3,IFLT0(385493.0 - PR2_EQ3,385493.0, &
          PR2_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP2   = IFEQ0(KRW2,0,IFLT0(PRESPAN2[ID:1]-8.0E6,0, &
          IFEQ0(KRG2,PR2_EQ1,IFLT0(LOG_KR2,PR2_EQ2,PR2_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP2 = MAKEPROP(IFEQ0(FBHP2,1,1000))
! REGION NO 3 (PANELS 3 & 6)
BRINE3  = IFLT0((BSATPAN3[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN3[ID:1])
SEBRINE3 = (BRINE3 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS3  = (BRINE3 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS3  = IFLT0((1.0 - SEGAS3),1.0,SEGAS3)
KRW3    = SEBRINE3**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG3    = (1.0-SEGAS3)**2*(1.0-SEGAS3**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR3  = WELLPI * KRW3 / VISCO[ID:5]
CONGAS3 = WELLPI * KRG3 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B3  = IFEQ0(KRW3,-10,LOG10(CONBR3+1E-24))
LOG_KR3 = IFEQ0(KRW3,10,LOG10((KRG3+1E-24)/(KRW3+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR3_EQ1 = (EQ1_A+EQ1_B*LOG_B3+EQ1_C*PRESPAN3[ID:1])/ &
          (1.0+EQ1_D*LOG_B3+EQ1_E*PRESPAN3[ID:1])
PR3_EQ1 = IFLT0(8002373.0 - PR3_EQ1,IFLT0(8036090.0 - PR3_EQ1,8036090.0, &
          PR3_EQ1),8002373.0)
PR3_EQ2 = (EQ2_A+EQ2_B*LOG_KR3+EQ2_C*LOG_KR3**2+EQ2_D*LOG_KR3**3+ &
          EQ2_E*PRESPAN3[ID:1])/(1.0+EQ2_F*LOG_KR3+EQ2_G*LOG_KR3**2+ &
          EQ2_H*PRESPAN3[ID:1])
PR3_EQ2 = IFLT0(225453.0 - PR3_EQ2,IFLT0(8028643.0 - PR3_EQ2,8028643.0, &
          PR3_EQ2),225453.0)
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PR3_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR3+EQ3_C*ABS(LOG_KR3)**0.5+ &
        EQ3_D*EXP(-1.0*ABS(LOG_KR3))+EQ3_E*PRESPAN3[ID:1]**0.5)
PR3_EQ3  = IFLT0(153271.0 - PR3_EQ3,IFLT0(385493.0 - PR3_EQ3,385493.0, &
        PR3_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP3    = IFEQ0(KRW3,0,IFLT0(PRESPAN3[ID:1]-8.0E6,0, &
        IFEQ0(KRG3,PR3_EQ1,IFLT0(LOG_KR3,PR3_EQ2,PR3_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP3 = MAKEPROP(IFEQ0(FBHP3,1,1000))
! REGION NO 4 (PANELS 4 & 5)
BRINE4   = IFLT0((BSATPAN4[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN4[ID:1])
SEBRINE4 = (BRINE4 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS4   = (BRINE4 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS4   = IFLT0((1.0 - SEGAS4),1.0,SEGAS4)
KRW4     = SEBRINE4**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG4     = (1.0-SEGAS4)**2*(1.0-SEGAS4**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR4   = WELLPI * KRW4 / VISCO[ID:5]
CONGAS4  = WELLPI * KRG4 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B4   = IFEQ0(KRW4,-10,LOG10(CONBR4+1E-24))
LOG_KR4  = IFEQ0(KRW4,10,LOG10((KRG4+1E-24)/(KRW4+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR4_EQ1  = (EQ1_A+EQ1_B*LOG_B4+EQ1_C*PRESPAN4[ID:1])/ &
        (1.0+EQ1_D*LOG_B4+EQ1_E*PRESPAN4[ID:1])
PR4_EQ1  = IFLT0(8002373.0 - PR4_EQ1,IFLT0(8036090.0 - PR4_EQ1,8036090.0, &
        PR4_EQ1),8002373.0)
PR4_EQ2  = (EQ2_A+EQ2_B*LOG_KR4+EQ2_C*LOG_KR4**2+EQ2_D*LOG_KR4**3+ &
        EQ2_E*PRESPAN4[ID:1])/(1.0+EQ2_F*LOG_KR4+EQ2_G*LOG_KR4**2+ &
        EQ2_H*PRESPAN4[ID:1])
PR4_EQ2  = IFLT0(225453.0 - PR4_EQ2,IFLT0(8028643.0 - PR4_EQ2,8028643.0, &
        PR4_EQ2),225453.0)
PR4_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR4+EQ3_C*ABS(LOG_KR4)**0.5+ &
        EQ3_D*EXP(-1.0*ABS(LOG_KR4))+EQ3_E*PRESPAN4[ID:1]**0.5)
PR4_EQ3  = IFLT0(153271.0 - PR4_EQ3,IFLT0(385493.0 - PR4_EQ3,385493.0, &
        PR4_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP4    = IFEQ0(KRW4,0,IFLT0(PRESPAN4[ID:1]-8.0E6,0, &
        IFEQ0(KRG4,PR4_EQ1,IFLT0(LOG_KR4,PR4_EQ2,PR4_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP4 = MAKEPROP(IFEQ0(FBHP4,1,1000))
DELETE BRINE1, BRINE2, BRINE3, BRINE4
!===========================================================
!*******************************************************************
!CHAPTER 3.  COMPUTE DIP IN REPOSITORY
!*******************************************************************
!*******************************************************************
!=========================================
!=========================================
LIMIT ELEMENT OFF
!COMPUTE THE GRID BLOCK ELEVATIONS ACCOUNTING FOR 1 DEGREE DIP IN SALADO
!DEFINE GRID BLOCK ELEVATIONS DUE TO DIP
! USE ELEVATION OF SHAFT AT MID-REPOSITORY
ZORIGIN  = 382.671
YORIGIN  = 1000.0
ELEVN    = MAKENODE(COS(THETA1[ID:1])*(Z-ZORIGIN) &
        + SIN(THETA1[ID:1])*(Y-YORIGIN))
ELEVE    = NOD2ELE(ELEVN) + ZORIGIN
!COMPUTE GRID BLOCK POTENTIAL ASSUMING BRINE IS INCOMPRESSIBLE (APPROXIMATELY)
POTE     = PRESEL/(DNSFLUID[ID:5]*GRAVACC[ID:8]) + ELEVE
!
! NOW SET GRID THICKNESS FOR ALL ELEMENTS TO CRUSHED PANEL HEIGHT
THICK    = MAKEATTR(HEIGHT[ID:1])
!
DELETE ELEVN, YORIGIN, ZORIGIN
EXIT
```

ALG_BF4_CCA_PRE_DIR_REL_S2_DIST.INP File Listing

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!-------------------------------------------------------------------------------
!
!TITLE:BRAGFLO 1996 CCA CALCULATIONS: REPOSITORY SCALE BLOWOUT
!ANAYLST: Dan Stoelzel, SNL
!CREATED: NOV 2, 1995
!PURPOSE: ALGEBRA file computes properties that can not be obtained
!       from CAMDAT and/or assigns properties to element blocks.
!               THIS FILE PREPARES A .CDB FILE FOR PREBRAG TO READ
!IMPORTANT: This file originates from J.E. Bean's algebra file for his FEP
!       model. The methodologies to calculate dip were copied from his
!       file, with minor changes
!       made to account for the differences in the meshes.
!       ALGEBRA TO CALC. DIP IN REPOSITORY - SCALE BLOWOUT MODEL.
!       new version of bragflo
!
!           MODIFIED:
!                           MARCH 26, 1996
!                           BLOWOUT MODEL STRUGGLING IN PANEL SEAL REGION: TURNED OFF
!                           CAP PRESSURE IN PANEL SEAL AND HALITE BY SETTING EQUAL TO
!                           CAP PRESSURE IN WASTE REGION
!
!                           MAY 17, 1996
!                           ADDED BOUNDARY CONDITION WELL CALCULATION FOR E1-E2 SCEN.
!                           NEW CHANGES FOR LATEST CCA ANALYSIS
!
!                           MAY 20. 1996
!                           WELL 2 INPUT FILE TO ACCOUNT FOR E1-E2 SAME PANEL BOUNDARY
!                           COND.
!
!                           MAY 30,1996
!                           ADDED LOGIC TO ACCOUNT FOR CHANGES IN ABANDONED WELLBORE PERM
!                           FOR BOUNDARY CONDITION WELL:
!                           SCENARIO 2 AND 4 FILE, FIRST INTRUSION AT 350 YEARS
!-------------------------------------------------------------------------------
!***********************************************************************
!CHAPTER 0:  DEFINE NEW VARIABLE NAMES AND SOME NEEDED CONSTANTS
!***********************************************************************
!-------------------------------------------------------------------------------
!
!
! SET CONSTANTS AND PUT IN WASTE REGION
LIMIT BLOCK 1
THETA1  = MAKEPROP(DIP_DEG[B:8]*2.0*PI[B:8]/360.0)
THETA2  = MAKEPROP(0.0)
!
!
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
POR_COMP = COMP_RCK/POROSITY
! CALCULATE PROPERTIES FOR DRZ & HALITE
LIMIT BLOCK 2 3
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD  = CAP_MOD[ID:1]
PCT_A    = PCT_A[ID:1]
PCT_EXP  = PCT_EXP[ID:1]
! CALC PROPERTIES FOR PANEL SEALS
LIMIT BLOCK 4
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD  = CAP_MOD[ID:1]
PCT_A    = PCT_A[ID:1]
PCT_EXP  = PCT_EXP[ID:1]
!-------------------------------------------------------------------------------
! SET WELLBORE PROPS
LIMIT BLOCK 7
SEBRINE1 = MAKEPROP(0.0)
SEGAS1   = MAKEPROP(0.0)
KRW1     = MAKEPROP(0.0)
KRG1     = MAKEPROP(0.0)
SEBRINE2 = MAKEPROP(0.0)
SEGAS2   = MAKEPROP(0.0)
KRW2     = MAKEPROP(0.0)
KRG2     = MAKEPROP(0.0)
SEBRINE3 = MAKEPROP(0.0)
SEGAS3   = MAKEPROP(0.0)
KRW3     = MAKEPROP(0.0)
KRG3     = MAKEPROP(0.0)
SEBRINE4 = MAKEPROP(0.0)
SEGAS4   = MAKEPROP(0.0)
KRW4     = MAKEPROP(0.0)
KRG4     = MAKEPROP(0.0)
! DEFINE CONSTANTS FOR THE THREE EQUATIONS TO BE USED TO CALCULATE FBHP
! EQUATION 1: (FOR BRINE FLOW ONLY, KRG = 0)
! FBHP = (A+BX+CY)/(1+DX+EY)
!    X = LOG10(BRINE CONST) LOG M^3/pA-S
!    Y = PANEL PRESSURE (Pa)
! 8,002,373 Pa < FBHP < 8,036,090 Pa
EQ1_A = MAKEPROP(8002577.4)
EQ1_B = MAKEPROP(821379.75)
EQ1_C = MAKEPROP(0.024916096)
EQ1_D = MAKEPROP(0.10264807)
EQ1_E = MAKEPROP(3.1235777E-9)
! EQUATION 2: (FOR LOG10(KRG/KRW) < 0  BRINE DOMINATED FLOW)
! FBHP = (A+BX+CX^2+DX^3+EY)/(1+FX+GX^2+HY)
```

ALG_BF4_CCA_PRE_DIR_REL_S2_DIST.INP File Listing

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!   X = LOG10(KRG/KRB)
!   Y = PANEL PRESSURE (Pa)
! 225,453 Pa < FBHP < 8,028,643 Pa
EQ2_A  = MAKEPROP(847082.65)
EQ2_B  = MAKEPROP(2788147.9)
EQ2_C  = MAKEPROP(3451058.3)
EQ2_D  = MAKEPROP(-54884.388)
EQ2_E  = MAKEPROP(-0.017079483)
EQ2_F  = MAKEPROP(0.8953597)
EQ2_G  = MAKEPROP(0.54041532)
EQ2_H  = MAKEPROP(-4.9369107E-9)
! EQUATION 3: (FOR LOG10(KRG/KRW) > 0  GAS DOMINATED FLOW)
! FBHP = EXP(A+BX+CX^0.5+DE^-X+EY^0.5)
!   X = LOG10(KRG/KRB)
!   Y = PANEL PRESSURE (Pa)
! 153,271 Pa < FBHP < 385,493 pA
EQ3_A  = MAKEPROP(8.9214635)
EQ3_B  = MAKEPROP(-0.2274279)
EQ3_C  = MAKEPROP(1.3680586)
EQ3_D  = MAKEPROP(1.8350086)
EQ3_E  = MAKEPROP(0.00045726223)
!
! CALCULATE SKIN FROM SPALL REMOVED, & WELL PRODUCTIVITY INDEX
! ELEMENT 59 IS LOCATION OF WELL 2 (2ND INTRUSION DOWN DIP)
WELLRAD  = BITSIZE/2
DRAINRAD = SQRT(DEL_X[E:59]*DEL_Y[E:59]/PI[B:8])
SKIN     = -1.0*LOG(SQRT(AREA_TOT/PI[B:8])/WELLRAD)
SKIN     = IFLT0(SKIN,SKIN,0)
! CHECK TO BE SURE WELLPI IS NOT 0 OR NEG, & SET TO 1.0 IF IT IS
! WELLPI  = PERM_X[ID:1] * HEIGHT[ID:1] / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5)
WELLPI  = IFGT0(LOG(DRAINRAD/WELLRAD) + SKIN - 0.5,PERM_X[ID:1]*HEIGHT[ID:1] &
          / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5),1.0)
! CALCULATE CONSTANTS NEEDED FOR WELLBORE MODEL:
! CALCULATE EFFECTIVE SATURATION USING KRP = 4 (BROOKS - COREY MODIFIED,
! WITH LAMBDA (PORE_DIS) = 2.89, NO CAP PRESSURE). DO FOR 4 COUPLED REGIONS
! REGION NO 1 (PANELS 1 & 8)
BRINE1   = IFLT0((BSATPAN1[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN1[ID:1])
SEBRINE1 = (BRINE1 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS1   = (BRINE1 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS1   = IFLT0((1.0 - SEGAS1),1.0,SEGAS1)
KRW1     = SEBRINE1**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG1     = (1.0-SEGAS1)**2*(1.0-SEGAS1**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR1   = WELLPI * KRW1 / VISCO[ID:5]
CONGAS1  = WELLPI * KRG1 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B1   = IFEQ0(KRW1,-10,LOG10(CONBR1+1E-24))
LOG_KR1  = IFEQ0(KRW1,10,LOG10((KRG1+1E-24)/(KRW1+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR1_EQ1  = (EQ1_A+EQ1_B*LOG_B1+EQ1_C*PRESPAN1[ID:1])/ &
           (1.0+EQ1_D*LOG_B1+EQ1_E*PRESPAN1[ID:1])
PR1_EQ1  = IFLT0(8002373.0 - PR1_EQ1,IFLT0(8036090.0 - PR1_EQ1,8036090.0, &
           PR1_EQ1),8002373.0)
PR1_EQ2  = (EQ2_A+EQ2_B*LOG_KR1+EQ2_C*LOG_KR1**2+EQ2_D*LOG_KR1**3+ &
           EQ2_E*PRESPAN1[ID:1])/(1.0+EQ2_F*LOG_KR1+EQ2_G*LOG_KR1**2+ &
           EQ2_H*PRESPAN1[ID:1])
PR1_EQ2  = IFLT0(225453.0 - PR1_EQ2,IFLT0(8028643.0 - PR1_EQ2,8028643.0, &
           PR1_EQ2),225453.0)
PR1_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR1+EQ3_C*ABS(LOG_KR1)**0.5+ &
           EQ3_D*EXP(-1.0*ABS(LOG_KR1))+EQ3_E*PRESPAN1[ID:1]**0.5)
PR1_EQ3  = IFLT0(153271.0 - PR1_EQ3,IFLT0(385493.0 - PR1_EQ3,385493.0, &
           PR1_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP1    = IFEQ0(KRW1,0,IFLT0(PRESPAN1[ID:1]-8.0E6,0, &
           IFEQ0(KRG1,PR1_EQ1,IFLT0(LOG_KR1,PR1_EQ2,PR1_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP1 = MAKEPROP(IFEQ0(FBHP1,1,1000))
! REGION NO 2 (PANELS 2 &7)
BRINE2   = IFLT0((BSATPAN2[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN2[ID:1])
SEBRINE2 = (BRINE2 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS2   = (BRINE2 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS2   = IFLT0((1.0 - SEGAS2),1.0,SEGAS2)
KRW2     = SEBRINE2**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG2     = (1.0-SEGAS2)**2*(1.0-SEGAS2**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR2   = WELLPI * KRW2 / VISCO[ID:5]
CONGAS2  = WELLPI * KRG2 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B2   = IFEQ0(KRW2,-10,LOG10(CONBR2+1E-24))
LOG_KR2  = IFEQ0(KRW2,10,LOG10((KRG2+1E-24)/(KRW2+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR2_EQ1  = (EQ1_A+EQ1_B*LOG_B2+EQ1_C*PRESPAN2[ID:1])/ &
           (1.0+EQ1_D*LOG_B2+EQ1_E*PRESPAN2[ID:1])
PR2_EQ1  = IFLT0(8002373.0 - PR2_EQ1,IFLT0(8036090.0 - PR2_EQ1,8036090.0, &
           PR2_EQ1),8002373.0)
PR2_EQ2  = (EQ2_A+EQ2_B*LOG_KR2+EQ2_C*LOG_KR2**2+EQ2_D*LOG_KR2**3+ &
           EQ2_E*PRESPAN2[ID:1])/(1.0+EQ2_F*LOG_KR2+EQ2_G*LOG_KR2**2+ &
           EQ2_H*PRESPAN2[ID:1])
PR2_EQ2  = IFLT0(225453.0 - PR2_EQ2,IFLT0(8028643.0 - PR2_EQ2,8028643.0, &
           PR2_EQ2),225453.0)
PR2_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR2+EQ3_C*ABS(LOG_KR2)**0.5+ &
           EQ3_D*EXP(-1.0*ABS(LOG_KR2))+EQ3_E*PRESPAN2[ID:1]**0.5)
PR2_EQ3  = IFLT0(153271.0 - PR2_EQ3,IFLT0(385493.0 - PR2_EQ3,385493.0, &
           PR2_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP2    = IFEQ0(KRW2,0,IFLT0(PRESPAN2[ID:1]-8.0E6,0, &
           IFEQ0(KRG2,PR2_EQ1,IFLT0(LOG_KR2,PR2_EQ2,PR2_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP2 = MAKEPROP(IFEQ0(FBHP2,1,1000))
! REGION NO 3 (PANELS 3 & 6)
BRINE3   = IFLT0((BSATPAN3[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN3[ID:1])
SEBRINE3 = (BRINE3 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS3   = (BRINE3 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS3   = IFLT0((1.0 - SEGAS3),1.0,SEGAS3)
KRW3     = SEBRINE3**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG3     = (1.0-SEGAS3)**2*(1.0-SEGAS3**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR3   = WELLPI * KRW3 / VISCO[ID:5]
CONGAS3  = WELLPI * KRG3 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B3   = IFEQ0(KRW3,-10,LOG10(CONBR3+1E-24))
LOG_KR3  = IFEQ0(KRW3,10,LOG10((KRG3+1E-24)/(KRW3+1E-24)))
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ALG_BF4_CCA_PRE_DIR_REL_S2_DIST.INP File Listing

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! CALCULATE FBHP's AND SET WITHIN LIMITS
PR3_EQ1  = (EQ1_A+EQ1_B*LOG_B3+EQ1_C*PRESPAN3[ID:1])/ &
        (1.0+EQ1_D*LOG_B3+EQ1_E*PRESPAN3[ID:1])
PR3_EQ1  = IFLT0(8002373.0 - PR3_EQ1,IFLT0(8036090.0 - PR3_EQ1,8036090.0, &
         PR3_EQ1),8002373.0)
PR3_EQ2  = (EQ2_A+EQ2_B*LOG_KR3+EQ2_C*LOG_KR3**2+EQ2_D*LOG_KR3**3+ &
         EQ2_E*PRESPAN3[ID:1])/(1.0+EQ2_F*LOG_KR3+EQ2_G*LOG_KR3**2+ &
         EQ2_H*PRESPAN3[ID:1])
PR3_EQ2  = IFLT0(225453.0 - PR3_EQ2,IFLT0(8028643.0 - PR3_EQ2,8028643.0, &
         PR3_EQ2),225453.0)
PR3_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR3+EQ3_C*ABS(LOG_KR3)**0.5+ &
         EQ3_D*EXP(-1.0*ABS(LOG_KR3))+EQ3_E*PRESPAN3[ID:1]**0.5)
PR3_EQ3  = IFLT0(153271.0 - PR3_EQ3,IFLT0(385493.0 - PR3_EQ3,385493.0, &
         PR3_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP3    = IFEQ0(KRW3,0,IFLT0(PRESPAN3[ID:1]-8.0E6,0, &
         IFEQ0(KRG3,PR3_EQ1,IFLT0(LOG_KR3,PR3_EQ2,PR3_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP3 = MAKEPROP(IFEQ0(FBHP3,1,1000))
! REGION NO 4 (PANELS 4 & 5)
BRINE4   = IFLT0((BSATPAN4[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN4[ID:1])
SEBRINE4 = (BRINE4 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS4   = (BRINE4 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS4   = IFLT0((1.0 - SEGAS4),1.0,SEGAS4)
KRW4     = SEBRINE4**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG4     = (1.0-SEGAS4)**2*(1.0-SEGAS4**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR4   = WELLPI * KRW4 / VISCO[ID:5]
CONGAS4  = WELLPI * KRG4 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B4   = IFEQ0(KRW4,-10,LOG10(CONBR4+1E-24))
LOG_KR4  = IFEQ0(KRW4,10,LOG10((KRG4+1E-24)/(KRW4+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR4_EQ1  = (EQ1_A+EQ1_B*LOG_B4+EQ1_C*PRESPAN4[ID:1])/ &
        (1.0+EQ1_D*LOG_B4+EQ1_E*PRESPAN4[ID:1])
PR4_EQ1  = IFLT0(8002373.0 - PR4_EQ1,IFLT0(8036090.0 - PR4_EQ1,8036090.0, &
         PR4_EQ1),8002373.0)
PR4_EQ2  = (EQ2_A+EQ2_B*LOG_KR4+EQ2_C*LOG_KR4**2+EQ2_D*LOG_KR4**3+ &
         EQ2_E*PRESPAN4[ID:1])/(1.0+EQ2_F*LOG_KR4+EQ2_G*LOG_KR4**2+ &
         EQ2_H*PRESPAN4[ID:1])
PR4_EQ2  = IFLT0(225453.0 - PR4_EQ2,IFLT0(8028643.0 - PR4_EQ2,8028643.0, &
         PR4_EQ2),225453.0)
PR4_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR4+EQ3_C*ABS(LOG_KR4)**0.5+ &
         EQ3_D*EXP(-1.0*ABS(LOG_KR4))+EQ3_E*PRESPAN4[ID:1]**0.5)
PR4_EQ3  = IFLT0(153271.0 - PR4_EQ3,IFLT0(385493.0 - PR4_EQ3,385493.0, &
         PR4_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP4    = IFEQ0(KRW4,0,IFLT0(PRESPAN4[ID:1]-8.0E6,0, &
         IFEQ0(KRG4,PR4_EQ1,IFLT0(LOG_KR4,PR4_EQ2,PR4_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP4 = MAKEPROP(IFEQ0(FBHP4,1,1000))
DELETE BRINE1, BRINE2, BRINE3, BRINE4
!----------------------------------------------------------------------
!**********************************************************************
!SET UP BOUNDARY CONDITIONS FOR PREVIOUS INTRUSIONS HERE
!**********************************************************************
! SET UP NEEDED CONSTANTS (NOTE: BOREHOLE LENGTH FROM PANEL TO CASTILE B.P.
! IS 247 METERS -- USED IN CON_SAND & CON_CREP)
! MODIFICATIONS MADE 5/30/96
LEN_BC   = MAKEPROP(247.0)
DRAIN_BC = MAKEPROP(SQRT(DEL_X[E:15]*DEL_Y[E:15]/PI[B:8]))
WELPI_BC = PERM_X[ID:1] * HEIGHT[ID:1] / (LOG(DRAIN_BC/WELLRAD) + 0.0 - 0.5)
RHO_G_H  = MAKEPROP(DNSFLUID[ID:5]*GRAVACC[ID:8]*LEN_BC)
CON_OPEN = MAKEPROP((PRM_CAST*THCK_CAS[ID:9]*(LOG(DRAIN_BC/WELLRAD)-0.5)) &
         / (PERM_X[ID:1]*HEIGHT[ID:1]*(LOG(RE_CAST[ID:9]/WELLRAD)-0.5)))
CON_SAND = MAKEPROP((PRM_SAND*PI[ID:8]*WELLRAD*WELLRAD* &
         (LOG(DRAIN_BC/WELLRAD)-0.5)) / (PERM_X[ID:1]*HEIGHT[ID:1]*LEN_BC))
CON_CREP = MAKEPROP((PRM_CREP*PI[ID:8]*WELLRAD*WELLRAD* &
         (LOG(DRAIN_BC/WELLRAD)-0.5)) / (PERM_X[ID:1]*HEIGHT[ID:1]*LEN_BC))
! SOLVE FOR OPEN BOREHOLE TO CASTILE B.C. (WITHIN 200 YEARS AFTER FIRST INTR.)
! USE FBHP4 SINCE BOUNDARY CONDITION WELL IS ASSUMED TO BE IN PANEL 5 (DOWN-
! DIP) FOR ALL SUBSEQUENT INTRUSIONS
BHP_OPEN = (FBHP4+CON_OPEN*(CAST_RE-RHO_G_H))/(1.0+CON_OPEN)
! SOLVE FOR SAND-FILLED BH CONDITION (200 TO 1200 YEARS AFTER 1ST INTRUSION)
BHP_SAND = (FBHP4+CON_SAND*(CAST_WB-RHO_G_H))/(1.0+CON_SAND)
! SOLVE FOR CREEP-CLOSED BH CONDITION (1200 YEARS AFTER 1ST INTRUSION)
BHP_CREP = (FBHP4+CON_CREP*(CAST_WB-RHO_G_H))/(1.0+CON_CREP)
!ASSIGN ABANDONED BH PRESSURE BASED ON INTRUSION TIME
PREV_TME = MAKEPROP(350.0)
DELT_TME = INTR_TME/YRSEC[ID:8] - PREV_TME
BHP_ABAN = IFGT0(DELT_TME - 200.1,IFGT0(DELT_TME - 1200.1,BHP_CREP,BHP_SAND),&
         BHP_OPEN)
!******************************************************************
!------------------------------------------------
!----------------------------------------------------------------------
!******************************************************************
!CHAPTER 3. COMPUTE DIP IN REPOSITORY
!******************************************************************
!******************************************************************
!------------------------------------------------
!------------------------------------------------
LIMIT ELEMENT OFF
!COMPUTE THE GRID BLOCK ELEVATIONS ACCOUNTING FOR 1 DEGREE DIP IN SALADO
!DEFINE GRID BLOCK ELEVATIONS DUE TO DIP
! USE ELEVATION OF SHAFT AT MID-REPOSITORY
ZORIGIN  = 382.671
YORIGIN  = 1000.0
ELEVN    = MAKENODE(COS(THETA1[ID:1])*(Z-ZORIGIN) &
         + SIN(THETA1[ID:1])*(Y-YORIGIN))
ELEVE    = NOD2ELE(ELEVN) + ZORIGIN
!COMPUTE GRID BLOCK POTENTIAL ASSUMING BRINE IS INCOMPRESSIBLE (APPROXIMATELY)
POTE     = PRESEL/(DNSFLUID[ID:5]*GRAVACC[ID:8]) + ELEVE
!
! NOW SET GRID THICKNESS FOR ALL ELEMENTS TO CRUSHED PANEL HEIGHT
THICK    = MAKEATTR(HEIGHT[ID:1])
!
DELETE ELEVN, YORIGIN, ZORIGIN
EXIT
```

ALG_BF4_CCA_PRE_DIR_REL_S3_DIST.INP File Listing

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!-----------------------------------------------------------------------
!
!TITLE:BRAGFLO 1996 CCA CALCULATIONS: REPOSITORY SCALE BLOWOUT
!ANAYLST: Dan Stoelzel, SNL
!CREATED: NOV 2, 1995
!PURPOSE: ALGEBRA file computes properties that can not be obtained
!    from CAMDAT and/or assigns properties to element blocks.
!        THIS FILE PREPARES A .CDB FILE FOR PREBRAG TO READ
!IMPORTANT: This file originates from J.E. Bean's algebra file for his FEP
!    model. The methodologies to calculate dip were copied from his
!    file, with minor changes
!    made to account for the differences in the meshes.
!    ALGEBRA TO CALC. DIP IN REPOSITORY - SCALE BLOWOUT MODEL.
!    new version of bragflo
!
!        MODIFIED:
!                MARCH 26, 1996
!                BLOWOUT MODEL STRUGGLING IN PANEL SEAL REGION: TURNED OFF
!                CAP PRESSURE IN PANEL SEAL AND HALITE BY SETTING EQUAL TO
!                CAP PRESSURE IN WASTE REGION
!
!                MAY 17, 1996
!                ADDED BOUNDARY CONDITION WELL CALCULATION FOR E1-E2 SCEN.
!                NEW CHANGES FOR LATEST CCA ANALYSIS
!
!                MAY 20. 1996
!                WELL 2 INPUT FILE TO ACCOUNT FOR E1-E2 SAME PANEL BOUNDARY
!                COND.
!
!                MAY 30,1996
!                ADDED LOGIC TO ACCOUNT FOR CHANGES IN ABANDONED WELLBORE PERM
!                FOR BOUNDARY CONDITION WELL:
!                SCENARIO 2 AND 4 FILE, FIRST INTRUSION AT 350 YEARS
!-----------------------------------------------------------------------
!***********************************************************************
!CHAPTER 0:  DEFINE NEW VARIABLE NAMES AND SOME NEEDED CONSTANTS
!***********************************************************************
!-----------------------------------------------------------------------
!
!
! SET CONSTANTS AND PUT IN WASTE REGION
LIMIT BLOCK 1
THETA1  = MAKEPROP(DIP_DEG[B:8]*2.0*PI[B:8]/360.0)
THETA2  = MAKEPROP(0.0)
!
!
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
POR_COMP = COMP_RCK/POROSITY
! CALCULATE PROPERTIES FOR DRZ & HALITE
LIMIT BLOCK 2 3
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD  = CAP_MOD[ID:1]
PCT_A    = PCT_A[ID:1]
PCT_EXP  = PCT_EXP[ID:1]
! CALC PROPERTIES FOR PANEL SEALS
LIMIT BLOCK 4
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD  = CAP_MOD[ID:1]
PCT_A    = PCT_A[ID:1]
PCT_EXP  = PCT_EXP[ID:1]
!-----------------------------------------------------------------------
! SET WELLBORE PROPS
LIMIT BLOCK 7
SEBRINE1 = MAKEPROP(0.0)
SEGAS1   = MAKEPROP(0.0)
KRW1     = MAKEPROP(0.0)
KRG1     = MAKEPROP(0.0)
SEBRINE2 = MAKEPROP(0.0)
SEGAS2   = MAKEPROP(0.0)
KRW2     = MAKEPROP(0.0)
KRG2     = MAKEPROP(0.0)
SEBRINE3 = MAKEPROP(0.0)
SEGAS3   = MAKEPROP(0.0)
KRW3     = MAKEPROP(0.0)
KRG3     = MAKEPROP(0.0)
SEBRINE4 = MAKEPROP(0.0)
SEGAS4   = MAKEPROP(0.0)
KRW4     = MAKEPROP(0.0)
KRG4     = MAKEPROP(0.0)
! DEFINE CONSTANTS FOR THE THREE EQUATIONS TO BE USED TO CALCULATE FBHP
! EQUATION 1: (FOR BRINE FLOW ONLY, KRG = 0)
! FBHP = (A+BX+CY)/(1+DX+EY)
!   X = LOG10(BRINE CONST) LOG M^3/pA-S
!   Y = PANEL PRESSURE (Pa)
! 8,002,373 Pa < FBHP < 8,036,090 Pa
EQ1_A  = MAKEPROP(8002577.4)
EQ1_B  = MAKEPROP(821379.75)
EQ1_C  = MAKEPROP(0.024916096)
EQ1_D  = MAKEPROP(0.10264807)
EQ1_E  = MAKEPROP(3.1235777E-9)
! EQUATION 2: (FOR LOG10(KRG/KRW) < 0  BRINE DOMINATED FLOW)
! FBHP = (A+BX+CX^2+DX^3+EY)/(1+FX+GX^2+HY)
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ALG_BF4_CCA_PRE_DIR_REL_S3_DIST.INP File Listing

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!  X = LOG10(KRG/KRB)
!  Y = PANEL PRESSURE (Pa)
! 225,453 Pa < FBHP < 8,028,643 Pa
EQ2_A  = MAKEPROP(847082.65)
EQ2_B  = MAKEPROP(2788147.9)
EQ2_C  = MAKEPROP(3451058.3)
EQ2_D  = MAKEPROP(-54884.388)
EQ2_E  = MAKEPROP(-0.017079483)
EQ2_F  = MAKEPROP(0.8953597)
EQ2_G  = MAKEPROP(0.54041532)
EQ2_H  = MAKEPROP(-4.9369107E-9)
! EQUATION 3: (FOR LOG10(KRG/KRW) > 0  GAS DOMINATED FLOW)
! FBHP = EXP(A+BX+CX^0.5+DE^-X+EY^0.5)
!  X = LOG10(KRG/KRB)
!  Y = PANEL PRESSURE (Pa)
! 153,271 Pa < FBHP < 385,493 pA
EQ3_A  = MAKEPROP(8.9214635)
EQ3_B  = MAKEPROP(-0.2274279)
EQ3_C  = MAKEPROP(1.3680586)
EQ3_D  = MAKEPROP(1.8350086)
EQ3_E  = MAKEPROP(0.00045726223)
!
! CALCULATE SKIN FROM SPALL REMOVED, & WELL PRODUCTIVITY INDEX
! ELEMENT 59 IS LOCATION OF WELL 2 (2ND INTRUSION DOWN DIP)
WELLRAD  = BITSIZE/2
DRAINRAD = SQRT(DEL_X[E:59]*DEL_Y[E:59]/PI[B:8])
SKIN     = -1.0*LOG(SQRT(AREA_TOT/PI[B:8])/WELLRAD)
SKIN     = IFLT0(SKIN,SKIN,0)
! CHECK TO BE SURE WELLPI IS NOT 0 OR NEG, & SET TO 1.0 IF IT IS
! WELLPI   = PERM_X[ID:1] * HEIGHT[ID:1] / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5)
WELLPI   = IFGT0(LOG(DRAINRAD/WELLRAD) + SKIN - 0.5,PERM_X[ID:1]*HEIGHT[ID:1] &
           / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5),1.0)
! CALCULATE CONSTANTS NEEDED FOR WELLBORE MODEL:
! CALCULATE EFFECTIVE SATURATION USING KRP = 4 (BROOKS - COREY MODIFIED,
! WITH LAMBDA (PORE_DIS) = 2.89, NO CAP PRESSURE). DO FOR 4 COUPLED REGIONS
! REGION NO 1 (PANELS 1 & 8)
BRINE1   = IFLT0((BSATPAN1[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN1[ID:1])
SEBRINE1 = (BRINE1 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS1   = (BRINE1 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS1   = IFLT0((1.0 - SEGAS1),1.0,SEGAS1)
KRW1     = SEBRINE1**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG1     = (1.0-SEGAS1)**2*(1.0-SEGAS1**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR1   = WELLPI * KRW1 / VISCO[ID:5]
CONGAS1  = WELLPI * KRG1 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B1   = IFEQ0(KRW1,-10,LOG10(CONBR1+1E-24))
LOG_KR1  = IFEQ0(KRW1,10,LOG10((KRG1+1E-24)/(KRW1+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR1_EQ1  = (EQ1_A+EQ1_B*LOG_B1+EQ1_C*PRESPAN1[ID:1])/ &
           (1.0+EQ1_D*LOG_B1+EQ1_E*PRESPAN1[ID:1])
PR1_EQ1  = IFLT0(8002373.0 - PR1_EQ1,IFLT0(8036090.0 - PR1_EQ1,8036090.0, &
           PR1_EQ1),8002373.0)
PR1_EQ2  = (EQ2_A+EQ2_B*LOG_KR1+EQ2_C*LOG_KR1**2+EQ2_D*LOG_KR1**3+ &
           EQ2_E*PRESPAN1[ID:1])/(1.0+EQ2_F*LOG_KR1+EQ2_G*LOG_KR1**2+ &
           EQ2_H*PRESPAN1[ID:1])
PR1_EQ2  = IFLT0(225453.0 - PR1_EQ2,IFLT0(8028643.0 - PR1_EQ2,8028643.0, &
           PR1_EQ2),225453.0)
PR1_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR1+EQ3_C*ABS(LOG_KR1)**0.5+ &
           EQ3_D*EXP(-1.0*ABS(LOG_KR1))+EQ3_E*PRESPAN1[ID:1]**0.5)
PR1_EQ3  = IFLT0(153271.0 - PR1_EQ3,IFLT0(385493.0 - PR1_EQ3,385493.0, &
           PR1_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP1    = IFEQ0(KRW1,0,IFLT0(PRESPAN1[ID:1]-8.0E6,0, &
           IFEQ0(KRG1,PR1_EQ1,IFLT0(LOG_KR1,PR1_EQ2,PR1_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP1 = MAKEPROP(IFEQ0(FBHP1,1,1000))
! REGION NO 2 (PANELS 2 &7)
BRINE2   = IFLT0((BSATPAN2[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN2[ID:1])
SEBRINE2 = (BRINE2 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS2   = (BRINE2 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS2   = IFLT0((1.0 - SEGAS2),1.0,SEGAS2)
KRW2     = SEBRINE2**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG2     = (1.0-SEGAS2)**2*(1.0-SEGAS2**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR2   = WELLPI * KRW2 / VISCO[ID:5]
CONGAS2  = WELLPI * KRG2 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B2   = IFEQ0(KRW2,-10,LOG10(CONBR2+1E-24))
LOG_KR2  = IFEQ0(KRW2,10,LOG10((KRG2+1E-24)/(KRW2+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR2_EQ1  = (EQ1_A+EQ1_B*LOG_B2+EQ1_C*PRESPAN2[ID:1])/ &
           (1.0+EQ1_D*LOG_B2+EQ1_E*PRESPAN2[ID:1])
PR2_EQ1  = IFLT0(8002373.0 - PR2_EQ1,IFLT0(8036090.0 - PR2_EQ1,8036090.0, &
           PR2_EQ1),8002373.0)
PR2_EQ2  = (EQ2_A+EQ2_B*LOG_KR2+EQ2_C*LOG_KR2**2+EQ2_D*LOG_KR2**3+ &
           EQ2_E*PRESPAN2[ID:1])/(1.0+EQ2_F*LOG_KR2+EQ2_G*LOG_KR2**2+ &
           EQ2_H*PRESPAN2[ID:1])
PR2_EQ2  = IFLT0(225453.0 - PR2_EQ2,IFLT0(8028643.0 - PR2_EQ2,8028643.0, &
           PR2_EQ2),225453.0)
PR2_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR2+EQ3_C*ABS(LOG_KR2)**0.5+ &
           EQ3_D*EXP(-1.0*ABS(LOG_KR2))+EQ3_E*PRESPAN2[ID:1]**0.5)
PR2_EQ3  = IFLT0(153271.0 - PR2_EQ3,IFLT0(385493.0 - PR2_EQ3,385493.0, &
           PR2_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP2    = IFEQ0(KRW2,0,IFLT0(PRESPAN2[ID:1]-8.0E6,0, &
           IFEQ0(KRG2,PR2_EQ1,IFLT0(LOG_KR2,PR2_EQ2,PR2_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP2 = MAKEPROP(IFEQ0(FBHP2,1,1000))
! REGION NO 3 (PANELS 3 & 6)
BRINE3   = IFLT0((BSATPAN3[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN3[ID:1])
SEBRINE3 = (BRINE3 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS3   = (BRINE3 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS3   = IFLT0((1.0 - SEGAS3),1.0,SEGAS3)
KRW3     = SEBRINE3**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG3     = (1.0-SEGAS3)**2*(1.0-SEGAS3**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR3   = WELLPI * KRW3 / VISCO[ID:5]
CONGAS3  = WELLPI * KRG3 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B3   = IFEQ0(KRW3,-10,LOG10(CONBR3+1E-24))
LOG_KR3  = IFEQ0(KRW3,10,LOG10((KRG3+1E-24)/(KRW3+1E-24)))
```

ALG_BF4_CCA_PRE_DIR_REL_S3_DIST.INP File Listing

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! CALCULATE FBHP's AND SET WITHIN LIMITS
PR3_EQ1  = (EQ1_A+EQ1_B*LOG_B3+EQ1_C*PRESPAN3[ID:1])/ &
        (1.0+EQ1_D*LOG_B3+EQ1_E*PRESPAN3[ID:1])
PR3_EQ1  = IFLT0(8002373.0 - PR3_EQ1,IFLT0(8036090.0 - PR3_EQ1,8036090.0, &
        PR3_EQ1),8002373.0)
PR3_EQ2  = (EQ2_A+EQ2_B*LOG_KR3+EQ2_C*LOG_KR3**2+EQ2_D*LOG_KR3**3+ &
        EQ2_E*PRESPAN3[ID:1])/(1.0+EQ2_F*LOG_KR3+EQ2_G*LOG_KR3**2+ &
        EQ2_H*PRESPAN3[ID:1])
PR3_EQ2  = IFLT0(225453.0 - PR3_EQ2,IFLT0(8028643.0 - PR3_EQ2,8028643.0, &
        PR3_EQ2),225453.0)
PR3_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR3+EQ3_C*ABS(LOG_KR3)**0.5+ &
        EQ3_D*EXP(-1.0*ABS(LOG_KR3))+EQ3_E*PRESPAN3[ID:1]**0.5)
PR3_EQ3  = IFLT0(153271.0 - PR3_EQ3,IFLT0(385493.0 - PR3_EQ3,385493.0, &
        PR3_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP3    = IFEQ0(KRW3,0,IFLT0(PRESPAN3[ID:1]-8.0E6,0, &
        IFEQ0(KRG3,PR3_EQ1,IFLT0(LOG_KR3,PR3_EQ2,PR3_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP3 = MAKEPROP(IFEQ0(FBHP3,1,1000))
! REGION NO 4 (PANELS 4 & 5)
BRINE4   = IFLT0((BSATPAN4[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN4[ID:1])
SEBRINE4 = (BRINE4 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS4   = (BRINE4 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS4   = IFLT0((1.0 - SEGAS4),1.0,SEGAS4)
KRW4     = SEBRINE4**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG4     = (1.0-SEGAS4)**2*(1.0-SEGAS4**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR4   = WELLPI * KRW4 / VISCO[ID:5]
CONGAS4  = WELLPI * KRG4 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B4   = IFEQ0(KRW4,-10,LOG10(CONBR4+1E-24))
LOG_KR4  = IFEQ0(KRW4,10,LOG10((KRG4+1E-24)/(KRW4+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR4_EQ1  = (EQ1_A+EQ1_B*LOG_B4+EQ1_C*PRESPAN4[ID:1])/ &
        (1.0+EQ1_D*LOG_B4+EQ1_E*PRESPAN4[ID:1])
PR4_EQ1  = IFLT0(8002373.0 - PR4_EQ1,IFLT0(8036090.0 - PR4_EQ1,8036090.0, &
        PR4_EQ1),8002373.0)
PR4_EQ2  = (EQ2_A+EQ2_B*LOG_KR4+EQ2_C*LOG_KR4**2+EQ2_D*LOG_KR4**3+ &
        EQ2_E*PRESPAN4[ID:1])/(1.0+EQ2_F*LOG_KR4+EQ2_G*LOG_KR4**2+ &
        EQ2_H*PRESPAN4[ID:1])
PR4_EQ2  = IFLT0(225453.0 - PR4_EQ2,IFLT0(8028643.0 - PR4_EQ2,8028643.0, &
        PR4_EQ2),225453.0)
PR4_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR4+EQ3_C*ABS(LOG_KR4)**0.5+ &
        EQ3_D*EXP(-1.0*ABS(LOG_KR4))+EQ3_E*PRESPAN4[ID:1]**0.5)
PR4_EQ3  = IFLT0(153271.0 - PR4_EQ3,IFLT0(385493.0 - PR4_EQ3,385493.0, &
        PR4_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP4    = IFEQ0(KRW4,0,IFLT0(PRESPAN4[ID:1]-8.0E6,0, &
        IFEQ0(KRG4,PR4_EQ1,IFLT0(LOG_KR4,PR4_EQ2,PR4_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP4 = MAKEPROP(IFEQ0(FBHP4,1,1000))
DELETE BRINE1, BRINE2, BRINE3, BRINE4
!========================================================================
!**********************************************************************
!SET UP BOUNDARY CONDITIONS FOR PREVIOUS INTRUSIONS HERE
!**********************************************************************
! SET UP NEEDED CONSTANTS (NOTE: BOREHOLE LENGTH FROM PANEL TO CASTILE B.P.
! IS 247 METERS -- USED IN CON_SAND & CON_CREP)
! MODIFICATIONS MADE 5/30/96
LEN_BC   = MAKEPROP(247.0)
DRAIN_BC = MAKEPROP(SQRT(DEL_X[E:15]*DEL_Y[E:15]/PI[B:8]))
WELPI_BC = PERM_X[ID:1] * HEIGHT[ID:1] / (LOG(DRAIN_BC/WELLRAD) + 0.0 - 0.5)
RHO_G_H  = MAKEPROP(DNSFLUID[ID:5]*GRAVACC[ID:8]*LEN_BC)
CON_OPEN = MAKEPROP((PRM_CAST*THCK_CAS[ID:9]*(LOG(DRAIN_BC/WELLRAD)-0.5)) &
        / (PERM_X[ID:1]*HEIGHT[ID:1]*(LOG(RE_CAST[ID:9]/WELLRAD)-0.5)))
CON_SAND = MAKEPROP((PRM_SAND*PI[ID:8]*WELLRAD*WELLRAD* &
        (LOG(DRAIN_BC/WELLRAD)-0.5)) / (PERM_X[ID:1]*HEIGHT[ID:1]*LEN_BC))
CON_CREP = MAKEPROP((PRM_CREP*PI[ID:8]*WELLRAD*WELLRAD* &
        (LOG(DRAIN_BC/WELLRAD)-0.5)) / (PERM_X[ID:1]*HEIGHT[ID:1]*LEN_BC))
! SOLVE FOR OPEN BOREHOLE TO CASTILE B.C. (WITHIN 200 YEARS AFTER FIRST INTR.)
! USE FBHP4 SINCE BOUNDARY CONDITION WELL IS ASSUMED TO BE IN PANEL 5 (DOWN-
! DIP) FOR ALL SUBSEQUENT INTRUSIONS
BHP_OPEN = (FBHP4+CON_OPEN*(CAST_RE-RHO_G_H))/(1.0+CON_OPEN)
! SOLVE FOR SAND-FILLED BH CONDITION (200 TO 1200 YEARS AFTER 1ST INTRUSION)
BHP_SAND = (FBHP4+CON_SAND*(CAST_WB-RHO_G_H))/(1.0+CON_SAND)
! SOLVE FOR CREEP-CLOSED BH CONDITION (1200 YEARS AFTER 1ST INTRUSION)
BHP_CREP = (FBHP4+CON_CREP*(CAST_WB-RHO_G_H))/(1.0+CON_CREP)
!ASSIGN ABANDONED BH PRESSURE BASED ON INTRUSION TIME
PREV_TME = MAKEPROP(1000.0)
DELT_TME = INTR_TME/YRSEC[ID:8] - PREV_TME
BHP_ABAN = IFGT0(DELT_TME - 200.1,IFGT0(DELT_TME - 1200.1,BHP_CREP,BHP_SAND),&
        BHP_OPEN)
!**********************************************************************
!==================================================
!========================================================================
!**********************************************************************
!CHAPTER 3.  COMPUTE DIP IN REPOSITORY
!**********************************************************************
!**********************************************************************
!==================================================
!==================================================
LIMIT ELEMENT OFF
!COMPUTE THE GRID BLOCK ELEVATIONS ACCOUNTING FOR 1 DEGREE DIP IN SALADO
!DEFINE GRID BLOCK ELEVATIONS DUE TO DIP
! USE ELEVATION OF SHAFT AT MID-REPOSITORY
ZORIGIN  =  382.671
YORIGIN  =  1000.0
ELEVN    = MAKENODE(COS(THETA1[ID:1])*(Z-ZORIGIN) &
        + SIN(THETA1[ID:1])*(Y-YORIGIN))
ELEVE    = NOD2ELE(ELEVN) + ZORIGIN
!COMPUTE GRID BLOCK POTENTIAL ASSUMING BRINE IS INCOMPRESSIBLE (APPROXIMATELY)
POTE     = PRESEL/(DNSFLUID[ID:5]*GRAVACC[ID:8]) + ELEVE
!
! NOW SET GRID THICKNESS FOR ALL ELEMENTS TO CRUSHED PANEL HEIGHT
THICK    = MAKEATTR(HEIGHT[ID:1])
!
DELETE ELEVN, YORIGIN, ZORIGIN
EXIT
```

ALG_BF4_CCA_PRE_DIR_REL_S4_DIST.INP File Listing

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!----------------------------------------------------------------------
!
!TITLE:BRAGFLO 1996 CCA CALCULATIONS: REPOSITORY SCALE BLOWOUT
!ANAYLST: Dan Stoelzel, SNL
!CREATED: NOV 2, 1995
!PURPOSE: ALGEBRA file computes properties that can not be obtained
!        from CAMDAT and/or assigns properties to element blocks.
!             THIS FILE PREPARES A .CDB FILE FOR PREBRAG TO READ
!IMPORTANT: This file originates from J.E. Bean's algebra file for his FEP
!        model. The methodologies to calculate dip were copied from his
!        file, with minor changes
!        made to account for the differences in the meshes.
!        ALGEBRA TO CALC. DIP IN REPOSITORY - SCALE BLOWOUT MODEL.
!        new version of bragflo
!
!           MODIFIED:
!                    MARCH 26, 1996
!                    BLOWOUT MODEL STRUGGLING IN PANEL SEAL REGION: TURNED OFF
!                    CAP PRESSURE IN PANEL SEAL AND HALITE BY SETTING EQUAL TO
!                    CAP PRESSURE IN WASTE REGION
!
!                    MAY 17, 1996
!                    ADDED BOUNDARY CONDITION WELL CALCULATION FOR E1-E2 SCEN.
!                    NEW CHANGES FOR LATEST CCA ANALYSIS
!
!                    MAY 20. 1996
!                    WELL 2 INPUT FILE TO ACCOUNT FOR E1-E2 SAME PANEL BOUNDARY
!                    COND.
!
!                    MAY 30,1996
!                    ADDED LOGIC TO ACCOUNT FOR CHANGES IN ABANDONED WELLBORE
PERM
!                    FOR BOUNDARY CONDITION WELL:
!                    SCENARIO 2 AND 4 FILE, FIRST INTRUSION AT 350 YEARS
!----------------------------------------------------------------------
!************************************************************************
!CHAPTER 0: DEFINE NEW VARIABLE NAMES AND SOME NEEDED CONSTANTS
!************************************************************************
!----------------------------------------------------------------------
!
!
! SET CONSTANTS AND PUT IN WASTE REGION
LIMIT BLOCK 1
THETA1  = MAKEPROP(DIP_DEG[B:8]*2.0*PI[B:8]/360.0)
THETA2  = MAKEPROP(0.0)
!
!
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
POR_COMP = COMP_RCK/POROSITY
! CALCULATE PROPERTIES FOR DRZ & HALITE
LIMIT BLOCK 2 3
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD  = CAP_MOD[ID:1]
PCT_A    = PCT_A[ID:1]
PCT_EXP  = PCT_EXP[ID:1]
! CALC PROPERTIES FOR PANEL SEALS
LIMIT BLOCK 4
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD  = CAP_MOD[ID:1]
PCT_A    = PCT_A[ID:1]
PCT_EXP  = PCT_EXP[ID:1]
!----------------------------------------------------------------------
! SET WELLBORE PROPS
LIMIT BLOCK 7
SEBRINE1 = MAKEPROP(0.0)
SEGAS1   = MAKEPROP(0.0)
KRW1     = MAKEPROP(0.0)
KRG1     = MAKEPROP(0.0)
SEBRINE2 = MAKEPROP(0.0)
SEGAS2   = MAKEPROP(0.0)
KRW2     = MAKEPROP(0.0)
KRG2     = MAKEPROP(0.0)
SEBRINE3 = MAKEPROP(0.0)
SEGAS3   = MAKEPROP(0.0)
KRW3     = MAKEPROP(0.0)
KRG3     = MAKEPROP(0.0)
SEBRINE4 = MAKEPROP(0.0)
SEGAS4   = MAKEPROP(0.0)
KRW4     = MAKEPROP(0.0)
KRG4     = MAKEPROP(0.0)
! DEFINE CONSTANTS FOR THE THREE EQUATIONS TO BE USED TO CALCULATE FBHP
! EQUATION 1: (FOR BRINE FLOW ONLY, KRG = 0)
! FBHP = (A+BX+CY)/(1+DX+EY)
!   X = LOG10(BRINE CONST) LOG M^3/pA-S
!   Y = PANEL PRESSURE (Pa)
! 8,002,373 Pa < FBHP < 8,036,090 Pa
EQ1_A = MAKEPROP(8002577.4)
EQ1_B = MAKEPROP(821379.75)
EQ1_C = MAKEPROP(0.024916096)
EQ1_D = MAKEPROP(0.10264807)
EQ1_E = MAKEPROP(3.1235777E-9)
! EQUATION 2: (FOR LOG10(KRG/KRW) < 0  BRINE DOMINATED FLOW)
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ALG_BF4_CCA_PRE_DIR_REL_S4_DIST.INP File Listing

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! FBHP = (A+BX+CX^2+DX^3+EY)/(1+FX+GX^2+HY)
!   X = LOG10(KRG/KRB)
!   Y = PANEL PRESSURE (Pa)
! 225,453 Pa < FBHP < 8,028,643 Pa
EQ2_A  = MAKEPROP(847082.65)
EQ2_B  = MAKEPROP(2788147.9)
EQ2_C  = MAKEPROP(3451058.3)
EQ2_D  = MAKEPROP(-54884.388)
EQ2_E  = MAKEPROP(-0.017079483)
EQ2_F  = MAKEPROP(0.8953597)
EQ2_G  = MAKEPROP(0.54041532)
EQ2_H  = MAKEPROP(-4.9369107E-9)
! EQUATION 3: (FOR LOG10(KRG/KRW) > 0  GAS DOMINATED FLOW)
! FBHP = EXP(A+BX+CX^0.5+DE^-X+EY^0.5)
!   X = LOG10(KRG/KRB)
!   Y = PANEL PRESSURE (Pa)
! 153,271 Pa < FBHP < 385,493 pA
EQ3_A  = MAKEPROP(8.9214635)
EQ3_B  = MAKEPROP(-0.2274279)
EQ3_C  = MAKEPROP(1.3680586)
EQ3_D  = MAKEPROP(1.8350086)
EQ3_E  = MAKEPROP(0.00045726223)
!
! CALCULATE SKIN FROM SPALL REMOVED, & WELL PRODUCTIVITY INDEX
! ELEMENT 59 IS LOCATION OF WELL 2 (2ND INTRUSION DOWN DIP)
WELLRAD  = BITSIZE/2
DRAINRAD = SQRT(DEL_X[E:59]*DEL_Y[E:59]/PI[B:8])
SKIN     = -1.0*LOG(SQRT(AREA_TOT/PI[B:8])/WELLRAD)
SKIN     = IFLT0(SKIN,SKIN,0)
! CHECK TO BE SURE WELLPI IS NOT 0 OR NEG, & SET TO 1.0 IF IT IS
! WELLPI   = PERM_X[ID:1] * HEIGHT[ID:1] / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5)
WELLPI   = IFGT0(LOG(DRAINRAD/WELLRAD) + SKIN - 0.5,PERM_X[ID:1]*HEIGHT[ID:1] &
           / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5),1.0)
! CALCULATE CONSTANTS NEEDED FOR WELLBORE MODEL:
! CALCULATE EFFECTIVE SATURATION USING KRP = 4 (BROOKS - COREY MODIFIED,
! WITH LAMBDA (PORE_DIS) = 2.89, NO CAP PRESSURE). DO FOR 4 COUPLED REGIONS
! REGION NO 1 (PANELS 1 & 8)
BRINE1   = IFLT0((BSATPAN1[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN1[ID:1])
SEBRINE1 = (BRINE1 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS1   = (BRINE1 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS1   = IFLT0((1.0 - SEGAS1),1.0,SEGAS1)
KRW1     = SEBRINE1**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG1     = (1.0-SEGAS1)**2*(1.0-SEGAS1**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR1   = WELLPI * KRW1 / VISCO[ID:5]
CONGAS1  = WELLPI * KRG1 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B1   = IFEQ0(KRW1,-10,LOG10(CONBR1+1E-24))
LOG_KR1  = IFEQ0(KRW1,10,LOG10((KRG1+1E-24)/(KRW1+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR1_EQ1  = (EQ1_A+EQ1_B*LOG_B1+EQ1_C*PRESPAN1[ID:1])/ &
           (1.0+EQ1_D*LOG_B1+EQ1_E*PRESPAN1[ID:1])
PR1_EQ1  = IFLT0(8002373.0 - PR1_EQ1,IFLT0(8036090.0 - PR1_EQ1,8036090.0, &
           PR1_EQ1),8002373.0)
PR1_EQ2  = (EQ2_A+EQ2_B*LOG_KR1+EQ2_C*LOG_KR1**2+EQ2_D*LOG_KR1**3+ &
           EQ2_E*PRESPAN1[ID:1])/(1.0+EQ2_F*LOG_KR1+EQ2_G*LOG_KR1**2+ &
           EQ2_H*PRESPAN1[ID:1])
PR1_EQ2  = IFLT0(225453.0 - PR1_EQ2,IFLT0(8028643.0 - PR1_EQ2,8028643.0, &
           PR1_EQ2),225453.0)
PR1_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR1+EQ3_C*ABS(LOG_KR1)**0.5+ &
           EQ3_D*EXP(-1.0*ABS(LOG_KR1))+EQ3_E*PRESPAN1[ID:1]**0.5)
PR1_EQ3  = IFLT0(153271.0 - PR1_EQ3,IFLT0(385493.0 - PR1_EQ3,385493.0, &
           PR1_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP1    = IFEQ0(KRW1,0,IFLT0(PRESPAN1[ID:1]-8.0E6,0, &
           IFEQ0(KRG1,PR1_EQ1,IFLT0(LOG_KR1,PR1_EQ2,PR1_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP1 = MAKEPROP(IFEQ0(FBHP1,1,1000))
! REGION NO 2 (PANELS 2 &7)
BRINE2   = IFLT0((BSATPAN2[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN2[ID:1])
SEBRINE2 = (BRINE2 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS2   = (BRINE2 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS2   = IFLT0((1.0 - SEGAS2),1.0,SEGAS2)
KRW2     = SEBRINE2**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG2     = (1.0-SEGAS2)**2*(1.0-SEGAS2**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR2   = WELLPI * KRW2 / VISCO[ID:5]
CONGAS2  = WELLPI * KRG2 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B2   = IFEQ0(KRW2,-10,LOG10(CONBR2+1E-24))
LOG_KR2  = IFEQ0(KRW2,10,LOG10((KRG2+1E-24)/(KRW2+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR2_EQ1  = (EQ1_A+EQ1_B*LOG_B2+EQ1_C*PRESPAN2[ID:1])/ &
           (1.0+EQ1_D*LOG_B2+EQ1_E*PRESPAN2[ID:1])
PR2_EQ1  = IFLT0(8002373.0 - PR2_EQ1,IFLT0(8036090.0 - PR2_EQ1,8036090.0, &
           PR2_EQ1),8002373.0)
PR2_EQ2  = (EQ2_A+EQ2_B*LOG_KR2+EQ2_C*LOG_KR2**2+EQ2_D*LOG_KR2**3+ &
           EQ2_E*PRESPAN2[ID:1])/(1.0+EQ2_F*LOG_KR2+EQ2_G*LOG_KR2**2+ &
           EQ2_H*PRESPAN2[ID:1])
PR2_EQ2  = IFLT0(225453.0 - PR2_EQ2,IFLT0(8028643.0 - PR2_EQ2,8028643.0, &
           PR2_EQ2),225453.0)
PR2_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR2+EQ3_C*ABS(LOG_KR2)**0.5+ &
           EQ3_D*EXP(-1.0*ABS(LOG_KR2))+EQ3_E*PRESPAN2[ID:1]**0.5)
PR2_EQ3  = IFLT0(153271.0 - PR2_EQ3,IFLT0(385493.0 - PR2_EQ3,385493.0, &
           PR2_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP2    = IFEQ0(KRW2,0,IFLT0(PRESPAN2[ID:1]-8.0E6,0, &
           IFEQ0(KRG2,PR2_EQ1,IFLT0(LOG_KR2,PR2_EQ2,PR2_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP2 = MAKEPROP(IFEQ0(FBHP2,1,1000))
! REGION NO 3 (PANELS 3 & 6)
BRINE3   = IFLT0((BSATPAN3[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN3[ID:1])
SEBRINE3 = (BRINE3 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS3   = (BRINE3 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS3   = IFLT0((1.0 - SEGAS3),1.0,SEGAS3)
KRW3     = SEBRINE3**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG3     = (1.0-SEGAS3)**2*(1.0-SEGAS3**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR3   = WELLPI * KRW3 / VISCO[ID:5]
CONGAS3  = WELLPI * KRG3 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B3   = IFEQ0(KRW3,-10,LOG10(CONBR3+1E-24))
```

