QA: QA

INSTALLATION TEST PLAN (ITP)
for
TOUGHREACT Version 2.2

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PRELIMINARY DRAFT
INFORMATION ONLY

CHANGE HISTORY

Revision Number	Effective Date	Description of Change
00	03/12/00	Initial issue of CP1 documents prior to ITSMA review.
01	05/1/00	Initial issue of CP1 documents following ITSMA review. The changes were the correction to the "QA" designator, addition of this Change History, addition of the media Read.me file/listing of the media contents, and the resulting change in page numbers.

This Installation Test Plan (ITP) 10154-ITP-2.2-01 is based upon Software Activity Plan (SAP) 10154-SAP-2.2-01, Requirements Document (RD) 10154-RD-2.2-01, and LBNL Master Planning Document (MPD) YMP-MPD-UZ-1.0, *UZ Flow and Transport Modeling FY99*. In accordance with AP-SI.1Q, Rev. 2, ICN 4, *Software Management*, the ITP is followed by Validation Test Plan (VTP) 10154-VTP-2.2-01.

1. DEFRAGMENTATION OF HARD DRIVE AND DETERMINATION OF DISK STORAGE CAPACITY (As Needed)

For this size program, these steps are regarded as unnecessary.

2. DESCRIPTION OF PRE-INSTALLATION TEST

Not applicable (see Section 1 above).

3. ACTIONS NECESSARY TO COMPLETE THE INSTALLATION PROCEDURE

Copy all distribution files to working directory. A FORTRAN77 or compatible compiler must be available on the system. A list of the required files is in Appendix A.

4. TRANSFER OF SOFTWARE AND DATA ELEMENTS FROM DISTRIBUTION MEDIA TO TARGET PLATFORM

For all platforms copy all of the FORTRAN77 source files and other associated files into the same directory.

5. TASKS TO BE PERFORMED AFTER THE SOFTWARE TRANSFER TO TARGET PLATFORM

Run the FORTRAN77 compiler for the source code. Recommended compiler options are the same as for V2.1, described in Appendix B.

6. SETTING INITIAL OPERATING CONDITIONS

No special conditions are to be required. See Appendix B for compiler options for each platform on which the software was tested.

7. INSTALLATION TEST CASES

Installation test case shall be a test simulation where the user shall use the provided installation test case input files and compare the generated output with the provided output files. The steps would be:

1) Load the files from the distribution media
2) Compile the source code by running the compiler
3) Execute the code using the installation test case input files
4) Confirm a correct installation by comparing the output files with the provided test case output files.

7.1 Confirming a Correct and Accurate Installation

Confirming a correct and accurate installation shall be by the formation of an executable code created with no compilation/linker errors, and by comparing the output files with the provided test case output files.

7.2 Ready-to-Use Condition

Ready-to-use condition shall be indicated by an executable code that is ready to run.

7.3 Documenting an Installation Failure and Conditions Found (As Needed)

Compiler errors and warnings are to be generated according to the specific compiler options. An execution error will result if the size of input data arrays exceeds the maximum allowable dimensions in the compiled code. In this case modify array dimensions in the appropriate include file (see files ending in ".inc" in Appendix A) and recompile the code.

8. EXPECTED OUTPUTS

The expected output from the installation test case sample run will be provided with the software on the distribution media.

9. INSTALLATION ACCEPTANCE CRITERIA

Executable code created without terminal error and generation of an output file that matches the installation test case output file provided.

10. ERRORS AND WARNING CONDITIONS AND INDICATORS TO BE EXAMINED BY TESTER

Compiler errors and warnings shall be generated according to the specific compiler options.
Also, see the log files for the run, run_log.dat and chdump.dat, as well as the FLOW.OUT file, as described in Appendix C.

11. INSTRUCTIONS FOR EXECUTING INSTALLATION TEST PLAN

Follow steps in Section 7 above.

References:

Spycher, N., Sonnenthal, E., Ahlers, R., and Xu, T., *TOUGHREACT V2.1 Software Qualification*, 1999. MOL.20000216.0113.

Appendix A: Distribution Files

The distribution files should include the following source code files:
eos3_22.f
t2cg1qui.f
t2fqui22.f
treact22.f
meshm.f
ma28.f
inichm22.f
geochem22.f
thermo22.f
readsolu22.f
newton22.f
secondsun.f
propchg.f
gasdiffus.f
kthermfac.f
pcap_2.2ysw.f
intp1.f
solver5.f
common22.inc
flowpar22.inc
chempar22.inc
perm21.inc

Appendix B: Hardware, Operating System, And Compiler Requirements for TOUGHREACT V2.2 Excerpted from Description of TOUGHREACT V2.1, Section 2.1

TOUGHREACT V2.1 has been tested on the following platforms:

Platform	Operating System	Compiler
SUN Ultrasparc systems with single or multiple processors	Solaris SUNOS 5.5.1	SUN f77 (optimization: -O3) Incorrect results are likely if a more aggressive optimization is attempted.
DEC Alpha	DEC-UNIX	DEC F77 with following options: - O4 -warn noalignments -fpe4 -check overflow -assume backslash -check no power -check underflow

Appendix C: Log Files for TOUGHREACT V2.2 Excerpted from Description of TOUGHREACT V2.1, Section 6.1.2

C.6.1.2 Output Files

Several output files are generated by TOUGHREACT V2.1. These include files with fixed file names, and other files with user-specified names.

Fixed-name output files

FLOW.OUT - Output of thermal and hydrological data (no chemical information). This file is identical to a TOUGH2 V1.11 output file, including data on temperature, pressure, liquid and gas saturations, liquid and gas (steam + air) fluxes, and velocities for all grid blocks of the model.

run_log.dat - Log of the simulation progress. This file is constantly updated during a simulation. It lists some run input parameters and all run-related messages, including error messages (Section 7). It also contains mass balance and other data whose printout is enabled by setting specific MOP parameters to non-zero values in the FLOW.INP file

chdump.dat - chemical speciation data. This file contains results of geochemical speciation calculations for each initial water composition input into the model. It also lists these data for grid nodes where chemical convergence fails. The results are computed for an original 1 liter of liquid. They include a printout of chemical mass balances (total mass balance and aqueous species mass balance) which must always remain zero or very small. For debugging purposes or for small grids, if the flag ICHDUMP in the SOLUTE.INP input file is set equal to 1, geochemical speciation results will be output in the *chdump.dat* file for every grid node at every time step (!). As a precaution to avoid filling up disk space, results of speciation calculations are output only for the first thousand grid nodes and/or time steps, after which the program will abort.

