Report

ENVIRONMENTAL RESTORATION PROJECT

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Date: May 9, 2002
Refer to: ER2002-0341

2002

Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

SUBJECT: QUARTERLY TECHNICAL REPORT FOR JANUARY THROUGH MARCH 2002

Dear Mr. Young:

Enclosed are three copies of the Environmental Restoration (ER) Project's Quarterly Technical Report, January through March 2002. The Quarterly Technical Report presents information from each focus area on the quarter's activities, including regulatory meetings, sampling, cleanups, and report writing. Also enclosed is a certification statement signed by the designee owner and operator for the Los Alamos National Laboratory. In accordance with Laboratory security requirements, copies of this report are available upon request through the external ER Project Web site at http://erproject.lanl.gov/documents/virtualhome.html. The report is also available on the internal Web site at http://erproject.lanl.gov/documents/VL/status.html.

If you have questions regarding this report, please contact Dave McInroy at (505) 667–0819 or Everett Trollinger at (505) 667–0281.

Sincerely,

Julie A. Canepa, Program Manager
Environmental Restoration Project
Los Alamos National Laboratory

Sincerely,

Everett Trollinger, Project Manager
Department of Energy
Office of Los Alamos Site Operations

8210

JC/ET/MB/vn

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2) Certification

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CERTIFICATION

CERTIFICATION BY THE ENVIRONMENTAL RESTORATION (ER) PROJECT TECHNICAL REPRESENTATIVES

Document Title: **Quarterly Technical Report for January through March 2002**

I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

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or

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ENVIRONMENTAL RESTORATION PROJECT

A Department of Energy
Environmental Cleanup Program

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May 9, 2002
ER2002-0277

Quarterly Technical Report
January–March 2002

Los Alamos
NATIONAL LABORATORY
Los Alamos NM 87545

Produced by the Regulatory Compliance Focus Area

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LIST OF ACRONYMS AND ABBREVIATIONS

BMP	best management practice
CAB	Citizens Advisory Board
CMS	corrective measures study
DOE	US Department of Energy
DOE-HQ	US Department of Energy-Headquarters
DOE-OLASO	US Department of Energy-Office of Los Alamos Site Operations
EDD	electronic data deliverable
EPA	US Environmental Protection Agency
ER	environmental restoration
ERDB	Environmental Restoration Database
ESH	Environment, Safety, and Health (Division)
ESH-17	Air Quality Group
ESH-18	Water Quality and Hydrology Group
ESH-19	Hazardous and Solid Waste Group
ESH-20	Ecology Group
FIMAD	Facility for Information Management, Analysis, and Display
FY	fiscal year
GIS	Geographical Information System
HE	high explosives
HPT	high-performance team
HSWA	Hazardous and Solid Waste Amendments
IM	interim measure
LAAO	Los Alamos Area Office
Laboratory	Los Alamos National Laboratory
LANL	Los Alamos National Laboratory
LAPSAR	Los Alamos and Pueblo Canyon Surface Aggregate Report
MDA	material disposal area
NEPA	National Environmental Policy Act
NFA	no further action
NMED	New Mexico Environment Department
NMED-HWB	New Mexico Environment Department-Hazardous Waste Bureau
NTISV	nontraditional in situ vitrification
PAH	polyaromatic hydrocarbon
PRS	potential release site
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RSI	request for supplemental information
SAP	sampling and analysis plan
SMART	Spatial Mapping and Reporting Tool
SMO	Sample Management Office
SOP	standard operating procedure

SQL	standard query language
SWMU	solid waste management unit
SWPPP	Stormwater Pollution Prevention Plan
TA	technical area
VCA	voluntary corrective action
VCM	voluntary corrective measure
VOC	volatile organic compound

QUARTERLY TECHNICAL REPORT

JANUARY–MARCH 2002

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL RESTORATION PROJECT

ALBUQUERQUE OPERATIONS OFFICE

CONTRACTOR: University of California

PROJECT MANAGER: Julie Canepa

NUMBER OF POTENTIAL RELEASE SITES: Approximately 2,000

POTENTIAL WASTE: Radionuclides, High Explosives, Metals, Organics

1.0 INTRODUCTION

This quarterly report describes the technical status of activities in the Los Alamos National Laboratory (the Laboratory) Environmental Restoration (ER) Project. The activities are divided according to the current focus area structure and then, when applicable, by the technical area (TA) where the specific activity is located. The Hazardous and Solid Waste Amendments (HSWA) portion of the Laboratory's Hazardous Waste Facility Permit (Module VIII, Section P, Task V, C) requires the submission of a technical progress report on a quarterly basis. This report, submitted to fulfill the permit's requirement, summarizes much of the fieldwork and report-writing activities performed this quarter in the ER Project.

2.0 FOCUS AREAS

2.1 Canyon Investigations — Focus Area Leader: Allyn Pratt

2.1.1 Ongoing Reach Investigations

2.1.1.1 Acid Canyon (within the Pueblo Canyon watershed)

Data assessment is in progress for Phase III analytical data from the South Fork of Acid Canyon (reach ACS). This data assessment is being conducted as part of planning for the "Los Alamos and Pueblo Canyon Surface Aggregate Report" (LAPSAR).

2.1.1.2 Pueblo Canyon

Data assessment is in progress for analytical data from four sediment samples collected in reach P-1 to evaluate mercury speciation. This data assessment is being conducted as part of planning for the LAPSAR. These data will also be used to evaluate the need for Phase II sampling.

2.1.1.3 Los Alamos Canyon

Data assessment is in progress for analytical data from 73 Phase I sediment samples collected between reaches LA-2 and LA-3 to improve the understanding of contamination in this area. Data assessment is also in progress for 42 sediment samples collected from other parts of the canyon to evaluate organic analytes. This data assessment is being conducted as part of the planning for the LAPSAR. These data will also be used to evaluate the need for Phase II sampling.

2.1.1.4 Mortandad Canyon

Data assessment is in progress for analytical data from 286 sediment samples collected from reaches E-1, M-2, M-3, M-4, M-5, and TS-3 in fiscal year (FY) 2001. These data will be used to evaluate the need for future sampling and will be incorporated in the future surface aggregate report for Mortandad Canyon.

2.1.2 Los Alamos Canyon and Pueblo Canyon Surface Water and Alluvial Groundwater Investigation

The third of four rounds of surface and alluvial groundwater sampling activities has been completed. The first round of sampling captured high water levels associated with spring snowmelt runoff. The second round of sampling captured low water levels characteristic of the period immediately before the monsoon season. The third round of sampling, conducted in November, characterized waning post-monsoon water levels. The fourth round of sampling was initially scheduled for early in calendar year 2002, but is now scheduled to occur in late spring if a significant snowmelt effect occurs or in mid summer to characterize potential monsoon-season effects. Discussions on the timing of the fourth round of sampling are ongoing with the New Mexico Environment Department (NMED).

2.1.3 Acid Canyon Interim Action

All waste generated during the interim action for the South Fork of Acid Canyon has been disposed of at TA-54. Analytical results have been received for confirmation samples collected following cleanup, and data validation on these samples is pending. A decision peer review was held to reach agreement on the contents of the interim action completion report. The report will be written once validated sample results are available.

2.1.4 TA-74 West Land Transfer Parcel Risk Assessment

A decision peer review was held to reach agreement on the contents of a report that will be prepared in support of the planned transfer of a 5.6-acre parcel in Pueblo Canyon in TA-74 from the US Department of Energy (DOE) to Los Alamos County. This land transfer will be for the purpose of constructing a new wastewater treatment plant. The report will include a risk assessment and will incorporate analytical results from sediment samples collected from upstream and downstream reaches.

2.2 Material Disposal Areas — Focus Area Leader: John Hopkins

2.2.1 General Information for Material Disposal Areas Focus Area

During the second quarter of FY 2002, the Material Disposal Areas (MDAs) Focus Area submitted a response to a request for supplemental information (RSI) for the voluntary corrective action (VCA) completion report for Potential Release Site (PRS) 54-007(c)-99, initiated Resource Conservation and

Recovery Act (RCRA) facility investigation (RFI) reports for MDA T and MDA V at TA-21, and continued work on the draft voluntary corrective measure (VCM) plan for PRS 21-011k.

2.2.2 Technical Area Activities

2.2.2.1 TA-21

PRS 21-027(d)-99, NTISV Cold Demonstration VCM. The VCM report proposing no further action (NFA) for PRS 21-027(d)-99, the nontraditional in situ vitrification (NTISV) cold demonstration, was reviewed, and comments were incorporated. The NMED underground storage tank regulations risk approach was followed to address residual hydrocarbon contamination at the site. Results show no unacceptable risk for industrial or residential land use. The VCM report will be peer-reviewed and issued in the May 2002 timeframe and submitted to NMED.

PRS 21-018(a)-99, NTISV Hot Demonstration at MDA V. The field phase of the hot demonstration was completed on April 28, 2000, and glass samples will be collected from the vitrified product and analyzed to determine the success of the demonstration. Sample collection was delayed for two years to ensure that internal glass temperatures cooled enough to allow successful drilling. The current surface temperature of the vitrified product is approximately 100 °F, and results of heat diffusion modeling indicate that interior temperatures of the product are approaching the surface temperature. Therefore, preparations are being made to hold the readiness review in early May 2002 and drill the glass to collect product samples for analysis in late May or early June 2002. Field documents are being produced or updated as necessary, drilling and dust suppression systems are being identified and acquired, and a schedule for the completion of the sampling and analytical work is in draft. A description of all field activities and analytical results will be documented in an interim measure (IM) completion report.

PRS 21-011(k), VCM Activities. Bench-scale testing at PRS 21-011(k), an outfall, is complete. The draft bench-scale study report indicates that solidification can be implemented very effectively at the site. The VCM plan is being prepared and will be submitted to NMED on April 19, 2002. Fieldwork is scheduled to start in July 2002. Site restoration and demobilization activities will be complete by September 30, 2002; the VCM completion report will be prepared and submitted to NMED in FY 2003.

PRSs 21-024(f), 21-030 and C-21-015, VCA Activities. During the VCA implemented in FY 2001 and FY 2002, all components of the septic system that served the former Safety Training Building at TA-21 (Building 21-45) were removed (septic tank, sump, inlet/outlet lines). All confirmation samples have been collected from beneath the inlet/outlet lines, beneath the septic tank, adjacent to the septic tank, the outfall, and beneath the sump. Excavated areas have been back-filled, revegetated, and mulched. Pending receipt of confirmation sample analytical results, a VCA completion report will be prepared in the third quarter of FY 2002.

PRS 21-024(i), VCM Activities. Work on the PRS 21-024(i) VCM plan has continued while awaiting final data for this site. Once all of the analytical data are received, a decision peer review will be conducted to determine whether any additional actions are necessary at the site. On the basis of the decision peer review results, either the VCM plan will be completed or a VCM completion report will be prepared and submitted to NMED.

PRS 21-029, DP Tank Farm. Site inspections of the two hydrocarbon seep areas in DP Canyon were conducted in January, February, and March of 2002. The inspection reports are included as Appendix A of this document.

PRS 21-015 (MDA B) and PRS 21-017(a)-99 (MDA U). The subcontractor completed draft RFI reports for MDA B and MDA U. The subcontractor is expected to complete their internal peer review in May 2002 and submit the RFI reports to the ER Project for review.

PRS 21-016(a)-99 (MDA T) and PRS 21-018(a)-99 (MDA V). The subcontractor initiated work on draft RFI reports for MDA T and MDA V. The subcontractor is expected to conduct a decision peer review on data usability in the third quarter.

PRS 21-023(a)-99, VCA Activities. A final draft of the fact sheet for PRS 21-023(a)-99 was produced during the first quarter of FY 2002, and work on the draft VCA plan is ongoing.

2.2.2.2 TA-49

PRS 49-001(a)-00, MDA AB, Areas 2, 2A, and 2B. Monthly moisture monitoring continued at this site during the second quarter of FY 2002. A review of the data is presented in Appendix B of this report. Erosion-control best management practices (BMPs) were inspected following precipitation events and remain in good condition. A decision peer review was conducted to review a white paper evaluating the type of drilling required to finalize subsurface investigations for MDA AB. A supplemental sampling and analysis plan (SAP) will be prepared in the third quarter for the subsurface investigations based on the white paper.

2.2.2.3 TA-50

Two boreholes were monitored for pore gas to measure the vertical extent of a potential volatile organic compound (VOC) plume at MDA C. Field-screening information and the fixed-laboratory results for the first quarter of FY 2002 are presented in Appendix C of this report. Second quarter results will be reported next quarter.

2.2.2.4 TA-54

MDA H. Peer review comments were incorporated into the MDA H corrective measures study (CMS) report, and a meeting was held with NMED in March 2002 to review the first two sections of the report.

Pore-Gas Monitoring. The quarterly pore-gas monitoring at MDA G and MDA L was completed as required by Module VIII of the Laboratory's Hazardous Waste Facility Permit. The field-screening information and the fixed-laboratory results for the first quarter of FY 2002 are presented in Appendix C of this report. Second quarter results will be reported next quarter.

PRS 54-007(c)-99. The RSI response for the VCA completion report was submitted to NMED on February 9, 2002.

PRS 54-007(a). A VCA plan for removal of this septic tank was prepared and peer-reviewed. The plan will be submitted to NMED in early April 2002, and fieldwork will begin in late April 2002.

2.3 RCRA Corrective Actions — Focus Area Leader (Acting): Don Hickmott

2.3.1 High Explosives Production Sites Team

The High Explosives Production Sites Team continued fieldwork, data analysis, and report-writing activities in support of the CMS at PRS 16-021(c)-99 (the 260 outfall). The team continued the work

associated with well CdV-R-15-3, including the fifth round of quarterly sampling, and continued work on the CdV-R-37-2 deep well, including the first round of quarterly sampling. Hydrogeology studies, including stream profiles, were continued. High-performance team (HPT) activities continued. A rough draft of the IM report for the 260 outfall was completed. Reviews of the TA-16 portion of the draft solid waste management unit (SWMU) report were completed.

2.3.1.1 TA-16

CMS Hydrogeology and Monitoring. The field team continued to monitor water levels in the Cañon de Valle alluvial wells and in the intermediate-depth wells. The hydrologic system in that canyon is extremely dry. Four of five of the alluvial wells in Cañon de Valle contained water this quarter; the uppermost well was dry throughout the quarter. The three alluvial wells in Martin Spring Canyon contained water briefly during the spring runoff. None of the intermediate-depth boreholes contained water throughout the quarter. SWSC Spring was dry throughout the quarter. This is the first time this is known to have occurred for a sustained period of time. Quarterly sampling locations were sampled during March. Total dissolved solids (as measured via conductivity) were elevated in alluvial waters and surface waters in Cañon de Valle, presumably because of the effects of the Cerro Grande fire.

Data collected in geophysical investigations in Cañon de Valle were reviewed and discussed with the HPT. The electrical results showed that there were extensive high-conductivity zones to a depth of approximately 60 ft in Cañon de Valle west of MDA P. This may represent a region of higher volumetric moisture content. These data suggest that intermediate-depth boreholes may be necessary in Cañon de Valle.

Stable isotope samples were collected at precipitation events. Every-other-day samples were collected and archived for eventual stable isotope analysis. Flow-integrated samples were collected in Burning Ground and Martin Springs. Stream profiles that included analytical laboratory sampling were completed. All second-quarter analytical results are pending.

A review of data from the springs was completed. Transient effects from the Cerro Grande fire appear to have dissipated.

The fifth round of quarterly sampling was completed at deep groundwater well CdV-R-15-3.

The first round of quarterly sampling was completed at deep groundwater well CdV-R-37-2. The well completion fact sheet was completed and submitted to NMED, and work was initiated on the well completion report for that well.

PRS 16-021(c) CMS. Additional data from the stormwater management system were received. This barrier unit is designed to remove high explosives (HE) and barium from spring waters. It appears to be removing HE effectively but not barium. Phytoremediation studies continued.

The 260 Outfall HPT met several times with the Ecological Risk HPT to evaluate ecological sampling in Cañon de Valle. The population dynamics studies indicate minimal impacts to rodents in Cañon de Valle, relative to a reference canyon. However, body-burden data for rodents appear to be of low quality. Resampling will need to occur.

PRS 16-021(c) Interim Measure. Work continued on the IM report.

Surface Water. BMPs were inspected and maintained.

2.3.2 Firing Sites Team

No activities occurred this reporting period.

2.3.3 Industrial Sites Team

During the second quarter of FY 2002, Industrial Sites Team members responded to more than 80 requests for excavations; environment, safety, and health (ESH)-ID questionnaires; and facility inquiries about new construction projects. In addition, the team worked with facility managers (by attending meetings and providing information) on ongoing projects or planning of construction projects to be located where PRSs are present.

The team responded to a request from the NMED DOE Oversight Bureau for providing data from past sampling events at TA-46 PRSs. The requested information included TA-46 sample coordinates for a list of samples, provided with the request, for inorganic chemical and radionuclide data (for calcium, manganese, zinc, and isotopic uranium). The DOE Oversight Bureau will use the data as part of a project to assess effectiveness of BMPs after the Cerro Grande fire. The ER data collected at sampling points located in the study area reflect a pre-fire baseline and will help determine if the erosion-control structures are working.

2.3.3.1 TA-3

PRS 03-010(a). The ER Project received an RSI from the NMED-Hazardous Waste Bureau (NMED-HWB), dated October 22, 2001, on the RFI report addendum for PRS 03-010(a), a systematic release from a vacuum pump repair shop. The ER Project submitted an RSI response to NMED-HWB on December 19, 2001. A letter from NMED-HWB (NMED 2002, 71486) in February 2002 approved the Laboratory's proposed action delineated in the RSI response to conduct site characterization activities using a phased approach. The first phase of the work will involve using geophysical instruments to determine if additional groundwater monitoring wells are warranted and to subsequently determine the possible well locations. The RSI response proposed that results of geophysical investigations be reviewed in collaboration with NMED-HWB to make decisions about subsequent phases if any are needed. NMED stated in their February letter (NMED 2002, 71486) that if NMED-HWB determines that additional wells are not needed, the results of the geophysical investigation must be submitted to them no later than December 31, 2002.

PRS 03-052(a)-00. Construction of a new occupational medicine and wellness center for the Laboratory has resulted in acceleration of sampling for consolidated PRS 03-052(a)-00. The proposed site for the buildings is at the location of the outfall for PRS 03-052(a)-00, which includes three PRSs: two storm drains and an outfall. Coordination with Project Management Division personnel has resulted in early implementation of Addendum 1 of the work plan for Operable Unit 1114 (LANL 1995, 57590). Industrial Sites Team personnel submitted a 10-day sampling notification to NMED-HWB on March 1, 2002, and coordinated the sampling event, including coordination of paperwork from the Sample Management Office (SMO). Samples were submitted to the SMO for shipment to ER Project-accepted analytical laboratories. Sampling was completed on March 28, 2002; data are pending. ER Project personnel are coordinating the survey of the sample points.

PRS 03-056(c). A data supplement to the September 27, 2002, VCA report for PRS 03-056(c), a former polychlorinated biphenyl transformer site, was prepared and submitted to NMED-HWB on January 24, 2002. The data supplement reported the results of samples requested by NMED-HWB staff during an August 2001 meeting. The purpose of the sampling activity was to determine if the concentration of

arsenic for a single soil verification sample that was elevated (out of 21 samples analyzed), was accurate and representative of site conditions, or if the reported result is an anomaly or analytical laboratory error. The supplemental sampling campaign showed that the arsenic concentration first reported in the VCA report was in error. The data supplement presents the results of the arsenic and other organic chemicals that were elevated. Also, the data supplement concludes that arsenic should be eliminated from the assessment of carcinogenic chemicals because all results are below background values. Furthermore, beryllium, cadmium, cobalt, and nickel were eliminated from the assessment because, on the basis of the new data, they were all below background values.

A meeting was held with NMED-HWB personnel on March 15, 2002, to discuss comments from NMED on the PRS 03-056(c) VCA report. The meeting's purpose was to clarify a draft copy of an imminent RSI on the VCA report.

2.3.3.2 TA-35

On the basis of a white paper prepared last quarter concerning whether a corrective action should be taken at the Ten Site Canyon Subarea (the TA-35 sanitary lagoons), it was decided that sampling was necessary to reduce uncertainties associated with data quality. Therefore, a sampling plan was developed for the Ten Site Canyon Subarea and added to the drafted sections of the Ten Site Slope, Mesa Top, Pratt Canyon, and Mortandad Canyon Subareas. The draft document was peer-reviewed, and the resulting revisions were completed. A draft for DOE final review was submitted on March 20, 2002, and the final document, which has been renamed "Sampling and Analysis Plan for the Middle Mortandad/Ten Site Aggregate" was delivered to NMED March 29, 2002.

2.3.3.3 TA-53

PRS 53-002(a)-99, Northern and Southern Lagoons.

PRS 53-002(a) Interim Action. An interim action at PRS 53-002(a) to remove the dried sludge and clay liner from the two northern lagoons at TA-53 will be implemented this fiscal year. It is estimated that approximately 2300 yd^3 of low-level radioactive waste will be removed from the site, packaged, and transported to MDA G at TA-54 for disposal. Planning for the interim action activities began this quarter. All readiness review activities were completed, including preparation and approval of the site-specific health and safety plan, excavation permits, a radiological control permit, and memoranda of understanding with Los Alamos Neutron Science Center-Facility Management and with Facilities and Waste Operations Division-Solid Waste Operations Group; preparation of a fieldwork planning document, waste characterization and strategy form, and waste profiles; and completion of various reviews that are part of the ESH-ID process. Fieldwork has been planned and coordinated. Interim action activities are scheduled to begin April 9, 2002.

Los Alamos Tributary below TA-53. Analytical data are still pending from the Phase I site characterization activities completed at the end of FY 2001 in the tributary to Los Alamos Canyon below the lagoons at TA-53, PRS 53-002(a)-99. Data that have been received are in the verification and validation process; once the verified data set is complete, the Phase II sampling activities will be planned, and additional samples will be collected to determine the extent of contamination below the lagoons at TA-53.

PRS 53-002(a)-00 Continuation Work. Data analysis and assessment activities continued through the second quarter of FY 2002. These activities included computer modeling of a tritium plume believed to exist below the site. The site-specific model, which captures important details such as geology, estimated amounts of water present at the site, and topography, will be used to support decisions regarding

placement of boreholes that will be drilled to define the extent of tritium contamination at the TA-53 lagoons. Additionally, the site-specific three-dimensional process model of the TA-53 lagoons and surrounding subsurface will prove useful for testing the current conceptual model of unsaturated transport through the Bandelier Tuff, specifically addressing the effects that the lagoons have had on this site. Boreholes proposed in the RFI work plan addendum (in preparation) will allow the model to be validated in real time and provide additional constraints on the possible behavior of subsurface transport. As new data become available, both the conceptual and numerical site models can be refined to better characterize the site and give guidance on the placement and number of additional boreholes required to optimize sampling in support of the final closure. Activities have included gathering and processing site-specific data into formats required for the numerical analysis. A numerical grid was generated, extending from the land surface to the water table and encompassing the lateral boundaries of the site. Suites of simulations are being performed to explore a range of transport scenarios, including tests of site sensitivity to high infiltration under the lagoons and plume estimates based on pure diffusion theory. Estimated tritium concentrations in the subsurface, constrained by the modeling, will allow personnel to optimize the placement and number of additional boreholes to better define nature and extent of tritium as well as to benchmark the conceptual models of the site. Other chemical and/or radionuclide results from the near surface will be used to constrain liquid flux estimates, providing additional limits on the site scale model.

2.3.4 Townsites Team

Land transfer, private property, Los Alamos community development, and other non-DOE property-related issues were addressed this quarter.

2.3.4.1 TA-0

PRS 00-003-99 (00-003, 00-012) and 00-030(i). The VCA report for the Los Alamos Area Office (LAAO) Land Transfer Tract [PRSs 00-003-99 (00-003, 00-012) and 00-030(i)] was approved.

PRSs 00-004, 00-010(a,b), 00-027, 00-030(a,b,l,m), and 00-033. The DP Road Land Transfer Tract [PRSs 00-004, 00-010(a,b), 00-027, 00-030(a,b,l,m), 00-033] VCA plan has been through internal review and is in final draft. This project underwent a complete rescheduling exercise to facilitate the DOE's interest in accelerating the transfer of a part of this parcel to Los Alamos County.

PRS 00-019. An RSI was received on the VCA completion report for PRS 00-019, the Central Waste Water Treatment Plant.

PRS 00-028(a,b). The PRS 00-028(a,b) RFI report submitted in 1996 was approved. These PRSs include the Los Alamos County golf course and North Mesa softball fields, which were excluded in the transfer of the water system to Los Alamos County.

PRS 00-030(g). Fee was assessed on the PRS 00-030(g) (old Catholic Church septic tank) RFI report submitted in March of 2001.

2.3.4.2 TA-73

PRSs 73-001(a,b)-99 [73-001(a–d) and 73-004(d)]. The 73-1 Airport Landfill VCM plan is in draft. A fundamental conceptual design has been developed and will be included in the VCM plan.

The interim measure plan has been submitted to DOE for review. It is currently on management hold pending a cost/risk-versus-benefit evaluation by DOE. Staff have conducted numerous site tours and briefings to communicate to senior management of NMED, DOE, and the Laboratory the problems, potential solutions, and remaining issues associated with this project. Significant compromise was reached between the regulators and Laboratory/DOE as a result of this effort.

2.3.5 MDA P Closure

Disposal of 1000 yd^3 of contaminated soil previously excavated from the East Drainage was completed this quarter. This soil was shipped to the Waste Control Specialists facility in Andrews County, Texas, for disposal as hazardous waste.

Additional confirmation samples collected from the East Drainage excavation area indicated that more excavation was required. Approximately 350 yd^3 of contaminated soil was excavated from this location. This soil was also shipped to the Texas facility for disposal during this report period.

Work on the final reports for the MDA P and 387 Burn Pad closures and the Burning Ground North VCA continued this quarter. The first set of validated data from Phase II confirmation sampling was received in March 2002. Analysis and assessment of these data is under way for the reports. Phase I and Phase II field reports are also being drafted.

2.4 Groundwater Investigations — Focus Area Leader: John McCann

Drilling, sampling, database management, and reporting activities continued this quarter. Drilling operations were completed at the R-8 regional well location in January 2002. Boring R-8a was completed at a total depth of 860 ft. Well installation/completion and site restoration are currently being completed.

The status of well sampling and reporting activity is provided in Table 2.4-1. Sampling was conducted this quarter at wells R-7, R-22, R-25, and CdV-R-37-2.

Work continued on data management activities, including updating of the field-parameter database.

Major accomplishments were realized in the reporting area this quarter. Completion reports for wells R-22, R-25, and R-31 were completed. The R-7 completion report is scheduled to be delivered in April 2002. Geochemistry reports for wells R-9/9i were also completed this quarter.

Groundwater hydrochemical data for four wells are presented in Appendix D. Analytical results are reported for wells R-9i (two screens; fourth sampling round), R-12 (three screens; fourth sampling round), R-15 (one screen; fourth sampling round), and R-19 (six screens; fourth sampling round). Data reported include field parameters, inorganic, organic, and radiological constituents.

Table 2.4-1
Groundwater Investigations Focus Area Well Status

Date Drilled	Well	Watershed	Total Depth (ft)	Number of Screens	Sampling Activity	Reporting Activity
Feb 99	R-25	Water/Valle	1942	9	1st round completed Nov 00 2nd round completed May 01 3rd round completed Aug 01 4th round completed Feb 02	• Fact sheet completed Dec 01 • Well completion report completed Mar 02 • Geochemistry report
Sep 99	R-15	Mortandad	1107	1	1st round completed Feb 00 2nd round completed Oct 00 3rd round completed Feb 01 4th round completed May 01	• Fact Sheet none (before requirement) • Well completion report completed Dec 00 • Geochemistry report completed Feb 02
Sep 99	R-9	LA/Pueblo	771	1	1st round completed Feb 00 2nd round completed Sep 00 3rd round completed Feb 01 4th round completed May 01	• Fact sheet none (before requirement) • Well completion report completed Dec 00 • Geochemistry report completed Mar 02
Jan 00	R-12	Sandia	886	3	1st round completed Sep 00 2nd round completed Mar 01 3rd round completed Jun 01 4th round completed Sep 01	• Fact sheet none (before requirement) • Well completion report completed Dec 00 • Geochemistry report scheduled May 02
Feb 00	R-31	Ancho	1103	5	1st round completed Dec 00 2nd round completed Sep 01 3rd round pushed to FY 03 4th round pushed to FY 03	• Fact sheet none (before requirement) • Well completion report completed Feb 02 • Geochemistry report
Mar 00	R-9i	LA/Pueblo	323	2	1st round completed Sep 00 2nd round completed Feb 01 3rd round completed Jun 01 4th round completed Sep 01	• Fact sheet none (before requirement • Well completion report completed Dec 00 • Geochemistry report completed Mar 02
Mar 00	R-19	Pajarito	1903	7	1st round completed Sep 00 2nd round completed Mar 01 3rd round completed July 01 4th round completed Sep 01	• Fact sheet none (before requirement) • Well completion report completed Dec 00 • Geochemistry report scheduled Apr 02
Apr 00	CdV-R-15-3	Water/Valle	1722	6	1st round completed Jan 01 2nd round completed Apr 01 3rd round completed Jul 01 4th round completed Oct 01	• Fact sheet • Well completion report • Geochemistry report

Table 2.4-1 (continued)

Date Drilled	Well	Watershed	Total Depth (ft)	Number of Screens	Sampling Activity	Reporting Activity
Oct 00	R-22	Pajarito	1489	5	1st round completed Mar 01 2nd round completed Jun 01 3rd round completed Nov 01 4th round completed Mar 02	• Fact sheet completed Feb 01 • Well completion report completed Feb 02 • Geochemistry report
Jan 01	R-7	LA/Pueblo	1097	3	1st round completed May 01 2nd round completed Aug 01 3rd round completed Nov 01 4th round completed Feb 02	• Fact sheet completed Dec 01 • Well completion report scheduled Apr 02 • Geochemistry report scheduled Aug 02
May 01	R-5	LA/Pueblo	902	4	1st round completed Nov 01 2nd round scheduled Feb 02 3rd round scheduled May 02 4th round scheduled Aug 02	• Fact sheet completed Oct 01 • Well completion report scheduled May 03 • Geochemistry report
Aug 01	CdV-R-37-2	Water/Valle	1664	4	1st round completed Jan 02 2nd round scheduled Jun 02 3rd round scheduled Sep 02 4th round scheduled Dec 02	• Fact sheet completed Jan 02 • Well completion report scheduled Sep 02

2.5 Information Management — Focus Area Leader: Stephen Bolivar

2.5.1 Team Activities

2.5.1.1 Information Management

The primary focus of Information Management personnel for the second quarter of FY 2002 was to continue with the business process reengineering. The major goal for this quarter was to move the SMO Phase 1 and SMO interim applications into production. This occurred, and a new Web-based process was created that provides a mechanism to report and status "bugs" for these applications. A requirements team is now working on the Spatial Mapping and Reporting Tool (SMART) application. The SMO applications get the data into the database; the SMART applications are used to extract data from the database and produce data for evaluation. A Web-based tool that lists electronic data deliverables (EDD) rejections was created two months ahead of schedule. The last SMO application, for validation and verification, is being programmed and will be tested early next quarter.

All data are now available through the standard query language (SQL) system (some of the data are still legacy data). Efforts continue to synchronize database changes with the Laboratory's Water and Hydrology Group (ESH-18) as part of a data-sharing agreement, ensuring that both organizations maintain identical structures, which facilitates data transfers. Construction well data for five wells has been transferred, and the two groups are now working on the mechanics to transfer analytical data (a much more difficult endeavor). As part of a poster series, a general reengineering fact sheet was produced.

2.5.1.2 Records Management

Records Processing Facility personnel received 8321 record pages this quarter for processing. There are now 221,876 records for query on the Records Processing Facility database. Personnel performed 230 queries and 726 retrievals for customers during the quarter. The contract for creating a database of documents for the Virtual Library is now in place, and work to copy these documents will begin next quarter.

2.5.1.3 Sample Management Office

Personnel from the SMO now accept field samples, create the necessary paperwork, contact the appropriate laboratories, ship the samples, and ensure the requested information is correct, using the new applications (developed as part of the reengineering effort). The SMO issued 115 field data groups (number of discrete samples) and had 275 customers this quarter. Personnel handled and shipped 2149 containers. These totals are slightly below last year's totals but are near the five-year average. The SMO will move to Pueblo Complex by September 1, 2002. As part of this move, 10,000 data packages must be scanned. The process has been set up, and 224 (2%) of the packages have been scanned.