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LOG_KR3  = IFEQ0(KRW3,10,LOG10((KRG3+1E-24)/(KRW3+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR3_EQ1  = (EQ1_A+EQ1_B*LOG_B3+EQ1_C*PRESPAN3[ID:1])/ &
        (1.0+EQ1_D*LOG_B3+EQ1_E*PRESPAN3[ID:1])
PR3_EQ1  = IFLT0(8002373.0 - PR3_EQ1,IFLT0(8036090.0 - PR3_EQ1,8036090.0, &
        PR3_EQ1),8002373.0)
PR3_EQ2  = (EQ2_A+EQ2_B*LOG_KR3+EQ2_C*LOG_KR3**2+EQ2_D*LOG_KR3**3+ &
        EQ2_E*PRESPAN3[ID:1])/(1.0+EQ2_F*LOG_KR3+EQ2_G*LOG_KR3**2+ &
        EQ2_H*PRESPAN3[ID:1])
PR3_EQ2  = IFLT0(225453.0 - PR3_EQ2,IFLT0(8028643.0 - PR3_EQ2,8028643.0, &
        PR3_EQ2),225453.0)
PR3_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR3+EQ3_C*ABS(LOG_KR3)**0.5+ &
        EQ3_D*EXP(-1.0*ABS(LOG_KR3))+EQ3_E*PRESPAN3[ID:1]**0.5)
PR3_EQ3  = IFLT0(153271.0 - PR3_EQ3,IFLT0(385493.0 - PR3_EQ3,385493.0, &
        PR3_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP3    = IFEQ0(KRW3,0,IFLT0(PRESPAN3[ID:1]-8.0E6,0, &
        IFEQ0(KRG3,PR3_EQ1,IFLT0(LOG_KR3,PR3_EQ2,PR3_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP3 = MAKEPROP(IFEQ0(FBHP3,1,1000))
! REGION NO 4 (PANELS 4 & 5)
BRINE4   = IFLT0((BSATPAN4[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN4[ID:1])
SEBRINE4 = (BRINE4 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS4   = (BRINE4 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS4   = IFLT0((1.0 - SEGAS4),1.0,SEGAS4)
KRW4     = SEBRINE4**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG4     = (1.0-SEGAS4)**2*(1.0-SEGAS4**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR4   = WELLPI * KRW4 / VISCO[ID:5]
CONGAS4  = WELLPI * KRG4 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B4   = IFEQ0(KRW4,-10,LOG10(CONBR4+1E-24))
LOG_KR4  = IFEQ0(KRW4,10,LOG10((KRG4+1E-24)/(KRW4+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR4_EQ1  = (EQ1_A+EQ1_B*LOG_B4+EQ1_C*PRESPAN4[ID:1])/ &
        (1.0+EQ1_D*LOG_B4+EQ1_E*PRESPAN4[ID:1])
PR4_EQ1  = IFLT0(8002373.0 - PR4_EQ1,IFLT0(8036090.0 - PR4_EQ1,8036090.0, &
        PR4_EQ1),8002373.0)
PR4_EQ2  = (EQ2_A+EQ2_B*LOG_KR4+EQ2_C*LOG_KR4**2+EQ2_D*LOG_KR4**3+ &
        EQ2_E*PRESPAN4[ID:1])/(1.0+EQ2_F*LOG_KR4+EQ2_G*LOG_KR4**2+ &
        EQ2_H*PRESPAN4[ID:1])
PR4_EQ2  = IFLT0(225453.0 - PR4_EQ2,IFLT0(8028643.0 - PR4_EQ2,8028643.0, &
        PR4_EQ2),225453.0)
PR4_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR4+EQ3_C*ABS(LOG_KR4)**0.5+ &
        EQ3_D*EXP(-1.0*ABS(LOG_KR4))+EQ3_E*PRESPAN4[ID:1]**0.5)
PR4_EQ3  = IFLT0(153271.0 - PR4_EQ3,IFLT0(385493.0 - PR4_EQ3,385493.0, &
        PR4_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP4    = IFEQ0(KRW4,0,IFLT0(PRESPAN4[ID:1]-8.0E6,0, &
        IFEQ0(KRG4,PR4_EQ1,IFLT0(LOG_KR4,PR4_EQ2,PR4_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP4 = MAKEPROP(IFEQ0(FBHP4,1,1000))
DELETE BRINE1, BRINE2, BRINE3, BRINE4
!----------------------------------------------------------------------------
!*************************************************************************
!SET UP BOUNDARY CONDITIONS FOR PREVIOUS INTRUSIONS HERE
!*************************************************************************
! WELLPI AND FBHP ARE SET TO ZERO FOR E2 INTRUSIONS (S4, S5)
WELPI_BC = MAKEPROP(0.0)
BHP_ABAN = MAKEPROP(0.0)
!*************************************************************************
!------------------------------------------------
!----------------------------------------------------------------------------
!*************************************************************************
!CHAPTER 3.  COMPUTE DIP IN REPOSITORY
!*************************************************************************
!*************************************************************************
!------------------------------------------------
!------------------------------------------------
LIMIT ELEMENT OFF
!COMPUTE THE GRID BLOCK ELEVATIONS ACCOUNTING FOR 1 DEGREE DIP IN SALADO
!DEFINE GRID BLOCK ELEVATIONS DUE TO DIP
! USE ELEVATION OF SHAFT AT MID-REPOSITORY
ZORIGIN  = 382.671
YORIGIN  = 1000.0
ELEVN    = MAKENODE(COS(THETA1[ID:1])*(Z-ZORIGIN) &
        + SIN(THETA1[ID:1])*(Y-YORIGIN))
ELEVE    = NOD2ELE(ELEVN) + ZORIGIN
!COMPUTE GRID BLOCK POTENTIAL ASSUMING BRINE IS INCOMPRESSIBLE (APPROXIMATELY)
POTE     = PRESEL/(DNSFLUID[ID:5]*GRAVACC[ID:8]) + ELEVE
!
! NOW SET GRID THICKNESS FOR ALL ELEMENTS TO CRUSHED PANEL HEIGHT
THICK    = MAKEATTR(HEIGHT[ID:1])
!
DELETE ELEVN, YORIGIN, ZORIGIN
EXIT
```

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!------------------------------------------------------------------------
!
!TITLE:BRAGFLO 1996 CCA CALCULATIONS: REPOSITORY SCALE BLOWOUT
!ANAYLST: Dan Stoelzel, SNL
!CREATED: NOV 2, 1995
!PURPOSE: ALGEBRA file computes properties that can not be obtained
!        from CAMDAT and/or assigns properties to element blocks.
!                THIS FILE PREPARES A .CDB FILE FOR PREBRAG TO READ
!IMPORTANT: This file originates from J.E. Bean's algebra file for his FEP
!        model. The methodologies to calculate dip were copied from his
!        file, with minor changes
!        made to account for the differences in the meshes.
!        ALGEBRA TO CALC. DIP IN REPOSITORY - SCALE BLOWOUT MODEL.
!        new version of bragflo
!
!            MODIFIED:
!                    MARCH 26, 1996
!                    BLOWOUT MODEL STRUGGLING IN PANEL SEAL REGION: TURNED OFF
!                    CAP PRESSURE IN PANEL SEAL AND HALITE BY SETTING EQUAL TO
!                    CAP PRESSURE IN WASTE REGION
!
!                    MAY 17, 1996
!                    ADDED BOUNDARY CONDITION WELL CALCULATION FOR E1-E2 SCEN.
!                    NEW CHANGES FOR LATEST CCA ANALYSIS
!
!                    MAY 20. 1996
!                    WELL 2 INPUT FILE TO ACCOUNT FOR E1-E2 SAME PANEL BOUNDARY
!                    COND.
!
!                    MAY 30,1996
!                    ADDED LOGIC TO ACCOUNT FOR CHANGES IN ABANDONED WELLBORE
PERM
!                    FOR BOUNDARY CONDITION WELL:
!                    SCENARIO 2 AND 4 FILE, FIRST INTRUSION AT 350 YEARS
!------------------------------------------------------------------------
!*********************************************************************
!CHAPTER 0: DEFINE NEW VARIABLE NAMES AND SOME NEEDED CONSTANTS
!*********************************************************************
!------------------------------------------------------------------------
!
!
! SET CONSTANTS AND PUT IN WASTE REGION
LIMIT BLOCK 1
THETA1  = MAKEPROP(DIP_DEG[B:8]*2.0*PI[B:8]/360.0)
THETA2  = MAKEPROP(0.0)
!
!
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
POR_COMP = COMP_RCK/POROSITY
! CALCULATE PROPERTIES FOR DRZ & HALITE
LIMIT BLOCK 2 3
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD = CAP_MOD[ID:1]
PCT_A   = PCT_A[ID:1]
PCT_EXP = PCT_EXP[ID:1]
! CALC PROPERTIES FOR PANEL SEALS
LIMIT BLOCK 4
PERM_X  = 10**PRMX_LOG
PERM_Y  = 10**PRMY_LOG
PERM_Z  = 10**PRMZ_LOG
SB_MIN  = SAT_RBRN * 1.05
! NOW ADJUST POROSITY AND PORE COMPRESSIBILITY TO EQ. PORE VOL WITH CRUSHED
! ROOM HEIGHT
POROSITY = HEIGHT * POROSITY / HEIGHT[ID:1]
POR_COMP = COMP_RCK/POROSITY
! CAP PRESSURE MODEL CHANGES HERE:
CAP_MOD = CAP_MOD[ID:1]
PCT_A   = PCT_A[ID:1]
PCT_EXP = PCT_EXP[ID:1]
!------------------------------------------------------------------------
! SET WELLBORE PROPS
LIMIT BLOCK 7
SEBRINE1 = MAKEPROP(0.0)
SEGAS1   = MAKEPROP(0.0)
KRW1     = MAKEPROP(0.0)
KRG1     = MAKEPROP(0.0)
SEBRINE2 = MAKEPROP(0.0)
SEGAS2   = MAKEPROP(0.0)
KRW2     = MAKEPROP(0.0)
KRG2     = MAKEPROP(0.0)
SEBRINE3 = MAKEPROP(0.0)
SEGAS3   = MAKEPROP(0.0)
KRW3     = MAKEPROP(0.0)
KRG3     = MAKEPROP(0.0)
SEBRINE4 = MAKEPROP(0.0)
SEGAS4   = MAKEPROP(0.0)
KRW4     = MAKEPROP(0.0)
KRG4     = MAKEPROP(0.0)
! DEFINE CONSTANTS FOR THE THREE EQUATIONS TO BE USED TO CALCULATE FBHP
! EQUATION 1: (FOR BRINE FLOW ONLY, KRG = 0)
! FBHP = (A+BX+CY)/(1+DX+EY)
!   X = LOG10(BRINE CONST) LOG M^3/pA-S
!   Y = PANEL PRESSURE (Pa)
! 8,002,373 Pa < FBHP < 8,036,090 Pa
EQ1_A = MAKEPROP(8002577.4)
EQ1_B = MAKEPROP(821379.75)
EQ1_C = MAKEPROP(0.024916096)
EQ1_D = MAKEPROP(0.10264807)
EQ1_E = MAKEPROP(3.1235777E-9)
! EQUATION 2: (FOR LOG10(KRG/KRW) < 0  BRINE DOMINATED FLOW)
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! FBHP = (A+BX+CX^2+DX^3+EY)/(1+FX+GX^2+HY)
!   X = LOG10(KRG/KRB)
!   Y = PANEL PRESSURE (Pa)
! 225,453 Pa < FBHP < 8,028,643 Pa
EQ2_A  = MAKEPROP(847082.65)
EQ2_B  = MAKEPROP(2788147.9)
EQ2_C  = MAKEPROP(3451058.3)
EQ2_D  = MAKEPROP(-54884.388)
EQ2_E  = MAKEPROP(-0.017079483)
EQ2_F  = MAKEPROP(0.8953597)
EQ2_G  = MAKEPROP(0.54041532)
EQ2_H  = MAKEPROP(-4.9369107E-9)
! EQUATION 3: (FOR LOG10(KRG/KRW) > 0  GAS DOMINATED FLOW)
! FBHP = EXP(A+BX+CX^0.5+DE^-X+EY^0.5)
!   X = LOG10(KRG/KRB)
!   Y = PANEL PRESSURE (Pa)
! 153,271 Pa < FBHP < 385,493 pA
EQ3_A  = MAKEPROP(8.9214635)
EQ3_B  = MAKEPROP(-0.2274279)
EQ3_C  = MAKEPROP(1.3680586)
EQ3_D  = MAKEPROP(1.8350086)
EQ3_E  = MAKEPROP(0.00045726223)
!
! CALCULATE SKIN FROM SPALL REMOVED, & WELL PRODUCTIVITY INDEX
! ELEMENT 59 IS LOCATION OF WELL 2 (2ND INTRUSION DOWN DIP)
WELLRAD  = BITSIZE/2
DRAINRAD = SQRT(DEL_X[E:59]*DEL_Y[E:59]/PI[B:8])
SKIN     = -1.0*LOG(SQRT(AREA_TOT/PI[B:8])/WELLRAD)
SKIN     = IFLT0(SKIN,SKIN,0)
! CHECK TO BE SURE WELLPI IS NOT 0 OR NEG, & SET TO 1.0 IF IT IS
! WELLPI   = PERM_X[ID:1] * HEIGHT[ID:1] / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5)
WELLPI   = IFGT0(LOG(DRAINRAD/WELLRAD) + SKIN - 0.5,PERM_X[ID:1]*HEIGHT[ID:1] &
           / (LOG(DRAINRAD/WELLRAD) + SKIN - 0.5),1.0)
! CALCULATE CONSTANTS NEEDED FOR WELLBORE MODEL:
! CALCULATE EFFECTIVE SATURATION USING KRP = 4 (BROOKS - COREY MODIFIED,
! WITH LAMBDA (PORE_DIS) = 2.89, NO CAP PRESSURE). DO FOR 4 COUPLED REGIONS
! REGION NO 1 (PANELS 1 & 8)
BRINE1   = IFLT0((BSATPAN1[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN1[ID:1])
SEBRINE1 = (BRINE1 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS1   = (BRINE1 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS1   = IFLT0((1.0 - SEGAS1),1.0,SEGAS1)
KRW1     = SEBRINE1**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG1     = (1.0-SEGAS1)**2*(1.0-SEGAS1**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR1   = WELLPI * KRW1 / VISCO[ID:5]
CONGAS1  = WELLPI * KRG1 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B1   = IFEQ0(KRW1,-10,LOG10(CONBR1+1E-24))
LOG_KR1  = IFEQ0(KRW1,10,LOG10((KRG1+1E-24)/(KRW1+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR1_EQ1  = (EQ1_A+EQ1_B*LOG_B1+EQ1_C*PRESPAN1[ID:1])/ &
           (1.0+EQ1_D*LOG_B1+EQ1_E*PRESPAN1[ID:1])
PR1_EQ1  = IFLT0(8002373.0 - PR1_EQ1,IFLT0(8036090.0 - PR1_EQ1,8036090.0, &
           PR1_EQ1),8002373.0)
PR1_EQ2  = (EQ2_A+EQ2_B*LOG_KR1+EQ2_C*LOG_KR1**2+EQ2_D*LOG_KR1**3+ &
           EQ2_E*PRESPAN1[ID:1])/(1.0+EQ2_F*LOG_KR1+EQ2_G*LOG_KR1**2+ &
           EQ2_H*PRESPAN1[ID:1])
PR1_EQ2  = IFLT0(225453.0 - PR1_EQ2,IFLT0(8028643.0 - PR1_EQ2,8028643.0, &
           PR1_EQ2),225453.0)
PR1_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR1+EQ3_C*ABS(LOG_KR1)**0.5+ &
           EQ3_D*EXP(-1.0*ABS(LOG_KR1))+EQ3_E*PRESPAN1[ID:1]**0.5)
PR1_EQ3  = IFLT0(153271.0 - PR1_EQ3,IFLT0(385493.0 - PR1_EQ3,385493.0, &
           PR1_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP1    = IFEQ0(KRW1,0,IFLT0(PRESPAN1[ID:1]-8.0E6,0, &
           IFEQ0(KRG1,PR1_EQ1,IFLT0(LOG_KR1,PR1_EQ2,PR1_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP1 = MAKEPROP(IFEQ0(FBHP1,1,1000))
! REGION NO 2 (PANELS 2 &7)
BRINE2   = IFLT0((BSATPAN2[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN2[ID:1])
SEBRINE2 = (BRINE2 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS2   = (BRINE2 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS2   = IFLT0((1.0 - SEGAS2),1.0,SEGAS2)
KRW2     = SEBRINE2**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG2     = (1.0-SEGAS2)**2*(1.0-SEGAS2**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR2   = WELLPI * KRW2 / VISCO[ID:5]
CONGAS2  = WELLPI * KRG2 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B2   = IFEQ0(KRW2,-10,LOG10(CONBR2+1E-24))
LOG_KR2  = IFEQ0(KRW2,10,LOG10((KRG2+1E-24)/(KRW2+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR2_EQ1  = (EQ1_A+EQ1_B*LOG_B2+EQ1_C*PRESPAN2[ID:1])/ &
           (1.0+EQ1_D*LOG_B2+EQ1_E*PRESPAN2[ID:1])
PR2_EQ1  = IFLT0(8002373.0 - PR2_EQ1,IFLT0(8036090.0 - PR2_EQ1,8036090.0, &
           PR2_EQ1),8002373.0)
PR2_EQ2  = (EQ2_A+EQ2_B*LOG_KR2+EQ2_C*LOG_KR2**2+EQ2_D*LOG_KR2**3+ &
           EQ2_E*PRESPAN2[ID:1])/(1.0+EQ2_F*LOG_KR2+EQ2_G*LOG_KR2**2+ &
           EQ2_H*PRESPAN2[ID:1])
PR2_EQ2  = IFLT0(225453.0 - PR2_EQ2,IFLT0(8028643.0 - PR2_EQ2,8028643.0, &
           PR2_EQ2),225453.0)
PR2_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR2+EQ3_C*ABS(LOG_KR2)**0.5+ &
           EQ3_D*EXP(-1.0*ABS(LOG_KR2))+EQ3_E*PRESPAN2[ID:1]**0.5)
PR2_EQ3  = IFLT0(153271.0 - PR2_EQ3,IFLT0(385493.0 - PR2_EQ3,385493.0, &
           PR2_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP2    = IFEQ0(KRW2,0,IFLT0(PRESPAN2[ID:1]-8.0E6,0, &
           IFEQ0(KRG2,PR2_EQ1,IFLT0(LOG_KR2,PR2_EQ2,PR2_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP2 = MAKEPROP(IFEQ0(FBHP2,1,1000))
! REGION NO 3 (PANELS 3 & 6)
BRINE3   = IFLT0((BSATPAN3[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN3[ID:1])
SEBRINE3 = (BRINE3 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS3   = (BRINE3 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS3   = IFLT0((1.0 - SEGAS3),1.0,SEGAS3)
KRW3     = SEBRINE3**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG3     = (1.0-SEGAS3)**2*(1.0-SEGAS3**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR3   = WELLPI * KRW3 / VISCO[ID:5]
CONGAS3  = WELLPI * KRG3 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B3   = IFEQ0(KRW3,-10,LOG10(CONBR3+1E-24))
```

ALG_BF4_CCA_PRE_DIR_REL_S5_DIST.INP File Listing

```
LOG_KR3  = IFEQ0(KRW3,10,LOG10((KRG3+1E-24)/(KRW3+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR3_EQ1  = (EQ1_A+EQ1_B*LOG_B3+EQ1_C*PRESPAN3[ID:1])/ &
        (1.0+EQ1_D*LOG_B3+EQ1_E*PRESPAN3[ID:1])
PR3_EQ1  = IFLT0(8002373.0 - PR3_EQ1,IFLT0(8036090.0 - PR3_EQ1,8036090.0, &
        PR3_EQ1),8002373.0)
PR3_EQ2  = (EQ2_A+EQ2_B*LOG_KR3+EQ2_C*LOG_KR3**2+EQ2_D*LOG_KR3**3+ &
        EQ2_E*PRESPAN3[ID:1])/(1.0+EQ2_F*LOG_KR3+EQ2_G*LOG_KR3**2+ &
        EQ2_H*PRESPAN3[ID:1])
PR3_EQ2  = IFLT0(225453.0 - PR3_EQ2,IFLT0(8028643.0 - PR3_EQ2,8028643.0, &
        PR3_EQ2),225453.0)
PR3_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR3+EQ3_C*ABS(LOG_KR3)**0.5+ &
        EQ3_D*EXP(-1.0*ABS(LOG_KR3))+EQ3_E*PRESPAN3[ID:1]**0.5)
PR3_EQ3  = IFLT0(153271.0 - PR3_EQ3,IFLT0(385493.0 - PR3_EQ3,385493.0, &
        PR3_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP3    = IFEQ0(KRW3,0,IFLT0(PRESPAN3[ID:1]-8.0E6,0, &
        IFEQ0(KRG3,PR3_EQ1,IFLT0(LOG_KR3,PR3_EQ2,PR3_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP3 = MAKEPROP(IFEQ0(FBHP3,1,1000))
! REGION NO 4 (PANELS 4 & 5)
BRINE4   = IFLT0((BSATPAN4[ID:1]-SAT_RBRN[ID:1]),SAT_RBRN[ID:1],BSATPAN4[ID:1])
SEBRINE4 = (BRINE4 - SAT_RBRN[ID:1])/(1.0 - SAT_RBRN[ID:1])
SEGAS4   = (BRINE4 - SAT_RBRN[ID:1])/(1.0-SAT_RBRN[ID:1]-SAT_RGAS[ID:1])
SEGAS4   = IFLT0((1.0 - SEGAS4),1.0,SEGAS4)
KRW4     = SEBRINE4**((2+3*PORE_DIS[ID:1])/PORE_DIS[ID:1])
KRG4     = (1.0-SEGAS4)**2*(1.0-SEGAS4**((2 + PORE_DIS[ID:1])/PORE_DIS[ID:1]))
! NOW CALCULATE CONSTANT FOR BRINE AND GAS
CONBR4   = WELLPI * KRW4 / VISCO[ID:5]
CONGAS4  = WELLPI * KRG4 / VISCO[ID:6]
! NOW TAKE LOG BASE 10 OF PARAMETERS NEEDED FOR FBHP EQUATIONS
LOG_B4   = IFEQ0(KRW4,-10,LOG10(CONBR4+1E-24))
LOG_KR4  = IFEQ0(KRW4,10,LOG10((KRG4+1E-24)/(KRW4+1E-24)))
! CALCULATE FBHP's AND SET WITHIN LIMITS
PR4_EQ1  = (EQ1_A+EQ1_B*LOG_B4+EQ1_C*PRESPAN4[ID:1])/ &
        (1.0+EQ1_D*LOG_B4+EQ1_E*PRESPAN4[ID:1])
PR4_EQ1  = IFLT0(8002373.0 - PR4_EQ1,IFLT0(8036090.0 - PR4_EQ1,8036090.0, &
        PR4_EQ1),8002373.0)
PR4_EQ2  = (EQ2_A+EQ2_B*LOG_KR4+EQ2_C*LOG_KR4**2+EQ2_D*LOG_KR4**3+ &
        EQ2_E*PRESPAN4[ID:1])/(1.0+EQ2_F*LOG_KR4+EQ2_G*LOG_KR4**2+ &
        EQ2_H*PRESPAN4[ID:1])
PR4_EQ2  = IFLT0(225453.0 - PR4_EQ2,IFLT0(8028643.0 - PR4_EQ2,8028643.0, &
        PR4_EQ2),225453.0)
PR4_EQ3  = EXP(EQ3_A+EQ3_B*LOG_KR4+EQ3_C*ABS(LOG_KR4)**0.5+ &
        EQ3_D*EXP(-1.0*ABS(LOG_KR4))+EQ3_E*PRESPAN4[ID:1]**0.5)
PR4_EQ3  = IFLT0(153271.0 - PR4_EQ3,IFLT0(385493.0 - PR4_EQ3,385493.0, &
        PR4_EQ3),153271.0)
! RESET FBHP TO 0 IF NO BRINE BLOWOUT (KRW = 0 OR PRESSURE < 8 MPa)
FBHP4    = IFEQ0(KRW4,0,IFLT0(PRESPAN4[ID:1]-8.0E6,0, &
        IFEQ0(KRG4,PR4_EQ1,IFLT0(LOG_KR4,PR4_EQ2,PR4_EQ3))))
! IF NO BLOWOUT, SET NUMBER OF BRAGFLO STEPS TO 1, ELSE 1000
NUMSTEP4 = MAKEPROP(IFEQ0(FBHP4,1,1000))
DELETE BRINE1, BRINE2, BRINE3, BRINE4
!=======================================================================
!***********************************************************************
!SET UP BOUNDARY CONDITIONS FOR PREVIOUS INTRUSIONS HERE
!***********************************************************************
! WELLPI AND FBHP ARE SET TO ZERO FOR E2 INTRUSIONS (S4, S5)
WELPI_BC = MAKEPROP(0.0)
BHP_ABAN = MAKEPROP(0.0)
!***********************************************************************
!=================================================
!=======================================================================
!***********************************************************************
!CHAPTER 3.  COMPUTE DIP IN REPOSITORY
!***********************************************************************
!***********************************************************************
!=================================================
!=================================================
LIMIT ELEMENT OFF
!COMPUTE THE GRID BLOCK ELEVATIONS ACCOUNTING FOR 1 DEGREE DIP IN SALADO
!DEFINE GRID BLOCK ELEVATIONS DUE TO DIP
! USE ELEVATION OF SHAFT AT MID-REPOSITORY
ZORIGIN  =  382.671
YORIGIN  =  1000.0
ELEVN    = MAKENODE(COS(THETA1[ID:1])*(Z-ZORIGIN) &
        + SIN(THETA1[ID:1])*(Y-YORIGIN))
ELEVE    = NOD2ELE(ELEVN) + ZORIGIN
!COMPUTE GRID BLOCK POTENTIAL ASSUMING BRINE IS INCOMPRESSIBLE (APPROXIMATELY)
POTE     = PRESEL/(DNSFLUID[ID:5]*GRAVACC[ID:8]) + ELEVE
!
! NOW SET GRID THICKNESS FOR ALL ELEMENTS TO CRUSHED PANEL HEIGHT
THICK    = MAKEATTR(HEIGHT[ID:1])
!
DELETE ELEVN, YORIGIN, ZORIGIN
EXIT
```

ALG_BF4_CCA_PRECUSP_DIR_REL.INP File Listing

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!==============================================================
!TITLE: BRAGFLO 1995 FEP SCREENING - POSTALGEBRA BLOWOUT CALCULATIONS
!ANALYST: David A. McArthur, Sandia National Labs Org 14614
!CREATED: SEPTEMBER 21, 1995
!PURPOSE: SUMMARY VARIABLES FOR BLOWOUT CCDF CALCULATIONS/R-Z WELL CALCS
!MODIFIED: 11/7/95 BY DM STOELZEL, FOR THE REPOSITORY-SCALE BLOWOUT MODEL
!MODIFIED: 11/27/95 BY DM STOELZEL. CHANGED BRNBHUE TO USE HISTORY VARIABLES
!      HV021001, HV022001 TO GET WELL FLOW RATES. THIS INPUT FILE CAN NOW
!      BE USED FOR ALL BLOWOUT POST PROCESSING, AS LONG AS HISTORY
!      VARIABLES ARE NOT CHANGED IN PREBRAG
!
!          MAY 30, 1996
!          RENAMED HISTORY VARIABLES TO CURRENT BRAGFLO USAGE. ALSO RENAMED OUTPUT
!          VARIABLES TO BRINEFLW GASFLW BRINEOUT GASOUT
!==============================================================
DELETE ALL
!
!*********************************************************************        DMS 11/21/96
!CALCULATE THE CUMULATIVE AMOUNT OF BRINE FLOW UP THROUGH BORE-HOLE;
!USE THE WELL PRODUCTIONS SUMMED OVER TOTAL BOREHOLE
BRINEFLW = -1.0 * H0210001                                     Conversions
!
MAX_BRN = ENVMAX(BRINEFLW)
!
BRN_RATE = BRINEFLW * 5.4346E5 - - - - - - - m3/s to barrels/day
!
BRINEOUT = INTRIGHT(BRINEFLW)
!
BRN_ENG = BRINEOUT * 6.29 - - - - - - - - m3 to barrels
!
GASFLW = -1.0 * H0220001
!
MAX_GAS = ENVMAX(GASFLW)
!
GAS_RATE = GASFLW * 3.051E3 - - - - - - - m3/s to MSCF/day
!
GASOUT = INTRIGHT(GASFLW)
!
GAS_ENG = 3.5315E-2 * GASOUT
!
LGR_MET = 1E6 * BRINEOUT / (GASOUT + 1E-15)          } Liquid/gas ratios (not
LGR_ENG1 = LGR_MET / 5.615                           }                    used)
LGR_ENG2 = (BRN_ENG * 1000) / (GAS_ENG + 1E-15)      }
! calculate brine releases based on max and min allowable flows
! GAS_MIN IS MINIMUM GAS FLOW RATE (MSCF/DAY) NEEDED TO CONTROL GAS BLOWOUT
! READ IN FROM DATABASE. MINFLOW IS THE MINIMUM FLOW DURATION, MAXFLOW IS
! LONGEST ALLOWABLE FLOW
BRIN_REL = MAKEHIST(0.0)
TEMP_REL = BRIN_REL[T:-1]
BRIN_REL = IFLT0(TIME - MINFLOW[ID:9],BRINEOUT,IFLT0(TIME - MAXFLOW[ID:9], &
IFLT0(GAS_RATE - GAS_MIN[ID:9],TEMP_REL,BRINEOUT),TEMP_REL))
DELETE TEMP_REL
!*********************************************************************
! NOW CALCULATE BRINE INJECTED IN BOUNDARY CONDITION WELL
! GAS INJECTED IS ALSO CALCULATED AS A CHECK (SHOULD BE ZERO)
!
BRINE_BC = H0210002
!
BRINEINJ = INTRIGHT(BRINE_BC)
!
BRINJENG = BRINEINJ * 6.29
!
GAS_BC = H0220002
!
GASINJ = INTRIGHT(GAS_BC)
!
GAINJENG = 3.5315E-2 * GASINJ
!
!*********************************************************************
!CALCULATE THE BRINE VOLUME IN CUBIC METERS FOR EACH PANEL
! PANEL 1
LIMIT ELEM 526 TO 600
GRIDVOL1 = DEL_X*DEL_Y*THICK*POROS
TOTVOL1 = SUM(GRIDVOL1)
BRNVOLW1 = SUM((1-SATGAS)*GRIDVOL1)
SATBRN1 = SUM((1-SATGAS)*GRIDVOL1/TOTVOL1)
BRNPRES1 = SUM(PRESBRIN*GRIDVOL1/TOTVOL1)
! PANEL 2
LIMIT ELEM 376 TO 450
GRIDVOL2 = DEL_X*DEL_Y*THICK*POROS
TOTVOL2 = SUM(GRIDVOL2)
BRNVOLW2 = SUM((1-SATGAS)*GRIDVOL2)
SATBRN2 = SUM((1-SATGAS)*GRIDVOL2/TOTVOL2)
BRNPRES2 = SUM(PRESBRIN*GRIDVOL2/TOTVOL2)
! PANEL 3
LIMIT ELEM 226 TO 300
GRIDVOL3 = DEL_X*DEL_Y*THICK*POROS
TOTVOL3 = SUM(GRIDVOL3)
BRNVOLW3 = SUM((1-SATGAS)*GRIDVOL3)
SATBRN3 = SUM((1-SATGAS)*GRIDVOL3/TOTVOL3)
BRNPRES3 = SUM(PRESBRIN*GRIDVOL3/TOTVOL3)
! PANEL 4
LIMIT ELEM 76 TO 150
GRIDVOL4 = DEL_X*DEL_Y*THICK*POROS
TOTVOL4 = SUM(GRIDVOL4)
BRNVOLW4 = SUM((1-SATGAS)*GRIDVOL4)
SATBRN4 = SUM((1-SATGAS)*GRIDVOL4/TOTVOL4)
BRNPRES4 = SUM(PRESBRIN*GRIDVOL4/TOTVOL4)
! PANEL 5
LIMIT ELEM 1 TO 75
GRIDVOL5 = DEL_X*DEL_Y*THICK*POROS
TOTVOL5 = SUM(GRIDVOL5)
BRNVOLW5 = SUM((1-SATGAS)*GRIDVOL5)
SATBRN5 = SUM((1-SATGAS)*GRIDVOL5/TOTVOL5)
BRNPRES5 = SUM(PRESBRIN*GRIDVOL5/TOTVOL5)
! PANEL 6
LIMIT ELEM 151 TO 225
GRIDVOL6 = DEL_X*DEL_Y*THICK*POROS
TOTVOL6 = SUM(GRIDVOL6)
BRNVOLW6 = SUM((1-SATGAS)*GRIDVOL6)
SATBRN6 = SUM((1-SATGAS)*GRIDVOL6/TOTVOL6)
```

ALG_BF4_CCA_PRECUSP_DIR_REL.INP File Listing

```
BRNPRES6 = SUM(PRESBRIN*GRIDVOL6/TOTVOL6)
! PANEL 7
LIMIT ELEM 301 TO 375
GRIDVOL7 = DEL_X*DEL_Y*THICK*POROS
TOTVOL7  = SUM(GRIDVOL7)
BRNVOLW7 = SUM((1-SATGAS)*GRIDVOL7)
SATBRN7  = SUM((1-SATGAS)*GRIDVOL7/TOTVOL7)
BRNPRES7 = SUM(PRESBRIN*GRIDVOL7/TOTVOL7)
! PANEL 8
LIMIT ELEM 451 TO 525
GRIDVOL8 = DEL_X*DEL_Y*THICK*POROS
TOTVOL8  = SUM(GRIDVOL8)
BRNVOLW8 = SUM((1-SATGAS)*GRIDVOL8)
SATBRN8  = SUM((1-SATGAS)*GRIDVOL8/TOTVOL8)
BRNPRES8 = SUM(PRESBRIN*GRIDVOL8/TOTVOL8)
! PANEL 9: LOWER DRIFT & PASSAGEWAYS
LIMIT ELEM 600 TO 617, 635 TO 638, 643 TO 659, 677 TO 680, 685 TO 701, &
        719 TO 722, 727 TO 743
GRIDVOL9 = DEL_X*DEL_Y*THICK*POROS
TOTVOL9  = SUM(GRIDVOL9)
BRNVOLW9 = SUM((1-SATGAS)*GRIDVOL9)
SATBRN9  = SUM((1-SATGAS)*GRIDVOL9/TOTVOL9)
BRNPRES9 = SUM(PRESBRIN*GRIDVOL9/TOTVOL9)
! PANEL 0: UPPER DRIFT & PASSAGEWAYS
LIMIT ELEM 618 TO 634, 639 TO 642, 660 TO 676, 681 TO 684, 702 TO 718, &
        723 TO 726, 744 TO 760
GRIDVOL0 = DEL_X*DEL_Y*THICK*POROS
TOTVOL0  = SUM(GRIDVOL0)
BRNVOLW0 = SUM((1-SATGAS)*GRIDVOL0)
SATBRN0  = SUM((1-SATGAS)*GRIDVOL0/TOTVOL0)
BRNPRES0 = SUM(PRESBRIN*GRIDVOL0/TOTVOL0)
!
LIMIT ELEM OFF
!
WASTE_PV = TOTVOL1+TOTVOL2+TOTVOL3+TOTVOL4+TOTVOL5+TOTVOL6+TOTVOL7+TOTVOL8+
&
        TOTVOL9+TOTVOL0
!
TOT_BRIN =
BRNVOLW1+BRNVOLW2+BRNVOLW3+BRNVOLW4+BRNVOLW5+BRNVOLW6+BRNVOLW7+ &
        BRNVOLW8+BRNVOLW9+BRNVOLW0
!
DELETE GRIDVOL1, GRIDVOL2, GRIDVOL3, GRIDVOL4, GRIDVOL5, GRIDVOL6, GRIDVOL7
DELETE GRIDVOL8, GRIDVOL9, GRIDVOL0
!
exit
```

BF4_BF1_CCA_DIR_REL_S1_UP.INP File Listing

```

!------------------------------------------------------------------------
!
! TITLE: PREBRAG INPUT FOR BLOWOUT CALCULATION: REPOSIRORY SCALE MODEL
! ANALYST: DAN M. STOELZEL
! DATE: NOV 3, 1995
! SCENARIO: UNDISTURBED SCENERIO: NO FLOW IN DRZ AND SALADO
!        DIP INCLUDED
!
!            MODIFIED MARCH 22, 1996
!              CHANGES MADE TO WELL INPUT CARD TO INCORPORATE FBHP MODEL (FROM
!     PREVIOUS ALGEBRA)
!------------------------------------------------------------------------
*HEADING
TITLE2 = BRINE BLOWOUT IN REPOSITORY SCALE MODEL
!------------------------------------------------------------------------
*GAS_TRANSPORT_initial_conditions
CALC=NO
!------------------------------------------------------------------------
*INITIAL_CONDITIONS
!BEGIN SIMULATION AT 0 YEARS
BEGIN, TIME= 0.0
CAMDAT,TIME= 0.0
SATBR,  ID_BRINE =SATBREL
PRESSURE,ID_PRES  =PRESEL
CONFE  , ID_CONFE =FECONC
CONCELL, ID_CONCEL=CH2OCONC
ELEVAT,  ID_ELEV  =ELEVE
!------------------------------------------------------------------------
!*STEP_CONTROL
!!TIME STEP IS REDUCED AT TIME THE WELLBORE IS ACTIVATED, TIME=0.0 YEARS
! TIME,BEGIN=0.0, DT=8.64e-02
!------------------------------------------------------------------------
*WELL_DATA
TIME_CONTROL, TIME_ID=1,WELLTIME=0.0
!PRODUCTION WELL WITH F-BHP AND PI BASED ON INPUTS
WELL_CONTROL, MAT=WELLBORE,TIME_ID=1,NUM=1,TYPE=PROD, &
         ILOC=21,JLOC=27,KLOC=1,&
         QO=0.0, QG=0.0, PIWELL=WELLPI,&
         PRWELL= FBHP2
!
!------------------------------------------------------------------------
*GEOMETRY
COORD= CARTESIAN
!------------------------------------------------------------------------
*SIMULATION_CONTROL
INTEGRATION, TMAX=4.323E06, DT_INIT=8.64e-01,DT_MIN= 8.64E-2, DT_MAX=8.646E4,&
        DT_INCR=1.25,  DT_REDU= 0.5,  AUTODT=YES,  TSWITCH=1.0,&
        MATERIAL=WELLBORE,MAXSTEPS=NUMSTEP2
!
ITERATION, DSATLIM= 2.E-1, DPRESLIM = -1.E8 , SATLIM= 1.E-3,&
        SATNORM= 0.30,  PRESNORM = 5.0E5,&
        ITMAX= 8,      IRESETMAX= 40, IJACINT= 1,&
        IJACSWITCH=41, IJACMIN= 1,    IJACRESET= 5,&
        IUPRPFLAG =9,  IUPMFFLAG= 9,  IUPRPLOOSE= 9,&
        IUPMFLOOSE=9
!
ITERATION, DHSAT_REL= 1.0E-8,  DHPRES_REL=1.0E-8,&
       DHSAT_MIN= 1.0E-10, DHPRES_MIN=1.0E-2
!
ITERATION, EPS_SAT  = 3.0E+0,    EPS_PRES   = 1.E-2,&
        R_EPS_SAT= 3.0E+0,    R_EPS_PRES  = 1.E-2,&
        FTOL_SAT = 1.0E-2,    FTOL_PRES   = 1.0E-2,&
        R_FTOL_SAT=1.0E-2,    R_FTOL_PRES = 1.0E-2, CONV_TEST = and
!
NUMERICS,SOLVER=LU
NUMERICS,JACSCALE= 1.0e7, VSWITCH = NO
NUMERICS, ITRAVE= HARMONIC, IMFRAVE=UPSTREAM
!
!------------------------------------------------------------------------
*OUTPUT_CONTROL

UNITS= SI
MONITOR, ILOC =  8, JLOC = 5, KLOC = 1
MONITOR, ILOC = 19, JLOC =18, KLOC = 1
MONITOR, ILOC = 34, JLOC =35, KLOC = 1
!
STEPS, FILE= BINARY, NSTEP=5
 TIMES, FILE= ASCII,  VALUES= 0.0, 3.1557E11
!
PRIBIN,&
   PRESBRIN,  PRESGAS,  POROS,   SATGAS,&
   FLOWGASX,  FLOWGASY,  FLOWBRX,  FLOWBRY,&
   BRINRATE,  WELLBRINE,  WELLGAS
!
PRIASC,&
   PRESBRIN,  PRESGAS,  POROS,   SATGAS
!
HISTORY, NAMES=  WELLBRINE,  IRANGE= 21,21,  JRANGE= 27,27, KRANGE=1,1
HISTORY, NAMES=  WELLBRINE,  IRANGE= 6,6,    JRANGE= 5, 5, KRANGE=1,1
!
HISTORY, NAMES=  WELLGAS,    IRANGE= 21,21,  JRANGE= 27,27, KRANGE=1,1
HISTORY, NAMES=  WELLGAS,    IRANGE= 6,6,    JRANGE= 5, 5, KRANGE=1,1
!------------------------------------------------------------------------
*PROPERTIES
! GET SOLID properties from CAMDAT file
!
SOLID, MAT=WAS_AREA,&
             PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
             PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
             BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
             BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
             SB_MIN    = SB_MIN,     PB_MIN    = PO_MIN,&
             PC_MAX    = PC_MAX,     CAP_MOD   = CAP_MOD,&
             RELP_MODEL = RELP_MOD,  PCT_A     = PCT_A,&
             PCT_EXP   = PCT_EXP,    PCT_FLAG  = KPT
!Salado Halite
SOLID, MAT=S_HALITE,&
             PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
             PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
             BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
             BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
```

```
            SB_MIN   = SB_MIN,    PB_MIN   = PO_MIN,&
            PC_MAX   = PC_MAX,    CAP_MOD  = CAP_MOD,&
            RELP_MODEL = RELP_MOD,  PCT_A    = PCT_A,&
            PCT_EXP  = PCT_EXP,   PCT_FLAG = KPT
!
SOLID, MAT=DRZ_1,&
            PRM_X    = PERM_X,    PRM_Y    = PERM_Y,&
            PRM_Z    = PERM_Z,    POROSITY = POROSITY,&
            BCSOR    = SAT_RBRN,  BCSGR    = SAT_RGAS,&
            BCLAM    = PORE_DIS,  COMPRES  = POR_COMP,&
            SB_MIN   = SB_MIN,    PB_MIN   = PO_MIN,&
            PC_MAX   = PC_MAX,    CAP_MOD  = CAP_MOD,&
            RELP_MODEL = RELP_MOD,  PCT_A    = PCT_A,&
            PCT_EXP  = PCT_EXP,   PCT_FLAG = KPT
!
!
SOLID, MAT=PAN_SEAL,&
            PRM_X    = PERM_X,    PRM_Y    = PERM_Y,&
            PRM_Z    = PERM_Z,    POROSITY = POROSITY,&
            BCSOR    = SAT_RBRN,  BCSGR    = SAT_RGAS,&
            BCLAM    = PORE_DIS,  COMPRES  = POR_COMP,&
            SB_MIN   = SB_MIN,    PB_MIN   = PO_MIN,&
            PC_MAX   = PC_MAX,    CAP_MOD  = CAP_MOD,&
            RELP_MODEL = RELP_MOD,  PCT_A    = PCT_A,&
            PCT_EXP  = PCT_EXP,   PCT_FLAG = KPT
!
!
!
! GET FLUID (brine and gas) properties from CAMDAT file
FLUID, MAT=BRINESAL, SALINITY=WTF, DEN_BR=DNSFLUID,&
            COMPR_BR= COMPRES, REF_TEMP= REF_TEMP,&
            REF_PRES=REF_PRES, TABLE=INTERP, VIS_BR=VISCO
FLUID, MAT=H2,     VIS_GAS=VISCO,DGAS = OFF,&
            H2_MOLE =1.0, CO2_MOLE=0.0, CH4_MOLE=0.0,&
            N2_MOLE= 0.0, H2S_MOLE=0.0, O2_MOLE=0.0
*END
!=======================================================================
```

BF4_BF1_CCA_DIR_REL_S2TO5_LOWER.INP File Listing

```

!------------------------------------------------------------------------
!
!  TITLE:  PREBRAG INPUT FOR BLOWOUT CALCULATION: REPOSIRORY SCALE MODEL
!  ANALYST: DAN M. STOELZEL
!  DATE:   NOV 3, 1995
!  SCENARIO: UNDISTURBED SCENERIO: NO FLOW IN DRZ AND SALADO
!          DIP INCLUDED
!
!              MODIFIED MARCH 22, 1996
!                CHANGES MADE TO WELL INPUT CARD TO INCORPORATE FBHP MODEL (FROM
!      PREVIOUS ALGEBRA)
!------------------------------------------------------------------------
*HEADING
TITLE2 = BRINE BLOWOUT IN REPOSITORY SCALE MODEL
!------------------------------------------------------------------------
*GAS_TRANSPORT_initial_conditions
CALC=NO
!------------------------------------------------------------------------
*INITIAL_CONDITIONS
!BEGIN SIMULATION AT 0 YEARS
BEGIN, TIME= 0.0
CAMDAT,TIME= 0.0
SATBR,  ID_BRINE =SATBREL
PRESSURE,ID_PRES  =PRESEL
CONFE  , ID_CONFE =FECONC
CONCELL, ID_CONCEL=CH2OCONC
ELEVAT,  ID_ELEV  =ELEVE
!------------------------------------------------------------------------
!*STEP_CONTROL
!!TIME STEP IS REDUCED AT TIME THE WELLBORE IS ACTIVATED, TIME=0.0 YEARS
! TIME,BEGIN=0.0, DT=8.64e-02
!------------------------------------------------------------------------
*WELL_DATA
TIME_CONTROL, TIME_ID=1,WELLTIME=0.0
!PRODUCTION WELL WITH F-BHP AND PI BASED ON INPUTS
WELL_CONTROL, MAT=WELLBORE,TIME_ID=1,NUM=1,TYPE=PROD, &
         ILOC=12,JLOC=5,KLOC=1,&
         QO=0.0, QG=0.0, PIWELL=WELLPI,&
         PRWELL= FBHP4
!
WELL_CONTROL, MAT=WELLBORE,TIME_ID=1,NUM=1,TYPE=INJP, &
         ILOC=6,JLOC=5,KLOC=1,&
         QO=0.0, QG=0.0, PIWELL=WELPI_BC,&
         PRWELL= BHP_ABAN
!------------------------------------------------------------------------
*GEOMETRY
COORD= CARTESIAN
!------------------------------------------------------------------------
*SIMULATION_CONTROL
INTEGRATION, TMAX=4.323E06, DT_INIT=8.64e-01,DT_MIN= 8.64E-2, DT_MAX=8.646E4,&
       DT_INCR=1.25,  DT_REDU= 0.5,  AUTODT=YES,  TSWITCH=1.0,&
       MATERIAL=WELLBORE,MAXSTEPS=NUMSTEP4
!
ITERATION, DSATLIM= 2.E-1, DPRESLIM = -1.E8 , SATLIM= 1.E-3,&
       SATNORM= 0.30,  PRESNORM = 5.0E5,&
       ITMAX= 8,     IRESETMAX= 40, IJACINT= 1,&
       IJACSWITCH=41, IJACMIN= 1,  IJACRESET= 5,&
       IUPRPFLAG =9,  IUPMFFLAG= 9,  IUPRPLOOSE= 9,&
       IUPMFLOOSE=9
!
ITERATION, DHSAT_REL= 1.0E-8,  DHPRES_REL=1.0E-8,&
       DHSAT_MIN= 1.0E-10,  DHPRES_MIN=1.0E-2
!
ITERATION, EPS_SAT  = 3.0E+0,    EPS_PRES  = 1.E-2,&
       R_EPS_SAT= 3.0E+0,   R_EPS_PRES  = 1.E-2,&
       FTOL_SAT = 1.0E-2,    FTOL_PRES  = 1.0E-2,&
       R_FTOL_SAT=1.0E-2,    R_FTOL_PRES = 1.0E-2, CONV_TEST = and
!
NUMERICS,SOLVER=LU
NUMERICS,JACSCALE= 1.0e7, VSWITCH = NO
NUMERICS, ITRAVE= HARMONIC, IMFRAVE=UPSTREAM
!
!------------------------------------------------------------------------
*OUTPUT_CONTROL

UNITS= SI
MONITOR, ILOC =  8, JLOC = 5, KLOC = 1
MONITOR, ILOC = 19, JLOC =18, KLOC = 1
MONITOR, ILOC = 34, JLOC =35, KLOC = 1
!
STEPS, FILE= BINARY, NSTEP=5
 TIMES, FILE= ASCII,  VALUES= 0.0, 3.1557E11
!
PRIBIN,&
   PRESBRIN,  PRESGAS,  POROS,   SATGAS,&
   FLOWGASX,  FLOWGASY,  FLOWBRX,  FLOWBRY,&
   BRINRATE,  WELLBRINE,  WELLGAS
!
PRIASC,&
   PRESBRIN,  PRESGAS,  POROS,   SATGAS
!
HISTORY, NAMES=  WELLBRINE,  JRANGE= 12,12,  JRANGE= 5, 5, KRANGE=1,1
HISTORY, NAMES=  WELLBRINE,  IRANGE= 6,6,    JRANGE= 5, 5, KRANGE=1,1
!
HISTORY, NAMES=  WELLGAS,   IRANGE= 12,12,  JRANGE= 5, 5, KRANGE=1,1
HISTORY, NAMES=  WELLGAS,   IRANGE= 6,6,    JRANGE= 5, 5, KRANGE=1,1
!------------------------------------------------------------------------
*PROPERTIES
! GET SOLID properties from CAMDAT file
!
SOLID, MAT=WAS_AREA,&
            PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
            PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
            BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
            BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
            SB_MIN    = SB_MIN,     PB_MIN    = PO_MIN,&
            PC_MAX    = PC_MAX,     CAP_MOD   = CAP_MOD,&
            RELP_MODEL = RELP_MOD,  PCT_A     = PCT_A,&
            PCT_EXP   = PCT_EXP,    PCT_FLAG  = KPT
!Salado Halite
SOLID, MAT=S_HALITE,&
```

BF4_BF1_CCA_DIR_REL_S2TO5_LOWER.INP File Listing

