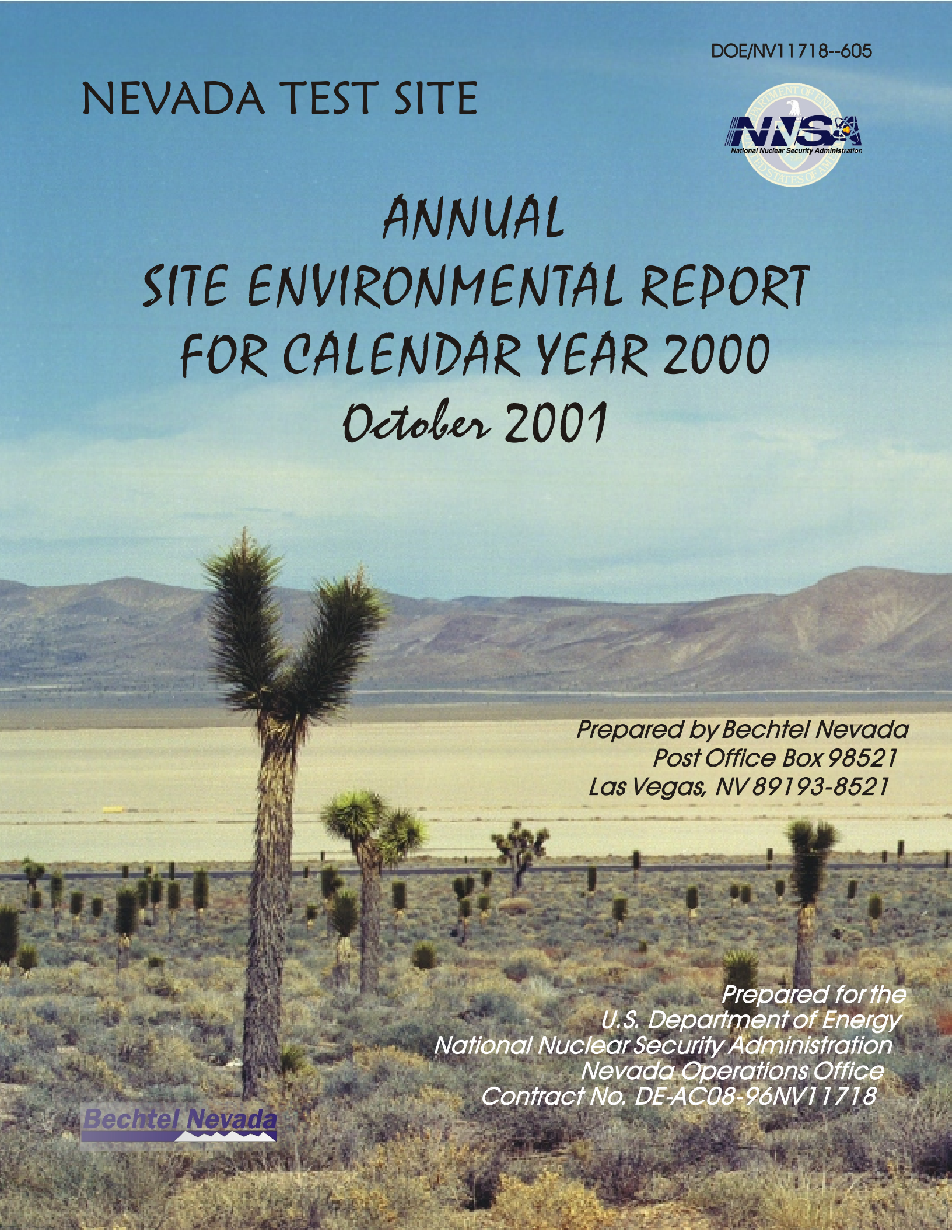
DOE/NV11718--605

NEVADA TEST SITE

ANNUAL SITE ENVIRONMENTAL REPORT FOR CALENDAR YEAR 2000

October 2001



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DISCLAIMER

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TABLE OF CONTENTS

Page

Page

LIST OF FIGURES

LIST OF PHOTOGRAPHS

LIST OF TABLES

MEASUREMENT UNITS AND NOMENCLATURE

Radioactivity data in this report are expressed in both traditional units (e.g., pCi/L) and International System (abbreviated SI) units. These units are explained below.

background Ambient background radiation to which people are exposed. Naturally occurring radioactive elements contained in the body, in the ground, and in construction materials, cosmic radiation, and radioactivity in the air all contribute to an average radiation dose equivalent to humans of about 350 mrem per year. In laboratory measurements of radioactivity in samples, background is the activity determined when a sample of distilled water is processed through the system (Also called a blank).

becquerel Abbreviation Bq. The Bq is the SI unit for disintegration rate. 1 Bq = 1 disintegration per second.

concentration Activity per unit volume or weight. Usually expressed as µCi/mL, pCi/m^3 or pCi/g.

curie Abbreviation Ci. The historic unit for disintegration rate. 1 Ci = 3.7 x 10^{10} disintegrations per second = 3.7 x 10^{10} Bq. The usual submultiples of Ci are mCi (10^{-3} Ci or one thousandth Ci), µCi (10^{-6} Ci or one millionth Ci), and pCi (10^{-12} or one trillionth Ci).