Appendix D: Read.me file and CDROM file contents listing

1. Readme.txt (for UNIX install):

INSTALLATION
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1. Copy the compressed distribution file
treactq2.2.tar.gz onto a SUN or DEC UNIX platform, into one folder
2. Decompress the file (use the gunzip then tar commands).
For example, type: gunzip treact22.tar.gz
tar xvf treact22.tar

COMPILATION
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In the "source_code" folder, use the "makefile_sun" or "makefile_dec" files to compile the source code on a SUN or DEC platform, respectively. Note, you will need to rename the selected file to "makefile", then type: make

EXECUTABLES
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If you do not whish to compile the code, or if you do not have access to a FORTRAN compiler, two executable versions (for SUN Solaris SUNOS 5.5.1 and DEC Digital UNIX, respectively) are provided in the folder "executable". Type the name of the executable to run the code.

TESTING CORRECT INSTALLATION
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Two sample problems are provided in folders "sample_problem1" and "sample_problem2", respectively. For each problem, copy the input files FLOW.INP, SOLUTE.INP, CHEMICAL.INP, and THERMOK.DAT (THERMOKTUFF.DAT for problem 2) into a working directory, and run the code (on our SUN Ultrasparc system, Problem 1 takes several minutes to run, while Problem 2 takes approximately half an hour). The various output files (e.g. TIME.DAT) can be inspected while the code is running or after completion of the run, and compared to the provided output files in the "sample_problem1" and "sample_problem2" folders. Results should match.

QA TESTS
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For information, input and output files for specific QA tests are provided in folders "qa_tests". Refer to the Validation Test Plan and Validation Test Report for a description of these various tests.

!!! PLEASE NOTE !!! For DEC users only: for provided QA test problems, the first line in files named SOLUTE.INP must be enclosed in single quotes for the DEC version to run properly (the SUN version works with or without quotes). If running the QA test problems on a DEC, check that the first line in the SOLUTE.INP files is enlosed between quotes and, if not, edit the file to insert the quotes.

2. CDROM file contents listing:

Size(bytes)	Date		Time	Name
drwxr-xr-x	0		3/30/00	17:56 executable/
-rwxr-xr-x	862480	3/14/00	09:44	executable/treactq2.2_sun
-rwxr-xr-x	557056	3/14/00	09:48	executable/treactq2.2_dec
drwxr-xr-x	0		3/30/00	17:54 qa_tests/
drwxr-xr-x	0		3/30/00	17:53 qa_tests/tests_on_dec/
drwxr-xr-x	0		3/30/00	17:53 qa_tests/tests_on_dec/qa_restart2.2/
-rwxr-xr-x	111049	3/14/00	09:57	qa_tests/tests_on_dec/qa_restart2.2/SOLUTE.OUT
-rwxr-xr-x	632		3/14/00	09:57 qa_tests/tests_on_dec/qa_restart2.2/ITER.DAT
-rwxr-xr-x	5795		3/14/00	12:28 qa_tests/tests_on_dec/qa_restart2.2/compare.dat
-rwxr-xr-x	4820		3/14/00	09:57 qa_tests/tests_on_dec/qa_restart2.2/run_log.dat
-rwxr-xr-x	497278	3/14/00	09:57	qa_tests/tests_on_dec/qa_restart2.2/TEC_CONC.DAT
-rwxr-xr-x	163327	3/14/00	09:57	qa_tests/tests_on_dec/qa_restart2.2/TEC_GAS.DAT
-rwxr-xr-x	883957	3/14/00	09:57	qa_tests/tests_on_dec/qa_restart2.2/TEC_MIN.DAT
-rwxr-xr-x	22355		3/9/00	20:05 qa_tests/tests_on_dec/qa_restart2.2/thermok05mod.dat
-rwxr-xr-x	8270		3/14/00	09:57 qa_tests/tests_on_dec/qa_restart2.2/TIME.DAT
-rwxr-xr-x	235195	11/5/99	08:42	qa_tests/tests_on_dec/qa_restart2.2/GENER
-rwxr-xr-x	4285097	2/16/00	17:05	qa_tests/tests_on_dec/qa_restart2.2/INCHEM
-rwxr-xr-x	343990	11/12/99	15:09	qa_tests/tests_on_dec/qa_restart2.2/INCON
-rwxr-xr-x	80		3/14/00	09:57 qa_tests/tests_on_dec/qa_restart2.2/LINEQ
-rwxr-xr-x	753810	11/5/99	08:42	qa_tests/tests_on_dec/qa_restart2.2/MESH
-rwxr-xr-x	343990	3/14/00	09:57	qa_tests/tests_on_dec/qa_restart2.2/SAVE
-rwxr-xr-x	4285097	3/14/00	09:57	qa_tests/tests_on_dec/qa_restart2.2/SAVECHEM
-rwxr-xr-x	0		2/16/00	16:55 qa_tests/tests_on_dec/qa_restart2.2/TABLE
-rwxr-xr-x	3571		3/14/00	09:57 qa_tests/tests_on_dec/qa_restart2.2/VERS
-rwxr-xr-x	53288		10/26/99	17:38 qa_tests/tests_on_dec/qa_restart2.2/CHEMICAL.INP
-rwxr-xr-x	11951		2/16/00	16:58 qa_tests/tests_on_dec/qa_restart2.2/FLOW.INP
-rwxr-xr-x	117048	3/9/00	19:58	qa_tests/tests_on_dec/qa_restart2.2/SOLUTE.INP
-rwxr-xr-x	104794	3/14/00	09:57	qa_tests/tests_on_dec/qa_restart2.2/CHEMICAL.OUT
-rwxr-xr-x	1369776	3/14/00	09:57	qa_tests/tests_on_dec/qa_restart2.2/FLOW.OUT
-rwxr-xr-x	15219		3/14/00	09:57 qa_tests/tests_on_dec/qa_restart2.2/chdump.dat
-rwxr-xr-x	557056	3/14/00	09:48	qa_tests/tests_on_dec/qa_restart2.2/treactq2.2
drwxr-xr-x	0		3/30/00	17:54 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/
drwxr-xr-x	0		3/30/00	17:53 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/
-rwxr-xr-x	7947220	3/14/00	10:05	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/FLOW.OUT
-rwxr-xr-x	12037		3/8/00	10:01 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/FLOW.INP
-rwxr-xr-x	320282	11/12/99	06:39	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/INCON
-rwxr-xr-x	753810	11/5/99	08:42	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/MESH
-rwxr-xr-x	4699		3/8/00	10:02 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/GENER
-rwxr-xr-x	3093		3/14/00	10:05 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/VERS
-rwxr-xr-x	343990	3/14/00	10:05	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/SAVE
-rwxr-xr-x	13040		3/14/00	10:05 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/LINEQ
-rwxr-xr-x	0		3/8/00	09:36 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/TABLE
-rwxr-xr-x	557056	3/14/00	09:48	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/treactq2.2/treactq2.2
drwxr-xr-x	0		3/30/00	17:54 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/
-rwxr-xr-x	4699		3/8/00	10:02 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/GENER
-rwxr-xr-x	753810	3/8/00	09:45	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/MESH
-rwxr-xr-x	320282	11/12/99	06:39	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/INCON
-rwxr-xr-x	12038		3/8/00	10:12 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/FLOW.INP
-r-xr-xr-x	409600	9/29/99	16:24	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/t2eos3l.exe
-rwxr-xr-x	8250883	3/8/00	10:17	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/FLOW.OUT
-rwxr-xr-x	2976		3/8/00	10:17 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/VERS
-rwxr-xr-x	276223	3/8/00	10:17	qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/SAVE
-rwxr-xr-x	0		3/8/00	10:11 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/LINEQ
-rwxr-xr-x	0		3/8/00	10:11 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/eos3_v1.4/TABLE
-rwxr-xr-x	3525		3/14/00	10:12 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/compare.dat
-rwxr-xr-x	25600		3/14/00	10:13 qa_tests/tests_on_dec/qa2.2_vs_eos3_v1.4/compare.xls
drwxr-xr-x	0		3/30/00	17:55 qa_tests/tests_on_sun/
drwxr-xr-x	0		3/30/00	17:54 qa_tests/tests_on_sun/reac_rates2.2/
-rwxr-xr-x	22216		11/5/99	08:41 qa_tests/tests_on_sun/reac_rates2.2/thermokapps2.05.dat
-rwxr-xr-x	2084		3/3/00	17:51 qa_tests/tests_on_sun/reac_rates2.2/CHEMICAL.INP
-rwxr-xr-x	1535		3/6/00	10:01 qa_tests/tests_on_sun/reac_rates2.2/FLOW.INP
-rwxr-xr-x	1377		3/2/00	17:56 qa_tests/tests_on_sun/reac_rates2.2/SOLUTE.INP
-rwxr-xr-x	34748		3/14/00	10:41 qa_tests/tests_on_sun/reac_rates2.2/FLOW.OUT
-rwxr-xr-x	3110		3/14/00	10:41 qa_tests/tests_on_sun/reac_rates2.2/VERS