```
          PRM_X    = PERM_X,    PRM_Y    = PERM_Y,&
          PRM_Z    = PERM_Z,    POROSITY = POROSITY,&
          BCSOR    = SAT_RBRN,  BCSGR    = SAT_RGAS,&
          BCLAM    = PORE_DIS,  COMPRES  = POR_COMP,&
          SB_MIN   = SB_MIN,    PB_MIN   = PO_MIN,&
          PC_MAX   = PC_MAX,    CAP_MOD  = CAP_MOD,&
          RELP_MODEL = RELP_MOD, PCT_A   = PCT_A,&
          PCT_EXP  = PCT_EXP,   PCT_FLAG = KPT
!
SOLID, MAT=DRZ_1,&
          PRM_X    = PERM_X,    PRM_Y    = PERM_Y,&
          PRM_Z    = PERM_Z,    POROSITY = POROSITY,&
          BCSOR    = SAT_RBRN,  BCSGR    = SAT_RGAS,&
          BCLAM    = PORE_DIS,  COMPRES  = POR_COMP,&
          SB_MIN   = SB_MIN,    PB_MIN   = PO_MIN,&
          PC_MAX   = PC_MAX,    CAP_MOD  = CAP_MOD,&
          RELP_MODEL = RELP_MOD, PCT_A   = PCT_A,&
          PCT_EXP  = PCT_EXP,   PCT_FLAG = KPT
!
!
SOLID, MAT=PAN_SEAL,&
          PRM_X    = PERM_X,    PRM_Y    = PERM_Y,&
          PRM_Z    = PERM_Z,    POROSITY = POROSITY,&
          BCSOR    = SAT_RBRN,  BCSGR    = SAT_RGAS,&
          BCLAM    = PORE_DIS,  COMPRES  = POR_COMP,&
          SB_MIN   = SB_MIN,    PB_MIN   = PO_MIN,&
          PC_MAX   = PC_MAX,    CAP_MOD  = CAP_MOD,&
          RELP_MODEL = RELP_MOD, PCT_A   = PCT_A,&
          PCT_EXP  = PCT_EXP,   PCT_FLAG = KPT
!
!
!
! GET FLUID (brine and gas) properties from CAMDAT file
FLUID, MAT=BRINESAL, SALINITY=WTF, DEN_BR=DNSFLUID,&
          COMPR_BR= COMPRES, REF_TEMP= REF_TEMP,&
          REF_PRES=REF_PRES, TABLE=INTERP, VIS_BR=VISCO
FLUID, MAT=H2,    VIS_GAS=VISCO,DGAS = OFF,&
          H2_MOLE =1.0, CO2_MOLE=0.0, CH4_MOLE=0.0,&
          N2_MOLE= 0.0, H2S_MOLE=0.0, O2_MOLE=0.0
*END
!------------------------------------------------------------------------
```

BF4_BF1_CCA_DIR_REL_S2TO5_UP.INP File Listing

```

!---------------------------------------------------------------------------
!
! TITLE:  PREBRAG INPUT FOR BLOWOUT CALCULATION: REPOSIRORY SCALE MODEL
! ANALYST: DAN M. STOELZEL
! DATE:   NOV 3, 1995
! SCENARIO: UNDISTURBED SCENERIO: NO FLOW IN DRZ AND SALADO
!         DIP INCLUDED
!
!            MODIFIED MARCH 22, 1996
!              CHANGES MADE TO WELL INPUT CARD TO INCORPORATE FBHP MODEL (FROM
!     PREVIOUS ALGEBRA)
!---------------------------------------------------------------------------
*HEADING
TITLE2 = BRINE BLOWOUT IN REPOSITORY SCALE MODEL
!---------------------------------------------------------------------------
*GAS_TRANSPORT_initial_conditions
CALC=NO
!---------------------------------------------------------------------------
*INITIAL_CONDITIONS
!BEGIN SIMULATION AT 0 YEARS
BEGIN, TIME= 0.0
CAMDAT,TIME= 0.0
SATBR,  ID_BRINE =SATBREL
PRESSURE,ID_PRES  =PRESEL
CONFE  , ID_CONFE =FECONC
CONCELL, ID_CONCEL=CH2OCONC
ELEVAT,  ID_ELEV  =ELEVE
!---------------------------------------------------------------------------
!*STEP_CONTROL
!!TIME STEP IS REDUCED AT TIME THE WELLBORE IS ACTIVATED, TIME=0.0 YEARS
! TIME,BEGIN=0.0, DT=8.64e-02
!---------------------------------------------------------------------------
*WELL_DATA
TIME_CONTROL, TIME_ID=1,WELLTIME=0.0
!PRODUCTION WELL WITH F-BHP AND PI BASED ON INPUTS
WELL_CONTROL, MAT=WELLBORE,TIME_ID=1,NUM=1,TYPE=PROD, &
        ILOC=21,JLOC=27,KLOC=1,&
        QO=0.0, QG=0.0, PIWELL=WELLPI,&
        PRWELL= FBHP2
!
WELL_CONTROL, MAT=WELLBORE,TIME_ID=1,NUM=1,TYPE=INJP, &
        ILOC=6,JLOC=5,KLOC=1,&
        QO=0.0, QG=0.0, PIWELL=WELPI_BC,&
        PRWELL= BHP_ABAN
!---------------------------------------------------------------------------
*GEOMETRY
COORD= CARTESIAN
!---------------------------------------------------------------------------
*SIMULATION_CONTROL
INTEGRATION, TMAX=4.323E06, DT_INIT=8.64e-01,DT_MIN= 8.64E-2, DT_MAX=8.646E4,&
       DT_INCR=1.25,  DT_REDU= 0.5,  AUTODT=YES,  TSWITCH=1.0,&
       MATERIAL=WELLBORE,MAXSTEPS=NUMSTEP2
!
ITERATION, DSATLIM= 2.E-1, DPRESLIM = -1.E8 , SATLIM= 1.E-3,&
       SATNORM= 0.30,  PRESNORM = 5.0E5,&
       ITMAX= 8,     IRESETMAX= 40, IJACINT= 1,&
       IJACSWITCH=41, IJACMIN= 1,   IJACRESET= 5,&
       IUPRPFLAG =9,  IUPMFFLAG= 9,  IUPRPLOOSE= 9,&
       IUPMFLOOSE=9
!
ITERATION, DHSAT_REL= 1.0E-8,  DHPRES_REL=1.0E-8,&
       DHSAT_MIN= 1.0E-10, DHPRES_MIN=1.0E-2
!
ITERATION, EPS_SAT  = 3.0E+0,    EPS_PRES   = 1.E-2,&
       R_EPS_SAT= 3.0E+0,   R_EPS_PRES  = 1.E-2,&
       FTOL_SAT = 1.0E-2,    FTOL_PRES   = 1.0E-2,&
       R_FTOL_SAT=1.0E-2,   R_FTOL_PRES = 1.0E-2, CONV_TEST = and
!
NUMERICS,SOLVER=LU
NUMERICS,JACSCALE= 1.0e7, VSWITCH = NO
NUMERICS, ITRAVE= HARMONIC, IMFRAVE=UPSTREAM
!
!---------------------------------------------------------------------------
*OUTPUT_CONTROL

UNITS= SI
MONITOR, ILOC =  8, JLOC = 5, KLOC = 1
MONITOR, ILOC = 19, JLOC =18, KLOC = 1
MONITOR, ILOC = 34, JLOC =35, KLOC = 1
!
STEPS, FILE= BINARY, NSTEP=5
 TIMES, FILE= ASCII,  VALUES= 0.0, 3.1557E11
!
PRIBIN,&
   PRESBRIN,  PRESGAS,  POROS,   SATGAS,&
   FLOWGASX,  FLOWGASY,  FLOWBRX,  FLOWBRY,&
   BRINRATE,  WELLBRINE,  WELLGAS
!
PRIASC,&
   PRESBRIN,  PRESGAS,  POROS,   SATGAS
!
HISTORY, NAMES=   WELLBRINE,  IRANGE= 21,21,  JRANGE= 27,27, KRANGE=1,1
HISTORY, NAMES=   WELLBRINE,  IRANGE= 6,6,    JRANGE= 5, 5,  KRANGE=1,1
!
HISTORY, NAMES=   WELLGAS,    IRANGE= 21,21,  JRANGE= 27,27, KRANGE=1,1
HISTORY, NAMES=   WELLGAS,    IRANGE= 6,6,    JRANGE= 5, 5,  KRANGE=1,1
!---------------------------------------------------------------------------
*PROPERTIES
! GET SOLID properties from CAMDAT file
!
SOLID, MAT=WAS_AREA,&
            PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
            PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
            BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
            BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
            SB_MIN    = SB_MIN,     PB_MIN    = PO_MIN,&
            PC_MAX    = PC_MAX,     CAP_MOD   = CAP_MOD,&
            RELP_MODEL = RELP_MOD,  PCT_A     = PCT_A,&
            PCT_EXP   = PCT_EXP,    PCT_FLAG  = KPT
!Salado Halite
SOLID, MAT=S_HALITE,&
```

BF4_BF1_CCA_DIR_REL_S2TO5_UP.INP File Listing

```
            PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
            PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
            BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
            BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
            SB_MIN    = SB_MIN,     PB_MIN    = PO_MIN,&
            PC_MAX    = PC_MAX,     CAP_MOD   = CAP_MOD,&
            RELP_MODEL = RELP_MOD,  PCT_A     = PCT_A,&
            PCT_EXP   = PCT_EXP,    PCT_FLAG  = KPT
!
SOLID, MAT=DRZ_1,&
            PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
            PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
            BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
            BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
            SB_MIN    = SB_MIN,     PB_MIN    = PO_MIN,&
            PC_MAX    = PC_MAX,     CAP_MOD   = CAP_MOD,&
            RELP_MODEL = RELP_MOD,  PCT_A     = PCT_A,&
            PCT_EXP   = PCT_EXP,    PCT_FLAG  = KPT
!
!
SOLID, MAT=PAN_SEAL,&
            PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
            PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
            BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
            BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
            SB_MIN    = SB_MIN,     PB_MIN    = PO_MIN,&
            PC_MAX    = PC_MAX,     CAP_MOD   = CAP_MOD,&
            RELP_MODEL = RELP_MOD,  PCT_A     = PCT_A,&
            PCT_EXP   = PCT_EXP,    PCT_FLAG  = KPT
!
!
!
! GET FLUID (brine and gas) properties from CAMDAT file
FLUID, MAT=BRINESAL, SALINITY=WTF, DEN_BR=DNSFLUID,&
            COMPR_BR= COMPRES, REF_TEMP= REF_TEMP,&
            REF_PRES=REF_PRES, TABLE=INTERP, VIS_BR=VISCO
FLUID, MAT=H2,     VIS_GAS=VISCO,DGAS = OFF,&
            H2_MOLE =1.0, CO2_MOLE=0.0, CH4_MOLE=0.0,&
            N2_MOLE= 0.0, H2S_MOLE=0.0, O2_MOLE=0.0
*END
!------------------------------------------------------------------------
```

BF4_BF1_CCA_DIR_REL_S1_LOWER.INP File Listing

```
!===============================================================
!
! TITLE:  PREBRAG INPUT FOR BLOWOUT CALCULATION: REPOSIRORY SCALE MODEL
! ANALYST: DAN M. STOELZEL
! DATE:   NOV 3, 1995
! SCENARIO: UNDISTURBED SCENERIO: NO FLOW IN DRZ AND SALADO
!          DIP INCLUDED
!
!              MODIFIED MARCH 22, 1996
!               CHANGES MADE TO WELL INPUT CARD TO INCORPORATE FBHP MODEL (FROM
!     PREVIOUS ALGEBRA)
!===============================================================
*HEADING
TITLE2 = BRINE BLOWOUT IN REPOSITORY SCALE MODEL
!===============================================================
*GAS_TRANSPORT_initial_conditions
CALC=NO
!===============================================================
*INITIAL_CONDITIONS
!BEGIN SIMULATION AT 0 YEARS
BEGIN, TIME= 0.0
CAMDAT,TIME= 0.0
SATBR,  ID_BRINE =SATBREL
PRESSURE,ID_PRES  =PRESEL
CONFE  , ID_CONFE =FECONC
CONCELL, ID_CONCEL=CH2OCONC
ELEVAT,  ID_ELEV  =ELEVE
!===============================================================
!*STEP_CONTROL
!!TIME STEP IS REDUCED AT TIME THE WELLBORE IS ACTIVATED, TIME=0.0 YEARS
! TIME,BEGIN=0.0, DT=8.64e-02
!===============================================================
*WELL_DATA
TIME_CONTROL, TIME_ID=1,WELLTIME=0.0
!PRODUCTION WELL WITH F-BHP AND PI BASED ON INPUTS
WELL_CONTROL, MAT=WELLBORE,TIME_ID=1,NUM=1,TYPE=PROD, &
        ILOC=12,JLOC=5, KLOC=1,&
        QO=0.0, QG=0.0, PIWELL=WELLPI,&
        PRWELL= FBHP4
!
!===============================================================
*GEOMETRY
COORD= CARTESIAN
!===============================================================
*SIMULATION_CONTROL
INTEGRATION, TMAX=4.323E06, DT_INIT=8.64e-01,DT_MIN= 8.64E-2, DT_MAX=8.646E4,&
       DT_INCR=1.25,  DT_REDU= 0.5,  AUTODT=YES,  TSWITCH=1.0,&
       MATERIAL=WELLBORE,MAXSTEPS=NUMSTEP4
!
ITERATION, DSATLIM= 2.E-1, DPRESLIM = -1.E8 , SATLIM= 1.E-3,&
       SATNORM= 0.30,  PRESNORM = 5.0E5,&
       ITMAX= 8,      IRESETMAX= 40, IJACINT= 1,&
       IJACSWITCH=41,  IJACMIN= 1,   IJACRESET= 5,&
       IUPRPFLAG =9,  IUPMFFLAG= 9,  IUPRPLOOSE= 9,&
       IUPMFLOOSE=9
!
ITERATION, DHSAT_REL= 1.0E-8,  DHPRES_REL=1.0E-8,&
       DHSAT_MIN= 1.0E-10, DHPRES_MIN=1.0E-2
!
ITERATION, EPS_SAT  = 3.0E+0,    EPS_PRES   = 1.E-2,&
       R_EPS_SAT= 3.0E+0,   R_EPS_PRES  = 1.E-2,&
       FTOL_SAT = 1.0E-2,    FTOL_PRES   = 1.0E-2,&
       R_FTOL_SAT=1.0E-2,    R_FTOL_PRES = 1.0E-2, CONV_TEST = and
!
NUMERICS,SOLVER=LU
NUMERICS,JACSCALE= 1.0e7, VSWITCH = NO
NUMERICS, ITRAVE= HARMONIC, IMFRAVE=UPSTREAM
!
!===============================================================
*OUTPUT_CONTROL

UNITS= SI
MONITOR, ILOC =  8, JLOC = 5, KLOC = 1
MONITOR, ILOC = 19, JLOC =18, KLOC = 1
MONITOR, ILOC = 34, JLOC =35, KLOC = 1
!
STEPS, FILE= BINARY, NSTEP=5
 TIMES, FILE= ASCII,  VALUES= 0.0, 3.1557E11
!
PRIBIN,&
   PRESBRIN,  PRESGAS,  POROS,   SATGAS,&
   FLOWGASX,  FLOWGASY,  FLOWBRX,  FLOWBRY,&
   BRINRATE,  WELLBRINE, WELLGAS
!
PRIASC,&
   PRESBRIN,  PRESGAS,  POROS,   SATGAS
!
HISTORY, NAMES=   WELLBRINE,  IRANGE= 12,12,  JRANGE= 5,5,   KRANGE=1,1
HISTORY, NAMES=   WELLBRINE,  IRANGE= 6,6,    JRANGE= 5, 5, KRANGE=1,1
!
HISTORY, NAMES=   WELLGAS,   IRANGE= 12,12,  JRANGE= 5,5,   KRANGE=1,1
HISTORY, NAMES=   WELLGAS,   IRANGE= 6,6,    JRANGE= 5, 5, KRANGE=1,1
!===============================================================
*PROPERTIES
! GET SOLID properties from CAMDAT file
!
SOLID, MAT=WAS_AREA,&
          PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
          PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
          BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
          BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
          SB_MIN    = SB_MIN,     PB_MIN    = PO_MIN,&
          PC_MAX    = PC_MAX,     CAP_MOD   = CAP_MOD,&
          RELP_MODEL = RELP_MOD,  PCT_A     = PCT_A,&
          PCT_EXP   = PCT_EXP,    PCT_FLAG  = KPT
!Salado Halite
SOLID, MAT=S_HALITE,&
          PRM_X     = PERM_X,     PRM_Y     = PERM_Y,&
          PRM_Z     = PERM_Z,     POROSITY  = POROSITY,&
          BCSOR     = SAT_RBRN,   BCSGR     = SAT_RGAS,&
          BCLAM     = PORE_DIS,   COMPRES   = POR_COMP,&
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BF4_BF1_CCA_DIR_REL_S1_LOWER.INP File Listing

```
            SB_MIN    = SB_MIN,      PB_MIN    = PO_MIN,&
            PC_MAX    = PC_MAX,      CAP_MOD   = CAP_MOD,&
            RELP_MODEL = RELP_MOD,   PCT_A     = PCT_A,&
            PCT_EXP   = PCT_EXP,     PCT_FLAG  = KPT
!
SOLID, MAT=DRZ_1,&
            PRM_X     = PERM_X,      PRM_Y     = PERM_Y,&
            PRM_Z     = PERM_Z,      POROSITY  = POROSITY,&
            BCSOR     = SAT_RBRN,    BCSGR     = SAT_RGAS,&
            BCLAM     = PORE_DIS,    COMPRES   = POR_COMP,&
            SB_MIN    = SB_MIN,      PB_MIN    = PO_MIN,&
            PC_MAX    = PC_MAX,      CAP_MOD   = CAP_MOD,&
            RELP_MODEL = RELP_MOD,   PCT_A     = PCT_A,&
            PCT_EXP   = PCT_EXP,     PCT_FLAG  = KPT
!
!
SOLID, MAT=PAN_SEAL,&
            PRM_X     = PERM_X,      PRM_Y     = PERM_Y,&
            PRM_Z     = PERM_Z,      POROSITY  = POROSITY,&
            BCSOR     = SAT_RBRN,    BCSGR     = SAT_RGAS,&
            BCLAM     = PORE_DIS,    COMPRES   = POR_COMP,&
            SB_MIN    = SB_MIN,      PB_MIN    = PO_MIN,&
            PC_MAX    = PC_MAX,      CAP_MOD   = CAP_MOD,&
            RELP_MODEL = RELP_MOD,   PCT_A     = PCT_A,&
            PCT_EXP   = PCT_EXP,     PCT_FLAG  = KPT
!
!
!
! GET FLUID (brine and gas) properties from CAMDAT file
FLUID, MAT=BRINESAL, SALINITY=WTF, DEN_BR=DNSFLUID,&
            COMPR_BR= COMPRES, REF_TEMP= REF_TEMP,&
            REF_PRES=REF_PRES, TABLE=INTERP, VIS_BR=VISCO
FLUID, MAT=H2,      VIS_GAS=VISCO,DGAS = OFF,&
            H2_MOLE =1.0, CO2_MOLE=0.0, CH4_MOLE=0.0,&
            N2_MOLE= 0.0, H2S_MOLE=0.0, O2_MOLE=0.0
*END
!==============================================================
```

GM_BF4_CCA_DIR_REL.INP File Listing

```

!----------------------------------------------------------------------------------------
!
! TITLE:    GENMESH Input.  FEP blowout calculations.
! ANALYST:  Daniel M. Stoelzel, SNL
! NOTES:    This is a new Blowout model. The waste region has been gridded up
!           discretely, with the actual dimensions if the drifts, pillars,
!           and rooms.  This will be a 2-D areal model with dip (done in
!           ALGEBRA). A 3-D modification may follow. Grid size = 40x40x2
!           nodes.
!
! CREATED:  Nov 2, 1995
!
! MODIFIED: Nov 20, 1995
!           Changed del_x and thickness dimensions to 2 meters to represent
!           actual crushed thickness.  Porosity will be doubled in algebra
!           to represent "real" porosities.
!
!                   MARCH 20, 1996
!                   FIRST DRAFT CCA MESH.... WILL BE THE SAME AS USED IN FEP CALCS
!                   ACCEPT DRZ "THICKNESS IS BEING CHANGED TO CONTAIN SAME VOLUME
!                   AS THE DRZ (BOTH ABOVE AND BELOW) IN THE 10,000 YR RUN.  THIS
!           CHANGE WILL BE MADE IN THE ALGEBRA STEP
!
!                   May 14, 1996
!                   Made salt pillars between rooms the DRZ region instead of halite.
!----------------------------------------------------------------------------------------
!
*SETUP
 DIM= 3
 ORIGIN= 0.0, 0.0, 380.49
 IJKMAX= 40, 40, 2
!
*GRID
 DEL, COORD = X, DEL = 5.12,INRANGE = 1,2,FACTOR = 1
 DEL, COORD = X, DEL = 10.00,INRANGE = 2,3,FACTOR = 1
 DEL, COORD = X, DEL = 30.50,INRANGE = 3,4,FACTOR = 1
 DEL, COORD = X, DEL = 10.00,INRANGE = 4,5,FACTOR = 1
 DEL, COORD = X, DEL = 30.50,INRANGE = 5,6,FACTOR = 1
 DEL, COORD = X, DEL = 10.00,INRANGE = 6,7,FACTOR = 1
 DEL, COORD = X, DEL = 30.50,INRANGE = 7,8,FACTOR = 1
 DEL, COORD = X, DEL = 10.00,INRANGE = 8,9,FACTOR = 1
 DEL, COORD = X, DEL = 30.50,INRANGE = 9,10,FACTOR = 1
 DEL, COORD = X, DEL = 10.00,INRANGE = 10,11,FACTOR = 1
 DEL, COORD = X, DEL = 30.50,INRANGE = 11,12,FACTOR = 1
 DEL, COORD = X, DEL = 10.00,INRANGE = 12,13,FACTOR = 1
 DEL, COORD = X, DEL = 30.50,INRANGE = 13,14,FACTOR = 1
 DEL, COORD = X, DEL = 10.00,INRANGE = 14,15,FACTOR = 1
 DEL, COORD = X, DEL = 21.00,INRANGE = 15,16,FACTOR = 1
 DEL, COORD = X, DEL = 40.00,INRANGE = 16,17,FACTOR = 1
 DEL, COORD = X, DEL = 4.30,INRANGE = 17,18,FACTOR = 1
 DEL, COORD = X, DEL = 42.20,INRANGE = 18,19,FACTOR = 1
 DEL, COORD = X, DEL = 4.30,INRANGE = 19,20,FACTOR = 1
 DEL, COORD = X, DEL = 46.50,INRANGE = 20,21,FACTOR = 1
 DEL, COORD = X, DEL = 7.60,INRANGE = 21,22,FACTOR = 1
 DEL, COORD = X, DEL = 38.00,INRANGE = 22,23,FACTOR = 1
 DEL, COORD = X, DEL = 4.30,INRANGE = 23,24,FACTOR = 1
 DEL, COORD = X, DEL = 40.00,INRANGE = 24,25,FACTOR = 1
 DEL, COORD = X, DEL = 21.00,INRANGE = 25,26,FACTOR = 1
 DEL, COORD = X, DEL = 10.00,INRANGE = 26,27,FACTOR = 1
 DEL, COORD = X, DEL = 30.50,INRANGE = 27,28,FACTOR = 1
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 DEL, COORD = X, DEL = 5.12,INRANGE = 39,40,FACTOR = 1
!
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 DEL, COORD = Y, DEL = 3.60,INRANGE = 2,3,FACTOR = 1
 DEL, COORD = Y, DEL = 6.40,INRANGE = 3,4,FACTOR = 1
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 DEL, COORD = Y, DEL = 32.70,INRANGE = 6,7,FACTOR = 1
 DEL, COORD = Y, DEL = 4.30,INRANGE = 7,8,FACTOR = 1
 DEL, COORD = Y, DEL = 5.70,INRANGE = 8,9,FACTOR = 1
 DEL, COORD = Y, DEL = 5.12,INRANGE = 9,10,FACTOR = 1
 DEL, COORD = Y, DEL = 45.96,INRANGE = 10,11,FACTOR = 1
 DEL, COORD = Y, DEL = 5.12,INRANGE = 11,12,FACTOR = 1
 DEL, COORD = Y, DEL = 3.60,INRANGE = 12,13,FACTOR = 1
 DEL, COORD = Y, DEL = 6.40,INRANGE = 13,14,FACTOR = 1
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 DEL, COORD = Y, DEL = 5.70,INRANGE = 18,19,FACTOR = 1
 DEL, COORD = Y, DEL = 12.75,INRANGE = 19,20,FACTOR = 1
 DEL, COORD = Y, DEL = 40.00,INRANGE = 20,21,FACTOR = 1
 DEL, COORD = Y, DEL = 12.75,INRANGE = 21,22,FACTOR = 1
 DEL, COORD = Y, DEL = 3.60,INRANGE = 22,23,FACTOR = 1
 DEL, COORD = Y, DEL = 6.40,INRANGE = 23,24,FACTOR = 1
 DEL, COORD = Y, DEL = 30.50,INRANGE = 24,25,FACTOR = 1
 DEL, COORD = Y, DEL = 30.50,INRANGE = 25,26,FACTOR = 1
 DEL, COORD = Y, DEL = 30.50,INRANGE = 26,27,FACTOR = 1
 DEL, COORD = Y, DEL = 4.30,INRANGE = 27,28,FACTOR = 1
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 DEL, COORD = Y, DEL = 30.50,INRANGE = 36,37,FACTOR = 1
 DEL, COORD = Y, DEL = 6.10,INRANGE = 37,38,FACTOR = 1
 DEL, COORD = Y, DEL = 3.90,INRANGE = 38,39,FACTOR = 1
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GM_BF4_CCA_DIR_REL.INP File Listing

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 DEL, COORD = Y, DEL = 5.12,INRANGE = 39,40,FACTOR = 1
!
 DEL, COORD = Z, DEL = 2.00,INRANGE = 1,2,FACTOR = 1
!
!
*ELEVATION_ELEMENT, ADJUST_Z_COORD
 LOCATION, THICK=2.00, ELEVAT=382.47,IRANGE=1,40,JRANGE=1,40,KRANGE=1,2
!
*REGIONS
! -- WASTE - FILLED EXCAVATED REGION - REPOSITORY
! -- PANEL 5
 REGION=1, IRANGE= 2,3, JRANGE= 2,9, KRANGE=1,2
 REGION=1, IRANGE= 3,4, JRANGE= 2,4, KRANGE=1,2
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 REGION=1, IRANGE= 11,12,JRANGE= 2,4, KRANGE=1,2
 REGION=1, IRANGE= 11,12,JRANGE= 7,9, KRANGE=1,2
 REGION=1, IRANGE= 12,13,JRANGE= 2,9, KRANGE=1,2
 REGION=1, IRANGE= 13,14,JRANGE= 2,4, KRANGE=1,2
 REGION=1, IRANGE= 13,14,JRANGE= 7,9, KRANGE=1,2
 REGION=1, IRANGE= 14,15,JRANGE= 2,9, KRANGE=1,2
 REGION=1, IRANGE= 15,16,JRANGE= 3,4, KRANGE=1,2
 REGION=1, IRANGE= 15,16,JRANGE= 7,8, KRANGE=1,2
! -- PANEL 4
 REGION=1, IRANGE= 38,39,JRANGE= 2,9, KRANGE=1,2
 REGION=1, IRANGE= 37,38,JRANGE= 2,4, KRANGE=1,2
 REGION=1, IRANGE= 37,38,JRANGE= 7,9, KRANGE=1,2
 REGION=1, IRANGE= 36,37,JRANGE= 2,9, KRANGE=1,2
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 REGION=1, IRANGE= 27,28,JRANGE= 7,9, KRANGE=1,2
 REGION=1, IRANGE= 26,27,JRANGE= 2,9, KRANGE=1,2
 REGION=1, IRANGE= 25,26,JRANGE= 3,4, KRANGE=1,2
 REGION=1, IRANGE= 25,26,JRANGE= 7,8, KRANGE=1,2
! -- PANEL 6
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 REGION=1, IRANGE= 3,4, JRANGE= 12,14,KRANGE=1,2
 REGION=1, IRANGE= 3,4, JRANGE= 17,19,KRANGE=1,2
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 REGION=1, IRANGE= 13,14,JRANGE= 17,19,KRANGE=1,2
 REGION=1, IRANGE= 14,15,JRANGE= 12,19,KRANGE=1,2
 REGION=1, IRANGE= 15,16,JRANGE= 13,14,KRANGE=1,2
 REGION=1, IRANGE= 15,16,JRANGE= 17,18,KRANGE=1,2
! -- PANEL 3
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 REGION=1, IRANGE= 37,38,JRANGE= 12,14,KRANGE=1,2
 REGION=1, IRANGE= 37,38,JRANGE= 17,19,KRANGE=1,2
 REGION=1, IRANGE= 36,37,JRANGE= 12,19,KRANGE=1,2
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 REGION=1, IRANGE= 27,28,JRANGE= 17,19,KRANGE=1,2
 REGION=1, IRANGE= 26,27,JRANGE= 12,19,KRANGE=1,2
 REGION=1, IRANGE= 25,26,JRANGE= 13,14,KRANGE=1,2
 REGION=1, IRANGE= 25,26,JRANGE= 17,18,KRANGE=1,2
! -- PANEL 7
 REGION=1, IRANGE= 2,3, JRANGE= 22,29,KRANGE=1,2
 REGION=1, IRANGE= 3,4, JRANGE= 22,24,KRANGE=1,2
 REGION=1, IRANGE= 3,4, JRANGE= 27,29,KRANGE=1,2
 REGION=1, IRANGE= 4,5, JRANGE= 22,29,KRANGE=1,2
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 REGION=1, IRANGE= 9,10,JRANGE= 22,24,KRANGE=1,2
 REGION=1, IRANGE= 9,10,JRANGE= 27,29,KRANGE=1,2
 REGION=1, IRANGE= 10,11,JRANGE= 22,29,KRANGE=1,2
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GM_BF4_CCA_DIR_REL.INP File Listing

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REGION=1, IRANGE= 11,12,JRANGE= 22,24,KRANGE=1,2
REGION=1, IRANGE= 11,12,JRANGE= 27,29,KRANGE=1,2
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! -- PANEL 2
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REGION=1, IRANGE= 29,30,JRANGE= 22,24,KRANGE=1,2
REGION=1, IRANGE= 29,30,JRANGE= 27,29,KRANGE=1,2
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REGION=1, IRANGE= 27,28,JRANGE= 22,24,KRANGE=1,2
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! -- PANEL 1
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REGION=1, IRANGE= 37,38,JRANGE= 32,34,KRANGE=1,2
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REGION=1, IRANGE= 25,26,JRANGE= 37,38,KRANGE=1,2
! PANEL 9 & 0 (DRIFTS AND CENTRAL ACCESS)
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REGION=1, IRANGE= 18,19,JRANGE=  3, 4,KRANGE=1,2
REGION=1, IRANGE= 18,19,JRANGE=  7, 8,KRANGE=1,2
REGION=1, IRANGE= 18,19,JRANGE= 13,14,KRANGE=1,2
REGION=1, IRANGE= 18,19,JRANGE= 17,18,KRANGE=1,2
REGION=1, IRANGE= 18,19,JRANGE= 23,24,KRANGE=1,2
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!
REGION=1, IRANGE= 19,20,JRANGE=  3,20,KRANGE=1,2
REGION=1, IRANGE= 19,20,JRANGE= 21,38,KRANGE=1,2
REGION=1, IRANGE= 20,21,JRANGE=  3, 4,KRANGE=1,2
REGION=1, IRANGE= 20,21,JRANGE=  7, 8,KRANGE=1,2
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REGION=1, IRANGE= 20,21,JRANGE= 37,38,KRANGE=1,2
!
REGION=1, IRANGE= 21,22,JRANGE=  3,20,KRANGE=1,2
REGION=1, IRANGE= 21,22,JRANGE= 21,38,KRANGE=1,2
REGION=1, IRANGE= 22,23,JRANGE=  3, 4,KRANGE=1,2
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REGION=1, IRANGE= 22,23,JRANGE= 37,38,KRANGE=1,2
!
REGION=1, IRANGE= 23,24,JRANGE=  3,20,KRANGE=1,2
REGION=1, IRANGE= 23,24,JRANGE= 21,38,KRANGE=1,2
!
! DRZ
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GM_BF4_CCA_DIR_REL.INP File Listing

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REGION=2, IRANGE= 1,16,JRANGE= 1, 2,KRANGE=1,2
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REGION=2, IRANGE= 1, 2,JRANGE= 22,29,KRANGE=1,2
REGION=2, IRANGE= 39,40,JRANGE= 22,29,KRANGE=1,2
REGION=2, IRANGE= 1, 2,JRANGE= 32,39,KRANGE=1,2
REGION=2, IRANGE= 39,40,JRANGE= 32,39,KRANGE=1,2
!
REGION=2, IRANGE= 15,17,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 18,19,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 20,21,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 22,23,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 24,26,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 16,17,JRANGE= 8,13,KRANGE=1,2
REGION=2, IRANGE= 18,19,JRANGE= 8,13,KRANGE=1,2
REGION=2, IRANGE= 20,21,JRANGE= 8,13,KRANGE=1,2
REGION=2, IRANGE= 22,23,JRANGE= 8,13,KRANGE=1,2
REGION=2, IRANGE= 24,25,JRANGE= 8,13,KRANGE=1,2
REGION=2, IRANGE= 15,17,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 18,19,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 20,21,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 22,23,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 24,26,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 16,17,JRANGE= 18,23,KRANGE=1,2
REGION=2, IRANGE= 18,19,JRANGE= 18,23,KRANGE=1,2
REGION=2, IRANGE= 20,21,JRANGE= 18,23,KRANGE=1,2
REGION=2, IRANGE= 22,23,JRANGE= 18,23,KRANGE=1,2
REGION=2, IRANGE= 24,25,JRANGE= 18,23,KRANGE=1,2
REGION=2, IRANGE= 15,17,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 18,19,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 20,21,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 22,23,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 24,26,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 16,17,JRANGE= 28,33,KRANGE=1,2
REGION=2, IRANGE= 18,19,JRANGE= 28,33,KRANGE=1,2
REGION=2, IRANGE= 20,21,JRANGE= 28,33,KRANGE=1,2
REGION=2, IRANGE= 22,23,JRANGE= 28,33,KRANGE=1,2
REGION=2, IRANGE= 24,25,JRANGE= 28,33,KRANGE=1,2
REGION=2, IRANGE= 15,17,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 18,19,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 20,21,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 22,23,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 24,26,JRANGE= 34,37,KRANGE=1,2
!
! PILLARS WITHIN PANELS
REGION=2, IRANGE= 3, 4,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 3, 4,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 3, 4,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 3, 4,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 5, 6,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 5, 6,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 5, 6,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 5, 6,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 7, 8,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 7, 8,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 7, 8,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 7, 8,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 9,10,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 9,10,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 9,10,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 9,10,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 11,12,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 11,12,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 11,12,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 11,12,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 13,14,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 13,14,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 13,14,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 13,14,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 27,28,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 27,28,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 27,28,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 27,28,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 29,30,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 29,30,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 29,30,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 29,30,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 31,32,JRANGE= 4, 7,KRANGE=1,2
REGION=2, IRANGE= 31,32,JRANGE= 14,17,KRANGE=1,2
```

GM_BF4_CCA_DIR_REL.INP File Listing

```
REGION=2, IRANGE= 31,32,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 31,32,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 33,34,JRANGE=  4, 7,KRANGE=1,2
REGION=2, IRANGE= 33,34,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 33,34,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 33,34,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 35,36,JRANGE=  4, 7,KRANGE=1,2
REGION=2, IRANGE= 35,36,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 35,36,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 35,36,JRANGE= 34,37,KRANGE=1,2
REGION=2, IRANGE= 37,38,JRANGE=  4, 7,KRANGE=1,2
REGION=2, IRANGE= 37,38,JRANGE= 14,17,KRANGE=1,2
REGION=2, IRANGE= 37,38,JRANGE= 24,27,KRANGE=1,2
REGION=2, IRANGE= 37,38,JRANGE= 34,37,KRANGE=1,2
!
! INTACT SALADO (WILL HAVE ZERO POROSITY AND PERM)
!  SALT BETWEEN PANELS
REGION=3, IRANGE= 16,25,JRANGE=  1, 2,KRANGE=1,2
REGION=3, IRANGE= 16,25,JRANGE= 39,40,KRANGE=1,2
REGION=3, IRANGE=  1,16,JRANGE= 10,11,KRANGE=1,2
REGION=3, IRANGE= 25,40,JRANGE= 10,11,KRANGE=1,2
REGION=3, IRANGE=  1,16,JRANGE= 20,21,KRANGE=1,2
REGION=3, IRANGE= 25,40,JRANGE= 20,21,KRANGE=1,2
REGION=3, IRANGE=  1,16,JRANGE= 30,31,KRANGE=1,2
REGION=3, IRANGE= 25,40,JRANGE= 30,31,KRANGE=1,2
!
! PANEL SEALS
!
REGION=4, IRANGE= 16,17,JRANGE=  3, 4,KRANGE=1,2
REGION=4, IRANGE= 16,17,JRANGE=  7, 8,KRANGE=1,2
REGION=4, IRANGE= 16,17,JRANGE= 13,14,KRANGE=1,2
REGION=4, IRANGE= 16,17,JRANGE= 17,18,KRANGE=1,2
REGION=4, IRANGE= 16,17,JRANGE= 23,24,KRANGE=1,2
REGION=4, IRANGE= 16,17,JRANGE= 27,28,KRANGE=1,2
REGION=4, IRANGE= 16,17,JRANGE= 33,34,KRANGE=1,2
REGION=4, IRANGE= 16,17,JRANGE= 37,38,KRANGE=1,2
REGION=4, IRANGE= 24,25,JRANGE=  3, 4,KRANGE=1,2
REGION=4, IRANGE= 24,25,JRANGE=  7, 8,KRANGE=1,2
REGION=4, IRANGE= 24,25,JRANGE= 13,14,KRANGE=1,2
REGION=4, IRANGE= 24,25,JRANGE= 17,18,KRANGE=1,2
REGION=4, IRANGE= 24,25,JRANGE= 23,24,KRANGE=1,2
REGION=4, IRANGE= 24,25,JRANGE= 27,28,KRANGE=1,2
REGION=4, IRANGE= 24,25,JRANGE= 33,34,KRANGE=1,2
REGION=4, IRANGE= 24,25,JRANGE= 37,38,KRANGE=1,2
REGION=4, IRANGE= 17,18,JRANGE= 20,21,KRANGE=1,2
REGION=4, IRANGE= 19,20,JRANGE= 20,21,KRANGE=1,2
REGION=4, IRANGE= 21,22,JRANGE= 20,21,KRANGE=1,2
REGION=4, IRANGE= 23,24,JRANGE= 20,21,KRANGE=1,2
*END
```

MS_BF4_CCA_DIR_REL.INP File Listing

```
!=====================================================================
!
! TITLE:   BRAGFLO DIRECT RELEASE MODEL (New repository scale grid)
! ANALYST:  Daniel M. Stoelzel ,SNL
! CREATED:  Nov. 2, 1995
! PURPOSE:  Define material and property names and selected values that
!          are not in the PROPERTY.SDB
!                    May, 1996
!          Updated to add needed params for CCA analysis.
!
!                MODIFIED 6/6/96
!                CHANGED SO BLOWOUT PARAMETERS CAN BE READ FROM DATABASE
!=====================================================================
*PRINT_ASSIGNED_VALUES
!
*HEADING
 TITLE, BRAGFLO: 1996 CCA: Brine Blowout Model
 SCALE, LOCAL
 SCENARIO, DISTURBED
!
*UNITS=SI
!
*CREATE_IDS
 BLOCK_IDS=5
 BLOCK_IDS=6
 BLOCK_IDS=7
 BLOCK_IDS=8
 BLOCK_IDS=9
!
*RETRIEVE
 COORD, DIM=3, NAMES= X,Y,Z
!
! ...Define region names
 MATERIAL, 1=WAS_AREA, 2=DRZ_1, 3=S_HALITE, 4=PAN_SEAL, 5=BRINESAL, 6=H2,&
       7=WELLBORE, 8=REFCON, 9=BLOWOUT
!1...Define WASTE property names
 PROPERTY, MAT=WAS_AREA, NAMES=     PRMX_LOG,     PRMY_LOG,   PRMZ_LOG,&
                          POROSITY,    PORE_DIS,  SAT_RGAS,&
                          SAT_RBRN,    COMP_RCK,  CAP_MOD,&
                          RELP_MOD,   PC_MAX,    PO_MIN,&
                          PCT_A,      PCT_EXP,   KPT,&
                          SAT_IBRN,   HEIGHT,&
                     PRESPAN1,  GPRSPAN1,  BSATPAN1,  GSATPAN1,&
                     PRESPAN2,  GPRSPAN2,  BSATPAN2,  GSATPAN2,&
                     PRESPAN3,  GPRSPAN3,  BSATPAN3,  GSATPAN3,&
                     PRESPAN4,  GPRSPAN4,  BSATPAN4,  GSATPAN4
!2...Define DRZ (Time period 2 : 0-10000 yrs)
! property names
 PROPERTY, MAT=DRZ_1,   NAMES=     PRMX_LOG,     PRMY_LOG,   PRMZ_LOG,&
                          POROSITY,    PORE_DIS,  SAT_RGAS,&
                          SAT_RBRN,    COMP_RCK,  CAP_MOD,&
                          RELP_MOD,   PC_MAX,    PO_MIN,&
                          PCT_A,      PCT_EXP,   KPT,&
                          HEIGHT
!3 ...Define  SALADO HALITE property names,
 PROPERTY, MAT=S_HALITE, NAMES=     PRMX_LOG,     PRMY_LOG,   PRMZ_LOG,&
                          POROSITY,    PORE_DIS,  SAT_RGAS,&
                          SAT_RBRN,    COMP_RCK,  CAP_MOD,&
                          RELP_MOD,   PC_MAX,    PO_MIN,&
                          PCT_A,      PCT_EXP,   KPT,&
                          PRESSURE,    HEIGHT
!4...Define Panel Seal (Time period 1 : 0-10000 yrs) property names
 PROPERTY, MAT=PAN_SEAL, NAMES=     PRMX_LOG,     PRMY_LOG,   PRMZ_LOG,&
                          POROSITY,    PORE_DIS,  SAT_RGAS,&
                          SAT_RBRN,    COMP_RCK,  CAP_MOD,&
                          RELP_MOD,   PC_MAX,    PO_MIN,&
                          PCT_A,      PCT_EXP,   KPT,&
                          SAT_IBRN,    HEIGHT
!5...Define brine props
 PROPERTY, MAT=BRINESAL, NAMES=     DNSFLUID,    WTF,      COMPRES,&
                          VISCO,      REF_TEMP,  REF_PRES
!6..Define GAS (H2) property names
 PROPERTY, MAT=H2,     NAMES=     VISCO
!7..DEFINE WELLBORE PROP NAMES:  Some props will be changed or added in ALGEBRA
!  & RELATE steps
 PROPERTY,MAT=WELLBORE,NAMES = &
 INTR_TME,&
 BITSIZE,&
 SKIN,&
 WELLPI,&
 DRAINRAD,&
 PRM_OPEN,&
 PRM_SAND,&
 PRM_CREP,&
 AREA_TOT,&
 VOLU_TOT,&
 CAST_RE,&
 CAST_WB,&
 PRM_CAST,&
 WELL_PAN
!
!8... Define Constants
 PROPERTY,MAT=REFCON,NAMES = &
 PI,&
 GRAVACC,&
 PSIPA,&
 YRSEC,&
 DARM2,&
 DAYSEC,&
 FTM,&
 DIP_DEG
!
!9... Define flow durations of blowout
 PROPERTY,MAT=BLOWOUT,NAMES = &
 MINFLOW,&
 MAXFLOW,&
 GAS_MIN,&
 THCK_CAS,&
 RE_CAST
*SET
 PROPERTY,MAT=WAS_AREA,NAME*VALUE: &
```

MS_BF4_CCA_DIR_REL.INP File Listing

```
 HEIGHT=1.5,&
 PRESPAN1=0.0,  GPRSPAN1=0.0,  BSATPAN1=0.0,  GSATPAN1=0.0,&
 PRESPAN2=0.0,  GPRSPAN2=0.0,  BSATPAN2=0.0,  GSATPAN2=0.0,&
 PRESPAN3=0.0,  GPRSPAN3=0.0,  BSATPAN3=0.0,  GSATPAN3=0.0,&
 PRESPAN4=0.0,  GPRSPAN4=0.0,  BSATPAN4=0.0,  GSATPAN4=0.0
PROPERTY,MAT=DRZ_1,NAME*VALUE: &
 HEIGHT=8.98
PROPERTY,MAT=S_HALITE,NAME*VALUE: &
 HEIGHT=8.98
PROPERTY,MAT=PAN_SEAL,NAME*VALUE: &
 HEIGHT=3.96
PROPERTY,MAT=WELLBORE,NAME*VALUE: &
 INTR_TME=0.0,&
 BITSIZE=0.0,&
 SKIN=0.0,&
 WELLPI=0.0,&
 DRAINRAD=0.0,&
 PRM_OPEN=0.0,&
 PRM_SAND=0.0,&
 PRM_CREP=0.0,&
 AREA_TOT=0.0,&
 VOLU_TOT=0.0,&
 CAST_RE=17e6,&
 CAST_WB=17e6,&
 PRM_CAST=1E-12,&
 WELL_PAN=14e6
PROPERTY,MAT=REFCON,NAME*VALUE: &
 DIP_DEG=1.0
*END
!
!==========================================================================
```

REL_BF4_BRAG_CCA_DIR_REL.INP File Listing

```

!***************************************************************************
! RELATE FILE TO MAP PROP's FROM PA MODEL TO BLOWOUT MODEL
! CREATED   5/15/96
! FILE      RELATE_brag.INP
! ANALYST   D.M. STOELZEL
!
!           MODIFIED 6/8/96
!           REMOVED LINES THAT RELATED BOREHOLE AND CASILE PROPS.  NEW FILE:
!           RELEATE_BRAG_DIRECT_RELEASE_UND.INP
!           FOR UNDISTURBED CASES ONLY (S1)
!***************************************************************************
*PROPERTIES
 WAS_AREA PORE_DIS = WAS_AREA PORE_DIS
 WAS_AREA SAT_RGAS = WAS_AREA SAT_RGAS
 WAS_AREA SAT_RBRN = WAS_AREA SAT_RBRN
 WAS_AREA COMP_RCK = WAS_AREA COMP_RCK
 WAS_AREA RELP_MOD = WAS_AREA RELP_MOD
 WAS_AREA KPT      = WAS_AREA KPT
 WAS_AREA CAP_MOD  = WAS_AREA CAP_MOD
 WAS_AREA PO_MIN   = WAS_AREA PO_MIN
 WAS_AREA PCT_A    = WAS_AREA PCT_A
 WAS_AREA PCT_EXP  = WAS_AREA PCT_EXP
 WAS_AREA PC_MAX   = WAS_AREA PC_MAX
!
```

REL_BF4_BRAG_CCA_DIR_REL_UND.INP File Listing

```
!****************************************************************************
! RELATE FILE TO MAP PROP's FROM PA MODEL TO BLOWOUT MODEL
! CREATED   5/15/96
! FILE      RELATE_brag.INP
! ANALYST   D.M. STOELZEL
!****************************************************************************
*PROPERTIES
 WAS_AREA PORE_DIS  = WAS_AREA PORE_DIS
 WAS_AREA SAT_RGAS  = WAS_AREA SAT_RGAS
 WAS_AREA SAT_RBRN  = WAS_AREA SAT_RBRN
 WAS_AREA COMP_RCK  = WAS_AREA COMP_RCK
 WAS_AREA RELP_MOD  = WAS_AREA RELP_MOD
 WAS_AREA KPT       = WAS_AREA KPT
 WAS_AREA CAP_MOD   = WAS_AREA CAP_MOD
 WAS_AREA PO_MIN    = WAS_AREA PO_MIN
 WAS_AREA PCT_A     = WAS_AREA PCT_A
 WAS_AREA PCT_EXP   = WAS_AREA PCT_EXP
 WAS_AREA PC_MAX    = WAS_AREA PC_MAX
!
 WELLBORE PRM_CAST  = CASTILER PERM_X
 WELLBORE PRM_OPEN  = BH_OPEN  PERM_Y
 WELLBORE PRM_SAND  = BH_SAND  PERM_Y
 WELLBORE PRM_CREP  = BH_CREEP PERM_Y
```

REL_BF4_CUSP_CCA_DIR_REL.INP File Listing

```

!***************************************************************************
! RELATE FILE TO MAP PROP's FROM PA MODEL TO BLOWOUT MODEL
! CREATED  9/14/95
! FILE     RELATE.INP
! ANALYST  D.M. STOELZEL
!***************************************************************************
*PROPERTIES
 WAS_AREA POROSITY = BLOWOUT POROSITY
 WAS_AREA HEIGHT   = BLOWOUT HEIGHT
 WAS_AREA PRESPAN1 = BLOWOUT BRNPRES1
 WAS_AREA GPRSPAN1 = BLOWOUT GASPRES1
 WAS_AREA BSATPAN1 = BLOWOUT BRN_SAT1
 WAS_AREA GSATPAN1 = BLOWOUT GAS_SAT1
 WAS_AREA PRESPAN2 = BLOWOUT BRNPRES2
 WAS_AREA GPRSPAN2 = BLOWOUT GASPRES2
 WAS_AREA BSATPAN2 = BLOWOUT BRN_SAT2
 WAS_AREA GSATPAN2 = BLOWOUT GAS_SAT2
 WAS_AREA PRESPAN3 = BLOWOUT BRNPRES3
 WAS_AREA GPRSPAN3 = BLOWOUT GASPRES3
 WAS_AREA BSATPAN3 = BLOWOUT BRN_SAT3
 WAS_AREA GSATPAN3 = BLOWOUT GAS_SAT3
 WAS_AREA PRESPAN4 = BLOWOUT BRNPRES4
 WAS_AREA GPRSPAN4 = BLOWOUT GASPRES4
 WAS_AREA BSATPAN4 = BLOWOUT BRN_SAT4
 WAS_AREA GSATPAN4 = BLOWOUT GAS_SAT4
!
 WELLBORE INTR_TME = BLOWOUT INTR_TME
 WELLBORE AREA_TOT = BLOWOUT AREA_TOT
 WELLBORE VOLU_TOT = BLOWOUT VOLU_TOT
 WELLBORE BITSIZE  = BLOWOUT BITSIZE
 WELLBORE CAST_WB  = BLOWOUT CAST_WB
 WELLBORE CAST_RE  = BLOWOUT CAST_RE
 WELLBORE WELL_PAN = BLOWOUT WELL_PAN
!
```

ICSET_DIRECT_RELEASE_S1_UND.INP Page 273a

```
=====================================================================

 TITLE:    INITIAL CONDITIONS FOR BRAGFLO 1995 SIDEBAR CALCS
 ANALYST: D.M. STOELZEL
 DATE:     NOV 2,1995

 MODIFIED 11/30/95
       MADE STARTING TIME AT 0, RE-INITIALIZED EACH OF THE FOUR PANEL
       REGIONS TO MATCH PORE-VOLUUME AVERAGED SAT, PRES FROM BASELINE RUN

        MAY 29, 1996
        RENAMED FILE ICSET_DIRECT_RELEASE_S1_WELL?.INP FOR ALL UNDISTURBED
        (FIRST INTRUSION) SCENARIOS
=====================================================================

SET_NAMES
 INITIAL_NAMES TYPE=ELEMENT, NUM=4, NAMES=SATBREL, PRESEL, FECONC,&
                                        CH2OCONC

SET_VALUES
Define start time = 0 DAYS
 INITIAL_VALUE, TYPE=TIME, VALUE=0.0

Define initial Fe concentrations
 INITIAL_VALUE, TYPE=ELEMENT, NAME=FECONC,   IRANGE=1,40, JRANGE=1,40,&
                KRANGE=1,2,   VALUE=0.0

Define initial CH2O concentrations
 INITIAL_VALUE, TYPE=ELEMENT, NAME=CH2OCONC, IRANGE=1,40, JRANGE=1,40,&
                KRANGE=1,2,   VALUE=0.0

 RE-DEFINE REGIONS FOR THE FOUR PANELS
 PANEL 1
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL, IRANGE=1,40, JRANGE=31,40,&
                KRANGE=1,2,   VALUE=WAS_AREA:BSATPAN1

 INITIAL_VALUE, TYPE=ELEMENT, NAME=PRESEL, IRANGE=1,40, JRANGE=31,40,&
                KRANGE=1,2,   VALUE=WAS_AREA:PRESPAN1
 PANEL 2
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL, IRANGE=1,40, JRANGE=21,31,&
                KRANGE=1,2,   VALUE=WAS_AREA:BSATPAN2

 INITIAL_VALUE, TYPE=ELEMENT, NAME=PRESEL, IRANGE=1,40, JRANGE=21,31,&
                KRANGE=1,2,   VALUE=WAS_AREA:PRESPAN2
 PANEL 3
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL, IRANGE=1,40, JRANGE=11,21,&
                KRANGE=1,2,   VALUE=WAS_AREA:BSATPAN3

 INITIAL_VALUE, TYPE=ELEMENT, NAME=PRESEL, IRANGE=1,40, JRANGE=11,21,&
                KRANGE=1,2,   VALUE=WAS_AREA:PRESPAN3
 PANEL 4
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL, IRANGE=1,40, JRANGE= 1,11,&
                KRANGE=1,2,   VALUE=WAS_AREA:BSATPAN4

 INITIAL_VALUE, TYPE=ELEMENT, NAME=PRESEL, IRANGE=1,40, JRANGE= 1,11,&
                KRANGE=1,2,   VALUE=WAS_AREA:PRESPAN4

END
```

ICSET_DIRECTRELEASE_S2T05-DIST.INP

Page 273b

```
======================================================================

 TITLE:   INITIAL CONDITIONS FOR BRAGFLO 1995 SIDEBAR CALCS
 ANALYST: D.M. STOELZEL
 DATE:    NOV 2,1995

 MODIFIED 11/30/95
       MADE STARTING TIME AT 0, RE-INITIALIZED EACH OF THE FOUR PANEL
       REGIONS TO MATCH PORE-VOLUUME AVERAGED SAT, PRES FROM BASELINE RUN

        MAY 29,1996
        SCENARIO 2 SERIES
        CHANGED FIRST INTRUSION WELL B.C. (SATURATION OF 1.0) TO
        I-ELEMENT=6, J-ELEMENT=5
======================================================================

SET_NAMES
 INITIAL_NAMES TYPE=ELEMENT, NUM=4, NAMES=SATBREL, PRESEL, FECONC,&
                                          CH2OCONC

SET_VALUES
Define start time = 0 DAYS
 INITIAL_VALUE, TYPE=TIME, VALUE=0.0

Define initial Fe concentrations
 INITIAL_VALUE, TYPE=ELEMENT, NAME=FECONC,   IRANGE=1,40, JRANGE=1,40,&
                KRANGE=1,2,    VALUE=0.0

Define initial CH2O concentrations
 INITIAL_VALUE, TYPE=ELEMENT, NAME=CH2OCONC, IRANGE=1,40, JRANGE=1,40,&
                KRANGE=1,2,    VALUE=0.0

 RE-DEFINE REGIONS FOR THE FOUR PANELS
 PANEL 1
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL, IRANGE=1,40, JRANGE=31,40,&
                KRANGE=1,2,    VALUE=WAS_AREA:BSATPAN1

 INITIAL_VALUE, TYPE=ELEMENT, NAME=PRESEL, IRANGE=1,40, JRANGE=31,40,&
                KRANGE=1,2,    VALUE=WAS_AREA:PRESPAN1
 PANEL 2
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL, IRANGE=1,40, JRANGE=21,31,&
                KRANGE=1,2,    VALUE=WAS_AREA:BSATPAN2

 INITIAL_VALUE, TYPE=ELEMENT, NAME=PRESEL, IRANGE=1,40, JRANGE=21,31,&
                KRANGE=1,2,    VALUE=WAS_AREA:PRESPAN2
 PANEL 3
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL, IRANGE=1,40, JRANGE=11,21,&
                KRANGE=1,2,    VALUE=WAS_AREA:BSATPAN3

 INITIAL_VALUE, TYPE=ELEMENT, NAME=PRESEL, IRANGE=1,40, JRANGE=11,21,&
                KRANGE=1,2,    VALUE=WAS_AREA:PRESPAN3
 PANEL 4
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL, IRANGE=1,40, JRANGE= 1,11,&
                KRANGE=1,2,    VALUE=WAS_AREA:BSATPAN4

 INITIAL_VALUE, TYPE=ELEMENT, NAME=PRESEL, IRANGE=1,40, JRANGE= 1,11,&
                KRANGE=1,2,    VALUE=WAS_AREA:PRESPAN4

 NOW REDO ELEMENT #26 I=(6,7) J=(5,6) TO 100% BRINE SATURATED TO SET UP
 BOUNDARY CONDITIONS FOR 2ND INTRUSION DISTURBED RUNS
 INITIAL_VALUE, TYPE=ELEMENT, NAME=SATBREL,  IRANGE=6,7,  JRANGE=5,6,&
                KRANGE=1,2,    VALUE=1.0

END
```