2.5.1.4 Computer Support

The computer support personnel have updated almost all ER Project computers to the Windows 2000 operating system. This activity will be completed early next quarter. The computer support personnel received 254 service requests this quarter and closed all but 34 of them. Information has been moved to more secure servers as the reengineering infrastructure comes into place.

2.5.1.5 Geographic Information System Support

Geographical Information System (GIS) personnel from the Facility for Information Management, Analysis, and Display (FIMAD) continued to maintain the present ER database, as well as the spatial data (such as elevation, orthophotographs, etc.). The main efforts are to clean up themes (this is information that is plotted onto maps, e.g., roads). The PRS theme is almost complete. As themes are being cleaned up or archived, configuration controls have been put into place to ensure users have the most accurate and latest data and can submit any changes using a formal process that ensures the changes are addressed. All spatial data have been moved from the old FIMAD 100 server to the new Redondo and Cerro servers, and FIMAD 100 will be shut down early next quarter. The Cartographic Laboratory, which is now part of GISLab, instituted a new map-tracking program. For this quarter, they produced 288 new maps and 905 copies of existing maps.

2.6 Analysis and Assessment — Focus Area Leader: Alison Dorries

2.6.1 Team Activities

2.6.1.1 Data Analysis and Assessment Team

Data Quality. Work has focused on the Information Management reengineering effort this quarter. The technical review and peer review comment resolution for the ER Project data validation standard operating procedures (SOPs) were completed.

Data Stewardship.

Integrated Information Management System Support. The Data Stewardship Team continues to work with the Information Management Team to design and implement the Integrated Information Management System. The system consists in part of software tools intended to ensure consistency and accuracy in data and information management and to allow tracking and traceability of environmental data. In the second quarter of FY 2002, the Data Stewardship Team provided technical support for the development and implementation of the software applications described below.

- The Sample Tracking Application provides software tools that interface with the Environmental Restoration Database (ERDB) Planning Module to track the sample planning and analysis process, from planning and initiating a sampling event, generating field paperwork, ordering sample analytics, checking-in samples at the SMO, shipping samples to analytical laboratories, and completing a sampling event. Phase 1 of the Sample Tracking Application, which has the functionality to plan a sample event and generate the field paperwork (sample collection logs and field chain-of-custody forms), underwent intensive testing by data stewardship personnel in the first quarter of FY 2002. The application was brought into full production in the second quarter of FY 2002, and data stewardship personnel created 29 sample events using the new application.

- The Verification and Validation Application provides software tools that interface with the ERDB to provide tracking of the verification and validation processes for analytical chemistry data. Verification is the comparison of the electronic record received in an EDD file with the hard-copy data package. Validation is the process by which qualifier flags and accompanying reason codes are applied to the data to indicate the data quality. The ER Project validation process is performed according to seven SOPs. In the first quarter of FY 2002, the software requirements for the application were defined and documented by data stewardship and data validation personnel. In the second quarter, data stewardship personnel assisted the Information Management development team in resolving design issues.

The Microsoft Access application used by the data stewardship team for data set preparation and reporting, known as the "A3 Toolbox," was modified to run on the Windows 2000 operating system. Further modifications were made to reflect the new SQL database table designs.

Data Stewardship and Reporting.

Data Management. The Data Stewardship Team began processing raw data records that were transferred from the old Oracle system this quarter, as well as new incoming data records. A process has been put in place to verify the analytical chemistry records by comparison with the hard-copy reports and upload the routine validation data qualifiers to the database. The processed data records are then moved from the temporary processing table to the analytical results production table, where they become available for retrieval and reporting. The stewardship team, working with the validation team, processed the analytical data records associated with 1011 request number/suite combinations in the second quarter of FY 2002.

Data Set Preparation. The Data Stewardship Team prepared 48 electronic data sets for ER Project users in the second quarter of FY 2002.

Data Stewardship for Groundwater Data. The data stewards for the Groundwater Investigations Focus Area are working to transfer data for the existing regional wells to the Borehole Module of the new ERDB. Data categories include, but are not limited to, drilling, well construction, water levels, geology, field and

laboratory hydrologic tests, field and analytical data for groundwater and geologic media, geophysics, and geodetic surveys.

Groundwater Investigations Focus Area data stewards continued to work with ESH-18 on the transfer of construction data from the ER Project to ESH-18. Complete construction information for R-9, R-9i, R-12, R-15, and R-19 wells, which was uploaded to the SQL database in the first quarter, was successfully transferred to the ESH-18 Water Quality Database in the second quarter. In addition, the data records for 108 groundwater samples collected at these five wells and 13,000 associated chemistry result records were transferred to ESH-18. The data stewards also worked closely with ESH-18 personnel in designing the Web release formats for the well construction information.

Data Validation. The chemistry validation team validated 580 request number/suite combinations during the second quarter. Validation team personnel continue to stay current with incoming data packages. The data authentication team assisted the Data Stewardship Team with the authentication of 1120 request number/suite combinations in the second quarter. (Data authentication is the comparison of electronic with hard-copy records).

2.6.1.2 Risk Assessment and Review Team

Human Health Risk. Peer review comments for "Human Health Risk-Based Screening Methodology" were received and incorporated into the final version. The methodology will be a stand-alone document and referenced in the Installation Work Plan.

The draft "Guidance for the Development of Human Health Preliminary Remediation Goals for Nonradiological Chemicals of Potential Concern" is under review by the Risk Assessment Team.

Team members met with the investigation team for PRS 21-011(k) to clarify concerns related to the human health risk assessment. The scenario for the decision on this PRS site is designated "recreational," as represented by a trail user/hiker.

The Los Alamos/Pueblo Surface Aggregate Report Team met with NMED to begin discussion of issues related to writing the surface aggregate report. These issues include human health risk assessment scenarios and exposure parameters for the watershed as well as exposure concentrations and exposure unit.

Ecological Risk. The Ecorisk Committee met to discuss how to coordinate new activities to better integrate studies and data related to macroinvertebrate studies. ESH-18 is initiating institutional monitoring to determine if exceedances in water quality measures impact benthic organisms (indicators of an aquatic system's health). Reaches will include those used by the US Fish and Wildlife Service and one additional location where water occurs. Sample locations associated with areas affected by the Cerro Grande fire will also be included. As part of this program, detailed design and sampling protocol will be established.

The Ecorisk Committee also discussed the bat studies conducted by the Laboratory and the availability of data on bat populations. A half-day session will be organized to discuss the information with DOE Oversight Bureau and NMED-HWB. Additionally, a methodology for calculating ecological preliminary remediation goals was discussed.

The Los Alamos/Pueblo Surface Aggregate Report Team met with NMED to begin discussion of issues related to the writing the surface aggregate report. These issues include the identification of chemicals of

potential ecological concern, the identification of assessment endpoints, and the types of field measurements and data needed to assess impacts on the ecology.

A presentation to the Northern New Mexico Citizens Advisory Board (CAB) on ecological risk assessment was given on March 27, 2002. An overview of the methodology was provided, the approach used by the ER Project explained, and the Cañon de Valle small-mammal investigation cited as an example of the application of the approach in a site-specific ecological risk assessment.

Ecological Risk Database. Team members started or completed several reviews for pesticides, HE, VOCs, dioxin, polyaromatic hydrocarbons (PAHs), and inorganic chemicals as part of the Primary Toxicity Study Evaluation. Copies of several references were obtained from the University of New Mexico Library system related to the toxicity of these chemicals. Literature searches for PAH/bird toxicity data were also done in the literature databases or literature-cited sections of references for PAH in birds. These references were to address the special need for PAH toxicity information for birds for a specific ecological risk assessment at the Laboratory.

Native American Risk. Team members met with San Ildefonso Department of Environmental and Cultural Preservation representatives to discuss plans for this year's sampling. The department indicated interest in sampling in lower Mortandad Canyon, a sacred area for the pueblo. Team members were invited to give a half-day seminar to the Department on conceptual model development on April 23 at San Ildefonso Pueblo. Also, a meeting between Department of Environmental and Cultural Preservation representatives and individuals from the Laboratory's Air Quality Group (ESH-17), ESH-18, the Ecology Group (ESH-20), and the ER Project was organized to talk about sampling and hands-on training of staff. Subsequently, the Laboratory representatives were invited to accompany pueblo members on a visit to this area.

Peer Review Team. Team members coordinated and participated in peer reviews for ER Project documents this quarter, as needed.

2.6.1.3 Strategic Decision Analysis Team

The Strategic Decision Analysis Team spent the second quarter of FY 2002 developing and initiating a detailed work scope and project plan for the quantitative risk-based decision strategy for groundwater protection, including corrective action, and for a set of hydrology and watershed themes to be incorporated into the ER Project GIS database. In addition, the team leader has developed and presented (internally and externally) a proposal for transitioning certain ER Project sites from corrective action status into long-term environmental stewardship status.

The groundwater decision strategy is the largest task. It will provide a basis for determining the need for and scope of groundwater corrective actions at ER sites on the basis of site-specific and cumulative groundwater pathway risk. The ER Project is working with the Laboratory's groundwater protection personnel to develop an inclusive, self-consistent strategy for protection of groundwater from past, present, and potential future releases. The strategy is risk based, following DOE and US Environmental Protection Agency (EPA) guidance on risk-based corrective action and probabilistic risk assessment. Progress to date includes development of alternative conceptual models of site-wide groundwater flow, mathematical models of vadose zone and saturated zone contaminant transport, and a methodology for calculating contaminant release from ER Project sites across the Laboratory.

2.7 Regulatory Compliance — Focus Area Leader: Dave McInroy

2.7.1 General Information for Regulatory Compliance Focus Area

Monthly meetings with NMED continued this quarter, as well as meetings regarding special topics such as permit modification; the NMED data request; and ongoing RFIs, IMs, VCAs/VCMs, RFI reports, CMS reports, and responses to RSIs.

The team continues to work on data requests received from the NMED-HWB for the purpose of supporting a corrective action schedule and an annual unit audit table associated with the rewrite of Module VIII of the Laboratory's Hazardous Waste Facility Permit.

In land transfer activities, team members prepared documents supporting the proposed transfer of several land parcels to the County of Los Alamos and the Pueblo of San Ildefonso and supported the conduct of land transfer property boundary surveys by the Corps of Engineers.

Team members performed the following miscellaneous tasks this quarter:

- Participated as members of high-performance teams for the TA-54 MDA H CMS, the airport landfill remedial actions, and the 260 outfall.
- Conducted inspections of ER field operations and waste management activities.
- Continued reviewing and revising information in the PRS database. Team members incorporated peer review comments and revised the overall format (at the request of NMED) for TA-16, TA-50, and TA-54, including photographs and location maps.
- Met with Laboratory MDA P staff and NMED staff on several occasions to finalize the administrative record for the closure and VCA activities at the site, review confirmation sample data against closure performance standards, and resolve report requirements and submittal schedule.

2.7.2 Team Activities

2.7.2.1 Communications and Outreach Team

Outreach Activities. Staff worked with DOE and Los Alamos County staff this quarter to finalize the ER Project signs that will be placed in various locations within Los Alamos County to provide public notification of ER Project work planned or ongoing at those locations. Staff also worked with Los Alamos County staff on access agreement issues.

Photodocumentation of Laboratory sites continues for the 2002 SWMU report. More than 150 photos were taken, labeled, and archived for the report. Staff worked with the Laboratory's Imaging Services Group (Information Management-4) to obtain aerial photos of some sites.

Communications and Outreach staff completed the following miscellaneous outreach activities this quarter:

- Worked on three access agreements with private owners. One was completed, and the other two are still being discussed with the owners.

- Produced a poster for a presentation at the Environmental Stewardship Symposium sponsored by DOE in New Orleans and a poster entitled "Integrated Database Approach to Spatial and Tabular Management" for a presentation at the Laboratory's GIS poster session.
- Finalized three press releases on ER Project cleanup activities this quarter. These press releases were published in the Laboratory's *Newsbulletin* and the *New Mexican* newspaper.
- Finalized the 2002 ER Project brochure. Copies of the brochure were printed and distributed to the CAB members and the general public.

High-Performance Teams (HPTs). The Communications and Outreach staff designed the HPT workshop flyer and worked with the ER Project manager and the NMED manager to plan the workshop, which was held on February 26, 2002, in Santa Fe, New Mexico. Participants included senior managers and HPT members from NMED, Los Alamos and Sandia National Laboratories, DOE-Office of Los Alamos Site Operations (OLASO), DOE-Albuquerque Operations Office, and the EPA. HPT members work together to resolve cleanup issues at the laboratories. The purpose of the workshop was to increase the effectiveness of high-performance teams. Team members and their managers discussed the success of the teams in resolving cleanup issues at Los Alamos and Sandia. Participants gathered stories of successes and challenges from actual HPT experiences, better defined what HPTs are, set guidelines for future effective performance, and provided a new momentum for effective performance. At Los Alamos, HPTs exist for MDAs, the airport landfill, TA-35, ecological risk, and the 260 outfall.

Northern New Mexico Citizens Advisory Board Activities. Staff attended the Northern New Mexico CAB monthly environmental restoration subcommittee meetings this quarter. Staff attended the quarterly CAB meeting held in Santa Fe, New Mexico, where the ER Project program manager presented the FY 2002 goals of the ER Project. Additionally, copies of the ER Project brochures and information regarding FY 2001 accomplishments were handed out to the CAB members and the public.

Staff met with DOE-Headquarters (DOE-HQ) staff to discuss the success stories of the Northern New Mexico CAB. This meeting was related to the survey DOE-HQ is doing on all CABs nationwide.

Pueblo Interactions. ER Project staff had several interactions with the pueblos this quarter. Staff met with the San Ildefonso Pueblo environmental staff to discuss issues related to an access agreement between the ER Project and the pueblo. ER Project staff also made a presentation on Ecorisk to the environmental staff of the San Ildefonso Pueblo. Communications and Outreach staff filled the pueblo's requests for copies of various documents this quarter and attended the San Ildefonso Pueblo's feast day in January 2002.

ER Project staff met with the Santa Clara Pueblo environmental staff on issues related to the pre- and post-fire mercury concentrations from the Cerro Grande fire.

The ER Project staff continues to work with the Four Accord Pueblos on a variety of issues and coordinates all pueblo activities with the Laboratory's tribal relations team leader in order to ensure effective communication.

ER Project Tours. Staff worked with DOE-OLASO to coordinate a March 26, 2002, tour for the Senior Policy Advisor from the Office of the Assistant Secretary for Environmental Management, DOE-HQ. Staff arranged tour sites, presentations, briefing packets, and information sheets. Staff worked with ER Project subject matter experts to produce information sheets on Mortandad Canyon, the TA-53 lagoons, and MDA H for the tour.

Communications and Outreach staff coordinated a one-day tour of several ER Project sites for the Idaho National Engineering and Environmental Laboratory staff, who came to learn about the successes at MDA P.

MDA H Focus Group Session. MDA H hosted its fourth focus group session on February 26, 2002, in Pojoaque, New Mexico. The session addressed outstanding questions and issues, the selection of an independent reviewer for documents, the evaluation criteria, and EPA's present value analysis approach. The final session is scheduled on June 4, 2002. Participants will be asked to recommend one or more of the preferred alternative remedies for MDA H. The recommendation will be provided to the NMED as part of the formal public hearing/comment process.

Staff finalized the "Frequently Asked Questions" for MDA H and submitted the questions to the focus group. This document was placed in the ER Project's external Web page.

Reading Room/Virtual Library. The Communications and Outreach Team continues to work on the Laboratory's Reading Room and the ER Project's Virtual Library. Staff generated a list of documents to be placed on the Virtual Library; met with the contractor for the Virtual Library scanning project in February 2002 to perform a quality assessment and to deliver three boxes of ER Project documents for scanning; and responded to 15 information requests. Staff placed various documents on the ER Project's external Web page/Virtual Library.

2.7.2.2 Closeout, Tracking, and Training Team

PRS and Future Deliverables Tracking. Work continued on the effort to update and validate information in the PRS database and to populate a new database "container" (information holder) with current and accurate PRS information. Analytical data tables, designed for the SWMU report, were added to the database, and all PRSs that have been sampled are scheduled to have a data summary table on the PRS database by the end of the fiscal year.

SWMU Report. Team members continued work on the draft SWMU report. Authors, data staff, and editors have been added to meet expanding NMED requirements for the report. During the last quarter, NMED requested a change to the format of the data reported in the SWMU report. This required the team to revisit all previously complete sections of the document. Database reprogramming was required to meet the expanded scope of the SWMU report to address both the changing report requirements and the Web-site view of the analytical data. Three technical areas have been finalized with the new report data requirements and format. The schedule will slip because of the expansion of scope in the report.

2.7.2.3 Regulatory Compliance and Facility Integration Team

Team members continued to provide assistance with regulatory compliance issues for activities within the ER Project this quarter. Staff provided regulatory reviews of documents prepared by the ER Project and participated in peer reviews. Deployed personnel from the Laboratory's Hazardous and Solid Waste Group (ESH-19) and ESH-18 participated in the reviews as subject matter experts regarding hazardous and solid waste issues and water issues, respectively. These efforts included preparing and reviewing responses to the notice of deficiency received from NMED on the TA-50 permit application; preparing and reviewing closure plans, post-closure-care plans, and corrective action crosswalks for MDAs G, H, and L; and working with NMED to finalize closure report requirements for MDA P.

Clean Water Compliance. BMP inspection and maintenance activities continued this quarter. Quarterly BMP inspections were completed, and BMP maintenance was completed at TAs-9, -15, -16, -33, -39, -40, -42, -45, -46 and -48. Modification to stormwater pollution prevention plans (SWPPPs) at 03-056(c), MDA P, and the 260 outfall and to the umbrella SWMU/SWPPP were required as a result of the Annual Site Compliance Evaluations. The installation of a perimeter fence at 10-002(a)-99 was completed in March.

Staff participated in the following meetings addressing clean water compliance issues:

- Surface Water Assessment Team members are conducting a data quality objective-like process for permit-related stormwater monitoring at Laboratory gaging stations. To date, the team has decided to focus on "conventional industrial activities" (i.e., the TA-3 power plant) first; then on treatment, storage and disposal facilities; and then on MDAs. An evaluation will be conducted to determine whether surface-water requirements related to SWMUs could be covered by the RCRA permit instead of the stormwater permit.

- Attended Watershed Integration Team meetings, which included discussions of the following topics: an update on Pajarito Plateau Watershed Partnership activities, an update for Laboratory managers on recent stormwater analytical data, an update on Surface Water Assessment Team data quality objective efforts related to the stormwater permit, and a review of the different types of tools used to analyze stormwater data.

- Participated in Watershed Integration Team subcommittee meetings to evaluate stormwater data that exceed Water Quality Control Commission standards, derived concentration guides, or stormwater permit benchmarks. The subcommittee discussed a path forward for addressing this issue in both the short and long term.

- Attended Total Maximum Daily Load Conference in Fort Worth, Texas. The EPA's "New Watershed Rule" was introduced to address changes in approach and to provide guidance for implementing total maximum daily loads.

Other clean water compliance activities this quarter included providing regulatory support to TA-3 power plant personnel during the aftermath of a waterline break on January 25, 2002. Approximately 400,000 gallons of water was released on the east side of the facility; the release impacted Area of Concern 03-047(d).

Training requirements for the BMP field team were updated as required by the site-specific health and safety plan.

Waste Management Activities. Team members provided the following support for ER waste management/minimization activities this quarter.

- Facilitated final shipment of thirty-two 55-gallon drums and nine B-12 boxes from the Field Support Facility at TA-3 to TA-54, MDA G. The drums and boxes contained fine sediment trapped in the filter assembly of the vacuum system used in Acid Canyon to remove contaminated soil.

- Conducted ER waste management training for all ER personnel who handle, manage, characterize, generate, store, or stage ER Project-related waste.

- Gathered analytical data and historical information on all samples returned from analytical laboratories and currently stored at the SMO. Return samples will be profiled for final shipment and disposal.
- Provided waste management support and document review for PRS 53-002(a) (Northern Lagoons interim action) and PRS 54-007(a) (septic tank removal).
- Coordinated on-site waste management, characterization, transportation, and disposal for waste generated at wells R-8, R-13, and CdV-R-37-2.
- Prepared a waste profile form for PRS 50-009 (MDA C) archived core, currently stored at the SMO.
- Reviewed and revised waste characterization profile forms and waste profile forms for the VCA at PRS 54-007(a) and the IM at PRS 21-018(a)-99 (the NTISV hot demonstration site at MDA V).
- Completed and submitted an ESH-ID project summary for TA-21, General's Tanks (PRS 21-104).

Land Transfer. Team members participated in the preparation of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-related documents for the transfer of the following sub-parcels of Laboratory property from DOE to the County of Los Alamos, the New Mexico Highway Department, or the Bureau of Indian Affairs to be held in trust for the Pueblo of San Ildefonso:

- White Rock-1 (to Los Alamos County)
- White Rock (to New Mexico Highway Department)
- LAAO-1 East (to Los Alamos County)
- TA-74-3 North (to Bureau of Indian Affairs)
- TA-74-4 Little Otowi (to Bureau of Indian Affairs)
- White Rock "Y"-3 (to Bureau of Indian Affairs)

The team also supported the Army Corps of Engineers, who began surveying all of the land transfer sub-parcels. The following four sub-parcels are currently excluded from the land transfer schedule: White Rock "Y"-2 South, White Rock "Y"-3 (Right-of-Way), White Rock "Y"-4 (Right-of-Way), and Airport-3 South.

Team members continue to participate as members of the Laboratory's Land Transfer Team and the DOE's Land Transfer Project Office Team. These teams are responsible for the activities leading up to the final transfer of Laboratory property.

Long-Term Stewardship. Team members continued participation in the DOE-Albuquerque Operations Office's Long-Term Stewardship Working Group, which distributed a draft of the Albuquerque Operations Office Long-Term Environmental Stewardship Strategic Plan in March 2002. Based on internal review comments, the team also began the revision of the ER Project's "Long-Term Environmental Stewardship Path Forward Plan."

2.7.2.4 Special Projects and Deployed Generalist Team

Approximately 54 PRSs are under consideration to support performance measures for work-off and permit modification. Five are candidates for submittal to NMED as supplemental information in support of previous permit modification requests; 22 are candidates for a future Class III permit modification request; 25 are candidates that may be included in a future petition for Class III permit modification; and 2 are candidates for NFA from DOE.

Of the 5 candidates for submittal to NMED as supplemental information in support of previous permit modification requests, 1 has been completed and is ready for submittal, 1 is awaiting the completion of a VCA report that is currently in the peer review process, and 1 requires supplemental sampling contingent upon the drafting of a SAP. The Special Projects and Deployed Generalist Team has determined that the remaining 2 candidates require information that cannot be acquired before the end of this fiscal year.

Of the 22 candidates for submittal in a future Class III permit modification request, 1 has been eliminated for eligibility, 5 are in the process of being drafted, 2 are awaiting approval of a VCA report, 1 is awaiting approval of a VCM report, and 14 are still in the review process.

Of the 26 candidates for inclusion in a future petition for Class III permit modification, 4 have been eliminated for eligibility, 5 are in the process of being drafted, 3 are awaiting drafts of VCA reports (the reports will be submitted in the petition), 4 require further sampling contingent upon the drafting of a revised SAP, 2 are awaiting ecological assessment drafts, and 8 are still in the review process. Eighteen PRSs are candidates for radiological property release reports under DOE Order 5400.5, "Radiation Protection of the Public and the Environment." To date, 10 reports have been written. Of these, 3 are ready for submittal and 7 are in the internal review process.

In document review activities, team members continue to provide peer review input as needed, and authorized derivative classifiers from the team continue to provide classification reviews of ER Project documents, as needed.

Team members worked with NMED staff to revise the RFI report annotated outline in an effort to streamline future reports.

Team members also participated in meetings with the ESH-20 to define National Environmental Policy Act (NEPA) requirements applicable to ER Project sites, with an emphasis on the MDAs and specifically on MDA H. Work continued with ESH-20 staff to finalize a process to meet applicable NEPA requirements without duplicating efforts under way to meet environmental assessment requirements in Module VIII of the Laboratory's Hazardous Waste Facility Permit.

Natural Resource Management Activities. This team member represents the East Jemez Resource Council for the ER Project. The Pajarito Plateau Watershed Partnership, which has now become affiliated with the council, has set erosion control (with emphasis on Pueblo Canyon for now) as a key focus of attention. The National Park Service-Bandelier has agreed to be the administrative body to manage the 319 grant for the watershed partnership as it proceeds with projects under that funding source. A draft Watershed Restoration Strategy from the Pajarito Plateau Watershed Partnership is available, and the group continues to work on a watershed management plan.

As the authorized NEPA, Cultural, Biological Resources reviewer for the ER Project, the team representative completed screening checklists/reviews for nature and extent in MDA U and MDA B, characterization and remediation for MDA A and the DP land transfer parcels, an interim action for the

surface impoundments (lagoons) at TA-53, and a VCM for soil stabilization at an outfall from the TA-21 wastewater treatment plant.

The team member is the ER Project point of contact for the Interagency Wildfire Management Team, which is working to mitigate wildfire on Laboratory property. The continuing efforts of this team focused on current fire hazard, interagency mitigation plans, and the proposed Laboratory-wide tree-thinning projects. Potential fire severity conditions this season are a Laboratory-wide concern. It is the team member's responsibility to address any concerns or impact to ER activity; Laboratory fire-road extension and maintenance may need to be reviewed with respect to PRSs.

The team member submitted a list of references to the wetlands working group on issues related to the management, study, and mitigation of Laboratory wetlands. This effort is consistent with the institution's goals of compliance, BMPs, and long-term stewardship and ER Project's interest in wetland/contaminant issues.

This team member represents the ER Project at the PM-1 Site Planning Group meetings and is working to establish contacts and enhance siting notification to the ER Project in an effort to reduce scheduling problems with cleanup activity. The team member provided data packages for 24 proposed siting notifications to ER Project focus area team leaders. Buildings, transportainers, roads, and a gas line were included in the notifications.

Support to Focus Areas. Personnel from the Special Projects and Deployed Generalist Team are deployed to the operational focus areas to provide support regarding regulatory issues. In addition to providing general regulatory compliance assistance this quarter, such as reviewing documents, participating in peer reviews for operational focus area documents, and attending operational focus area meetings, high-performance team meetings, and meetings with DOE and NMED. The deployed members of the team also assisted with the following tasks in the operational focus areas.

Canyons Investigations Activities. Staff reviewed four excavation permit requests for the Canyons Focus Area this quarter. Sampling notifications were completed for surface, groundwater, and spring sampling in Los Alamos Canyon and Pueblo Canyon. The staff member representing the Canyons Investigations Focus Area performed duties as waste management coordinator for low-level radioactive waste generated from Acid Canyon sediment removal and participated in the peer review for the South Fork Acid Canyon interim action completion report.

Groundwater Investigations Activities. Sampling notifications were completed for drilling well R-8A and for quarterly sampling at wells R-7, R-22, R-25, and CdV-R-37-2. The team member reviewed and commented on the R9/R9i and R-15 geochemistry report and the R-7 completion report.

MDA Activities. Staff continued to provide support for the draft IM report for PRS 21-018(a)-99, the NTISV hot demonstration at MDA V, and met with NMED staff regarding the tentative sampling schedule for the glass product and potential modifications to the sampling approach in the IM plan. NMED staff reiterated their concern regarding the potential for product sample quality and quantity to be compromised if the core is too hot during drilling, as a result of the accelerated schedule.

Staff assisted with numerous other MDA projects this quarter, including the following:

- Continued the review and revision of the draft VCM report proposing NFA for PRS 21-027(d)-99, the NTISV cold demonstration.
- Reviewed and revised draft SWMU reports for TA-21, TA-50, and TA-54.

- Attended meeting with Land Transfer staff, DOE, and Los Alamos County to provide supplemental information on DP Tank Farm in support of the pending land transfer.
- Participated in Innovative Treatment and Remediation Demonstration meetings and conference calls on the review of potential remediation technologies for the VOC vapor plume at MDA L.
- Reviewed and revised the investigation report for documenting the geotechnical and waste characterization activities conducted within the boundaries of PRSs 50-004(a)-00 and 50-011(a) in anticipation of the construction of a new pump house and influent tank vault at TA-50.
- Continued review of RFI data for MDA C to determine if nature and extent have been determined, and if not, what information is required to complete the RFI.
- Conducted site visit of PRS 21-011(k) with NMED staff to review the pending VCM of the site, which will involve the excavation and onsite stabilization of radionuclide-contaminated tuff and sediment and restoration of the site. The VCM plan for PRS 21-011(k) will be submitted to NMED in April 2002.
- Reviewed and revised a white paper on the remaining RFI subsurface characterization requirements for MDA AB at TA-49.
- Reviewed and revised the first two sections of the MDA H CMS report and facilitated a meeting with NMED staff in March 2002 to review those two sections of the report. Reviewed and revised section three of the CMS report and scheduled a meeting with NMED staff to discuss the MDA H modeling approach in April 2002.
- Continued to participate in/facilitate the MDA/TA-54 HPT meetings with NMED-HWB and DOE representatives on the preparation of the CMS report for MDA H and the public involvement plan; on NMED comments on the RFI report for MDA H, supplemental RFI investigation, and the RFI addendum; and on the planning of future public meetings for the CMS of MDA H.
- Reviewed and revised the MDA H CMS progress reports for January and February 2002, which were submitted in February and March 2002, respectively, in accordance with Module VIII of the Laboratory's Hazardous Waste Facility Permit.
- Continued regulatory support for reports documenting the final cleanup of several PRSs at TA-21, TA-51, and TA-54 West.
- Reviewed four excavation permit requests for infrastructure construction projects planned at TA-50 and TA-3.

The deployed generalist provided additional support to the focus area by preparing, reviewing, and/or resolving peer review comments received on various sampling notifications, VCA completion reports, RFI reports, SAPs, the CMS report for MDA H, and other submittals. Sampling notifications were prepared for ER activities at PRS 03-052(a)-00 and PRS 54-007(a).

RCRA Corrective Actions Activities. The deployed generalist reviewed drawings and maps submitted with an excavation permit for a new medical facility to be located east of Building 3-16, at the location of PRS 03-054(b). The team member met with TA-3 facility staff to discuss the location of the proposed excavation, which overlaps the entire boundary of PRS 03-054(b). PRS 03-054(b) is a National Pollutant Discharge Elimination System-permitted outfall for storm drains designated as PRSs 03-052(a) and 03-052(e). All three PRSs were consolidated in FY 2000 into PRS 03-052(a)-00. RFI sample locations

were located in accordance with the RFI work plan, and nine sediment/soil samples were collected by ESH-19. All nine samples will be analyzed for target-analyte-list metals and semivolatile organic compounds, and three will be analyzed for VOCs.

Sampling notifications were completed for sampling activities at PRSs 00-027, 03-052, and 16-021(c)-99.

3.0 REFERENCES

LANL (Los Alamos National Laboratory), July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico. (LANL 1995, 57590)

NMED (New Mexico Environment Department), February 1, 2002. "LANL's Response to Request for Supplemental Information, RCRA Facility Investigation Report Addendum for Potential Release Site 3-010(a)," NMED-HWB letter to M. Johansen (DOE-LAAO, Project Manager) and J. Browne (LANL Director) from J. Young (NMED Permits Management Program, Hazardous Waste Bureau), Santa Fe, New Mexico. (NMED 2002, 71486)

Appendix A

Monthly Inspection Reports
Second Quarter, Fiscal Year 2002
DP Canyon

Monthly Inspection Reports
Second Quarter, Fiscal Year 2002
DP Canyon

MDA Focus Area

Environmental Restoration Project

Los Alamos National Laboratory

May 2002

DP Canyon Inspection Report
January 30, 2002

Introduction: Regular inspections are conducted to assess the status of two petroleum hydrocarbon seeps in DP Canyon. These seeps, which are downgradient from Potential Release Site (PRS) 21-029 (DP Tank Farm), are referred to as the upstream and downstream seeps (Figure 1). Inspections are generally conducted on a monthly basis. However, during wetter months, these inspections are conducted on a semimonthly basis. The results of these inspections will help document any changes in the petroleum hydrocarbon seep areas in relation to seasonal changes and recent precipitation.