-rwxr-xr-x	268		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/MESH
-rwxr-xr-x	236		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/INCON
-rwxr-xr-x	0		3/3/00	18:15	qa_tests/tests_on_sun/reac_rates2.2/GENER
-rwxr-xr-x	394		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/SAVE
-rwxr-xr-x	400		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/LINEQ
-rwxr-xr-x	0		3/3/00	18:15	qa_tests/tests_on_sun/reac_rates2.2/TABLE
-rwxr-xr-x	2931		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/SOLUTE.OUT
-rwxr-xr-x	5577		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/CHEMICAL.OUT
-rwxr-xr-x	997		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/ITER.DAT
-rwxr-xr-x	1672		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/TEC_CONC.DAT
-rwxr-xr-x	1489		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/TEC_MIN.DAT
-rwxr-xr-x	1040		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/TEC_GAS.DAT
-rwxr-xr-x	1280		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/TIME.DAT
-rwxr-xr-x	3976		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/run_log.dat
-rwxr-xr-x	18239		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/chdump.dat
-rwxr-xr-x	826		3/14/00	10:41	qa_tests/tests_on_sun/reac_rates2.2/SAVECHEM
-rwxr-xr-x	31232		3/14/00	10:59	qa_tests/tests_on_sun/reac_rates2.2/chk_rates.xls
drwxr-xr-x	0		3/30/00	17:54	qa_tests/tests_on_sun/aqtrans2.2/
-rwxr-xr-x	212520	3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/TEC_GAS.DAT	
-rwxr-xr-x	2307		2/17/00	17:56	qa_tests/tests_on_sun/aqtrans2.2/CHEMICAL.INP
-rwxr-xr-x	142869	9/30/98	18:47	qa_tests/tests_on_sun/aqtrans2.2/FLOW.INP	
-rwxr-xr-x	1269		2/17/00	16:45	qa_tests/tests_on_sun/aqtrans2.2/SOLUTE.INP
-rwxr-xr-x	906911	3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/FLOW.OUT	
-rwxr-xr-x	2580		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/VERS
-rwxr-xr-x	162230	3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/MESH	
-rwxr-xr-x	236		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/INCON
-rwxr-xr-x	13		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/GENER
-rwxr-xr-x	137257	3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/SAVE	
-rwxr-xr-x	7920		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/LINEQ
-rwxr-xr-x	0		2/17/00	16:37	qa_tests/tests_on_sun/aqtrans2.2/TABLE
-rwxr-xr-x	45868		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/SOLUTE.OUT
-rwxr-xr-x	5092		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/CHEMICAL.OUT
-rwxr-xr-x	2603		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/ITER.DAT
-rwxr-xr-x	312642	3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/TEC_CONC.DAT	
-rwxr-xr-x	304630	3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/TEC_MIN.DAT	
-rwxr-xr-x	3809		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/TIME.DAT
-rwxr-xr-x	0		2/17/00	16:37	qa_tests/tests_on_sun/aqtrans2.2/Weighting parameters
-rwxr-xr-x	22216		11/5/99	08:41	qa_tests/tests_on_sun/aqtrans2.2/thermokapps2.05.dat
-rwxr-xr-x	7579		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/run_log.dat
-rwxr-xr-x	3393		3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/chdump.dat
-rwxr-xr-x	151497	3/14/00	10:37	qa_tests/tests_on_sun/aqtrans2.2/SAVECHEM	
drwxr-xr-x	0		3/30/00	17:54	qa_tests/tests_on_sun/boil100_2.2/
-rwxr-xr-x	103509	3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/FLOW.OUT	
-rwxr-xr-x	3743		2/17/00	17:55	qa_tests/tests_on_sun/boil100_2.2/CHEMICAL.INP
-rwxr-xr-x	3400		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/VERS
-rwxr-xr-x	1828		11/18/98	17:19	qa_tests/tests_on_sun/boil100_2.2/FLOW.INP
-rwxr-xr-x	1453		2/17/00	18:00	qa_tests/tests_on_sun/boil100_2.2/SOLUTE.INP
-rwxr-xr-x	268		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/MESH
-rwxr-xr-x	236		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/INCON
-rwxr-xr-x	91		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/GENER
-rwxr-xr-x	394		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/SAVE
-rwxr-xr-x	15760		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/LINEQ
-rwxr-xr-x	0		5/24/99	16:15	qa_tests/tests_on_sun/boil100_2.2/TABLE
-rwxr-xr-x	2981		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/SOLUTE.OUT
-rwxr-xr-x	14964		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/CHEMICAL.OUT
-rwxr-xr-x	12704		2/17/00	17:47	qa_tests/tests_on_sun/boil100_2.2/thermok2.dat
-rwxr-xr-x	2895		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/ITER.DAT
-rwxr-xr-x	6562		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/TEC_CONC.DAT
-rwxr-xr-x	5704		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/TEC_MIN.DAT
-rwxr-xr-x	17144		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/TIME.DAT
-rwxr-xr-x	540385	3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/run_log.dat	
-rwxr-xr-x	567806	3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/chdump.dat	
-rwxr-xr-x	0		2/17/00	17:48	qa_tests/tests_on_sun/boil100_2.2/Weighting parameters
-rwxr-xr-x	2975		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/TEC_GAS.DAT
-rwxr-xr-x	2586		3/14/00	10:37	qa_tests/tests_on_sun/boil100_2.2/SAVECHEM
drwxr-xr-x	0		3/30/00	17:54	qa_tests/tests_on_sun/gas_diffus2.2/
-rwxr-xr-x	108544	3/14/00	10:48	qa_tests/tests_on_sun/gas_diffus2.2/check_diff.xls	
-rwxr-xr-x	280478	3/10/99	10:01	qa_tests/tests_on_sun/gas_diffus2.2/FLOW.INP	
-rwxr-xr-x	1311		3/9/00	17:43	qa_tests/tests_on_sun/gas_diffus2.2/SOLUTE.INP
-rwxr-xr-x	1868		2/17/00	16:56	qa_tests/tests_on_sun/gas_diffus2.2/CHEMICAL.INP