Attachment 7: Poettmann-Carpenter Lookup Function Data Points used in CCA (TableCurve™ 3D Output

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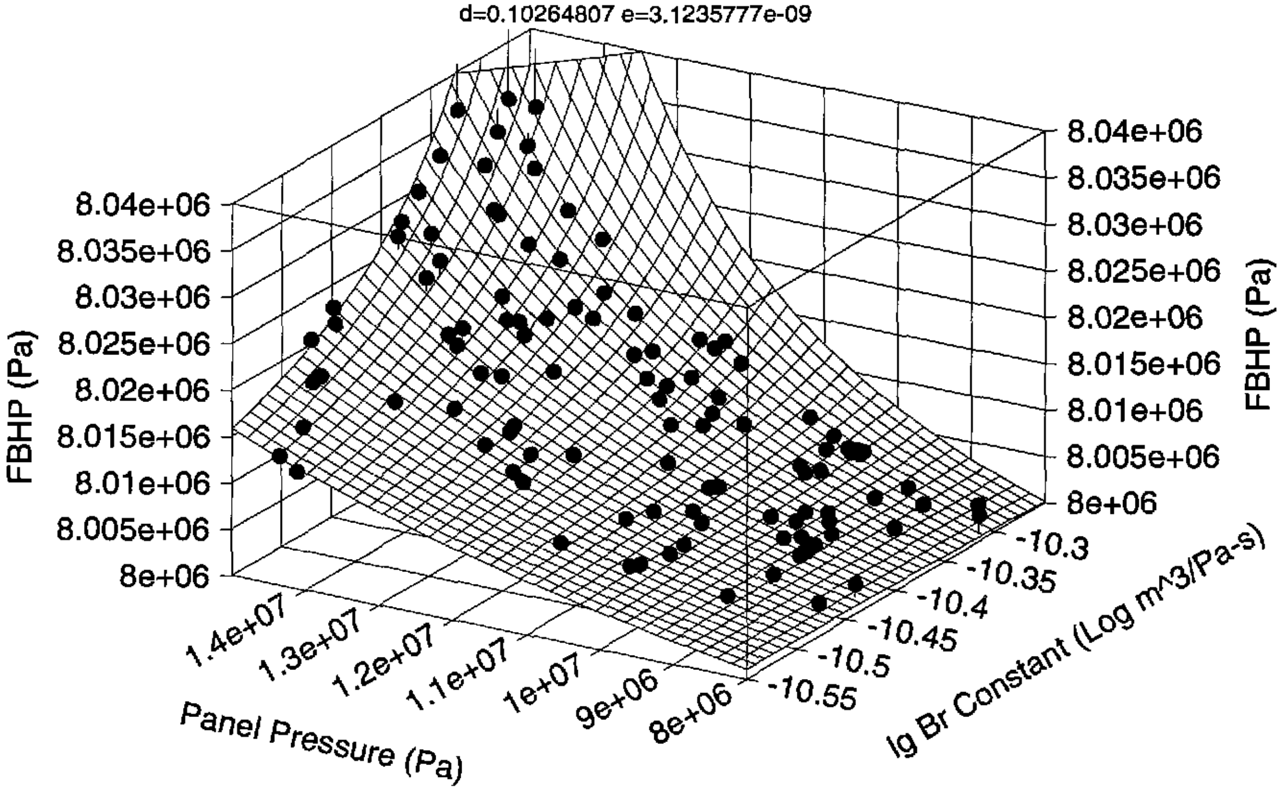
FBHP as a Function of Log Brine Constant and Panel Pressure (Krg=0: Brine Only)
Rank 36 Eqn 1001 z=(a+bx+cy)/(1+dx+ey)
r^2=0.98189816 DF Adj r^2=0.98103617 FitStdErr=1284.2129 Fstat=1437.4399
a=8002577.4 b=821379.75 c=0.024916096
d=0.10264807 e=3.1235777e-09



8,002,373pa < FBHP < 8,036,090pa

Rank 36 Eqn 1001 z=(a+bx+cy)/(1+dx+ey)

XYZ *	X Value	Y Value	Z Value	Z Predict	Residual	Residual%	95% C
1	-10.54642	1.416e+07	8.012e+06	8.013e+06	-942.0782	-0.011758	8.013e
2	-10.54355	1.443e+07	8.013e+06	8.014e+06	-806.8783	-0.010069	8.013e
3	-10.51813	1.447e+07	8.015e+06	8.015e+06	-369.2024	-0.004606	8.015e
4	-10.49439	1.128e+07	8.006e+06	8.007e+06	-932.0577	-0.011642	8.006e
5	-10.4907	1.47e+07	8.018e+06	8.017e+06	188.77841	0.0023546	8.017e
6	-10.48846	1.043e+07	8.004e+06	8.005e+06	-703.588	-0.00879	8.004e
7	-10.48479	1.468e+07	8.018e+06	8.018e+06	332.61884	0.0041485	8.017e
8	-10.48276	1.036e+07	8.004e+06	8.005e+06	-639.1387	-0.007985	8.004e
9	-10.48275	9.169e+06	8.003e+06	8.003e+06	44.928942	0.0005614	8.002e
10	-10.47139	1.499e+07	8.02e+06	8.02e+06	701.08119	0.0087412	8.019e
11	-10.46848	1.389e+07	8.015e+06	8.015e+06	168.97285	0.0021081	8.015e
12	-10.46444	1.22e+07	8.009e+06	8.01e+06	-531.4751	-0.006636	8.009e
13	-10.46337	8.186e+06	8.002e+06	8.001e+06	1185.2278	0.0148109	8e+06
14	-10.4612	1.238e+07	8.01e+06	8.01e+06	-456.5508	-0.0057	8.01e+
15	-10.46079	1.025e+07	8.004e+06	8.005e+06	-669.2965	-0.008362	8.004e
16	-10.45613	1.283e+07	8.012e+06	8.012e+06	-249.9553	-0.00312	8.011e
17	-10.45465	1.488e+07	8.021e+06	8.02e+06	979.63295	0.0122129	8.02e+
18	-10.44848	1.102e+07	8.006e+06	8.007e+06	-764.3643	-0.009547	8.006e
19	-10.44836	1.5e+07	8.022e+06	8.021e+06	1063.5185	0.0132568	8.021e
20	-10.448	1.336e+07	8.014e+06	8.014e+06	161.3325	0.0020131	8.014e
21	-10.44711	1.024e+07	8.004e+06	8.005e+06	-620.9087	-0.007757	8.005e
22	-10.44493	9.06e+06	8.003e+06	8.003e+06	183.93887	0.0022984	8.002e
23	-10.44258	1.239e+07	8.01e+06	8.011e+06	-324.3064	-0.004049	8.01e+
24	-10.43807	1.274e+07	8.012e+06	8.012e+06	-89.80132	-0.001121	8.012e
25	-10.43201	1.276e+07	8.012e+06	8.012e+06	-59.03629	-0.000737	8.012e
26	-10.43131	8.129e+06	8.002e+06	8.001e+06	1331.6007	0.01664	8e+06
27	-10.43091	1.087e+07	8.006e+06	8.007e+06	-675.2126	-0.008434	8.006e
28	-10.42473	1.205e+07	8.01e+06	8.01e+06	-355.2808	-0.004436	8.01e+
29	-10.42133	1.035e+07	8.005e+06	8.006e+06	-553.4006	-0.006913	8.005e
30	-10.41871	1.339e+07	8.016e+06	8.015e+06	632.66078	0.0078924	8.015e
31	-10.41552	1.376e+07	8.018e+06	8.017e+06	946.85171	0.0118086	8.017e
32	-10.41535	1.055e+07	8.006e+06	8.006e+06	-566.7703	-0.00708	8.006e
33	-10.41483	9.108e+06	8.003e+06	8.003e+06	109.02272	0.0013623	8.002e
34	-10.41373	1.391e+07	8.019e+06	8.018e+06	1011.0486	0.0126079	8.018e
35	-10.4111	1.321e+07	8.016e+06	8.015e+06	617.51684	0.0077039	8.015e
36	-10.40845	9.099e+06	8.003e+06	8.003e+06	172.97065	0.0021613	8.002e
37	-10.40494	1.383e+07	8.019e+06	8.018e+06	1051.7373	0.0131149	8.018e
38	-10.40234	9.493e+06	8.003e+06	8.004e+06	-246.0045	-0.003074	8.003e
39	-10.39896	1.441e+07	8.024e+06	8.022e+06	1387.681	0.0172951	8.022e
40	-10.3981	9.118e+06	8.003e+06	8.003e+06	168.61278	0.0021068	8.002e
41	-10.39468	9.345e+06	8.003e+06	8.003e+06	-65.09553	-0.000813	8.003e
42	-10.39429	1.484e+07	8.027e+06	8.026e+06	1402.9218	0.0174775	8.025e
43	-10.38993	1.068e+07	8.006e+06	8.007e+06	-493.6661	-0.006166	8.006e
44	-10.38875	1.125e+07	8.008e+06	8.008e+06	-436.8438	-0.005455	8.008e
45	-10.38771	1.489e+07	8.028e+06	8.027e+06	1298.356	0.0161727	8.026e
46	-10.38738	9.867e+06	8.004e+06	8.005e+06	-438.9572	-0.005484	8.004e

47	-10.38666	1.284e+07	8.015e+06	8.015e+06	540.7479	0.0067466	8.014e
48	-10.38664	1.439e+07	8.025e+06	8.023e+06	1418.2159	0.0176732	8.023e
49	-10.38487	1.061e+07	8.006e+06	8.007e+06	-515.8257	-0.006443	8.006e
50	-10.38227	1.353e+07	8.019e+06	8.018e+06	1047.4426	0.0130614	8.018e
51	-10.3814	9.603e+06	8.004e+06	8.004e+06	-268.6579	-0.003357	8.004e
52	-10.38127	1.331e+07	8.018e+06	8.017e+06	858.54872	0.0107077	8.017e
53	-10.38108	9.121e+06	8.003e+06	8.003e+06	169.92964	0.0021233	8.002e
54	-10.37952	1.459e+07	8.027e+06	8.026e+06	1288.0524	0.0160469	8.025e
55	-10.37779	1.342e+07	8.019e+06	8.018e+06	1045.7997	0.0130413	8.018e
56	-10.37439	1.37e+07	8.021e+06	8.02e+06	1177.5656	0.0146808	8.02e+
57	-10.37026	1.49e+07	8.03e+06	8.029e+06	891.54863	0.0111024	8.029e
58	-10.36876	9.648e+06	8.004e+06	8.004e+06	-335.3781	-0.00419	8.004e
59	-10.36853	9.329e+06	8.003e+06	8.003e+06	-107.9889	-0.001349	8.003e
60	-10.36437	1.323e+07	8.019e+06	8.018e+06	898.98834	0.0112109	8.018e
61	-10.36342	1.155e+07	8.01e+06	8.01e+06	-167.841	-0.002095	8.01e+
62	-10.36064	9.453e+06	8.004e+06	8.004e+06	-190.9913	-0.002386	8.003e
63	-10.35365	1.184e+07	8.012e+06	8.012e+06	3.2018297	3.996e-05	8.011e
64	-10.35143	8.675e+06	8.003e+06	8.002e+06	600.45744	0.0075033	8.001e
65	-10.34949	1.131e+07	8.009e+06	8.01e+06	-250.8307	-0.003132	8.009e
66	-10.34925	1.488e+07	8.033e+06	8.033e+06	-109.7197	-0.001366	8.032e
67	-10.34848	1.208e+07	8.013e+06	8.013e+06	248.22378	0.0030977	8.013e
68	-10.34704	1.308e+07	8.019e+06	8.018e+06	885.19681	0.0110384	8.018e
69	-10.34504	1.421e+07	8.028e+06	8.027e+06	775.81292	0.0096641	8.027e
70	-10.34408	1.415e+07	8.027e+06	8.027e+06	806.76991	0.0100502	8.026e
71	-10.34329	1.288e+07	8.018e+06	8.017e+06	683.79481	0.0085281	8.017e
72	-10.34274	1.188e+07	8.012e+06	8.012e+06	107.30079	0.0013392	8.012e
73	-10.34239	1.234e+07	8.015e+06	8.015e+06	436.35215	0.0054442	8.014e
74	-10.34212	1.377e+07	8.025e+06	8.024e+06	906.76495	0.0112998	8.023e
75	-10.33783	1.134e+07	8.01e+06	8.01e+06	-219.9938	-0.002747	8.01e+
76	-10.33517	1.011e+07	8.005e+06	8.006e+06	-472.9611	-0.005908	8.006e
77	-10.3345	1.346e+07	8.023e+06	8.022e+06	842.13572	0.0104965	8.022e
78	-10.3339	1.448e+07	8.031e+06	8.031e+06	-13.88806	-0.000173	8.031e
79	-10.33296	1.02e+07	8.006e+06	8.006e+06	-411.7483	-0.005143	8.006e
80	-10.33191	1.223e+07	8.015e+06	8.015e+06	352.63448	0.0043997	8.014e
81	-10.32968	1.102e+07	8.009e+06	8.009e+06	-330.1899	-0.004123	8.009e
82	-10.32855	9.252e+06	8.004e+06	8.003e+06	51.663412	0.0006455	8.003e
83	-10.32787	1.294e+07	8.02e+06	8.019e+06	693.37239	0.0086457	8.019e
84	-10.32722	1.176e+07	8.012e+06	8.012e+06	-10.09908	-0.000126	8.012e
85	-10.32701	1.001e+07	8.005e+06	8.006e+06	-408.9983	-0.005109	8.005e
86	-10.32572	1.142e+07	8.011e+06	8.011e+06	-190.6722	-0.00238	8.011e
87	-10.3236	1.5e+07	8.036e+06	8.041e+06	-5001.258	-0.062237	8.04e+
88	-10.32235	1.259e+07	8.018e+06	8.017e+06	481.38607	0.006004	8.017e
89	-10.31638	1.455e+07	8.034e+06	8.036e+06	-2477.335	-0.030836	8.035e
90	-10.31637	8.76e+06	8.003e+06	8.002e+06	518.56493	0.0064798	8.002e
91	-10.31376	1.408e+07	8.03e+06	8.031e+06	-526.6306	-0.006558	8.03e+
92	-10.31295	1.364e+07	8.027e+06	8.027e+06	137.49555	0.001713	8.026e
93	-10.31127	8.064e+06	8.002e+06	8.001e+06	1778.156	0.0222204	8e+06
94	-10.30945	1.423e+07	8.032e+06	8.034e+06	-1388.175	-0.017282	8.033e

95	-10.30864	1.018e+07	8.006e+06	8.007e+06	-446.3133	-0.005575	8.006e
96	-10.3075	1.324e+07	8.024e+06	8.024e+06	276.95275	0.0034516	8.023e
97	-10.30595	9.105e+06	8.003e+06	8.003e+06	171.67409	0.002145	8.003e
98	-10.30473	1.196e+07	8.015e+06	8.015e+06	79.497891	0.0009919	8.014e
99	-10.30166	1.179e+07	8.014e+06	8.014e+06	11.545702	0.0001441	8.013e
100	-10.30008	9.948e+06	8.006e+06	8.006e+06	-382.3486	-0.004776	8.005e
101	-10.2985	1.002e+07	8.006e+06	8.006e+06	-410.9911	-0.005134	8.006e
102	-10.2983	8.252e+06	8.002e+06	8.001e+06	1442.5307	0.0180262	8e+06
103	-10.29815	1.464e+07	8.036e+06	8.044e+06	-7454.672	-0.092765	8.042e
104	-10.29667	9.883e+06	8.005e+06	8.006e+06	-474.4104	-0.005926	8.005e
105	-10.29591	1.025e+07	8.007e+06	8.007e+06	-489.9162	-0.006119	8.007e
106	-10.29589	1.151e+07	8.012e+06	8.013e+06	-263.6996	-0.003291	8.012e
107	-10.29474	9.936e+06	8.005e+06	8.006e+06	-474.6029	-0.005928	8.005e
108	-10.29426	1.059e+07	8.008e+06	8.008e+06	-479.0556	-0.005982	8.008e
109	-10.29336	9.874e+06	8.005e+06	8.006e+06	-439.6332	-0.005492	8.005e
110	-10.29312	1.177e+07	8.014e+06	8.014e+06	-113.84	-0.00142	8.014e
111	-10.29098	1.438e+07	8.035e+06	8.041e+06	-6235.504	-0.077603	8.04e+

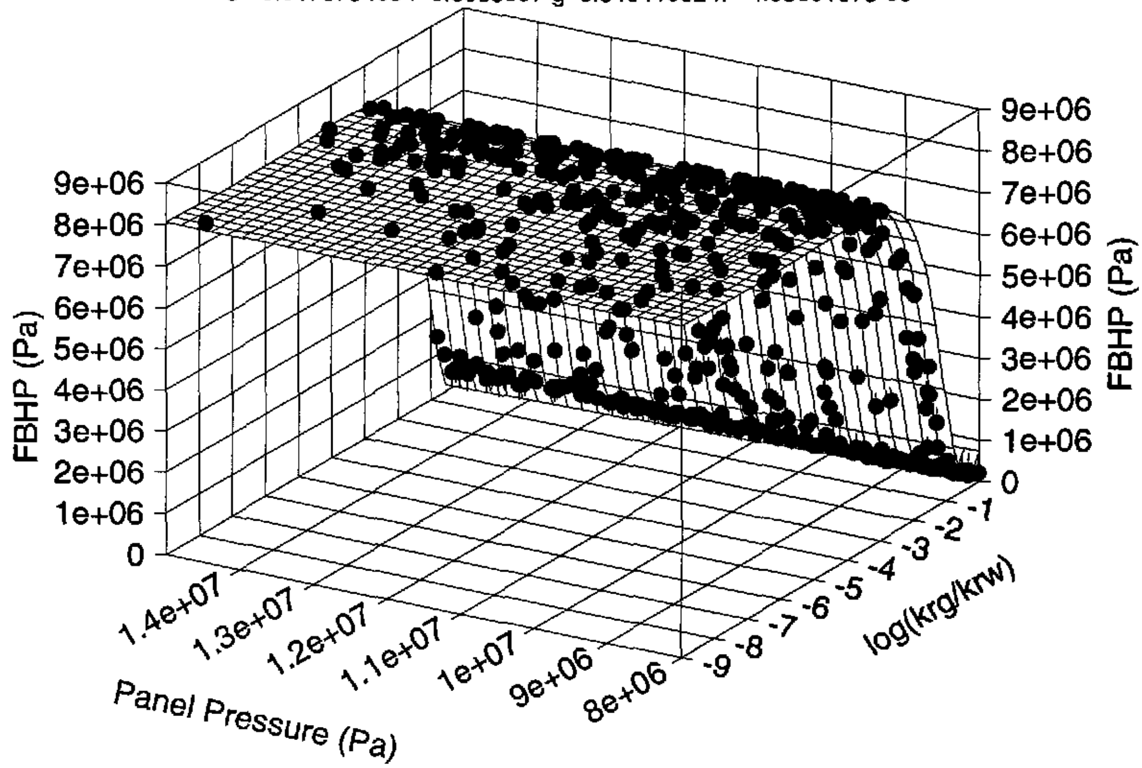
FBHP as a Function of Rel permeabilities and Panel Pressure (brine dominated)

Rank 3 Eqn 1100 $z=(a+bx+cx^2+dx^3+ey)/(1+fx+gx^2+hy)$

r^2=0.99785338 DF Adj r^2=0.99782216 FitStdErr=147128.98 Fstat=36590.213

a=847082.65 b=2788147.9 c=3451058.3 d=-54884.388

e=-0.017079483 f=0.8953597 g=0.54041532 h=-4.9369107e-09



225,453 pa < FBHP < 8,028,643 pa

for Log (Krg/Krw) < 0

Rank 3 Eqn 1100 $z=(a+bx+cx^2+dx^3+ey)/(1+fx+gx^2+hy)$

XYZ *	X Value	Y Value	Z Value	Z Predict	Residual	Residual%	95% C
1	-8.666735	1.461e+07	8.014e+06	8.039e+06	-2.42e+04	-0.301999	7.831e
2	-8.20637	9.729e+06	8.004e+06	8.019e+06	-1.47e+04	-0.183151	7.872e
3	-7.511688	1.26e+07	8.011e+06	8.001e+06	9438.3614	0.117819	7.909e
4	-7.374063	1.366e+07	8.014e+06	8e+06	1.421e+04	0.1773063	7.912e
5	-7.336388	8.604e+06	8.002e+06	7.994e+06	8441.9309	0.105492	7.905e
6	-6.831332	1.174e+07	8.006e+06	7.989e+06	1.715e+04	0.2142164	7.919e
7	-6.503497	8.593e+06	8.003e+06	7.983e+06	1.949e+04	0.2436039	7.911e
8	-6.206966	9.533e+06	8.003e+06	7.984e+06	1.953e+04	0.2439721	7.919e
9	-6.190597	9.215e+06	8.003e+06	7.983e+06	2.024e+04	0.2529299	7.917e
10	-6.080304	1.357e+07	8.012e+06	7.99e+06	2.257e+04	0.2816665	7.926e
11	-5.975367	1.001e+07	8.005e+06	7.985e+06	1.991e+04	0.248702	7.924e
12	-5.955627	1.29e+07	8.009e+06	7.99e+06	1.982e+04	0.2475197	7.93e+
13	-5.865943	1.015e+07	8.005e+06	7.986e+06	1.866e+04	0.2331661	7.927e
14	-5.815049	8.292e+06	8.002e+06	7.984e+06	1.874e+04	0.2341572	7.919e
15	-5.569192	1.011e+07	8.004e+06	7.989e+06	1.49e+04	0.186192	7.935e
16	-5.527781	1.413e+07	8.019e+06	7.997e+06	2.185e+04	0.2724989	7.94e+
17	-5.46817	1.424e+07	8.013e+06	7.998e+06	1.414e+04	0.176532	7.941e
18	-5.404348	1.145e+07	8.006e+06	7.994e+06	1.197e+04	0.1494903	7.944e
19	-5.298044	9.697e+06	8.004e+06	7.993e+06	1.081e+04	0.1350162	7.942e
20	-5.20004	1.083e+07	8.004e+06	7.997e+06	6729.1943	0.0840734	7.95e+
21	-5.12543	9.968e+06	8.003e+06	7.997e+06	6474.423	0.0808951	7.95e+
22	-5.067628	1.119e+07	8.006e+06	8.001e+06	5199.3696	0.0649424	7.957e
23	-5.008788	8.363e+06	8.002e+06	7.996e+06	5656.0833	0.0706862	7.944e
24	-4.941182	8.47e+06	8.002e+06	7.998e+06	3823.9279	0.0477898	7.947e
25	-4.920196	1.426e+07	8.029e+06	8.012e+06	1.694e+04	0.2109547	7.963e
26	-4.904016	1.394e+07	8.022e+06	8.011e+06	1.012e+04	0.1261724	7.964e
27	-4.904009	9.355e+06	8.002e+06	8.001e+06	1411.7437	0.0176423	7.955e
28	-4.894011	1.32e+07	8.009e+06	8.01e+06	-1179.773	-0.014731	7.966e
29	-4.786767	1.397e+07	8.009e+06	8.015e+06	-5646.461	-0.070499	7.969e
30	-4.757211	1.295e+07	8.014e+06	8.013e+06	383.63193	0.0047873	7.972e
31	-4.605555	1.406e+07	8.022e+06	8.021e+06	1372.2854	0.0171066	7.976e
32	-4.588599	1.48e+07	8.016e+06	8.023e+06	-7589.27	-0.094682	7.975e
33	-4.57404	1.391e+07	8.008e+06	8.021e+06	-1.27e+04	-0.158801	7.978e
34	-4.456124	1.071e+07	8.003e+06	8.015e+06	-1.21e+04	-0.151191	7.98e+
35	-4.432827	1.064e+07	8.004e+06	8.016e+06	-1.16e+04	-0.144652	7.981e
36	-4.407355	1.343e+07	8.008e+06	8.025e+06	-1.69e+04	-0.210783	7.986e
37	-4.385024	1.308e+07	8.009e+06	8.024e+06	-1.52e+04	-0.190053	7.987e
38	-4.347326	8.335e+06	7.999e+06	8.011e+06	-1.18e+04	-0.148122	7.966e
39	-4.193203	1.398e+07	8.007e+06	8.032e+06	-2.47e+04	-0.308528	7.992e
40	-4.182465	9.517e+06	7.998e+06	8.017e+06	-1.97e+04	-0.245841	7.981e
41	-4.140178	1.179e+07	8.001e+06	8.026e+06	-2.48e+04	-0.310219	7.994e
42	-4.118707	1.497e+07	8.011e+06	8.037e+06	-2.59e+04	-0.32345	7.991e
43	-4.085558	1.389e+07	8.004e+06	8.034e+06	-3.01e+04	-0.375673	7.995e
44	-4.052082	1.029e+07	7.997e+06	8.022e+06	-2.44e+04	-0.30519	7.989e
45	-3.990849	9.598e+06	7.995e+06	8.02e+06	-2.49e+04	-0.311269	7.985e
46	-3.973047	1.436e+07	8.009e+06	8.038e+06	-2.84e+04	-0.354511	7.996e

47	-3.951735	9.848e+06	7.995e+06	8.021e+06	-2.61e+04	-0.326869	7.987e
48	-3.916788	9.18e+06	7.993e+06	8.018e+06	-2.51e+04	-0.313809	7.982e
49	-3.900202	1.002e+07	7.993e+06	8.021e+06	-2.84e+04	-0.355292	7.989e
50	-3.866507	1.076e+07	7.994e+06	8.024e+06	-3.03e+04	-0.378722	7.994e
51	-3.857285	8.009e+06	7.991e+06	8.013e+06	-2.22e+04	-0.278308	7.97e+
52	-3.835326	1.28e+07	8e+06	8.033e+06	-3.29e+04	-0.410941	8e+06
53	-3.820793	1.29e+07	7.998e+06	8.033e+06	-3.48e+04	-0.435632	8e+06
54	-3.812217	1.045e+07	7.992e+06	8.023e+06	-3.06e+04	-0.382666	7.992e
55	-3.792381	1.218e+07	7.999e+06	8.03e+06	-3.13e+04	-0.391503	7.999e
56	-3.758091	1.408e+07	7.996e+06	8.038e+06	-4.18e+04	-0.523152	7.999e
57	-3.752204	1.276e+07	7.993e+06	8.032e+06	-3.87e+04	-0.484643	8e+06
58	-3.745706	1.329e+07	8.002e+06	8.034e+06	-3.27e+04	-0.409062	8e+06
59	-3.728134	1.077e+07	7.99e+06	8.023e+06	-3.34e+04	-0.417647	7.993e
60	-3.695973	1.444e+07	7.999e+06	8.039e+06	-4e+04	-0.499836	7.998e
61	-3.693278	1.216e+07	7.99e+06	8.029e+06	-3.92e+04	-0.490264	7.998e
62	-3.692418	1.063e+07	7.988e+06	8.022e+06	-3.4e+04	-0.425046	7.992e
63	-3.63362	1.411e+07	8.002e+06	8.037e+06	-3.49e+04	-0.436392	7.997e
64	-3.608526	1.388e+07	7.993e+06	8.035e+06	-4.16e+04	-0.520327	7.997e
65	-3.586908	1.316e+07	7.987e+06	8.031e+06	-4.36e+04	-0.546433	7.997e
66	-3.563594	9.364e+06	7.98e+06	8.012e+06	-3.11e+04	-0.389219	7.977e
67	-3.552855	8.053e+06	7.979e+06	8.005e+06	-2.55e+04	-0.31967	7.962e
68	-3.512402	1.067e+07	7.979e+06	8.016e+06	-3.69e+04	-0.462146	7.986e
69	-3.503296	8.526e+06	7.976e+06	8.004e+06	-2.77e+04	-0.347866	7.965e
70	-3.472941	1.273e+07	7.981e+06	8.024e+06	-4.25e+04	-0.532285	7.992e
71	-3.458259	1.127e+07	7.978e+06	8.015e+06	-3.76e+04	-0.47152	7.986e
72	-3.450184	9.33e+06	7.974e+06	8.005e+06	-3.11e+04	-0.390588	7.97e+
73	-3.439935	1.064e+07	7.976e+06	8.011e+06	-3.54e+04	-0.443256	7.981e
74	-3.439138	8.332e+06	7.972e+06	7.999e+06	-2.66e+04	-0.333527	7.958e
75	-3.434193	1.395e+07	7.982e+06	8.028e+06	-4.57e+04	-0.572764	7.99e+
76	-3.433756	1.238e+07	7.977e+06	8.02e+06	-4.26e+04	-0.534196	7.989e
77	-3.326866	1.365e+07	7.97e+06	8.019e+06	-4.87e+04	-0.611395	7.983e
78	-3.323421	1.343e+07	7.97e+06	8.017e+06	-4.74e+04	-0.594702	7.982e
79	-3.300666	1.225e+07	7.964e+06	8.008e+06	-4.41e+04	-0.553132	7.978e
80	-3.285822	1.062e+07	7.961e+06	7.997e+06	-3.61e+04	-0.453158	7.968e
81	-3.250835	1.082e+07	7.959e+06	7.994e+06	-3.57e+04	-0.448066	7.965e
82	-3.21543	8.947e+06	7.952e+06	7.978e+06	-2.63e+04	-0.330206	7.942e
83	-3.210752	1.179e+07	7.954e+06	7.995e+06	-4.12e+04	-0.517386	7.966e
84	-3.180987	1.028e+07	7.949e+06	7.981e+06	-3.21e+04	-0.404071	7.951e
85	-3.127883	9.88e+06	7.942e+06	7.97e+06	-2.84e+04	-0.358024	7.939e
86	-3.127869	1.139e+07	7.943e+06	7.98e+06	-3.71e+04	-0.466587	7.952e
87	-3.106205	1.457e+07	7.952e+06	7.997e+06	-4.55e+04	-0.57248	7.956e
88	-3.104644	1.226e+07	7.941e+06	7.982e+06	-4.04e+04	-0.508205	7.952e
89	-3.102405	9.526e+06	7.937e+06	7.963e+06	-2.59e+04	-0.325773	7.931e
90	-3.079153	8.393e+06	7.933e+06	7.951e+06	-1.81e+04	-0.228035	7.912e
91	-3.075823	1.454e+07	7.953e+06	7.992e+06	-3.86e+04	-0.48494	7.951e
92	-3.048353	1.32e+07	7.94e+06	7.978e+06	-3.72e+04	-0.468245	7.945e
93	-3.047054	9.687e+06	7.929e+06	7.953e+06	-2.42e+04	-0.30527	7.921e
94	-3.033286	1.304e+07	7.935e+06	7.973e+06	-3.86e+04	-0.486664	7.941e

95	-3.015499	9.401e+06	7.923e+06	7.944e+06	-2.14e+04	-0.270554	7.911e
96	-3.014424	8.493e+06	7.922e+06	7.938e+06	-1.56e+04	-0.196619	7.899e
97	-3.001812	8.675e+06	7.92e+06	7.936e+06	-1.61e+04	-0.203032	7.899e
98	-2.898585	9.269e+06	7.898e+06	7.912e+06	-1.34e+04	-0.169214	7.878e
99	-2.878481	1.198e+07	7.899e+06	7.926e+06	-2.73e+04	-0.345813	7.898e
100	-2.874535	1.157e+07	7.896e+06	7.922e+06	-2.53e+04	-0.320131	7.895e
101	-2.864611	8.04e+06	7.889e+06	7.891e+06	-2301.956	-0.02918	7.851e
102	-2.842271	8.632e+06	7.883e+06	7.888e+06	-4953.644	-0.062841	7.851e
103	-2.842026	8.107e+06	7.883e+06	7.884e+06	-898.9588	-0.011404	7.844e
104	-2.83514	1.413e+07	7.887e+06	7.929e+06	-4.17e+04	-0.52888	7.892e
105	-2.828365	1.499e+07	7.889e+06	7.934e+06	-4.45e+04	-0.563949	7.891e
106	-2.827796	1.163e+07	7.882e+06	7.907e+06	-2.45e+04	-0.311001	7.88e+
107	-2.806694	1.451e+07	7.888e+06	7.923e+06	-3.46e+04	-0.438956	7.883e
108	-2.786077	1.352e+07	7.873e+06	7.907e+06	-3.41e+04	-0.433085	7.874e
109	-2.722797	9.713e+06	7.846e+06	7.848e+06	-2124.997	-0.027083	7.819e
110	-2.721181	1.304e+07	7.853e+06	7.876e+06	-2.35e+04	-0.299146	7.846e
111	-2.717791	1.415e+07	7.859e+06	7.885e+06	-2.6e+04	-0.330675	7.848e
112	-2.711372	1.213e+07	7.846e+06	7.864e+06	-1.81e+04	-0.23021	7.837e
113	-2.694004	9.62e+06	7.834e+06	7.834e+06	506.7695	0.0064686	7.804e
114	-2.691975	1.321e+07	7.838e+06	7.865e+06	-2.64e+04	-0.33741	7.834e
115	-2.684629	1.259e+07	7.835e+06	7.856e+06	-2.05e+04	-0.261327	7.828e
116	-2.684228	1.415e+07	7.846e+06	7.869e+06	-2.3e+04	-0.293229	7.833e
117	-2.670321	8.406e+06	7.824e+06	7.811e+06	1.334e+04	0.1705226	7.774e
118	-2.655341	9.857e+06	7.819e+06	7.816e+06	2625.9236	0.0335846	7.788e
119	-2.653652	1.263e+07	7.821e+06	7.841e+06	-1.94e+04	-0.248363	7.813e
120	-2.653602	1.036e+07	7.818e+06	7.82e+06	-1484.397	-0.018986	7.793e
121	-2.617383	8.919e+06	7.802e+06	7.787e+06	1.501e+04	0.1924307	7.753e
122	-2.615447	9.78e+06	7.801e+06	7.793e+06	7991.8929	0.1024424	7.765e
123	-2.6043	1.008e+07	7.796e+06	7.79e+06	6832.9746	0.0876421	7.762e
124	-2.596796	1.263e+07	7.8e+06	7.809e+06	-9624.822	-0.1234	7.782e
125	-2.589876	1.055e+07	7.789e+06	7.785e+06	3831.337	0.0491876	7.76e+
126	-2.584779	8.943e+06	7.786e+06	7.767e+06	1.864e+04	0.2394438	7.734e
127	-2.583164	1.492e+07	7.795e+06	7.823e+06	-2.86e+04	-0.367414	7.782e
128	-2.551293	1.34e+07	7.776e+06	7.789e+06	-1.26e+04	-0.162665	7.758e
129	-2.539995	8.897e+06	7.762e+06	7.737e+06	2.483e+04	0.3198486	7.705e
130	-2.538637	1.007e+07	7.762e+06	7.748e+06	1.43e+04	0.1842233	7.721e
131	-2.524143	1.055e+07	7.754e+06	7.742e+06	1.156e+04	0.1490777	7.717e
132	-2.522348	1.179e+07	7.755e+06	7.754e+06	1348.1827	0.0173849	7.729e
133	-2.516999	8.735e+06	7.749e+06	7.719e+06	2.938e+04	0.3791571	7.686e
134	-2.510642	9.758e+06	7.746e+06	7.725e+06	2.092e+04	0.2700563	7.697e
135	-2.507927	1.234e+07	7.749e+06	7.749e+06	-224.7321	-0.0029	7.723e
136	-2.501801	9.421e+06	7.74e+06	7.715e+06	2.516e+04	0.3250757	7.686e
137	-2.492226	1.38e+07	7.741e+06	7.753e+06	-1.19e+04	-0.153901	7.72e+
138	-2.482698	1.071e+07	7.729e+06	7.714e+06	1.566e+04	0.2025641	7.69e+
139	-2.479143	8.462e+06	7.726e+06	7.688e+06	3.741e+04	0.4842268	7.653e
140	-2.452864	1.006e+07	7.709e+06	7.683e+06	2.589e+04	0.3358003	7.658e
141	-2.445006	1.143e+07	7.707e+06	7.691e+06	1.516e+04	0.1967116	7.668e
142	-2.442686	1.016e+07	7.703e+06	7.676e+06	2.653e+04	0.3443864	7.651e

143	-2.411851	9.027e+06	7.679e+06	7.637e+06	4.195e+04	0.5462402	7.607e
144	-2.403184	9.337e+06	7.673e+06	7.633e+06	4.022e+04	0.5241909	7.604e
145	-2.38382	8.833e+06	7.657e+06	7.609e+06	4.808e+04	0.6278595	7.578e
146	-2.383152	1.095e+07	7.659e+06	7.632e+06	2.749e+04	0.3589044	7.609e
147	-2.374888	1.451e+07	7.657e+06	7.663e+06	-6437.06	-0.084068	7.627e
148	-2.365184	1.162e+07	7.646e+06	7.622e+06	2.36e+04	0.3087265	7.599e
149	-2.361033	9.712e+06	7.64e+06	7.597e+06	4.287e+04	0.5611872	7.57e+
150	-2.35138	1.373e+07	7.636e+06	7.632e+06	3656.9438	0.0478926	7.601e
151	-2.332299	8.526e+06	7.614e+06	7.554e+06	5.985e+04	0.7860356	7.521e
152	-2.321038	1.081e+07	7.606e+06	7.568e+06	3.782e+04	0.4972705	7.545e
153	-2.320773	1.452e+07	7.619e+06	7.61e+06	9323.4081	0.1223632	7.574e
154	-2.311641	1.171e+07	7.598e+06	7.568e+06	3.035e+04	0.3995014	7.545e
155	-2.265308	1.242e+07	7.551e+06	7.523e+06	2.796e+04	0.3702448	7.499e
156	-2.257059	1.29e+07	7.547e+06	7.519e+06	2.755e+04	0.365071	7.493e
157	-2.245783	9.271e+06	7.528e+06	7.462e+06	6.604e+04	0.8772135	7.434e
158	-2.234127	1.2e+07	7.52e+06	7.48e+06	4.033e+04	0.5362482	7.457e
159	-2.223531	1.374e+07	7.509e+06	7.487e+06	2.124e+04	0.2828285	7.457e
160	-2.219766	8.357e+06	7.498e+06	7.417e+06	8.093e+04	1.0793963	7.384e
161	-2.215129	1.189e+07	7.497e+06	7.454e+06	4.342e+04	0.5791455	7.431e
162	-2.210169	1.353e+07	7.498e+06	7.467e+06	3.042e+04	0.4056975	7.438e
163	-2.1862	1.057e+07	7.459e+06	7.398e+06	6.114e+04	0.8197125	7.375e
164	-2.181578	1.363e+07	7.459e+06	7.429e+06	2.913e+04	0.39054	7.4e+0
165	-2.175548	1.222e+07	7.448e+06	7.403e+06	4.503e+04	0.6046343	7.38e+
166	-2.157503	9.085e+06	7.421e+06	7.337e+06	8.356e+04	1.1260511	7.309e
167	-2.156242	1.383e+07	7.425e+06	7.395e+06	2.986e+04	0.4020793	7.365e
168	-2.143467	9.475e+06	7.402e+06	7.321e+06	8.182e+04	1.1052632	7.294e
169	-2.12626	1.469e+07	7.387e+06	7.361e+06	2.586e+04	0.3501036	7.325e
170	-2.121504	1.371e+07	7.38e+06	7.34e+06	3.988e+04	0.5403343	7.311e
171	-2.116308	1.172e+07	7.365e+06	7.306e+06	5.896e+04	0.8005652	7.284e
172	-2.083053	9.587e+06	7.313e+06	7.222e+06	9.024e+04	1.2340208	7.196e
173	-2.078722	1.404e+07	7.312e+06	7.274e+06	3.841e+04	0.5252864	7.242e
174	-2.067318	1.011e+07	7.287e+06	7.201e+06	8.612e+04	1.1818145	7.177e
175	-2.066293	1.114e+07	7.287e+06	7.213e+06	7.43e+04	1.0196157	7.191e
176	-2.066174	1.306e+07	7.289e+06	7.238e+06	5.043e+04	0.6918979	7.212e
177	-2.026522	8.671e+06	7.217e+06	7.105e+06	1.114e+05	1.5442266	7.075e
178	-2.008034	8.653e+06	7.183e+06	7.068e+06	1.148e+05	1.5988271	7.038e
179	-1.996219	9.315e+06	7.161e+06	7.053e+06	1.078e+05	1.5052489	7.026e
180	-1.996117	1.203e+07	7.162e+06	7.089e+06	7.286e+04	1.0172087	7.067e
181	-1.99488	1.3e+07	7.163e+06	7.1e+06	6.228e+04	0.8695434	7.075e
182	-1.992515	1.204e+07	7.158e+06	7.082e+06	7.546e+04	1.0542889	7.06e+
183	-1.98813	1.128e+07	7.146e+06	7.063e+06	8.384e+04	1.1731433	7.041e
184	-1.980256	1.207e+07	7.135e+06	7.057e+06	7.867e+04	1.1024819	7.034e
185	-1.973181	9.821e+06	7.116e+06	7.011e+06	1.055e+05	1.4819667	6.986e
186	-1.965287	1.453e+07	7.112e+06	7.059e+06	5.292e+04	0.7441	7.025e
187	-1.964974	8.611e+06	7.098e+06	6.976e+06	1.218e+05	1.7162134	6.946e
188	-1.962344	9.226e+06	7.093e+06	6.979e+06	1.138e+05	1.6046629	6.951e
189	-1.962185	8.825e+06	7.092e+06	6.973e+06	1.193e+05	1.6823524	6.943e
190	-1.959682	1.017e+07	7.088e+06	6.986e+06	1.022e+05	1.4424709	6.962e

191	-1.958083	1.286e+07	7.09e+06	7.019e+06	7.028e+04	0.9912453	6.995e
192	-1.957808	1.06e+07	7.086e+06	6.987e+06	9.881e+04	1.3944193	6.965e
193	-1.951028	1.247e+07	7.072e+06	6.998e+06	7.359e+04	1.0406327	6.975e
194	-1.945574	1.456e+07	7.064e+06	7.015e+06	4.874e+04	0.6899291	6.982e
195	-1.93241	1.101e+07	7.03e+06	6.935e+06	9.521e+04	1.3542637	6.913e
196	-1.914731	1.178e+07	6.991e+06	6.904e+06	8.709e+04	1.2457089	6.882e
197	-1.904102	1.037e+07	6.965e+06	6.858e+06	1.066e+05	1.5304556	6.835e
198	-1.903713	1.457e+07	6.975e+06	6.917e+06	5.808e+04	0.8326617	6.883e
199	-1.903456	1.177e+07	6.965e+06	6.876e+06	8.891e+04	1.2765894	6.854e
200	-1.897453	1.246e+07	6.956e+06	6.871e+06	8.484e+04	1.2197231	6.847e
201	-1.885715	9.296e+06	6.921e+06	6.797e+06	1.241e+05	1.7934169	6.77e+
202	-1.884171	9.467e+06	6.917e+06	6.795e+06	1.219e+05	1.7624137	6.769e
203	-1.88417	9.382e+06	6.916e+06	6.794e+06	1.225e+05	1.7713772	6.767e
204	-1.880714	9.107e+06	6.908e+06	6.781e+06	1.264e+05	1.8302735	6.753e
205	-1.875379	8.971e+06	6.895e+06	6.765e+06	1.292e+05	1.8741684	6.737e
206	-1.843433	8.669e+06	6.812e+06	6.675e+06	1.365e+05	2.0034811	6.645e
207	-1.840751	1.437e+07	6.811e+06	6.749e+06	6.211e+04	0.9119409	6.717e
208	-1.836508	9.341e+06	6.793e+06	6.665e+06	1.28e+05	1.8843061	6.638e
209	-1.819114	1.25e+07	6.75e+06	6.66e+06	8.926e+04	1.3224344	6.636e
210	-1.818663	1.149e+07	6.746e+06	6.645e+06	1.012e+05	1.5008421	6.622e
211	-1.817175	1.014e+07	6.741e+06	6.621e+06	1.195e+05	1.7731969	6.597e
212	-1.8067	8.501e+06	6.709e+06	6.567e+06	1.413e+05	2.105554	6.536e
213	-1.802512	1.397e+07	6.704e+06	6.633e+06	7.121e+04	1.0621693	6.603e
214	-1.800935	1.454e+07	6.702e+06	6.636e+06	6.598e+04	0.9843984	6.603e
215	-1.796065	1.272e+07	6.682e+06	6.595e+06	8.698e+04	1.3016638	6.571e
216	-1.795985	9.772e+06	6.678e+06	6.553e+06	1.252e+05	1.8754356	6.528e
217	-1.789876	1.462e+07	6.676e+06	6.604e+06	7.2e+04	1.0784791	6.571e
218	-1.78298	1.361e+07	6.647e+06	6.568e+06	7.882e+04	1.185776	6.54e+
219	-1.78227	9.82e+06	6.638e+06	6.512e+06	1.26e+05	1.8986744	6.486e
220	-1.752217	1.315e+07	6.551e+06	6.464e+06	8.743e+04	1.3346718	6.437e
221	-1.751186	1.059e+07	6.542e+06	6.424e+06	1.186e+05	1.8126275	6.4e+0
222	-1.750307	9.476e+06	6.536e+06	6.405e+06	1.308e+05	2.0016157	6.378e
223	-1.737848	1.302e+07	6.504e+06	6.414e+06	9.001e+04	1.3838339	6.388e
224	-1.729999	9.331e+06	6.468e+06	6.335e+06	1.323e+05	2.0460201	6.308e
225	-1.725351	1.173e+07	6.459e+06	6.353e+06	1.058e+05	1.6380394	6.33e+
226	-1.722362	1.348e+07	6.451e+06	6.368e+06	8.32e+04	1.2896395	6.34e+
227	-1.720276	1.094e+07	6.436e+06	6.324e+06	1.112e+05	1.7281512	6.301e
228	-1.703656	8.652e+06	6.375e+06	6.235e+06	1.407e+05	2.2066883	6.204e
229	-1.703649	9.721e+06	6.378e+06	6.249e+06	1.287e+05	2.0180098	6.223e
230	-1.697739	1.22e+07	6.358e+06	6.263e+06	9.561e+04	1.5036438	6.239e
231	-1.69265	1.068e+07	6.339e+06	6.223e+06	1.16e+05	1.8300252	6.199e
232	-1.690635	9.534e+06	6.329e+06	6.2e+06	1.287e+05	2.0343706	6.173e
233	-1.678787	1.062e+07	6.288e+06	6.171e+06	1.17e+05	1.8608527	6.147e
234	-1.673443	1.156e+07	6.267e+06	6.164e+06	1.026e+05	1.6372769	6.141e
235	-1.66765	1.451e+07	6.255e+06	6.184e+06	7.078e+04	1.1315839	6.152e
236	-1.653171	1.061e+07	6.189e+06	6.074e+06	1.153e+05	1.8627863	6.05e+
237	-1.652312	9.012e+06	6.182e+06	6.049e+06	1.325e+05	2.1434947	6.02e+
238	-1.650163	1.035e+07	6.176e+06	6.059e+06	1.168e+05	1.8916966	6.034e

239	-1.644353	1.277e+07	6.156e+06	6.069e+06	8.686e+04	1.4109309	6.044e
240	-1.639786	8.767e+06	6.131e+06	5.997e+06	1.344e+05	2.1925	5.967e
241	-1.638579	1.05e+07	6.129e+06	6.015e+06	1.139e+05	1.8575893	5.991e
242	-1.636974	1.248e+07	6.126e+06	6.036e+06	9.032e+04	1.4742401	6.011e
243	-1.635736	8.319e+06	6.114e+06	5.975e+06	1.391e+05	2.2745912	5.943e
244	-1.634021	1.14e+07	6.11e+06	6.009e+06	1.01e+05	1.6522166	5.986e
245	-1.62586	1.471e+07	6.085e+06	6.022e+06	6.249e+04	1.02697	5.989e
246	-1.62138	1.135e+07	6.059e+06	5.958e+06	1.017e+05	1.6777488	5.934e
247	-1.619417	1.494e+07	6.068e+06	5.999e+06	6.889e+04	1.1353223	5.965e
248	-1.610791	1.006e+07	6.012e+06	5.897e+06	1.149e+05	1.9104321	5.871e
249	-1.609176	1.128e+07	6.006e+06	5.906e+06	1.001e+05	1.6671666	5.882e
250	-1.601954	1.014e+07	5.975e+06	5.861e+06	1.143e+05	1.9127662	5.836e
251	-1.596369	1.261e+07	5.952e+06	5.87e+06	8.187e+04	1.3754351	5.845e
252	-1.591058	1.117e+07	5.929e+06	5.828e+06	1.008e+05	1.6995655	5.804e
253	-1.590821	1.239e+07	5.93e+06	5.843e+06	8.676e+04	1.4629686	5.819e
254	-1.585533	8.423e+06	5.898e+06	5.769e+06	1.289e+05	2.1848013	5.738e
255	-1.559855	1.375e+07	5.798e+06	5.725e+06	7.306e+04	1.2600855	5.696e
256	-1.557146	1.289e+07	5.773e+06	5.701e+06	7.214e+04	1.2494295	5.675e
257	-1.552216	1.321e+07	5.756e+06	5.683e+06	7.304e+04	1.2689516	5.656e
258	-1.544992	1.176e+07	5.712e+06	5.631e+06	8.047e+04	1.4087815	5.607e
259	-1.542842	1.327e+07	5.705e+06	5.641e+06	6.4e+04	1.1219579	5.613e
260	-1.538055	1.168e+07	5.678e+06	5.598e+06	8.017e+04	1.4118857	5.574e
261	-1.53402	1.16e+07	5.658e+06	5.578e+06	7.971e+04	1.408797	5.554e
262	-1.533527	1.233e+07	5.664e+06	5.585e+06	7.861e+04	1.3879131	5.56e+
263	-1.523914	1.22e+07	5.608e+06	5.538e+06	6.972e+04	1.2433214	5.513e
264	-1.519425	1.135e+07	5.584e+06	5.506e+06	7.739e+04	1.385898	5.482e
265	-1.50554	1.349e+07	5.517e+06	5.465e+06	5.173e+04	0.9376803	5.437e
266	-1.50041	9.191e+06	5.484e+06	5.389e+06	9.478e+04	1.7282797	5.361e
267	-1.490148	1.101e+07	5.431e+06	5.36e+06	7.119e+04	1.3107654	5.335e
268	-1.489839	1.344e+07	5.443e+06	5.387e+06	5.65e+04	1.0380367	5.359e
269	-1.487498	1.261e+07	5.419e+06	5.365e+06	5.435e+04	1.0029454	5.34e+
270	-1.48431	1.498e+07	5.417e+06	5.377e+06	3.945e+04	0.7283661	5.344e
271	-1.482762	9.143e+06	5.388e+06	5.302e+06	8.619e+04	1.5996668	5.273e
272	-1.47379	9.564e+06	5.342e+06	5.262e+06	8.011e+04	1.4996811	5.234e
273	-1.462933	1.268e+07	5.289e+06	5.241e+06	4.858e+04	0.918522	5.215e
274	-1.461674	1.037e+07	5.277e+06	5.209e+06	6.846e+04	1.2973646	5.183e
275	-1.458649	8.326e+06	5.255e+06	5.171e+06	8.393e+04	1.5970251	5.14e+
276	-1.457875	1.015e+07	5.253e+06	5.187e+06	6.613e+04	1.2589441	5.161e
277	-1.436834	8.242e+06	5.129e+06	5.057e+06	7.177e+04	1.3992181	5.026e
278	-1.419654	1.095e+07	5.03e+06	4.992e+06	3.75e+04	0.7456077	4.968e
279	-1.411707	1.143e+07	4.992e+06	4.954e+06	3.872e+04	0.7754929	4.929e
280	-1.408792	1.432e+07	4.983e+06	4.966e+06	1.723e+04	0.3458177	4.936e
281	-1.401615	1.448e+07	4.939e+06	4.927e+06	1.155e+04	0.2338708	4.896e
282	-1.395459	1.019e+07	4.881e+06	4.852e+06	2.868e+04	0.5876739	4.827e
283	-1.394978	9.949e+06	4.877e+06	4.847e+06	3.007e+04	0.6165238	4.821e
284	-1.392503	1.371e+07	4.873e+06	4.868e+06	4988.7796	0.1023718	4.84e+
285	-1.390767	1.263e+07	4.861e+06	4.848e+06	1.233e+04	0.2536827	4.823e
286	-1.389918	8.726e+06	4.846e+06	4.808e+06	3.781e+04	0.7802326	4.779e