EDE Effective dose equivalent - radiation dose corrected by various weighting factors that relate dose to the risk of serious effects.

rem Rem (for roentgen equivalent man) is the unit for expressing dose equivalent, or the energy imparted to a person when exposed to radiation. The commonly used subunit is the millirem (10^{-3} rem or one thousandth rem), abbreviated mrem.

roentgen Abbreviation R. A unit expressing the intensity of X or γ radiation at a point in air. The usual unit is mR or 10^{-3} R (one thousandth R).

volume The SI unit for volume is m^3 (cubic meter). Other units used are liter (L) and mL (10^{-3} L or one thousandth liter). One cubic meter = 1,000 L, 1 L = 1.06 quarts.

The elements and corresponding symbols used in this report are:

Element	Symbol	Element	Symbol
Actinium	Ac	Iron	Fe
Aluminum	Al	Krypton	Kr
Argon	Ar	Lead	Pb
Arsenic	As	Lithium	Li
Barium	Ba	Mercury	Hg
Beryllium	Be	Nitrogen	N
Bismuth	Bi	Oxygen	O
Boron	B	Plutonium	Pu
Cadmium	Cd	Potassium	K
Calcium	Ca	Radium	Ra
Cesium	Cs	Radon	Rn
Chlorine	Cl	Selenium	Se
Chromium	Cr	Silver	Ag
Cobalt	Co	Strontium	Sr
Copper	C	Thallium	Tl
Europium	Eu	Thorium	Th
Fluorine	F	Thulium	Tm
Hydrogen	H	Tritium	^3H
Iodine	I	Uranium	U

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LIST OF ACRONYMS AND ABBREVIATIONS

AA	Alluvial Aquifer
AIP	Agreement in Principle
AMEM	Assistant Manager for Environmental Management
ANOVA	Analysis of Variance
APCD	Air Pollution Control Division
ARL/SORD	Air Resources Laboratory, Special Operations and Research Division
ASA	Auditable Safety Analysis
ASCII	American Standard Code for Information Interchange
ASER	Annual Site Environmental Report
ASL	Analytical Services Laboratory
ASN	Air Surveillance Network
BCG	Biota Concentration Guide
BEEF	Big Explosives Experimental Facility
BEIDMS	Bechtel Environmental Integrated Data Management System
BHPS	Bureau of Health Protection Services
BLM	Bureau of Land Management
BN	Bechtel Nevada
BOD	Biochemical Oxygen Demand
CAA	Clean Air Act
CADD	Corrective Action Decision Document
CAIP	Corrective Action Investigation Plan
CAP	Corrective Action Plan
CAP88-PC	Clean Air Package 1988 (EPA software program for estimating doses)
CAS	Corrective Action Site
CAU	Corrective Action Unit
CEDE	Committed Effective Dose Equivalent
CEI	Compliance Evaluation Inspection
CEMP	Community Environmental Monitoring Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGTO	Consolidated Group of Tribes and Organizations
CP	Control Point
CRMP	Community Radiation Monitoring Program
CTLP	Community Technical Liaison Program
CWA	Clean Water Act
CX	Categorical Exclusion
CY	Calendar Year
DAC	Derived Air Concentration
DAF	Device Assembly Facility
DAS	Disposal Authorization Statement
DCG	Derived Concentration Guide
D&D	Deactivation and Decommissioning
DDR	Data Discrepancy Report
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOE/HQ	DOE Headquarters
DOELAP	DOE Laboratory Accreditation Program
DOE/NV	DOE Nevada Operations Office
DQO	Data Quality Objectives

DRI	Desert Research Institute, University and Community College System, Nevada
DWR	Division of Water Resources
EA	Environmental Assessment
EDE	Effective Dose Equivalent
EHS	Extremely Hazardous Substances
EIS	Environmental Impact Statement
ELU	Ecological Landform Unit
EMAC	Ecological Monitoring and Compliance
EML	Environmental Measurements Laboratory (DOE)
EO	Executive Order
EOD	Explosive Ordnance Disposal (NTS)
EODU	Explosive Ordnance Disposal Unit
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Reporting and Community Right-to-Know Act
ERA	Environmental Resource Associates
ERP	Environmental Restoration Project
ESA	Endangered Species Act
ESHD	Environment, Safety and Health Division
ET	Evapotranspiration
FFACO	Federal Facilities Agreement and Consent Order
FFCAct	Federal Facilities Compliance Act
FIFRA	Federal Insecticide Fungicide and Rodenticide Act
FY	Fiscal Year
GCD	Greater Confinement Disposal
GCU	Granite Confining Unit
GIS	Geographic Information System
gpm	Gallons per Minute
HGU	Hydrogeologic Unit
HRMP	Hydrologic Resources Management Program
HSC	Hazardous Materials Spill Center
HSU	Hydrostratigraphic Unit
HTO	Tritiated Water
HWSU	Hazardous Waste Storage Unit
ICMP	Integrated Closure and Monitoring Plan
ICRP	International Commission on Radiological Protection
ID	Identification
IICU	Intrusive Confining Unit
INEEL	Idaho National Engineering and Environmental Laboratory
IT	International Technology
JASPER	Joint Actinide Shock Physics Experimental Research Facility
LANL	Los Alamos National Laboratory
LAO	Los Alamos Operations (BN)
LCA	Lower Carbonate Aquifer
LCA3	Lower Carbonate Aquifer, Upper Thrust Plate
LCCU	Lower Clastic Confining Unit
LDR	Land Disposal Restrictions
LLNL	Lawrence Livermore National Laboratory
LLW	Low Level (Radioactive) Waste
LLWMU	Low Level Waste Management Unit
LO	Livermore Operations (BN)
LTHMP	Long-Term Hydrological Monitoring Program
MAPEP	Mixed Analyte Performance Evaluation Program
MDC	Minimum Detectable Concentration