-rwxr-xr-x	1370550	3/14/00	10:45	qa_tests/tests_on_sun/gas_diffus2.2/FLOW.OUT
-rwxr-xr-x	3212		3/14/00	10:45 qa_tests/tests_on_sun/gas_diffus2.2/VERS
-rwxr-xr-x	162230	3/14/00	10:37	qa_tests/tests_on_sun/gas_diffus2.2/MESH
-rwxr-xr-x	112124	3/14/00	10:37	qa_tests/tests_on_sun/gas_diffus2.2/INCON
-rwxr-xr-x	0		3/1/00	09:31 qa_tests/tests_on_sun/gas_diffus2.2/GENER
-rwxr-xr-x	137257	3/14/00	10:45	qa_tests/tests_on_sun/gas_diffus2.2/SAVE
-rwxr-xr-x	33040		3/14/00	10:45 qa_tests/tests_on_sun/gas_diffus2.2/LINEQ
-rwxr-xr-x	0		3/1/00	09:31 qa_tests/tests_on_sun/gas_diffus2.2/TABLE
-rwxr-xr-x	45868		3/14/00	10:37 qa_tests/tests_on_sun/gas_diffus2.2/SOLUTE.OUT
-rwxr-xr-x	5095		3/14/00	10:37 qa_tests/tests_on_sun/gas_diffus2.2/CHEMICAL.OUT
-rwxr-xr-x	4939		3/14/00	10:45 qa_tests/tests_on_sun/gas_diffus2.2/ITER.DAT
-rwxr-xr-x	312642	3/14/00	10:45	qa_tests/tests_on_sun/gas_diffus2.2/TEC_CONC.DAT
-rwxr-xr-x	304630	3/14/00	10:45	qa_tests/tests_on_sun/gas_diffus2.2/TEC_MIN.DAT
-rwxr-xr-x	260579	3/14/00	10:45	qa_tests/tests_on_sun/gas_diffus2.2/TEC_GAS.DAT
-rwxr-xr-x	36077		3/14/00	10:45 qa_tests/tests_on_sun/gas_diffus2.2/TIME.DAT
-rwxr-xr-x	44956		3/14/00	10:45 qa_tests/tests_on_sun/gas_diffus2.2/run_log.dat
-rwxr-xr-x	1520		3/14/00	10:37 qa_tests/tests_on_sun/gas_diffus2.2/chdump.dat
-rwxr-xr-x	217510	3/14/00	10:45	qa_tests/tests_on_sun/gas_diffus2.2/SAVECHEM
-rwxr-xr-x	22216		11/5/99	15:59 qa_tests/tests_on_sun/gas_diffus2.2/thermokapps2.05.dat
drwxr-xr-x	0		3/30/00	17:54 qa_tests/tests_on_sun/gas_min_conver/
-rwxr-xr-x	12704		2/17/00	17:47 qa_tests/tests_on_sun/gas_min_conver/thermok2.dat
-rwxr-xr-x	2741		2/17/00	18:23 qa_tests/tests_on_sun/gas_min_conver/CHEMICAL.INP
-rwxr-xr-x	1370		9/22/98	16:37 qa_tests/tests_on_sun/gas_min_conver/FLOW.INP
-rwxr-xr-x	1434		3/2/00	14:30 qa_tests/tests_on_sun/gas_min_conver/SOLUTE.INP
-rwxr-xr-x	104555	3/14/00	10:38	qa_tests/tests_on_sun/gas_min_conver/FLOW.OUT
-rwxr-xr-x	3294		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/VERS
-rwxr-xr-x	106		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/MESH
-rwxr-xr-x	124		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/INCON
-rwxr-xr-x	91		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/GENER
-rwxr-xr-x	257		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/SAVE
-rwxr-xr-x	4000		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/LINEQ
-rwxr-xr-x	0		3/2/00	14:31 qa_tests/tests_on_sun/gas_min_conver/TABLE
-rwxr-xr-x	2934		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/SOLUTE.OUT
-rwxr-xr-x	13865		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/CHEMICAL.OUT
-rwxr-xr-x	2092		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/ITER.DAT
-rwxr-xr-x	5110		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/TEC_CONC.DAT
-rwxr-xr-x	4512		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/TEC_MIN.DAT
-rwxr-xr-x	2613		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/TEC_GAS.DAT
-rwxr-xr-x	3374		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/TIME.DAT
-rwxr-xr-x	6749		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/run_log.dat
-rwxr-xr-x	110145	3/14/00	10:38	qa_tests/tests_on_sun/gas_min_conver/chdump.dat
-rwxr-xr-x	1338		3/14/00	10:38 qa_tests/tests_on_sun/gas_min_conver/SAVECHEM
-rwxr-xr-x	33280		3/14/00	10:48 qa_tests/tests_on_sun/gas_min_conver/check_conver.xls
drwxr-xr-x	0		3/30/00	17:54 qa_tests/tests_on_sun/gastrans2.2/
-rwxr-xr-x	1370550	3/14/00	10:43	qa_tests/tests_on_sun/gastrans2.2/FLOW.OUT
-rwxr-xr-x	280478	3/10/99	10:01	qa_tests/tests_on_sun/gastrans2.2/FLOW.INP
-rwxr-xr-x	3212		3/14/00	10:43 qa_tests/tests_on_sun/gastrans2.2/VERS
-rwxr-xr-x	1311		2/17/00	17:28 qa_tests/tests_on_sun/gastrans2.2/SOLUTE.INP
-rwxr-xr-x	162230	3/14/00	10:38	qa_tests/tests_on_sun/gastrans2.2/MESH
-rwxr-xr-x	112124	3/14/00	10:38	qa_tests/tests_on_sun/gastrans2.2/INCON
-rwxr-xr-x	0		5/25/99	10:50 qa_tests/tests_on_sun/gastrans2.2/GENER
-rwxr-xr-x	137257	3/14/00	10:43	qa_tests/tests_on_sun/gastrans2.2/SAVE
-rwxr-xr-x	33040		3/14/00	10:43 qa_tests/tests_on_sun/gastrans2.2/LINEQ
-rwxr-xr-x	0		5/25/99	10:50 qa_tests/tests_on_sun/gastrans2.2/TABLE
-rwxr-xr-x	45868		3/14/00	10:38 qa_tests/tests_on_sun/gastrans2.2/SOLUTE.OUT
-rwxr-xr-x	1868		2/17/00	16:56 qa_tests/tests_on_sun/gastrans2.2/CHEMICAL.INP
-rwxr-xr-x	5095		3/14/00	10:38 qa_tests/tests_on_sun/gastrans2.2/CHEMICAL.OUT
-rwxr-xr-x	4939		3/14/00	10:43 qa_tests/tests_on_sun/gastrans2.2/ITER.DAT
-rwxr-xr-x	312642	3/14/00	10:43	qa_tests/tests_on_sun/gastrans2.2/TEC_CONC.DAT
-rwxr-xr-x	260579	3/14/00	10:43	qa_tests/tests_on_sun/gastrans2.2/TEC_GAS.DAT
-rwxr-xr-x	304630	3/14/00	10:43	qa_tests/tests_on_sun/gastrans2.2/TEC_MIN.DAT
-rwxr-xr-x	36077		3/14/00	10:43 qa_tests/tests_on_sun/gastrans2.2/TIME.DAT
-rwxr-xr-x	44956		3/14/00	10:43 qa_tests/tests_on_sun/gastrans2.2/run_log.dat
-rwxr-xr-x	1520		3/14/00	10:38 qa_tests/tests_on_sun/gastrans2.2/chdump.dat
-rwxr-xr-x	22216		11/5/99	08:41 qa_tests/tests_on_sun/gastrans2.2/thermokapps2.05.dat
-rwxr-xr-x	217510	3/14/00	10:43	qa_tests/tests_on_sun/gastrans2.2/SAVECHEM
drwxr-xr-x	0		3/30/00	17:55 qa_tests/tests_on_sun/geothermal2.2/
-rwxr-xr-x	120803	3/14/00	10:38	qa_tests/tests_on_sun/geothermal2.2/FLOW.OUT
-rwxr-xr-x	2708		3/14/00	10:38 qa_tests/tests_on_sun/geothermal2.2/VERS
-rwxr-xr-x	8050		3/14/00	10:38 qa_tests/tests_on_sun/geothermal2.2/MESH