287	-1.364263	1.03e+07	4.69e+06	4.676e+06	1.332e+04	0.2839265	4.651e
288	-1.355444	1.419e+07	4.656e+06	4.657e+06	-507.042	-0.010889	4.627e
289	-1.348754	1.171e+07	4.592e+06	4.597e+06	-4942.91	-0.107638	4.573e
290	-1.347906	1.259e+07	4.591e+06	4.599e+06	-8314.264	-0.181112	4.574e
291	-1.342912	1.225e+07	4.548e+06	4.567e+06	-1.85e+04	-0.405744	4.542e
292	-1.327956	8.814e+06	4.441e+06	4.453e+06	-1.16e+04	-0.261569	4.424e
293	-1.32702	9.491e+06	4.436e+06	4.452e+06	-1.58e+04	-0.355148	4.425e
294	-1.323699	1.439e+07	4.446e+06	4.466e+06	-1.99e+04	-0.448177	4.436e
295	-1.307447	1.173e+07	4.317e+06	4.349e+06	-3.13e+04	-0.725058	4.325e
296	-1.306477	1.38e+07	4.312e+06	4.356e+06	-4.37e+04	-1.012849	4.328e
297	-1.30425	1.272e+07	4.293e+06	4.335e+06	-4.18e+04	-0.974266	4.31e+
298	-1.302004	1.301e+07	4.275e+06	4.323e+06	-4.76e+04	-1.11314	4.297e
299	-1.296227	1.099e+07	4.236e+06	4.275e+06	-3.9e+04	-0.920077	4.251e
300	-1.291912	1.036e+07	4.197e+06	4.245e+06	-4.84e+04	-1.152431	4.22e+
301	-1.289985	1.038e+07	4.179e+06	4.233e+06	-5.4e+04	-1.293127	4.209e
302	-1.28891	9.01e+06	4.168e+06	4.219e+06	-5.13e+04	-1.231968	4.191e
303	-1.284362	1.462e+07	4.186e+06	4.221e+06	-3.53e+04	-0.843308	4.19e+
304	-1.278157	1.389e+07	4.119e+06	4.178e+06	-5.87e+04	-1.424076	4.15e+
305	-1.278108	1.168e+07	4.096e+06	4.166e+06	-6.96e+04	-1.698742	4.142e
306	-1.271591	9.315e+06	4.043e+06	4.114e+06	-7.08e+04	-1.752378	4.087e
307	-1.262226	8.262e+06	3.974e+06	4.051e+06	-7.73e+04	-1.944914	4.021e
308	-1.256629	8.423e+06	3.937e+06	4.017e+06	-7.94e+04	-2.016804	3.987e
309	-1.251344	9.922e+06	3.902e+06	3.989e+06	-8.74e+04	-2.239069	3.964e
310	-1.240496	1.195e+07	3.825e+06	3.927e+06	-1.02e+05	-2.664755	3.904e
311	-1.232081	1.431e+07	3.798e+06	3.88e+06	-8.21e+04	-2.162335	3.851e
312	-1.221433	1.273e+07	3.706e+06	3.806e+06	-9.92e+04	-2.677818	3.781e
313	-1.210712	1.319e+07	3.639e+06	3.736e+06	-9.71e+04	-2.667681	3.71e+
314	-1.20755	1.252e+07	3.594e+06	3.714e+06	-1.2e+05	-3.337281	3.689e
315	-1.204713	1.205e+07	3.558e+06	3.694e+06	-1.36e+05	-3.823622	3.67e+
316	-1.204368	1.395e+07	3.572e+06	3.695e+06	-1.24e+05	-3.45819	3.667e
317	-1.19969	1.095e+07	3.522e+06	3.659e+06	-1.37e+05	-3.901136	3.636e
318	-1.184644	8.364e+06	3.398e+06	3.558e+06	-1.6e+05	-4.697895	3.529e
319	-1.176173	8.336e+06	3.333e+06	3.503e+06	-1.7e+05	-5.092431	3.474e
320	-1.170302	8.159e+06	3.287e+06	3.465e+06	-1.78e+05	-5.402441	3.435e
321	-1.169365	1.382e+07	3.329e+06	3.459e+06	-1.3e+05	-3.88977	3.431e
322	-1.161381	1.231e+07	3.245e+06	3.405e+06	-1.61e+05	-4.954585	3.381e
323	-1.160536	1.108e+07	3.234e+06	3.4e+06	-1.66e+05	-5.136077	3.377e
324	-1.157211	1.237e+07	3.219e+06	3.377e+06	-1.59e+05	-4.926106	3.353e
325	-1.151439	1.486e+07	3.202e+06	3.336e+06	-1.34e+05	-4.173265	3.303e
326	-1.146164	1.327e+07	3.139e+06	3.302e+06	-1.63e+05	-5.195795	3.275e
327	-1.143287	8.365e+06	3.077e+06	3.289e+06	-2.12e+05	-6.894315	3.259e
328	-1.142828	1.111e+07	3.106e+06	3.282e+06	-1.76e+05	-5.674522	3.259e
329	-1.136648	1.13e+07	3.055e+06	3.24e+06	-1.85e+05	-6.053126	3.217e
330	-1.134655	1.366e+07	3.069e+06	3.222e+06	-1.53e+05	-4.988589	3.195e
331	-1.124097	1.066e+07	2.952e+06	3.158e+06	-2.06e+05	-6.975159	3.134e
332	-1.11891	1.36e+07	2.924e+06	3.115e+06	-1.91e+05	-6.540159	3.087e
333	-1.115413	1.348e+07	2.927e+06	3.091e+06	-1.65e+05	-5.624619	3.064e
334	-1.114261	1.027e+07	2.876e+06	3.093e+06	-2.17e+05	-7.553206	3.069e

335	-1.107468	1.115e+07	2.833e+06	3.045e+06	-2.11e+05	-7.454967	3.022e
336	-1.103199	1.093e+07	2.799e+06	3.017e+06	-2.18e+05	-7.797649	2.994e
337	-1.099613	1.101e+07	2.752e+06	2.992e+06	-2.41e+05	-8.75116	2.97e+
338	-1.098879	9.601e+06	2.749e+06	2.993e+06	-2.44e+05	-8.860583	2.968e
339	-1.088464	9.165e+06	2.66e+06	2.926e+06	-2.66e+05	-9.983013	2.899e
340	-1.086745	1.124e+07	2.672e+06	2.905e+06	-2.33e+05	-8.715589	2.882e
341	-1.086486	1.254e+07	2.685e+06	2.897e+06	-2.12e+05	-7.910135	2.873e
342	-1.082263	1.408e+07	2.647e+06	2.861e+06	-2.14e+05	-8.089087	2.831e
343	-1.081081	9.577e+06	2.626e+06	2.875e+06	-2.49e+05	-9.50067	2.85e+
344	-1.080346	8.222e+06	2.595e+06	2.876e+06	-2.81e+05	-10.84784	2.846e
345	-1.074357	1.231e+07	2.592e+06	2.816e+06	-2.25e+05	-8.676511	2.792e
346	-1.073301	8.206e+06	2.546e+06	2.83e+06	-2.85e+05	-11.18106	2.8e+0
347	-1.063818	1.259e+07	2.548e+06	2.743e+06	-1.95e+05	-7.666623	2.719e
348	-1.054691	1.012e+07	2.41e+06	2.697e+06	-2.87e+05	-11.92607	2.673e
349	-1.051293	1.011e+07	2.393e+06	2.675e+06	-2.82e+05	-11.79249	2.651e
350	-1.050745	1.039e+07	2.412e+06	2.669e+06	-2.57e+05	-10.67142	2.646e
351	-1.049897	1.093e+07	2.391e+06	2.66e+06	-2.7e+05	-11.28704	2.637e
352	-1.043538	1.152e+07	2.381e+06	2.614e+06	-2.33e+05	-9.800638	2.591e
353	-1.026368	8.749e+06	2.196e+06	2.521e+06	-3.26e+05	-14.83205	2.493e
354	-1.021827	8.265e+06	2.177e+06	2.496e+06	-3.19e+05	-14.6445	2.465e
355	-1.020301	1.09e+07	2.21e+06	2.465e+06	-2.54e+05	-11.51258	2.442e
356	-1.019067	1.438e+07	2.238e+06	2.427e+06	-1.88e+05	-8.415444	2.394e
357	-1.01782	1.226e+07	2.187e+06	2.437e+06	-2.5e+05	-11.435	2.413e
358	-1.014583	1.181e+07	2.143e+06	2.419e+06	-2.77e+05	-12.91349	2.396e
359	-1.010144	1.122e+07	2.118e+06	2.395e+06	-2.77e+05	-13.07339	2.372e
360	-1.005365	9.655e+06	2.077e+06	2.378e+06	-3.01e+05	-14.49839	2.353e
361	-0.998939	1.139e+07	2.052e+06	2.32e+06	-2.68e+05	-13.06299	2.297e
362	-0.991059	8.959e+06	1.971e+06	2.293e+06	-3.22e+05	-16.33546	2.265e
363	-0.988129	1.409e+07	1.999e+06	2.222e+06	-2.23e+05	-11.158	2.19e+
364	-0.97328	8.147e+06	1.838e+06	2.189e+06	-3.51e+05	-19.09015	2.157e
365	-0.968687	1.294e+07	1.853e+06	2.107e+06	-2.55e+05	-13.74044	2.08e+
366	-0.956505	1.142e+07	1.811e+06	2.047e+06	-2.36e+05	-13.04027	2.023e
367	-0.956004	1.104e+07	1.758e+06	2.048e+06	-2.9e+05	-16.49968	2.025e
368	-0.947699	9.618e+06	1.684e+06	2.014e+06	-3.29e+05	-19.55731	1.988e
369	-0.945844	1.334e+07	1.764e+06	1.955e+06	-1.91e+05	-10.82876	1.926e
370	-0.943362	1.17e+07	1.738e+06	1.961e+06	-2.22e+05	-12.77901	1.937e
371	-0.942766	1.043e+07	1.66e+06	1.973e+06	-3.13e+05	-18.82732	1.949e
372	-0.942144	1.09e+07	1.695e+06	1.963e+06	-2.69e+05	-15.85286	1.94e+
373	-0.916596	1.385e+07	1.564e+06	1.764e+06	-2e+05	-12.81824	1.731e
374	-0.909832	1.082e+07	1.518e+06	1.767e+06	-2.49e+05	-16.40378	1.743e
375	-0.909255	1.033e+07	1.522e+06	1.771e+06	-2.48e+05	-16.30375	1.746e
376	-0.893065	9.552e+06	1.392e+06	1.687e+06	-2.95e+05	-21.17547	1.66e+
377	-0.887829	1.28e+07	1.461e+06	1.606e+06	-1.44e+05	-9.868081	1.577e
378	-0.881153	1.496e+07	1.489e+06	1.53e+06	-4.07e+04	-2.736307	1.489e
379	-0.871741	1.365e+07	1.366e+06	1.497e+06	-1.31e+05	-9.567297	1.464e
380	-0.870163	1.408e+07	1.384e+06	1.48e+06	-9.64e+04	-6.969	1.445e
381	-0.859318	1.073e+07	1.256e+06	1.476e+06	-2.2e+05	-17.51838	1.451e
382	-0.853973	1.17e+07	1.247e+06	1.429e+06	-1.82e+05	-14.59432	1.404e

383	-0.847525	8.194e+06	1.152e+06	1.454e+06	-3.02e+05	-26.23347	1.421e
384	-0.845502	9.91e+06	1.202e+06	1.414e+06	-2.12e+05	-17.60094	1.388e
385	-0.84259	1.303e+07	1.256e+06	1.342e+06	-8.65e+04	-6.885745	1.312e
386	-0.842555	1.023e+07	1.164e+06	1.393e+06	-2.29e+05	-19.64704	1.367e
387	-0.829447	8.337e+06	1.09e+06	1.357e+06	-2.67e+05	-24.4691	1.323e
388	-0.812629	1.469e+07	1.086e+06	1.148e+06	-6.13e+04	-5.641245	1.106e
389	-0.811369	1.29e+07	1.07e+06	1.177e+06	-1.07e+05	-9.994962	1.147e
390	-0.807098	9.989e+06	1.028e+06	1.212e+06	-1.85e+05	-17.95844	1.185e
391	-0.805012	1.196e+07	1.099e+06	1.163e+06	-6.45e+04	-5.868794	1.136e
392	-0.800485	1.039e+07	1.023e+06	1.171e+06	-1.48e+05	-14.50455	1.145e
393	-0.791846	1.045e+07	1.005e+06	1.127e+06	-1.22e+05	-12.1716	1.102e
394	-0.769697	1.293e+07	1.007e+06	9.694e+05	3.788e+04	3.7602522	9.38e+
395	-0.768313	8.458e+06	8.839e+05	1.056e+06	-1.72e+05	-19.50391	1.023e
396	-0.768093	1.318e+07	9.426e+05	9.563e+05	-1.37e+04	-1.456726	9.235e
397	-0.765272	1.492e+07	1.029e+06	9.043e+05	1.246e+05	12.110652	8.598e
398	-0.764008	1.116e+07	9.055e+05	9.808e+05	-7.53e+04	-8.319534	9.549e
399	-0.75493	9.745e+06	8.735e+05	9.697e+05	-9.62e+04	-11.01206	9.416e
400	-0.754925	8.094e+06	8.247e+05	1.004e+06	-1.79e+05	-21.73222	9.678e
401	-0.750163	1.448e+07	9.512e+05	8.439e+05	1.073e+05	11.283431	8.021e
402	-0.735311	9.001e+06	7.892e+05	9.008e+05	-1.12e+05	-14.13909	8.694e
403	-0.723191	8.523e+06	7.567e+05	8.614e+05	-1.05e+05	-13.83656	8.272e
404	-0.715445	1.315e+07	8.596e+05	7.254e+05	1.342e+05	15.615237	6.917e
405	-0.711691	1.08e+07	7.833e+05	7.649e+05	1.836e+04	2.3435112	7.385e
406	-0.705563	1.383e+07	8.348e+05	6.695e+05	1.653e+05	19.801764	6.313e
407	-0.704406	1.026e+07	7.41e+05	7.489e+05	-7962.893	-1.074639	7.218e
408	-0.700532	1.148e+07	7.563e+05	7.057e+05	5.061e+04	6.6920478	6.786e
409	-0.694309	9.25e+06	6.937e+05	7.338e+05	-4.01e+04	-5.777077	7.031e
410	-0.689251	1.414e+07	7.749e+05	5.991e+05	1.758e+05	22.685125	5.585e
411	-0.687468	1.332e+07	7.799e+05	6.126e+05	1.673e+05	21.455509	5.775e
412	-0.686354	8.223e+06	6.388e+05	7.281e+05	-8.93e+04	-13.98394	6.916e
413	-0.668663	8.569e+06	6.421e+05	6.59e+05	-1.69e+04	-2.624533	6.244e
414	-0.668366	1.262e+07	6.823e+05	5.616e+05	1.207e+05	17.695771	5.303e
415	-0.662955	1.007e+07	6.155e+05	6.05e+05	1.054e+04	1.7119515	5.771e
416	-0.649021	1.31e+07	6.83e+05	4.854e+05	1.975e+05	28.919519	4.513e
417	-0.633462	1.441e+07	7.042e+05	4.037e+05	3.004e+05	42.664139	3.602e
418	-0.629727	1.232e+07	6.37e+05	4.463e+05	1.908e+05	29.945814	4.161e
419	-0.629068	1.182e+07	6.295e+05	4.569e+05	1.725e+05	27.408938	4.287e
420	-0.624445	8.485e+06	5.655e+05	5.251e+05	4.036e+04	7.1376071	4.896e
421	-0.62058	1.041e+07	5.463e+05	4.679e+05	7.845e+04	14.358186	4.406e
422	-0.617789	8.125e+06	5.153e+05	5.153e+05	-72.20331	-0.014013	4.774e
423	-0.609225	1.072e+07	5.59e+05	4.295e+05	1.295e+05	23.163636	4.026e
424	-0.601283	1.188e+07	5.794e+05	3.8e+05	1.993e+05	34.407559	3.516e
425	-0.600386	1.484e+07	6.321e+05	3.006e+05	3.315e+05	52.4383	2.533e
426	-0.60036	1.061e+07	5.68e+05	4.095e+05	1.585e+05	27.904152	3.826e
427	-0.59597	8.431e+06	4.914e+05	4.521e+05	3.935e+04	8.0068413	4.16e+
428	-0.590699	1.416e+07	6.545e+05	2.946e+05	3.598e+05	54.983369	2.527e
429	-0.589483	1.181e+07	5.86e+05	3.527e+05	2.334e+05	39.822327	3.245e
430	-0.585102	9.308e+06	5.346e+05	4.051e+05	1.295e+05	24.22607	3.741e

431	-0.578521	1.169e+07	5.629e+05	3.307e+05	2.322e+05	41.250544	3.03e+
432	-0.573163	8.269e+06	4.853e+05	4.039e+05	8.141e+04	16.774755	3.667e
433	-0.561108	8.157e+06	4.695e+05	3.818e+05	8.775e+04	18.689879	3.437e
434	-0.55281	8.338e+06	4.525e+05	3.613e+05	9.119e+04	20.153777	3.245e
435	-0.552406	9.771e+06	4.945e+05	3.253e+05	1.692e+05	34.220668	2.964e
436	-0.551328	8.502e+06	4.37e+05	3.545e+05	8.25e+04	18.877655	3.188e
437	-0.542772	8.017e+06	4.363e+05	3.508e+05	8.55e+04	19.595658	3.117e
438	-0.541494	9.073e+06	4.423e+05	3.228e+05	1.195e+05	27.020346	2.906e
439	-0.53688	1.189e+07	4.958e+05	2.44e+05	2.518e+05	50.791678	2.159e
440	-0.535453	1.226e+07	5.475e+05	2.32e+05	3.155e+05	57.628549	2.025e
441	-0.529676	8.416e+06	4.193e+05	3.191e+05	1.002e+05	23.890065	2.828e
442	-0.525979	9.098e+06	4.405e+05	2.966e+05	1.439e+05	32.674103	2.645e
443	-0.524855	8.562e+06	4.44e+05	3.08e+05	1.36e+05	30.639468	2.726e
444	-0.522857	8.989e+06	4.514e+05	2.945e+05	1.569e+05	34.765403	2.618e
445	-0.520604	1.241e+07	4.677e+05	2.046e+05	2.631e+05	56.254008	1.745e
446	-0.508224	8.773e+06	4.408e+05	2.789e+05	1.619e+05	36.725804	2.449e
447	-0.50184	1.003e+07	4.064e+05	2.395e+05	1.668e+05	41.055852	2.12e+
448	-0.495885	1.142e+07	4.347e+05	1.973e+05	2.373e+05	54.600643	1.711e
449	-0.495797	9.294e+06	3.976e+05	2.504e+05	1.472e+05	37.023466	2.196e
450	-0.489527	1.144e+07	4.334e+05	1.895e+05	2.439e+05	56.276009	1.633e
451	-0.48203	9.482e+06	4.246e+05	2.305e+05	1.941e+05	45.717506	2.008e
452	-0.479973	1.082e+07	4.054e+05	1.951e+05	2.103e+05	51.867186	1.694e
453	-0.479468	1.132e+07	4.261e+05	1.821e+05	2.439e+05	57.250171	1.563e
454	-0.476274	1.431e+07	5.333e+05	1.015e+05	4.318e+05	80.958909	5.88e+
455	-0.459428	1.22e+07	4.159e+05	1.424e+05	2.735e+05	65.7566	1.142e
456	-0.452933	1.474e+07	4.806e+05	7.2e+04	4.086e+05	85.019129	2.581e
457	-0.45081	1.053e+07	3.81e+05	1.783e+05	2.027e+05	53.200633	1.526e
458	-0.446234	8.38e+06	3.886e+05	2.278e+05	1.608e+05	41.386096	1.913e
459	-0.440581	9.999e+06	3.816e+05	1.853e+05	1.964e+05	51.448711	1.582e
460	-0.439097	9.535e+06	3.875e+05	1.958e+05	1.917e+05	49.473251	1.666e
461	-0.432133	1.406e+07	4.323e+05	7.91e+04	3.532e+05	81.700029	3.897e
462	-0.428902	1.11e+07	4.284e+05	1.526e+05	2.758e+05	64.37508	1.277e
463	-0.425175	1.119e+07	4.103e+05	1.489e+05	2.614e+05	63.711319	1.24e+
464	-0.424263	9.071e+06	3.424e+05	2.001e+05	1.422e+05	41.542634	1.684e
465	-0.423821	1.036e+07	3.684e+05	1.69e+05	1.994e+05	54.134695	1.432e
466	-0.412192	1.108e+07	3.879e+05	1.478e+05	2.401e+05	61.897206	1.231e
467	-0.409991	1.105e+07	4.253e+05	1.482e+05	2.771e+05	65.158129	1.235e
468	-0.40937	1.497e+07	4.19e+05	4.937e+04	3.697e+05	88.218679	1692.7
469	-0.407555	1.211e+07	4.394e+05	1.215e+05	3.179e+05	72.343896	9.453e
470	-0.400749	1.205e+07	3.919e+05	1.223e+05	2.696e+05	68.793203	9.566e
471	-0.379413	1.452e+07	4.005e+05	6.165e+04	3.389e+05	84.606733	1.844e
472	-0.375797	1.021e+07	3.727e+05	1.671e+05	2.056e+05	55.169608	1.413e
473	-0.375285	1.324e+07	4.61e+05	9.417e+04	3.668e+05	79.570621	6.115e
474	-0.37276	1.489e+07	4.105e+05	5.36e+04	3.569e+05	86.945304	7176.6
475	-0.370592	1.267e+07	3.752e+05	1.092e+05	2.66e+05	70.902652	7.99e+
476	-0.367681	8.772e+06	3.158e+05	2.018e+05	1.14e+05	36.093462	1.682e
477	-0.364307	8.184e+06	3.149e+05	2.159e+05	9.9e+04	31.43835	1.78e+
478	-0.362176	9.047e+06	3.555e+05	1.967e+05	1.589e+05	44.684103	1.649e

479	-0.361408	1.069e+07	3.831e+05	1.587e+05	2.244e+05	58.582588	1.342e
480	-0.35511	1.204e+07	3.625e+05	1.288e+05	2.337e+05	64.469587	1.027e
481	-0.339382	8.001e+06	3.149e+05	2.279e+05	8.7e+04	27.627048	1.884e
482	-0.33699	9.271e+06	3.19e+05	2.005e+05	1.184e+05	37.128127	1.701e
483	-0.336339	8.135e+06	3.14e+05	2.263e+05	8.77e+04	27.934047	1.878e
484	-0.329555	9.282e+06	3.103e+05	2.041e+05	1.062e+05	34.231749	1.736e
485	-0.320172	1.203e+07	3.68e+05	1.474e+05	2.206e+05	59.958947	1.215e
486	-0.314287	1.219e+07	3.937e+05	1.478e+05	2.459e+05	62.4508	1.214e
487	-0.311103	1.218e+07	3.714e+05	1.503e+05	2.211e+05	59.524112	1.239e
488	-0.310749	1.404e+07	4.06e+05	1.076e+05	2.984e+05	73.506383	6.919e
489	-0.306674	1.29e+07	3.667e+05	1.374e+05	2.293e+05	62.531405	1.072e
490	-0.304655	9.726e+06	3.362e+05	2.103e+05	1.259e+05	37.446492	1.821e
491	-0.303327	1.198e+07	3.959e+05	1.612e+05	2.348e+05	59.292153	1.355e
492	-0.299971	1.129e+07	3.703e+05	1.793e+05	1.911e+05	51.592906	1.549e
493	-0.297812	1.057e+07	3.215e+05	1.972e+05	1.242e+05	38.644811	1.722e
494	-0.297078	1.18e+07	3.514e+05	1.703e+05	1.811e+05	51.544928	1.45e+
495	-0.296046	1.364e+07	3.92e+05	1.296e+05	2.624e+05	66.948918	9.437e
496	-0.289387	9.538e+06	3.396e+05	2.269e+05	1.128e+05	33.199897	1.974e
497	-0.274591	1.449e+07	4.155e+05	1.318e+05	2.837e+05	68.281601	8.991e
498	-0.2705	1.155e+07	3.372e+05	2.015e+05	1.356e+05	40.225007	1.764e
499	-0.265438	9.044e+06	2.755e+05	2.603e+05	1.518e+04	5.5121765	2.272e
500	-0.262963	8.216e+06	2.605e+05	2.8e+05	-1.95e+04	-7.492924	2.411e
501	-0.262085	1.362e+07	3.922e+05	1.656e+05	2.266e+05	57.77112	1.305e
502	-0.255652	1.25e+07	3.331e+05	1.977e+05	1.354e+05	40.653073	1.692e
503	-0.254637	1.221e+07	3.698e+05	2.052e+05	1.646e+05	44.515632	1.78e+
504	-0.254125	1.482e+07	4.248e+05	1.486e+05	2.762e+05	65.015373	1.04e+
505	-0.2528	8.982e+06	2.719e+05	2.753e+05	-3352.023	-1.232722	2.414e
506	-0.249297	1.154e+07	3.287e+05	2.26e+05	1.027e+05	31.241135	2.003e
507	-0.246345	9.863e+06	3.001e+05	2.646e+05	3.55e+04	11.830569	2.356e
508	-0.243157	9.523e+06	2.931e+05	2.754e+05	1.765e+04	6.0225583	2.445e
509	-0.241088	9.167e+06	2.697e+05	2.852e+05	-1.55e+04	-5.749761	2.521e
510	-0.240341	1.288e+07	3.337e+05	2.088e+05	1.249e+05	37.433151	1.781e
511	-0.235502	1.256e+07	3.443e+05	2.219e+05	1.224e+05	35.553731	1.927e
512	-0.23142	1.177e+07	3.134e+05	2.439e+05	6.948e+04	22.169601	2.172e
513	-0.218836	1.051e+07	3.332e+05	2.869e+05	4.629e+04	13.892181	2.591e
514	-0.215638	1.167e+07	3.395e+05	2.68e+05	7.142e+04	21.04031	2.408e
515	-0.212134	8.972e+06	2.775e+05	3.268e+05	-4.93e+04	-17.77048	2.913e
516	-0.19927	1.372e+07	3.494e+05	2.51e+05	9.845e+04	28.173008	2.141e
517	-0.197852	1.324e+07	3.67e+05	2.631e+05	1.038e+05	28.2993	2.291e
518	-0.179218	8.227e+06	2.403e+05	3.896e+05	-1.49e+05	-62.16385	3.475e
519	-0.1759	1.049e+07	3.042e+05	3.524e+05	-4.82e+04	-15.8344	3.219e
520	-0.166341	1.166e+07	3.323e+05	3.462e+05	-1.39e+04	-4.19017	3.16e+
521	-0.15874	8.299e+06	2.471e+05	4.213e+05	-1.74e+05	-70.53923	3.785e
522	-0.151849	8.075e+06	2.344e+05	4.369e+05	-2.03e+05	-86.43581	3.921e
523	-0.144865	1.26e+07	3.373e+05	3.668e+05	-2.96e+04	-8.763589	3.329e
524	-0.138938	9.12e+06	2.911e+05	4.408e+05	-1.5e+05	-51.42426	4.016e
525	-0.138271	1.269e+07	3.195e+05	3.774e+05	-5.79e+04	-18.11808	3.428e
526	-0.13591	1.178e+07	3.473e+05	3.986e+05	-5.13e+04	-14.76784	3.659e

527	-0.133872	9.871e+06	2.552e+05	4.366e+05	-1.81e+05	-71.07278	4.006e
528	-0.131424	8.811e+06	2.575e+05	4.597e+05	-2.02e+05	-78.53119	4.181e
529	-0.131184	1.239e+07	2.97e+05	3.964e+05	-9.93e+04	-33.44508	3.621e
530	-0.128943	1.116e+07	2.868e+05	4.227e+05	-1.36e+05	-47.35492	3.894e
531	-0.128571	1.105e+07	3.006e+05	4.255e+05	-1.25e+05	-41.52693	3.921e
532	-0.125496	1.313e+07	3.009e+05	3.939e+05	-9.3e+04	-30.9057	3.565e
533	-0.125218	1.461e+07	4e+05	3.671e+05	3.291e+04	8.2277345	3.212e
534	-0.119623	8.186e+06	2.281e+05	4.92e+05	-2.64e+05	-115.6805	4.456e
535	-0.116502	8.502e+06	2.615e+05	4.924e+05	-2.31e+05	-88.26781	4.478e
536	-0.108186	1.186e+07	3.237e+05	4.505e+05	-1.27e+05	-39.17048	4.151e
537	-0.107316	1.372e+07	3.251e+05	4.195e+05	-9.44e+04	-29.03789	3.78e+
538	-0.105277	1.371e+07	3.479e+05	4.239e+05	-7.6e+04	-21.8519	3.822e
539	-0.096153	1.161e+07	2.734e+05	4.789e+05	-2.05e+05	-75.17085	4.424e
540	-0.088745	8.202e+06	2.436e+05	5.505e+05	-3.07e+05	-126.0124	5.016e
541	-0.067013	1.399e+07	3.678e+05	5.002e+05	-1.32e+05	-35.96946	4.54e+
542	-0.066719	1.098e+07	2.64e+05	5.502e+05	-2.86e+05	-108.3868	5.102e
543	-0.066291	1.374e+07	3.429e+05	5.058e+05	-1.63e+05	-47.53932	4.608e
544	-0.057793	1.327e+07	3.63e+05	5.323e+05	-1.69e+05	-46.64319	4.884e
545	-0.056596	1.329e+07	3.519e+05	5.347e+05	-1.83e+05	-51.92325	4.906e
546	-0.052415	9.551e+06	2.389e+05	6.032e+05	-3.64e+05	-152.4557	5.575e
547	-0.051401	1.445e+07	3.742e+05	5.273e+05	-1.53e+05	-40.92037	4.774e
548	-0.048941	9.653e+06	2.775e+05	6.089e+05	-3.31e+05	-119.4305	5.633e
549	-0.04082	1.107e+07	3.123e+05	6.046e+05	-2.92e+05	-93.61019	5.614e
550	-0.039994	1.283e+07	2.947e+05	5.789e+05	-2.84e+05	-96.41225	5.343e
551	-0.038934	9.343e+06	2.642e+05	6.351e+05	-3.71e+05	-140.4125	5.87e+
552	-0.037441	8.132e+06	2.407e+05	6.565e+05	-4.16e+05	-172.7045	6.022e
553	-0.026257	8.003e+06	2.255e+05	6.823e+05	-4.57e+05	-202.6375	6.261e
554	-0.020217	1.493e+07	3.351e+05	5.913e+05	-2.56e+05	-76.45553	5.36e+
555	-0.019655	1.438e+07	3.724e+05	6.011e+05	-2.29e+05	-61.3898	5.486e
556	-0.015969	1.285e+07	3.509e+05	6.331e+05	-2.82e+05	-80.44077	5.856e
557	-0.008775	9.894e+06	2.615e+05	6.932e+05	-4.32e+05	-165.0629	6.432e
558	-0.005345	1.488e+07	3.811e+05	6.272e+05	-2.46e+05	-64.58632	5.709e
559	-0.002275	1.409e+07	3.733e+05	6.464e+05	-2.73e+05	-73.16499	5.934e

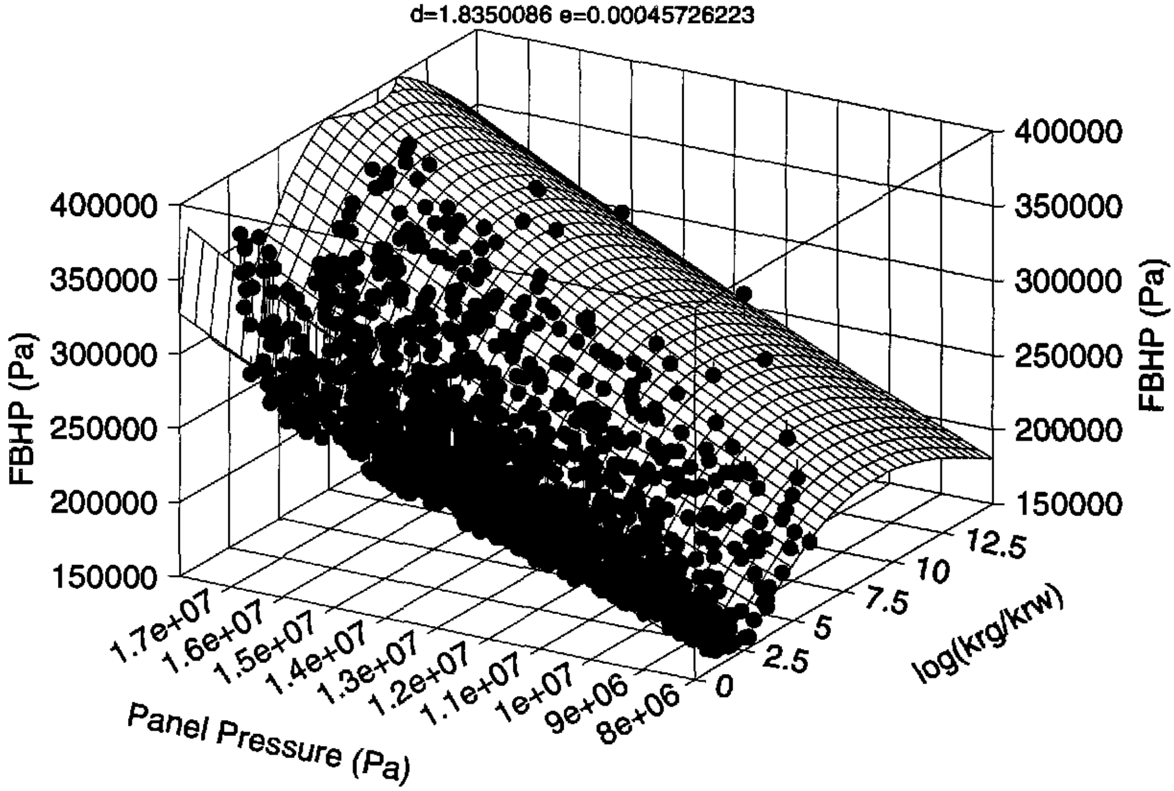
FBHP as a Function of Rel permeabilities and Panel Pressure (gas dominated)

Rank 54 Eqn 151250960 $\ln z=a+bx+cx^{0.5}+de^{-x}+ey^{0.5}$

r^2=0.94539889 DF Adj r^2=0.94520677 FitStdErr=11520.361 Fstat=6155.3571

a=8.9214635 b=-0.2274279 c=1.3680586

d=1.8350086 e=0.00045726223



$153,271 \text{ pa} < FBHP < 385,493$

for $\log(krg/krw) > 0$

Rank 54 Eqn 151250960 $\ln z = a + bx + cx^{0.5} + de^{-x} + ey^{0.5}$

XYZ *	X Value	Y Value	Z Value	Z Predict	Residual	Residual%	95% C
1	0.0040422	9.826e+06	2.513e+05	2.129e+05	3.846e+04	15.300555	2.129e
2	0.0120987	1.124e+07	2.851e+05	2.465e+05	3.858e+04	13.534382	2.465e
3	0.0179447	1.018e+07	2.589e+05	2.337e+05	2.518e+04	9.7239501	2.337e
4	0.0264122	1.406e+07	3.069e+05	3.084e+05	-1515.925	-0.493907	3.084e
5	0.0357086	1.317e+07	2.853e+05	2.971e+05	-1.18e+04	-4.121731	2.971e
6	0.036681	1.059e+07	2.423e+05	2.508e+05	-8484.314	-3.501988	2.508e
7	0.0403762	1.402e+07	3.389e+05	3.154e+05	2.346e+04	6.9227095	3.154e
8	0.0429099	9.606e+06	2.74e+05	2.357e+05	3.829e+04	13.974359	2.357e
9	0.0439841	8.545e+06	2.23e+05	2.178e+05	5257.0043	2.3572854	2.178e
10	0.0456781	1.275e+07	3.247e+05	2.935e+05	3.125e+04	9.6225209	2.935e
11	0.0494501	1.222e+07	3.044e+05	2.847e+05	1.969e+04	6.4702828	2.847e
12	0.0550354	1.384e+07	3.255e+05	3.173e+05	8180.6737	2.5130701	3.173e
13	0.0569563	1.013e+07	2.811e+05	2.487e+05	3.248e+04	11.552045	2.487e
14	0.0760864	1.09e+07	2.828e+05	2.662e+05	1.66e+04	5.8710982	2.662e
15	0.0794307	1.359e+07	3.508e+05	3.179e+05	3.296e+04	9.3932971	3.179e
16	0.0810871	8.421e+06	2.282e+05	2.223e+05	5972.2513	2.6168013	2.223e
17	0.0829196	1.076e+07	2.443e+05	2.644e+05	-2.02e+04	-8.255089	2.644e
18	0.0944003	1.385e+07	2.864e+05	3.25e+05	-3.86e+04	-13.46583	3.25e+
19	0.1019274	1.135e+07	2.801e+05	2.773e+05	2773.3378	0.9901143	2.773e
20	0.1019956	9.325e+06	2.493e+05	2.401e+05	9279.7163	3.721825	2.401e
21	0.1021156	9.69e+06	2.45e+05	2.466e+05	-1591.908	-0.649645	2.466e
22	0.103271	9.606e+06	2.415e+05	2.452e+05	-3653.441	-1.512535	2.452e
23	0.1071169	1.24e+07	2.74e+05	2.976e+05	-2.37e+04	-8.637329	2.976e
24	0.1081146	1.332e+07	2.824e+05	3.157e+05	-3.33e+04	-11.77783	3.157e
25	0.1127742	9.645e+06	2.31e+05	2.464e+05	-1.54e+04	-6.671387	2.464e
26	0.1139495	1.471e+07	3.514e+05	3.441e+05	7294.7812	2.0757416	3.441e
27	0.1175567	1.111e+07	2.854e+05	2.736e+05	1.185e+04	4.1500635	2.736e
28	0.1226005	8.831e+06	2.474e+05	2.321e+05	1.531e+04	6.1877924	2.321e
29	0.1263969	1.34e+07	3.444e+05	3.181e+05	2.622e+04	7.6131133	3.181e
30	0.1282976	8.392e+06	2.189e+05	2.244e+05	-5485.371	-2.506264	2.244e
31	0.1323635	1.178e+07	2.888e+05	2.866e+05	2253.2568	0.780181	2.866e
32	0.1356914	1.181e+07	3.01e+05	2.872e+05	1.375e+04	4.5667642	2.872e
33	0.1443793	9.714e+06	2.541e+05	2.482e+05	5911.2523	2.3264587	2.482e
34	0.1490215	9.592e+06	2.553e+05	2.459e+05	9358.048	3.6655804	2.459e
35	0.1527035	9.172e+06	2.402e+05	2.383e+05	1895.9299	0.7892939	2.383e
36	0.1560135	1.384e+07	3.119e+05	3.269e+05	-1.5e+04	-4.800812	3.269e
37	0.1614512	1.168e+07	2.844e+05	2.845e+05	-153.3042	-0.053909	2.845e
38	0.1657974	1.447e+07	3.536e+05	3.394e+05	1.416e+04	4.003808	3.394e
39	0.1717269	9.496e+06	2.548e+05	2.437e+05	1.102e+04	4.3253129	2.437e
40	0.1733128	1.641e+07	3.284e+05	3.796e+05	-5.12e+04	-15.60451	3.796e
41	0.1805775	1.127e+07	2.504e+05	2.762e+05	-2.58e+04	-10.31489	2.762e
42	0.1820213	1.024e+07	2.73e+05	2.57e+05	1.608e+04	5.887812	2.57e+
43	0.1826707	1.1e+07	2.855e+05	2.71e+05	1.448e+04	5.0724446	2.71e+
44	0.1893539	1.399e+07	3.276e+05	3.287e+05	-1086.597	-0.331711	3.287e
45	0.1918804	1.334e+07	3.165e+05	3.154e+05	1034.1634	0.326784	3.154e
46	0.1926023	1.454e+07	3.195e+05	3.395e+05	-1.99e+04	-6.239736	3.395e

47	0.1960809	1.627e+07	3.22e+05	3.752e+05	-5.32e+04	-16.52403	3.752e
48	0.2026492	9.556e+06	2.24e+05	2.436e+05	-1.95e+04	-8.719611	2.436e
49	0.2027343	1.12e+07	2.463e+05	2.738e+05	-2.74e+04	-11.14327	2.738e
50	0.2039753	1.445e+07	2.893e+05	3.37e+05	-4.76e+04	-16.46348	3.37e+
51	0.204993	9.39e+06	2.171e+05	2.405e+05	-2.33e+04	-10.74306	2.405e
52	0.2062638	1.239e+07	2.641e+05	2.96e+05	-3.19e+04	-12.06485	2.96e+
53	0.2063091	9.086e+06	2.141e+05	2.35e+05	-2.08e+04	-9.733683	2.35e+
54	0.2098204	1.002e+07	2.194e+05	2.516e+05	-3.22e+04	-14.65991	2.516e
55	0.2114127	9.021e+06	2.131e+05	2.335e+05	-2.04e+04	-9.572548	2.335e
56	0.2176971	1.031e+07	2.501e+05	2.564e+05	-6292.469	-2.516077	2.564e
57	0.2196352	1.031e+07	2.34e+05	2.563e+05	-2.23e+04	-9.524257	2.563e
58	0.2204655	8.849e+06	2.381e+05	2.3e+05	8077.9116	3.3928819	2.3e+0
59	0.2287595	1.121e+07	2.466e+05	2.722e+05	-2.56e+04	-10.38883	2.722e
60	0.230706	1.274e+07	2.604e+05	3.011e+05	-4.07e+04	-15.61259	3.011e
61	0.2309495	1.064e+07	2.541e+05	2.616e+05	-7444.288	-2.929533	2.616e
62	0.2316963	1.263e+07	2.582e+05	2.989e+05	-4.07e+04	-15.76514	2.989e
63	0.2335302	1.019e+07	2.325e+05	2.532e+05	-2.07e+04	-8.894389	2.532e
64	0.2382656	1.029e+07	2.44e+05	2.547e+05	-1.07e+04	-4.387249	2.547e
65	0.24059	1.307e+07	2.895e+05	3.066e+05	-1.71e+04	-5.903897	3.066e
66	0.2440558	1.033e+07	2.398e+05	2.551e+05	-1.53e+04	-6.393946	2.551e
67	0.2478695	1.453e+07	2.968e+05	3.348e+05	-3.79e+04	-12.77389	3.348e
68	0.2487472	1.24e+07	2.687e+05	2.931e+05	-2.44e+04	-9.083846	2.931e
69	0.2563317	1.259e+07	2.798e+05	2.961e+05	-1.63e+04	-5.812903	2.961e
70	0.2602478	1.418e+07	3.392e+05	3.267e+05	1.252e+04	3.6905238	3.267e
71	0.2615363	1.155e+07	2.737e+05	2.761e+05	-2360.434	-0.8624	2.761e
72	0.2640794	1.328e+07	3.114e+05	3.086e+05	2716.7349	0.8725241	3.086e
73	0.2661614	1.647e+07	3.252e+05	3.727e+05	-4.74e+04	-14.58129	3.727e
74	0.2708493	1.003e+07	2.436e+05	2.476e+05	-4046.631	-1.661247	2.476e
75	0.2718959	1.328e+07	3.185e+05	3.079e+05	1.055e+04	3.312593	3.079e
76	0.2832994	1.356e+07	2.813e+05	3.121e+05	-3.09e+04	-10.9703	3.121e
77	0.2858882	1.304e+07	2.842e+05	3.019e+05	-1.76e+04	-6.196799	3.019e
78	0.287162	1.636e+07	3.159e+05	3.679e+05	-5.2e+04	-16.45738	3.679e
79	0.2914365	1.642e+07	3.245e+05	3.686e+05	-4.41e+04	-13.59485	3.686e
80	0.2915887	1.511e+07	3.207e+05	3.418e+05	-2.11e+04	-6.578761	3.418e
81	0.2917192	1.44e+07	3.002e+05	3.278e+05	-2.76e+04	-9.19372	3.278e
82	0.2947017	8.99e+06	2.042e+05	2.275e+05	-2.33e+04	-11.40028	2.275e
83	0.2980738	1.316e+07	2.735e+05	3.029e+05	-2.94e+04	-10.73297	3.029e
84	0.2985525	1.181e+07	2.731e+05	2.776e+05	-4481.155	-1.640903	2.776e
85	0.3007885	1.178e+07	2.876e+05	2.768e+05	1.084e+04	3.7688689	2.768e
86	0.3015876	9.231e+06	2.077e+05	2.311e+05	-2.34e+04	-11.28275	2.311e
87	0.3016434	1.392e+07	2.767e+05	3.173e+05	-4.05e+04	-14.654	3.173e
88	0.3039297	1.5e+07	3.034e+05	3.383e+05	-3.49e+04	-11.50309	3.383e
89	0.3046417	1.521e+07	3.193e+05	3.425e+05	-2.31e+04	-7.241399	3.425e
90	0.3107249	1.103e+07	2.538e+05	2.622e+05	-8412.683	-3.31448	2.622e
91	0.3107462	9.227e+06	2.138e+05	2.303e+05	-1.65e+04	-7.737387	2.303e
92	0.3145469	1.281e+07	2.567e+05	2.946e+05	-3.79e+04	-14.75816	2.946e
93	0.3184971	1.398e+07	3.343e+05	3.167e+05	1.766e+04	5.2812487	3.167e
94	0.3195044	1.24e+07	2.672e+05	2.865e+05	-1.93e+04	-7.224965	2.865e

95	0.3226997	1.107e+07	2.723e+05	2.619e+05	1.037e+04	3.8087243	2.619e
96	0.3243916	1.276e+07	2.932e+05	2.928e+05	432.31127	0.1474497	2.928e
97	0.3250508	1.303e+07	2.784e+05	2.977e+05	-1.93e+04	-6.927154	2.977e
98	0.3260367	1.228e+07	2.674e+05	2.836e+05	-1.63e+04	-6.090504	2.836e
99	0.3272201	1.099e+07	2.688e+05	2.6e+05	8797.7644	3.2734056	2.6e+0
100	0.328996	9.289e+06	2.336e+05	2.299e+05	3706.4978	1.5864315	2.299e
101	0.3300548	1.338e+07	2.869e+05	3.037e+05	-1.68e+04	-5.851579	3.037e
102	0.335025	1.266e+07	2.87e+05	2.897e+05	-2685.611	-0.935803	2.897e
103	0.338301	8.09e+06	1.916e+05	2.088e+05	-1.72e+04	-8.990345	2.088e
104	0.3387398	1.416e+07	3.402e+05	3.178e+05	2.246e+04	6.6019408	3.178e
105	0.3402325	1.398e+07	2.732e+05	3.141e+05	-4.09e+04	-14.96344	3.141e
106	0.3409051	1.036e+07	2.508e+05	2.476e+05	3167.1614	1.2628437	2.476e
107	0.3415366	1.66e+07	3.855e+05	3.66e+05	1.95e+04	5.0572051	3.66e+
108	0.3442711	1.226e+07	2.55e+05	2.814e+05	-2.65e+04	-10.38016	2.814e
109	0.3468259	1.51e+07	3.208e+05	3.352e+05	-1.45e+04	-4.505071	3.352e
110	0.3480294	1.17e+07	2.799e+05	2.707e+05	9189.1516	3.282854	2.707e
111	0.3487445	1.651e+07	3.638e+05	3.632e+05	570.96721	0.156964	3.632e
112	0.3496646	8.425e+06	1.95e+05	2.136e+05	-1.85e+04	-9.511602	2.136e
113	0.3544823	1.513e+07	2.899e+05	3.348e+05	-4.49e+04	-15.48718	3.348e
114	0.3562588	8.061e+06	2.155e+05	2.07e+05	8501.1401	3.9455907	2.07e+
115	0.3574032	1.454e+07	3.147e+05	3.23e+05	-8365.28	-2.658421	3.23e+
116	0.3607034	1.567e+07	3.102e+05	3.447e+05	-3.44e+04	-11.09963	3.447e
117	0.3621624	8.772e+06	2.134e+05	2.184e+05	-5071.164	-2.376858	2.184e
118	0.3714616	1.364e+07	2.877e+05	3.041e+05	-1.65e+04	-5.726004	3.041e
119	0.3723101	1.353e+07	2.951e+05	3.02e+05	-6973.026	-2.363162	3.02e+
120	0.3744265	8.686e+06	2.083e+05	2.16e+05	-7713.751	-3.703618	2.16e+
121	0.3752678	1.335e+07	3.003e+05	2.983e+05	2003.9127	0.6672905	2.983e
122	0.3768253	1.364e+07	3.078e+05	3.035e+05	4291.7762	1.39451	3.035e
123	0.3798944	1.689e+07	3.756e+05	3.667e+05	8909.2909	2.3720534	3.667e
124	0.3839988	1.263e+07	2.886e+05	2.84e+05	4571.505	1.5840231	2.84e+
125	0.3864282	8.906e+06	1.993e+05	2.187e+05	-1.94e+04	-9.740187	2.187e
126	0.386535	8.95e+06	2.228e+05	2.194e+05	3424.3628	1.536626	2.194e
127	0.3949505	1.105e+07	2.274e+05	2.547e+05	-2.73e+04	-12.02363	2.547e
128	0.3950833	1.057e+07	2.242e+05	2.462e+05	-2.2e+04	-9.82055	2.462e
129	0.3992398	1.69e+07	3.358e+05	3.644e+05	-2.86e+04	-8.519117	3.644e
130	0.4004031	1.411e+07	2.916e+05	3.096e+05	-1.8e+04	-6.177537	3.096e
131	0.4026635	1.145e+07	2.616e+05	2.609e+05	683.09757	0.2611321	2.609e
132	0.4038158	1.431e+07	3.045e+05	3.131e+05	-8576.013	-2.81641	3.131e
133	0.4052009	1.265e+07	2.726e+05	2.821e+05	-9529.119	-3.495888	2.821e
134	0.4054101	1.139e+07	2.608e+05	2.596e+05	1235.8775	0.4739029	2.596e
135	0.4068589	1.283e+07	2.579e+05	2.853e+05	-2.74e+04	-10.62939	2.853e
136	0.407273	1.481e+07	3.49e+05	3.222e+05	2.683e+04	7.6870241	3.222e
137	0.4078425	1.552e+07	3.06e+05	3.357e+05	-2.97e+04	-9.70796	3.357e
138	0.4092526	1.226e+07	2.967e+05	2.747e+05	2.201e+04	7.4183476	2.747e
139	0.4105048	1.12e+07	2.458e+05	2.558e+05	-1e+04	-4.080504	2.558e
140	0.4127987	1.643e+07	3.758e+05	3.53e+05	2.273e+04	6.0488265	3.53e+
141	0.4132003	9.777e+06	2.155e+05	2.311e+05	-1.56e+04	-7.233369	2.311e
142	0.4140091	1.284e+07	2.509e+05	2.847e+05	-3.38e+04	-13.47909	2.847e

143	0.4157006	1.243e+07	2.528e+05	2.77e+05	-2.42e+04	-9.57863	2.77e+
144	0.4161071	1.123e+07	2.641e+05	2.558e+05	8293.5679	3.1402578	2.558e
145	0.4182421	1.636e+07	3.502e+05	3.51e+05	-755.6166	-0.215768	3.51e+
146	0.4243733	1.344e+07	2.657e+05	2.944e+05	-2.87e+04	-10.80484	2.944e
147	0.4283455	1.265e+07	2.585e+05	2.796e+05	-2.11e+04	-8.163774	2.796e
148	0.4344113	1.305e+07	3.046e+05	2.862e+05	1.84e+04	6.0397819	2.862e
149	0.4366823	1.055e+07	2.49e+05	2.422e+05	6859.9808	2.7546751	2.422e
150	0.4369657	8.027e+06	2.048e+05	2.002e+05	4573.066	2.2327453	2.002e
151	0.4383706	1.199e+07	2.725e+05	2.669e+05	5530.6528	2.0297643	2.669e
152	0.4396164	1.69e+07	3.768e+05	3.588e+05	1.799e+04	4.775456	3.588e
153	0.4402641	1.22e+07	2.778e+05	2.704e+05	7424.6672	2.6722011	2.704e
154	0.4415179	1.32e+07	3.123e+05	2.882e+05	2.408e+04	7.7118225	2.882e
155	0.4478109	8.96e+06	1.991e+05	2.146e+05	-1.54e+04	-7.758112	2.146e
156	0.4555578	1.192e+07	2.529e+05	2.639e+05	-1.1e+04	-4.36254	2.639e
157	0.456678	1.005e+07	2.292e+05	2.319e+05	-2624.17	-1.144709	2.319e
158	0.4616213	1.466e+07	2.873e+05	3.127e+05	-2.55e+04	-8.864737	3.127e
159	0.4617895	1.106e+07	2.444e+05	2.486e+05	-4172.967	-1.70753	2.486e
160	0.4664197	1.59e+07	3.477e+05	3.357e+05	1.202e+04	3.4566445	3.357e
161	0.4672682	1.222e+07	2.547e+05	2.68e+05	-1.33e+04	-5.222788	2.68e+
162	0.4701424	1.533e+07	3.553e+05	3.244e+05	3.095e+04	8.7092884	3.244e
163	0.4709933	1.265e+07	2.865e+05	2.752e+05	1.123e+04	3.9217947	2.752e
164	0.474959	1.497e+07	3.401e+05	3.17e+05	2.306e+04	6.7817709	3.17e+
165	0.4751775	1.256e+07	2.573e+05	2.732e+05	-1.59e+04	-6.167674	2.732e
166	0.4778528	9.804e+06	2.352e+05	2.26e+05	9259.5481	3.9365647	2.26e+
167	0.4820427	1.207e+07	2.404e+05	2.64e+05	-2.35e+04	-9.79227	2.64e+
168	0.4832836	9.028e+06	1.959e+05	2.128e+05	-1.69e+04	-8.64362	2.128e
169	0.484228	1.636e+07	3.652e+05	3.424e+05	2.278e+04	6.2390232	3.424e
170	0.4885996	1.14e+07	2.691e+05	2.518e+05	1.733e+04	6.4393414	2.518e
171	0.4896723	1.702e+07	3.834e+05	3.544e+05	2.903e+04	7.5714	3.544e
172	0.4933428	1.184e+07	2.549e+05	2.589e+05	-3992.107	-1.566093	2.589e
173	0.4941536	8.953e+06	1.98e+05	2.108e+05	-1.27e+04	-6.430479	2.108e
174	0.4956642	1.246e+07	2.846e+05	2.693e+05	1.525e+04	5.3579089	2.693e
175	0.4999129	1.414e+07	2.7e+05	2.989e+05	-2.88e+04	-10.68159	2.989e
176	0.5005852	1.133e+07	2.311e+05	2.494e+05	-1.83e+04	-7.91627	2.494e
177	0.5010765	8.587e+06	2.149e+05	2.044e+05	1.05e+04	4.8890599	2.044e
178	0.5025711	1.494e+07	3.373e+05	3.131e+05	2.419e+04	7.1718813	3.131e
179	0.5027951	1.267e+07	2.583e+05	2.722e+05	-1.39e+04	-5.38254	2.722e
180	0.5059357	1.027e+07	2.11e+05	2.312e+05	-2.02e+04	-9.58961	2.312e
181	0.5175696	1.114e+07	2.443e+05	2.447e+05	-414.4633	-0.169663	2.447e
182	0.518695	1.306e+07	2.939e+05	2.776e+05	1.625e+04	5.5301529	2.776e
183	0.521471	1.579e+07	3.388e+05	3.268e+05	1.206e+04	3.5577986	3.268e
184	0.5232792	1.025e+07	2.361e+05	2.295e+05	6591.0109	2.7916542	2.295e
185	0.524879	1.191e+07	2.351e+05	2.57e+05	-2.19e+04	-9.325855	2.57e+
186	0.5261352	1.688e+07	3.604e+05	3.47e+05	1.342e+04	3.7247094	3.47e+
187	0.5325882	1.483e+07	2.986e+05	3.078e+05	-9194.955	-3.07934	3.078e
188	0.5342331	1.162e+07	2.597e+05	2.512e+05	8502.6348	3.2743824	2.512e
189	0.5352966	1.431e+07	2.834e+05	2.979e+05	-1.45e+04	-5.125084	2.979e
190	0.5359609	1.059e+07	2.289e+05	2.34e+05	-5097.243	-2.226778	2.34e+