Date: January 30, 2002
Time: 3:50 p.m.
Personnel: Becky Coel-Roback and Dan Holmquist
Weather: 30° F, overcast, heavy snow
Precipitation: 0.47 inches, approximate total since the last inspection (source: Los Alamos National Laboratory Weather Machine).

Presence of standing or running water: At the time of the inspection there was heavy flow from the culverts draining the town site, due to recent and current snowfall. The water in the drainage was opaque brown due to the heavy flow and no streambed sediments were exposed due to the depth of the water in the drainage. Water was flowing from the north side of the drainage, immediately upstream of the downstream seep area. This appears to be coming from the apartment complex parking lot located on the north side of DP Canyon.

Location and intensity of odors, staining, or sheen (see Figure 1 for locations):

	Air	Water	Soil/Sediment
Upstream Location	No petroleum hydrocarbon odor in air.	No sheen on water due to the heavy flow in the drainage.	No exposed sediments.
Downstream Location	No petroleum hydrocarbon odor in air.	No sheen on water due to the heavy flow in the drainage.	No exposed sediments.

Photographs: The following photographs were taken during the site visit (see Figure 1 for locations).

Location 1, canyon head. Culverts at the head of DP Canyon, showing heavy water flow due to snowfall.

Location 2, upstream location. Small pool with running water.

Location 3, upstream location. During the January 30 inspection, flow was too heavy to detect sheen in the water or sediments. No petroleum hydrocarbon odor was noted in air.

Location 4, upstream location. Stream channel, looking downstream from sample location 21-11136.

Location 5, downstream location. There was heavy water flow in this pool during the January 30 inspection.

Location 6, downstream location. Flow was too heavy to detect sheen in the water or on sediments during the January 30 inspection. No petroleum hydrocarbon odor was noted in air.

Location 7, downstream location. Stream channel, looking downstream from sample location 21-11176.

DP Canyon Inspection Report
February 27, 2002

Introduction: Regular inspections are conducted to assess the status of two petroleum hydrocarbon seeps in DP Canyon. These seeps, which are downgradient from Potential Release Site 21-029 (DP Tank Farm), are referred to as the upstream and downstream seeps (Figure 1). Inspections are generally conducted on a monthly basis. However, during wetter months, these inspections are conducted on a semimonthly basis. The results of these inspections will help document any changes in the petroleum hydrocarbon seep areas in relation to seasonal changes and recent precipitation.

Date: February 27, 2002
Time: 3:00 p.m.
Personnel: Becky Coel-Roback and Ryan Channell
Weather: 45° F, sunny and breezy
Precipitation: 0.31 inches, approximate total since last inspection (source: Los Alamos National Laboratory Weather Machine).

Presence of standing or running water: At the time of the inspection, there was no flow in the drainage due to recent dry weather. Nearly all standing water was frozen, with the exception of small amounts of water along the ice margins at the upstream location.

Location and intensity of odors, staining, or sheen (see Figure 1 for locations):

	Air	Water	Soil/Sediment
Upstream Location	No petroleum hydrocarbon odor in air.	Sheen on water in the unfrozen areas. Most appears to be from decaying vegetation. Some may be petroleum hydrocarbon, in the immediate area of the seep.	Slight petroleum hydrocarbon odor and sheen in disturbed mid-channel sediments.
Downstream Location	No petroleum hydrocarbon odor in air.	Completely iced over, no sheen.	No sheen, staining, or odor in disturbed sediments.

Photographs: The following photographs were taken during the site visit (see Figure 1 for locations):

Location 1, canyon head. No flow in culverts at the head of DP Canyon.

Location 2, upstream location. Small pool, completely frozen.

Location 3, upstream location. During the February 27 inspection, a slight petroleum hydrocarbon odor and sheen was noted in disturbed sediments. Sheen on open water may be due to decaying vegetation.

Location 4, upstream location. Stream channel, looking downstream from sample location 21-11136.

Location 5, downstream location. There was no standing water in the downstream location during the February 27 inspection. All water was frozen.

Location 6, downstream location. This pool was frozen over during the February 27 inspection. No petroleum hydrocarbon odor was detected in disturbed sediments or air.

Location 7, downstream location. Stream channel, looking downstream from sample location 21-11176.

DP Canyon Inspection Report
March 27, 2002

Introduction: Regular inspections are conducted to assess the status of two petroleum hydrocarbon seeps in DP Canyon. These seeps, which are downgradient from PRS 21-029 (DP Tank Farm), are referred to as the upstream and downstream seeps (Figure 1). Inspections are generally conducted on a monthly basis. However, during wetter months, these inspections are conducted on a semimonthly basis. The results of these inspections will help document any changes in the petroleum hydrocarbon seep areas in relation to seasonal changes and recent precipitation.

Date: March 27, 2002
Time: 1:41 p.m.
Personnel: Becky Coel-Roback and Ryan Channell
Weather: 60°F, sunny, breezy
Precipitation: 0.02 inches, approximate total since last inspection (source: Los Alamos National Laboratory Weather Machine).

Presence of standing or running water: At the time of the inspection, there was very little water flow from culverts at the head of the drainage. Small amounts of standing water were present within the drainage, and ice was still present at the downstream location. There was no input into the drainage from the north bank at the downstream seep location.

Location and intensity of odors, staining, or sheen (see Figure 1 for locations):

	Air	Water	Soil/Sediment
Upstream Location	No petroleum hydrocarbon odor in air.	No petroleum hydrocarbon odors or sheen.	Moderate petroleum hydrocarbon odor and sheen in disturbed mid-channel sediments.
Downstream Location	No petroleum hydrocarbon odor in air.	Faint petroleum hydrocarbon odor and sheen on standing water.	No petroleum hydrocarbon odors, staining, or sheen.

Photographs: The following photographs were taken during the site visit (see Figure 1 for locations).

Location 1, canyon head. Culverts at the head of DP Canyon showing very little water flow due to dry weather conditions.

Location 2, upstream location. There was no flow and only small amounts of standing water at the upstream seep location during the March 27 inspection.

Location 3, upstream location. During the March 27 inspection, there was a noticeable petroleum hydrocarbon odor in disturbed sediments.

Location 6, downstream location. Standing water and ice were present in the downstream location during the March 27 inspection.

Location 7, downstream location. Stream channel in the area of sample location 21-11176, looking downstream.

Location 4, upstream location. Stream channel, looking downstream from sample location 21-11136.

Location 7, downstream location. Sheen and petroleum hydrocarbon odor were associated with standing water in the downstream location during the March 27 inspection.

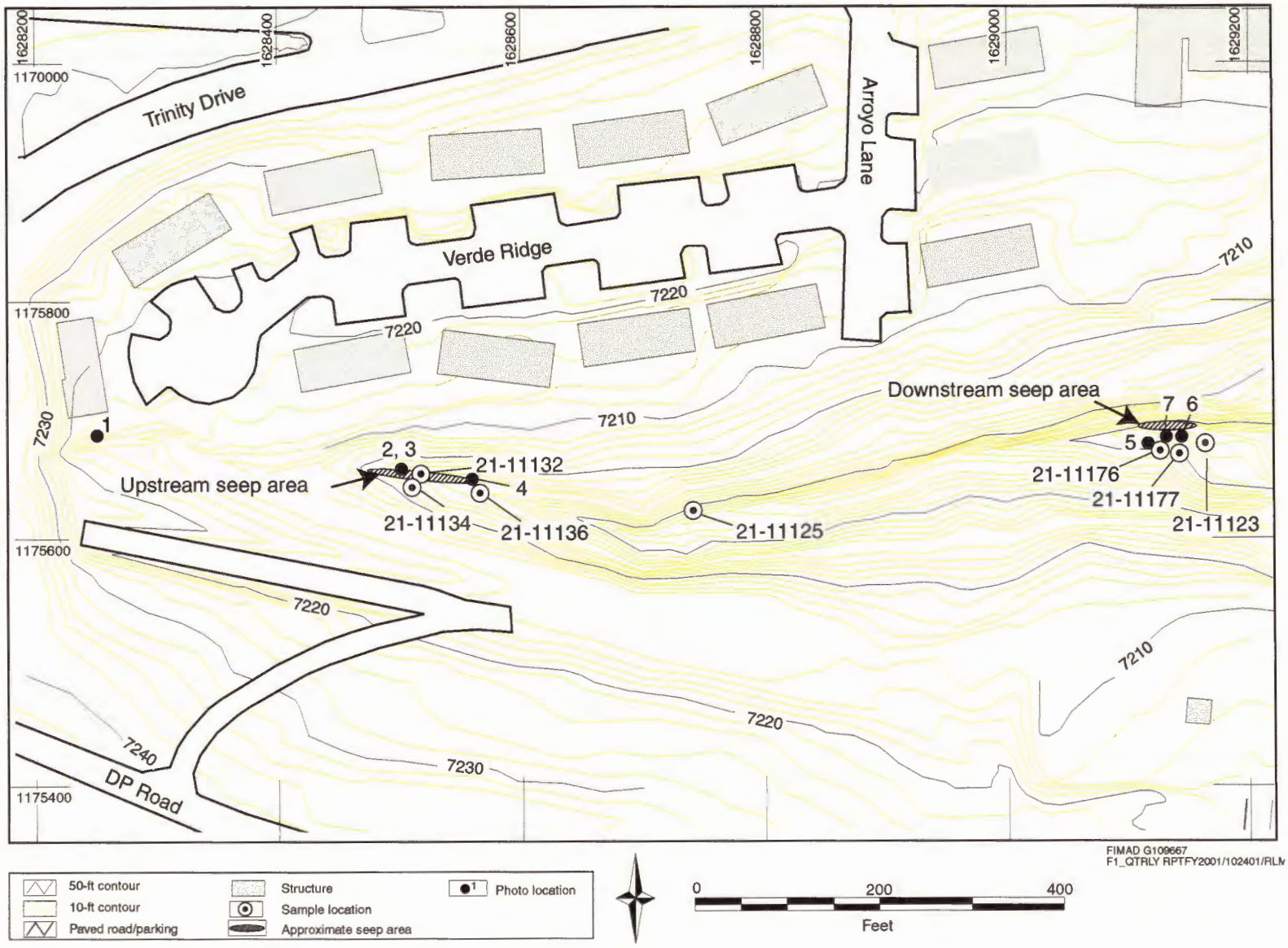

Figure 1. DP Tank Farm photo locations, seep areas, and sampling locations

Appendix B

Quarterly Moisture-Monitoring Report
Second Quarter, Fiscal Year 2002
Technical Area 49, Material Disposal Area AB

Quarterly Moisture-Monitoring Report
First Quarter, Fiscal Year 2002
Technical Area 49
Material Disposal Area AB

MDA Focus Area

Environmental Restoration Project

Los Alamos National Laboratory

May 2002

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1.0 INTRODUCTION

This report documents the results of moisture monitoring at Material Disposal Area (MDA) AB, Technical Area (TA) 49, at Los Alamos National Laboratory (LANL) during the second quarter of Fiscal Year (FY) 2002. The moisture-monitoring system was installed during March 2000 to determine whether or not the evapotranspirative (ET) cover at MDA AB was maintaining or reducing subsurface moisture. It is anticipated that the cover material will behave similarly to native undisturbed areas and restore the semiarid conditions at the site. Moisture monitoring was performed in accordance with WGII-SOP-7.05, Rev. 1, "Subsurface Moisture Measurements Using a Neutron Probe."

The moisture-monitoring project utilizes three neutron access holes (49-10046, 49-10047, and 49-10048), eight boreholes (TH-1, TH-2, TH-3, TH-4, TH-5, 2A-O, 2A-Y, and 2B-Y), four time domain reflectometry (TDR) probes (TDR1, TDR2, TDR3, and TDR4), and a rain gauge to evaluate changes in moisture beneath the cover and the undisturbed areas near the cover (Figure 1). The eight boreholes are 4 in. in diameter and uncased, and the three access holes have a 2-in. aluminum casing that extends to the bottom of the hole. Adjacent to each of two access holes (49-10046 and 49-10048) are two TDR arrays; they consist of a shallow TDR probe positioned horizontally just beneath the surface soil (approximately 6 in.) and a deeper TDR probe positioned vertically beneath the cover materials at 6 ft (TDR1) and 10 ft (TDR3). A rain gauge is located at the surface of the cover near access hole 49-10046. Figure 1 shows the locations of access holes, boreholes, TDR probes, the rain gauge, the cover, and the silt fence. Table 1 gives the depths of the TDR probes.

Moisture monitoring at MDA AB was completed for the last month of the first quarter of FY 2002 and for Quarter 2, FY 2002. This report will include a discussion of moisture trends over time, a comparison of moisture results from the neutron probes and the TDR probes, and a discussion of the relationship between precipitation and moisture content.

2.0 MOISTURE-MONITORING EVENTS

2.1 Neutron Logging

Neutron-logging events occurred at the beginning of January, February, and March, and the end of March. Due to the holiday shutdown at LANL in December, neutron logging scheduled for the last week of December was postponed to the second week of January, and the corresponding results are displayed in this report in addition to the results of second-quarter monitoring for FY 2002. Logging was performed with a dedicated CPN 503DR Hydroprobe at all access holes and boreholes. The neutron counts from each of the 11 monitoring holes were recorded into a spreadsheet, and a corresponding volumetric moisture content was calculated for each. Plots of volumetric moisture content for each sampling period and all of the holes are shown in Attachment A.

2.2 TDR and Precipitation Measurements

TDR measurements and precipitation quantities were collected twice a day through March and were recorded to a Campbell Scientific datalogger. The Campbell Scientific datalogger was programmed to record a timestamp, temperature, TDR raw frequencies, and precipitation (in.). The program converts raw frequency to volumetric moisture content and then records the data (both raw and converted) to a *.dat file. Figures 2 and 3 display moisture measurements and precipitation from April 2000 through March 2002. On November 30, 2001, it was discovered that rodents had likely entered the TDR-1 and TDR-2 conduits on top of the ET cover and damaged the wiring of the system rendering it incapable of data

collection. Non-lethal deterrents were put in place within the conduit to alleviate this biological nuisance. The deterrents have proven to be successful thus far. The damage to the TDR system caused a data gap of approximately two weeks from November 23 to December 11.

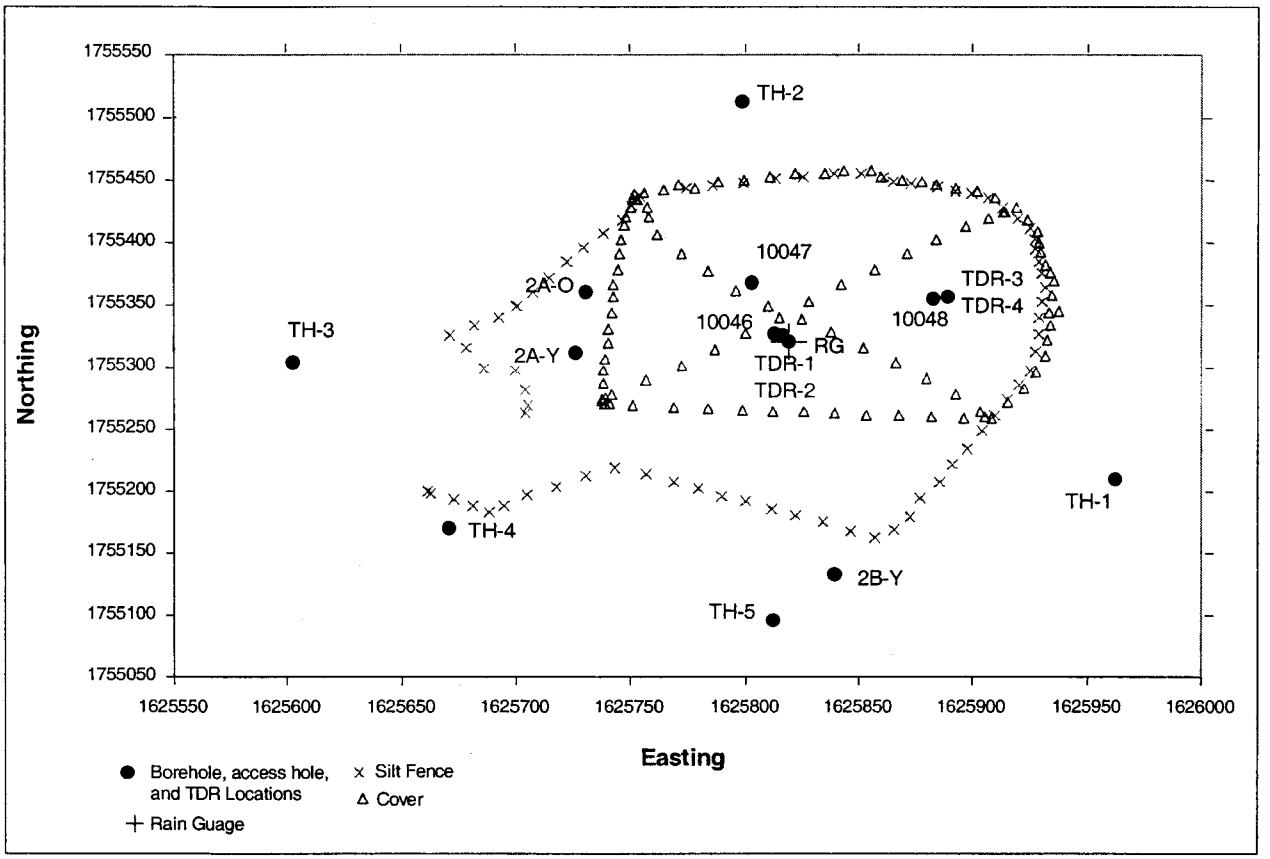

Figure 1. Location of instrumentation, access holes, and boreholes on XY plane at TA-49

Table 1
TDR Array Descriptions

TDR Number	Array Type	Depth (ft)
TDR1	Vertical, within soil overlaying Bandelier Tuff	6
TDR2	Horizontal, at bottom of top-soil	0.5
TDR3	Vertical, within El Cajete pumice	10
TDR4	Horizontal, at bottom of top-soil	0.5

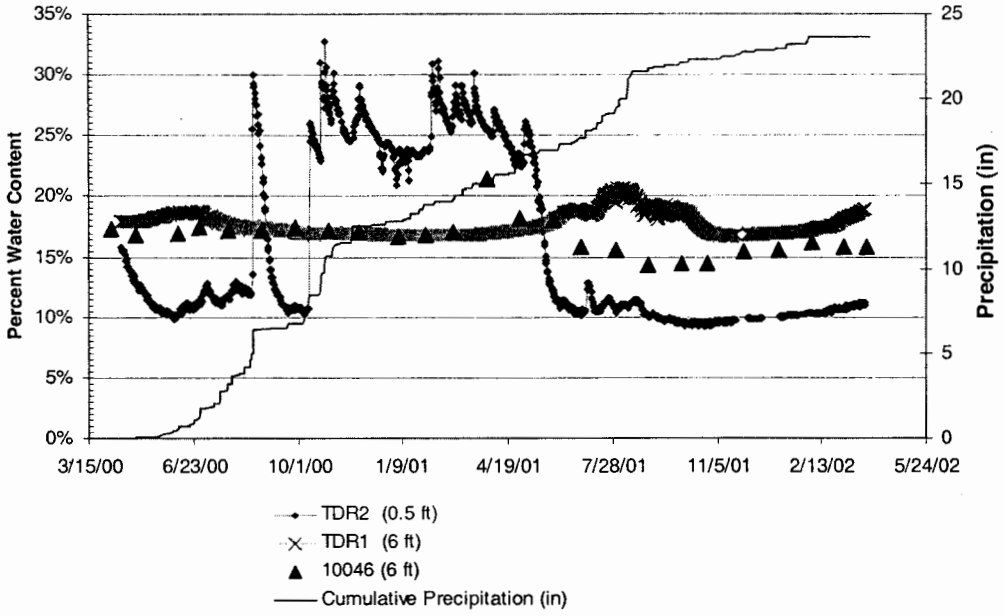

Figure 2. **TDR measurements compared with neutron measurements at access hole 49-10046, which is in close proximity and at the same corresponding depths as TDR1**

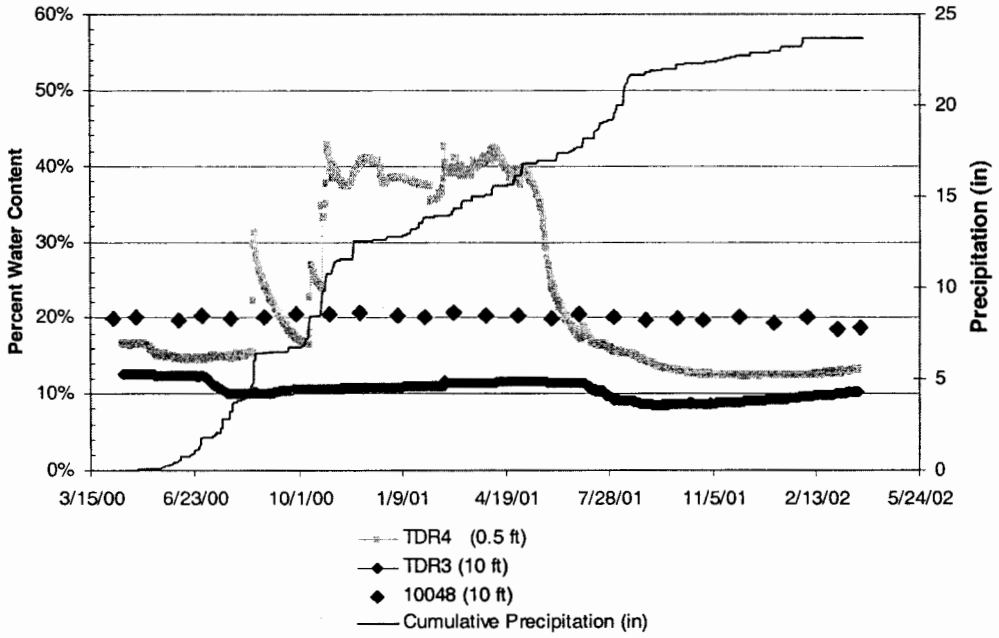

Figure 3. **TDR measurements compared with neutron measurements at access hole 49-10048, which is in close proximity and at the same corresponding depth as TDR3**

3.0 MOISTURE-MONITORING RESULTS AND DATA ANALYSIS

3.1 Introduction

During the second quarter (Q2) of 2002, most neutron access holes and boreholes have shown either a slight increase in volumetric moisture content or have shown no change in moisture in the first 5 ft, an interval of unconsolidated materials and/or the soil tuff interface. Trend plots of time versus moisture content were created for specific depth intervals (Attachment B). These plots exhibit the impacts of high-intensity rainstorms and snowmelt in addition to the effects of evapotranspiration, which accounts for the reduction of near-surface soil moisture.

3.2 Correlation between TDR Measurements and Precipitation Events

From December 2001 to March 2002, Los Alamos experienced only small precipitation accumulations from 0.01 in. to 0.24 in. During this period, all the precipitation received was in the form of snow. The TDR probes do not respond strongly to snow accumulation until the spring, when temperatures increase and significant melting of the snow occurs. In the last four months the shallow and deep TDRs have remained very steady with only slight increases (≤1%). The TDR behavior is consistent with what is expected during a dry fall, and winter months with cold temperatures and below average snowfall.

3.3 TDR and Neutron Comparisons

The moisture-monitoring system is producing similar results from the TDR arrays and the neutron logging. Figures 2 and 3 display the deep TDR data associated with access holes 49-10046 and 49-10048; neutron probe data from the same depth are also shown. The TDR probes are quickly able to detect moisture increases in the subsurface, whereas the neutron probe captures the long-term effect of the same events. In the second quarter of 2002, the neutron probe data and TDR data have the same relative trend in moisture content at access hole 49-10046, but the neutron probe is reading a 3% lower moisture content than the TDR probe at the same location (Figure 2). The TDR probe's moisture output is thought to be more accurate over different moisture conditions than the neutron probe because it measures the same volumetric diameter of soil each time. The neutron probe will analyze different soil volumes depending on the overall moisture of the soil (it will measure a greater volumetric diameter in dry soils than in wet soils). Thus you would expect the two instruments to read at a greater variability during dry conditions and closer during periods of greater volumetric moisture. This may explain why the instruments match closely during periods of precipitation infiltration and differ during dryer periods of the year.

At access hole 49-10048, the TDR and neutron probe measurements differed by approximately 13%, with the neutron probe reading higher than the TDR probe. Neither the TDR nor neutron probe measurements have shown much moisture change during the last quarter. The difference between the TDR and neutron probe measurements in 49-10048 is due to the placement of the TDR probe in the El Cajete pumice. The neutron probe is calibrated for materials with densities closer to crushed tuff; the El Cajete pumice has a much lower bulk density. Therefore, the difference is an artifact of the neutron probe calibration. The TDR probe is accurate for all densities of material found at the site and, therefore, returns more realistic moisture content values for the El Cajete pumice.

3.4 Student T-test of Neutron Data

A student t-test analysis was performed to track trends in moisture over time for each of the boreholes and neutron access holes. The student t-test evaluates the significance of an apparent trend based on a

selected confidence interval. For the purposes of this analysis, a 95% confidence interval was selected.

As of March 2002, 25 months of data were available for statistical analysis. Table 2 presents the results of the student t-test analyses for each of the boreholes and neutron access holes. The majority of trends noted showed a decreasing moisture trend of less than 0.5% volumetric moisture/year. The trending analysis results show that moisture levels have increased only for borehole TH-2 in the near-surface area (from 1 ft to 5 ft). The only moisture-monitoring holes to show an increase in moisture at depths below 5 ft were boreholes 2B-Y, which detected an increasing moisture trend from 11 ft to 15 ft, and 2A-Y, which indicated an increasing trend from 16 ft to 20 ft Both of these increasing trends are not considered significant because the overall increase in moisture over the 2-year evaluation is less than 1% per year and the trend in the last quarter (January through March 2002) is decreasing. For all other boreholes and neutron access holes, the moisture levels have remained constant or decreased over the period of analysis. With almost 2 years of data (25 months) available for the trending analysis, seasonal fluctuations in moisture no longer bias the trending analysis results as they did previously.

Table 2
Results of the Student T-Test Analysis, Based on a 95% Confidence Interval

Borehole/Neutron Access Hole Number	Moisture Trending Results
TH-1	Analysis shows a decreasing moisture trend from 6 ft to 20 ft, 26 ft to 40 ft, 46 ft to 70 ft, and 101 ft to 110 ft
TH-2	Analysis shows an increasing moisture trend from 1 ft to 5 ft and a decreasing moisture trend from 6 ft to 25 ft, 31 ft to 40 ft, 46 ft to 50 ft, 56 ft to 85 ft, and 96 ft to 100 ft
TH-3	Analysis shows a decreasing moisture trend from 6 ft to 10 ft, 41 ft to 45 ft, 51 ft to 65 ft, 86 ft to 95 ft, and 101 ft to 105 ft
TH-4	Analysis shows a decreasing moisture trend from 1 ft to 10 ft, 56 ft to 60 ft, and 66 ft to 70 ft
TH-5	Analysis shows a decreasing moisture trend from 6 ft to 20 ft, 26 ft to 70 ft, 81 ft to 95 ft, and 101 ft to 105 ft
2B-Y	Analysis shows an increasing moisture trend from 11 ft to 15 ft
2A-Y	Analysis shows a decreasing moisture trend from 6 ft to 10 ft, and an increasing trend from 16 ft to 20 ft
2A-O	Analysis shows a decreasing moisture trend from 11 ft to 25 ft, and 31 ft to 35 ft
49-10046	Analysis shows a decreasing moisture trend from 7 ft to 13 ft
49-10047	Analysis shows a decreasing moisture trend from 7 ft to 12 ft
49-10048	Analysis shows a decreasing moisture trend from 5 ft to 10 ft

4.0 CONCLUSIONS

Second Quarter

During the second quarter of FY 2002, moisture content remained constant or increased slightly below the unconsolidated surface material across the site. This was expected because very little precipitation in the form of rain or snow occurred during the winter months. The shallow TDR probes indicated a small increase in moisture (<1%) from January to the end of March, which was probably due to snowmelt. The TDR instrument at 6 ft recorded a slight increase (<1%) in moisture, while the deep TDR instrument (10 ft) indicated little to no change in this quarter. Because the TDR probe measurements are recorded

every 12 hours, relatively small moisture content fluctuations can be measured in the near surface. TDR measurements at depth have confirmed that these impulses only penetrate the near surface. Both the neutron log and TDR probe data continue to indicate that the evapotranspirative cover at MDA AB is maintaining the local moisture content at levels comparable to nearby undisturbed areas.

5.0 RECOMMENDATIONS

MDA G at TA-54 is similar to MDA AB. Routine moisture monitoring has been performed at MDA G for more than 10 years. The results have indicated that very little, if any, detectable change in moisture content occurs below the near-surface environment; therefore any significant changes or trends are effectively captured by bimonthly monitoring. The moisture-monitoring results for the past 25 months at MDA AB have been consistent with those from MDA G. Measurements of the moisture content within the Bandelier Tuff at both mesa-top sites indicate that seasonal precipitation results in little, if any, deep infiltration. Consequently, it is recommended that moisture monitoring of all boreholes and neutron access holes be reduced from monthly to bimonthly. This will be sufficient to capture any potential long-term variability in moisture content below the near-surface environment. The current frequency of TDR measurements will continue to monitor the performance of the cover materials.