-rwxr-xr-x	12		3/14/00	10:38	qa_tests/tests_on_sun/geothermal2.2/INCON
-rwxr-xr-x	91		3/14/00	10:38	qa_tests/tests_on_sun/geothermal2.2/GENER
-rwxr-xr-x	6970		3/14/00	10:38	qa_tests/tests_on_sun/geothermal2.2/SAVE
-rwxr-xr-x	10480		3/14/00	10:38	qa_tests/tests_on_sun/geothermal2.2/LINEQ
-rwxr-xr-x	0		4/29/99	13:39	qa_tests/tests_on_sun/geothermal2.2/TABLE
-r-xr-xr-x	5024		9/23/98	15:03	qa_tests/tests_on_sun/geothermal2.2/FLOW.INP
drwxr-xr-x	0		3/30/00	17:55	qa_tests/tests_on_sun/heat_pipe2.2/
-rwxr-xr-x	169483	3/14/00	10:40	qa_tests/tests_on_sun/heat_pipe2.2/FLOW.OUT	
-rwxr-xr-x	3281		3/14/00	10:40	qa_tests/tests_on_sun/heat_pipe2.2/VERS
-rwxr-xr-x	18405		3/14/00	10:39	qa_tests/tests_on_sun/heat_pipe2.2/MESH
-rwxr-xr-x	12		3/14/00	10:39	qa_tests/tests_on_sun/heat_pipe2.2/INCON
-rwxr-xr-x	91		3/14/00	10:39	qa_tests/tests_on_sun/heat_pipe2.2/GENER
-rwxr-xr-x	16697		3/14/00	10:40	qa_tests/tests_on_sun/heat_pipe2.2/SAVE
-rwxr-xr-x	55680		3/14/00	10:40	qa_tests/tests_on_sun/heat_pipe2.2/LINEQ
-rwxr-xr-x	0		4/29/99	13:43	qa_tests/tests_on_sun/heat_pipe2.2/TABLE
-r-xr-xr-x	1501		9/23/98	15:01	qa_tests/tests_on_sun/heat_pipe2.2/FLOW.INP
drwxr-xr-x	0		3/30/00	17:55	qa_tests/tests_on_sun/heat_sat1_2.2/
-rwxr-xr-x	101881	3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/FLOW.OUT	
-rwxr-xr-x	1298		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/SAVECHEM
-rwxr-xr-x	2527		9/22/98	17:10	qa_tests/tests_on_sun/heat_sat1_2.2/CHEMICAL.INP
-rwxr-xr-x	1375		9/22/98	16:18	qa_tests/tests_on_sun/heat_sat1_2.2/FLOW.INP
-rwxr-xr-x	1414		2/17/00	18:17	qa_tests/tests_on_sun/heat_sat1_2.2/SOLUTE.INP
-rwxr-xr-x	2938		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/SOLUTE.OUT
-rwxr-xr-x	13464		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/CHEMICAL.OUT
-rwxr-xr-x	2165		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/ITER.DAT
-rwxr-xr-x	4888		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/TEC_CONC.DAT
-rwxr-xr-x	4316		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/TEC_MIN.DAT
-rwxr-xr-x	6726		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/run_log.dat
-rwxr-xr-x	126933	3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/chdump.dat	
-rwxr-xr-x	4139		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/TIME.DAT
-rwxr-xr-x	12704		2/17/00	17:47	qa_tests/tests_on_sun/heat_sat1_2.2/thermok2.dat
-rwxr-xr-x	2662		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/VERS
-rwxr-xr-x	106		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/MESH
-rwxr-xr-x	124		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/INCON
-rwxr-xr-x	91		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/GENER
-rwxr-xr-x	257		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/SAVE
-rwxr-xr-x	4720		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/LINEQ
-rwxr-xr-x	0		2/17/00	18:14	qa_tests/tests_on_sun/heat_sat1_2.2/TABLE
-rwxr-xr-x	2500		3/14/00	10:39	qa_tests/tests_on_sun/heat_sat1_2.2/TEC_GAS.DAT
-rwxr-xr-x	0		2/17/00	18:14	qa_tests/tests_on_sun/heat_sat1_2.2/Weighting parameters
drwxr-xr-x	0		3/30/00	17:55	qa_tests/tests_on_sun/heat_unsat1_2.2/
-rwxr-xr-x	12704		2/17/00	17:47	qa_tests/tests_on_sun/heat_unsat1_2.2/thermok2.dat
-rwxr-xr-x	104555	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/FLOW.OUT	
-rwxr-xr-x	1425		2/17/00	18:13	qa_tests/tests_on_sun/heat_unsat1_2.2/SOLUTE.INP
-rwxr-xr-x	2741		2/17/00	18:23	qa_tests/tests_on_sun/heat_unsat1_2.2/CHEMICAL.INP
-rwxr-xr-x	1370		9/22/98	16:37	qa_tests/tests_on_sun/heat_unsat1_2.2/FLOW.INP
-rwxr-xr-x	3294		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/VERS
-rwxr-xr-x	106		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/MESH
-rwxr-xr-x	124		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/INCON
-rwxr-xr-x	91		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/GENER
-rwxr-xr-x	257		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/SAVE
-rwxr-xr-x	4000		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/LINEQ
-rwxr-xr-x	0		5/24/99	16:24	qa_tests/tests_on_sun/heat_unsat1_2.2/TABLE
-rwxr-xr-x	2934		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/SOLUTE.OUT
-rwxr-xr-x	13865		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/CHEMICAL.OUT
-rwxr-xr-x	2092		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/ITER.DAT
-rwxr-xr-x	5110		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/TEC_CONC.DAT
-rwxr-xr-x	4512		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/TEC_MIN.DAT
-rwxr-xr-x	3374		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/TIME.DAT
-rwxr-xr-x	6749		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/run_log.dat
-rwxr-xr-x	110145	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/chdump.dat	
-rwxr-xr-x	2613		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/TEC_GAS.DAT
-rwxr-xr-x	1338		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat1_2.2/SAVECHEM
drwxr-xr-x	0		3/30/00	17:55	qa_tests/tests_on_sun/heat_unsat2_2.2/
-rwxr-xr-x	12704		2/17/00	17:47	qa_tests/tests_on_sun/heat_unsat2_2.2/thermok2.dat
-rwxr-xr-x	47002		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/FLOW.OUT
-rwxr-xr-x	1425		2/17/00	18:13	qa_tests/tests_on_sun/heat_unsat2_2.2/SOLUTE.INP
-rwxr-xr-x	2749		2/17/00	18:29	qa_tests/tests_on_sun/heat_unsat2_2.2/CHEMICAL.INP
-rwxr-xr-x	1295		9/22/98	16:28	qa_tests/tests_on_sun/heat_unsat2_2.2/FLOW.INP
-rwxr-xr-x	3023		3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/VERS