191	0.5380391	1.195e+07	2.562e+05	2.564e+05	-227.4056	-0.088776	2.564e
192	0.5388031	1.355e+07	2.7e+05	2.841e+05	-1.4e+04	-5.202385	2.841e
193	0.5430797	1.056e+07	2.307e+05	2.329e+05	-2227.185	-0.965475	2.329e
194	0.5446316	1.334e+07	2.762e+05	2.798e+05	-3659.746	-1.325094	2.798e
195	0.5464046	1.571e+07	2.897e+05	3.223e+05	-3.26e+04	-11.24346	3.223e
196	0.5478096	8.696e+06	2.159e+05	2.026e+05	1.336e+04	6.187291	2.026e
197	0.5522512	1.247e+07	2.812e+05	2.64e+05	1.727e+04	6.1400166	2.64e+
198	0.5555403	1.033e+07	2.195e+05	2.281e+05	-8533.084	-3.886847	2.281e
199	0.5576535	1.601e+07	3.262e+05	3.266e+05	-316.6826	-0.097071	3.266e
200	0.5593317	1.487e+07	3.327e+05	3.054e+05	2.723e+04	8.1867339	3.054e
201	0.5614441	1.609e+07	3.489e+05	3.277e+05	2.119e+04	6.0740467	3.277e
202	0.5635017	1.472e+07	2.741e+05	3.022e+05	-2.81e+04	-10.27126	3.022e
203	0.5643729	1.467e+07	3.054e+05	3.013e+05	4168.3478	1.364792	3.013e
204	0.5670031	1.189e+07	2.78e+05	2.527e+05	2.52e+04	9.0680856	2.527e
205	0.5724974	9.768e+06	2.141e+05	2.177e+05	-3536.265	-1.651554	2.177e
206	0.5813057	1.061e+07	2.324e+05	2.305e+05	1951.6063	0.8397257	2.305e
207	0.5817469	1.687e+07	3.231e+05	3.399e+05	-1.68e+04	-5.187369	3.399e
208	0.5837337	1.136e+07	2.291e+05	2.425e+05	-1.35e+04	-5.879896	2.425e
209	0.5850367	1.42e+07	3.224e+05	2.907e+05	3.167e+04	9.824248	2.907e
210	0.5863181	1.376e+07	3.012e+05	2.829e+05	1.831e+04	6.0800464	2.829e
211	0.5894241	9.586e+06	2.107e+05	2.135e+05	-2759.906	-1.309851	2.135e
212	0.5921611	1.44e+07	2.847e+05	2.935e+05	-8724.462	-3.064003	2.935e
213	0.596562	1.159e+07	2.605e+05	2.452e+05	1.528e+04	5.8634658	2.452e
214	0.5984665	1.177e+07	2.328e+05	2.48e+05	-1.52e+04	-6.515508	2.48e+
215	0.6019712	1.614e+07	3.508e+05	3.239e+05	2.69e+04	7.6695357	3.239e
216	0.6034761	1.147e+07	2.281e+05	2.426e+05	-1.45e+04	-6.365869	2.426e
217	0.6041569	9.632e+06	2.214e+05	2.131e+05	8330.7992	3.7623685	2.131e
218	0.6053445	1.3e+07	2.944e+05	2.679e+05	2.649e+04	8.9998738	2.679e
219	0.6054161	8.742e+06	1.928e+05	1.992e+05	-6333.594	-3.284664	1.992e
220	0.6074208	1.573e+07	3.041e+05	3.158e+05	-1.17e+04	-3.849751	3.158e
221	0.6078402	1.427e+07	3.089e+05	2.896e+05	1.934e+04	6.2623175	2.896e
222	0.6079035	1.702e+07	3.564e+05	3.396e+05	1.678e+04	4.7073475	3.396e
223	0.6096085	1.207e+07	2.777e+05	2.52e+05	2.569e+04	9.2520516	2.52e+
224	0.6141726	1.086e+07	2.536e+05	2.319e+05	2.166e+04	8.5438861	2.319e
225	0.6167874	1.452e+07	2.676e+05	2.931e+05	-2.55e+04	-9.516209	2.931e
226	0.6189632	9.796e+06	2.153e+05	2.146e+05	696.66838	0.3236534	2.146e
227	0.6200424	1.451e+07	2.903e+05	2.926e+05	-2305.733	-0.794273	2.926e
228	0.6242024	1.428e+07	3.104e+05	2.882e+05	2.225e+04	7.1665246	2.882e
229	0.6242908	1.186e+07	2.451e+05	2.472e+05	-2050.132	-0.836438	2.472e
230	0.6256091	1.131e+07	2.313e+05	2.381e+05	-6802.59	-2.941369	2.381e
231	0.6262035	1.304e+07	2.838e+05	2.667e+05	1.714e+04	6.0403348	2.667e
232	0.6325513	1.471e+07	2.893e+05	2.949e+05	-5594.897	-1.933994	2.949e
233	0.6325579	1.46e+07	3.245e+05	2.93e+05	3.157e+04	9.7277586	2.93e+
234	0.6336849	9.526e+06	2.003e+05	2.093e+05	-8956.819	-4.471305	2.093e
235	0.6338746	1.051e+07	2.435e+05	2.247e+05	1.877e+04	7.7098966	2.247e
236	0.6351085	1.443e+07	3.054e+05	2.897e+05	1.571e+04	5.1453225	2.897e
237	0.6435861	1.157e+07	2.387e+05	2.409e+05	-2252.735	-0.943857	2.409e
238	0.6456465	1.545e+07	3.379e+05	3.066e+05	3.127e+04	9.2561884	3.066e

239	0.6542058	1.278e+07	2.79e+05	2.599e+05	1.909e+04	6.8447454	2.599e
240	0.6599248	9.65e+06	2.119e+05	2.093e+05	2563.0222	1.2095587	2.093e
241	0.6621633	1.35e+07	2.53e+05	2.712e+05	-1.83e+04	-7.222616	2.712e
242	0.6631428	1.416e+07	2.641e+05	2.824e+05	-1.83e+04	-6.944806	2.824e
243	0.6645756	1.63e+07	3.2e+05	3.199e+05	176.55159	0.0551656	3.199e
244	0.6649609	1.088e+07	2.147e+05	2.282e+05	-1.35e+04	-6.309225	2.282e
245	0.6686479	1.496e+07	3.197e+05	2.956e+05	2.416e+04	7.5567043	2.956e
246	0.6729393	1.033e+07	2.399e+05	2.189e+05	2.097e+04	8.7432154	2.189e
247	0.6779801	1.048e+07	2.222e+05	2.209e+05	1291.1288	0.5811055	2.209e
248	0.6824726	1.537e+07	2.983e+05	3.015e+05	-3223.635	-1.080791	3.015e
249	0.6838859	1.095e+07	2.304e+05	2.279e+05	2509.0475	1.0890247	2.279e
250	0.6861617	8e+06	1.816e+05	1.828e+05	-1112.455	-0.612424	1.828e
251	0.6873595	1.387e+07	2.651e+05	2.753e+05	-1.01e+04	-3.822676	2.753e
252	0.6934667	1.164e+07	2.531e+05	2.381e+05	1.498e+04	5.9192142	2.381e
253	0.6951513	1.26e+07	2.567e+05	2.534e+05	3291.3476	1.2820131	2.534e
254	0.6982835	1.098e+07	2.261e+05	2.272e+05	-1148.82	-0.508174	2.272e
255	0.6998521	8.551e+06	2.037e+05	1.901e+05	1.358e+04	6.6653842	1.901e
256	0.7026704	1.458e+07	3.053e+05	2.859e+05	1.946e+04	6.374108	2.859e
257	0.7032776	1.215e+07	2.489e+05	2.455e+05	3456.7791	1.38859	2.455e
258	0.7062129	1.616e+07	3.24e+05	3.132e+05	1.078e+04	3.3265219	3.132e
259	0.7186847	1.33e+07	2.774e+05	2.63e+05	1.436e+04	5.1754191	2.63e+
260	0.7247169	9.084e+06	1.902e+05	1.965e+05	-6315.301	-3.320646	1.965e
261	0.7257427	8.513e+06	1.967e+05	1.88e+05	8745.1008	4.4453485	1.88e+
262	0.7268684	1.027e+07	2.037e+05	2.142e+05	-1.05e+04	-5.167337	2.142e
263	0.7296166	8.369e+06	1.872e+05	1.856e+05	1574.6434	0.8410877	1.856e
264	0.7365051	1.014e+07	2.176e+05	2.117e+05	5861.5531	2.6939488	2.117e
265	0.7440384	1.687e+07	3.469e+05	3.22e+05	2.487e+04	7.1706731	3.22e+
266	0.7444269	1.299e+07	2.592e+05	2.559e+05	3345.6643	1.2907135	2.559e
267	0.7449205	1.334e+07	2.713e+05	2.615e+05	9796.6281	3.6107304	2.615e
268	0.7471269	1.409e+07	2.575e+05	2.737e+05	-1.62e+04	-6.297005	2.737e
269	0.748103	1.411e+07	2.733e+05	2.74e+05	-665.4201	-0.243452	2.74e+
270	0.7514329	1.47e+07	3.063e+05	2.835e+05	2.28e+04	7.4424112	2.835e
271	0.7593899	1.219e+07	2.281e+05	2.418e+05	-1.37e+04	-5.996934	2.418e
272	0.7612272	1.202e+07	2.56e+05	2.39e+05	1.705e+04	6.6589682	2.39e+
273	0.7730281	1.244e+07	2.521e+05	2.449e+05	7195.9599	2.8548238	2.449e
274	0.7770273	1.131e+07	2.197e+05	2.268e+05	-7073.763	-3.219135	2.268e
275	0.7775487	1.44e+07	2.815e+05	2.763e+05	5170.501	1.8368607	2.763e
276	0.7790427	8.198e+06	1.869e+05	1.804e+05	6474.4524	3.4643266	1.804e
277	0.7801418	9.072e+06	2.05e+05	1.93e+05	1.196e+04	5.8350856	1.93e+
278	0.7807268	8.81e+06	1.939e+05	1.892e+05	4732.3864	2.4403999	1.892e
279	0.7812713	1.178e+07	2.374e+05	2.339e+05	3441.6968	1.4500017	2.339e
280	0.7916638	9.214e+06	2.112e+05	1.945e+05	1.67e+04	7.9063912	1.945e
281	0.7960413	1.193e+07	2.32e+05	2.352e+05	-3280.447	-1.41429	2.352e
282	0.7999225	1.515e+07	2.996e+05	2.87e+05	1.261e+04	4.2102289	2.87e+
283	0.8003295	1.373e+07	2.676e+05	2.636e+05	4016.9128	1.5009376	2.636e
284	0.8034028	1.603e+07	3.002e+05	3.018e+05	-1592.925	-0.530632	3.018e
285	0.805992	1.58e+07	2.984e+05	2.977e+05	748.63372	0.2508478	2.977e
286	0.8077683	1.332e+07	2.738e+05	2.564e+05	1.741e+04	6.3595979	2.564e

287	0.8099726	1.469e+07	2.656e+05	2.786e+05	-1.3e+04	-4.908209	2.786e
288	0.8122188	8.519e+06	1.958e+05	1.833e+05	1.247e+04	6.3722101	1.833e
289	0.8134796	1.441e+07	2.566e+05	2.736e+05	-1.7e+04	-6.642469	2.736e
290	0.8144796	1.173e+07	2.436e+05	2.309e+05	1.267e+04	5.2025473	2.309e
291	0.819691	8.426e+06	1.806e+05	1.816e+05	-979.4138	-0.542316	1.816e
292	0.8205314	1.466e+07	2.637e+05	2.773e+05	-1.36e+04	-5.155942	2.773e
293	0.8223297	1.095e+07	2.243e+05	2.185e+05	5788.4796	2.5804088	2.185e
294	0.8281646	1.359e+07	2.617e+05	2.592e+05	2528.8612	0.9662675	2.592e
295	0.8360189	9.759e+06	2.149e+05	2e+05	1.49e+04	6.9319918	2e+05
296	0.8369366	1.46e+07	2.915e+05	2.749e+05	1.655e+04	5.6763215	2.749e
297	0.8386149	1.237e+07	2.578e+05	2.392e+05	1.864e+04	7.2288474	2.392e
298	0.841561	1.39e+07	2.794e+05	2.632e+05	1.612e+04	5.7719441	2.632e
299	0.842221	1.496e+07	2.745e+05	2.805e+05	-5980.591	-2.17879	2.805e
300	0.8429485	8.411e+06	1.871e+05	1.802e+05	6865.7801	3.6704015	1.802e
301	0.8444406	1.124e+07	2.137e+05	2.215e+05	-7709.661	-3.606922	2.215e
302	0.8451255	1.155e+07	2.31e+05	2.262e+05	4820.3499	2.0865615	2.262e
303	0.8454245	8.886e+06	1.975e+05	1.869e+05	1.065e+04	5.390598	1.869e
304	0.8540242	1.462e+07	2.997e+05	2.74e+05	2.574e+04	8.5879195	2.74e+
305	0.8547441	1.069e+07	2.359e+05	2.127e+05	2.314e+04	9.8105382	2.127e
306	0.8547838	1.158e+07	2.224e+05	2.261e+05	-3665.109	-1.647826	2.261e
307	0.8559635	1.652e+07	3.254e+05	3.058e+05	1.959e+04	6.020316	3.058e
308	0.8567708	1.438e+07	2.991e+05	2.7e+05	2.918e+04	9.7547408	2.7e+0
309	0.8588337	1.49e+07	3.116e+05	2.782e+05	3.336e+04	10.707857	2.782e
310	0.8596397	9.399e+06	1.958e+05	1.935e+05	2354.2971	1.2021013	1.935e
311	0.8630478	8.39e+06	1.732e+05	1.789e+05	-5761.639	-3.327262	1.789e
312	0.8645972	9.237e+06	1.936e+05	1.909e+05	2689.1654	1.3890603	1.909e
313	0.8659279	8.022e+06	1.825e+05	1.736e+05	8890.1104	4.8711862	1.736e
314	0.8660411	1.392e+07	2.626e+05	2.619e+05	747.61761	0.2846984	2.619e
315	0.8664221	1.366e+07	2.868e+05	2.577e+05	2.913e+04	10.156116	2.577e
316	0.8676635	8.426e+06	1.88e+05	1.792e+05	8823.2107	4.6920865	1.792e
317	0.8682104	8.38e+06	1.91e+05	1.785e+05	1.243e+04	6.5081049	1.785e
318	0.8712622	1.294e+07	2.49e+05	2.46e+05	2974.9841	1.1947604	2.46e+
319	0.872043	1.19e+07	2.276e+05	2.299e+05	-2293.864	-1.007718	2.299e
320	0.8722642	1.704e+07	3.432e+05	3.135e+05	2.973e+04	8.6605501	3.135e
321	0.8788604	1.198e+07	2.344e+05	2.307e+05	3717.8193	1.5859094	2.307e
322	0.8815232	1.347e+07	2.699e+05	2.537e+05	1.624e+04	6.0157377	2.537e
323	0.8835387	8.993e+06	1.894e+05	1.865e+05	2891.4641	1.5267529	1.865e
324	0.8851056	9.215e+06	2.055e+05	1.896e+05	1.593e+04	7.7502447	1.896e
325	0.8852202	1.533e+07	2.988e+05	2.835e+05	1.531e+04	5.1255817	2.835e
326	0.8857213	1.466e+07	2.734e+05	2.724e+05	992.97745	0.3631631	2.724e
327	0.8858816	9.317e+06	1.867e+05	1.91e+05	-4309.309	-2.308273	1.91e+
328	0.8884307	1.267e+07	2.355e+05	2.407e+05	-5156.767	-2.189294	2.407e
329	0.8886147	1.51e+07	3.047e+05	2.794e+05	2.529e+04	8.298681	2.794e
330	0.888863	1.321e+07	2.786e+05	2.491e+05	2.954e+04	10.601472	2.491e
331	0.8899975	1.503e+07	2.741e+05	2.781e+05	-4042.891	-1.4752	2.781e
332	0.8925199	1.471e+07	3.027e+05	2.728e+05	2.985e+04	9.8632871	2.728e
333	0.9002236	1.026e+07	2.167e+05	2.038e+05	1.293e+04	5.9665868	2.038e
334	0.9034112	1.127e+07	2.1e+05	2.186e+05	-8631.346	-4.11012	2.186e

335	0.9075904	1.373e+07	2.737e+05	2.56e+05	1.769e+04	6.4648726	2.56e+
336	0.9081822	1.438e+07	2.765e+05	2.664e+05	1.011e+04	3.6554995	2.664e
337	0.9089032	1.056e+07	2.148e+05	2.078e+05	7007.9061	3.2621574	2.078e
338	0.9095202	1.215e+07	2.301e+05	2.314e+05	-1305.378	-0.567272	2.314e
339	0.9095512	1.188e+07	2.513e+05	2.273e+05	2.396e+04	9.5351143	2.273e
340	0.9155603	1.349e+07	2.405e+05	2.518e+05	-1.13e+04	-4.688487	2.518e
341	0.9157891	1.483e+07	2.863e+05	2.731e+05	1.314e+04	4.5898816	2.731e
342	0.9164039	1.039e+07	1.98e+05	2.05e+05	-7035.654	-3.553959	2.05e+
343	0.9237489	9.638e+06	1.958e+05	1.938e+05	2080.8919	1.0625585	1.938e
344	0.9267274	1.6e+07	3.151e+05	2.916e+05	2.358e+04	7.4812273	2.916e
345	0.930527	8.425e+06	1.87e+05	1.764e+05	1.061e+04	5.6759018	1.764e
346	0.9306472	1.21e+07	2.361e+05	2.295e+05	6588.876	2.7903991	2.295e
347	0.9329739	1.309e+07	2.593e+05	2.444e+05	1.484e+04	5.7233575	2.444e
348	0.9368386	9.202e+06	2.058e+05	1.87e+05	1.88e+04	9.1371363	1.87e+
349	0.9373578	1.342e+07	2.733e+05	2.493e+05	2.403e+04	8.7938793	2.493e
350	0.9381845	1.056e+07	2.094e+05	2.064e+05	3023.2582	1.4439293	2.064e
351	0.9382172	1.435e+07	2.566e+05	2.639e+05	-7247.882	-2.824238	2.639e
352	0.9389169	1.144e+07	2.422e+05	2.192e+05	2.305e+04	9.5172014	2.192e
353	0.9434042	1.504e+07	2.644e+05	2.746e+05	-1.02e+04	-3.849464	2.746e
354	0.9439235	1.246e+07	2.345e+05	2.342e+05	254.66307	0.108611	2.342e
355	0.9517244	1.292e+07	2.614e+05	2.408e+05	2.057e+04	7.8687098	2.408e
356	0.9536397	1.491e+07	2.574e+05	2.72e+05	-1.46e+04	-5.665778	2.72e+
357	0.9559366	9.73e+06	1.856e+05	1.936e+05	-7956.201	-4.286119	1.936e
358	0.9582794	1.473e+07	2.839e+05	2.688e+05	1.518e+04	5.3475762	2.688e
359	0.9634043	1.376e+07	2.427e+05	2.531e+05	-1.04e+04	-4.292532	2.531e
360	0.9635596	9.007e+06	1.958e+05	1.831e+05	1.271e+04	6.4929996	1.831e
361	0.9686726	1.312e+07	2.542e+05	2.429e+05	1.13e+04	4.443216	2.429e
362	0.9688194	8.181e+06	1.743e+05	1.714e+05	2897.7169	1.6620728	1.714e
363	0.9700512	1.26e+07	2.254e+05	2.349e+05	-9520.278	-4.223875	2.349e
364	0.9710247	1.514e+07	2.601e+05	2.746e+05	-1.44e+04	-5.550039	2.746e
365	0.9720966	1.178e+07	2.187e+05	2.226e+05	-3883.867	-1.775819	2.226e
366	0.9728636	1.476e+07	2.7e+05	2.683e+05	1715.487	0.6354312	2.683e
367	0.9765137	8.391e+06	1.909e+05	1.74e+05	1.688e+04	8.8434106	1.74e+
368	0.9765796	1.327e+07	2.439e+05	2.448e+05	-910.0367	-0.373094	2.448e
369	0.9804886	1.067e+07	2.112e+05	2.06e+05	5244.9061	2.4833362	2.06e+
370	0.9868659	1.472e+07	2.801e+05	2.668e+05	1.324e+04	4.727422	2.668e
371	0.9875086	1.056e+07	2.049e+05	2.04e+05	861.52506	0.4204549	2.04e+
372	0.988146	1.207e+07	2.212e+05	2.26e+05	-4786.988	-2.1643	2.26e+
373	0.9903503	1.442e+07	2.863e+05	2.618e+05	2.446e+04	8.5427144	2.618e
374	0.9919908	1.428e+07	2.878e+05	2.596e+05	2.828e+04	9.8243216	2.596e
375	0.9922433	9.813e+06	2.052e+05	1.932e+05	1.2e+04	5.8481042	1.932e
376	1.0016838	1.197e+07	2.338e+05	2.239e+05	9963.1033	4.260716	2.239e
377	1.002147	1.44e+07	2.808e+05	2.609e+05	1.991e+04	7.0896445	2.609e
378	1.0111406	1.105e+07	2.142e+05	2.1e+05	4276.0531	1.9959033	2.1e+0
379	1.0130372	1.145e+07	2.39e+05	2.156e+05	2.34e+04	9.7899283	2.156e
380	1.0147328	1.096e+07	2.039e+05	2.085e+05	-4611.485	-2.261614	2.085e
381	1.015292	1.283e+07	2.325e+05	2.361e+05	-3582.193	-1.540761	2.361e
382	1.0215635	1.253e+07	2.551e+05	2.313e+05	2.379e+04	9.326699	2.313e

383	1.0270626	1.009e+07	1.98e+05	1.956e+05	2352.835	1.1884519	1.956e
384	1.0292654	8.887e+06	1.845e+05	1.788e+05	5705.3398	3.0920994	1.788e
385	1.0324739	1.1e+07	2.24e+05	2.083e+05	1.576e+04	7.0368912	2.083e
386	1.0330036	8.984e+06	1.964e+05	1.8e+05	1.639e+04	8.3448031	1.8e+0
387	1.0377777	1.381e+07	2.57e+05	2.499e+05	7148.6997	2.7813715	2.499e
388	1.040753	1.051e+07	2.183e+05	2.01e+05	1.725e+04	7.90188	2.01e+
389	1.0453623	1.351e+07	2.499e+05	2.449e+05	5090.0163	2.0364643	2.449e
390	1.0472475	9.285e+06	1.989e+05	1.836e+05	1.532e+04	7.7035943	1.836e
391	1.0527911	1.101e+07	2.283e+05	2.077e+05	2.06e+04	9.0245878	2.077e
392	1.0623252	1.553e+07	2.843e+05	2.754e+05	8856.5369	3.1156966	2.754e
393	1.0633609	1.075e+07	2.212e+05	2.035e+05	1.767e+04	7.9877913	2.035e
394	1.0643841	1.597e+07	2.925e+05	2.825e+05	1.003e+04	3.4301774	2.825e
395	1.0740932	9.347e+06	1.846e+05	1.835e+05	1106.1019	0.5992356	1.835e
396	1.0833239	1.001e+07	2.048e+05	1.922e+05	1.253e+04	6.1166399	1.922e
397	1.0844321	1.334e+07	2.657e+05	2.403e+05	2.533e+04	9.5335735	2.403e
398	1.0893474	1.21e+07	2.118e+05	2.218e+05	-9967.171	-4.705563	2.218e
399	1.0931816	1.4e+07	2.623e+05	2.499e+05	1.234e+04	4.7044924	2.499e
400	1.0984771	1.594e+07	3.024e+05	2.8e+05	2.238e+04	7.4022818	2.8e+0
401	1.0990927	8.468e+06	1.823e+05	1.707e+05	1.162e+04	6.3706607	1.707e
402	1.1008915	8.818e+06	1.895e+05	1.754e+05	1.416e+04	7.4717379	1.754e
403	1.1052144	1.127e+07	2.272e+05	2.092e+05	1.807e+04	7.9507995	2.092e
404	1.1067069	1.259e+07	2.326e+05	2.283e+05	4274.2586	1.8377838	2.283e
405	1.1082262	1.295e+07	2.498e+05	2.335e+05	1.623e+04	6.4968564	2.335e
406	1.1140503	8.632e+06	1.79e+05	1.724e+05	6576.8887	3.6738476	1.724e
407	1.1241215	1.019e+07	1.974e+05	1.933e+05	4086.9591	2.0700552	1.933e
408	1.1268018	1.615e+07	2.851e+05	2.82e+05	3080.0316	1.0802644	2.82e+
409	1.1268509	1.439e+07	2.705e+05	2.544e+05	1.607e+04	5.9411914	2.544e
410	1.131772	1.656e+07	3.069e+05	2.884e+05	1.853e+04	6.0388307	2.884e
411	1.1336644	9.301e+06	1.972e+05	1.808e+05	1.637e+04	8.3015404	1.808e
412	1.135066	1.706e+07	2.844e+05	2.964e+05	-1.2e+04	-4.221817	2.964e
413	1.1359362	1.043e+07	2.133e+05	1.963e+05	1.703e+04	7.9824278	1.963e
414	1.1368425	1.615e+07	3.091e+05	2.815e+05	2.763e+04	8.9397927	2.815e
415	1.1376926	1.341e+07	2.443e+05	2.391e+05	5178.5416	2.1199026	2.391e
416	1.1398946	1.301e+07	2.378e+05	2.33e+05	4807.1102	2.0211066	2.33e+
417	1.1405006	1.533e+07	2.938e+05	2.683e+05	2.551e+04	8.6829172	2.683e
418	1.141807	1.469e+07	2.523e+05	2.584e+05	-6077.738	-2.409069	2.584e
419	1.1450955	8.075e+06	1.782e+05	1.641e+05	1.413e+04	7.9274932	1.641e
420	1.1538115	1.341e+07	2.278e+05	2.384e+05	-1.06e+04	-4.659055	2.384e
421	1.1542571	1.046e+07	2.086e+05	1.96e+05	1.26e+04	6.0411379	1.96e+
422	1.156329	1.361e+07	2.539e+05	2.414e+05	1.258e+04	4.9525724	2.414e
423	1.1580554	1.592e+07	2.931e+05	2.768e+05	1.627e+04	5.5500502	2.768e
424	1.1582674	1.454e+07	2.776e+05	2.553e+05	2.23e+04	8.0325968	2.553e
425	1.159879	9.621e+06	1.914e+05	1.844e+05	7021.9332	3.6689031	1.844e
426	1.1600479	1.374e+07	2.341e+05	2.431e+05	-8961.716	-3.828167	2.431e
427	1.1644798	1.218e+07	2.358e+05	2.2e+05	1.578e+04	6.6943608	2.2e+0
428	1.1654897	1.502e+07	2.557e+05	2.624e+05	-6752.563	-2.6412	2.624e
429	1.1665532	9.563e+06	1.843e+05	1.834e+05	884.74758	0.4801483	1.834e
430	1.1698153	1.582e+07	2.764e+05	2.747e+05	1719.3138	0.6219871	2.747e

431	1.1756281	8.42e+06	1.676e+05	1.678e+05	-185.3407	-0.110564	1.678e
432	1.1820061	1.407e+07	2.608e+05	2.472e+05	1.361e+04	5.2173945	2.472e
433	1.1855926	1.207e+07	2.136e+05	2.177e+05	-4146.328	-1.941379	2.177e
434	1.1874561	1.136e+07	2.238e+05	2.075e+05	1.624e+04	7.2579043	2.075e
435	1.1876826	1.17e+07	2.076e+05	2.123e+05	-4654.419	-2.241749	2.123e
436	1.1901332	1.586e+07	2.629e+05	2.745e+05	-1.16e+04	-4.401545	2.745e
437	1.1908565	1.131e+07	1.989e+05	2.067e+05	-7770.077	-3.906293	2.067e
438	1.1913588	1.243e+07	2.252e+05	2.226e+05	2619.0332	1.162955	2.226e
439	1.1942869	1.223e+07	2.306e+05	2.197e+05	1.09e+04	4.7275159	2.197e
440	1.1955713	1.212e+07	2.146e+05	2.181e+05	-3536.945	-1.64835	2.181e
441	1.1958747	1.316e+07	2.413e+05	2.332e+05	8168.9584	3.3847302	2.332e
442	1.1979613	8.738e+06	1.662e+05	1.714e+05	-5190.526	-3.122626	1.714e
443	1.1982716	1.077e+07	1.945e+05	1.989e+05	-4479.957	-2.303729	1.989e
444	1.2000109	1.389e+07	2.535e+05	2.439e+05	9670.5737	3.8143437	2.439e
445	1.2026739	9.372e+06	1.863e+05	1.798e+05	6546.8497	3.5141443	1.798e
446	1.2090347	8.701e+06	1.7e+05	1.706e+05	-667.964	-0.393003	1.706e
447	1.2120789	1.022e+07	1.888e+05	1.909e+05	-2080.58	-1.101745	1.909e
448	1.2132715	1.268e+07	2.355e+05	2.254e+05	1.009e+04	4.2850755	2.254e
449	1.2146832	1.645e+07	2.833e+05	2.828e+05	511.80385	0.1806745	2.828e
450	1.2156619	1.66e+07	3.091e+05	2.851e+05	2.396e+04	7.7524743	2.851e
451	1.2190946	1.125e+07	2e+05	2.05e+05	-5007.15	-2.503261	2.05e+
452	1.2204781	1.568e+07	2.759e+05	2.703e+05	5548.6523	2.0114508	2.703e
453	1.2211407	9.852e+06	2.009e+05	1.857e+05	1.524e+04	7.5843184	1.857e
454	1.2274567	1.419e+07	2.365e+05	2.472e+05	-1.07e+04	-4.54112	2.472e
455	1.2348311	1.593e+07	2.829e+05	2.737e+05	9286.9369	3.2822367	2.737e
456	1.2351481	8.966e+06	1.811e+05	1.735e+05	7617.2224	4.2064115	1.735e
457	1.2352673	1.278e+07	2.354e+05	2.261e+05	9295.3397	3.9480155	2.261e
458	1.243879	1.299e+07	2.395e+05	2.29e+05	1.052e+04	4.3931055	2.29e+
459	1.2480608	1.139e+07	2.069e+05	2.061e+05	809.77904	0.3914237	2.061e
460	1.2497888	1.023e+07	1.882e+05	1.901e+05	-1883.618	-1.000824	1.901e
461	1.2505299	1.494e+07	2.665e+05	2.578e+05	8744.6397	3.2812884	2.578e
462	1.2510305	1.349e+07	2.528e+05	2.36e+05	1.687e+04	6.6715932	2.36e+
463	1.2518915	1.356e+07	2.405e+05	2.371e+05	3405.3873	1.4161445	2.371e
464	1.2618655	9.607e+06	1.869e+05	1.813e+05	5530.6753	2.9597512	1.813e
465	1.263853	1.193e+07	2.262e+05	2.132e+05	1.298e+04	5.7372571	2.132e
466	1.2703129	1.219e+07	2.314e+05	2.167e+05	1.464e+04	6.3286605	2.167e
467	1.2765189	1.496e+07	2.503e+05	2.571e+05	-6761.124	-2.700698	2.571e
468	1.2767074	1.285e+07	2.252e+05	2.26e+05	-739.0171	-0.328097	2.26e+
469	1.2850959	1.103e+07	1.912e+05	2.001e+05	-8864.357	-4.635712	2.001e
470	1.2858201	1.393e+07	2.391e+05	2.413e+05	-2205.318	-0.922231	2.413e
471	1.2862147	1.351e+07	2.231e+05	2.352e+05	-1.21e+04	-5.412933	2.352e
472	1.2876895	1.432e+07	2.593e+05	2.472e+05	1.21e+04	4.665153	2.472e
473	1.2956385	1.048e+07	2.032e+05	1.922e+05	1.1e+04	5.415579	1.922e
474	1.2974687	1.191e+07	2.023e+05	2.119e+05	-9536.337	-4.712922	2.119e
475	1.3001891	1.445e+07	2.511e+05	2.486e+05	2473.7881	0.9852745	2.486e
476	1.3007887	1.032e+07	1.958e+05	1.899e+05	5878.484	3.0022589	1.899e
477	1.301174	1.211e+07	2.163e+05	2.147e+05	1597.3616	0.7385828	2.147e
478	1.3025174	8.265e+06	1.585e+05	1.627e+05	-4262.505	-2.689496	1.627e

479	1.3034185	1.517e+07	2.803e+05	2.594e+05	2.089e+04	7.4507085	2.594e
480	1.3052112	1.444e+07	2.688e+05	2.484e+05	2.04e+04	7.5905331	2.484e
481	1.3056818	1.464e+07	2.616e+05	2.514e+05	1.021e+04	3.9024351	2.514e
482	1.3073278	1.249e+07	2.263e+05	2.199e+05	6407.2438	2.8313305	2.199e
483	1.3129427	1.689e+07	2.93e+05	2.859e+05	7051.9297	2.4068831	2.859e
484	1.3139634	9.437e+06	1.848e+05	1.778e+05	6934.3629	3.7527274	1.778e
485	1.3158858	1.173e+07	2.097e+05	2.089e+05	792.03533	0.3776624	2.089e
486	1.3208013	1.2e+07	2.224e+05	2.126e+05	9842.9458	4.4248536	2.126e
487	1.3221161	8.256e+06	1.674e+05	1.622e+05	5199.8261	3.1055729	1.622e
488	1.3229507	1.185e+07	2.2e+05	2.105e+05	9582.3188	4.3548497	2.105e
489	1.3248411	1.682e+07	2.864e+05	2.844e+05	2042.7691	0.7131623	2.844e
490	1.3255391	1.648e+07	2.683e+05	2.79e+05	-1.07e+04	-3.988664	2.79e+
491	1.327255	1.018e+07	1.906e+05	1.875e+05	3121.1892	1.6373774	1.875e
492	1.3322475	1.184e+07	2.196e+05	2.101e+05	9496.2021	4.3250343	2.101e
493	1.3325413	8.519e+06	1.744e+05	1.654e+05	8960.7194	5.138261	1.654e
494	1.3333178	1.127e+07	2.037e+05	2.021e+05	1609.1607	0.7898308	2.021e
495	1.3343135	1.561e+07	2.599e+05	2.651e+05	-5215.372	-2.006814	2.651e
496	1.3373255	8.017e+06	1.7e+05	1.589e+05	1.112e+04	6.5388381	1.589e
497	1.3395957	1.378e+07	2.263e+05	2.375e+05	-1.13e+04	-4.978139	2.375e
498	1.3413819	1.496e+07	2.675e+05	2.551e+05	1.243e+04	4.6474566	2.551e
499	1.3438763	1.117e+07	1.979e+05	2.005e+05	-2657.735	-1.343262	2.005e
500	1.3459509	1.595e+07	2.549e+05	2.7e+05	-1.51e+04	-5.93226	2.7e+0
501	1.3468639	9.465e+06	1.881e+05	1.775e+05	1.062e+04	5.6456505	1.775e
502	1.3513534	1.33e+07	2.444e+05	2.303e+05	1.411e+04	5.7725527	2.303e
503	1.3570954	8.469e+06	1.713e+05	1.643e+05	6992.0646	4.0813621	1.643e
504	1.3614814	9.177e+06	1.844e+05	1.734e+05	1.1e+04	5.9647142	1.734e
505	1.3727848	9.618e+06	1.911e+05	1.79e+05	1.209e+04	6.3260616	1.79e+
506	1.3729859	1.196e+07	2.005e+05	2.108e+05	-1.03e+04	-5.136115	2.108e
507	1.3751679	1.054e+07	1.973e+05	1.912e+05	6029.9812	3.0565956	1.912e
508	1.3770621	1.094e+07	2.029e+05	1.966e+05	6339.7506	3.1241894	1.966e
509	1.3828667	1.231e+07	2.11e+05	2.154e+05	-4465.95	-2.116848	2.154e
510	1.3845608	9.001e+06	1.715e+05	1.707e+05	792.51138	0.462101	1.707e
511	1.3906238	1.401e+07	2.441e+05	2.396e+05	4436.4047	1.817819	2.396e
512	1.3928516	1.417e+07	2.289e+05	2.42e+05	-1.31e+04	-5.722722	2.42e+
513	1.3946508	1.392e+07	2.259e+05	2.383e+05	-1.24e+04	-5.474852	2.383e
514	1.3988394	1.07e+07	2.042e+05	1.929e+05	1.125e+04	5.5111747	1.929e
515	1.3989571	1.285e+07	2.184e+05	2.226e+05	-4194.689	-1.920236	2.226e
516	1.4031012	1.316e+07	2.414e+05	2.27e+05	1.432e+04	5.9334229	2.27e+
517	1.4041433	1.226e+07	2.142e+05	2.143e+05	-72.05834	-0.033634	2.143e
518	1.4042221	8.978e+06	1.764e+05	1.701e+05	6339.7388	3.5937191	1.701e
519	1.4089739	1.618e+07	2.56e+05	2.718e+05	-1.58e+04	-6.177387	2.718e
520	1.4149801	1.352e+07	2.34e+05	2.318e+05	2194.4759	0.9376623	2.318e
521	1.4161078	1.119e+07	2.074e+05	1.992e+05	8162.0648	3.9360647	1.992e
522	1.4165885	1.644e+07	2.612e+05	2.756e+05	-1.44e+04	-5.499049	2.756e
523	1.4194029	1.339e+07	2.23e+05	2.299e+05	-6908.106	-3.098087	2.299e
524	1.4207768	1.187e+07	2.002e+05	2.084e+05	-8191.957	-4.090879	2.084e
525	1.4275242	1.295e+07	2.367e+05	2.234e+05	1.324e+04	5.5937414	2.234e
526	1.4335276	1.648e+07	2.726e+05	2.757e+05	-3133.767	-1.149685	2.757e

527	1.4348571	1.033e+07	1.939e+05	1.873e+05	6669.7123	3.4389707	1.873e
528	1.4438174	8.301e+06	1.695e+05	1.607e+05	8823.7058	5.2042159	1.607e
529	1.4451975	1.18e+07	1.985e+05	2.07e+05	-8555.412	-4.310798	2.07e+
530	1.4504476	1.082e+07	1.961e+05	1.936e+05	2571.1528	1.3109818	1.936e
531	1.4517165	1.454e+07	2.582e+05	2.46e+05	1.221e+04	4.7268651	2.46e+
532	1.4550945	8.789e+06	1.673e+05	1.668e+05	520.46795	0.3110241	1.668e
533	1.457664	1.238e+07	2.115e+05	2.149e+05	-3348.327	-1.583114	2.149e
534	1.4588312	1.454e+07	2.317e+05	2.458e+05	-1.4e+04	-6.055211	2.458e
535	1.4602458	1.709e+07	2.84e+05	2.847e+05	-657.407	-0.231451	2.847e
536	1.4614568	1.011e+07	1.881e+05	1.839e+05	4140.7972	2.2017185	1.839e
537	1.4625638	1.432e+07	2.476e+05	2.426e+05	5052.3925	2.0404454	2.426e
538	1.4627031	1.519e+07	2.487e+05	2.554e+05	-6695.838	-2.692075	2.554e
539	1.4639948	1.463e+07	2.304e+05	2.471e+05	-1.67e+04	-7.25279	2.471e
540	1.4643865	1.687e+07	2.765e+05	2.811e+05	-4587.501	-1.659211	2.811e
541	1.468319	1.055e+07	1.994e+05	1.896e+05	9718.9269	4.8748703	1.896e
542	1.4734873	1.403e+07	2.253e+05	2.381e+05	-1.27e+04	-5.649477	2.381e
543	1.4750901	1.257e+07	2.258e+05	2.171e+05	8711.7388	3.8573914	2.171e
544	1.4772724	1.063e+07	1.938e+05	1.907e+05	3127.5638	1.6139377	1.907e
545	1.4816177	1.145e+07	1.948e+05	2.016e+05	-6739.981	-3.459658	2.016e
546	1.4847824	1.299e+07	2.244e+05	2.229e+05	1483.8707	0.6612232	2.229e
547	1.4858736	1.573e+07	2.731e+05	2.631e+05	1.004e+04	3.6764405	2.631e
548	1.4888108	1.582e+07	2.471e+05	2.644e+05	-1.73e+04	-7.008729	2.644e
549	1.4892074	1.361e+07	2.18e+05	2.316e+05	-1.36e+04	-6.251547	2.316e
550	1.4924823	1.63e+07	2.824e+05	2.716e+05	1.087e+04	3.8480842	2.716e
551	1.4936371	1.078e+07	1.9e+05	1.924e+05	-2382.353	-1.253678	1.924e
552	1.4945763	1.161e+07	1.95e+05	2.036e+05	-8624.479	-4.423472	2.036e
553	1.4960197	1.676e+07	2.709e+05	2.786e+05	-7679.526	-2.834978	2.786e
554	1.5010017	1.562e+07	2.591e+05	2.61e+05	-1977.266	-0.763229	2.61e+
555	1.5052061	1.392e+07	2.423e+05	2.359e+05	6389.1391	2.6368859	2.359e
556	1.5129411	1.031e+07	1.862e+05	1.859e+05	359.04937	0.1927941	1.859e
557	1.5134453	1.423e+07	2.49e+05	2.402e+05	8735.7923	3.508598	2.402e
558	1.5136783	1.399e+07	2.39e+05	2.367e+05	2313.2698	0.9677328	2.367e
559	1.5151057	1.323e+07	2.271e+05	2.258e+05	1298.0361	0.5716199	2.258e
560	1.5159186	9.409e+06	1.768e+05	1.74e+05	2794.4126	1.5808231	1.74e+
561	1.5196743	1.26e+07	2.161e+05	2.168e+05	-675.4638	-0.312537	2.168e
562	1.5310989	1.215e+07	2.069e+05	2.104e+05	-3498.706	-1.691217	2.104e
563	1.5311347	9.159e+06	1.747e+05	1.705e+05	4102.3293	2.3488664	1.705e
564	1.5332489	1.038e+07	1.964e+05	1.865e+05	9894.5822	5.0388325	1.865e
565	1.5475604	1.127e+07	1.944e+05	1.982e+05	-3812.899	-1.961294	1.982e
566	1.5481138	1.389e+07	2.38e+05	2.347e+05	3311.4779	1.3914785	2.347e
567	1.5494969	1.467e+07	2.413e+05	2.46e+05	-4650.942	-1.927254	2.46e+
568	1.5495348	1.093e+07	1.85e+05	1.936e+05	-8617.688	-4.657742	1.936e
569	1.5506558	1.066e+07	1.969e+05	1.9e+05	6925.3636	3.5167323	1.9e+0
570	1.5559496	1.482e+07	2.521e+05	2.481e+05	4071.5555	1.614902	2.481e
571	1.561675	1.54e+07	2.655e+05	2.567e+05	8845.0774	3.3314541	2.567e
572	1.5645095	1.473e+07	2.299e+05	2.467e+05	-1.68e+04	-7.314032	2.467e
573	1.567814	1.012e+07	1.874e+05	1.826e+05	4874.0856	2.6004701	1.826e
574	1.5715738	1.345e+07	2.245e+05	2.281e+05	-3616.576	-1.611233	2.281e

575	1.572831	1.635e+07	2.741e+05	2.708e+05	3241.0142	1.1825803	2.708e
576	1.5756013	8.446e+06	1.598e+05	1.61e+05	-1182.387	-0.740057	1.61e+
577	1.5756919	1.393e+07	2.268e+05	2.348e+05	-7995.032	-3.524548	2.348e
578	1.5763364	1.651e+07	2.79e+05	2.732e+05	5730.25	2.0542032	2.732e
579	1.5772202	1.149e+07	2.088e+05	2.008e+05	8017.9818	3.8403699	2.008e
580	1.5785176	1.363e+07	2.169e+05	2.305e+05	-1.36e+04	-6.257582	2.305e
581	1.5808531	1.442e+07	2.329e+05	2.418e+05	-8902.116	-3.821778	2.418e
582	1.5823532	1.298e+07	2.213e+05	2.213e+05	-14.51373	-0.006559	2.213e
583	1.5864828	1.375e+07	2.169e+05	2.321e+05	-1.52e+04	-6.990496	2.321e
584	1.5882289	1.317e+07	2.149e+05	2.238e+05	-8925.563	-4.153883	2.238e
585	1.5884342	1.148e+07	1.907e+05	2.004e+05	-9755.951	-5.116551	2.004e
586	1.5998762	1.308e+07	2.085e+05	2.224e+05	-1.39e+04	-6.673641	2.224e
587	1.6074559	1.609e+07	2.591e+05	2.663e+05	-7210.752	-2.782788	2.663e
588	1.621912	8.433e+06	1.586e+05	1.604e+05	-1736.344	-1.094623	1.604e
589	1.6296569	1.214e+07	2.044e+05	2.091e+05	-4698.554	-2.299186	2.091e
590	1.6357163	9.363e+06	1.715e+05	1.721e+05	-540.6437	-0.315155	1.721e
591	1.6358475	1.256e+07	2.054e+05	2.147e+05	-9350.331	-4.553104	2.147e
592	1.637624	1.565e+07	2.536e+05	2.592e+05	-5579.873	-2.200253	2.592e
593	1.6422403	1.625e+07	2.506e+05	2.682e+05	-1.75e+04	-7.001033	2.682e
594	1.6454409	1.044e+07	1.899e+05	1.86e+05	3839.8628	2.0224514	1.86e+
595	1.6493098	1.67e+07	2.703e+05	2.751e+05	-4727.27	-1.748578	2.751e
596	1.6503378	1.077e+07	1.973e+05	1.904e+05	6861.0306	3.4782174	1.904e
597	1.6566782	1.167e+07	2.095e+05	2.023e+05	7247.3848	3.4589267	2.023e
598	1.6622429	1.148e+07	1.943e+05	1.997e+05	-5400.027	-2.779793	1.997e
599	1.6624684	1.16e+07	2.051e+05	2.013e+05	3783.1681	1.8443328	2.013e
600	1.6645516	1.43e+07	2.207e+05	2.39e+05	-1.83e+04	-8.312236	2.39e+
601	1.6658313	1.091e+07	1.972e+05	1.921e+05	5152.8694	2.6124523	1.921e
602	1.6664108	1.672e+07	2.747e+05	2.751e+05	-422.377	-0.15378	2.751e
603	1.6667709	1.433e+07	2.237e+05	2.394e+05	-1.57e+04	-7.00227	2.394e
604	1.6670185	1.039e+07	1.839e+05	1.851e+05	-1229.091	-0.668297	1.851e
605	1.6671265	1.166e+07	2.015e+05	2.022e+05	-622.2924	-0.308774	2.022e
606	1.6750171	1.478e+07	2.401e+05	2.46e+05	-5849.971	-2.436248	2.46e+
607	1.677105	8.364e+06	1.552e+05	1.591e+05	-3911.316	-2.520701	1.591e
608	1.678676	1.028e+07	1.857e+05	1.836e+05	2042.9434	1.100375	1.836e
609	1.6787673	1.457e+07	2.389e+05	2.428e+05	-3897.197	-1.631625	2.428e
610	1.6822977	1.638e+07	2.521e+05	2.697e+05	-1.75e+04	-6.954399	2.697e
611	1.6834556	1.298e+07	2.159e+05	2.201e+05	-4235.029	-1.961674	2.201e
612	1.6841099	1.551e+07	2.512e+05	2.565e+05	-5333.185	-2.122971	2.565e
613	1.6860106	1.473e+07	2.413e+05	2.451e+05	-3803.333	-1.576316	2.451e
614	1.6860958	1.044e+07	1.799e+05	1.857e+05	-5768.951	-3.20628	1.857e
615	1.6894118	1.468e+07	2.304e+05	2.444e+05	-1.39e+04	-6.043522	2.444e
616	1.6899139	1.151e+07	2.004e+05	1.999e+05	558.21925	0.2785327	1.999e
617	1.6911176	1.499e+07	2.302e+05	2.488e+05	-1.86e+04	-8.062168	2.488e
618	1.6911203	1.002e+07	1.748e+05	1.801e+05	-5351.893	-3.062088	1.801e
619	1.6913737	1.193e+07	2.065e+05	2.055e+05	962.8124	0.4663408	2.055e
620	1.6988997	1.411e+07	2.24e+05	2.359e+05	-1.2e+04	-5.340101	2.359e
621	1.699964	1.471e+07	2.344e+05	2.446e+05	-1.02e+04	-4.356826	2.446e
622	1.7007328	1.044e+07	1.873e+05	1.855e+05	1800.9293	0.9612986	1.855e

623	1.7012551	1.689e+07	2.617e+05	2.774e+05	-1.57e+04	-5.993668	2.774e
624	1.7043765	1.43e+07	2.263e+05	2.387e+05	-1.24e+04	-5.473203	2.387e
625	1.7046691	1.176e+07	1.911e+05	2.032e+05	-1.21e+04	-6.306337	2.032e
626	1.7052195	1.492e+07	2.281e+05	2.476e+05	-1.96e+04	-8.571254	2.476e
627	1.7132067	1.26e+07	2.191e+05	2.146e+05	4572.4801	2.0864748	2.146e
628	1.7153349	1.427e+07	2.353e+05	2.381e+05	-2820.363	-1.19855	2.381e
629	1.7212587	8.677e+06	1.608e+05	1.628e+05	-1909.928	-1.18744	1.628e
630	1.7272818	1.246e+07	2.051e+05	2.126e+05	-7499.526	-3.656702	2.126e
631	1.7306131	1.059e+07	1.914e+05	1.874e+05	4029.3505	2.1051665	1.874e
632	1.7382152	1.454e+07	2.231e+05	2.419e+05	-1.88e+04	-8.435491	2.419e
633	1.7562467	1.378e+07	2.311e+05	2.308e+05	253.88664	0.1098665	2.308e
634	1.7624435	1.025e+07	1.773e+05	1.827e+05	-5380.067	-3.033662	1.827e
635	1.7630311	9.703e+06	1.76e+05	1.756e+05	385.36054	0.2189458	1.756e
636	1.7671512	1.148e+07	2e+05	1.99e+05	1039.2924	0.5196494	1.99e+
637	1.7678929	8.824e+06	1.619e+05	1.644e+05	-2431.266	-1.501313	1.644e
638	1.7813174	1.228e+07	2.061e+05	2.097e+05	-3658.391	-1.775472	2.097e
639	1.7829613	1.301e+07	2.201e+05	2.198e+05	263.36225	0.1196703	2.198e
640	1.7937188	1.001e+07	1.738e+05	1.794e+05	-5667.771	-3.261506	1.794e
641	1.7955771	1.378e+07	2.173e+05	2.306e+05	-1.33e+04	-6.110993	2.306e
642	1.7974078	1.484e+07	2.274e+05	2.459e+05	-1.85e+04	-8.131195	2.459e
643	1.7982781	1.421e+07	2.273e+05	2.366e+05	-9333.246	-4.105965	2.366e
644	1.7999077	1.103e+07	1.877e+05	1.928e+05	-5105.005	-2.720206	1.928e
645	1.8003696	1.236e+07	2.017e+05	2.108e+05	-9098.691	-4.511061	2.108e
646	1.804323	8.369e+06	1.534e+05	1.585e+05	-5168.504	-3.370388	1.585e
647	1.8047563	1.393e+07	2.218e+05	2.327e+05	-1.09e+04	-4.907835	2.327e
648	1.8062306	8.044e+06	1.581e+05	1.545e+05	3607.9588	2.282669	1.545e
649	1.8063018	1.101e+07	1.866e+05	1.925e+05	-5908.498	-3.166723	1.925e
650	1.8147753	9.867e+06	1.808e+05	1.775e+05	3259.5887	1.8028874	1.775e
651	1.8175865	1.169e+07	1.96e+05	2.016e+05	-5634.719	-2.874799	2.016e
652	1.8184616	9.196e+06	1.664e+05	1.689e+05	-2520.82	-1.514969	1.689e
653	1.8194939	1.12e+07	1.985e+05	1.95e+05	3537.0006	1.7818988	1.95e+
654	1.8196175	1.423e+07	2.176e+05	2.37e+05	-1.94e+04	-8.909236	2.37e+
655	1.8221676	1.417e+07	2.384e+05	2.36e+05	2426.4346	1.0177795	2.36e+
656	1.8239055	8.677e+06	1.58e+05	1.623e+05	-4327.541	-2.738893	1.623e
657	1.824894	1.466e+07	2.339e+05	2.431e+05	-9115.889	-3.89657	2.431e
658	1.835513	1.307e+07	2.062e+05	2.205e+05	-1.43e+04	-6.921383	2.205e
659	1.8369909	1.072e+07	1.855e+05	1.886e+05	-3113.856	-1.678645	1.886e
660	1.8383128	1.146e+07	1.942e+05	1.984e+05	-4177.823	-2.15154	1.984e
661	1.8435894	8.299e+06	1.533e+05	1.575e+05	-4266.723	-2.783782	1.575e
662	1.8436825	1.434e+07	2.229e+05	2.385e+05	-1.56e+04	-6.993054	2.385e
663	1.8439396	1.519e+07	2.43e+05	2.508e+05	-7745.103	-3.186719	2.508e
664	1.844249	1.444e+07	2.274e+05	2.399e+05	-1.24e+04	-5.472803	2.399e
665	1.8454062	1.56e+07	2.462e+05	2.569e+05	-1.07e+04	-4.342226	2.569e
666	1.8467244	9.97e+06	1.818e+05	1.788e+05	2993.7998	1.6470012	1.788e
667	1.8474776	1.445e+07	2.286e+05	2.399e+05	-1.14e+04	-4.98019	2.399e
668	1.8489286	1.239e+07	2.043e+05	2.11e+05	-6721.918	-3.290106	2.11e+
669	1.8502389	1.016e+07	1.782e+05	1.813e+05	-3039.757	-1.705695	1.813e
670	1.858066	1.694e+07	2.62e+05	2.77e+05	-1.49e+04	-5.703113	2.77e+

671	1.8647222	1.315e+07	2.045e+05	2.215e+05	-1.7e+04	-8.336617	2.215e
672	1.865805	1.285e+07	2.163e+05	2.173e+05	-1023.547	-0.473169	2.173e
673	1.8661345	1.178e+07	1.941e+05	2.027e+05	-8530.711	-4.393925	2.027e
674	1.8720599	1.667e+07	2.575e+05	2.729e+05	-1.53e+04	-5.948536	2.729e
675	1.8740619	1.249e+07	2.115e+05	2.122e+05	-789.6841	-0.373452	2.122e
676	1.8741065	1.433e+07	2.309e+05	2.381e+05	-7225.697	-3.129818	2.381e
677	1.8770538	1.486e+07	2.328e+05	2.459e+05	-1.31e+04	-5.643781	2.459e
678	1.8844451	1.308e+07	2.069e+05	2.204e+05	-1.35e+04	-6.519478	2.204e
679	1.88601	1.467e+07	2.418e+05	2.431e+05	-1255.83	-0.519347	2.431e
680	1.8896171	1.125e+07	1.863e+05	1.954e+05	-9106.011	-4.886911	1.954e
681	1.890255	1.54e+07	2.505e+05	2.537e+05	-3198.279	-1.276722	2.537e
682	1.8920383	1.19e+07	1.957e+05	2.042e+05	-8506.287	-4.346936	2.042e
683	1.8935313	8.759e+06	1.566e+05	1.632e+05	-6608.98	-4.219924	1.632e
684	1.9000173	1.385e+07	2.246e+05	2.312e+05	-6576.389	-2.927821	2.312e
685	1.9023333	8.939e+06	1.654e+05	1.655e+05	-65.85296	-0.039807	1.655e
686	1.9027539	1.132e+07	1.913e+05	1.965e+05	-5127.735	-2.679995	1.965e
687	1.9034787	1.066e+07	1.871e+05	1.877e+05	-553.944	-0.295993	1.877e
688	1.9055613	1.522e+07	2.376e+05	2.511e+05	-1.34e+04	-5.648524	2.511e
689	1.9061763	1.22e+07	2.063e+05	2.083e+05	-1951.64	-0.945884	2.083e
690	1.9102324	9.917e+06	1.733e+05	1.78e+05	-4674.188	-2.697028	1.78e+
691	1.91312	1.29e+07	2.013e+05	2.179e+05	-1.66e+04	-8.266419	2.179e
692	1.9199419	1.246e+07	2.038e+05	2.119e+05	-8112.915	-3.981099	2.119e
693	1.9223455	9.71e+06	1.674e+05	1.753e+05	-7907.821	-4.723729	1.753e
694	1.9252174	1.325e+07	2.154e+05	2.227e+05	-7275.452	-3.377173	2.227e
695	1.9300642	1.469e+07	2.408e+05	2.433e+05	-2406.983	-0.999389	2.433e
696	1.9308209	1.257e+07	2.123e+05	2.133e+05	-946.784	-0.445873	2.133e
697	1.9348213	1.635e+07	2.47e+05	2.68e+05	-2.1e+04	-8.493395	2.68e+
698	1.9352397	1.36e+07	2.206e+05	2.276e+05	-7014.477	-3.179479	2.276e
699	1.9366877	1.398e+07	2.309e+05	2.33e+05	-2082.53	-0.901755	2.33e+
700	1.9409637	1.475e+07	2.234e+05	2.442e+05	-2.08e+04	-9.299198	2.442e
701	1.942523	1.639e+07	2.626e+05	2.685e+05	-5864.453	-2.232896	2.685e
702	1.9434245	1.08e+07	1.878e+05	1.895e+05	-1662.592	-0.885169	1.895e
703	1.9469917	1.674e+07	2.718e+05	2.739e+05	-2076.008	-0.763757	2.739e
704	1.9503482	1.076e+07	1.83e+05	1.889e+05	-5945.954	-3.249639	1.889e
705	1.9503683	1.191e+07	2.049e+05	2.044e+05	558.52505	0.2725514	2.044e
706	1.9543471	1.378e+07	2.29e+05	2.302e+05	-1182.576	-0.516407	2.302e
707	1.9601133	1.374e+07	2.215e+05	2.296e+05	-8142.066	-3.67637	2.296e
708	1.9616108	1.061e+07	1.851e+05	1.87e+05	-1913.218	-1.033801	1.87e+
709	1.9651395	9.861e+06	1.787e+05	1.773e+05	1389.7581	0.7779074	1.773e
710	1.9686833	1.042e+07	1.819e+05	1.845e+05	-2585.557	-1.421347	1.845e
711	1.96949	1.457e+07	2.238e+05	2.416e+05	-1.78e+04	-7.953526	2.416e
712	1.9699212	1.213e+07	2.008e+05	2.074e+05	-6604.745	-3.289741	2.074e
713	1.9709943	1.423e+07	2.266e+05	2.367e+05	-1.01e+04	-4.458431	2.367e
714	1.9710821	1.035e+07	1.852e+05	1.836e+05	1615.1202	0.8719154	1.836e
715	1.9710825	1.36e+07	2.258e+05	2.278e+05	-1929.231	-0.85424	2.278e
716	1.9725108	1.479e+07	2.439e+05	2.447e+05	-823.4656	-0.337591	2.447e
717	1.9760274	8.699e+06	1.616e+05	1.625e+05	-881.0959	-0.545312	1.625e
718	1.9780365	1.114e+07	1.942e+05	1.941e+05	171.73703	0.0884196	1.941e