MEI	Maximally Exposed Individual
MGCU	Mesozoic Granite Confining Unit
MLLW	Mixed Low Level Waste
MOU	Memorandum of Understanding
MQO	Measurement Quality Objectives
MSL	Mean Sea Level
MTRU	Mixed Transuranic
NAC	Nevada Administrative Code
NAFR	Nellis Air Force Range
NAGPRA	Native American Graves Protection and Repatriation Act
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Division of Wildlife
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NIST	National Institute of Standards and Technology
NLVF	North Las Vegas Facility (BN)
NNSA/NV	National Nuclear Security Administration, Nevada Operations Office
NPDES	National Pollution Discharge Elimination System
NR	National Register
NRHP	National Register of Historic Places
NRS	Nevada Revised Statues
NSHPO	Nevada State Historic Preservation Office
NTS	Nevada Test Site
NTSWAC	Nevada Test Site Waste Acceptance Criteria
NVLAP	National Voluntary Laboratory Accreditation Program (NIST)
OEMP	Offsite Environmental Monitoring Program
ORSP	Offsite Radiological Safety Program
P2	Pollution Prevention
PA	Performance Assessment
PCB	Polychlorinated Biphenyl
PE	Performance Evaluation
PEP	Performance Evaluation Program
PES	Performance Evaluation Study
PIC	Pressurized Ion Chamber
PM-OV	Pahute Mesa-Oasis Valley
PPOA	Pollution Prevention Opportunity Assessments
QA	Quality Assurance
QAP	Quality Assessment Program
RBRC	Rechargeable Battery Recycling Corporation
RCRA	Resource Conservation and Recovery Act
RCT	Radiological Control Technician
R&IE-LV	Radiation & Indoor Environments National Laboratory - Las Vegas (EPA)
RMAD	Reactor Maintenance Assembly and Disassembly
RMP	Resource Management Plan
ROD	Record of Decision
RREMP	Routine Radiological Environmental Monitoring Plan
RSD	Relative Standard Deviation
RSL	Remote Sensing Laboratory (BN)
RT	Rainier Test
RWID	Radioactive Waste Information Document
RWMBART	Radioactive Waste Management Basis Assistance and Review Team
RWMS	Radioactive Waste Management Site

RWMS-3	Radioactive Waste Management Site, Area 3
RWMS-5	Radioactive Waste Management Site, Area 5
SAFER	Streamlined Approach for Environmental Restoration
SARA	Superfund Amendments and Reauthorization Act
SCCC	Silent Canyon Caldera Complex
SDWA	Safe Drinking Water Act
SERDP	Strategic Environmental Research and Development Program
SQL	Structured Query Language
STL	Special Technologies Laboratory (BN)
SWL	Static Water Level
SWNVF	Southwest Nevada Volcanic Field
SWRWMP	Sitewide Radioactive Waste Management Program
TaDD	Tactical Demilitarization Development
TCU	Tuff Confining Unit
TLD	Thermoluminescent Dosimeter
TMA	Timber Mountain Aquifer
TMCC	Timber Mountain Caldera Complex
TRU	Transuranic
TSA	Topopah Spring Asquifer
TSCA	Toxic Substances Control Act
TTR	Tonopah Test Range
UCCU	Upper Clastic Confining Unit
UGTA	Underground Testing Area
U.S.	United States of America
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VCU	Volcaniclastic Confining Unit
VZM	Vades Zone Monitoring
WAMO	Washington Aerial Measurements Operations (BN)
WEF	Waste Examination Facility
WI	Work Instructions
WIPP	Waste Isolation Pilot Plant
WPM-OV	Western Pahute Mesa - Oasis Valley
WRCC	Western Regional Climate Center
WVCU	Wahmonie Volcanic Confining Unit
YF-LCU	Yucca Flat Lower Confining Unit
YMP	Yucca Mountain Program