-rwxr-xr-x	106	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/MESH
-rwxr-xr-x	124	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/INCON
-rwxr-xr-x	0	5/24/99	16:22	qa_tests/tests_on_sun/heat_unsat2_2.2/GENER
-rwxr-xr-x	257	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/SAVE
-rwxr-xr-x	0	5/24/99	16:22	qa_tests/tests_on_sun/heat_unsat2_2.2/LINEQ
-rwxr-xr-x	0	5/24/99	16:22	qa_tests/tests_on_sun/heat_unsat2_2.2/TABLE
-rwxr-xr-x	2934	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/SOLUTE.OUT
-rwxr-xr-x	13865	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/CHEMICAL.OUT
-rwxr-xr-x	1362	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/ITER.DAT
-rwxr-xr-x	2224	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/TEC_CONC.DAT
-rwxr-xr-x	1964	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/TEC_MIN.DAT
-rwxr-xr-x	1589	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/TIME.DAT
-rwxr-xr-x	4405	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/run_log.dat
-rwxr-xr-x	46575	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/chdump.dat
-rwxr-xr-x	1144	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/TEC_GAS.DAT
-rwxr-xr-x	1338	3/14/00	10:40	qa_tests/tests_on_sun/heat_unsat2_2.2/SAVECHEM
drwxr-xr-x	0	3/30/00	17:55	qa_tests/tests_on_sun/k_thermal2.2/
-rwxr-xr-x	1950	3/9/00	21:31	qa_tests/tests_on_sun/k_thermal2.2/FLOW.INP
-rwxr-xr-x	112794	3/14/00	10:40	qa_tests/tests_on_sun/k_thermal2.2/FLOW.OUT
-rwxr-xr-x	2816	3/14/00	10:40	qa_tests/tests_on_sun/k_thermal2.2/VERS
-rwxr-xr-x	592	3/14/00	10:40	qa_tests/tests_on_sun/k_thermal2.2/MESH
-rwxr-xr-x	460	3/14/00	10:40	qa_tests/tests_on_sun/k_thermal2.2/INCON
-rwxr-xr-x	457	3/14/00	10:40	qa_tests/tests_on_sun/k_thermal2.2/GENER
-rwxr-xr-x	668	3/14/00	10:40	qa_tests/tests_on_sun/k_thermal2.2/SAVE
-rwxr-xr-x	1600	3/14/00	10:40	qa_tests/tests_on_sun/k_thermal2.2/LINEQ
-rwxr-xr-x	0	2/18/00	11:33	qa_tests/tests_on_sun/k_thermal2.2/TABLE
-rwxr-xr-x	18944	3/14/00	10:58	qa_tests/tests_on_sun/k_thermal2.2/check_kth.xls
drwxr-xr-x	0	3/30/00	17:55	qa_tests/tests_on_sun/perm-pcap2.2/
drwxr-xr-x	0	3/30/00	17:55	qa_tests/tests_on_sun/perm-pcap2.2/fracture/
-rwxr-xr-x	28442	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/FLOW.OUT
-rwxr-xr-x	3294	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/VERS
-rwxr-xr-x	268	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/MESH
-rwxr-xr-x	0	3/14/00	09:29	qa_tests/tests_on_sun/perm-pcap2.2/fracture/INCON
-rwxr-xr-x	169	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/GENER
-rwxr-xr-x	394	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/SAVE
-rwxr-xr-x	320	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/LINEQ
-rwxr-xr-x	10632	2/18/00	09:09	qa_tests/tests_on_sun/perm-pcap2.2/fracture/thermodum.dat
-rwxr-xr-x	0	3/14/00	09:29	qa_tests/tests_on_sun/perm-pcap2.2/fracture/TABLE
-rwxr-xr-x	2927	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/SOLUTE.OUT
-rwxr-xr-x	7420	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/CHEMICAL.OUT
-rwxr-xr-x	778	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/ITER.DAT
-rwxr-xr-x	1082	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/TEC_CONC.DAT
-rwxr-xr-x	734	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/TEC_MIN.DAT
-rwxr-xr-x	661	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/TEC_GAS.DAT
-rwxr-xr-x	2052	4/15/99	18:13	qa_tests/tests_on_sun/perm-pcap2.2/fracture/CHEMICAL.INP
-rwxr-xr-x	1450	2/18/00	09:11	qa_tests/tests_on_sun/perm-pcap2.2/fracture/FLOW.INP
-rwxr-xr-x	1407	2/17/00	19:49	qa_tests/tests_on_sun/perm-pcap2.2/fracture/SOLUTE.INP
-rwxr-xr-x	329	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/TIME.DAT
-rwxr-xr-x	9444	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/run_log.dat
-rwxr-xr-x	12557	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/chdump.dat
-rwxr-xr-x	1183	3/14/00	09:45	qa_tests/tests_on_sun/perm-pcap2.2/fracture/SAVECHEM
drwxr-xr-x	0	3/30/00	17:55	qa_tests/tests_on_sun/perm-pcap2.2/matrix/
-rwxr-xr-x	2927	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/SOLUTE.OUT
-rwxr-xr-x	778	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/ITER.DAT
-rwxr-xr-x	9444	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/run_log.dat
-rwxr-xr-x	1082	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/TEC_CONC.DAT
-rwxr-xr-x	661	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/TEC_GAS.DAT
-rwxr-xr-x	734	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/TEC_MIN.DAT
-rwxr-xr-x	10632	2/18/00	09:09	qa_tests/tests_on_sun/perm-pcap2.2/matrix/thermodum.dat
-rwxr-xr-x	329	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/TIME.DAT
-rwxr-xr-x	169	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/GENER
-rwxr-xr-x	0	2/18/00	08:25	qa_tests/tests_on_sun/perm-pcap2.2/matrix/INCON
-rwxr-xr-x	320	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/LINEQ
-rwxr-xr-x	268	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/MESH
-rwxr-xr-x	394	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/SAVE
-rwxr-xr-x	1183	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/SAVECHEM
-rwxr-xr-x	0	5/24/99	17:52	qa_tests/tests_on_sun/perm-pcap2.2/matrix/TABLE
-rwxr-xr-x	3294	3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/VERS
-rwxr-xr-x	2052	4/15/99	18:13	qa_tests/tests_on_sun/perm-pcap2.2/matrix/CHEMICAL.INP
-rwxr-xr-x	1450	2/18/00	09:23	qa_tests/tests_on_sun/perm-pcap2.2/matrix/FLOW.INP