719	1.9816173	1.434e+07	2.34e+05	2.383e+05	-4305.997	-1.840135	2.383e
720	1.9818759	9.244e+06	1.603e+05	1.694e+05	-9078.883	-5.664206	1.694e
721	1.9841816	1.26e+07	1.983e+05	2.138e+05	-1.55e+04	-7.795832	2.138e
722	1.9861748	1.299e+07	2.112e+05	2.192e+05	-7994.674	-3.78578	2.192e
723	1.9951875	1.027e+07	1.743e+05	1.826e+05	-8286.571	-4.755088	1.826e
724	2.0089697	8.188e+06	1.568e+05	1.561e+05	676.20248	0.431339	1.561e
725	2.0160348	1.258e+07	2.142e+05	2.136e+05	651.51273	0.3041111	2.136e
726	2.022007	8.851e+06	1.585e+05	1.644e+05	-5970.248	-3.767596	1.644e
727	2.0246743	1.105e+07	1.852e+05	1.929e+05	-7699.899	-4.15783	1.929e
728	2.0255492	1.028e+07	1.801e+05	1.827e+05	-2659.404	-1.476842	1.827e
729	2.0302678	9.561e+06	1.725e+05	1.735e+05	-999.6208	-0.579512	1.735e
730	2.0331517	1.691e+07	2.667e+05	2.766e+05	-9945.345	-3.729645	2.766e
731	2.0335755	1.251e+07	2.131e+05	2.127e+05	383.72638	0.1801062	2.127e
732	2.0337128	1.209e+07	1.98e+05	2.069e+05	-8910.268	-4.500321	2.069e
733	2.0338927	1.347e+07	2.151e+05	2.259e+05	-1.08e+04	-5.023584	2.259e
734	2.0407138	1.237e+07	1.975e+05	2.108e+05	-1.33e+04	-6.733683	2.108e
735	2.0420437	1.482e+07	2.325e+05	2.454e+05	-1.29e+04	-5.566008	2.454e
736	2.0461938	1.06e+07	1.872e+05	1.87e+05	187.43751	0.1001216	1.87e+
737	2.05903	1.223e+07	2.052e+05	2.088e+05	-3625.659	-1.766976	2.088e
738	2.0623893	1.541e+07	2.362e+05	2.541e+05	-1.79e+04	-7.575052	2.541e
739	2.064429	1.305e+07	2.102e+05	2.203e+05	-1e+04	-4.768713	2.203e
740	2.0657971	1.129e+07	1.949e+05	1.962e+05	-1302.407	-0.6683	1.962e
741	2.0670917	1.163e+07	1.975e+05	2.008e+05	-3348.007	-1.695579	2.008e
742	2.0694352	1.699e+07	2.708e+05	2.78e+05	-7210.052	-2.662793	2.78e+
743	2.0703494	1.635e+07	2.425e+05	2.681e+05	-2.56e+04	-10.5705	2.681e
744	2.0706956	8.796e+06	1.648e+05	1.638e+05	936.28434	0.5682048	1.638e
745	2.0807183	8.404e+06	1.569e+05	1.589e+05	-2011.641	-1.281837	1.589e
746	2.0842964	1.38e+07	2.26e+05	2.308e+05	-4749.054	-2.100899	2.308e
747	2.0876564	8.253e+06	1.563e+05	1.571e+05	-762.2924	-0.487688	1.571e
748	2.0879819	1.304e+07	2.09e+05	2.201e+05	-1.11e+04	-5.309563	2.201e
749	2.0900547	8.282e+06	1.539e+05	1.574e+05	-3549.824	-2.306749	1.574e
750	2.0950642	1.155e+07	1.91e+05	1.998e+05	-8763.875	-4.588537	1.998e
751	2.0955227	1.177e+07	1.975e+05	2.027e+05	-5141.139	-2.602511	2.027e
752	2.0970052	1.242e+07	2.091e+05	2.117e+05	-2583.878	-1.235817	2.117e
753	2.1007185	1.217e+07	1.936e+05	2.082e+05	-1.46e+04	-7.532412	2.082e
754	2.1010693	1.274e+07	2.045e+05	2.16e+05	-1.15e+04	-5.648266	2.16e+
755	2.1014608	1.4e+07	2.319e+05	2.337e+05	-1736.136	-0.748498	2.337e
756	2.1054293	1.299e+07	2.178e+05	2.195e+05	-1760.598	-0.80843	2.195e
757	2.1076576	8.126e+06	1.552e+05	1.556e+05	-339.1816	-0.218528	1.556e
758	2.1120138	9.527e+06	1.707e+05	1.733e+05	-2572.862	-1.507074	1.733e
759	2.1148001	1.673e+07	2.466e+05	2.742e+05	-2.76e+04	-11.19864	2.742e
760	2.1187673	1.217e+07	2.003e+05	2.083e+05	-8020.312	-4.004791	2.083e
761	2.1293219	1.471e+07	2.415e+05	2.441e+05	-2638.428	-1.0926	2.441e
762	2.1319007	8.985e+06	1.646e+05	1.664e+05	-1813.891	-1.101797	1.664e
763	2.1379742	1.093e+07	1.886e+05	1.916e+05	-3019.792	-1.60097	1.916e
764	2.1382707	1.495e+07	2.319e+05	2.478e+05	-1.58e+04	-6.815177	2.478e
765	2.1411643	1.069e+07	1.764e+05	1.885e+05	-1.21e+04	-6.840235	1.885e
766	2.1414652	8.531e+06	1.564e+05	1.607e+05	-4304.888	-2.751915	1.607e

767	2.1470092	9.946e+06	1.798e+05	1.788e+05	980.05914	0.5450193	1.788e
768	2.1484764	1.666e+07	2.654e+05	2.734e+05	-7980.115	-3.00705	2.734e
769	2.1526288	9.323e+06	1.646e+05	1.708e+05	-6268.263	-3.808985	1.708e
770	2.1540193	8.801e+06	1.561e+05	1.642e+05	-8108.549	-5.194716	1.642e
771	2.1571261	1.031e+07	1.753e+05	1.837e+05	-8372.041	-4.775968	1.837e
772	2.1573819	1.552e+07	2.423e+05	2.562e+05	-1.38e+04	-5.715383	2.562e
773	2.1585259	1.281e+07	2.01e+05	2.173e+05	-1.63e+04	-8.119719	2.173e
774	2.1604114	9.804e+06	1.743e+05	1.771e+05	-2801.623	-1.607767	1.771e
775	2.1614204	1.196e+07	2.018e+05	2.056e+05	-3814.898	-1.890154	2.056e
776	2.1650594	1.319e+07	2.158e+05	2.226e+05	-6800.423	-3.151209	2.226e
777	2.1680858	1.102e+07	1.929e+05	1.93e+05	-117.39	-0.06086	1.93e+
778	2.1748845	1.029e+07	1.782e+05	1.835e+05	-5257.41	-2.950405	1.835e
779	2.1770624	1.488e+07	2.289e+05	2.469e+05	-1.81e+04	-7.88613	2.469e
780	2.1810275	1.376e+07	2.263e+05	2.307e+05	-4418.162	-1.952228	2.307e
781	2.183505	1.66e+07	2.497e+05	2.728e+05	-2.3e+04	-9.215679	2.728e
782	2.1856488	1.321e+07	2.136e+05	2.231e+05	-9493.047	-4.445151	2.231e
783	2.188256	8.413e+06	1.592e+05	1.595e+05	-307.7122	-0.193338	1.595e
784	2.1903482	8.432e+06	1.58e+05	1.597e+05	-1676.671	-1.060955	1.597e
785	2.1954791	1.483e+07	2.271e+05	2.464e+05	-1.92e+04	-8.468878	2.464e
786	2.1971914	1.232e+07	2.027e+05	2.108e+05	-8163.354	-4.027908	2.108e
787	2.202402	1.218e+07	2.072e+05	2.089e+05	-1676.088	-0.80889	2.089e
788	2.2051042	8.085e+06	1.571e+05	1.554e+05	1709.8266	1.088054	1.554e
789	2.2066096	8.726e+06	1.597e+05	1.635e+05	-3812.162	-2.387274	1.635e
790	2.2154566	1.16e+07	1.931e+05	2.01e+05	-7910.547	-4.096014	2.01e+
791	2.2178197	1.492e+07	2.31e+05	2.479e+05	-1.69e+04	-7.317583	2.479e
792	2.2178728	1.451e+07	2.253e+05	2.419e+05	-1.66e+04	-7.36809	2.419e
793	2.2187084	1.182e+07	2.008e+05	2.041e+05	-3264.158	-1.625207	2.041e
794	2.2217696	1.285e+07	2.133e+05	2.183e+05	-5030.713	-2.358576	2.183e
795	2.228894	9.001e+06	1.652e+05	1.671e+05	-1908.764	-1.155428	1.671e
796	2.2317635	1.072e+07	1.828e+05	1.894e+05	-6577.367	-3.597562	1.894e
797	2.2346332	1.237e+07	2.094e+05	2.117e+05	-2305.343	-1.100871	2.117e
798	2.2381646	1.395e+07	2.288e+05	2.339e+05	-5101.858	-2.229664	2.339e
799	2.2450248	1.221e+07	2.045e+05	2.095e+05	-5047.217	-2.468392	2.095e
800	2.245433	1.085e+07	1.841e+05	1.912e+05	-7086.09	-3.848801	1.912e
801	2.2504107	1.207e+07	2.062e+05	2.078e+05	-1534.526	-0.744136	2.078e
802	2.2511866	1.101e+07	1.896e+05	1.934e+05	-3772.131	-1.989733	1.934e
803	2.2538928	8.202e+06	1.585e+05	1.572e+05	1388.3781	0.8757289	1.572e
804	2.2546363	9.161e+06	1.686e+05	1.693e+05	-745.7147	-0.442429	1.693e
805	2.2572706	1.216e+07	1.975e+05	2.089e+05	-1.15e+04	-5.82087	2.089e
806	2.2628115	8.657e+06	1.641e+05	1.629e+05	1165.7613	0.710373	1.629e
807	2.2748654	1.352e+07	2.194e+05	2.281e+05	-8749.807	-3.988781	2.281e
808	2.2769879	1.22e+07	1.95e+05	2.097e+05	-1.47e+04	-7.537068	2.097e
809	2.2770423	1.465e+07	2.258e+05	2.443e+05	-1.86e+04	-8.235449	2.443e
810	2.278374	1.143e+07	1.961e+05	1.992e+05	-3056.118	-1.558301	1.992e
811	2.2907794	9.521e+06	1.658e+05	1.742e+05	-8336.207	-5.027195	1.742e
812	2.2920643	1.046e+07	1.862e+05	1.864e+05	-110.2732	-0.05921	1.864e
813	2.2922754	1.626e+07	2.548e+05	2.685e+05	-1.37e+04	-5.382218	2.685e
814	2.2922966	1.043e+07	1.845e+05	1.861e+05	-1562.312	-0.846724	1.861e

815	2.292966	1.15e+07	1.901e+05	2.004e+05	-1.02e+04	-5.388509	2.004e
816	2.29649	8.997e+06	1.681e+05	1.675e+05	675.40535	0.4016838	1.675e
817	2.3094987	9.266e+06	1.634e+05	1.71e+05	-7576.527	-4.636193	1.71e+
818	2.3165064	1.082e+07	1.798e+05	1.913e+05	-1.16e+04	-6.443002	1.913e
819	2.32916	8.565e+06	1.55e+05	1.622e+05	-7216.772	-4.656775	1.622e
820	2.3298627	1.561e+07	2.379e+05	2.591e+05	-2.12e+04	-8.915642	2.591e
821	2.3341567	1.399e+07	2.314e+05	2.354e+05	-4010.207	-1.733003	2.354e
822	2.3393863	8.554e+06	1.601e+05	1.621e+05	-2067.653	-1.291876	1.621e
823	2.3399615	9.652e+06	1.741e+05	1.762e+05	-2070.029	-1.188758	1.762e
824	2.3433532	8.702e+06	1.639e+05	1.64e+05	-140.5076	-0.085733	1.64e+
825	2.3455791	1.14e+07	1.953e+05	1.993e+05	-3974.622	-2.03486	1.993e
826	2.3629138	1.234e+07	2.098e+05	2.124e+05	-2618.677	-1.248251	2.124e
827	2.3707147	1.033e+07	1.778e+05	1.854e+05	-7518.703	-4.227988	1.854e
828	2.3724984	1.116e+07	1.955e+05	1.964e+05	-904.529	-0.462733	1.964e
829	2.3778984	1.077e+07	1.796e+05	1.912e+05	-1.17e+04	-6.500205	1.912e
830	2.3784901	1.35e+07	2.257e+05	2.288e+05	-3094.577	-1.371079	2.288e
831	2.3889163	1.268e+07	2.03e+05	2.173e+05	-1.43e+04	-7.045211	2.173e
832	2.4004381	1.306e+07	2.184e+05	2.228e+05	-4404.799	-2.017149	2.228e
833	2.4011008	1.419e+07	2.273e+05	2.389e+05	-1.16e+04	-5.114036	2.389e
834	2.4091009	1.105e+07	1.9e+05	1.952e+05	-5157.83	-2.714237	1.952e
835	2.412281	1.319e+07	2.206e+05	2.248e+05	-4135.295	-1.874161	2.248e
836	2.4221569	1.1e+07	1.837e+05	1.947e+05	-1.1e+04	-5.987416	1.947e
837	2.4285494	1.069e+07	1.818e+05	1.906e+05	-8746.93	-4.810286	1.906e
838	2.4292056	8.433e+06	1.625e+05	1.613e+05	1223.5182	0.752998	1.613e
839	2.4293473	1.6e+07	2.504e+05	2.662e+05	-1.58e+04	-6.323297	2.662e
840	2.4321969	1.092e+07	1.855e+05	1.937e+05	-8183.107	-4.410277	1.937e
841	2.4328078	1.195e+07	1.995e+05	2.077e+05	-8219.236	-4.120199	2.077e
842	2.4364941	1.422e+07	2.34e+05	2.397e+05	-5710.696	-2.440097	2.397e
843	2.4404941	9.42e+06	1.74e+05	1.74e+05	-55.44691	-0.031874	1.74e+
844	2.4411183	1.515e+07	2.417e+05	2.536e+05	-1.19e+04	-4.910923	2.536e
845	2.4453524	1.223e+07	2.012e+05	2.117e+05	-1.05e+04	-5.203202	2.117e
846	2.4489076	9.725e+06	1.764e+05	1.781e+05	-1650.529	-0.935617	1.781e
847	2.4532662	1.017e+07	1.761e+05	1.839e+05	-7842.219	-4.454403	1.839e
848	2.4544166	1.282e+07	2.086e+05	2.2e+05	-1.14e+04	-5.466031	2.2e+0
849	2.4561953	9.244e+06	1.685e+05	1.719e+05	-3346.236	-1.985457	1.719e
850	2.4625707	1.247e+07	2.079e+05	2.152e+05	-7252.513	-3.487945	2.152e
851	2.4729875	1.293e+07	2.19e+05	2.218e+05	-2789.147	-1.273559	2.218e
852	2.4851704	1.357e+07	2.148e+05	2.31e+05	-1.62e+04	-7.544988	2.31e+
853	2.4949979	1.259e+07	2.1e+05	2.173e+05	-7289.37	-3.471156	2.173e
854	2.5004348	1.497e+07	2.463e+05	2.517e+05	-5432.119	-2.205787	2.517e
855	2.5036502	1.325e+07	2.184e+05	2.267e+05	-8290.933	-3.796923	2.267e
856	2.5071391	1.407e+07	2.27e+05	2.385e+05	-1.15e+04	-5.062857	2.385e
857	2.5194321	1.271e+07	2.174e+05	2.193e+05	-1840.003	-0.846284	2.193e
858	2.5288409	1.135e+07	1.964e+05	2.005e+05	-4081.45	-2.077992	2.005e
859	2.5368761	9.646e+06	1.765e+05	1.779e+05	-1351.838	-0.765797	1.779e
860	2.5369973	1.041e+07	1.797e+05	1.88e+05	-8316.395	-4.627839	1.88e+
861	2.5378023	1.31e+07	2.149e+05	2.249e+05	-1e+04	-4.659948	2.249e
862	2.5410066	8.564e+06	1.591e+05	1.639e+05	-4771.439	-2.998395	1.639e

863	2.5477322	1.239e+07	2.056e+05	2.151e+05	-9552.473	-4.646869	2.151e
864	2.5515247	1.602e+07	2.609e+05	2.683e+05	-7387.327	-2.831724	2.683e
865	2.5564786	1.378e+07	2.273e+05	2.35e+05	-7681.91	-3.37896	2.35e+
866	2.5606996	1.191e+07	1.989e+05	2.085e+05	-9615.771	-4.834337	2.085e
867	2.5618	1.033e+07	1.826e+05	1.871e+05	-4515.98	-2.472837	1.871e
868	2.5694436	1.204e+07	2.055e+05	2.106e+05	-5009.781	-2.437306	2.106e
869	2.5767559	1.423e+07	2.33e+05	2.418e+05	-8838.747	-3.793791	2.418e
870	2.5782112	1.033e+07	1.83e+05	1.873e+05	-4299.531	-2.349067	1.873e
871	2.584287	1.623e+07	2.546e+05	2.72e+05	-1.74e+04	-6.846175	2.72e+
872	2.5866011	1.306e+07	2.105e+05	2.25e+05	-1.45e+04	-6.873859	2.25e+
873	2.5918785	8.01e+06	1.579e+05	1.573e+05	556.30559	0.3523812	1.573e
874	2.6024644	1.388e+07	2.329e+05	2.37e+05	-4121.728	-1.769712	2.37e+
875	2.6035097	1.48e+07	2.337e+05	2.506e+05	-1.69e+04	-7.231044	2.506e
876	2.6043842	1.242e+07	2.059e+05	2.162e+05	-1.04e+04	-5.028124	2.162e
877	2.6059456	1.455e+07	2.34e+05	2.47e+05	-1.31e+04	-5.582564	2.47e+
878	2.606837	1.052e+07	1.821e+05	1.902e+05	-8112.344	-4.454131	1.902e
879	2.6095671	1.492e+07	2.372e+05	2.525e+05	-1.53e+04	-6.450133	2.525e
880	2.614435	8.355e+06	1.626e+05	1.619e+05	638.31254	0.3926165	1.619e
881	2.6185749	1.338e+07	2.276e+05	2.3e+05	-2400.446	-1.054531	2.3e+0
882	2.6199584	1.462e+07	2.417e+05	2.482e+05	-6510.062	-2.693972	2.482e
883	2.6208247	1.489e+07	2.417e+05	2.522e+05	-1.05e+04	-4.347504	2.522e
884	2.6278161	1.304e+07	2.152e+05	2.254e+05	-1.02e+04	-4.737475	2.254e
885	2.6295876	1.137e+07	1.91e+05	2.02e+05	-1.09e+04	-5.720234	2.02e+
886	2.6324864	1.015e+07	1.836e+05	1.856e+05	-2046.625	-1.114906	1.856e
887	2.6346758	1.034e+07	1.849e+05	1.881e+05	-3169.689	-1.713977	1.881e
888	2.6367961	1.235e+07	2.04e+05	2.157e+05	-1.17e+04	-5.741982	2.157e
889	2.6381214	1.056e+07	1.858e+05	1.912e+05	-5339.388	-2.873228	1.912e
890	2.6405652	1.009e+07	1.801e+05	1.848e+05	-4761.139	-2.644047	1.848e
891	2.6414732	1.46e+07	2.338e+05	2.483e+05	-1.44e+04	-6.173204	2.483e
892	2.6440435	1.246e+07	2.099e+05	2.173e+05	-7364.066	-3.507969	2.173e
893	2.6449566	1.276e+07	2.11e+05	2.215e+05	-1.05e+04	-5.000223	2.215e
894	2.6497392	1.289e+07	2.127e+05	2.235e+05	-1.09e+04	-5.118867	2.235e
895	2.651594	1.563e+07	2.552e+05	2.639e+05	-8731.168	-3.421616	2.639e
896	2.6521736	1.248e+07	2.144e+05	2.177e+05	-3318.671	-1.547755	2.177e
897	2.6571073	1.228e+07	2.04e+05	2.15e+05	-1.1e+04	-5.40313	2.15e+
898	2.6610396	1.304e+07	2.156e+05	2.258e+05	-1.02e+04	-4.740968	2.258e
899	2.6620284	8.337e+06	1.612e+05	1.622e+05	-983.1302	-0.609872	1.622e
900	2.664933	1.252e+07	2.066e+05	2.184e+05	-1.18e+04	-5.702015	2.184e
901	2.6651494	1.187e+07	2.014e+05	2.093e+05	-7899.03	-3.922007	2.093e
902	2.6696438	9.395e+06	1.727e+05	1.76e+05	-3294.585	-1.90762	1.76e+
903	2.6699446	9.814e+06	1.733e+05	1.815e+05	-8225.769	-4.746342	1.815e
904	2.6906449	1.36e+07	2.251e+05	2.343e+05	-9217.474	-4.095597	2.343e
905	2.6940971	8.998e+06	1.701e+05	1.711e+05	-939.7051	-0.552296	1.711e
906	2.6995267	1.666e+07	2.716e+05	2.807e+05	-9091.963	-3.347225	2.807e
907	2.7008528	1.238e+07	2.123e+05	2.169e+05	-4605.179	-2.168755	2.169e
908	2.7034393	1.396e+07	2.295e+05	2.398e+05	-1.03e+04	-4.488667	2.398e
909	2.7035232	1.704e+07	2.782e+05	2.868e+05	-8587.54	-3.086934	2.868e
910	2.7098994	1.179e+07	2.044e+05	2.089e+05	-4506.65	-2.204942	2.089e

911	2.7108529	1.129e+07	1.952e+05	2.02e+05	-6753.301	-3.459403	2.02e+
912	2.7160526	1.315e+07	2.237e+05	2.281e+05	-4390.701	-1.962541	2.281e
913	2.7170695	1.429e+07	2.294e+05	2.448e+05	-1.55e+04	-6.742435	2.448e
914	2.7216259	9.953e+06	1.787e+05	1.84e+05	-5276.491	-2.952318	1.84e+
915	2.7247035	1.466e+07	2.42e+05	2.505e+05	-8503.837	-3.513856	2.505e
916	2.7371193	8.003e+06	1.571e+05	1.587e+05	-1562.534	-0.994412	1.587e
917	2.7381263	1.681e+07	2.755e+05	2.838e+05	-8264.104	-2.999673	2.838e
918	2.7402967	8.647e+06	1.64e+05	1.67e+05	-3067.513	-1.870844	1.67e+
919	2.7449912	1.045e+07	1.886e+05	1.909e+05	-2301.791	-1.220487	1.909e
920	2.7454668	1.197e+07	2.047e+05	2.118e+05	-7068.185	-3.45238	2.118e
921	2.7466263	1.281e+07	2.203e+05	2.238e+05	-3589.587	-1.629773	2.238e
922	2.7495066	1.389e+07	2.325e+05	2.395e+05	-7033.002	-3.025561	2.395e
923	2.7562756	1.188e+07	2.032e+05	2.108e+05	-7572.491	-3.726192	2.108e
924	2.7588545	1.055e+07	1.894e+05	1.925e+05	-3063.198	-1.617312	1.925e
925	2.7672211	8.669e+06	1.689e+05	1.676e+05	1250.5961	0.7405476	1.676e
926	2.7766839	1.68e+07	2.7e+05	2.843e+05	-1.43e+04	-5.306511	2.843e
927	2.7977143	1.206e+07	2.077e+05	2.139e+05	-6209.933	-2.990206	2.139e
928	2.7989866	1.465e+07	2.388e+05	2.516e+05	-1.29e+04	-5.386358	2.516e
929	2.8023396	8.587e+06	1.656e+05	1.67e+05	-1385.994	-0.83706	1.67e+
930	2.8171798	1.485e+07	2.41e+05	2.549e+05	-1.39e+04	-5.748785	2.549e
931	2.8279591	1.048e+07	1.843e+05	1.925e+05	-8191.607	-4.444694	1.925e
932	2.8283448	1.014e+07	1.831e+05	1.878e+05	-4727.131	-2.581852	1.878e
933	2.8287777	1.438e+07	2.413e+05	2.481e+05	-6882.899	-2.85298	2.481e
934	2.8295876	1.242e+07	2.192e+05	2.195e+05	-291.6141	-0.133047	2.195e
935	2.8314487	1.286e+07	2.182e+05	2.258e+05	-7537.257	-3.453977	2.258e
936	2.8319738	9.891e+06	1.848e+05	1.846e+05	199.90238	0.1081925	1.846e
937	2.8383572	1.136e+07	2.05e+05	2.047e+05	246.85966	0.1204215	2.047e
938	2.8401818	1.032e+07	1.902e+05	1.904e+05	-208.6408	-0.109683	1.904e
939	2.8418778	9.72e+06	1.822e+05	1.824e+05	-163.6328	-0.089786	1.824e
940	2.8456132	1.111e+07	2.014e+05	2.014e+05	25.54552	0.0126829	2.014e
941	2.8509852	1.493e+07	2.438e+05	2.567e+05	-1.3e+04	-5.316771	2.567e
942	2.8516104	9.339e+06	1.762e+05	1.775e+05	-1289.322	-0.731885	1.775e
943	2.8565916	8.848e+06	1.683e+05	1.71e+05	-2708.069	-1.608797	1.71e+
944	2.8713486	1.115e+07	1.977e+05	2.023e+05	-4593.904	-2.323275	2.023e
945	2.8733569	1.017e+07	1.847e+05	1.889e+05	-4176.44	-2.261256	1.889e
946	2.8762172	1.288e+07	2.209e+05	2.268e+05	-5906.835	-2.674421	2.268e
947	2.8831321	1.139e+07	2.067e+05	2.057e+05	982.04929	0.4750788	2.057e
948	2.883242	1.01e+07	1.845e+05	1.88e+05	-3562.59	-1.931111	1.88e+
949	2.8847185	9.094e+06	1.734e+05	1.746e+05	-1210.771	-0.698174	1.746e
950	2.890662	1.622e+07	2.63e+05	2.775e+05	-1.45e+04	-5.525889	2.775e
951	2.8927424	1.091e+07	1.938e+05	1.993e+05	-5512.335	-2.844266	1.993e
952	2.8981221	1.222e+07	2.112e+05	2.177e+05	-6475.793	-3.065686	2.177e
953	2.8995814	1.235e+07	2.126e+05	2.196e+05	-6913.667	-3.251377	2.196e
954	2.9028993	1.449e+07	2.48e+05	2.51e+05	-3013.314	-1.215049	2.51e+
955	2.9035388	1.171e+07	2.039e+05	2.105e+05	-6654.288	-3.264027	2.105e
956	2.9067587	1.004e+07	1.861e+05	1.876e+05	-1413.538	-0.759358	1.876e
957	2.9070161	1.081e+07	1.95e+05	1.982e+05	-3144.958	-1.612634	1.982e
958	2.92204	1.205e+07	2.168e+05	2.157e+05	1040.771	0.4801203	2.157e

959	2.9234992	1.023e+07	1.882e+05	1.904e+05	-2235.306	-1.187643	1.904e
960	2.9241075	1.179e+07	2.122e+05	2.12e+05	177.2855	0.0835474	2.12e+
961	2.9301051	1.445e+07	2.415e+05	2.509e+05	-9431.037	-3.904962	2.509e
962	2.9340153	1.246e+07	2.175e+05	2.217e+05	-4161.069	-1.912755	2.217e
963	2.9484992	1.456e+07	2.519e+05	2.529e+05	-953.3431	-0.378389	2.529e
964	2.9592585	1.355e+07	2.286e+05	2.381e+05	-9488.961	-4.150988	2.381e
965	2.9696952	9.052e+06	1.754e+05	1.752e+05	205.40851	0.1171206	1.752e
966	2.9712269	1.398e+07	2.345e+05	2.446e+05	-1.01e+04	-4.324361	2.446e
967	2.9725438	1.168e+07	2.083e+05	2.112e+05	-2855.474	-1.370731	2.112e
968	2.973527	1.205e+07	2.175e+05	2.165e+05	1055.6191	0.4852977	2.165e
969	2.9736922	9.703e+06	1.843e+05	1.84e+05	340.68306	0.1848501	1.84e+
970	2.9776236	9.812e+06	1.862e+05	1.855e+05	729.99748	0.3920226	1.855e
971	2.9790527	8.447e+06	1.671e+05	1.673e+05	-155.7987	-0.09322	1.673e
972	2.9795902	1.094e+07	1.995e+05	2.01e+05	-1510.66	-0.757095	2.01e+
973	2.980295	1.365e+07	2.406e+05	2.399e+05	691.32702	0.2872903	2.399e
974	2.9861944	1.58e+07	2.629e+05	2.728e+05	-9890.866	-3.762142	2.728e
975	2.994165	1.256e+07	2.226e+05	2.241e+05	-1476.757	-0.663326	2.241e
976	2.9973056	1.63e+07	2.8e+05	2.81e+05	-1000.603	-0.35732	2.81e+
977	2.9988227	1.094e+07	2.009e+05	2.013e+05	-467.8155	-0.232889	2.013e
978	2.9988909	9.355e+06	1.804e+05	1.796e+05	779.01601	0.4318209	1.796e
979	3.0007372	1.031e+07	1.881e+05	1.926e+05	-4489.42	-2.386966	1.926e
980	3.0020244	1.246e+07	2.241e+05	2.228e+05	1335.9067	0.5960421	2.228e
981	3.0059463	8.916e+06	1.708e+05	1.738e+05	-3005.048	-1.759054	1.738e
982	3.0067146	9.657e+06	1.804e+05	1.838e+05	-3392.75	-1.880669	1.838e
983	3.0092344	1.103e+07	2.041e+05	2.027e+05	1319.2187	0.6464929	2.027e
984	3.0137562	1.138e+07	2.061e+05	2.077e+05	-1649.939	-0.80066	2.077e
985	3.0237222	1.543e+07	2.673e+05	2.679e+05	-559.1336	-0.20916	2.679e
986	3.0387863	1.29e+07	2.241e+05	2.299e+05	-5826.987	-2.600697	2.299e
987	3.0439901	1.212e+07	2.122e+05	2.187e+05	-6492.73	-3.059934	2.187e
988	3.044543	1.162e+07	2.102e+05	2.115e+05	-1355.011	-0.644779	2.115e
989	3.0534363	1.194e+07	2.165e+05	2.162e+05	237.71594	0.1098062	2.162e
990	3.0567772	1.159e+07	2.052e+05	2.113e+05	-6126.364	-2.985898	2.113e
991	3.0587032	1.23e+07	2.149e+05	2.215e+05	-6573.372	-3.059092	2.215e
992	3.0662284	1.051e+07	1.974e+05	1.963e+05	1071.1362	0.5426797	1.963e
993	3.0739617	1.346e+07	2.391e+05	2.388e+05	239.79763	0.1003008	2.388e
994	3.0781033	8.884e+06	1.732e+05	1.744e+05	-1180.494	-0.681573	1.744e
995	3.0908122	1.146e+07	2.096e+05	2.1e+05	-340.8533	-0.162591	2.1e+0
996	3.1028869	1.205e+07	2.176e+05	2.187e+05	-1140.388	-0.524168	2.187e
997	3.1052582	1.301e+07	2.35e+05	2.327e+05	2255.0526	0.9596092	2.327e
998	3.1142727	1.443e+07	2.482e+05	2.543e+05	-6088.134	-2.453086	2.543e
999	3.1174603	1.043e+07	1.92e+05	1.961e+05	-4095.238	-2.133225	1.961e
1000	3.1205957	1.468e+07	2.604e+05	2.582e+05	2234.593	0.8581552	2.582e
1001	3.1245162	1.037e+07	1.971e+05	1.953e+05	1824.9755	0.9258947	1.953e
1002	3.1276548	1.168e+07	2.116e+05	2.138e+05	-2189.409	-1.034861	2.138e
1003	3.1356476	1.465e+07	2.569e+05	2.581e+05	-1205.042	-0.469157	2.581e
1004	3.1498638	1.255e+07	2.243e+05	2.267e+05	-2409.977	-1.074296	2.267e
1005	3.1506156	1.475e+07	2.539e+05	2.599e+05	-5970.369	-2.351175	2.599e
1006	3.1558932	1.212e+07	2.217e+05	2.206e+05	1100.7958	0.4964674	2.206e

1007	3.1581494	1.068e+07	2.015e+05	2.002e+05	1349.5793	0.6696206	2.002e
1008	3.1633973	8.314e+06	1.69e+05	1.679e+05	1071.687	0.6341301	1.679e
1009	3.1667377	1.033e+07	1.971e+05	1.955e+05	1624.5624	0.8243216	1.955e
1010	3.16847	9.66e+06	1.837e+05	1.862e+05	-2476.311	-1.348081	1.862e
1011	3.1737561	1.43e+07	2.559e+05	2.534e+05	2538.7531	0.9920131	2.534e
1012	3.1794169	1.06e+07	1.964e+05	1.994e+05	-2948.47	-1.501108	1.994e
1013	3.1813947	1.167e+07	2.174e+05	2.146e+05	2840.1151	1.3061395	2.146e
1014	3.1839055	1.47e+07	2.621e+05	2.597e+05	2372.1094	0.9050596	2.597e
1015	3.1935571	8.079e+06	1.645e+05	1.652e+05	-675.4162	-0.410529	1.652e
1016	3.1956497	1.206e+07	2.17e+05	2.204e+05	-3428.833	-1.580451	2.204e
1017	3.1969232	1.171e+07	2.109e+05	2.154e+05	-4580.171	-2.172193	2.154e
1018	3.1970288	1.594e+07	2.817e+05	2.797e+05	2079.1919	0.7379732	2.797e
1019	3.2025074	1.482e+07	2.538e+05	2.621e+05	-8282.712	-3.263011	2.621e
1020	3.205362	1.283e+07	2.303e+05	2.319e+05	-1647.372	-0.715335	2.319e
1021	3.2096421	1.28e+07	2.315e+05	2.316e+05	-65.22582	-0.028174	2.316e
1022	3.2164023	1.165e+07	2.139e+05	2.149e+05	-961.773	-0.449562	2.149e
1023	3.2258337	1.441e+07	2.497e+05	2.561e+05	-6374.832	-2.552555	2.561e
1024	3.2313904	1.175e+07	2.188e+05	2.166e+05	2210.0324	1.0101419	2.166e
1025	3.2397855	9.86e+06	1.898e+05	1.9e+05	-172.0435	-0.090633	1.9e+0
1026	3.2416247	1.412e+07	2.525e+05	2.52e+05	483.72559	0.1915898	2.52e+
1027	3.2426744	1.441e+07	2.586e+05	2.566e+05	2075.556	0.802518	2.566e
1028	3.2455212	1.248e+07	2.278e+05	2.275e+05	333.17839	0.1462695	2.275e
1029	3.2546294	1.149e+07	2.115e+05	2.132e+05	-1663.432	-0.786404	2.132e
1030	3.2648169	1.577e+07	2.724e+05	2.784e+05	-6012.507	-2.207324	2.784e
1031	3.2694258	1.082e+07	2.004e+05	2.04e+05	-3582.514	-1.787742	2.04e+
1032	3.2718993	1.344e+07	2.424e+05	2.422e+05	114.50395	0.0472453	2.422e
1033	3.2827291	1.466e+07	2.618e+05	2.613e+05	552.09617	0.2108795	2.613e
1034	3.2848604	8.801e+06	1.782e+05	1.762e+05	2002.486	1.1239943	1.762e
1035	3.2890902	1.424e+07	2.584e+05	2.548e+05	3550.5835	1.374291	2.548e
1036	3.2896881	1.328e+07	2.441e+05	2.403e+05	3817.5045	1.5639818	2.403e
1037	3.291764	1.025e+07	1.993e+05	1.962e+05	3047.2181	1.5290264	1.962e
1038	3.3237507	1.246e+07	2.268e+05	2.286e+05	-1843.452	-0.812832	2.286e
1039	3.3243949	9.595e+06	1.852e+05	1.876e+05	-2391.044	-1.290801	1.876e
1040	3.366911	1.423e+07	2.522e+05	2.563e+05	-4113.428	-1.631004	2.563e
1041	3.3999317	1.369e+07	2.457e+05	2.487e+05	-3043.059	-1.238655	2.487e
1042	3.4092593	1.034e+07	2.021e+05	1.994e+05	2657.3657	1.3149079	1.994e
1043	3.4186878	1.303e+07	2.396e+05	2.39e+05	605.29499	0.2526451	2.39e+
1044	3.4252836	1.32e+07	2.401e+05	2.417e+05	-1550.534	-0.645771	2.417e
1045	3.4258775	1.016e+07	1.948e+05	1.972e+05	-2442.57	-1.25418	1.972e
1046	3.4276221	1.083e+07	2.077e+05	2.068e+05	898.69815	0.4327583	2.068e
1047	3.4297747	1.031e+07	2.029e+05	1.993e+05	3637.2645	1.7922277	1.993e
1048	3.4454926	1.441e+07	2.587e+05	2.609e+05	-2212.826	-0.855504	2.609e
1049	3.4464172	1.455e+07	2.683e+05	2.63e+05	5322.9924	1.9839193	2.63e+
1050	3.4622848	1.615e+07	2.946e+05	2.891e+05	5417.3064	1.8391359	2.891e
1051	3.4750949	9.621e+06	1.899e+05	1.903e+05	-484.4189	-0.255149	1.903e
1052	3.4755307	1.35e+07	2.439e+05	2.473e+05	-3439.281	-1.410383	2.473e
1053	3.482846	1.357e+07	2.528e+05	2.485e+05	4248.008	1.680652	2.485e
1054	3.4847276	1.167e+07	2.219e+05	2.2e+05	1955.7283	0.8811844	2.2e+0

1055	3.4903377	1.4e+07	2.605e+05	2.554e+05	5124.345	1.966874	2.554e
1056	3.5134077	9.092e+06	1.843e+05	1.835e+05	791.29991	0.4292976	1.835e
1057	3.5136036	1.007e+07	1.955e+05	1.973e+05	-1742.614	-0.89126	1.973e
1058	3.5141228	8.941e+06	1.841e+05	1.814e+05	2612.7141	1.4194785	1.814e
1059	3.5208855	1.382e+07	2.539e+05	2.531e+05	758.74099	0.2988334	2.531e
1060	3.5253438	1.448e+07	2.656e+05	2.637e+05	1939.2711	0.7301471	2.637e
1061	3.5472774	1.588e+07	2.838e+05	2.867e+05	-2874.841	-1.012967	2.867e
1062	3.5683917	1.314e+07	2.419e+05	2.436e+05	-1692.421	-0.699551	2.436e
1063	3.5730492	1.245e+07	2.328e+05	2.333e+05	-538.6776	-0.231439	2.333e
1064	3.5814504	1.482e+07	2.683e+05	2.704e+05	-2069.127	-0.771194	2.704e
1065	3.5857276	1.016e+07	1.997e+05	1.998e+05	-47.02611	-0.023544	1.998e
1066	3.5886918	1.124e+07	2.158e+05	2.155e+05	387.22623	0.1794053	2.155e
1067	3.589747	1.425e+07	2.657e+05	2.613e+05	4345.7323	1.6356709	2.613e
1068	3.5961731	1.52e+07	2.746e+05	2.767e+05	-2163.84	-0.788068	2.767e
1069	3.5996221	1.223e+07	2.349e+05	2.304e+05	4515.2722	1.9223252	2.304e
1070	3.6071457	1.4e+07	2.642e+05	2.579e+05	6325.0286	2.3937174	2.579e
1071	3.6081241	1.584e+07	2.939e+05	2.875e+05	6369.9646	2.1674084	2.875e
1072	3.6144076	1.031e+07	2.051e+05	2.024e+05	2710.401	1.3211865	2.024e
1073	3.6161764	1.211e+07	2.317e+05	2.289e+05	2741.7008	1.1835149	2.289e
1074	3.6167484	1.319e+07	2.506e+05	2.454e+05	5226.1276	2.0851274	2.454e
1075	3.6199674	1.634e+07	3.032e+05	2.962e+05	7049.78	2.3248773	2.962e
1076	3.6335097	1.395e+07	2.611e+05	2.576e+05	3514.2655	1.3459259	2.576e
1077	3.6366683	1.312e+07	2.458e+05	2.447e+05	1116.5334	0.454199	2.447e
1078	3.6396171	1.47e+07	2.745e+05	2.697e+05	4814.8334	1.753751	2.697e
1079	3.6425254	1.638e+07	3.03e+05	2.975e+05	5571.3351	1.8385724	2.975e
1080	3.6674872	8.01e+06	1.695e+05	1.708e+05	-1337.835	-0.789441	1.708e
1081	3.6869301	1.619e+07	3.013e+05	2.952e+05	6089.1191	2.0206947	2.952e
1082	3.6916251	8.081e+06	1.724e+05	1.721e+05	260.03726	0.1508384	1.721e
1083	3.693092	9.759e+06	1.996e+05	1.958e+05	3785.4658	1.8968022	1.958e
1084	3.6943778	1.265e+07	2.396e+05	2.386e+05	985.05735	0.4111478	2.386e
1085	3.7037807	1.381e+07	2.626e+05	2.569e+05	5708.4997	2.1740221	2.569e
1086	3.7041512	1.127e+07	2.181e+05	2.18e+05	157.88989	0.0723906	2.18e+
1087	3.7046885	9.414e+06	1.92e+05	1.91e+05	968.86587	0.5045888	1.91e+
1088	3.7303282	1.343e+07	2.519e+05	2.515e+05	339.97408	0.1349857	2.515e
1089	3.7500259	1.661e+07	3.039e+05	3.04e+05	-70.69487	-0.02326	3.04e+
1090	3.7509454	1.415e+07	2.68e+05	2.633e+05	4674.7577	1.744492	2.633e
1091	3.7602904	1.587e+07	2.998e+05	2.917e+05	8071.6544	2.6926529	2.917e
1092	3.7634722	1.577e+07	2.933e+05	2.901e+05	3213.9362	1.095641	2.901e
1093	3.7675304	1.177e+07	2.326e+05	2.267e+05	5915.7828	2.5434443	2.267e
1094	3.7766344	1.123e+07	2.216e+05	2.187e+05	2887.8402	1.3030147	2.187e
1095	3.7822636	1.587e+07	2.926e+05	2.922e+05	433.82986	0.1482475	2.922e
1096	3.7836618	1.249e+07	2.443e+05	2.379e+05	6365.2408	2.6057537	2.379e
1097	3.8148689	9.924e+06	2.008e+05	2.002e+05	594.55603	0.2961612	2.002e
1098	3.8179377	1.341e+07	2.589e+05	2.53e+05	5957.0156	2.3006306	2.53e+
1099	3.8260822	8.072e+06	1.731e+05	1.739e+05	-801.9708	-0.463205	1.739e
1100	3.8303699	1.346e+07	2.552e+05	2.54e+05	1248.6223	0.4892095	2.54e+
1101	3.8357868	1.599e+07	2.99e+05	2.956e+05	3392.6567	1.1346574	2.956e
1102	3.8459315	1.545e+07	2.914e+05	2.867e+05	4646.1553	1.5945471	2.867e

1103	3.847956	1.145e+07	2.273e+05	2.233e+05	3940.5361	1.7337394	2.233e
1104	3.8490373	1.607e+07	2.992e+05	2.973e+05	1952.8253	0.652654	2.973e
1105	3.8595654	1.443e+07	2.738e+05	2.703e+05	3472.0617	1.2683099	2.703e
1106	3.8722539	1.044e+07	2.137e+05	2.087e+05	5013.4854	2.3462329	2.087e
1107	3.8729884	1.543e+07	2.948e+05	2.87e+05	7760.1761	2.632307	2.87e+
1108	3.8731764	1.281e+07	2.506e+05	2.446e+05	5927.3411	2.3657007	2.446e
1109	3.8767134	1.377e+07	2.64e+05	2.6e+05	4006.7307	1.5179197	2.6e+0
1110	3.8837328	1.487e+07	2.806e+05	2.779e+05	2640.3796	0.9410239	2.779e
1111	3.8872098	1.039e+07	2.083e+05	2.081e+05	139.15742	0.0668144	2.081e
1112	3.8953504	1.23e+07	2.425e+05	2.372e+05	5241.5376	2.1618598	2.372e
1113	3.9044799	1.451e+07	2.795e+05	2.726e+05	6994.0127	2.5018971	2.726e
1114	3.9077716	1.413e+07	2.705e+05	2.665e+05	4015.6318	1.4846223	2.665e
1115	3.916889	1.45e+07	2.773e+05	2.727e+05	4643.8418	1.6745957	2.727e
1116	3.9272426	1.66e+07	3.161e+05	3.083e+05	7827.4768	2.4762954	3.083e
1117	3.9280045	1.669e+07	3.1e+05	3.098e+05	138.62453	0.04472	3.098e
1118	3.936538	1.331e+07	2.616e+05	2.539e+05	7679.968	2.9357092	2.539e
1119	3.9401183	9.161e+06	1.94e+05	1.911e+05	2926.6908	1.5082884	1.911e
1120	3.9467197	1.374e+07	2.665e+05	2.609e+05	5556.3249	2.0851103	2.609e
1121	3.9471459	1.663e+07	3.186e+05	3.093e+05	9344.2115	2.9324868	3.093e
1122	3.949262	1.026e+07	2.077e+05	2.074e+05	386.43482	0.1860216	2.074e
1123	3.951534	1.254e+07	2.456e+05	2.42e+05	3608.6605	1.4691164	2.42e+
1124	3.9644697	1.663e+07	3.149e+05	3.097e+05	5229.2994	1.6604031	3.097e
1125	3.9942321	8.261e+06	1.787e+05	1.79e+05	-336.7099	-0.188443	1.79e+
1126	3.9944608	1.348e+07	2.598e+05	2.577e+05	2040.5712	0.7855096	2.577e
1127	4.0009607	1.077e+07	2.178e+05	2.158e+05	2027.6608	0.9309447	2.158e
1128	4.0037247	1.143e+07	2.294e+05	2.259e+05	3509.885	1.5301943	2.259e
1129	4.0111684	1.559e+07	2.988e+05	2.929e+05	5917.7913	1.9802402	2.929e
1130	4.0132375	1.553e+07	3.002e+05	2.92e+05	8224.7798	2.7396852	2.92e+
1131	4.0140534	1.463e+07	2.791e+05	2.77e+05	2094.8439	0.7506412	2.77e+
1132	4.024954	1.506e+07	2.92e+05	2.844e+05	7541.0858	2.5829706	2.844e
1133	4.0281855	1.692e+07	3.235e+05	3.163e+05	7191.5617	2.2229149	3.163e
1134	4.0366678	1.064e+07	2.187e+05	2.145e+05	4157.1874	1.9012289	2.145e
1135	4.0377982	1.216e+07	2.398e+05	2.377e+05	2118.6181	0.8833737	2.377e
1136	4.0616006	1.641e+07	3.149e+05	3.083e+05	6591.8874	2.0930559	3.083e
1137	4.0661375	1.169e+07	2.337e+05	2.31e+05	2681.4527	1.147633	2.31e+
1138	4.0681487	1.081e+07	2.182e+05	2.176e+05	609.9426	0.2795632	2.176e
1139	4.0757856	1.073e+07	2.18e+05	2.165e+05	1534.8289	0.7040498	2.165e
1140	4.0786406	1.08e+07	2.196e+05	2.177e+05	1933.2226	0.8802073	2.177e
1141	4.0838213	1.443e+07	2.812e+05	2.752e+05	6026.9601	2.1433414	2.752e
1142	4.0875507	1.354e+07	2.692e+05	2.606e+05	8584.8895	3.1889703	2.606e
1143	4.0888248	1.545e+07	2.965e+05	2.924e+05	4191.4764	1.4134399	2.924e
1144	4.0892231	1.307e+07	2.572e+05	2.532e+05	3958.9707	1.5394834	2.532e
1145	4.0901639	1.663e+07	3.186e+05	3.128e+05	5803.4266	1.8215751	3.128e
1146	4.1047981	1.027e+07	2.134e+05	2.102e+05	3234.9439	1.5159897	2.102e
1147	4.1223769	8.156e+06	1.784e+05	1.794e+05	-960.189	-0.538198	1.794e
1148	4.1286537	1.193e+07	2.425e+05	2.359e+05	6515.4809	2.6873344	2.359e
1149	4.1300238	1.633e+07	3.15e+05	3.087e+05	6319.4428	2.0063379	3.087e
1150	4.149169	1.473e+07	2.895e+05	2.816e+05	7940.1245	2.7425086	2.816e

1151	4.1575448	1.358e+07	2.658e+05	2.628e+05	3042.8947	1.1445994	2.628e
1152	4.1780309	1.073e+07	2.216e+05	2.184e+05	3201.1781	1.4448254	2.184e
1153	4.1852871	1.256e+07	2.52e+05	2.469e+05	5116.4875	2.030358	2.469e
1154	4.1909088	1.246e+07	2.517e+05	2.454e+05	6253.486	2.4849416	2.454e
1155	4.1970687	1.111e+07	2.269e+05	2.244e+05	2527.7365	1.1138406	2.244e
1156	4.2030987	9.482e+06	2.02e+05	1.999e+05	2093.41	1.0361867	1.999e
1157	4.2119935	1.121e+07	2.284e+05	2.263e+05	2069.218	0.906015	2.263e
1158	4.2162111	8.467e+06	1.847e+05	1.852e+05	-521.3297	-0.282254	1.852e
1159	4.2234197	1.628e+07	3.18e+05	3.1e+05	8033.9004	2.5261258	3.1e+0
1160	4.2287766	1.077e+07	2.229e+05	2.198e+05	3025.2363	1.3575103	2.198e
1161	4.2344891	1.434e+07	2.813e+05	2.769e+05	4429.7815	1.5745156	2.769e
1162	4.2558149	1.037e+07	2.181e+05	2.142e+05	3918.0796	1.7963459	2.142e
1163	4.2572051	1.157e+07	2.36e+05	2.327e+05	3250.6095	1.3776021	2.327e
1164	4.2601623	1.353e+07	2.677e+05	2.641e+05	3629.4383	1.3558547	2.641e
1165	4.2610843	9.286e+06	1.992e+05	1.979e+05	1234.4777	0.6198074	1.979e
1166	4.264105	1.593e+07	3.09e+05	3.048e+05	4158.9949	1.3460433	3.048e
1167	4.2695794	8.746e+06	1.928e+05	1.901e+05	2763.1841	1.432867	1.901e
1168	4.2726959	1.529e+07	3.016e+05	2.94e+05	7650.1625	2.5362041	2.94e+
1169	4.2767591	1.428e+07	2.843e+05	2.769e+05	7332.6739	2.5795789	2.769e
1170	4.2772652	1.676e+07	3.236e+05	3.199e+05	3724.6028	1.1508819	3.199e
1171	4.2923082	1.405e+07	2.815e+05	2.734e+05	8035.2682	2.8548764	2.734e
1172	4.30205	1.2e+07	2.443e+05	2.402e+05	4066.5778	1.664886	2.402e
1173	4.3102349	1.517e+07	2.989e+05	2.928e+05	6091.563	2.0379016	2.928e
1174	4.3118236	1.695e+07	3.34e+05	3.241e+05	9958.9397	2.9816119	3.241e
1175	4.3207791	1.294e+07	2.619e+05	2.557e+05	6156.7681	2.3508697	2.557e
1176	4.3301829	1.405e+07	2.829e+05	2.741e+05	8816.3591	3.1160954	2.741e
1177	4.3453779	1.429e+07	2.88e+05	2.786e+05	9433.7729	3.2753021	2.786e
1178	4.3514635	1.286e+07	2.587e+05	2.55e+05	3710.9881	1.4342902	2.55e+
1179	4.3551407	1.676e+07	3.282e+05	3.217e+05	6539.4797	1.9923152	3.217e
1180	4.3557065	1.215e+07	2.511e+05	2.437e+05	7421.8734	2.9555878	2.437e
1181	4.3562151	1.693e+07	3.298e+05	3.248e+05	5009.0481	1.5187598	3.248e
1182	4.359936	1.37e+07	2.732e+05	2.689e+05	4219.6767	1.5447683	2.689e
1183	4.3699137	1.022e+07	2.146e+05	2.137e+05	857.80458	0.399777	2.137e
1184	4.3711665	1.263e+07	2.595e+05	2.517e+05	7871.8235	3.0329313	2.517e
1185	4.3714728	1.131e+07	2.324e+05	2.307e+05	1695.8473	0.729788	2.307e
1186	4.3815197	1.265e+07	2.566e+05	2.521e+05	4513.0433	1.7584703	2.521e
1187	4.3868376	1.539e+07	3.032e+05	2.982e+05	4950.3869	1.6328679	2.982e
1188	4.3931817	1.349e+07	2.746e+05	2.663e+05	8311.0411	3.026978	2.663e
1189	4.4000141	1.642e+07	3.244e+05	3.167e+05	7693.9353	2.3716752	3.167e
1190	4.4125598	1.476e+07	2.931e+05	2.88e+05	5018.4821	1.7124956	2.88e+
1191	4.4145062	1.665e+07	3.277e+05	3.212e+05	6491.2216	1.9810826	3.212e
1192	4.4264559	1.532e+07	3.037e+05	2.98e+05	5690.1172	1.8734108	2.98e+
1193	4.4287351	1.409e+07	2.815e+05	2.77e+05	4490.3044	1.5950409	2.77e+
1194	4.4311957	1.495e+07	2.97e+05	2.917e+05	5390.4238	1.8146852	2.917e
1195	4.438767	1.411e+07	2.827e+05	2.775e+05	5192.1365	1.8365484	2.775e
1196	4.447524	1.353e+07	2.748e+05	2.679e+05	6917.3768	2.517205	2.679e
1197	4.4501054	8.81e+06	1.929e+05	1.937e+05	-770.5063	-0.399393	1.937e
1198	4.450413	1.173e+07	2.419e+05	2.386e+05	3319.8935	1.3721673	2.386e