Attachment A

Neutron Moisture Measurements

ATTACHMENT A NEUTRON MOISTURE MEASUREMENTS

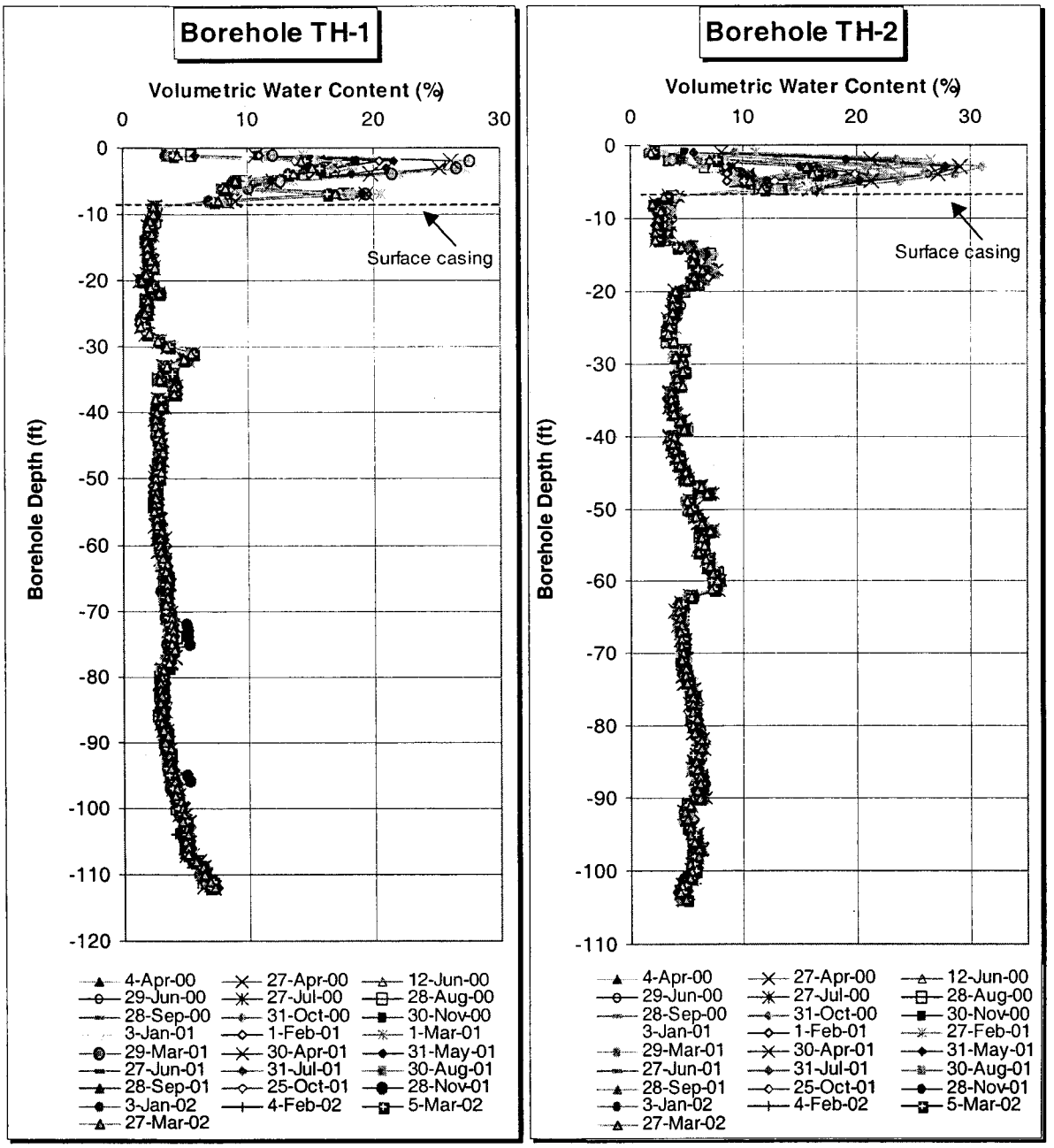

Figure A-1. Neutron probe moisture measurements for boreholes TH-1 and TH-2

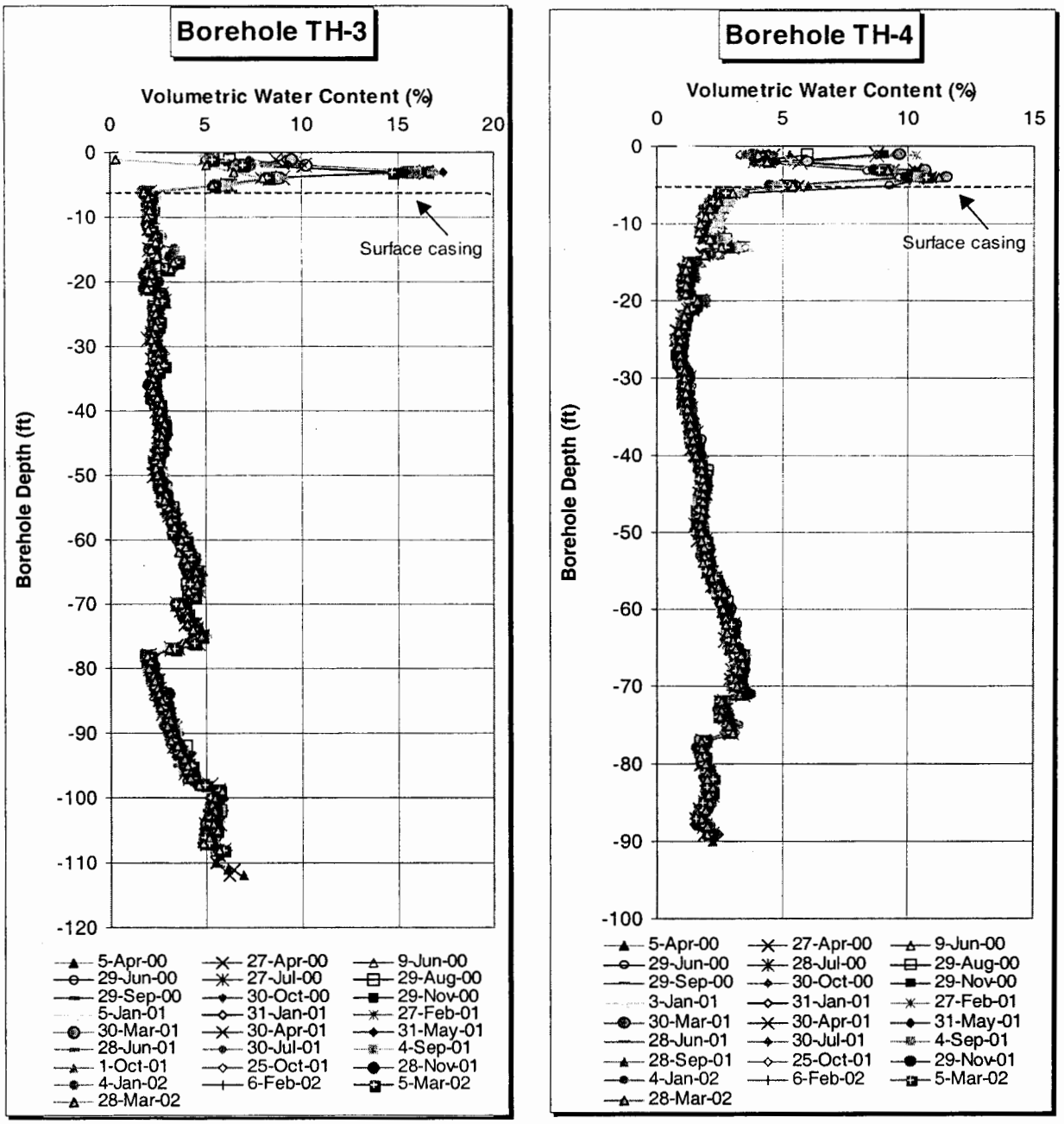

Figure A-2. Neutron probe moisture measurements for boreholes TH-3 and TH-4

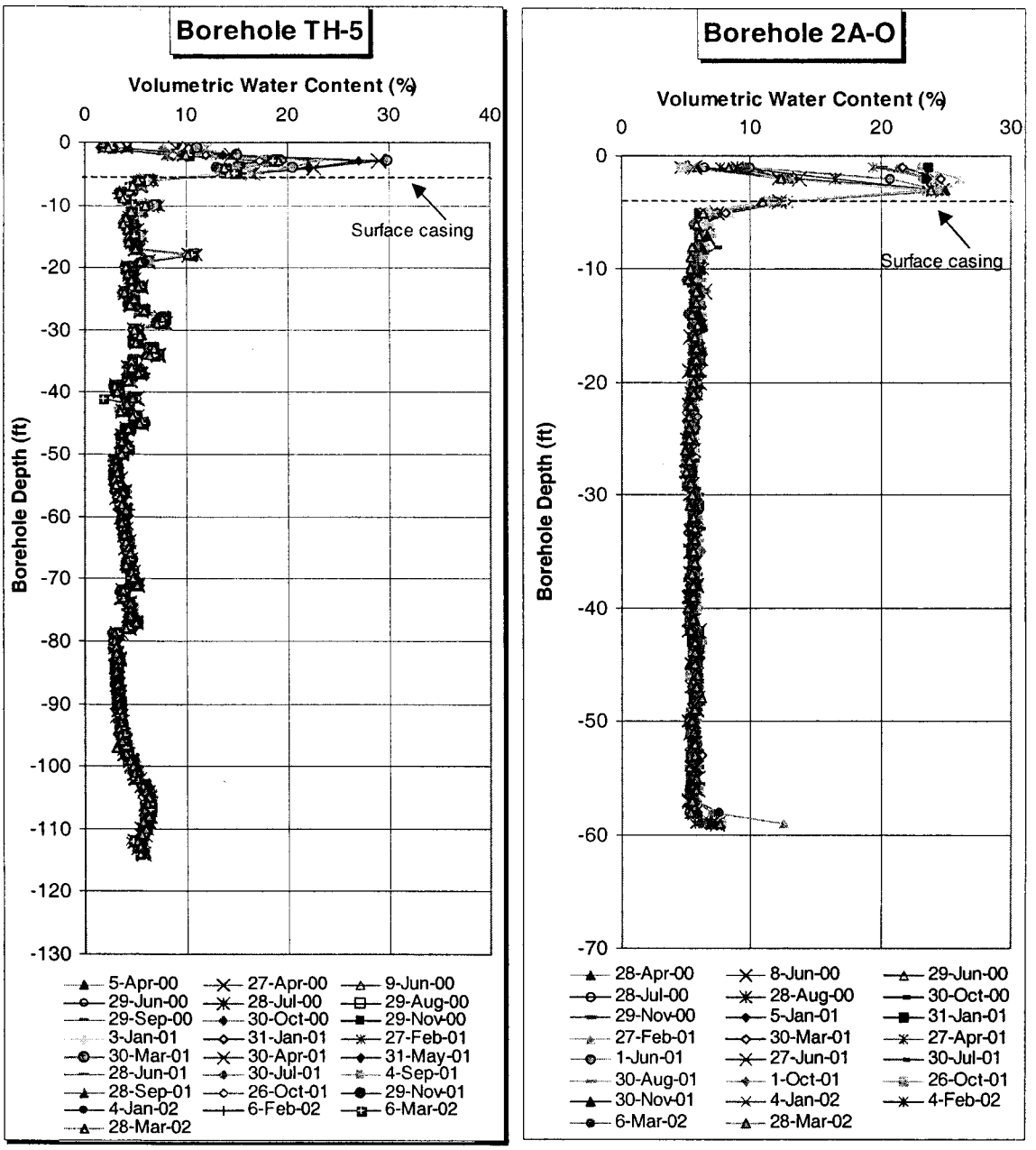

Figure A-3. Neutron probe moisture measurements for boreholes TH-5 and 2A-O

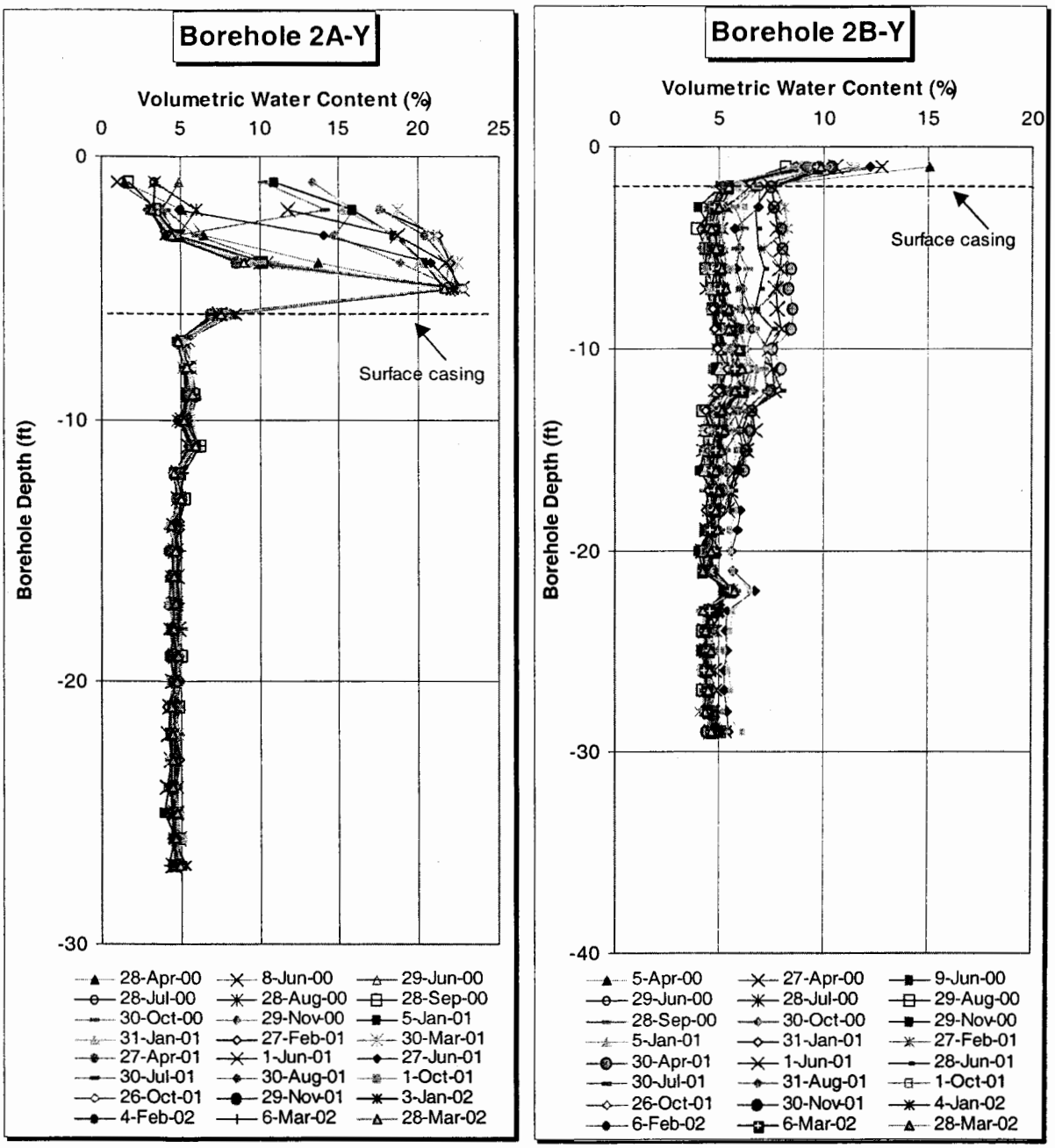

Figure A-4. Neutron probe moisture measurements boreholes 2A-Y and 2B-Y

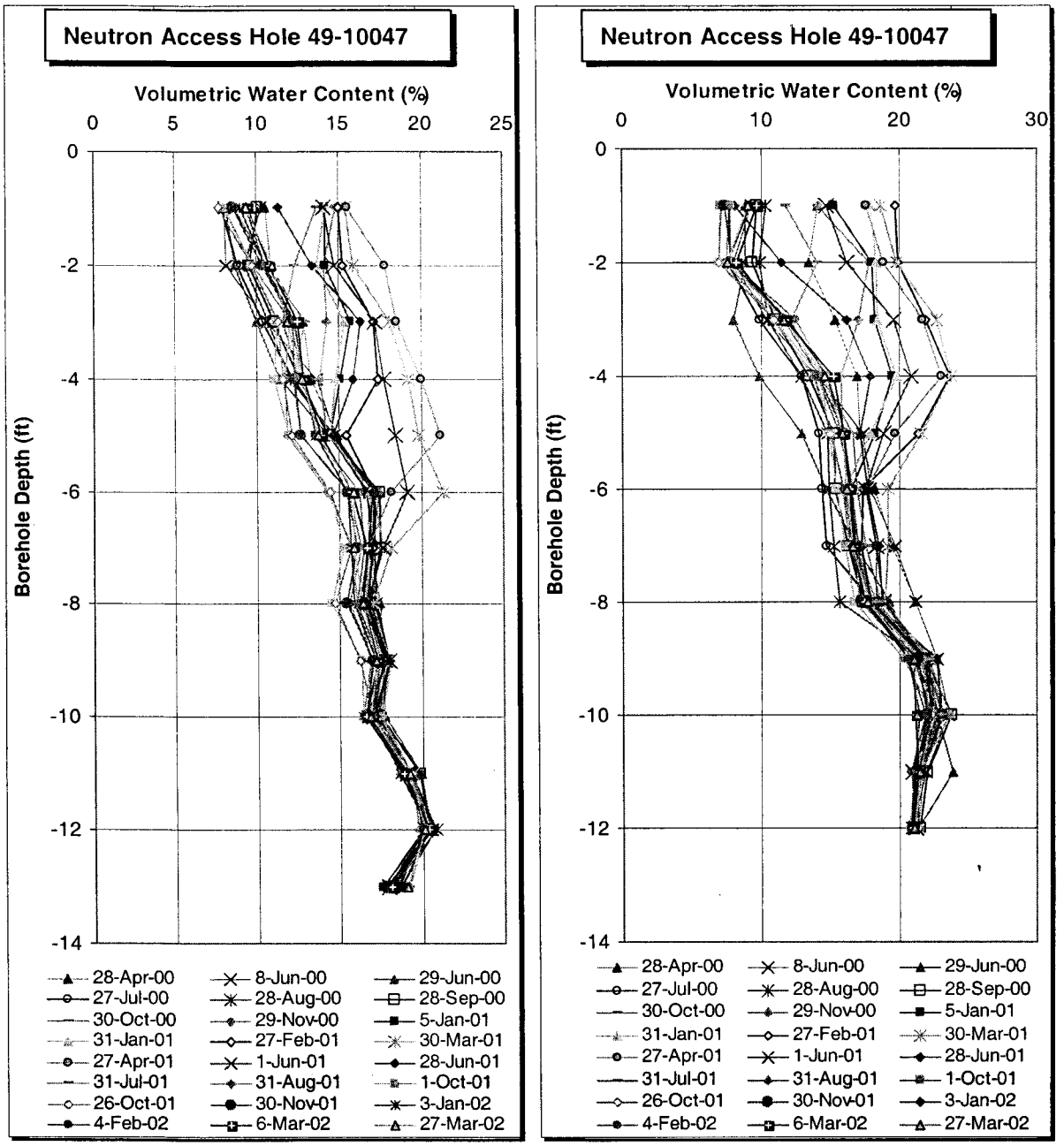

Figure A-5. Neutron probe moisture measurements for neutron access holes 49-10046 and 49-10047

