QA: N/A

Civilian Radioactive Waste Management System
Management & Operating Contractor

Natural Analogue Synthesis Report

TDR-NBS-GS-000027 REV00 ICN 02

May 2002

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CHANGE HISTORY

Revision Number	**Interim Change No.**	**Effective Date**	**Description of Change**
00		02/15/2002	Initial Issue.
00	01	04/15/2002	Interim change to address comments per AP-7.5Q, Submittal, Review, and Acceptance of Deliverables. Text modified for grammar. Changes indicated by sidebar in margin.
00	02	05/01/2002	Interim change to Table 1-1, KTI Agreements and to correct typographical errors. Text modified on pp. 1T-1, 3-1, 4-1, 6-2, 7-2, 8-1, 10-1, 11-1, 11-5, 11-18, 14-1. Changes indicated by sidebars in margin; on pages modified for ICN 02, only those changes associated with ICN 02 are noted by sidebars.

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ACRONYMS AND ABBREVIATIONS

1-D	one-dimensional, one dimension
2-D	two-dimensional, two dimensions
3-D	three-dimensional, three dimensions
ACC	accession number
AMR	Analysis/Model Report
AP	Administrative Procedure
BDCF	Biosphere Dose Conversion Factor
BP	Before Present
BSC	Bechtel SAIC Company, LLC
CEC	Cation Exchange Capacity
CFR	Code of Federal Regulations
ChNNP	Chernobyl Nuclear Power Plant
CRWMS	Civilian Radioactive Waste Management System
DCM	dual-continuum model
DCPT	dual-continuum particle tracker
DIC	dissolved inorganic carbon
DIRS	Document Input Reference System
DOE	U.S. Department of Energy
DST	Drift Scale Test
DTN	Data Tracking Number
EBS	Engineered Barrier System
ECRB	Enhanced Characterization of Repository Block
EHPA	Di (2-Ethylhexyl) Phosphoric Acid
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESF	Exploratory Studies Facility
FEHM	Finite Element Heat and Mass Transfer
FEP	Features, Events, and Processes
FY	Fiscal Year
GMWL	Global Meteoric Water Line
IAEA	International Atomic Energy Agency
IFC	International Formulation Committee
INEEL	Idaho National Engineering and Environmental Laboratory
ISM	Integrated Site Model
ITN	Input Tracking Number
KTI	Key Technical Issue

ACRONYMS AND ABBREVIATIONS (Continued)

LA	License Application
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LBT	Large Block Test
LLNL	Lawrence Livermore National Laboratory
LPIT	Large Scale Aquifer Pumping and Infiltration Test (at INEEL)
M&O	Management and Operating Contractor
N/A	not applicable
NARG	Natural Analogue Review Group
NAT	Neutron-Probe Access Tube
NEA	Nuclear Energy Agency
NKC	sodium-potassium-calcium
NRC	U.S. Nuclear Regulatory Commission
NTS	Nevada Test Site
NWTRB	Nuclear Waste Technical Review Board
OCRWM	Office of Civilian Radioactive Waste Management
PA	Performance Assessment
PGA	peak ground acceleration
PMR	Process Model Report
Q	Qualified
QA	Quality Assurance
QAP	Quality Administrative Procedure
QARD	Quality Assurance Requirements and Description
QIP	Quality Implementing Procedure
REE	rare earth elements
RPM	Rock Properties Model
RWMC	Radioactive Waste Management Complex (at INEEL)
SDA	Subsurface Disposal Area (within RWMC, at INEEL)
SEM	scanning electron microscope
S & ER	Yucca Mountain Science and Engineering Report
SHT	Single Heater Test
SN	Scientific Notebook
SNF	spent nuclear fuel
SNL	Sandia National Laboratories
SR	Site Recommendation
SRPA	Snake River Plain Aquifer

ACRONYMS AND ABBREVIATIONS (Continued)

STN	Software Tracking Number
SZ	saturated zone
TBD	to be determined
TBV	to be verified
TDMS	Technical Data Management System
TDS	total dissolved solids
TH	thermal-hydrologic
THC	thermal-hydrologic-chemical
THCM	thermal-hydrologic-chemical-mechanical
THM	thermal-hydrologic-mechanical
TIMS	thermal ionization mass spectrometry
TNT	trinitrotoluene
TOUGH	Transport Of Unsaturated Groundwater and Heat
TRU	transuranic
TSPA	Total System Performance Assessment
TSPA-SR	Total System Performance Assessment Site Recommendation
TWP	Technical Work Plan
UMTRA	Uranium Mill Tailing Remedial Action
UNE	Underground Nuclear Explosion
US	United States
USGS	United States Geological Survey
UZ	unsaturated zone
VA	Viability Assessment
WFD	waste form degradation
WP	waste package
XRD	x-ray diffraction
XRF	x-ray fluorescence
YM	Yucca Mountain
YMP	Yucca Mountain Site Characterization Project
YMSD	Yucca Mountain Site Description

ACRONYMS AND ABBREVIATIONS (Continued)

UNITS

Bq	becquerel
Ci	curie
g	gram
ka	thousand years ago
kg	kilogram
ky	thousand years
m	meter
Ma	million years ago
masl	meters above sea level
mg/L	milligrams per liter
mL/g	milliliters per gram
mm	millimeter
μmho/cm	micro-mho per centimeter
MPa	megapascal
mR/hr	millirads per hour
Mt	megaton
m.y.	million years
Pa	pascal
pCi	picocurie
rem	roentgen equivalent man (i.e., the amount that produces the same damage to humans as 1 roentgen of high-voltage x-rays)
Sv	sievert
t	ton
t/ha	tons per hectare
yr	year

MAJOR HYDROGEOLOGICAL UNITS

CFu	Crater Flat undifferentiated hydrogeologic unit
CHn	Calico Hills nonwelded hydrogeologic unit
PTn	Paintbrush Tuff nonwelded hydrogeologic unit
TCw	Tiva Canyon welded hydrogeologic unit
TSw	Topopah Spring welded hydrogeologic unit