-rwxr-xr-x	1407		2/17/00	19:49	qa_tests/tests_on_sun/perm-pcap2.2/matrix/SOLUTE.INP
-rwxr-xr-x	7420		3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/CHEMICAL.OUT
-rwxr-xr-x	28442		3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/FLOW.OUT
-rwxr-xr-x	12557		3/14/00	09:46	qa_tests/tests_on_sun/perm-pcap2.2/matrix/chdump.dat
drwxr-xr-x	0		3/30/00	17:55	qa_tests/tests_on_sun/2phase_flow2.2/
drwxr-xr-x	0		3/30/00	17:55	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/
-rwxr-xr-x	277895	3/14/00	10:37	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/FLOW.OUT	
-rwxr-xr-x	3276		3/14/00	10:37	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/VERS
-rwxr-xr-x	32530		3/14/00	10:36	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/MESH
-rwxr-xr-x	22524		3/14/00	10:36	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/INCON
-rwxr-xr-x	314		3/14/00	10:36	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/GENER
-rwxr-xr-x	27657		3/14/00	10:37	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/SAVE
-rwxr-xr-x	76080		3/14/00	10:37	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/LINEQ
-rwxr-xr-x	0		4/29/99	11:04	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/TABLE
-rwxr-xr-x	9364		9/23/98	15:04	qa_tests/tests_on_sun/2phase_flow2.2/outer_ring/FLOW.INP
drwxr-xr-x	0		3/30/00	17:55	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/
-rwxr-xr-x	179344	3/14/00	10:37	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/FLOW.OUT	
-rwxr-xr-x	3276		3/14/00	10:37	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/VERS
-rwxr-xr-x	16318		3/14/00	10:36	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/MESH
-rwxr-xr-x	11324		3/14/00	10:36	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/INCON
-rwxr-xr-x	314		3/14/00	10:36	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/GENER
-rwxr-xr-x	13957		3/14/00	10:37	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/SAVE
-rwxr-xr-x	121280	3/14/00	10:37	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/LINEQ	
-rwxr-xr-x	0		4/29/99	11:23	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/TABLE
-rwxr-xr-x	9015		9/23/98	15:04	qa_tests/tests_on_sun/2phase_flow2.2/no_outer_ring/FLOW.INP
drwxr-xr-x	0		3/30/00	17:55	sample_problems/
drwxr-xr-x	0		3/30/00	17:55	sample_problems/sample_problem2/
-rwxr-xr-x	18657		3/8/00	20:15	sample_problems/sample_problem2/thermoktuff.dat
-rwxr-xr-x	9056		5/24/99	14:23	sample_problems/sample_problem2/FLOW.INP
-rwxr-xr-x	4397		3/8/00	20:16	sample_problems/sample_problem2/CHEMICAL.INP
-rwxr-xr-x	1376		3/31/00	13:47	sample_problems/sample_problem2/SOLUTE.INP
-rwxr-xr-x	2599308	3/14/00	11:05	sample_problems/sample_problem2/FLOW.OUT	
-rwxr-xr-x	2662		3/14/00	11:05	sample_problems/sample_problem2/VERS
-rwxr-xr-x	8698		3/14/00	10:41	sample_problems/sample_problem2/MESH
-rwxr-xr-x	0		3/8/00	20:17	sample_problems/sample_problem2/INCON
-rwxr-xr-x	91		3/14/00	10:41	sample_problems/sample_problem2/GENER
-rwxr-xr-x	7518		3/14/00	11:05	sample_problems/sample_problem2/SAVE
-rwxr-xr-x	1382960	3/14/00	11:05	sample_problems/sample_problem2/LINEQ	
-rwxr-xr-x	0		3/8/00	20:17	sample_problems/sample_problem2/TABLE
-rwxr-xr-x	5242		3/14/00	10:41	sample_problems/sample_problem2/SOLUTE.OUT
-rwxr-xr-x	12529		3/14/00	10:41	sample_problems/sample_problem2/CHEMICAL.OUT
-rwxr-xr-x	128090	3/14/00	11:05	sample_problems/sample_problem2/ITER.DAT	
-rwxr-xr-x	34442		3/14/00	11:05	sample_problems/sample_problem2/TEC_CONC.DAT
-rwxr-xr-x	56655		3/14/00	11:05	sample_problems/sample_problem2/TEC_MIN.DAT
-rwxr-xr-x	2203514	3/14/00	11:05	sample_problems/sample_problem2/TIME.DAT	
-rwxr-xr-x	0		3/8/00	20:17	sample_problems/sample_problem2/Weighting parameters
-rwxr-xr-x	14666		3/14/00	11:05	sample_problems/sample_problem2/TEC_GAS.DAT
-rwxr-xr-x	341682	3/14/00	11:05	sample_problems/sample_problem2/run_log.dat	
-rwxr-xr-x	5150		3/14/00	10:41	sample_problems/sample_problem2/chdump.dat
-rwxr-xr-x	45335		3/14/00	11:05	sample_problems/sample_problem2/SAVECHEM
drwxr-xr-x	0		3/30/00	17:56	sample_problems/sample_problem1/
-rwxr-xr-x	11496		3/8/00	19:56	sample_problems/sample_problem1/thermok.dat
-rwxr-xr-x	5715		4/30/99	13:45	sample_problems/sample_problem1/FLOW.INP
-rwxr-xr-x	1261		3/31/00	13:47	sample_problems/sample_problem1/SOLUTE.INP
-rwxr-xr-x	1990		3/8/00	19:49	sample_problems/sample_problem1/CHEMICAL.INP
-rwxr-xr-x	1065019	3/14/00	10:43	sample_problems/sample_problem1/FLOW.OUT	
-rwxr-xr-x	2662		3/14/00	10:43	sample_problems/sample_problem1/VERS
-rwxr-xr-x	5131		3/14/00	10:41	sample_problems/sample_problem1/MESH
-rwxr-xr-x	0		3/8/00	19:53	sample_problems/sample_problem1/INCON
-rwxr-xr-x	91		3/14/00	10:41	sample_problems/sample_problem1/GENER
-rwxr-xr-x	4504		3/14/00	10:43	sample_problems/sample_problem1/SAVE
-rwxr-xr-x	556640	3/14/00	10:43	sample_problems/sample_problem1/LINEQ	
-rwxr-xr-x	0		3/8/00	19:53	sample_problems/sample_problem1/TABLE
-rwxr-xr-x	4201		3/14/00	10:41	sample_problems/sample_problem1/SOLUTE.OUT
-rwxr-xr-x	4735		3/14/00	10:41	sample_problems/sample_problem1/CHEMICAL.OUT
-rwxr-xr-x	52681		3/14/00	10:43	sample_problems/sample_problem1/ITER.DAT
-rwxr-xr-x	10314		3/14/00	10:43	sample_problems/sample_problem1/TEC_CONC.DAT
-rwxr-xr-x	10054		3/14/00	10:43	sample_problems/sample_problem1/TEC_MIN.DAT
-rwxr-xr-x	7092		3/14/00	10:43	sample_problems/sample_problem1/TEC_GAS.DAT
-rwxr-xr-x	261059	3/14/00	10:43	sample_problems/sample_problem1/TIME.DAT	