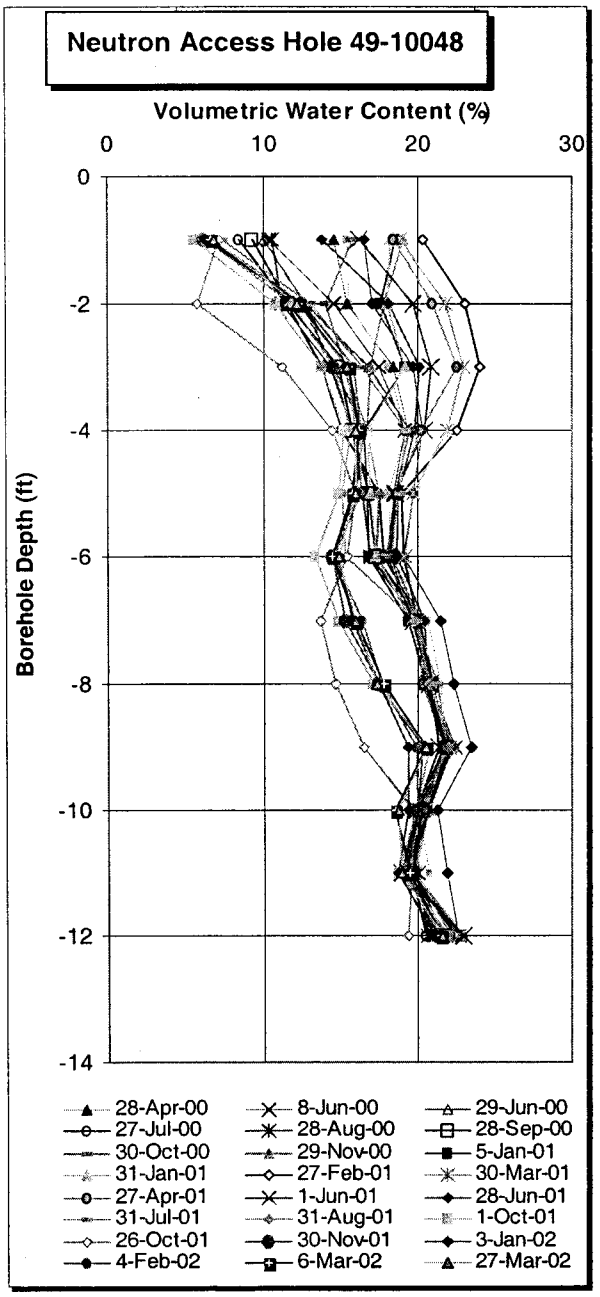

Figure A-6. Neutron probe moisture measurements for neutron access hole 49-10048

Attachment B

Time Versus Moisture Content Plots

ATTACHMENT B TIME VERSUS MOISTURE CONTENT PLOTS

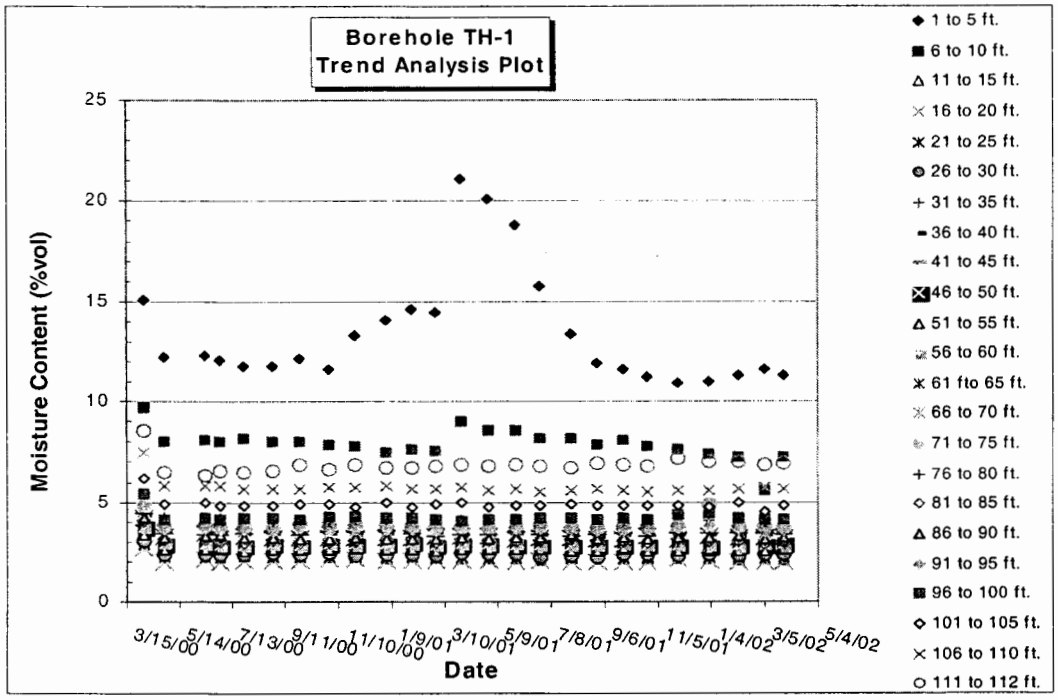

Figure B-1. Trend plot of neutron moisture measurements, borehole TH-1

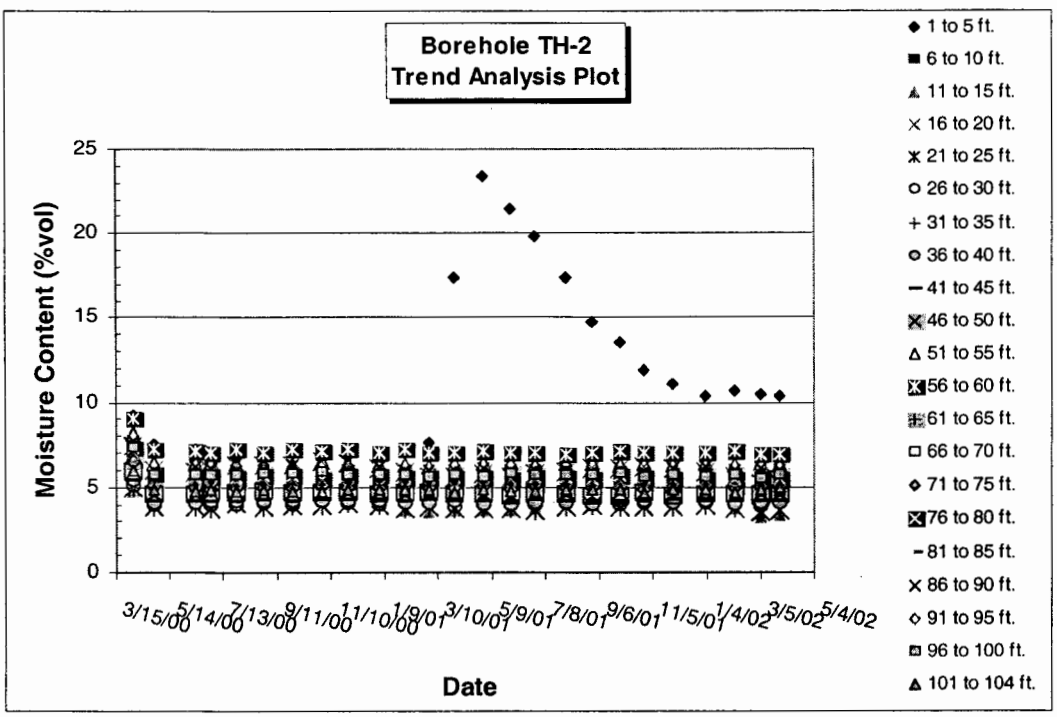

Figure B-2. Trend plot of neutron moisture measurements, borehole TH-2

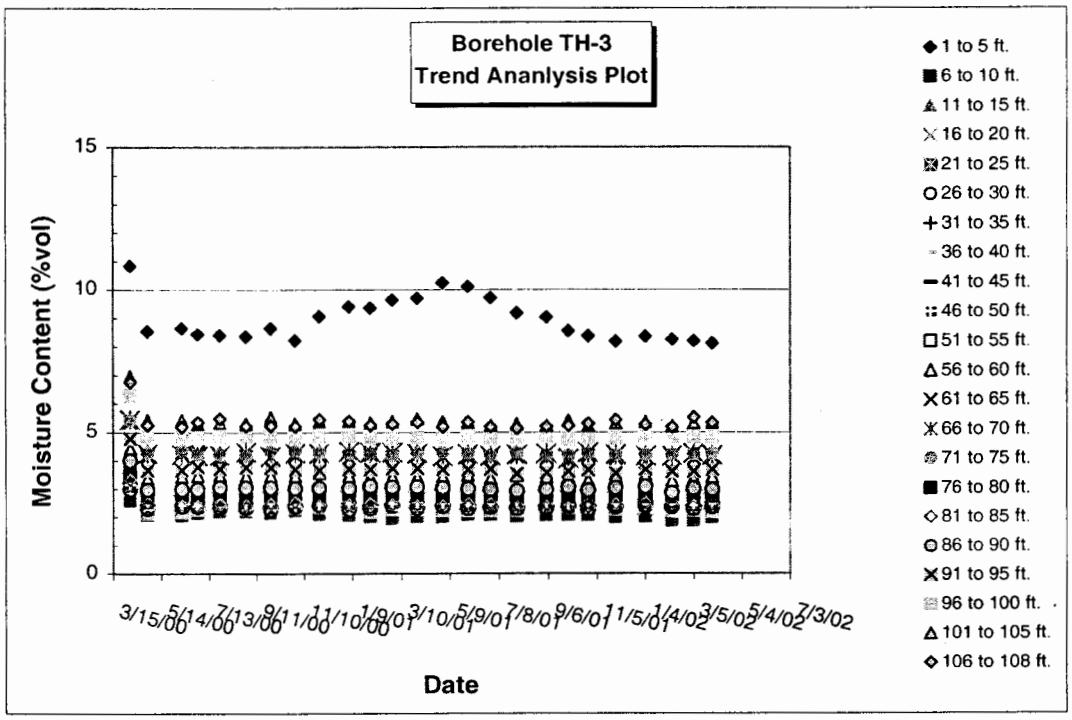

Figure B-3. Trend plot of neutron moisture measurements, borehole TH-3

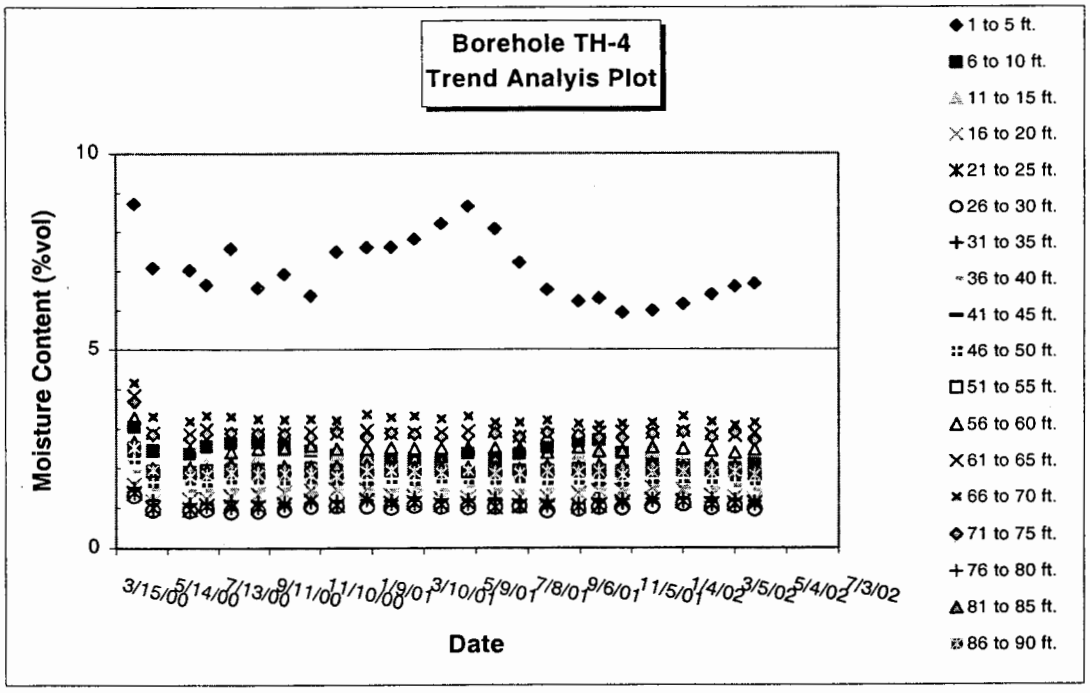

Figure B-4. Trend plot of neutron moisture measurements, borehole TH-4

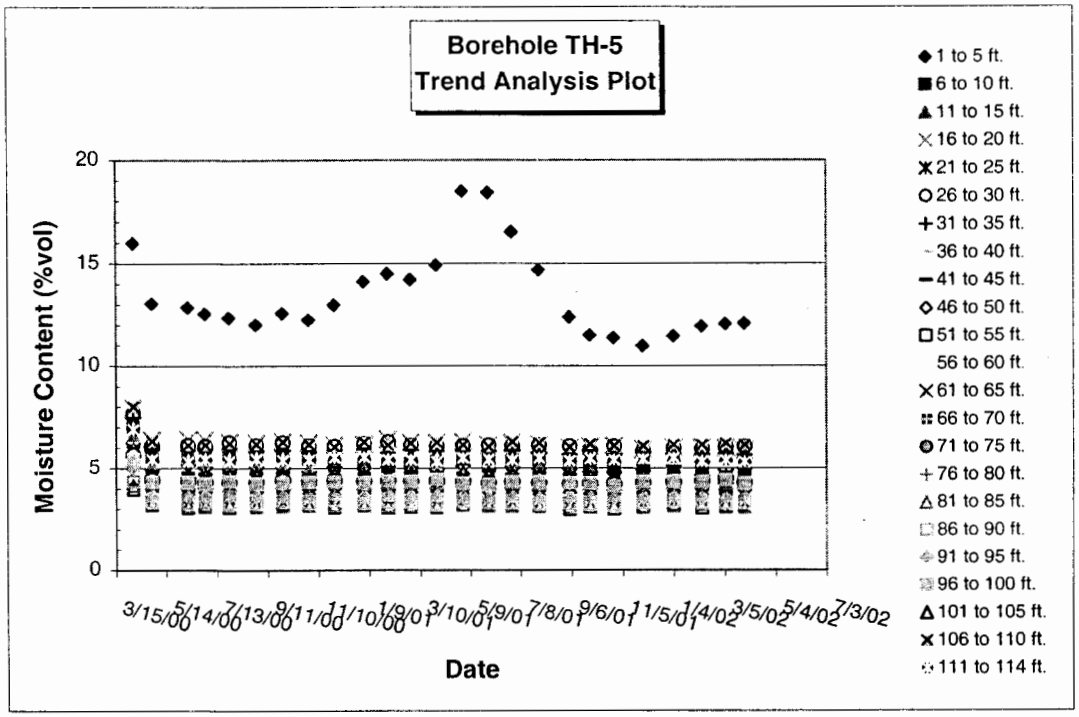

Figure B-5. Trend plot of neutron moisture measurements, borehole TH-5

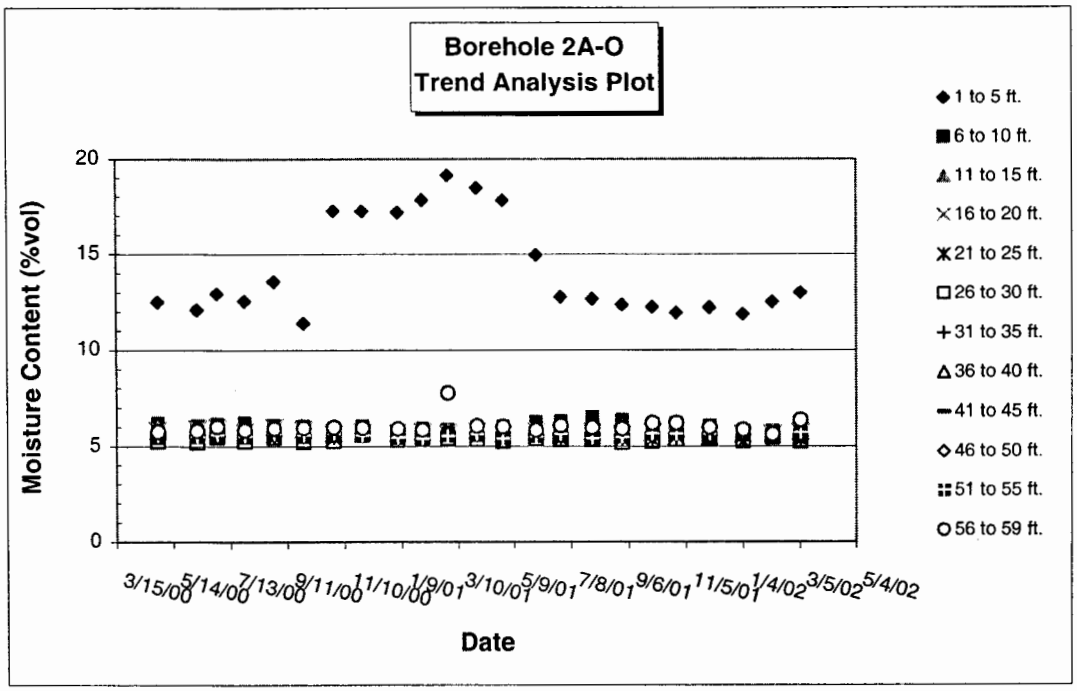

Figure B-6. Trend plot of neutron moisture measurements, borehole 2A-O

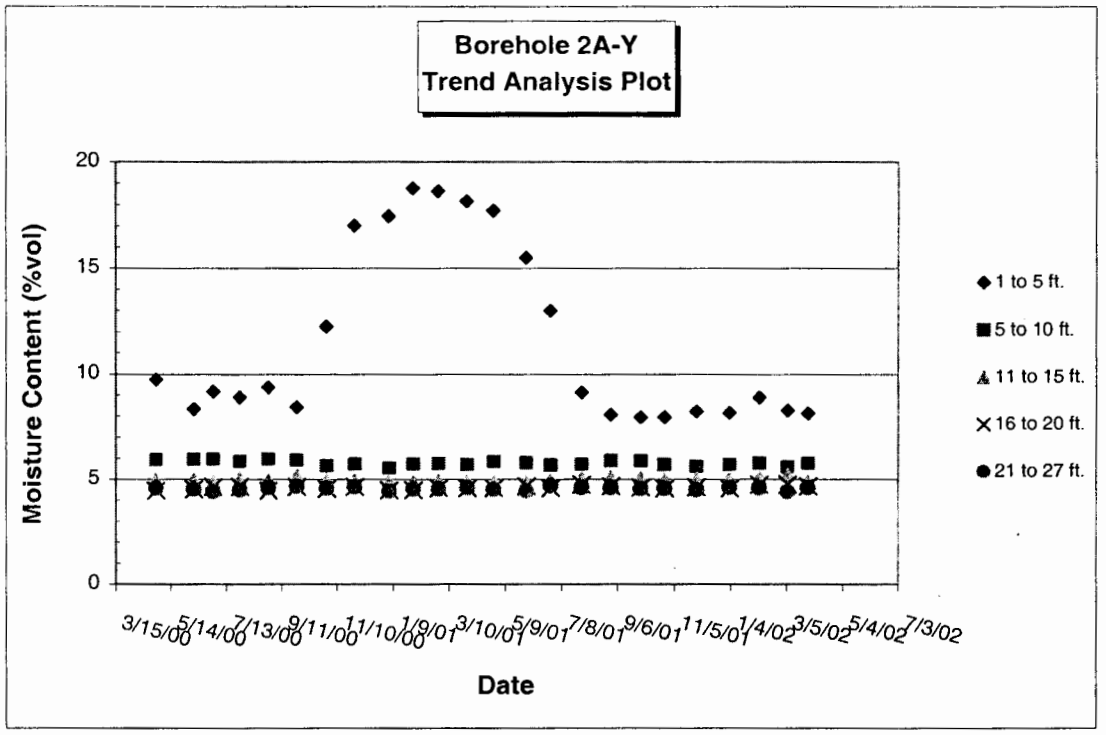

Figure B-7. Trend plot of neutron moisture measurements, borehole 2A-Y

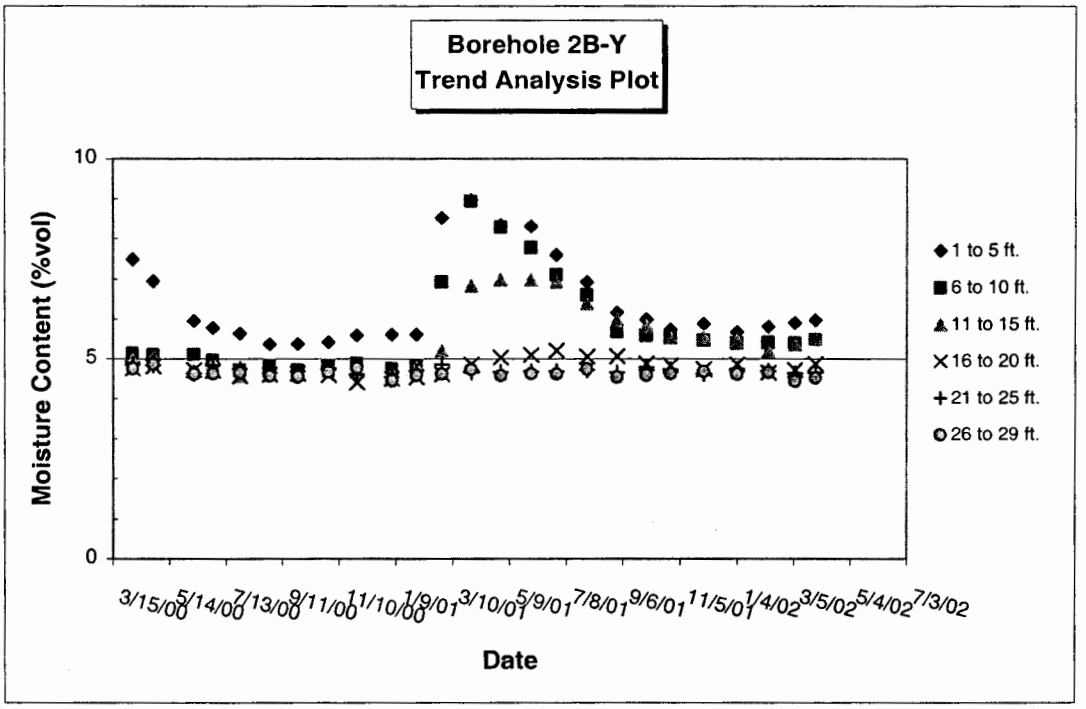

Figure B-8. Trend plot of neutron moisture measurements, borehole 2B-Y

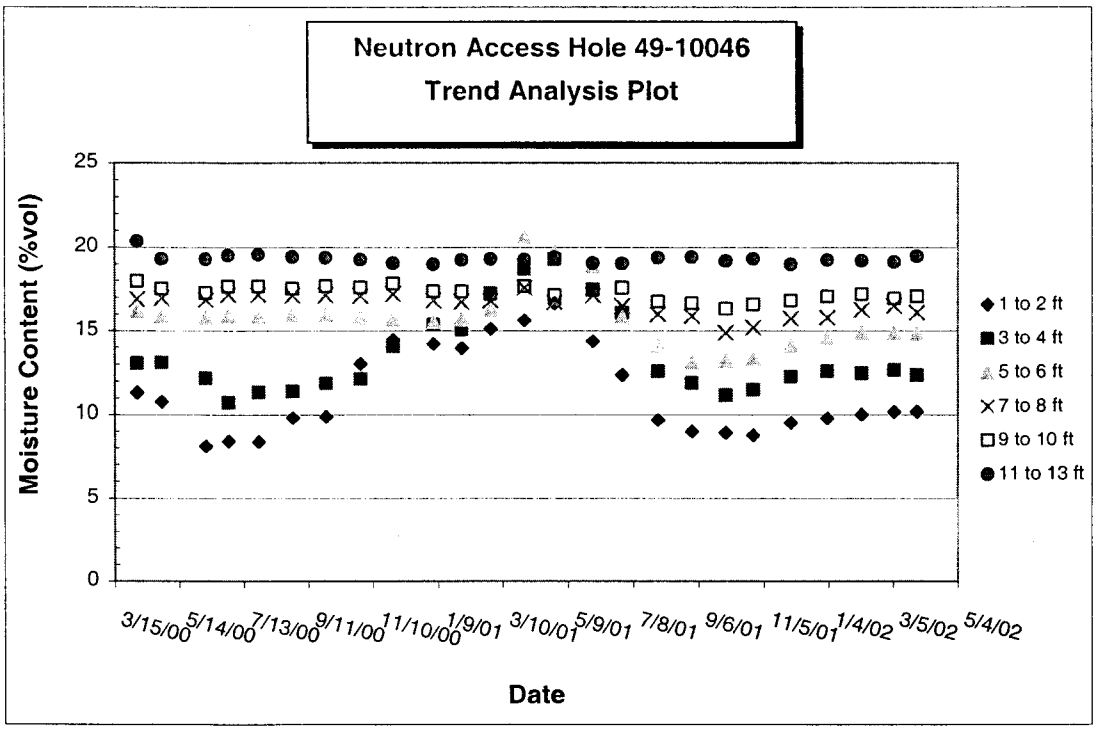

Figure B-9. Trend plot of neutron moisture measurements, neutron access hole 49-10046

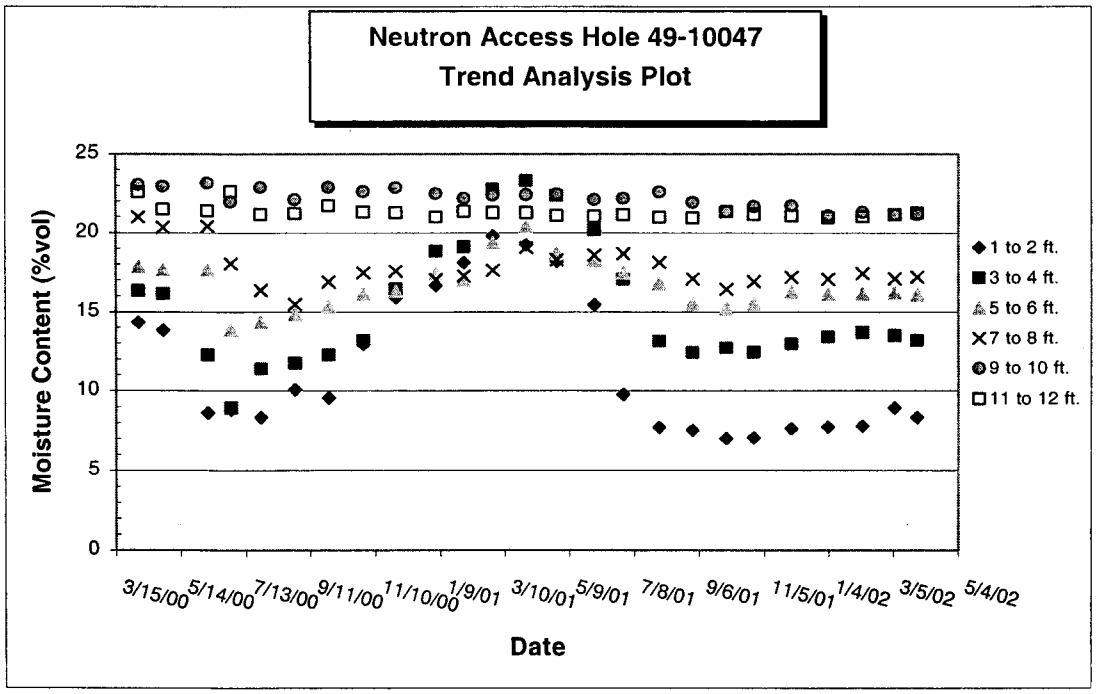

Figure B-10. Trend plot of neutron moisture measurements, neutron access hole 49-10047

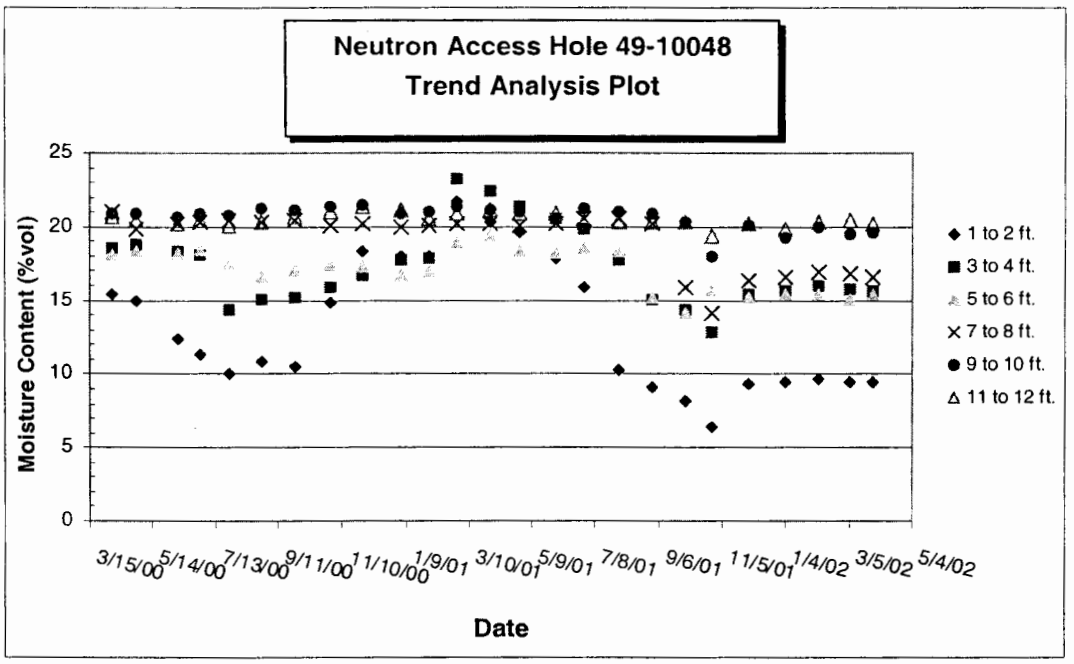

Figure B-11. Trend plot of neutron moisture measurements, neutron access hole 49-10048

Appendix C

Pore-Gas Sampling at Technical Area 54 Material Disposal Areas L and G, and Technical Area 50, Material Disposal Area C Second Quarter, Fiscal Year 2002

QUARTERLY PORE-GAS SAMPLING AT TECHNICAL AREA 54, MATERIAL DISPOSAL AREAS L AND G, AND TECHNICAL AREA 50, MATERIAL DISPOSAL AREA C SECOND QUARTER FISCAL YEAR 2002

MDA Focus Area
Environmental Restoration Project
Los Alamos National Laboratory

May 2002

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1.0 INTRODUCTION

This report discusses first-quarter and second-quarter subsurface pore-gas sampling at Los Alamos National Laboratory (the Laboratory), Technical Areas (TAs) 54 and 50. Monitoring at TA-54 is required by Module VIII of the Laboratory's Hazardous Waste Facility Permit in Section C.5, "Unsaturated Zone Monitoring" (EPA 1990, 1585). The approved plan (Davis 1993, 38812) for pore-gas sampling at TA-54 is described in the Laboratory's response (Glatzmaier 1993, 30987) to an Environmental Protection Agency (EPA) notice of deficiency (Driscoll 1992, 3849.3) addressing the Laboratory's Resource Conservation and Recovery Act facility investigation (RFI) work plan for TA-54 (LANL 1992, 7669). Monitoring at TA-50 is being performed to gather RFI data.

1.1 Sampling Plan Requirements

Twenty-eight Environmental Restoration (ER) Project boreholes are available for pore-gas sampling at TA-54. The sampling and analysis plan requires the collection of samples from 12 boreholes each quarter. These 12 samples are collected for analysis of volatile organic compounds (VOCs). Of these 12 samples, seven are to be selected from a list of 10 boreholes located at Material Disposal Area (MDA) L, and two are to be selected from a list of four boreholes located at MDA G. Therefore, nine of the 12 samples collected each quarter are constrained to a defined set of 14 boreholes. This leaves three samples per quarter that may be distributed among the remaining 14 available ER Project pore-gas sampling boreholes or the boreholes provided by the TA-54 Area G Performance Assessment Maintenance Group (PAMG boreholes).

The SUMMA canister sampling method is currently being used with analysis by EPA TO-14 (gas chromatography/mass spectrometry) (EPA 1999, 70063). SUMMA canister samples are drawn from one of the several sampling ports available at each borehole. Table 4 in Appendix F of the fourth-quarter report for Fiscal Year (FY) 2000 (Environmental Restoration Project 2000, 70064) lists the reasons for selecting ports to be sampled during FY 2001.

Before the required sampling is performed, all available boreholes (ER Project boreholes and PAMG boreholes) are screened with the Brüel and Kjaer multigas monitor, Type 1302. Each port is purged and monitored with field instruments until CO_2 levels have stabilized at values representative of subsurface pore-gas conditions and is then screened for four VOCs (1,1,1-trichloroethane, trichloroethene, perchloroethene, and Freon-11).

Three types of field quality assurance (QA) samples are collected and analyzed. These three samples include a duplicate sample, an equipment blank of zero grade air (zero grade air is a common term for air that is certified to be free from VOC contamination) or nitrogen drawn through the sampling apparatus in the working area, and a performance evaluation sample/calibration gas sample taken from a tank of a certified gas mixture. Laboratory QA for EPA Method TO-14 includes internal standards, surrogates, replicates, blanks, laboratory control samples, and reference standards.

1.2 Sampling Purpose

The purpose of the pore-gas sampling at TA-54 MDAs L and G is three-fold:

- To identify changes in contaminant concentrations at the perimeter of the relatively well-characterized plume at MDA L as an indicator of outward plume expansion (i.e., extent),
- To monitor for contaminants and changes in contaminant concentration distributions within the plumes at MDAs L and G as an indicator of changes warranting further attention (i.e., nature), and
- To monitor boreholes for data gap needs for future modeling and trend analyses.

The purpose of pore-gas sampling at TA-50 is to gather data on the nature and extent of a potential VOC plume.

2.0 FIRST-QUARTER SAMPLING

2.1 Sampling Event

Sampling for the first quarter of FY 2002 (October through December) was conducted during the period from October 16 to November 26. Analytical results for that quarter were not available for the first-quarter report and are discussed here.

Table 2-1 identifies the boreholes sampled (from the list of all boreholes available) and lists the port at each borehole from which the SUMMA canister sample was drawn. Twelve boreholes were sampled in accordance with the approved sampling plan. Seven boreholes at MDA L were sampled, two of the MDA G boreholes were sampled, and two samples were taken from PAMG boreholes. Five samples, two per borehole as well as a duplicate, were taken from MDA C boreholes 50-9100 and 50-10131. The three QA samples (field duplicate, equipment blank, and performance evaluation) were collected as planned. In total, 19 samples were collected for laboratory analysis.

2.2 Sampling Results

Field-screening results for the first quarter are available on request. Analytical results are reported in Attachment A. The following issues were noted:

- Results for ortho-xylene were qualified as estimated and biased high (J+). The laboratory control sample failed high.
- Chloromethane, bromomethane, and methanol are qualified as estimated due to the initial and continuing calibration exceedences(UJ/J).
- Results for several compounds were above the equipment blank sample. The individual sample results for these compounds might be slightly elevated because of the equipment blank results. Therefore, the results are biased high.
- Ethylene dibromide and vinyl chloride failed high in the laboratory control sample; however, no qualification was needed because these analytes were not detected in the sample.
- The result for vinyl acetate was below the laboratory control standard. The reporting limits are therefore qualified as estimated (UJ).
- Tetrahydrafuran is qualified as non-detected (U) in the sample MD50-01-0025. The mass spectra did not match the library spectra.

Table 2-1 Summary of Sampling Event, First Quarter of FY 2002

Borehole ID	Site	On Defined Sampling List (Y/N)	Number of Ports Screened	Depths of Screened Ports (ft)	Depth of Port Sampled (ft)	Sample ID
54-1015	MDA L	N	7	45, 187, 350, 385, 435, 485, 525	385	MD54-01-0208
54-1016	MDA L	N	7	36, 188, 318, 390, 481, 533, 601	—	n/a
54-1018	MDA L	N	n/a	Borehole needs repair[c]	—	n/a
54-1107	PAMG	N	n/a	Borehole needs repair[c]	—	n/a
54-1111	PAMG	N	7	20, 40, 50, 70, 78, 100, 139	50	MD54-01-0215
54-1117	PAMG	N	6	20, 32, 55, 73, 82, 85	55	MD54-01-0205
54-1121	PAMG	N	7	20, 26, 62, 70, 76, 98, 121	—	n/a
54-2002	MDA L	Y	10	20, 40, 60, 80, 100, 120, 140, 157, 180, 200	100	MD54-01-0207
54-2009	MDA G	Y	4	37, 62, 79, 92	62	MD54-01-0211
54-2009	MDA G	Y	4	37, 62, 79, 92	62	MD54-01-0212
54-2010	MDA G	Y	3	30, 53, 95	53	MD54-01-0206
54-2012	MDA L	Y	3	8, 28, 42	—	n/a
54-2013	MDA L	N	3	20, 43, 63	—	n/a
54-2014	MDA L	N	4	13, 31, 46, 86	—	n/a
54-2016	MDA L	N	3	18, 31, 82	—	n/a
54-2020	MDA L	N	10	20, 40, 60, 80, 95, 120, 140, 160, 180, 200	—	n/a
54-2021	MDA L	Y	10	20, 40, 60, 80, 100, 120, 140, 160, 180, 200	100	MD54-01-210
54-2022	MDA L	Y	10	20, 40, 60, 80, 100, 120, 140, 160, 180, 200	—	n/a
54-2023	MDA L	Y	9	20, 40, 60, 80, 100, 120, 140, 159, 180, 200	159	MD54-01-0201
54-2024	MDA L	N	10	20, 40, 60, 80, 100, 120, 140, 160, 180, 200	—	n/a
54-2025	MDA L	N	5	20, 60, 100, 160, 180	—	n/a
54-2026	MDA L	N	6	20, 60, 100, 160, 200, 215	160	MD54-01-0204
54-2027	MDA L	N	6	20, 60, 100, 160, 200, 220	—	n/a
54-2028	MDA L	N	7	20, 60, 100, 160, 200, 220, 250	—	n/a
54-2029	MDA L	Y	8	20, 60, 100, 160, 200, 220, 260, 288	—	n/a
54-2030	MDA L	Y	7	20, 60, 100, 160, 200, 220, 243	100	MD54-01-0203
54-2031	MDA L	Y	7	20, 60, 100, 160, 200, 220, 260	—	n/a
54-2032	MDA G	Y	5	20, 60, 100, 130, 156	—	n/a
54-2033	MDA G	Y	8	20, 60, 100, 160, 200, 220, 260, 277	—	n/a
54-2034	MDA L	Y	7	20, 40, 60, 80, 100, 160, 200, 220, 260	60	MD54-01-0209
54-2087	MDA L	N	4	13, 31, 46, 86	—	n/a
54-2088	MDA L	N	4	13, 31, 46, 86	—	n/a
54-2089	MDA L	N	4	13, 31, 46, 86	—	n/a
50-9100	MDA C	N N	10	20, 50, 90, 103, 129, 160, 200, 233, 260, 315	20, 40	MD50-01-0027 MD50-01-0028
50-10135	MDA C	N N	10		25, 125	MD50-01-0025 MD50-01-0026
Total samples						16
MDA L defined list boreholes sampled (7 expected)					5	
MDA G defined list boreholes sampled (2 expected)					2	
MDA C boreholes sampled					2	
PAMG boreholes sampled					2	
QA samples taken				1 field duplicate	1 perf. eval.	1 equipment blank

[a] A dash indicates that the port was not sampled.

[b] n/a = not applicable.

[c] This borehole has been taken out of service because of failure of positive pressure membranes or irreparable damage to ports.

3.0 SECOND-QUARTER SAMPLING

3.1 Sampling Event

Sampling for the second quarter of FY 2002 (January through March 2002) was conducted during the period from February 14 to March 11, 2002. The SUMMA samples were delivered to the SMO on March 11, 2002. TO-14 analysis generally requires a 30-day turnaround, hence the second quarter SUMMA sampling results are not available. The second quarter SUMMA sample results will be included in the third quarter report.

4.0 REFERENCES

Davis, A., December 14, 1993. "RFI Work Plan for OU 1148, Approval Los Alamos National Laboratory NM0890010515," Environmental Protection Agency memorandum to J. Vozella, Dallas, Texas. (Davis 1993, 38812)

Driscoll, B., November 30, 1992. "EPA NOD to LANL," EPA memorandum to C. Rofer, Los Alamos National Laboratory, Los Alamos, New Mexico. (Driscoll 1992, 3849.3)

Environmental Restoration Project, November 14, 2000. "Quarterly Technical Report, July–September 2000," Los Alamos National Laboratory report LA-UR-00-5107, Los Alamos, New Mexico. (Environmental Restoration Project 2000, 70064)

EPA (US Environmental Protection Agency), April 1990. United States Environmental Protection Agency, Region 6 Hazardous Waste Permit (Hazardous and Solid Waste Amendments). (EPA 1990, 1585)

EPA (US Environmental Protection Agency), January 1999. "Compendium Method TA-14A, Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Specially Prepared Canisters With Subsequent Analysis by Gas Chromatography," in "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air," EPA/625/R-96/010b, Office of Research and Development, Cincinnati, Ohio. (EPA 1999, 70063)

Glatzmaier, T., November 12, 1993. "Final Notice of Deficiency (NOD) Response for Operable Unit (OU) 1148," Los Alamos National Laboratory memorandum EM-13:93-A232, Los Alamos, New Mexico. (Glatzmaier 1993, 30987)

LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1148," Los Alamos National Laboratory report LA-UR-92-855, Los Alamos, New Mexico. (LANL 1992, 7669)

Attachment A

First Quarter Analytical Results for Fiscal Year 2002

ATTACHMENT A—FIRST QUARTER ANALYTICAL RESULTS FOR FISCAL YEAR 2002

Borehole:	**54-2023**	**FY2002 1st Quarter**
Depth:	**159**	**MDA L**
Date:	**11/15/01**	
Sample ID:	**MD54-01-0201**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.16	0.084
75-69-4	Trichlorofluoromethane	0.6	0.084
75-35-4	1,1-Dichloroethene	1.1	0.084
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	3.7	0.084
75-09-2	Methylene Chloride	0.12	0.084
75-34-3	1,1-Dichloroethane	0.15	0.084
67-66-3	Chloroform	0.44	0.084
71-55-6	1,1,1-Trichloroethane	17	0.084
56-23-5	Carbon Tetrachloride	0.11	0.084
79-01-6	Trichloroethene	3.9	0.084
127-18-4	Tetrachloroethlyene	0.26	0.084

Borehole:	**54-2030**	**FY2002 1st Quarter**
Depth:	**100**	**MDA L**
Date:	**11/16/01**	
Sample ID:	**MD54-01-0203**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.016	0.0066
75-69-4	Trichlorofluoromethane	0.049	0.0066
75-35-4	1,1-Dichloroethene	0.059	0.0066
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.28	0.0066
75-34-3	1,1-Dichloroethane	0.0084	0.0066
67-66-3	Chloroform	0.046	0.0066
71-55-6	1,1,1-Trichloroethane	1.2	0.0066
56-23-5	Carbon Tetrachloride	8.9	0.0066
79-01-6	Trichloroethene	0.23	0.0066
127-18-4	Tetrachloroethene	0.03	0.0066

Borehole:	**54-2026**	**FY2002 1st Quarter**
Depth:	**160**	**MDA L**
Date:	**11/16/01**	
Sample ID:	**MD54-01-0204**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.046	0.016
75-69-4	Trichlorofluoromethane	0.14	0.016
75-35-4	1,1-Dichloroethene	0.2	0.016
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.88	0.016
75-09-2	Methylene Chloride	0.048	0.016
75-34-3	1,1-Dichloroethane	0.019	0.016
67-66-3	Chloroform	0.091	0.016
71-55-6	1,1,1-Trichloroethane	3.2	0.016
56-23-5	Carbon Tetrachloride	0.03	0.016
79-01-6	Trichloroethene	0.68	0.016
127-18-4	Tetrachloroethene	0.074	0.016

Borehole:	**54-1117**	**FY2002 1st Quarter**
Depth:	**55**	**PAMG**
Date:	**11/19/01**	
Sample ID:	**MD54-01-0205**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-35-4	1,1-Dichloroethene	1.6	0.084
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	1.4	0.084
75-09-2	Methylene Chloride	0.49	0.084
75-34-3	1,1-Dichloroethane	2.2	0.084
71-55-6	1,1,1-Trichloroethane	84	0.084
79-01-6	Trichloroethene	1.6	0.084
127-18-4	Tetrachloroethene	0.45	0.084
67-63-0	2-Propanol	4.5	0.084
64-17-5	Ethanol	1.4	0.084

Borehole:	**54-2010**	**FY2002 1st Quarter**
Depth:	**53**	**MDA G**
Date:	**11/19/01**	
Sample ID:	**MD54-01-0206**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.23	0.32
75-69-4	Trichlorofluoromethane	0.59	0.32
75-35-4	1,1-Dichloroethene	0.26	0.32
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	1.1	0.32
75-34-3	1,1-Dichloroethane	0.52	0.32
71-55-6	1,1,1-Trichloroethane	16	0.32
79-01-6	Trichloroethene	0.12	0.32
127-18-4	Tetrachloroethene	0.18	0.32

Borehole:	**54-2002**	**FY2002 1st Quarter**
Depth:	**100**	**MDA L**
Date:	**11/19/01**	
Sample ID:	**MD54-01-0207**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-69-4	Trichlorofluoromethane	18	2.1
75-35-4	1,1-Dichloroethene	8.1	2.1
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	49	2.1
75-09-2	Methylene Chloride	23	2.1
75-34-3	1,1-Dichloroethane	6.8	2.1
67-66-3	Chloroform	9.4	2.1
71-55-6	1,1,1-Trichloroethane	390	2.1
107-06-2	1,2-Dichloroethane	8.3	2.1
79-01-6	Trichloroethene	78	2.1
78-87-5	1,2-Dichloropropane	16	2.1
108-88-3	Tolulene	5.6	2.1
127-18-4	Tetrachloroethene	7.4	2.1
106-42-3	m,p-Xylene	2.3	2.1
67-63-0	2-Propanol	16	8.6
109-99-9	Tetrahydrafuran	13	8.6
64-17-5	Ethanol	58	8.6

Borehole:	**54-1015**	**FY2002 1st Quarter**
Depth:	**385**	**MDA L**
Date:	**11/20/01**	
Sample ID:	**MD54-01-0208**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.0039	0.0021
75-69-4	Trichlorofluoromethane	0.03	0.0021
75-35-4	1,1-Dichloroethene	0.02	0.0021
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.076	0.0021
75-09-2	Methylene Chloride	0.027	0.0021
75-34-3	1,1-Dichloroethane	0.01	0.0021
67-66-3	Chloroform	0.012	0.0021
71-55-6	1,1,1-Trichloroethane	0.56	0.0021
56-23-5	Carbon Tetrachloride	0.0028	0.0021
71-43-2	Benzene	0.003	0.0021
107-06-2	1,2-Dichloroethane	0.0094	0.0021
79-01-6	Trichloroethene	0.11	0.0021
78-87-5	1,2-Dichloropropane	0.019	0.0021
108-88-3	Tolulene	0.0082	0.0021
127-18-4	Tetrachloroethene	0.012	0.0021
106-42-3	m,p-Xylene	0.0042	0.0021
109-99-9	Tetrahydrafuran	0.011	0.0086

Borehole:	**54-2034**	**FY2002 1st Quarter**
Depth:	**60**	**MDA L**
Date:	**11/20/01**	
Sample ID:	**MD54-01-0209**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.038	0.016
75-69-4	Trichlorofluoromethane	0.042	0.016
75-35-4	1,1-Dichloroethene	0.097	0.016
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.081	0.016
75-09-2	Methylene Chloride	0.042	0.016
75-34-3	1,1-Dichloroethane	0.098	0.016
67-66-3	Chloroform	0.039	0.016
71-55-6	1,1,1-Trichloroethane	5.6	0.016
107-06-2	1,2-Dichloroethane	0.052	0.016
79-01-6	Trichloroethene	0.92	0.016
127-18-4	Tetrachloroethylene	0.039	0.016