1199	4.4590618	1.386e+07	2.813e+05	2.737e+05	7602.9943	2.7032502	2.737e
1200	4.4670427	1.583e+07	3.178e+05	3.079e+05	9902.3764	3.1157904	3.079e
1201	4.4772845	8.948e+06	1.965e+05	1.961e+05	330.30843	0.168119	1.961e
1202	4.4794678	9.853e+06	2.111e+05	2.099e+05	1219.0155	0.5774384	2.099e
1203	4.4827509	1.226e+07	2.508e+05	2.477e+05	3096.6798	1.2346765	2.477e
1204	4.4916583	1.13e+07	2.376e+05	2.325e+05	5022.0107	2.1140699	2.325e
1205	4.507247	1.398e+07	2.861e+05	2.768e+05	9282.4648	3.2449165	2.768e
1206	4.520302	1.599e+07	3.176e+05	3.12e+05	5623.9141	1.7707374	3.12e+
1207	4.521378	1.211e+07	2.488e+05	2.46e+05	2723.3925	1.0947399	2.46e+
1208	4.5347725	1.078e+07	2.299e+05	2.251e+05	4863.7834	2.1153345	2.251e
1209	4.5356124	1.679e+07	3.353e+05	3.268e+05	8482.6711	2.5301859	3.268e
1210	4.5475482	8.064e+06	1.851e+05	1.84e+05	1092.4436	0.5902858	1.84e+
1211	4.5966812	1.64e+07	3.257e+05	3.212e+05	4551.4692	1.3973729	3.212e
1212	4.6019477	1.658e+07	3.345e+05	3.245e+05	9997.2548	2.9890189	3.245e
1213	4.6124167	1.291e+07	2.654e+05	2.608e+05	4587.9617	1.7288474	2.608e
1214	4.6208589	9.606e+06	2.104e+05	2.083e+05	2069.0733	0.9836055	2.083e
1215	4.6326328	1.412e+07	2.883e+05	2.817e+05	6537.2655	2.2678827	2.817e
1216	4.6343755	1.489e+07	3.026e+05	2.951e+05	7578.5028	2.5042145	2.951e
1217	4.6367402	1.636e+07	3.264e+05	3.212e+05	5154.2429	1.5791589	3.212e
1218	4.6382557	1.37e+07	2.809e+05	2.746e+05	6297.0717	2.2420414	2.746e
1219	4.6419073	1.112e+07	2.355e+05	2.322e+05	3217.981	1.3666951	2.322e
1220	4.6469897	1.322e+07	2.707e+05	2.668e+05	3952.7413	1.4600834	2.668e
1221	4.6492629	1.65e+07	3.331e+05	3.241e+05	9036.0399	2.7126488	3.241e
1222	4.712341	9.406e+06	2.087e+05	2.066e+05	2158.4011	1.0340664	2.066e
1223	4.7165394	1.516e+07	3.076e+05	3.015e+05	6032.454	1.9612965	3.015e
1224	4.7203338	1.16e+07	2.456e+05	2.413e+05	4304.4979	1.7526376	2.413e
1225	4.7286283	1.575e+07	3.224e+05	3.123e+05	1.008e+04	3.1281227	3.123e
1226	4.7348485	1.553e+07	3.163e+05	3.086e+05	7747.0741	2.4490733	3.086e
1227	4.7369462	1.179e+07	2.506e+05	2.448e+05	5796.7632	2.3133816	2.448e
1228	4.7451029	1.107e+07	2.346e+05	2.332e+05	1458.8497	0.6217406	2.332e
1229	4.7452013	8.677e+06	1.942e+05	1.959e+05	-1648.958	-0.848954	1.959e
1230	4.7522043	1.063e+07	2.303e+05	2.263e+05	4013.1862	1.7426649	2.263e
1231	4.7575279	1.159e+07	2.468e+05	2.419e+05	4974.8865	2.0154	2.419e
1232	4.773791	1.5e+07	3.091e+05	2.999e+05	9175.2933	2.9684272	2.999e
1233	4.7750471	8.612e+06	1.951e+05	1.953e+05	-231.4253	-0.118638	1.953e
1234	4.7948686	1.438e+07	2.942e+05	2.894e+05	4750.3757	1.6147219	2.894e
1235	4.8048233	1.512e+07	3.116e+05	3.027e+05	8866.6792	2.8456775	3.027e
1236	4.8287133	1.217e+07	2.578e+05	2.526e+05	5184.559	2.0114114	2.526e
1237	4.830711	1.026e+07	2.237e+05	2.217e+05	1987.4886	0.8884503	2.217e
1238	4.8397466	1.46e+07	2.996e+05	2.943e+05	5280.2441	1.7625828	2.943e
1239	4.842972	1.079e+07	2.34e+05	2.303e+05	3701.9874	1.5819656	2.303e
1240	4.8563595	1.643e+07	3.375e+05	3.276e+05	9886.8205	2.9294625	3.276e
1241	4.8682608	9.592e+06	2.13e+05	2.117e+05	1306.4214	0.6132172	2.117e
1242	4.8786014	1.451e+07	3.01e+05	2.934e+05	7543.2634	2.5062494	2.934e
1243	4.8881447	1.335e+07	2.799e+05	2.734e+05	6470.7607	2.312015	2.734e
1244	4.910228	1.469e+07	3.018e+05	2.972e+05	4592.1859	1.5218045	2.972e
1245	4.9317896	1.559e+07	3.2e+05	3.138e+05	6165.9544	1.926994	3.138e
1246	4.9320637	9.423e+06	2.093e+05	2.1e+05	-719.9385	-0.343999	2.1e+0

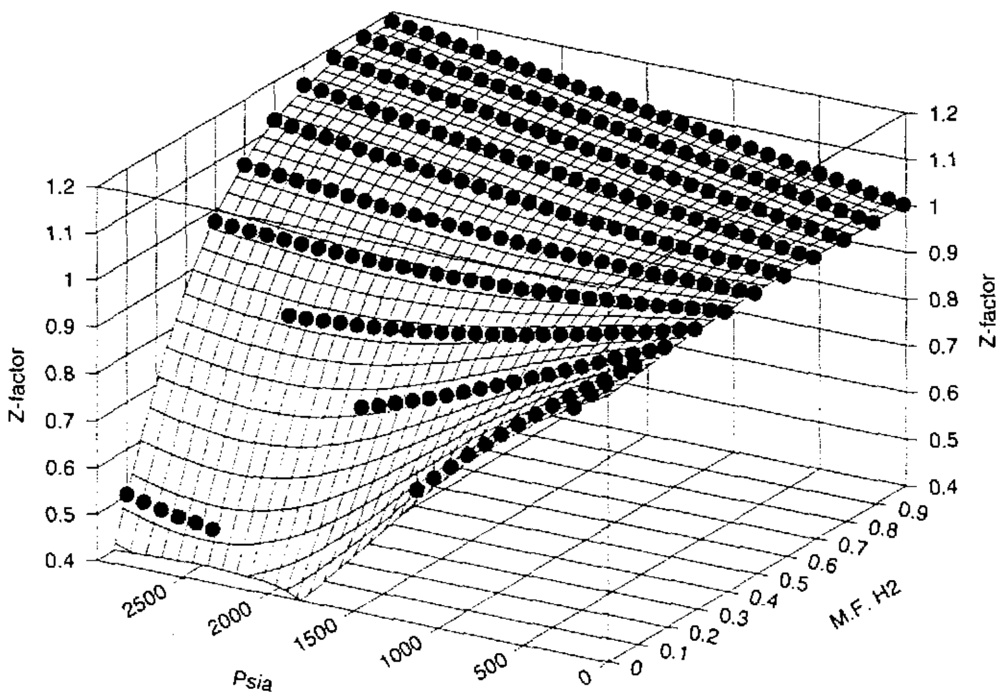
1247	4.933633	1.32e+07	2.791e+05	2.718e+05	7333.3523	2.6275638	2.718e
1248	4.9504811	1.258e+07	2.648e+05	2.616e+05	3259.301	1.2307409	2.616e
1249	4.9711512	1.192e+07	2.561e+05	2.508e+05	5308.7268	2.0728086	2.508e
1250	4.9774999	1.568e+07	3.219e+05	3.165e+05	5391.1161	1.6747712	3.165e
1251	4.9851917	1.203e+07	2.566e+05	2.528e+05	3808.3664	1.4839405	2.528e
1252	4.9935121	1.519e+07	3.157e+05	3.08e+05	7785.5598	2.4657953	3.08e+
1253	4.9993606	1.605e+07	3.287e+05	3.237e+05	4980.2476	1.5152548	3.237e
1254	5.0226229	1.14e+07	2.477e+05	2.431e+05	4607.8662	1.8600371	2.431e
1255	5.0414072	1.296e+07	2.734e+05	2.696e+05	3832.166	1.401688	2.696e
1256	5.0483117	8.845e+06	2.005e+05	2.026e+05	-2017.513	-1.005991	2.026e
1257	5.0736134	1.216e+07	2.606e+05	2.566e+05	4025.3798	1.5445356	2.566e
1258	5.0773263	1.138e+07	2.469e+05	2.436e+05	3308.8656	1.3401777	2.436e
1259	5.0819602	1.014e+07	2.256e+05	2.235e+05	2021.1237	0.896068	2.235e
1260	5.0892594	1.44e+07	3.025e+05	2.957e+05	6807.1176	2.250397	2.957e
1261	5.0936134	1.049e+07	2.317e+05	2.293e+05	2391.6027	1.0320697	2.293e
1262	5.1269579	1.215e+07	2.596e+05	2.572e+05	2384.0622	0.9182989	2.572e
1263	5.1285963	1.152e+07	2.498e+05	2.467e+05	3130.1037	1.2528594	2.467e
1264	5.1350258	1.297e+07	2.774e+05	2.715e+05	5966.8381	2.1507845	2.715e
1265	5.1435535	1.244e+07	2.65e+05	2.624e+05	2541.1472	0.9590563	2.624e
1266	5.1643326	1.584e+07	3.292e+05	3.232e+05	6008.1184	1.8248366	3.232e
1267	5.165983	1.156e+07	2.51e+05	2.48e+05	2942.6052	1.1724902	2.48e+
1268	5.1688616	9.256e+06	2.105e+05	2.106e+05	-111.5567	-0.052994	2.106e
1269	5.1689541	1.183e+07	2.544e+05	2.525e+05	1832.6467	0.7204717	2.525e
1270	5.1700079	1e+07	2.24e+05	2.226e+05	1398.7373	0.6245587	2.226e
1271	5.1767999	1.26e+07	2.69e+05	2.657e+05	3285.3388	1.2214186	2.657e
1272	5.1986346	1.356e+07	2.888e+05	2.827e+05	6094.3744	2.1103254	2.827e
1273	5.2033237	1.521e+07	3.177e+05	3.123e+05	5310.3744	1.6717559	3.123e
1274	5.2051698	8.633e+06	1.986e+05	2.013e+05	-2704.751	-1.362105	2.013e
1275	5.2081615	1.214e+07	2.622e+05	2.585e+05	3686.935	1.4062563	2.585e
1276	5.2242756	1.472e+07	3.107e+05	3.039e+05	6806.8931	2.1907049	3.039e
1277	5.2246591	1.518e+07	3.194e+05	3.124e+05	7070.1819	2.2132826	3.124e
1278	5.225439	1.577e+07	3.31e+05	3.232e+05	7838.958	2.3679648	3.232e
1279	5.227866	1.389e+07	2.933e+05	2.891e+05	4253.1148	1.4498654	2.891e
1280	5.2290342	1.037e+07	2.298e+05	2.293e+05	509.18501	0.2215463	2.293e
1281	5.2311774	1.692e+07	3.509e+05	3.45e+05	5907.4799	1.6835723	3.45e+
1282	5.2349318	1.038e+07	2.309e+05	2.296e+05	1311.3307	0.5679927	2.296e
1283	5.2464769	1.617e+07	3.361e+05	3.311e+05	5027.1715	1.4955616	3.311e
1284	5.253075	1.683e+07	3.504e+05	3.437e+05	6617.0906	1.8886719	3.437e
1285	5.2659103	1.688e+07	3.496e+05	3.451e+05	4508.9386	1.2897113	3.451e
1286	5.2692783	1.427e+07	3.028e+05	2.966e+05	6215.3886	2.0525959	2.966e
1287	5.2870849	1.309e+07	2.793e+05	2.76e+05	3291.6427	1.1784331	2.76e+
1288	5.2908077	1.601e+07	3.341e+05	3.29e+05	5156.4697	1.5432499	3.29e+
1289	5.3237643	1.327e+07	2.844e+05	2.798e+05	4574.9201	1.6089024	2.798e
1290	5.33779	1.431e+07	3.048e+05	2.986e+05	6210.0208	2.0374262	2.986e
1291	5.3412536	1.203e+07	2.624e+05	2.586e+05	3791.2863	1.4450699	2.586e
1292	5.3465306	9.945e+06	2.244e+05	2.24e+05	403.41825	0.1797411	2.24e+
1293	5.3526029	1.446e+07	3.067e+05	3.015e+05	5153.3654	1.6803335	3.015e
1294	5.3585016	1.676e+07	3.487e+05	3.446e+05	4118.7876	1.1811987	3.446e

1295	5.3710043	1.127e+07	2.478e+05	2.463e+05	1490.7884	0.6017083	2.463e
1296	5.3723314	1.473e+07	3.111e+05	3.069e+05	4272.7174	1.3732211	3.069e
1297	5.3743288	1.38e+07	2.941e+05	2.901e+05	3926.7795	1.3353509	2.901e
1298	5.3855884	1.618e+07	3.411e+05	3.341e+05	7007.5133	2.0543774	3.341e
1299	5.3909498	1.072e+07	2.379e+05	2.373e+05	631.4842	0.265394	2.373e
1300	5.3942807	1.185e+07	2.596e+05	2.564e+05	3195.2888	1.230714	2.564e
1301	5.4131955	1.59e+07	3.336e+05	3.293e+05	4291.8163	1.2865181	3.293e
1302	5.4193125	1.441e+07	3.065e+05	3.018e+05	4688.9593	1.5299728	3.018e
1303	5.4200635	1.209e+07	2.619e+05	2.609e+05	1007.5444	0.3846748	2.609e
1304	5.4247629	1.61e+07	3.408e+05	3.332e+05	7536.7529	2.2115938	3.332e
1305	5.4323728	8.241e+06	1.938e+05	1.978e+05	-4083.404	-2.107401	1.978e
1306	5.4692936	1.36e+07	2.922e+05	2.881e+05	4071.5508	1.3933376	2.881e
1307	5.5080744	9.276e+06	2.119e+05	2.153e+05	-3306.883	-1.560219	2.153e
1308	5.5088373	1.435e+07	3.064e+05	3.022e+05	4150.6079	1.3547832	3.022e
1309	5.5099793	1.084e+07	2.4e+05	2.409e+05	-972.5002	-0.405289	2.409e
1310	5.5333655	1.094e+07	2.442e+05	2.431e+05	1172.8432	0.4801871	2.431e
1311	5.5343224	1.443e+07	3.071e+05	3.042e+05	2881.575	0.9382787	3.042e
1312	5.5373964	1.383e+07	2.976e+05	2.933e+05	4316.5234	1.4505355	2.933e
1313	5.5469023	8.872e+06	2.064e+05	2.092e+05	-2842.422	-1.377345	2.092e
1314	5.549607	1.482e+07	3.162e+05	3.117e+05	4473.1194	1.4148585	3.117e
1315	5.5766663	1.485e+07	3.161e+05	3.127e+05	3461.9283	1.0950471	3.127e
1316	5.5852453	1.419e+07	3.054e+05	3.007e+05	4658.9645	1.5257054	3.007e
1317	5.5964206	9.565e+06	2.181e+05	2.21e+05	-2908.66	-1.333486	2.21e+
1318	5.6151554	1.364e+07	2.957e+05	2.912e+05	4540.3985	1.5354511	2.912e
1319	5.6232381	1.689e+07	3.572e+05	3.523e+05	4871.8281	1.3638315	3.523e
1320	5.6525782	1.432e+07	3.073e+05	3.041e+05	3135.2325	1.0203848	3.041e
1321	5.6535052	1.487e+07	3.193e+05	3.143e+05	5026.6973	1.5740882	3.143e
1322	5.716781	1.03e+07	2.322e+05	2.347e+05	-2495.138	-1.074472	2.347e
1323	5.7851686	1.449e+07	3.118e+05	3.094e+05	2437.9287	0.7818397	3.094e
1324	5.7894995	1.07e+07	2.399e+05	2.422e+05	-2372.474	-0.989114	2.422e
1325	5.7934685	9.83e+06	2.257e+05	2.277e+05	-2001.777	-0.886749	2.277e
1326	5.8684098	1.484e+07	3.191e+05	3.174e+05	1727.9331	0.5415005	3.174e
1327	5.8888861	1.692e+07	3.626e+05	3.58e+05	4608.6293	1.2710561	3.58e+
1328	5.8930419	1.295e+07	2.83e+05	2.829e+05	133.56477	0.0471895	2.829e
1329	5.8932953	1.061e+07	2.392e+05	2.421e+05	-2877.532	-1.202964	2.421e
1330	5.9142602	1.601e+07	3.451e+05	3.405e+05	4618.348	1.3383766	3.405e
1331	5.9365496	8.349e+06	1.997e+05	2.05e+05	-5301.739	-2.655064	2.05e+
1332	5.9513934	1.242e+07	2.743e+05	2.742e+05	117.69349	0.0429038	2.742e
1333	5.9739653	1.28e+07	2.821e+05	2.813e+05	868.53642	0.3078578	2.813e
1334	6.0185416	8.088e+06	1.944e+05	2.016e+05	-7118.876	-3.661287	2.016e
1335	6.0333614	1.366e+07	2.998e+05	2.978e+05	2025.3981	0.6755977	2.978e
1336	6.0608426	1.579e+07	3.398e+05	3.385e+05	1338.243	0.393806	3.385e
1337	6.1215357	8.671e+06	2.052e+05	2.121e+05	-6842.343	-3.334214	2.121e
1338	6.1304903	1.213e+07	2.697e+05	2.714e+05	-1626.315	-0.602904	2.714e
1339	6.1317652	1.429e+07	3.118e+05	3.109e+05	811.2266	0.2602116	3.109e
1340	6.1434963	1.436e+07	3.133e+05	3.123e+05	1003.9035	0.3204053	3.123e
1341	6.1576998	1.542e+07	3.353e+05	3.328e+05	2420.5857	0.7219903	3.328e
1342	6.1622669	1.14e+07	2.565e+05	2.587e+05	-2239.494	-0.873131	2.587e

1343	6.1718842	1.567e+07	3.399e+05	3.379e+05	2033.6104	0.5982583	3.379e
1344	6.1904802	1.6e+07	3.463e+05	3.446e+05	1763.7573	0.5092938	3.446e
1345	6.2026978	1.157e+07	2.599e+05	2.623e+05	-2438.802	-0.938393	2.623e
1346	6.2527241	1.533e+07	3.342e+05	3.325e+05	1714.8159	0.5130942	3.325e
1347	6.2564619	1.015e+07	2.338e+05	2.382e+05	-4325.181	-1.849564	2.382e
1348	6.2698363	1.517e+07	3.312e+05	3.295e+05	1682.427	0.507949	3.295e
1349	6.3081433	9.832e+06	2.274e+05	2.333e+05	-5837.416	-2.566546	2.333e
1350	6.3126185	1.583e+07	3.445e+05	3.43e+05	1455.0896	0.4224208	3.43e+
1351	6.3194511	1.491e+07	3.255e+05	3.253e+05	183.76342	0.0564626	3.253e
1352	6.333858	1.117e+07	2.537e+05	2.566e+05	-2875.474	-1.133222	2.566e
1353	6.3361466	1.601e+07	3.474e+05	3.469e+05	499.87398	0.1439042	3.469e
1354	6.3673009	1.168e+07	2.635e+05	2.66e+05	-2491.162	-0.945517	2.66e+
1355	6.3714664	1.387e+07	3.064e+05	3.061e+05	295.47848	0.0964261	3.061e
1356	6.3751574	1.588e+07	3.45e+05	3.45e+05	-39.10794	-0.011337	3.45e+
1357	6.3817032	1.43e+07	3.148e+05	3.144e+05	374.00072	0.1188053	3.144e
1358	6.3976007	1.47e+07	3.232e+05	3.223e+05	859.29294	0.2658937	3.223e
1359	6.4004692	1.391e+07	3.077e+05	3.073e+05	347.80917	0.1130463	3.073e
1360	6.4506422	8.718e+06	2.084e+05	2.158e+05	-7409.288	-3.555721	2.158e
1361	6.4623937	9.743e+06	2.267e+05	2.332e+05	-6488.752	-2.862044	2.332e
1362	6.4642989	1.076e+07	2.466e+05	2.508e+05	-4229.971	-1.715616	2.508e
1363	6.4900169	9.685e+06	2.257e+05	2.325e+05	-6728.613	-2.980836	2.325e
1364	6.4950108	9.293e+06	2.189e+05	2.258e+05	-6900.932	-3.151927	2.258e
1365	6.5083911	1.358e+07	3.003e+05	3.022e+05	-1925.018	-0.64099	3.022e
1366	6.5097954	1.03e+07	2.378e+05	2.433e+05	-5493.306	-2.310389	2.433e
1367	6.5401012	1.625e+07	3.553e+05	3.546e+05	635.3414	0.1788263	3.546e
1368	6.6096556	1.178e+07	2.666e+05	2.703e+05	-3773.834	-1.41577	2.703e
1369	6.6102737	1.132e+07	2.574e+05	2.621e+05	-4695.268	-1.823997	2.621e
1370	6.7296056	1.679e+07	3.671e+05	3.679e+05	-802.1519	-0.218526	3.679e
1371	6.7780312	1.508e+07	3.318e+05	3.342e+05	-2404.38	-0.724595	3.342e
1372	6.7889056	1.393e+07	3.099e+05	3.12e+05	-2130.474	-0.687566	3.12e+
1373	6.8092212	9.557e+06	2.249e+05	2.329e+05	-7961.911	-3.539489	2.329e
1374	6.8161343	1.327e+07	2.965e+05	2.997e+05	-3256.379	-1.098333	2.997e
1375	6.8211932	1.471e+07	3.261e+05	3.275e+05	-1349.834	-0.413919	3.275e
1376	6.831257	1.184e+07	2.685e+05	2.734e+05	-4868.735	-1.813302	2.734e
1377	6.8353642	1.292e+07	2.902e+05	2.934e+05	-3260.16	-1.123482	2.934e
1378	6.843486	9.658e+06	2.269e+05	2.349e+05	-8034.585	-3.54168	2.349e
1379	6.91337	1.482e+07	3.274e+05	3.306e+05	-3130.598	-0.956141	3.306e
1380	7.0154918	1.544e+07	3.414e+05	3.438e+05	-2384.918	-0.698612	3.438e
1381	7.0309619	1.576e+07	3.479e+05	3.504e+05	-2460.384	-0.707156	3.504e
1382	7.0322546	1.261e+07	2.847e+05	2.894e+05	-4706.072	-1.653	2.894e
1383	7.0406392	1.24e+07	2.801e+05	2.854e+05	-5359.471	-1.913591	2.854e
1384	7.0770367	8.835e+06	2.125e+05	2.224e+05	-9907.633	-4.663403	2.224e
1385	7.0982863	1.351e+07	3.033e+05	3.069e+05	-3575.77	-1.178842	3.069e
1386	7.1010741	1.242e+07	2.81e+05	2.864e+05	-5457.732	-1.942593	2.864e
1387	7.1321778	1.673e+07	3.68e+05	3.713e+05	-3382.79	-0.919358	3.713e
1388	7.1369947	1.229e+07	2.783e+05	2.842e+05	-5872.045	-2.110086	2.842e
1389	7.1482979	1.369e+07	3.068e+05	3.107e+05	-3814.515	-1.24314	3.107e
1390	7.193143	1.702e+07	3.744e+05	3.78e+05	-3629.51	-0.969471	3.78e+

1391	7.2176574	1.006e+07	2.356e+05	2.444e+05	-8835.278	-3.749969	2.444e
1392	7.2679302	1.604e+07	3.55e+05	3.584e+05	-3403.244	-0.958735	3.584e
1393	7.3337766	1.565e+07	3.467e+05	3.51e+05	-4245.709	-1.224492	3.51e+
1394	7.375174	1.5e+07	3.34e+05	3.382e+05	-4215.057	-1.261867	3.382e
1395	7.3834446	1.554e+07	3.454e+05	3.493e+05	-3905.184	-1.130755	3.493e
1396	7.4080868	1.184e+07	2.711e+05	2.779e+05	-6804.289	-2.509844	2.779e
1397	7.4804085	1.681e+07	3.715e+05	3.761e+05	-4646.669	-1.250821	3.761e
1398	7.4904339	1.296e+07	2.933e+05	2.993e+05	-6012.757	-2.050211	2.993e
1399	7.535063	1.208e+07	2.764e+05	2.831e+05	-6684.587	-2.418387	2.831e
1400	7.5431963	1.396e+07	3.14e+05	3.189e+05	-4971.777	-1.58356	3.189e
1401	7.5985172	1.052e+07	2.456e+05	2.549e+05	-9299.122	-3.786247	2.549e
1402	7.6026933	1.128e+07	2.603e+05	2.686e+05	-8309.857	-3.192669	2.686e
1403	7.6425652	1.312e+07	2.971e+05	3.033e+05	-6172.795	-2.077654	3.033e
1404	7.6735467	1.554e+07	3.464e+05	3.514e+05	-5022.647	-1.450145	3.514e
1405	7.7863	1.58e+07	3.52e+05	3.573e+05	-5273.689	-1.49825	3.573e
1406	7.7988932	9.025e+06	2.174e+05	2.293e+05	-1.19e+04	-5.48568	2.293e
1407	7.8071143	1.582e+07	3.522e+05	3.578e+05	-5574.532	-1.582629	3.578e
1408	7.8584072	1.311e+07	2.971e+05	3.042e+05	-7105.068	-2.391287	3.042e
1409	7.9489554	1.493e+07	3.343e+05	3.404e+05	-6174.165	-1.847152	3.404e
1410	7.9613578	1.407e+07	3.169e+05	3.233e+05	-6453.253	-2.036445	3.233e
1411	7.9621671	1.645e+07	3.651e+05	3.718e+05	-6629.597	-1.815626	3.718e
1412	8.0916886	1.521e+07	3.409e+05	3.468e+05	-5962.757	-1.749203	3.468e
1413	8.2140134	1.677e+07	3.726e+05	3.797e+05	-7073.483	-1.89826	3.797e
1414	8.4034524	1.172e+07	2.711e+05	2.798e+05	-8767.801	-3.23471	2.798e
1415	8.4916327	1.689e+07	3.764e+05	3.833e+05	-6889.682	-1.830353	3.833e
1416	8.7251745	1.651e+07	3.689e+05	3.756e+05	-6701.476	-1.816495	3.756e
1417	8.7258121	1.211e+07	2.793e+05	2.877e+05	-8399.443	-3.006945	2.877e
1418	8.8214329	1.695e+07	3.782e+05	3.85e+05	-6829.608	-1.805868	3.85e+
1419	8.9189914	9.65e+06	2.308e+05	2.427e+05	-1.19e+04	-5.138155	2.427e
1420	9.1576257	1.117e+07	2.611e+05	2.703e+05	-9224.226	-3.532781	2.703e
1421	9.3287667	1.494e+07	3.373e+05	3.431e+05	-5808.732	-1.722249	3.431e
1422	9.9239093	1.452e+07	3.294e+05	3.333e+05	-3907.409	-1.18632	3.333e
1423	10.83229	1.522e+07	3.444e+05	3.426e+05	1760.7789	0.5113048	3.426e
1424	10.856941	1.526e+07	3.451e+05	3.433e+05	1885.4382	0.54628	3.433e
1425	11.170533	1.094e+07	2.575e+05	2.594e+05	-1857.424	-0.721317	2.594e
1426	12.432115	1.421e+07	3.24e+05	3.091e+05	1.488e+04	4.5946671	3.091e
1427	12.97374	1.204e+07	2.799e+05	2.644e+05	1.543e+04	5.5149041	2.644e

Rank 2 Eqn 1301 $z=(a+cx+ey+gx^2+iy^2+kxy)/(1+bx+dy+fx^2+hy^2+jxy)$
r^2=0.99503132 DF Adj r^2=0.99483038 FitStdErr=0.0089438965 Fstat=5467.1164
a=0.96953278 b=-0.53291978 c=-0.42234014 d=-0.00052606629 e=-0.0006826474 f=1.9968523
g=1.9224323 h=1.2470738e-07 i=1.3716083e-07 j=0.00025630877 k=0.00054053362



Z- Factor as a Function of
Pressure and Mole Fraction

DMS
11/21/96

Rank 2 Eqn 1301 $z=(a+cx+ey+gx^2+iy^2+kxy)/(1+bx+dy+fx^2+hy^2+jxy)$

XYZ *	X Value	Y Value	Z Value	Z Predict	Residual	Residual%	95% C
1	0	14.7	0.995132	0.9669793	0.0281527	2.8290452	0.9593
2	0	100	0.966427	0.9515087	0.0149183	1.5436536	0.9447
3	0	200	0.931004	0.9318882	-0.000884	-0.094972	0.9256
4	0.1	14.7	0.996606	0.9770316	0.0195744	1.964109	0.9716
5	0.1	100	0.976631	0.9642167	0.0124143	1.2711356	0.9595
6	0.1	200	0.952587	0.9480402	0.0045468	0.477315	0.9439
7	0.1	300	0.927847	0.9305601	-0.002713	-0.292409	0.9266
8	0.1	400	0.90239	0.911725	-0.009335	-1.034477	0.9077
9	0.1	500	0.876196	0.8914988	-0.015303	-1.746499	0.8872
10	0.1	600	0.849245	0.8698663	-0.020621	-2.428193	0.8654
11	0.1	700	0.821513	0.8468404	-0.025327	-3.083021	0.8421
12	0.1	800	0.792977	0.8224688	-0.029492	-3.71913	0.8176
13	0.1	900	0.763609	0.7968421	-0.033233	-4.352104	0.7919
14	0.1	1000	0.733377	0.7701007	-0.036724	-5.007484	0.7650
15	0.1	1100	0.702249	0.7424424	-0.040193	-5.72352	0.7371
16	0.1	1200	0.670212	0.7141259	-0.043914	-6.552241	0.7085
17	0.1	1300	0.63732	0.6854735	-0.048153	-7.555617	0.6793
18	0.1	2500	0.464815	0.4692705	-0.004456	-0.95856	0.4609
19	0.1	2600	0.470937	0.4707071	0.0002299	0.0488071	0.4631
20	0.1	2700	0.477927	0.4750538	0.0028732	0.6011745	0.4678
21	0.1	2800	0.485584	0.4819927	0.0035913	0.7395864	0.4745
22	0.1	2900	0.493761	0.4911761	0.0025849	0.5235133	0.4826
23	0.1	3000	0.502347	0.5022461	0.0001009	0.0200882	0.4919
24	0.2	14.7	0.997731	0.9867629	0.0109681	1.099306	0.9825
25	0.2	100	0.984504	0.9771566	0.0073474	0.7463095	0.9735
26	0.2	200	0.968888	0.9651573	0.0037307	0.3850514	0.9620
27	0.2	300	0.953185	0.952346	0.000839	0.0880212	0.9494
28	0.2	400	0.937437	0.9387169	-0.00128	-0.136537	0.9357
29	0.2	500	0.921685	0.9242791	-0.002594	-0.281456	0.9212
30	0.2	600	0.905978	0.9090599	-0.003082	-0.340178	0.9058
31	0.2	700	0.890364	0.8931088	-0.002745	-0.30828	0.8898
32	0.2	800	0.874895	0.8765011	-0.001606	-0.183573	0.8732
33	0.2	900	0.859624	0.8593412	0.0002828	0.0329034	0.8560
34	0.2	1000	0.844602	0.8417653	0.0028367	0.3358676	0.8385
35	0.2	1100	0.829882	0.8239425	0.0059395	0.7156986	0.8207
36	0.2	1200	0.815513	0.8060747	0.0094383	1.1573462	0.8028
37	0.2	1300	0.801543	0.7883931	0.0131499	1.6405759	0.7850
38	0.2	1400	0.788021	0.7711534	0.0168676	2.140498	0.7675
39	0.2	1500	0.774998	0.7546277	0.0203703	2.6284354	0.7506
40	0.2	1600	0.76253	0.7390934	0.0234366	3.0735352	0.7346
41	0.2	1700	0.75068	0.7248211	0.0258589	3.4447308	0.7199
42	0.2	1800	0.73952	0.712061	0.027459	3.713086	0.7068
43	0.3	14.7	0.998626	0.9950292	0.0035968	0.3601761	0.9910
44	0.3	100	0.990691	0.9887336	0.0019574	0.1975828	0.9853
45	0.3	200	0.981486	0.9810098	0.0004762	0.0485176	0.9781
46	0.3	300	0.972414	0.9729286	-0.000515	-0.052921	0.9703

47	0.3	400	0.963506	0.9645121	-0.001006	-0.104417	0.9620
48	0.3	500	0.954794	0.9557923	-0.000998	-0.104558	0.9533
49	0.3	600	0.946309	0.9468129	-0.000504	-0.053244	0.9443
50	0.3	700	0.938079	0.9376296	0.0004494	0.0479032	0.9350
51	0.3	800	0.930132	0.9283118	0.0018202	0.1956967	0.9256
52	0.3	900	0.922494	0.9189418	0.0035522	0.3850688	0.9162
53	0.3	1000	0.915186	0.9096151	0.0055709	0.6087149	0.9069
54	0.3	1100	0.90823	0.9004391	0.0077909	0.8578152	0.8976
55	0.3	1200	0.901641	0.8915304	0.0101106	1.1213605	0.8887
56	0.3	1300	0.895433	0.8830122	0.0124208	1.3871266	0.8801
57	0.3	1400	0.889616	0.8750103	0.0146057	1.6418009	0.8720
58	0.3	1500	0.8842	0.8676479	0.0165521	1.8719875	0.8645
59	0.3	1600	0.87919	0.8610409	0.0181491	2.0642978	0.8577
60	0.3	1700	0.874592	0.8552925	0.0192995	2.2066877	0.8518
61	0.3	1800	0.87041	0.8504883	0.0199217	2.2887727	0.8469
62	0.3	1900	0.866649	0.8466925	0.0199565	2.3027253	0.8430
63	0.3	2000	0.863311	0.8439448	0.0193662	2.2432491	0.8401
64	0.3	2100	0.860401	0.8422594	0.0181416	2.1085014	0.8384
65	0.3	2200	0.857923	0.8416251	0.0162979	1.8996944	0.8376
66	0.3	2300	0.855881	0.8420066	0.0138744	1.6210646	0.8378
67	0.3	2400	0.85428	0.843348	0.010932	1.2796753	0.8390
68	0.4	14.7	0.999355	1.0011177	-0.001763	-0.176384	0.9970
69	0.4	100	0.99568	0.9978341	-0.002154	-0.216346	0.9943
70	0.4	200	0.991525	0.9939386	-0.002414	-0.243425	0.9909
71	0.4	300	0.98755	0.9900159	-0.002466	-0.249702	0.9874
72	0.4	400	0.983772	0.9860937	-0.002322	-0.235995	0.9837
73	0.4	500	0.980206	0.9822035	-0.001998	-0.203787	0.9800
74	0.4	600	0.976866	0.9783814	-0.001515	-0.155124	0.9762
75	0.4	700	0.973764	0.9746667	-0.000903	-0.092698	0.9724
76	0.4	800	0.970909	0.9711022	-0.000193	-0.0199	0.9688
77	0.4	900	0.968311	0.9677332	0.0005778	0.0596731	0.9653
78	0.4	1000	0.965977	0.9646061	0.0013709	0.1419136	0.9621
79	0.4	1100	0.963911	0.9617678	0.0021432	0.2223439	0.9592
80	0.4	1200	0.962117	0.9592635	0.0028535	0.2965899	0.9566
81	0.4	1300	0.960596	0.9571354	0.0034606	0.360252	0.9544
82	0.4	1400	0.95935	0.9554214	0.0039286	0.409507	0.9526
83	0.4	1500	0.958378	0.9541528	0.0042252	0.440875	0.9514
84	0.4	1600	0.957678	0.9533533	0.0043247	0.4515866	0.9506
85	0.4	1700	0.957247	0.9530379	0.0042091	0.439711	0.9503
86	0.4	1800	0.957082	0.9532121	0.0038699	0.4043422	0.9505
87	0.4	1900	0.957179	0.9538717	0.0033073	0.3455264	0.9512
88	0.4	2000	0.957536	0.9550028	0.0025332	0.2645501	0.9524
89	0.4	2100	0.958147	0.9565829	0.0015641	0.1632403	0.9539
90	0.4	2200	0.959009	0.9585816	0.0004274	0.0445719	0.9559
91	0.4	2300	0.960118	0.960962	-0.000844	-0.087904	0.9581
92	0.4	2400	0.96147	0.9636827	-0.002213	-0.230134	0.9606
93	0.4	2500	0.96306	0.9666989	-0.003639	-0.377849	0.9633
94	0.4	2600	0.964885	0.9699645	-0.005079	-0.526436	0.9661

95	0.4	2700	0.966942	0.9734332	-0.006491	-0.67131	0.9691
96	0.4	2800	0.969226	0.97706	-0.007834	-0.808269	0.9721
97	0.4	2900	0.971733	0.9808021	-0.009069	-0.933292	0.9752
98	0.4	3000	0.974461	0.98462	-0.010159	-1.04253	0.9784
99	0.5	14.7	0.999938	1.0048964	-0.004958	-0.495875	1.0007
100	0.5	100	0.999635	1.0040992	-0.004464	-0.446579	1.0004
101	0.5	200	0.999413	1.0033001	-0.003887	-0.388934	1.0001
102	0.5	300	0.99934	1.0026656	-0.003326	-0.332784	0.9999
103	0.5	400	0.999423	1.0022154	-0.002792	-0.279405	0.9998
104	0.5	500	0.999667	1.0019687	-0.002302	-0.230246	0.9997
105	0.5	600	1.00008	1.001944	-0.001864	-0.186385	0.9998
106	0.5	700	1.00065	1.0021586	-0.001509	-0.150765	1.0000
107	0.5	800	1.0014	1.002628	-0.001228	-0.122628	1.0005
108	0.5	900	1.00232	1.003365	-0.001045	-0.10426	1.0011
109	0.5	1000	1.00342	1.0043795	-0.00096	-0.095624	1.0020
110	0.5	1100	1.00469	1.0056776	-0.000988	-0.0983	1.0033
111	0.5	1200	1.00613	1.0072613	-0.001131	-0.112441	1.0048
112	0.5	1300	1.00775	1.0091281	-0.001378	-0.136747	1.0066
113	0.5	1400	1.00954	1.0112707	-0.001731	-0.171433	1.0087
114	0.5	1500	1.01149	1.0136772	-0.002187	-0.216234	1.0111
115	0.5	1600	1.01362	1.016331	-0.002711	-0.26746	1.0138
116	0.5	1700	1.0159	1.0192115	-0.003311	-0.325964	1.0168
117	0.5	1800	1.01835	1.0222941	-0.003944	-0.387303	1.0199
118	0.5	1900	1.02095	1.0255515	-0.004601	-0.450707	1.0232
119	0.5	2000	1.02371	1.0289541	-0.005244	-0.51226	1.0266
120	0.5	2100	1.02661	1.0324708	-0.005861	-0.570893	1.0302
121	0.5	2200	1.02967	1.0360704	-0.0064	-0.6216	1.0338
122	0.5	2300	1.03286	1.0397217	-0.006862	-0.664342	1.0373
123	0.5	2400	1.0362	1.0433948	-0.007195	-0.694341	1.0409
124	0.5	2500	1.03968	1.0470613	-0.007381	-0.709962	1.0444
125	0.5	2600	1.04329	1.0506955	-0.007405	-0.709819	1.0477
126	0.5	2700	1.04703	1.0542739	-0.007244	-0.691851	1.0510
127	0.5	2800	1.05089	1.0577762	-0.006886	-0.655269	1.0541
128	0.5	2900	1.05489	1.0611849	-0.006295	-0.596733	1.0570
129	0.5	3000	1.059	1.0644856	-0.005486	-0.518002	1.0598
130	0.6	14.7	1.00038	1.006671	-0.006291	-0.628861	1.0025
131	0.6	100	1.00263	1.007783	-0.005153	-0.513948	1.0041
132	0.6	200	1.00534	1.0093094	-0.003969	-0.394834	1.0061
133	0.6	300	1.00815	1.0110856	-0.002936	-0.291182	1.0083
134	0.6	400	1.01104	1.0131192	-0.002079	-0.205649	1.0106
135	0.6	500	1.01402	1.0154158	-0.001396	-0.137652	1.0131
136	0.6	600	1.01709	1.0179782	-0.000888	-0.087323	1.0158
137	0.6	700	1.02026	1.0208058	-0.000546	-0.0535	1.0187
138	0.6	800	1.02352	1.0238951	-0.000375	-0.03665	1.0217
139	0.6	900	1.02687	1.0272386	-0.000369	-0.0359	1.0250
140	0.6	1000	1.03032	1.0308253	-0.000505	-0.049042	1.0286
141	0.6	1100	1.03386	1.0346402	-0.00078	-0.075464	1.0324
142	0.6	1200	1.03749	1.0386648	-0.001175	-0.113236	1.0363

143	0.6	1300	1.04122	1.0428772	-0.001657	-0.159156	1.0405
144	0.6	1400	1.04503	1.0472522	-0.002222	-0.212646	1.0449
145	0.6	1500	1.04893	1.0517623	-0.002832	-0.27002	1.0494
146	0.6	1600	1.05292	1.0563778	-0.003458	-0.3284	1.0540
147	0.6	1700	1.057	1.0610676	-0.004068	-0.384824	1.0587
148	0.6	1800	1.06116	1.0658	-0.00464	-0.437253	1.0634
149	0.6	1900	1.0654	1.0705432	-0.005143	-0.482746	1.0681
150	0.6	2000	1.06973	1.0752662	-0.005536	-0.517535	1.0728
151	0.6	2100	1.07413	1.0799394	-0.005809	-0.54085	1.0775
152	0.6	2200	1.07861	1.084535	-0.005925	-0.549317	1.0820
153	0.6	2300	1.08317	1.0890275	-0.005857	-0.540773	1.0865
154	0.6	2400	1.0878	1.0933942	-0.005594	-0.514271	1.0908
155	0.6	2500	1.0925	1.0976155	-0.005116	-0.468239	1.0949
156	0.6	2600	1.09728	1.1016747	-0.004395	-0.40051	1.0988
157	0.6	2700	1.10212	1.1055584	-0.003438	-0.311978	1.1025
158	0.6	2800	1.10704	1.1092561	-0.002216	-0.200182	1.1059
159	0.6	2900	1.11202	1.1127604	-0.00074	-0.066586	1.1089
160	0.6	3000	1.11706	1.1160668	0.0009932	0.0889164	1.1117
161	0.7	14.7	1.00071	1.006935	-0.006225	-0.622055	1.0029
162	0.7	100	1.0048	1.009437	-0.004637	-0.461482	1.0059
163	0.7	200	1.00963	1.0126186	-0.002989	-0.296005	1.0096
164	0.7	300	1.01447	1.0160688	-0.001599	-0.157603	1.0134
165	0.7	400	1.01933	1.0197859	-0.000456	-0.044722	1.0173
166	0.7	500	1.02421	1.0237648	0.0004452	0.0434677	1.0215
167	0.7	600	1.02912	1.0279978	0.0011222	0.109046	1.0258
168	0.7	700	1.03406	1.0324738	0.0015862	0.1533967	1.0303
169	0.7	800	1.03902	1.0371786	0.0018414	0.1772278	1.0350
170	0.7	900	1.04401	1.0420947	0.0019153	0.1834522	1.0399
171	0.7	1000	1.04903	1.0472019	0.0018281	0.174267	1.0450
172	0.7	1100	1.05408	1.0524768	0.0016032	0.152096	1.0503
173	0.7	1200	1.05916	1.0578937	0.0012663	0.1195547	1.0557
174	0.7	1300	1.06427	1.0634249	0.0008451	0.0794079	1.0612
175	0.7	1400	1.0694	1.0690408	0.0003592	0.0335874	1.0668
176	0.7	1500	1.07457	1.0747109	-0.000141	-0.013116	1.0724
177	0.7	1600	1.07977	1.0804041	-0.000634	-0.058726	1.0781
178	0.7	1700	1.085	1.0860892	-0.001089	-0.100385	1.0837
179	0.7	1800	1.09025	1.0917356	-0.001486	-0.136259	1.0893
180	0.7	1900	1.09554	1.0973138	-0.001774	-0.161907	1.0949
181	0.7	2000	1.10086	1.1027958	-0.001936	-0.175848	1.1003
182	0.7	2100	1.10621	1.1081559	-0.001946	-0.175908	1.1056
183	0.7	2200	1.11159	1.1133704	-0.00178	-0.160167	1.1108
184	0.7	2300	1.11699	1.1184184	-0.001428	-0.127877	1.1158
185	0.7	2400	1.12243	1.1232817	-0.000852	-0.075879	1.1207
186	0.7	2500	1.1279	1.1279451	-4.51e-05	-0.003999	1.1252
187	0.7	2600	1.13339	1.1323963	0.0009937	0.0876716	1.1296
188	0.7	2700	1.13891	1.1366259	0.0022841	0.2005473	1.1336
189	0.7	2800	1.14446	1.1406273	0.0038327	0.3348946	1.1372
190	0.7	2900	1.15004	1.1443962	0.0056438	0.4907459	1.1405

191	0.7	3000	1.15564	1.1479312	0.0077088	0.6670623	1.1434
192	0.8	14.7	1.00091	1.0061783	-0.005268	-0.526353	1.0022
193	0.8	100	1.00617	1.0096508	-0.003481	-0.345943	1.0062
194	0.8	200	1.0123	1.0139618	-0.001662	-0.164158	1.0110
195	0.8	300	1.01839	1.0185264	-0.000136	-0.013392	1.0159
196	0.8	400	1.02445	1.0233363	0.0011137	0.1087119	1.0210
197	0.8	500	1.03048	1.0283806	0.0020994	0.2037287	1.0261
198	0.8	600	1.03648	1.0336458	0.0028342	0.2734453	1.0314
199	0.8	700	1.04246	1.0391157	0.0033443	0.3208073	1.0369
200	0.8	800	1.04842	1.0447718	0.0036482	0.3479752	1.0426
201	0.8	900	1.05435	1.050593	0.003757	0.356334	1.0484
202	0.8	1000	1.06027	1.0565564	0.0037136	0.3502538	1.0543
203	0.8	1100	1.06617	1.062637	0.003533	0.3313735	1.0604
204	0.8	1200	1.07206	1.0688085	0.0032515	0.303294	1.0666
205	0.8	1300	1.07793	1.0750434	0.0028866	0.2677914	1.0728
206	0.8	1400	1.0838	1.0813134	0.0024866	0.2294299	1.0790
207	0.8	1500	1.08965	1.0875901	0.0020599	0.1890411	1.0853
208	0.8	1600	1.0955	1.093845	0.001655	0.1510697	1.0915
209	0.8	1700	1.10134	1.1000504	0.0012896	0.117097	1.0977
210	0.8	1800	1.10717	1.1061792	0.0009908	0.0894859	1.1038
211	0.8	1900	1.113	1.1122061	0.0007939	0.071328	1.1098
212	0.8	2000	1.11883	1.1181071	0.0007229	0.0646102	1.1156
213	0.8	2100	1.12465	1.1238603	0.0007897	0.0702173	1.1214
214	0.8	2200	1.13047	1.1294459	0.0010241	0.0905933	1.1270
215	0.8	2300	1.13629	1.1348464	0.0014436	0.1270487	1.1324
216	0.8	2400	1.14211	1.1400467	0.0020633	0.1806549	1.1376
217	0.8	2500	1.14793	1.1450344	0.0028956	0.2522465	1.1425
218	0.8	2600	1.15375	1.1497992	0.0039508	0.3424281	1.1471
219	0.8	2700	1.15957	1.1543336	0.0052364	0.4515843	1.1514
220	0.8	2800	1.1654	1.158632	0.006768	0.5807471	1.1553
221	0.8	2900	1.17122	1.1626912	0.0085288	0.728194	1.1587
222	0.8	3000	1.17705	1.1665102	0.0105398	0.8954434	1.1618
223	0.9	14.7	1.001	1.0047975	-0.003797	-0.379369	1.0001
224	0.9	100	1.00678	1.0089218	-0.002142	-0.212741	1.0048
225	0.9	200	1.01349	1.0139733	-0.000483	-0.047686	1.0104
226	0.9	300	1.02013	1.0192491	0.0008809	0.086352	1.0161
227	0.9	400	1.02669	1.0247376	0.0019524	0.1901662	1.0218
228	0.9	500	1.03319	1.030425	0.002765	0.2676177	1.0277
229	0.9	600	1.03964	1.0362956	0.0033444	0.3216899	1.0337
230	0.9	700	1.04603	1.0423316	0.0036984	0.3535613	1.0398
231	0.9	800	1.05236	1.0485137	0.0038463	0.3654905	1.0460
232	0.9	900	1.05865	1.0548208	0.0038292	0.3617071	1.0523
233	0.9	1000	1.06489	1.0612304	0.0036596	0.3436569	1.0587
234	0.9	1100	1.07109	1.0677192	0.0033708	0.314712	1.0652
235	0.9	1200	1.07725	1.0742626	0.0029874	0.2773158	1.0718
236	0.9	1300	1.08338	1.080836	0.002544	0.234823	1.0783
237	0.9	1400	1.08946	1.0874142	0.0020458	0.1877837	1.0848
238	0.9	1500	1.09552	1.0939723	0.0015477	0.1412793	1.0914

239	0.9	1600	1.10155	1.1004857	0.0010643	0.0966179	1.0978
240	0.9	1700	1.10754	1.1069307	0.0006093	0.0550127	1.1042
241	0.9	1800	1.11351	1.1132845	0.0002255	0.0202536	1.1105
242	0.9	1900	1.11946	1.1195254	-6.54e-05	-0.005846	1.1167
243	0.9	2000	1.12538	1.1256335	-0.000254	-0.022528	1.1228
244	0.9	2100	1.13128	1.1315903	-0.00031	-0.027431	1.1288
245	0.9	2200	1.13716	1.1373792	-0.000219	-0.019275	1.1346
246	0.9	2300	1.14302	1.1429854	3.46e-05	0.0030267	1.1402
247	0.9	2400	1.14887	1.1483962	0.0004738	0.0412383	1.1456
248	0.9	2500	1.15469	1.1536009	0.0010891	0.0943207	1.1508
249	0.9	2600	1.16051	1.1585906	0.0019194	0.1653914	1.1556
250	0.9	2700	1.1663	1.1633586	0.0029414	0.2522013	1.1601
251	0.9	2800	1.17209	1.1678998	0.0041902	0.3574977	1.1642
252	0.9	2900	1.17786	1.1722111	0.0056489	0.4795883	1.1678
253	0.9	3000	1.18362	1.176291	0.007329	0.6192018	1.1710
254	1	14.7	1.00101	1.0030778	-0.002068	-0.206574	0.9964
255	1	100	1.00681	1.0076209	-0.000811	-0.080541	1.0015
256	1	200	1.01353	1.0131344	0.0003956	0.039028	1.0077
257	1	300	1.02015	1.0188396	0.0013104	0.1284518	1.0139
258	1	400	1.0267	1.0247234	0.0019766	0.1925174	1.0202
259	1	500	1.03317	1.0307714	0.0023986	0.2321588	1.0266
260	1	600	1.03957	1.0369676	0.0026024	0.2503376	1.0331
261	1	700	1.0459	1.0432946	0.0026054	0.2491077	1.0396
262	1	800	1.05216	1.0497339	0.0024261	0.2305795	1.0462
263	1	900	1.05836	1.0562661	0.0020939	0.1978462	1.0528
264	1	1000	1.06451	1.0628706	0.0016394	0.1540035	1.0595
265	1	1100	1.0706	1.0695266	0.0010734	0.100266	1.0662
266	1	1200	1.07665	1.0762125	0.0004375	0.0406387	1.0729
267	1	1300	1.08264	1.0829068	-0.000267	-0.024639	1.0796
268	1	1400	1.08859	1.0895879	-0.000998	-0.091669	1.0862
269	1	1500	1.0945	1.0962346	-0.001735	-0.158486	1.0928
270	1	1600	1.10036	1.1028262	-0.002466	-0.224128	1.0993
271	1	1700	1.10619	1.1093426	-0.003153	-0.284998	1.1058
272	1	1800	1.11198	1.1157647	-0.003785	-0.340359	1.1121
273	1	1900	1.11774	1.1220745	-0.004334	-0.387788	1.1183
274	1	2000	1.12347	1.128255	-0.004785	-0.425917	1.1244
275	1	2100	1.12916	1.134291	-0.005131	-0.454408	1.1304
276	1	2200	1.13483	1.1401683	-0.005338	-0.470404	1.1363
277	1	2300	1.14047	1.1458744	-0.005404	-0.473877	1.1419
278	1	2400	1.14609	1.1513985	-0.005308	-0.463181	1.1474
279	1	2500	1.15168	1.1567311	-0.005051	-0.438582	1.1526
280	1	2600	1.15725	1.1618644	-0.004614	-0.398738	1.1576
281	1	2700	1.1628	1.1667922	-0.003992	-0.34333	1.1622
282	1	2800	1.16833	1.1715099	-0.00318	-0.272171	1.1664
283	1	2900	1.17384	1.1760139	-0.002174	-0.185196	1.1703
284	1	3000	1.17933	1.1803024	-0.000972	-0.082457	1.1737

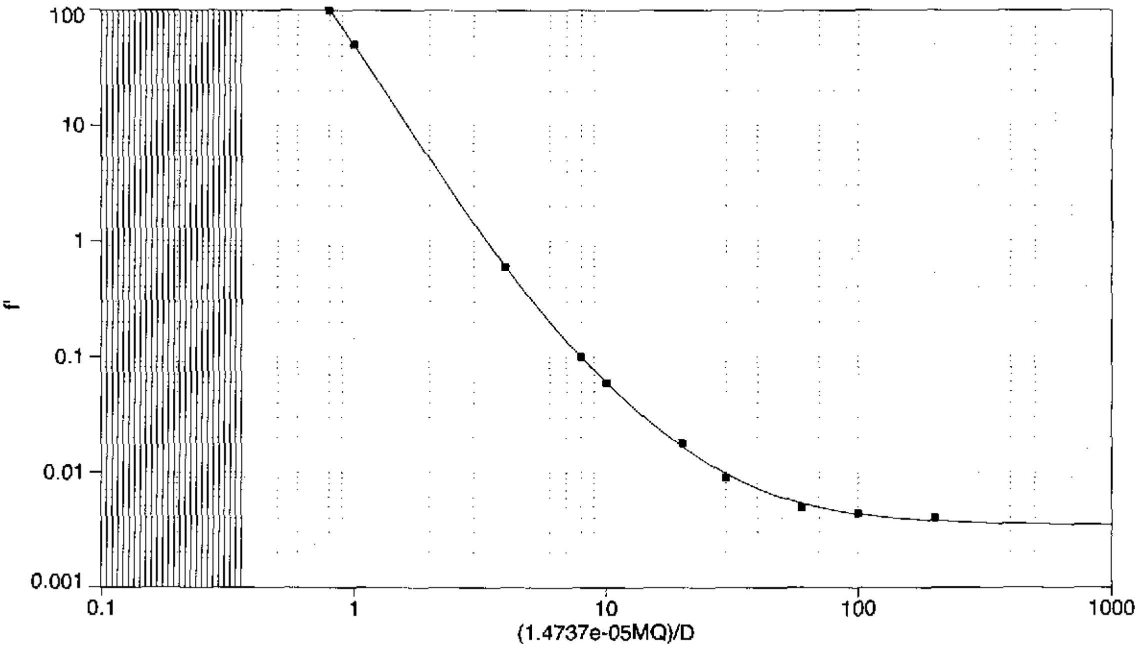
Friction factor (f') as function of M, Q, & D

Rank 2 Eqn 6503 $y=a+b/x+c/x^2+d/x^3+e/x^4+f/x^5$

$r^2=1$ DF Adj $r^2=1$ FitStdErr=0.00080865987 Fstat=3.1276393e+09

a=0.0034152139 b=0.05040896 c=3.8265844

d=8.0204911 e=62.225962 f=-24.126662



Rank 2 Eqn 6503 $y=a+b/x+c/x^2+d/x^3+e/x^4+f/x^5$

XY *	X Value	Y Value	Y Predict	Residual	Residual%	95% Confidence Limi	
1	0.8000000	100.00000	100.00000	-4.95e-09	-4.95e-09	99.997752	100.002
2	1.0000000	50.000000	50.000000	1.84e-08	3.679e-08	49.997752	50.0022
3	4.0000000	0.6000000	0.6000079	-7.93e-06	-0.001321	0.5977607	0.60225
4	8.0000000	0.1000000	0.0996273	0.0003727	0.3726719	0.0977419	0.10151
5	10.000000	0.0600000	0.0607238	-0.000724	-1.206287	0.0593273	0.06212
6	20.000000	0.0180000	0.0168861	0.0011139	6.1885735	0.0153039	0.01846
7	30.000000	0.0090000	0.0097202	-0.000720	-8.001749	0.0083858	0.01105
8	60.000000	0.0050000	0.0053602	-0.000360	-7.204111	0.0042956	0.00642
9	100.00000	0.0044000	0.0043106	8.94e-05	2.0317674	0.0030392	0.00558
10	200.00000	0.0040000	0.0037640	0.0002360	5.9008838	0.0021440	0.00538