-rwxr-xr-x	323346	3/14/00	10:43	sample_problems/sample_problem1/run_log.dat
-rwxr-xr-x	2358	3/14/00	10:41	sample_problems/sample_problem1/chdump.dat
-rwxr-xr-x	5658	3/14/00	10:43	sample_problems/sample_problem1/SAVECHEM
drwxr-xr-x	0	3/30/00	17:53	source_code/
-rwxr-xr-x	217	9/14/99	11:38	source_code/perm21.inc
-rwxr-xr-x	71234	3/9/00	20:40	source_code/eos3_22.f
-rwxr-xr-x	1061	3/9/00	16:50	source_code/gasdiffus.f
-rwxr-xr-x	84347	3/13/00	18:25	source_code/geochem22.f
-rwxr-xr-x	43783	3/14/00	09:41	source_code/inichm22.f
-rwxr-xr-x	777	9/20/99	14:28	source_code/intp1.f
-rwxr-xr-x	1127	3/9/00	17:32	source_code/kthermfac.f
-rwxr-xr-x	115401	9/15/99	11:01	source_code/ma28.f
-rwxr-xr-x	42829	9/15/99	11:01	source_code/meshm.f
-rwxr-xr-x	43417	9/15/99	11:01	source_code/meshm22.f
-rwxr-xr-x	22572	9/17/99	13:39	source_code/newton22.f
-rwxr-xr-x	16002	9/21/99	10:16	source_code/pcap_2.2ysw.f
-rwxr-xr-x	3707	3/13/00	16:54	source_code/propchg.f
-rwxr-xr-x	17592	9/24/99	11:06	source_code/readsolu22.f
-rwxr-xr-x	386	9/15/99	11:01	source_code/secondsun.f
-rwxr-xr-x	7498	9/24/99	11:03	source_code/solver5.f
-rwxr-xr-x	65463	9/24/99	11:32	source_code/t2cg1qui22.f
-rwxr-xr-x	84156	10/11/99	11:06	source_code/t2fqui22.f
-rwxr-xr-x	21119	10/8/99	16:19	source_code/thermo22.f
-rwxr-xr-x	164910	3/13/00	18:36	source_code/treact22.f
-rwxr-xr-x	1759	10/11/99	14:40	source_code/chempar22.inc
-rwxr-xr-x	3585	9/30/99	15:34	source_code/common22.inc
-rwxr-xr-x	1020	10/14/99	16:28	source_code/flowpar22.inc
-rwxr-xr-x	4622	10/15/99	17:22	source_code/couple_k22.f
-rwxr-xr-x	369	3/9/00	16:49	source_code/makefile_sun
-rwxr-xr-x	486	10/18/99	13:57	source_code/makefile_dec