Borehole:	**54-2021**	**FY2002 1st Quarter**
Depth:	**100**	**MDA L**
Date:	**11/20/01**	
Sample ID:	**MD54-01-0210**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.35	0.34
75-35-4	1,1-Dichloroethene	0.98	0.34
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	1	0.34
75-09-2	Methylene Chloride	1.1	0.34
75-34-3	1,1-Dichloroethane	1.8	0.34
71-55-6	1,1,1-Trichloroethane	71	0.34
107-06-2	1,2-Dichloroethane	1.3	0.34
79-01-6	Trichloroethene	15	0.34
127-18-4	Tetrachloroethene	0.88	0.34

Borehole:	**54-2009**	**FY2002 1st Quarter**
Depth:	**62**	**MDA G**
Date:	**11/20/01**	
Sample ID:	**MD54-01-0211**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-35-4	1,1-Dichloroethene	4.4	0.34
75-09-2	Methylene Chloride	0.48	0.34
75-34-3	1,1-Dichloroethane	3.8	0.34
71-55-6	1,1,1-Trichloroethane	97	0.34
79-01-6	Trichloroethene	0.46	0.34
127-18-4	Tetrachloroethene	0.8	0.34
67-63-0	2-Propanol	4.4	1.3

Borehole:	**54-2009 D**	**FY2002 1st Quarter**
Depth:	**62**	**MDA G**
Date:	**11/26/01**	
Sample ID:	**MD54-01-0212**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-35-4	1,1-Dichloroethene	4.4	0.32
75-34-3	1,1-Dichloroethane	3.9	0.32
71-55-6	1,1,1-Trichloroethane	96	0.32
79-01-6	Trichloroethene	0.43	0.32
127-18-4	Tetrachloroethene	0.84	0.32
67-63-0	2-Propanol	2.8	0.32
64-17-5	Ethanol	2.3	0.32
67-56-1	Methanol	35	0.32

Borehole:	**54-Cal Gas**	**FY2002 1st Quarter**
Depth:	**Cal Gas**	
Date:	**11/26/01**	
Sample ID:	**MD54-01-0213**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
79-01-6	Trichloroethene	77	0.0011
127-18-4	Tetrachloroethene	36	0.0011
67-63-0	2-Propanol	6.1	0.0011
64-17-5	Ethanol	1.7	0.0011

Borehole:	**54-Field Blank**	**FY2002 1st Quarter**
Depth:	**Field Blank**	
Date:	**11/26/01**	
Sample ID:	**MD54-01-0214**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-35-4	1,1-Dichloroethene	0.01	0.0011
75-34-3	1,1-Dichloroethane	0.011	0.0011
71-55-6	1,1,1-Trichloroethane	0.35	0.0011
79-01-6	Trichloroethene	0.0086	0.0011
127-18-4	Tetrachloroethene	0.0088	0.0011
67-64-1	Acetone		

Borehole:	**54-1111**	**FY2002 1st Quarter**
Depth:	**50**	**PAMG**
Date:	**11/26/01**	
Sample ID:	**MD54-01-0215**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.066	0.0072
75-69-4	Trichlorofluoromethane	0.021	0.0072
75-35-4	1,1-Dichloroethene	0.067	0.0072
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.6	0.0072
75-09-2	Methylene Chloride	0.047	0.0072
75-34-3	1,1-Dichloroethane	0.074	0.0072
71-55-6	1,1,1-Trichloroethane	2.3	0.0072
71-43-2	Benzene	0.0089	0.0072
79-01-6	Trichloroethene	0.043	0.0072
127-18-4	Tetrachloroethene	0.037	0.0072

Borehole:	**50-10131**	**FY2002 1st Quarter**
Depth:	**25**	**MDA C**
Date:	**11/26/01**	
Sample ID:	**MD50-01-0025**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.034	0.0066
75-69-4	Trichlorofluoromethane	0.0092	0.0066
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.027	0.0066
75-09-2	Methylene Chloride	0.011	0.0066
156-59-2	cis-1,2-Dichloroethene	0.0069	0.0066
67-66-3	Chloroform	0.22	0.0066
71-55-6	1,1,1-Trichloroethane	0.062	0.0066
56-23-5	Carbon Tetrachloride	0.025	0.0066
107-06-2	1,2-Dichloroethane	0.0099	0.0066
79-01-6	Trichloroethene	1.8	0.0066
78-87-5	1,2-Dichloropropane	0.037	0.0066
127-18-4	Tetrachloroethene	1.4	0.0066
67-64-1	Acetone	0.028	0.0066
78-93-3	2-Butanone	0.069	0.026
109-99-9	Tetrahydrafuran	0.06	0.026

Borehole:	**50-10131**	**FY2002 1st Quarter**
Depth:	**125**	**MDA C**
Date:	**11/26/01**	
Sample ID:	**MD50-01-0026**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.05	0.008
75-69-4	Trichlorofluoromethane	0.0097	0.008
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.052	0.008
75-09-2	Methylene Chloride	0.019	0.008
156-59-2	cis-1,2-Dichloroethene	0.01	0.008
67-66-3	Chloroform	0.18	0.008
71-55-6	1,1,1-Trichloroethane	0.049	0.008
56-23-5	Carbon Tetrachloride	0.036	0.008
107-06-2	1,2-Dichloroethane	0.012	0.008
79-01-6	Trichloroethene	1.6	0.008
78-87-5	1,2-Dichloropropane	0.059	0.008
108-88-3	Tolulene	0.042	0.008
127-18-4	Tetrachloroethene	1	0.008
64-17-5	Ethanol	0.035	0.032

Borehole:	**50-9100**	**FY2002 1st Quarter**
Depth:	**20**	**MDA C**
Date:	**11/26/01**	
Sample ID:	**MD50-01-0027**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.086	0.0047
75-69-4	Trichlorofluoromethane	0.006	0.0047
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.23	0.0047
75-09-2	Methylene Chloride	0.069	0.0047
156-59-2	cis-1,2-Dichloroethene	0.14	0.0047
67-66-3	Chloroform	0.11	0.0047
71-55-6	1,1,1-Trichloroethane	0.054	0.0047
56-23-5	Carbon Tetrachloride	0.022	0.0047
79-01-6	Trichloroethene	1.1	0.0047
78-87-5	1,2-Dichloropropane	0.0064	0.0047
127-18-4	Tetrachloroethene	0.051	0.0047

Borehole:	**50-9100**	**FY2002 1st Quarter**
Depth:	**40**	**MDA C**
Date:	**11/26/01**	
Sample ID:	**MD50-01-0028**	

CAS Analyte Code	Compound Analyte Code Desc	Result [ppmv]	Reporting Limit [ppmv]
75-71-8	Dichlorodifluoromethane	0.15	0.021
76-13-1	Trichloro-1,2,2-triflouroethane(R-113)	0.41	0.021
75-09-2	Methylene Chloride	0.03	0.021
156-59-2	cis-1,2-Dichloroethene	0.063	0.021
67-66-3	Chloroform	0.36	0.021
71-55-6	1,1,1-Trichloroethane	0.11	0.021
56-23-5	Carbon Tetrachloride	0.067	0.021
79-01-6	Trichloroethene	4.4	0.021
78-87-5	1,2-Dichloropropane	0.028	0.021
127-18-4	Tetrachloroethene	0.18	0.021

Appendix D

Groundwater Sampling Results,
Wells R-9i, R-12, R-15, and R-19

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Table D-1
Samples Taken at Wells

Sample ID	Location ID	Depth (ft)	Media	Alkalinity	Anions[a]	Cyanide	Deuterium	Metals	$^{15}N/^{14}N$	$^{18}O/^{16}O$	Specific Condutance	Total Kjeldahl Nitrogen	High-Explosive	Humic Acids
R-9i, 4th Sample Round (September 5, 2001)														
GW9I-01-0009	LA-10029	199	GW, Perched	—[b]	—	9698R	9707R	9699R, 9698R	9708R	9707R	—	—	9697R	—
GW9I-01-0010	LA-10029	199	GW, Perched	9698R	9698R	—	—	9699R, 9698R	—	—	—	9698R	—	9700R
GW9I-01-0011	LA-10029	279	GW, Perched	—	—	9714R	9718R	9716R, 9614R	9719R	9718R	—	—	—	—
GW9I-01-0012	LA-10029	279	GW, Perched	9714R	9714R	—	—	9716R, 9614R	—	—	—	9714R	—	9717R
R-12, 4th Sample Round (September 7, 2001)														
GW12-01-0015	SA-00006	468	GW, Perched	—	—	9724R	9728R	9726R	9729R	9728R	—	—	—	—
GW12-01-0016	SA-00006	468	GW, Perched	9724R	9725R	—	—	9726R	—	—	9727R	9724R	—	9727R
GW12-01-0017	SA-00006	507	GW, Perched	—	—	9745R	9749R	9747R	9750R	9749R	—	—	—	—
GW12-01-0018	SA-00006	507	GW, Perched	9745R	9746R	—	—	9747R	—	—	9748R	9745R	—	9748R
GW12-01-0019	SA-00006	811	GW, Regional	—	—	9775R	9779R	9777R	9780R	9779R	—	—	9774R	—
GW12-01-0020	SA-00006	811	GW, Regional	9775R	9776R	—	—	9777R	—	—	9778R	9775R	—	9778R
R-15, 4th Sample Round (May 22, 2001)														
RW15-01-0003	MO-00051	1019	GW, Regional	—	—	8865R	8868R	8868R	8869R	8868R	—	—	—	—
RW15-01-0004	MO-00051	1019	GW, Regional	8865R	8867R	—	8868R	8868R	—	8868R	—	8866R	—	—
R-19, 4th Sample Round (September 13, 2001)														
GW19-01-0032	TH-10000	909	GW, Perched	—	—	9814R	9818R	9816R	9819R	9818R	—	—	9813R	—
GW19-01-0033	TH-10000	909	GW, Perched	9814R	9815R	—	—	9816R	—	—	—	9814R	—	9817R
GW19-01-0034	TH-10000	1190	GW, Regional	—	—	9827R	9831R	9829R	9832R	9831R	—	—	9826R	—
GW19-01-0035	TH-10000	1190	GW, Regional	9827R	9828R	—	—	9829R	—	—	—	9827R	—	9830R
GW19-01-0036	TH-10000	1413	GW, Regional	—	—	9839R	9881R	9843R	9882R	9881R	—	—	9838R	—
GW19-01-0037	TH-10000	1413	GW, Regional	9839R	9840R	—	—	9843R	—	—	—	9839R	—	9841R
GW19-01-0038	TH-10000	1586	GW, Regional	—	—	9847R	9884R	9850R	9885R	9884R	—	—	9846R	—
GW19-01-0039	TH-10000	1586	GW, Regional	9847R	9848R	—	—	9850R	—	—	9849R	9847R	—	9849R
GW19-01-0040	TH-10000	1730	GW, Regional	—	—	9858R	9887R	9861R	9888R	9887R	—	—	9857R	—
GW19-01-0041	TH-10000	1730	GW, Regional	9858R	9859R	—	—	9861R	—	—	9860R	9858R	—	9860R
GW19-01-0042	TH-10000	1835	GW, Regional	—	—	9874R	9892R	9877R	9893R	9892R	—	—	9873R	—
GW19-01-0043	TH-10000	1835	GW, Regional	9874R	9875R	—	—	9877R	—	—	9876R	9874R	—	9876R

Table D-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Pesticides	Pesticides/ PCBs[c]	Semivolatile Organic Compounds	Total Organic Carbon	Volatile Organic Compounds	Alpha Spectrometry	Beta Emitters	Gamma Spectroscopy	Gross Alpha/Beta	Gross Gamma	Tritium
R-9i, 4th Sample Round (September 5, 2001)														
GW9I-01-0009	LA-10029	199	GW, Perched	—	9695R	9695R	9695R	9695R	—	—	9701R	9701R	9701R	9709R
GW9I-01-0010	LA-10029	199	GW, Perched	—	—	—	9700R	—	9701R	9701R	9701R	—	—	—
GW9I-01-0011	LA-10029	279	GW, Perched	—	—	—	9713R	9713R	—	—	—	9721R	9721R	9720R
GW9I-01-0012	LA-10029	279	GW, Perched	—	—	—	—	—	9721R	9721R	9721R	—	—	—
R-12, 4th Sample Round (September 7, 2001)														
GW12-01-0015	SA-00006	468	GW, Perched	—	—	—	9722R	9722R	—	—	—	9731R	9731R	9730R
GW12-01-0016	SA-00006	468	GW, Perched	—	—	—	—	—	9731R	9731R	9731R	—	—	—
GW12-01-0017	SA-00006	507	GW, Perched	—	—	—	9743R	9743R	—	—	—	9752R	9752R	9751R
GW12-01-0018	SA-00006	507	GW, Perched	—	—	—	—	—	9752R	9752R	9752R	—	—	—
GW12-01-0019	SA-00006	811	GW, Regional	—	9773R	9773R	9773R	9773R	—	—	—	9723R	9723R	9781R
GW12-01-0020	SA-00006	811	GW, Regional	—	—	—	—	—	9723R	9723R	9723R	—	—	—
R-15, 4th Sample Round (May 22, 2001)														
RW15-01-0003	MO-00051	1019	GW, Regional	—	—	—	8864R	8864R	—	—	8872R	—	—	8871R
RW15-01-0004	MO-00051	1019	GW, Regional	—	—	—	—	—	8872R	8872R	—	8872R	8872R	—
R-19, 4th Sample Round (September 13, 2001)														
GW19-01-0032	TH-10000	909	GW, Perched	—	9811R	9811R	9811R	9811R	—	—	—	9821R	9821R	9820R
GW19-01-0033	TH-10000	909	GW, Perched	—	—	—	—	—	9821R	9821R	9821R	—	—	—
GW19-01-0034	TH-10000	1190	GW, Regional	—	9824R	9824R	9824R	9824R	—	—	—	9834R	9834R	9833R
GW19-01-0035	TH-10000	1190	GW, Regional	—	—	—	—	—	9834R	9834R	9834R	—	—	—
GW19-01-0036	TH-10000	1413	GW, Regional	9836R	9836R	9836R	—	9836R	—	—	—	9842R	9842R	9883R
GW19-01-0037	TH-10000	1413	GW, Regional	—	—	—	—	—	9842R	9842R	9842R	—	—	—
GW19-01-0038	TH-10000	1586	GW, Regional	9844R	9844R	9844R	9844R	9844R	—	—	—	9851R	9851R	9886R
GW19-01-0039	TH-10000	1586	GW, Regional	—	—	—	—	—	9851R	9851R	9851R	—	—	—
GW19-01-0040	TH-10000	1730	GW, Regional	—	9855R	9855R	9855R	9855R	—	—	—	9862R	9862R	9889R
GW19-01-0041	TH-10000	1730	GW, Regional	—	—	—	—	—	9862R	9862R	9862R	—	—	—

Table D-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Pesticides	Pesticides/ PCBs	Semivolatile Organic Compounds	Total Organic Carbon	Volatile Organic Compounds	Alpha Spectrometry	Beta Emitters	Gamma Spectroscopy	Gross Alpha/Beta	Gross Gamma	Tritium
GW19-01-0042	TH-10000	1835	GW, Regional	—	9871R	9871R	9871R	9871R	—	—	—	9878R	9878R	9894R
GW19-01-0043	TH-10000	1835	GW, Regional	—	—	—	—	—	9878R	9878R	9878R	—	—	—

[a] Anions = Ammonia, bromide, chloride, fluoride, nitrate/nitrite, oxalate, perchlorate, sulfate.
[b] — = Not available or applicable.
[c] PCBs = Polychlorinated biphenyls.

Table D-2
Well R-9i Screen 1 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	1	199	09/05/2001	NF[e]	1	1	36000	—[f]	—	—	—	—
pH	1	199	09/05/2001	NF	1	1	7.22	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	1	199	09/05/2001	NF	1	1	270.6	—	—	0/1	—	0/1
Temperature (°C)	1	199	09/05/2001	NF	1	1	21.3	—	—	0/1	—	0/1
Turbidity (NTU[g])	1	199	09/05/2001	NF	1	1	—	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (as CO_3+HCO_3	1	199	09/05/2001	F[h]	1	1	71500	—	—	—	—	—
Aluminum	1	199	09/05/2001	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	1	199	09/05/2001	NF	1	0	—	[9.54]	—	—	—	—
Ammonia	1	199	09/05/2001	F	1	0	—	[23.5]	—	—	—	—
Antimony	1	199	09/05/2001	F	1	0	—	[0.752]	6	0/1	—	—
Antimony	1	199	09/05/2001	NF	1	0	—	[0.174]	—	—	—	—
Arsenic	1	199	09/05/2001	F	1	0	—	[2.6]	50	0/1	100	0/1
Arsenic	1	199	09/05/2001	NF	1	0	—	[2.6]	—	—	—	—
Barium	1	199	09/05/2001	F	1	1	72.6	—	2000	0/1	1000	0/1
Barium	1	199	09/05/2001	NF	1	1	72.4	—	—	—	—	—
Beryllium	1	199	09/05/2001	F	1	1	0.013	—	4	0/1	—	—
Beryllium	1	199	09/05/2001	NF	1	1	0.012	—	—	—	—	—
Boron	1	199	09/05/2001	F	1	0	—	[20.3]	—	—	750	0/1
Boron	1	199	09/05/2001	NF	1	0	—	[20.4]	—	—	—	—
Bromide	1	199	09/05/2001	F	1	0	—	[20]	—	—	—	—
Cadmium	1	199	09/05/2001	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	1	199	09/05/2001	NF	1	0	—	[0.017]	—	—	—	—

Table D-2 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	1	199	09/05/2001	F	1	1	19700	—	—	—	—	—
Calcium	1	199	09/05/2001	NF	1	1	19400	—	—	—	—	—
Chloride	1	199	09/05/2001	F	1	1	25400	—	250000	0/1	250000	0/1
Chromium	1	199	09/05/2001	F	1	1	3.4	—	100	0/1	50	0/1
Chromium	1	199	09/05/2001	NF	1	1	6.91	—	—	—	—	—
Cobalt	1	199	09/05/2001	F	1	1	1.39	—	—	—	50	0/1
Cobalt	1	199	09/05/2001	NF	1	1	1.3	—	—	—	—	—
Copper	1	199	09/05/2001	F	1	1	1.38	—	1300	0/1	1000	0/1
Copper	1	199	09/05/2001	NF	1	1	1.3	—	—	—	—	—
Cyanide (total)	1	199	09/05/2001	NF	1	1	4.54	—	—	—	—	—
Fluoride	1	199	09/05/2001	F	1	1	503	—	4000	0/1	1600	0/1
Iron	1	199	09/05/2001	F	1	1	966	—	300	1/1	1000	0/1
Iron	1	199	09/05/2001	NF	1	1	999	—	—	—	—	—
Lead	1	199	09/05/2001	F	1	1	0.121	—	15	0/1	50	0/1
Lead	1	199	09/05/2001	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	1	199	09/05/2001	F	1	1	6440	—	—	—	—	—
Magnesium	1	199	09/05/2001	NF	1	1	6350	—	—	—	—	—
Manganese	1	199	09/05/2001	F	1	1	925	—	50	1/1	200	1/1
Manganese	1	199	09/05/2001	NF	1	1	932	—	—	—	—	—
Mercury	1	199	09/05/2001	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	1	199	09/05/2001	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	1	199	09/05/2001	F	1	1	15.9	—	—	—	—	—
Molybdenum	1	199	09/05/2001	NF	1	1	16.2	—	—	—	—	—
Nickel	1	199	09/05/2001	F	1	1	37.2	—	100	0/1	200	0/1
Nickel	1	199	09/05/2001	NF	1	1	38.7	—	—	—	—	—
Nitrate-Nitrite (as N)	1	199	09/05/2001	F	1	0	—	[6.9]	10000	0/1	—	—
Oxalate	1	199	09/05/2001	F	1	0	—	[190]	—	—	—	—

Table D-2 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Perchlorate	1	199	09/05/2001	F	1	1	2.12	—	—	—	—	—
Phosphorus (as P)	1	199	09/05/2001	F	1	1	6.44	—	—	—	—	—
Potassium	1	199	09/05/2001	F	1	1	4240	—	—	—	—	—
Potassium	1	199	09/05/2001	NF	1	1	4180	—	—	—	—	—
Selenium	1	199	09/05/2001	F	1	1	3.72	—	50	0/1	50	0/1
Selenium	1	199	09/05/2001	NF	1	1	3.52	—	—	—	—	—
Silica	1	199	09/05/2001	F	1	1	33598	—	—	—	—	—
Silica	1	199	09/05/2001	NF	1	1	33170	—	—	—	—	—
Silver	1	199	09/05/2001	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	1	199	09/05/2001	NF	1	0	—	[0.666]	—	—	—	—
Sodium	1	199	09/05/2001	F	1	1	21000	—	—	—	—	—
Sodium	1	199	09/05/2001	NF	1	1	20800	—	—	—	—	—
Lab Specific Conductance	1	199	09/05/2001	F	1	1	219	—	—	—	—	—
Strontium	1	199	09/05/2001	F	1	1	117	—	—	—	—	—
Strontium	1	199	09/05/2001	NF	1	1	116	—	—	—	—	—
Sulfate	1	199	09/05/2001	F	1	1	10200	—	250000	0/1	600000	0/1
Thallium	1	199	09/05/2001	F	1	0	—	[0.028]	2	0/1	—	—
Thallium	1	199	09/05/2001	NF	1	0	—	[0.199]	—	—	—	—
Total Kjeldahl Nitrogen	1	199	09/05/2001	F	1	1	290	—	—	—	—	—
Uranium	1	199	09/05/2001	F	1	1	0.194	—	20	0/1	5000	0/1
Uranium	1	199	09/05/2001	NF	1	1	0.19	—	—	—	—	—
Vanadium	1	199	09/05/2001	F	1	1	0.52	—	—	—	—	—
Vanadium	1	199	09/05/2001	NF	1	0	—	[0.482]	—	—	—	—
Zinc	1	199	09/05/2001	F	1	1	5.57	—	5000	0/1	10000	0/1
Zinc	1	199	09/05/2001	NF	1	1	6.3	—	—	—	—	—

Table D-2 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD/H	1	199	09/05/2001	NF	1	0	-73	—	—	—	—	—
$\delta^{15}N/^{14}N$	1	199	09/05/2001	NF	1	1	—	BDL[i]	—	—	—	—
$\delta^{18}O/^{16}O$	1	199	09/05/2001	NF	1	1	-10.8	—	—	—	—	—

[a] R-9i does not extend to the regional aquifer.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

[i] BDL = Below detection limit.

Table D-3
Well R-9i Screen 2 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	2	279	09/06/2001	NF[e]	1	1	35000	—[f]	—	—	—	—
pH	2	279	09/06/2001	NF	1	1	7.18	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	2	279	09/06/2001	NF	1	1	182.6	—	—	0/1	—	0/1
Temperature (°C)	2	279	09/06/2001	NF	1	1	21.8	—	—	0/1	—	0/1
Turbidity (NTU[g])	2	279	09/06/2001	NF	1	1	1.1	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	2	279	09/06/2001	F[h]	1	1	57000	—	—	—	—	—
Aluminum	2	279	09/06/2001	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	2	279	09/06/2001	NF	1	0	—	[9.54]	—	—	—	—
Ammonia (as N)	2	279	09/06/2001	F	1	0	—	[23.5]	—	—	—	—
Antimony	2	279	09/06/2001	F	1	0	—	[0.46]	6	0/1	—	—
Antimony	2	279	09/06/2001	NF	1	0	—	[0.07]	—	—	—	—
Arsenic	2	279	09/06/2001	F	1	0	—	[2.6]	50	0/1	100	0/1
Arsenic	2	279	09/06/2001	NF	1	0	—	[2.6]	—	—	—	—
Barium	2	279	09/06/2001	F	1	1	49.2	—	2000	0/1	1000	0/1
Barium	2	279	09/06/2001	NF	1	1	48.8	—	—	—	—	—
Beryllium	2	279	09/06/2001	F	1	1	0.01	—	4	0/1	—	—
Beryllium	2	279	09/06/2001	NF	1	0	—	[0.003]	—	—	—	—
Boron	2	279	09/06/2001	F	1	0	—	[25.5]	—	—	750	0/1
Boron	2	279	09/06/2001	NF	1	0	—	[28.7]	—	—	—	—
Bromide	2	279	09/06/2001	F	1	0	—	[20]	—	—	—	—
Cadmium	2	279	09/06/2001	F	1	1	0.04	—	5	0/1	10	0/1
Cadmium	2	279	09/06/2001	NF	1	1	0.05	—	—	—	—	—

Table D-3 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	2	279	09/06/2001	F	1	1	14400	—	—	—	—	—
Calcium	2	279	09/06/2001	NF	1	1	14300	—	—	—	—	—
Chloride	2	279	09/06/2001	F	1	1	14900	—	250000	0/1	250000	0/1
Chromium (total)	2	279	09/06/2001	F	1	0	—	[0.57]	100	0/1	50	0/1
Chromium (total)	2	279	09/06/2001	NF	1	1	3.12	—	—	—	—	—
Cobalt	2	279	09/06/2001	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	2	279	09/06/2001	NF	1	0	—	[0.737]	—	—	—	—
Copper	2	279	09/06/2001	F	1	0	—	[1.02]	1300	0/1	1000	0/1
Copper	2	279	09/06/2001	NF	1	1	1.23	—	—	—	—	—
Cyanide (total)	2	279	09/06/2001	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	2	279	09/06/2001	F	1	1	308	—	4000	0/1	1600	0/1
Iron	2	279	09/06/2001	F	1	1	703	—	300	1/1	1000	0/1
Iron	2	279	09/06/2001	NF	1	1	706	—	—	—	—	—
Lead	2	279	09/06/2001	F	1	0	—	[0.011]	15	0/1	50	0/1
Lead	2	279	09/06/2001	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	2	279	09/06/2001	F	1	1	4600	—	—	—	—	—
Magnesium	2	279	09/06/2001	NF	1	1	4590	—	—	—	—	—
Manganese	2	279	09/06/2001	F	1	1	487	—	50	1/1	200	1/1
Manganese	2	279	09/06/2001	NF	1	1	500	—	—	—	—	—
Mercury	2	279	09/06/2001	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	2	279	09/06/2001	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	2	279	09/06/2001	F	1	1	10.7	—	—	—	—	—
Molybdenum	2	279	09/06/2001	NF	1	1	10.9	—	—	—	—	—
Nickel	2	279	09/06/2001	F	1	1	22.3	—	100	0/1	200	0/1
Nickel	2	279	09/06/2001	NF	1	1	23.5	—	—	—	—	—
Nitrate-Nitrite (as N)	2	279	09/06/2001	F	1	1	20	—	10000	0/1	—	—
Phosphorus (as P)	2	279	09/06/2001	F	1	1	30	—	—	—	—	—

Table D-3 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Potassium	2	279	09/06/2001	F	1	1	3540	—	—	—	—	—
Potassium	2	279	09/06/2001	NF	1	1	3570	—	—	—	—	—
Selenium	2	279	09/06/2001	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	2	279	09/06/2001	NF	1	0	—	[3.49]	—	—	—	—
Silica	2	279	09/06/2001	F	1	1	33812	—	—	—	—	—
Silica	2	279	09/06/2001	NF	1	1	33812	—	—	—	—	—
Silver	2	279	09/06/2001	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	2	279	09/06/2001	NF	1	0	—	[0.666]	—	—	—	—
Sodium	2	279	09/06/2001	F	1	1	13800	—	—	—	—	—
Sodium	2	279	09/06/2001	NF	1	1	14100	—	—	—	—	—
Lab Specific Conductance	2	279	09/06/2001	F	1	1	181	—	—	—	—	—
Strontium	2	279	09/06/2001	F	1	1	86.6	—	—	—	—	—
Strontium	2	279	09/06/2001	NF	1	1	86.7	—	—	—	—	—
Sulfate	2	279	09/06/2001	F	1	1	7580	—	250000	0/1	600000	0/1
Thallium	2	279	09/06/2001	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	2	279	09/06/2001	NF	1	0	—	[0.021]	—	—	—	—
Total Kjeldahl Nitrogen	2	279	09/06/2001	F	1	1	200	—	—	—	—	—
Uranium	2	279	09/06/2001	F	1	0	—	[0.003]	20	0/1	5000	0/1
Uranium	2	279	09/06/2001	NF	1	0	—	[0.003]	—	—	—	—
Vanadium	2	279	09/06/2001	F	1	0	—	[0.482]	—	—	—	—
Vanadium	2	279	09/06/2001	NF	1	1	0.49	—	—	—	—	—
Zinc	2	279	09/06/2001	F	1	0	—	[2.99]	5000	0/1	10000	0/1
Zinc	2	279	09/06/2001	NF	1	1	7.38	—	—	—	—	—

Table D-3 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD/H	2	279	09/06/2001	NF	1	1	-79	—	—	—	—	—
$\delta^{15}N/^{14}N$	2	279	09/06/2001	NF	1	1	—	BDL[i]	—	—	—	—
$\delta^{18}O/^{16}O$	2	279	09/06/2001	NF	1	1	-11.4	—	—	—	—	—

[a] -R-9i does not extend to the regional aquifer.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

[i] BDL = Below detection limit.

Table D-4
Well R-9i Screen 1 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Dissolved Organic Carbon	1	199	09/05/2001	F[e]	1	1	3600	—[f]	—	—	—	—
Humic Substances, Hydrophilic Acids	1	199	09/05/2001	F	1	1	1300	—	—	—	—	—
Humic Substances, Hydrophilic Bases	1	199	09/05/2001	F	1	1	200	—	—	—	—	—
Humic Substances, Hydrophilic Neutrals	1	199	09/05/2001	F	1	1	100	—	—	—	—	—
Humic Substances, Hydrophilic Total	1	199	09/05/2001	F	1	1	1600	—	—	—	—	—
Humic Substances, Hydrophobic Acids	1	199	09/05/2001	F	1	1	1200	—	—	—	—	—
Humic Substances, Hydrophobic Bases	1	199	09/05/2001	F	1	1	0	—	—	—	—	—
Humic Substances, Hydrophobic Neutrals	1	199	09/05/2001	F	1	1	800	—	—	—	—	—
Humic Substances, Hydrophobic Total	1	199	09/05/2001	F	1	1	2000	—	—	—	—	—
Total Organic Carbon	1	199	09/05/2001	NF[g]	1	1	3810	—	—	—	—	—

[a] R-9i does not extend to the regional aquifer.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] F = Filtered.

[f] — = Not available or not applicable.

[g] NF = Nonfiltered.

Table D-5
Well R-9i Screen 2 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Dissolved Organic Carbon	2	279	09/06/2001	F[e]	1	1	2300	—[f]	—	—	—	—
Humic Substances, Hydrophilic Acids	2	279	09/06/2001	F	1	0	—	—	—	—	—	—
Humic Substances, Hydrophilic Bases	2	279	09/06/2001	F	1	1	100	—	—	—	—	—
Humic Substances, Hydrophilic Neutrals	2	279	09/06/2001	F	1	1	800	—	—	—	—	—
Humic Substances, Hydrophilic Total	2	279	09/06/2001	F	1	1	900	—	—	—	—	—
Humic Substances, Hydrophobic Acids	2	279	09/06/2001	F	1	1	500	—	—	—	—	—
Humic Substances, Hydrophobic Bases	2	279	09/06/2001	F	1	0	—	—	—	—	—	—
Humic Substances, Hydrophobic Neutrals	2	279	09/06/2001	F	1	1	900	—	—	—	—	—
Humic Substances, Hydrophobic Total	2	279	09/06/2001	F	1	1	1400	—	—	—	—	—
Total Organic Carbon	2	279	09/06/2001	NF[g]	1	1	2590	—	—	—	—	—

[a] R-9i does not extend to the regional aquifer.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] F = Filtered.

[f] — = Not available or not applicable.

[g] NF = Nonfiltered.

Table D-6
Well R-9i Screen 1 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	1	199	09/05/2001	F[c]	2	1	0.0376	—[d]	15[e]	0/2
Americium-241	1	199	09/05/2001	NF[f]	1	0	—	[-25.3]	—	—
Cesium-134	1	199	09/05/2001	F	1	0	—	[-1.85]	—	—
Cesium-134	1	199	09/05/2001	NF	1	0	—	[-1.61]	—	—
Cesium-137	1	199	09/05/2001	F	1	0	—	[-0.0585]	—	—
Cesium-137	1	199	09/05/2001	NF	1	0	—	[1.88]	—	—
Cobalt-60	1	199	09/05/2001	F	1	0	—	[2.36]	—	—
Cobalt-60	1	199	09/05/2001	NF	1	0	—	[-1.07]	—	—
Europium-152	1	199	09/05/2001	F	1	0	—	[-0.539]	—	—
Europium-152	1	199	09/05/2001	NF	1	0	—	[-8.11]	—	—
Gross Alpha Radiation	1	199	09/05/2001	NF	1	0	—	[1.37]	—	—
Gross Beta Radiation	1	199	09/05/2001	NF	1	1	5.99	—	—	—
Gross Gamma Radiation	1	199	09/05/2001	NF	1	0	—	[56.4]	—	—
Plutonium-238	1	199	09/05/2001	F	1	0	—	[0.00105]	15[e]	0/1
Plutonium-239	1	199	09/05/2001	F	1	0	—	[0.00158]	15[e]	0/1
Ruthenium-106	1	199	09/05/2001	F	1	0	—	[5.64]	—	—
Ruthenium-106	1	199	09/05/2001	NF	1	0	—	[5.22]	—	—
Strontium-90	1	199	09/05/2001	F	1	0	—	[0.455]	8	0/1
Tritium	1	199	09/05/2001	NF	1	1	239.1	—	20000	0/1
Uranium-234	1	199	09/05/2001	F	1	1	0.124	—	—	—
Uranium-235	1	199	09/05/2001	F	2	0	—	[0.00877]	—	—

Table D-6 (continued)

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Uranium-235	1	199	09/05/2001	NF	1	0	—	[-5.1]	—	—
Uranium-238	1	199	09/05/2001	F	1	1	0.093	—	—	—

[a] R-9i does not extend to the regional aquifer.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-7
Well R-9i Screen 2 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	2	279	09/06/2001	F[c]	2	0	—[d]	[0.594]	15[e]	0/2
Cesium-134	2	279	09/06/2001	F	1	0	—	[0.734]	—	—
Cesium-137	2	279	09/06/2001	F	1	0	—	[2.37]	—	—
Cobalt-60	2	279	09/06/2001	F	1	0	—	[2.32]	—	—
Europium-152	2	279	09/06/2001	F	1	0	—	[-1.63]	—	—
Gross Alpha Radiation	2	279	09/06/2001	NF[f]	1	1	0.664	—	—	—
Gross Beta Radiation	2	279	09/06/2001	NF	1	1	4.11	—	—	—
Gross Gamma Radiation	2	279	09/06/2001	NF	1	0	—	[10]	—	—
Plutonium-238	2	279	09/06/2001	F	1	0	—	[-0.00116]	15[e]	0/1
Plutonium-239	2	279	09/06/2001	F	1	0	—	[-0.000578]	—	—
Ruthenium-106	2	279	09/06/2001	F	1	0	—	[-3.61]	—	—
Strontium-90	2	279	09/06/2001	F	1	0	—	[-0.1]	8	0/1
Thorium-228	2	279	09/06/2001	F	1	0	—	[0.0154]	15[e]	0/1
Thorium-230	2	279	09/06/2001	F	1	0	—	[-0.00222]	15[e]	0/1
Thorium-232	2	279	09/06/2001	F	1	0	—	[0.00111]	15[e]	0/1
Tritium	2	279	09/06/2001	NF	1	1	129.9	—	20000	0/1
Uranium-234	2	279	09/06/2001	F	1	1	0.0191	—	—	—
Uranium-235	2	279	09/06/2001	F	2	0	—	[0.00187]	—	—
Uranium-238	2	279	09/06/2001	F	1	1	0.021	—	—	—

[a] R-9i does not extend to the regional aquifer.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-8
Regional Well R-12 Screen 1 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	1	468	09/07/01	NF[e]	1	1	—[f]	—	—	—	—	—
pH	1	468	09/07/01	NF	1	1	8.94	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	1	468	09/07/01	NF	1	1	122.3	—	—	0/1	—	0/1
Temperature (°C)	1	468	09/07/01	NF	1	1	21.3	—	—	0/1	—	0/1
Turbidity (NTU[g])	1	468	09/07/01	NF	1	1	6.5	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (as $CaCO_3$)	1	468	09/07/01	F[h]	1	1	52500	—	—	—	—	—
Aluminum	1	468	09/07/01	F	1	1	72.2	—	50	1/1	5000	0/1
Aluminum	1	468	09/07/01	NF	1	1	283	—	—	—	—	—
Ammonia	1	468	09/07/01	F	1	1	3120	—	—	—	—	—
Antimony	1	468	09/07/01	F	1	0	—	[0.21]	6	0/1	—	—
Antimony	1	468	09/07/01	NF	1	0	—	[0.07]	—	—	—	—
Arsenic	1	468	09/07/01	F	1	0	—	[2.6]	50	0/1	100	0/1
Arsenic	1	468	09/07/01	NF	1	0	—	[2.6]	—	—	—	—
Barium	1	468	09/07/01	F	1	1	22.3	—	2000	0/1	1000	0/1
Barium	1	468	09/07/01	NF	1	1	28.3	—	—	—	—	—
Beryllium	1	468	09/07/01	F	1	1	0.01	—	4	0/1	—	—
Beryllium	1	468	09/07/01	NF	1	1	0.05	—	—	—	—	—
Boron	1	468	09/07/01	F	1	1	122	—	—	—	750	0/1
Boron	1	468	09/07/01	NF	1	1	123	—	—	—	—	—
Bromide	1	468	09/07/01	F	2	0	—	[20]	—	—	—	—
Cadmium	1	468	09/07/01	F	1	1	0.04	—	5	0/1	10	0/1
Cadmium	1	468	09/07/01	NF	1	1	0.12	—	—	—	—	—

Table D-8 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	1	468	09/07/01	F	1	1	3030	—	—	—	—	—
Calcium	1	468	09/07/01	NF	1	1	3520	—	—	—	—	—
Chloride	1	468	09/07/01	F	2	2	10100	—	250000	0/2	250000	0/2
Chromium	1	468	09/07/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Chromium	1	468	09/07/01	NF	1	1	6.33	—	—	—	—	—
Cobalt	1	468	09/07/01	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	1	468	09/07/01	NF	1	0	—	[0.737]	—	—	—	—
Copper	1	468	09/07/01	F	1	1	6.49	—	1300	0/1	1000	0/1
Copper	1	468	09/07/01	NF	1	1	12	—	—	—	—	—
Cyanide (total)	1	468	09/07/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	1	468	09/07/01	F	1	1	557	—	4000	0/1	1600	0/1
Iron	1	468	09/07/01	F	1	1	109	—	300	0/1	1000	0/1
Iron	1	468	09/07/01	NF	1	1	521	—	—	—	—	—
Lead	1	468	09/07/01	F	1	1	5.83	—	15	0/1	50	0/1
Lead	1	468	09/07/01	NF	1	1	8.34	—	—	—	—	—
Magnesium	1	468	09/07/01	F	1	1	569	—	—	—	—	—
Magnesium	1	468	09/07/01	NF	1	1	746	—	—	—	—	—
Manganese	1	468	09/07/01	F	1	1	54.8	—	50	1/1	200	0/1
Manganese	1	468	09/07/01	NF	1	1	94.6	—	—	—	—	—
Mercury	1	468	09/07/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	1	468	09/07/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	1	468	09/07/01	F	1	1	21.7	—	—	—	—	—
Molybdenum	1	468	09/07/01	NF	1	1	22.3	—	—	—	—	—
Nickel	1	468	09/07/01	F	1	1	2.34	—	100	0/1	200	0/1
Nickel	1	468	09/07/01	NF	1	1	6.71	—	—	—	—	—
Nitrate + Nitrite (as N)	1	468	09/07/01	F	1	1	30	—	10000	0/1	—	—
Potassium	1	468	09/07/01	F	1	1	1510	—	—	—	—	—

Table D-8 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Potassium	1	468	09/07/01	NF	1	1	1610	—	—	—	—	—
Selenium	1	468	09/07/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	1	468	09/07/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	1	468	09/07/01	F	1	1	12283.6	—	—	—	—	—
Silica	1	468	09/07/01	NF	1	1	13674.6	—	—	—	—	—
Silver	1	468	09/07/01	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	1	468	09/07/01	NF	1	0	—	[0.666]	—	—	—	—
Sodium	1	468	09/07/01	F	1	1	25600	—	—	—	—	—
Sodium	1	468	09/07/01	NF	1	1	25300	—	—	—	—	—
Lab Specific Conductance	1	468	09/07/01	F	1	1	75	—	—	—	—	—
Strontium	1	468	09/07/01	F	1	1	13.9	—	—	—	—	—
Strontium	1	468	09/07/01	NF	1	1	16.5	—	—	—	—	—
Sulfate	1	468	09/07/01	F	1	1	301	—	250000	0/1	600000	0/1
Thallium	1	468	09/07/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	1	468	09/07/01	NF	1	0	—	[0.021]	—	—	—	—
Total Kjeldahl Nitrogen	1	468	09/07/01	F	1	1	3900	—	—	—	—	—
Phosphorus (as PO_4)	1	468	09/07/01	F	1	1	440	—	—	—	—	—
Uranium	1	468	09/07/01	F	1	0	—	[0.003]	20	0/1	5000	0/1
Uranium	1	468	09/07/01	NF	1	0	—	[0.003]	—	—	—	—
Vanadium	1	468	09/07/01	F	1	1	0.49	—	—	—	—	—
Vanadium	1	468	09/07/01	NF	1	1	0.682	—	—	—	—	—
Zinc	1	468	09/07/01	F	1	0	—	[1.76]	5000	0/1	10000	0/1
Zinc	1	468	09/07/01	NF	1	1	5.91	—	—	—	—	—

Table D-8 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD	1	468	09/07/01	NF	1	1	-79	—	—	—	—	—
$\delta^{15}N$	1	468	09/07/01	NF	1	1	-6.2	—	—	—	—	—
$\delta^{18}O$	1	468	09/07/01	NF	1	1	-11.5	—	—	—	—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-9
Regional Well R-12 Screen 2 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	2	507	09/10/01	NF[e]	1	1	—[f]	—	—	—	—	—
pH	2	507	09/10/01	NF	1	1	9.26	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	2	507	09/10/01	NF	1	1	156.4	—	—	0/1	—	0/1
Temperature (°C)	2	507	09/10/01	NF	1	1	24.4	—	—	0/1	—	0/1
Turbidity (NTU[g])	2	507	09/10/01	NF	1	1	2.5	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (as $CaCO_3$)	2	507	09/10/01	F[h]	1	1	53000	—	—	—	—	—
Aluminum	2	507	09/10/01	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	2	507	09/10/01	NF	1	0	—	[9.54]	—	—	—	—
Ammonia	2	507	09/10/01	F	1	1	270	—	—	—	—	—
Antimony	2	507	09/10/01	F	1	0	—	[0.09]	6	0/1	—	—
Antimony	2	507	09/10/01	NF	1	0	—	[0.07]	—	—	—	—
Arsenic	2	507	09/10/01	F	1	0	—	[2.6]	50	0/1	100	0/1
Arsenic	2	507	09/10/01	NF	1	1	3.18	—	—	—	—	—
Barium	2	507	09/10/01	F	1	1	12.8	—	2000	0/1	1000	0/1
Barium	2	507	09/10/01	NF	1	1	14.2	—	—	—	—	—
Beryllium	2	507	09/10/01	F	1	0	—	[0.003]	4	0/1	—	—
Beryllium	2	507	09/10/01	NF	1	0	—	[0.003]	—	—	—	—
Boron	2	507	09/10/01	F	1	0	—	[37.1]	—	—	750	0/1
Boron	2	507	09/10/01	NF	1	0	—	[35.1]	—	—	—	—
Bromide	2	507	09/10/01	F	2	0	—	[20]	—	—	—	—
Cadmium	2	507	09/10/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	2	507	09/10/01	NF	1	1	0.04	—	—	—	—	—

Table D-9 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	2	507	09/10/01	F	1	1	15000	—	—	—	—	—
Calcium	2	507	09/10/01	NF	1	1	14800	—	—	—	—	—
Chloride	2	507	09/10/01	F	2	2	4380	—	250000	0/2	250000	0/2
Chromium	2	507	09/10/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Chromium	2	507	09/10/01	NF	1	0	—	[0.57]	—	—	—	—
Cobalt	2	507	09/10/01	F	1	0	—	[0.737 to 0.737]	—	—	50	0/1
Cobalt	2	507	09/10/01	NF	1	0	—	[0.737]	—	—	—	—
Copper	2	507	09/10/01	F	1	0	—	[1.02]	1300	0/1	1000	0/1
Copper	2	507	09/10/01	NF	1	1	1.42	—	—	—	—	—
Cyanide (total)	2	507	09/10/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	2	507	09/10/01	F	1	1	404	—	4000	0/1	1600	0/1
Iron	2	507	09/10/01	F	1	0	—	[2.24]	300	0/1	1000	0/1
Iron	2	507	09/10/01	NF	1	0	—	[2.24]	—	—	—	—
Lead	2	507	09/10/01	F	1	0	—	[0.011]	15	0/1	50	0/1
Lead	2	507	09/10/01	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	2	507	09/10/01	F	1	1	1900	—	—	—	—	—
Magnesium	2	507	09/10/01	NF	1	1	2040	—	—	—	—	—
Manganese	2	507	09/10/01	F	1	1	43.5	—	50	0/1	200	0/1
Manganese	2	507	09/10/01	NF	1	1	56.5	—	—	—	—	—
Mercury	2	507	09/10/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	2	507	09/10/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	2	507	09/10/01	F	1	1	7.12	—	—	—	—	—
Molybdenum	2	507	09/10/01	NF	1	1	7.33	—	—	—	—	—
Nickel	2	507	09/10/01	F	1	0	—	[1.26]	100	0/1	200	0/1
Nickel	2	507	09/10/01	NF	1	0	—	[1.26]	—	—	—	—
Nitrate + Nitrite (as N)	2	507	09/10/01	F	1	1	70	—	10000	0/1	—	—

Table D-9 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Potassium	2	507	09/10/01	F	1	1	1980	—	—	—	—	—
Potassium	2	507	09/10/01	NF	1	1	1920	—	—	—	—	—
Selenium	2	507	09/10/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	2	507	09/10/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	2	507	09/10/01	F	1	1	31030	—	—	—	—	—
Silica	2	507	09/10/01	NF	1	1	31886	—	—	—	—	—
Silver	2	507	09/10/01	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	2	507	09/10/01	NF	1	0	—	[0.666]	—	—	—	—
Sodium	2	507	09/10/01	F	1	1	11100	—	—	—	—	—
Sodium	2	507	09/10/01	NF	1	0	—	[11100]	—	—	—	—
Lab Specific Conductance	2	507	09/10/01	F	1	1	134	—	—	—	—	—
Strontium	2	507	09/10/01	F	1	1	58.3	—	—	—	—	—
Strontium	2	507	09/10/01	NF	1	1	58.9	—	—	—	—	—
Sulfate	2	507	09/10/01	F	1	1	7650	—	250000	0/1	600000	0/1
Thallium	2	507	09/10/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	2	507	09/10/01	NF	1	0	—	[0.021]	—	—	—	—
Total Kjeldahl Nitrogen	2	507	09/10/01	F	1	1	490	—	—	—	—	—
Phosphorus (as PO_4)	2	507	09/10/01	F	1	1	90	—	—	—	—	—
Uranium	2	507	09/10/01	F	1	1	0.14	—	20	0/1	5000	0/1
Uranium	2	507	09/10/01	NF	1	1	0.16	—	—	—	—	—
Vanadium	2	507	09/10/01	F	1	1	2.63	—	—	—	—	—
Vanadium	2	507	09/10/01	NF	1	1	2.45	—	—	—	—	—
Zinc	2	507	09/10/01	F	1	0	—	[1.63]	5000	0/1	10000	0/1
Zinc	2	507	09/10/01	NF	1	0	—	[2.02]	—	—	—	—

Table D-9 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD	2	507	09/10/01	NF	1	1	-82	—	—	—	—	—
$\delta^{15}N$	2	507	09/10/01	NF	1	1	+10.4	—	—	—	—	—
$\delta^{18}O$	2	507	09/10/01	NF	1	1	-11.5	—	—	—	—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-10
Regional Well R-12 Screen 3 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	3	811	09/11/01	NF[e]	1	1	—[f]	—	—	—	—	—
pH	3	811	09/11/01	NF	1	1	7.57	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	3	811	09/11/01	NF	1	1	388.4	—	—	0/1	—	0/1
Temperature (°C)	3	811	09/11/01	NF	1	1	25.8	—	—	0/1	—	0/1
Turbidity (NTU[g])	3	811	09/11/01	NF	1	1	5.0	—	—	0/1	—	0/1
Analyte												
Arsenic	3	811	09/11/01	NF	1	0	—	[2.6]	—	—	—	—
Barium	3	811	09/11/01	F[h]	1	1	145	—	2000	0/1	1000	0/1
Barium	3	811	09/11/01	NF	1	1	151	—	—	—	—	—
Beryllium	3	811	09/11/01	F	1	0	—	[0.003]	4	0/1	—	—
Beryllium	3	811	09/11/01	NF	1	1	0.02	—	—	—	—	—
Boron	3	811	09/11/01	F	1	0	—	[72.7]	—	—	750	0/1
Boron	3	811	09/11/01	NF	1	0	—	[75.9]	—	—	—	—
Bromide	3	811	09/11/01	F	2	0	—	[20]	—	—	—	—
Cadmium	3	811	09/11/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	3	811	09/11/01	NF	1	1	0.04	—	—	—	—	—
Calcium	3	811	09/11/01	F	1	1	44000	—	—	—	—	—
Calcium	3	811	09/11/01	NF	1	1	45300	—	—	—	—	—
Chloride	3	811	09/11/01	F	2	2	8810	—	250000	0/2	250000	0/2
Chromium	3	811	09/11/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Chromium	3	811	09/11/01	NF	1	1	1.06	—	—	—	—	—
Cobalt	3	811	09/11/01	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	3	811	09/11/01	NF	1	0	—	[0.737]	—	—	—	—
Copper	3	811	09/11/01	F	1	0	—	[1.02]	1300	0/1	1000	0/1

Table D-10 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Copper	3	811	09/11/01	NF	1	0	—	[1.02]	—	—	—	—
Cyanide (total)	3	811	09/11/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	3	811	09/11/01	F	1	1	367	—	4000	0/1	1600	0/1
Iron	3	811	09/11/01	F	1	0	—	[2.24]	300	0/1	1000	0/1
Iron	3	811	09/11/01	NF	1	1	372	—	—	—	—	—
Lead	3	811	09/11/01	F	1	0	—	[0.011]	15	0/1	50	0/1
Lead	3	811	09/11/01	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	3	811	09/11/01	F	1	1	10400	—	—	—	—	—
Magnesium	3	811	09/11/01	NF	1	1	10800	—	—	—	—	—
Manganese	3	811	09/11/01	F	1	1	340	—	50	1/1	200	1/1
Manganese	3	811	09/11/01	NF	1	1	360	—	—	—	—	—
Mercury	3	811	09/11/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	3	811	09/11/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	3	811	09/11/01	F	1	1	5.92	—	—	—	—	—
Molybdenum	3	811	09/11/01	NF	1	1	6.02	—	—	—	—	—
Nickel	3	811	09/11/01	F	1	1	4.8	—	100	0/1	200	0/1
Nickel	3	811	09/11/01	NF	1	1	5.15	—	—	—	—	—
Nitrate + Nitrite (as N)	3	811	09/11/01	F	1	1	10	—	10000	0/1	—	—
Potassium	3	811	09/11/01	F	1	1	4280	—	—	—	—	—
Potassium	3	811	09/11/01	NF	1	1	4450	—	—	—	—	—
Selenium	3	811	09/11/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	3	811	09/11/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	3	811	09/11/01	F	1	1	57780	—	—	—	—	—
Silica	3	811	09/11/01	NF	1	1	59064	—	—	—	—	—
Silver	3	811	09/11/01	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	3	811	09/11/01	NF	1	0	—	[0.666]	—	—	—	—
Sodium	3	811	09/11/01	F	1	1	18300	—	—	—	—	—
Sodium	3	811	09/11/01	NF	1	1	19100	—	—	—	—	—

Table D-10 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Lab Specific Conductance	3	811	09/11/01	F	1	1	358	—	—	—	—	—
Strontium	3	811	09/11/01	F	1	1	231	—	—	—	—	—
Strontium	3	811	09/11/01	NF	1	1	238	—	—	—	—	—
Sulfate	3	811	09/11/01	F	1	1	13400	—	250000	0/1	600000	0/1
Thallium	3	811	09/11/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	3	811	09/11/01	NF	1	0	—	[0.021]	—	—	—	—
Total Kjeldahl Nitrogen	3	811	09/11/01	F	1	1	300	—	—	—	—	—
Phosphorus (as PO_4)	3	811	09/11/01	F	1	1	50	—	—	—	—	—
Uranium	3	811	09/11/01	F	1	1	1.94	—	20	0/1	5000	0/1
Uranium	3	811	09/11/01	NF	1	1	1.85	—	—	—	—	—
Vanadium	3	811	09/11/01	F	1	1	2.3	—	—	—	—	—
Vanadium	3	811	09/11/01	NF	1	1	1.22	—	—	—	—	—
Zinc	3	811	09/11/01	F	1	0	—	[2.73]	5000	0/1	10000	0/1
Zinc	3	811	09/11/01	NF	1	1	5.43	—	—	—	—	—
Stable Isotope (‰)												
δD	3	811	09/11/01	NF	1	1	-74	—	—	—	—	—
$\delta^{15}N$	3	811	09/11/01	NF	1	1	—	BDL[i]	—	—	—	—
$\delta^{18}O$	3	811	09/11/01	NF	1	1	-10.8	—	—	—	—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

[i] BDL = Below detection limit.

Table D-11
Regional Well R-12 Screen 1 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Butanone[2-]	1	468	09/07/01	NF[e]	1	1	1.1	—[f]	—	—	—	—
Dissolved Organic Carbon	1	468	09/07/01	F[g]	1	1	5	—	—	—	—	—
Humic Substances, Hydrophilic Acids	1	468	09/07/01	F	1	1	1.2	—	—	—	—	—
Humic Substances, Hydrophilic Bases	1	468	09/07/01	F	1	1	0.3	—	—	—	—	—
Humic Substances, Hydrophilic Neutrals	1	468	09/07/01	F	1	1	0.1	—	—	—	—	—
Humic Substances, Hydrophilic Total	1	468	09/07/01	F	1	1	1.6	—	—	—	—	—
Humic Substances, Hydrophobic Acids	1	468	09/07/01	F	1	1	2.1	—	—	—	—	—
Humic Substances, Hydrophobic Bases	1	468	09/07/01	F	1	1	[0.1]	—	—	—	—	—
Humic Substances, Hydrophobic Neutrals	1	468	09/07/01	F	1	1	1.2	—	—	—	—	—
Humic Substances, Hydrophobic Total	1	468	09/07/01	F	1	1	3.3	—	—	—	—	—
Methylene Chloride	1	468	09/07/01	NF	1	1	1.1	—	5	0/1	100	0/1
Total Organic Carbon	1	468	09/07/01	NF	1	1	9.99	—	—	—	—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] F = Filtered.

Table D-12
Regional Well R-12 Screen 2 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acetone	2	507	09/10/01	NF[e]	1	1	19.1	—[f]	—	—	—	—
Dissolved Organic Carbon	2	507	09/10/01	F[g]	1	1	1.8	—	—	—	—	—
Humic Substances, Hydrophilic Acids	2	507	09/10/01	F	1	1	0.5	—	—	—	—	—
Humic Substances, Hydrophilic Bases	2	507	09/10/01	F	1	1	0.1	—	—	—	—	—
Humic Substances, Hydrophilic Neutrals	2	507	09/10/01	F	1	1	0.2	—	—	—	—	—
Humic Substances, Hydrophilic Total	2	507	09/10/01	F	1	1	0.8	—	—	—	—	—
Humic Substances, Hydrophobic Acids	2	507	09/10/01	F	1	1	0.4	—	—	—	—	—
Humic Substances, Hydrophobic Bases	2	507	09/10/01	F	1	1	[0.1]	—	—	—	—	—
Humic Substances, Hydrophobic Neutrals	2	507	09/10/01	F	1	1	0.6	—	—	—	—	—
Humic Substances, Hydrophobic Total	2	507	09/10/01	F	1	1	1	—	—	—	—	—
Total Organic Carbon	2	507	09/10/01	NF	1	1	1.77	—	—	—	—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] F = Filtered.

Table D-13
Regional Well R-12 Screen 3 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acetone	3	811	09/11/01	NF[e]	1	1	2.4	—[f]	—	—	—	—
Dissolved Organic Carbon	3	811	09/11/01	F[g]	1	1	1.1	—	—	—	—	—
Humic Substances, Hydrophilic Acids	3	811	09/11/01	F	1	1	0.3	—	—	—	—	—
Humic Substances, Hydrophilic Bases	3	811	09/11/01	F	1	1	[0.1]	—	—	—	—	—
Humic Substances, Hydrophilic Neutrals	3	811	09/11/01	F	1	1	0.2	—	—	—	—	—
Humic Substances, Hydrophilic Total	3	811	09/11/01	F	1	1	0.5	—	—	—	—	—
Humic Substances, Hydrophobic Acids	3	811	09/11/01	F	1	1	0.2	—	—	—	—	—
Humic Substances, Hydrophobic Bases	3	811	09/11/01	F	1	1	[0.1]	—	—	—	—	—
Humic Substances, Hydrophobic Neutrals	3	811	09/11/01	F	1	1	0.4	—	—	—	—	—
Humic Substances, Hydrophobic Total	3	811	09/11/01	F	1	1	0.6	—	—	—	—	—
Total Organic Carbon	3	811	09/11/01	NF	1	1	352	—	—	—	—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] F = Filtered.

Table D-14
Regional Well R-12 Screen 1 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	1	468	09/07/01	F[c]	1	0	—[d]	[0.0122]	15[e]	0/2
Cesium-134	1	468	09/07/01	F	1	0	—	[-2.5]	—	—
Cesium-137	1	468	09/07/01	F	1	0	—	[-0.538]	—	—
Cobalt-60	1	468	09/07/01	F	1	0	—	[1.42]	—	—
Europium-152	1	468	09/07/01	F	1	0	—	[-0.605]	—	—
Gross Alpha Radiation	1	468	09/07/01	NF[f]	1	0	—	[-0.219]	—	—
Gross Beta Radiation	1	468	09/07/01	NF	1	1	3.93	—	—	—
Gross Gamma Radiation	1	468	09/07/01	NF	1	0	—	[-87.4]	—	—
Plutonium-238	1	468	09/07/01	F	1	0	—	[-0.00067]	15[e]	0/1
Plutonium-239	1	468	09/07/01	F	1	0	—	[-0.000669]	15[e]	0/1
Ruthenium-106	1	468	09/07/01	F	1	0	—	[-12.6]	—	—
Strontium-90	1	468	09/07/01	F	1	0	—	[0.238]	8	0/1
Tritium	1	468	09/07/01	NF	1	1	181.04	—	20000	0/1
Uranium-234	1	468	09/07/01	F	1	1	0.0228	—	—	—
Uranium-235	1	468	09/07/01	F	1	0	—	[0]	—	—
Uranium-238	1	468	09/07/01	F	1	1	0.0185	—	—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-15
Regional Well R-12 Screen 2 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	2	507	09/10/01	F[c]	1	0	—[d]	[0.00896]	15[e]	0/2
Cesium-134	2	507	09/10/01	F	1	0	—	[-0.593]	—	—
Cesium-137	2	507	09/10/01	F	1	0	—	[0.0189]	—	—
Cobalt-60	2	507	09/10/01	F	1	0	—	[0.507]	—	—
Europium-152	2	507	09/10/01	F	1	0	—	[1.64]	—	—
Gross Alpha Radiation	2	507	09/10/01	NF[f]	1	1	0.71		—	—
Gross Beta Radiation	2	507	09/10/01	NF	1	0	—	[2.44]	—	—
Gross Gamma Radiation	2	507	09/10/01	NF	1	0	—	[3.04]	—	—
Plutonium-238	2	507	09/10/01	F	1	0	—	[-0.000314]	15[e]	0/1
Plutonium-239	2	507	09/10/01	F	1	0	—	[0.00188]	15[e]	0/1
Ruthenium-106	2	507	09/10/01	F	1	0	—	[5.18]	—	—
Strontium-90	2	507	09/10/01	F	1	0	—	[0.267]	8	0/1
Tritium	2	507	09/10/01	NF	1	1	78.23		20000	0/1
Uranium-234	2	507	09/10/01	F	1	1	0.169		—	—
Uranium-235	2	507	09/10/01	F	1	0	—	[0.00751]	—	—
Uranium-238	2	507	09/10/01	F	1	1	0.0966		—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-16
Regional Well R-12 Screen 3 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	3	811	09/11/01	F[c]	1	0	—[d]	[0.00746]	15[e]	0/2
Cesium-134	3	811	09/11/01	F	1	0	—	[-0.0842]	—	—
Cesium-137	3	811	09/11/01	F	1	0	—	[2.19]	—	—
Cobalt-60	3	811	09/11/01	F	1	0	—	[2.55]	—	—
Europium-152	3	811	09/11/01	F	1	0	—	[-5.49]	—	—
Gross Alpha Radiation	3	811	09/11/01	NF[f]	1	1	2.21	—	—	—
Gross Beta Radiation	3	811	09/11/01	NF	1	1	5.98	—	—	—
Gross Gamma Radiation	3	811	09/11/01	NF	1	0	—	[1.91]	—	—
Plutonium-238	3	811	09/11/01	F	1	0	—	[0.00233]	15[e]	0/1
Plutonium-239	3	811	09/11/01	F	1	0	—	[0.00494]	15[e]	0/1
Ruthenium-106	3	811	09/11/01	F	1	0	—	[-3.46]	—	—
Strontium-90	3	811	09/11/01	F	1	0	—	[0.165]	8	0/1
Tritium	3	811	09/11/01	NF	1	1	49.81	—	20000	0/1
Uranium-234	3	811	09/11/01	F	1	1	1.33	—	—	—
Uranium-235	3	811	09/11/01	F	1	1	—	[12.6]	—	—
Uranium-238	3	811	09/11/01	F	1	1	0.7	—	—	—

[a] The static water level for the regional aquifer at R-12 was 805 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-17
Regional Well R-15 Screen 1 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	1	1019	05/22/01	NF[e]	1	1	—[f]	—	—	—	—	—
pH	1	1019	05/22/01	NF	1	1	7.87	—	>6 & <9	0/1	>6 & <9	0/1
Temperature (°C)	1	1019	05/22/01	NF	1	1	21.5	—	—	0/1	—	0/1
Turbidity (NTU[g])	1	1019	05/22/01	NF	1	1	1.2	—	—	0/1	—	0/1
Specific Conductance (µS/cm)	1	1019	05/22/01	NF	1	1	150	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total)	1	1019	05/22/01	F[h]	1	1	58000	—	—	—	—	—
Aluminum	1	1019	05/22/01	F	1	0	—	[7.6]	50	0/1	5000	0/1
Aluminum	1	1019	05/22/01	NF	1	0	—	[7.6]	—	—	—	—
Ammonia (as N)	1	1019	05/22/01	F	1	0	—	[100]	—	—	—	—
Antimony	1	1019	05/22/01	F	1	0	—	[0.153]	6	0/2	—	—
Antimony	1	1019	05/22/01	NF	1	0	—	[0.193]	—	—	—	—
Arsenic	1	1019	05/22/01	F	1	0	—	[1.5]	50	0/1	100	0/1
Arsenic	1	1019	05/22/01	NF	1	0	—	[1.5]	—	—	—	—
Barium	1	1019	05/22/01	F	1	1	25	—	2000	0/1	1000	0/1
Barium	1	1019	05/22/01	NF	1	1	25	—	—	—	—	—
Beryllium	1	1019	05/22/01	F	1	0	—	[0.074]	4	0/1	—	—
Beryllium	1	1019	05/22/01	NF	1	0	—	[0.074]	—	—	—	—
Boron	1	1019	05/22/01	F	1	0	—	[5.4]	—	—	750	0/1
Boron	1	1019	05/22/01	NF	1	1	10	—	—	—	—	—
Bromide	1	1019	05/22/01	F	1	0	—	[200]	—	—	—	—
Cadmium	1	1019	05/22/01	F	1	0	—	[0.084]	5	0/1	10	0/1
Cadmium	1	1019	05/22/01	NF	1	0	—	[0.084]	—	—	—	—
Calcium	1	1019	05/22/01	F	1	1	13000	—	—	—	—	—

Table D-17 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	1	1019	05/22/01	NF	1	1	13000	—	—	—	—	—
Chloride	1	1019	05/22/01	F	1	1	4700	—	250000	0/1	250000	0/1
Chromium (total)	1	1019	05/22/01	F	1	1	3.8	—	100	0/1	50	0/1
Chromium (total)	1	1019	05/22/01	NF	1	1	3.6	—	—	—	—	—
Cobalt	1	1019	05/22/01	F	1	0	—	[0.37]	—	—	50	0/1
Cobalt	1	1019	05/22/01	NF	1	0	—	[0.37]	—	—	—	—
Copper	1	1019	05/22/01	F	1	0	—	[0.27]	1300	0/1	1000	0/1
Copper	1	1019	05/22/01	NF	1	0	—	[0.27]	—	—	—	—
Cyanide (total)	1	1019	05/22/01	NF	1	0	—	[10]	—	—	—	—
Fluoride	1	1019	05/22/01	F	1	1	140	—	4000	0/1	1600	0/1
Iron	1	1019	05/22/01	F	1	0	—	[46]	300	0/1	1000	0/1
Iron	1	1019	05/22/01	NF	1	0	—	[60]	—	—	—	—
Lead	1	1019	05/22/01	F	1	0	—	[0.37]	15	0/2	50	0/2
Lead	1	1019	05/22/01	NF	1	1	—	[0.178]	—	—	—	—
Magnesium	1	1019	05/22/01	F	1	1	3500	—	—	—	—	—
Magnesium	1	1019	05/22/01	NF	1	1	3500	—	—	—	—	—
Manganese	1	1019	05/22/01	F	1	1	0.24	—	50	0/1	200	0/1
Manganese	1	1019	05/22/01	NF	1	1	0.86	—	—	—	—	—
Mercury	1	1019	05/22/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	1	1019	05/22/01	NF	1	0	—	[0.033]	—	—	2	0/1
Molybdenum	1	1019	05/22/01	F	1	0	—	[3.8]	—	—	—	—
Molybdenum	1	1019	05/22/01	NF	1	0	—	[3.8]	—	—	—	—
Nickel	1	1019	05/22/01	F	1	0	—	[0.3]	100	0/1	200	0/1
Nickel	1	1019	05/22/01	NF	1	0	—	[0.3]	—	—	—	—
Nitrate + Nitrite (as N)	1	1019	05/22/01	F	1	1	2400	—	10000	0/1	—	—
Perchlorate	1	1019	05/22/01	F	1	1	4.19	—	—	—	—	—
Phosphorus (as P)	1	1019	05/22/01	F	1	0	—	[50]	—	—	—	—

Table D-17 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Potassium	1	1019	05/22/01	F	1	1	1800	—	—	—	—	—
Potassium	1	1019	05/22/01	NF	1	1	1800	—	—	—	—	—
Selenium	1	1019	05/22/01	F	1	0	—	[1.9]	50	0/1	50	0/1
Selenium	1	1019	05/22/01	NF	1	0	—	[1.9]	—	—	—	—
Silica	1	1019	05/22/01	F	1	1	7276	—	—	—	—	—
Silica	1	1019	05/22/01	NF	1	1	7276	—	—	—	—	—
Silver	1	1019	05/22/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Silver	1	1019	05/22/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	1	1019	05/22/01	F	1	1	8500	—	—	—	—	—
Sodium	1	1019	05/22/01	NF	1	1	8400	—	—	—	—	—
Strontium	1	1019	05/22/01	F	1	1	56	—	—	—	—	—
Strontium	1	1019	05/22/01	NF	1	1	56	—	—	—	—	—
Sulfate	1	1019	05/22/01	F	1	1	6100	—	250000	0/1	600000	0/1
Thallium	1	1019	05/22/01	F	1	1	—	[0.189]	2	0/2	—	—
Thallium	1	1019	05/22/01	NF	1	1	—	[0.133]	—	—	—	—
Total Kjeldahl Nitrogen	1	1019	05/22/01	F	1	0	—	[0.1]	—	—	—	—
Uranium	1	1019	05/22/01	F	1	1	0.375	—	20	0/1	5000	0/1
Uranium	1	1019	05/22/01	NF	1	1	0.379	—	—	—	—	—
Vanadium	1	1019	05/22/01	F	1	1	6	—	—	—	—	—
Vanadium	1	1019	05/22/01	NF	1	1	6.1	—	—	—	—	—
Zinc	1	1019	05/22/01	F	1	0	—	[0.31]	5000	0/1	10000	0/1
Zinc	1	1019	05/22/01	NF	1	0	—	[0.31]	—	—	—	—

Table D-17 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
$\delta^{18}O/^{16}O$	1	1019	05/22/01	NF	1	1	-11.2	—	—	—	—	—
δD/H	1	1019	05/22/01	NF	1	1	-79	—	—	—	—	—

[a] The static water level for the regional aquifer at R-15 is 964 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US E.P.A. secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not applicable or not available.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-18
Regional Well R-15 Screen 1 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Dissolved Organic Carbon	1	1019	05/22/01	F[e]	1	0	—[f]	—	—	—	—	—
Total Organic Carbon	1	1019	05/22/01	NF[g]	1	0	—	—	—	—	—	—

[a] The static water level for the regional aquifer at R-15 is 964 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US E.P.A. secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] F = Filtered.

[f] — = Not applicable or not available.

[g] NF = Nonfiltered.

Table D-19
Regional Well R-15 Screen 1 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	1	1019	05/22/01	F[c]	1	0	—[d]	[0.7]	15	0/2
Cesium-134	1	1019	05/22/01	F	1	0	—	[-0.6]	—	—
Cesium-137	1	1019	05/22/01	F	1	0	—	[-1.3]	—	—
Cobalt-57	1	1019	05/22/01	F	1	0	—	[-0.3]	—	—
Cobalt-60	1	1019	05/22/01	F	1	0	—	[0.5]	—	—
Europium-152	1	1019	05/22/01	F	1	0	—	[-24]	—	—
Gross Alpha Radiation	1	1019	05/22/01	NF[e]	1	0	—	[-0.19]	—	—
Gross Beta Radiation	1	1019	05/22/01	NF	1	0	—	[0.8]	—	—
Gross Gamma Radiation	1	1019	05/22/01	NF	1	1	240	—	—	—
Plutonium-238	1	1019	05/22/01	F	1	0	—	[-0.002]	15	0/1
Plutonium-239	1	1019	05/22/01	F	1	0	—	[0.003]	15	0/1
Ruthenium-106	1	1019	05/22/01	F	1	0	—	[19]	—	—
Strontium-85	1	1019	05/22/01	F	1	0	—	[0.4]	—	—
Strontium-90	1	1019	05/22/01	F	1	0	—	[-0.1]	8	0/1
Tritium	1	1019	05/22/01	NF	1	1	3.29	—	20000	0/1
Uranium-234	1	1019	05/22/01	F	1	1	0.257	—	—	—
Uranium-235	1	1019	05/22/01	F	1	0	—	[0.007]	—	—
Uranium-238	1	1019	05/22/01	F	1	1	0.099	—	—	—

[a] The static water level for the regional aquifer at R-15 was 964 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US E.P.A. secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not applicable or not available.

[e] NF = Nonfiltered.

Table D-20
Regional Well R-19 Screen 2 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	2	909	09/13/01	NF[e]	1	1	29000	—[f]	—	—	—	—
pH	2	909	09/13/01	NF	1	1	9.19	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	2	909	09/13/01	NF	1	1	167.4	—	—	0/1	—	0/1
Temperature (°C)	2	909	09/13/01	NF	1	1	21	—	—	0/1	—	0/1
Turbidity (NTU[g])	2	909	09/13/01	NF	1	1	0.3	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as CO_3)	2	909	09/13/01	F[h]	1	1	72500	—	—	—	—	—
Aluminum	2	909	09/13/01	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	2	909	09/13/01	NF	1	0	—	[9.54]	—	—	—	—
Ammonia	2	909	09/13/01	F	1	0	—	[23.5]	—	—	—	—
Antimony	2	909	09/13/01	F	1	0	—	[0.1]	6	0/1	—	—
Antimony	2	909	09/13/01	NF	1	0	—	[0.6]	—	—	—	—
Arsenic	2	909	09/13/01	F	1	0	—	[3.14]	50	0/1	100	0/1
Arsenic	2	909	09/13/01	NF	1	0	—	[2.6]	—	—	—	—
Barium	2	909	09/13/01	F	1	1	26.9	—	2000	0/1	1000	0/1
Barium	2	909	09/13/01	NF	1	1	26.8	—	—	—	—	—
Beryllium	2	909	09/13/01	F	1	0	—	[0.003]	4	0/1	—	—
Beryllium	2	909	09/13/01	NF	1	0	—	[0.003]	—	—	—	—
Boron	2	909	09/13/01	F	1	0	—	[12.3]	—	—	750	0/1
Boron	2	909	09/13/01	NF	1	0	—	[16.9]	—	—	—	—
Bromide	2	909	09/13/01	F	1	0	—	[20]	—	—	—	—
Cadmium	2	909	09/13/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	2	909	09/13/01	NF	1	0	—	[0.017]	—	—	—	—

Table D-20 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	2	909	09/13/01	F	1	1	21100	—	—	—	—	—
Calcium	2	909	09/13/01	NF	1	1	20700	—	—	—	—	—
Chloride	2	909	09/13/01	F	1	1	2180	—	250000	0/1	250000	0/1
Chromium	2	909	09/13/01	F	1	0	—	[1.21]	100	0/1	50	0/1
Chromium	2	909	09/13/01	NF	1	0	—	[1.49]	—	—	—	—
Cobalt	2	909	09/13/01	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	2	909	09/13/01	NF	1	0	—	[0.737]	—	—	—	—
Copper	2	909	09/13/01	F	1	0	—	[1.02]	1300	0/1	1000	0/1
Copper	2	909	09/13/01	NF	1	1	31.5	—	—	—	—	—
Cyanide (total)	2	909	09/13/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	2	909	09/13/01	F	1	1	566	—	4000	0/1	1600	0/1
Iron	2	909	09/13/01	F	1	0	—	[9.06]	300	0/1	1000	0/1
Iron	2	909	09/13/01	NF	1	0	—	[2.24]	—	—	—	—
Lead	2	909	09/13/01	F	1	0	—	[0.011]	15	0/1	50	0/1
Lead	2	909	09/13/01	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	2	909	09/13/01	F	1	1	3470	—	—	—	—	—
Magnesium	2	909	09/13/01	NF	1	1	3400	—	—	—	—	—
Manganese	2	909	09/13/01	F	1	1	3.81	—	50	0/1	200	0/1
Manganese	2	909	09/13/01	NF	1	1	3.73	—	—	—	—	—
Mercury	2	909	09/13/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	2	909	09/13/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	2	909	09/13/01	F	1	1	1.92	—	—	—	—	—
Molybdenum	2	909	09/13/01	NF	1	1	2.2	—	—	—	—	—
Nickel	2	909	09/13/01	F	1	1	1.53	—	100	0/1	200	0/1
Nickel	2	909	09/13/01	NF	1	0	—	[1.26]	—	—	—	—
Nitrate-Nitrite (as N)	2	909	09/13/01	F	1	1	340	—	10000	0/1	—	—
Oxalate	2	909	09/13/01	F	1	0	—	[600]	—	—	—	—

Table D-20 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Perchlorate	2	909	09/13/01	F	1	0	—	[4]	—	—	—	—
Potassium	2	909	09/13/01	F	1	1	1220	—	—	—	—	—
Potassium	2	909	09/13/01	NF	1	1	1180	—	—	—	—	—
Selenium	2	909	09/13/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	2	909	09/13/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	2	909	09/13/01	F	1	1	73830	—	—	—	—	—
Silica	2	909	09/13/01	NF	1	1	72974	—	—	—	—	—
Silver	2	909	09/13/01	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	2	909	09/13/01	NF	1	0	—	[0.666]	—	—	—	—
Sodium	2	909	09/13/01	F	1	1	14700	—	—	—	—	—
Sodium	2	909	09/13/01	NF	1	1	14200	—	—	—	—	—
Strontium	2	909	09/13/01	F	1	1	85.5	—	—	—	—	—
Strontium	2	909	09/13/01	NF	1	1	84.3	—	—	—	—	—
Sulfate	2	909	09/13/01	F	1	1	2560	—	250000	0/1	600000	0/1
Thallium	2	909	09/13/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	2	909	09/13/01	NF	1	0	—	[0.021]	—	—	—	—
Total Kjeldahl Nitrogen	2	909	09/13/01	F	1	1	170	—	—	—	—	—
Phosphorus (as PO_4)	2	909	09/13/01	F	1	1	50	—	—	—	—	—
Uranium	2	909	09/13/01	F	1	1	0.39	—	20	0/1	5000	0/1
Uranium	2	909	09/13/01	NF	1	1	0.39	—	—	—	—	—
Vanadium	2	909	09/13/01	F	1	0	—	[1.78]	—	—	—	—
Vanadium	2	909	09/13/01	NF	1	0	—	[1.92]	—	—	—	—
Zinc	2	909	09/13/01	F	1	0	—	[3.25]	5000	0/1	10000	0/1
Zinc	2	909	09/13/01	NF	1	1	56.2	—	—	—	—	—

Table D-20 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD	2	909	09/13/01	NF	1	1	-75	—	—	—	—	—
$\delta^{15}N$	2	909	09/13/01	NF	1	1	+2.7					
$\delta^{18}O$	2	909	09/13/01	NF	1	1	-10.8	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-21
Regional Well R-19 Screen 3 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	3	1190	09/18/01	NF[e]	1	1	12000	—[f]	—	—	—	—
pH	3	1190	09/18/01	NF	1	1	8.01	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	3	1190	09/18/01	NF	1	1	124	—	—	0/1	—	0/1
Temperature (°C)	3	1190	09/18/01	NF	1	1	22.7	—	—	0/1	—	0/1
Turbidity (NTU[g])	3	1190	09/18/01	NF	1	1	0.9	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as CO_3)	3	1190	09/18/01	F[h]	1	1	75400	—	—	—	—	—
Aluminum	3	1190	09/18/01	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	3	1190	09/18/01	NF	1	0	—	[9.54]	—	—	—	—
Ammonia	3	1190	09/18/01	F	1	0	—	[23.5]	—	—	—	—
Antimony	3	1190	09/18/01	F	1	0	—	[0.4]	6	0/1	—	—
Antimony	3	1190	09/18/01	NF	1	0	—	[0.05]	—	—	—	—
Arsenic	3	1190	09/18/01	F	1	0	—	[2.6]	50	0/1	100	0/1
Arsenic	3	1190	09/18/01	NF	1	0	—	[2.6]	—	—	—	—
Barium	3	1190	09/18/01	F	1	1	21.7	—	2000	0/1	1000	0/1
Barium	3	1190	09/18/01	NF	1	1	22.4	—	—	—	—	—
Beryllium	3	1190	09/18/01	F	1	0	—	[0.003]	4	0/1	—	—
Beryllium	3	1190	09/18/01	NF	1	0	—	[0.003]	—	—	—	—
Boron	3	1190	09/18/01	F	1	0	—	[8.26]	—	—	750	0/1
Boron	3	1190	09/18/01	NF	1	0	—	[10.2]	—	—	—	—
Bromide	3	1190	09/18/01	F	1	0	—	[20]	—	—	—	—
Cadmium	3	1190	09/18/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	3	1190	09/18/01	NF	1	0	—	[0.017]	—	—	—	—

Table D-21 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	3	1190	09/18/01	F	1	1	13400	—	—	—	—	—
Calcium	3	1190	09/18/01	NF	1	1	13200	—	—	—	—	—
Chloride	3	1190	09/18/01	F	1	1	1730	—	250000	0/1	250000	0/1
Chromium	3	1190	09/18/01	F	1	0	—	[2]	100	0/1	50	0/1
Chromium	3	1190	09/18/01	NF	1	1	4.66	—	—	—	—	—
Cobalt	3	1190	09/18/01	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	3	1190	09/18/01	NF	1	0	—	[0.737]	—	—	—	—
Copper	3	1190	09/18/01	F	1	0	—	[1.02]	1300	0/1	1000	0/1
Copper	3	1190	09/18/01	NF	1	0	—	[1.02]	—	—	—	—
Cyanide (total)	3	1190	09/18/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	3	1190	09/18/01	F	1	1	360	—	4000	0/1	1600	0/1
Iron	3	1190	09/18/01	F	1	0	—	[2.24]	300	0/1	1000	0/1
Iron	3	1190	09/18/01	NF	1	0	—	[23.9]	—	—	—	—
Lead	3	1190	09/18/01	F	1	0	—	[0.011]	15	0/1	50	0/1
Lead	3	1190	09/18/01	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	3	1190	09/18/01	F	1	1	3260	—	—	—	—	—
Magnesium	3	1190	09/18/01	NF	1	1	3210	—	—	—	—	—
Manganese	3	1190	09/18/01	F	1	1	4.57	—	50	0/1	200	0/1
Manganese	3	1190	09/18/01	NF	1	1	6.9	—	—	—	—	—
Mercury	3	1190	09/18/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	3	1190	09/18/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	3	1190	09/18/01	F	1	1	0.94	—	—	—	—	—
Molybdenum	3	1190	09/18/01	NF	1	1	1.35 to 1.35	—	—	—	—	—
Nickel	3	1190	09/18/01	F	1	0	—	[1.26]	100	0/1	200	0/1
Nickel	3	1190	09/18/01	NF	1	1	1.54	—	—	—	—	—
Nitrate-Nitrite (as N)	3	1190	09/18/01	F	1	1	250	—	10000	0/1	—	—

Table D-21 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Oxalate	3	1190	09/18/01	F	1	0	—	[190]	—	—	—	—
Perchlorate	3	1190	09/18/01	F	1	0	—	[0.958]	—	—	—	—
Potassium	3	1190	09/18/01	F	1	1	1250	—	—	—	—	—
Potassium	3	1190	09/18/01	NF	1	1	1230	—	—	—	—	—
Selenium	3	1190	09/18/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	3	1190	09/18/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	3	1190	09/18/01	F	1	1	71690	—	—	—	—	—
Silica	3	1190	09/18/01	NF	1	1	71262	—	—	—	—	—
Silver	3	1190	09/18/01	F	1	0	—	[0.679]	100	0/1	50	0/1
Silver	3	1190	09/18/01	NF	1	0	—	[0.666]	—	—	—	—
Sodium	3	1190	09/18/01	F	1	1	10700	—	—	—	—	—
Sodium	3	1190	09/18/01	NF	1	1	10600	—	—	—	—	—
Strontium	3	1190	09/18/01	F	1	1	56	—	—	—	—	—
Strontium	3	1190	09/18/01	NF	1	1	55.2	—	—	—	—	—
Sulfate	3	1190	09/18/01	F	1	1	1710	—	250000	0/1	600000	0/1
Thallium	3	1190	09/18/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	3	1190	09/18/01	NF	1	0	—	[0.021]	—	—	—	—
Total Kjeldahl Nitrogen	3	1190	09/18/01	F	1	1	130	—	—	—	—	—
Phosphorus (as PO_4)	3	1190	09/18/01	F	1	1	60	—	—	—	—	—
Uranium	3	1190	09/18/01	F	1	1	0.38	—	20	0/1	5000	0/1
Uranium	3	1190	09/18/01	NF	1	1	0.38	—	—	—	—	—
Vanadium	3	1190	09/18/01	F	1	1	4.69	—	—	—	—	—
Vanadium	3	1190	09/18/01	NF	1	1	4.63	—	—	—	—	—
Zinc	3	1190	09/18/01	F	1	0	—	[2.64]	5000	0/1	10000	0/1
Zinc	3	1190	09/18/01	NF	1	0	—	[3.08]	—	—	—	—

Table D-21 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD	3	1190	09/18/01	NF	1	1	-76	—	—	—	—	—
$\delta^{15}N$	3	1190	09/18/01	NF	1	1	+1.9	—	—	—	—	—
$\delta^{18}O$	3	1190	09/18/01	NF	1	1	-11.1	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-22
Regional Well R-19 Screen 4 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	4	1413	09/19/01	NF[e]	1	1	12000	—[f]	—	—	—	—
pH	4	1413	09/19/01	NF	1	1	7.50	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	4	1413	09/19/01	NF	1	1	105	—	—	0/1	—	0/1
Temperature (°C)	4	1413	09/19/01	NF	1	1	22.7	—	—	0/1	—	0/1
Turbidity (NTU[g])	4	1413	09/19/01	NF	1	1	0.5	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as CO_3)	4	1413	09/19/01	F[h]	1	1	58000	—	—	—	—	—
Aluminum	4	1413	09/19/01	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	4	1413	09/19/01	NF	1	0	—	[9.54]	—	—	—	—
Ammonia	4	1413	09/19/01	F	1	0	—	[23.5]	—	—	—	—
Antimony	4	1413	09/19/01	F	1	0	—	[0.15]	6	0/1	—	—
Antimony	4	1413	09/19/01	NF	1	0	—	[0.05]	—	—	—	—
Arsenic	4	1413	09/19/01	F	1	0	—	[2.6]	50	0/1	100	0/1
Arsenic	4	1413	09/19/01	NF	1	0	—	[2.6]	—	—	—	—
Barium	4	1413	09/19/01	F	1	1	37.4	—	2000	0/1	1000	0/1
Barium	4	1413	09/19/01	NF	1	1	38.6	—	—	—	—	—
Beryllium	4	1413	09/19/01	F	1	0	—	[0.003]	4	0/1	—	—
Beryllium	4	1413	09/19/01	NF	1	0	—	[0.003]	—	—	—	—
Boron	4	1413	09/19/01	F	1	0	—	[3.39]	—	—	750	0/1
Boron	4	1413	09/19/01	NF	1	0	—	[3.39]	—	—	—	—
Bromide	4	1413	09/19/01	F	1	0	—	[20]	—	—	—	—
Cadmium	4	1413	09/19/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	4	1413	09/19/01	NF	1	0	—	[0.017]	—	—	—	—

Table D-22 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	4	1413	09/19/01	F	1	1	9400	—	—	—	—	—
Calcium	4	1413	09/19/01	NF	1	1	9380	—	—	—	—	—
Chloride	4	1413	09/19/01	F	1	1	1480	—	250000	0/1	250000	0/1
Chromium	4	1413	09/19/01	F	1	0	—	[2.69]	100	0/1	50	0/1
Chromium	4	1413	09/19/01	NF	1	1	3.82	—	—	—	—	—
Cobalt	4	1413	09/19/01	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	4	1413	09/19/01	NF	1	0	—	[0.737]	—	—	—	—
Copper	4	1413	09/19/01	F	1	1	1.43	—	1300	0/1	1000	0/1
Copper	4	1413	09/19/01	NF	1	0	—	[1.02]	—	—	—	—
Cyanide (total)	4	1413	09/19/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	4	1413	09/19/01	F	1	1	301	—	4000	0/1	1600	0/1
Iron	4	1413	09/19/01	F	1	0	—	[2.24]	300	0/1	1000	0/1
Iron	4	1413	09/19/01	NF	1	0	—	[2.24]	—	—	—	—
Lead	4	1413	09/19/01	F	1	0	—	[0.011]	15	0/1	50	0/1
Lead	4	1413	09/19/01	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	4	1413	09/19/01	F	1	1	2800	—	—	—	—	—
Magnesium	4	1413	09/19/01	NF	1	1	2770	—	—	—	—	—
Manganese	4	1413	09/19/01	F	1	1	1.69	—	50	0/1	200	0/1
Manganese	4	1413	09/19/01	NF	1	1	1.84	—	—	—	—	—
Mercury	4	1413	09/19/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	4	1413	09/19/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	4	1413	09/19/01	F	1	1	1.32	—	—	—	—	—
Molybdenum	4	1413	09/19/01	NF	1	1	1.49	—	—	—	—	—
Nickel	4	1413	09/19/01	F	1	0	—	[1.26]	100	0/1	200	0/1
Nickel	4	1413	09/19/01	NF	1	0	—	[1.26]	—	—	—	—
Nitrate-Nitrite (as N)	4	1413	09/19/01	F	1	1	340	—	10000	0/1	—	—
Oxalate	4	1413	09/19/01	F	1	0	—	[190]	—	—	—	—

Table D-22 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Perchlorate	4	1413	09/19/01	F	1	0	—	[0.958]	—	—	—	—
Potassium	4	1413	09/19/01	F	1	1	1570	—	—	—	—	—
Potassium	4	1413	09/19/01	NF	1	1	1550	—	—	—	—	—
Selenium	4	1413	09/19/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	4	1413	09/19/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	4	1413	09/19/01	F	1	1	71904	—	—	—	—	—
Silica	4	1413	09/19/01	NF	1	1	72546	—	—	—	—	—
Silver	4	1413	09/19/01	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	4	1413	09/19/01	NF	1	0	—	[0.878]	—	—	—	—
Sodium	4	1413	09/19/01	F	1	1	10600	—	—	—	—	—
Sodium	4	1413	09/19/01	NF	1	1	10900	—	—	—	—	—
Strontium	4	1413	09/19/01	F	1	1	47.4	—	—	—	—	—
Strontium	4	1413	09/19/01	NF	1	1	48.3	—	—	—	—	—
Sulfate	4	1413	09/19/01	F	1	1	1570	—	250000	0/1	600000	0/1
Thallium	4	1413	09/19/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	4	1413	09/19/01	NF	1	0	—	[0.021]	—	—	—	—
Total Kjeldahl Nitrogen	4	1413	09/19/01	F	1	1	80	—	—	—	—	—
Phosphorus (as PO_4)	4	1413	09/19/01	F	1	0	—	[19.4]	—	—	—	—
Uranium	4	1413	09/19/01	F	1	1	0.39	—	20	0/1	5000	0/1
Uranium	4	1413	09/19/01	NF	1	1	0.41	—	—	—	—	—
Vanadium	4	1413	09/19/01	F	1	1	5.37	—	—	—	—	—
Vanadium	4	1413	09/19/01	NF	1	1	4.84	—	—	—	—	—
Zinc	4	1413	09/19/01	F	1	1	5.94	—	5000	0/1	10000	0/1
Zinc	4	1413	09/19/01	NF	1	1	5.93	—	—	—	—	—

Table D-22 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD	4	1413	09/19/01	NF	1	1	-77	—	—	—	—	—
$\delta^{15}N$	4	1413	09/19/01	NF	1	1	+0.3	—	—	—	—	—
$\delta^{18}O$	4	1413	09/19/01	NF	1	1	-11.5	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-23
Regional Well R-19 Screen 5 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	5	1586	09/20/01	NF[e]	1	1	79000	—[f]	—	—	—	—
pH	5	1586	09/20/01	NF	1	1	7.27	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	5	1586	09/20/01	NF	1	1	232.5	—	—	0/1	—	0/1
Temperature (°C)	5	1586	09/20/01	NF	1	1	22.2	—	—	0/1	—	0/1
Turbidity (NTU[g])	5	1586	09/20/01	NF	1	1	6.5	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as CO_3)	5	1586	09/20/01	F[h]	1	1	145000	—	—	—	—	—
Aluminum	5	1586	09/20/01	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	5	1586	09/20/01	NF	1	0	—	[9.54]	—	—	—	—
Ammonia	5	1586	09/20/01	F	1	1	790	—	—	—	—	—
Antimony	5	1586	09/20/01	F	1	0	—	[0.1]	6	0/1	—	—
Antimony	5	1586	09/20/01	NF	1	0	—	[0.19]	—	—	—	—
Arsenic	5	1586	09/20/01	F	1	1	3.7	—	50	0/1	100	0/1
Arsenic	5	1586	09/20/01	NF	1	1	5.42	—	—	—	—	—
Barium	5	1586	09/20/01	F	1	1	110	—	2000	0/1	1000	0/1
Barium	5	1586	09/20/01	NF	1	1	114	—	—	—	—	—
Beryllium	5	1586	09/20/01	F	1	0	—	[0.003]	4	0/1	—	—
Beryllium	5	1586	09/20/01	NF	1	0	—	[0.003]	—	—	—	—
Boron	5	1586	09/20/01	F	1	1	17.7	—	—	—	750	0/1
Boron	5	1586	09/20/01	NF	1	1	16.8	—	—	—	—	—
Bromide	5	1586	09/20/01	F	1	0	—	[20]	—	—	—	—
Cadmium	5	1586	09/20/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	5	1586	09/20/01	NF	1	0	—	[0.017]	—	—	—	—

Table D-23 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	5	1586	09/20/01	F	1	1	31600	—	—	—	—	—
Calcium	5	1586	09/20/01	NF	1	1	31800	—	—	—	—	—
Chloride	5	1586	09/20/01	F	1	1	1910	—	250000	0/1	250000	0/1
Chromium	5	1586	09/20/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Chromium	5	1586	09/20/01	NF	1	0	—	[2.01]	—	—	—	—
Cobalt	5	1586	09/20/01	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	5	1586	09/20/01	NF	1	1	0.793	—	—	—	—	—
Copper	5	1586	09/20/01	F	1	0	—	[1.02]	1300	0/1	1000	0/1
Copper	5	1586	09/20/01	NF	1	0	—	[1.02]	—	—	—	—
Cyanide (total)	5	1586	09/20/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	5	1586	09/20/01	F	1	1	316	—	4000	0/1	1600	0/1
Iron	5	1586	09/20/01	F	1	1	5180	—	300	1/1	1000	1/1
Iron	5	1586	09/20/01	NF	1	1	7190	—	—	—	—	—
Lead	5	1586	09/20/01	F	1	0	—	[0.011]	15	0/1	50	0/1
Lead	5	1586	09/20/01	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	5	1586	09/20/01	F	1	1	4900	—	—	—	—	—
Magnesium	5	1586	09/20/01	NF	1	1	4990	—	—	—	—	—
Manganese	5	1586	09/20/01	F	1	1	850	—	50	1/1	200	1/1
Manganese	5	1586	09/20/01	NF	1	1	790	—	—	—	—	—
Mercury	5	1586	09/20/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	5	1586	09/20/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	5	1586	09/20/01	F	1	1	9.64	—	—	—	—	—
Molybdenum	5	1586	09/20/01	NF	1	1	9.17	—	—	—	—	—
Nickel	5	1586	09/20/01	F	1	1	1.54	—	100	0/1	200	0/1
Nickel	5	1586	09/20/01	NF	1	1	3.51	—	—	—	—	—
Nitrate-Nitrite (as N)	5	1586	09/20/01	F	1	1	10	—	10000	0/1	—	—
Oxalate	5	1586	09/20/01	F	1	0	—	[190]	—	—	—	—

Table D-23 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Perchlorate	5	1586	09/20/01	F	1	0	—	[0.958]	—	—	—	—
Potassium	5	1586	09/20/01	F	1	1	2610	—	—	—	—	—
Potassium	5	1586	09/20/01	NF	1	1	2580	—	—	—	—	—
Selenium	5	1586	09/20/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	5	1586	09/20/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	5	1586	09/20/01	F	1	1	48578	—	—	—	—	—
Silica	5	1586	09/20/01	NF	1	1	52216	—	—	—	—	—
Silver	5	1586	09/20/01	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	5	1586	09/20/01	NF	1	0	—	[0.746]	—	—	—	—
Sodium	5	1586	09/20/01	F	1	1	14800	—	—	—	—	—
Sodium	5	1586	09/20/01	NF	1	1	14900	—	—	—	—	—
Lab Specific Conductance	5	1586	09/20/01	F	1	1	243	—	—	—	—	—
Strontium	5	1586	09/20/01	F	1	1	717	—	—	—	—	—
Strontium	5	1586	09/20/01	NF	1	1	699	—	—	—	—	—
Sulfate	5	1586	09/20/01	F	1	0	—	[62]	250000	0/1	600000	0/1
Thallium	5	1586	09/20/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	5	1586	09/20/01	NF	1	1	0.55	—	—	—	—	—
Total Kjeldahl Nitrogen	5	1586	09/20/01	F	1	1	960	—	—	—	—	—
Phosphorus (as PO_4)	5	1586	09/20/01	F	1	1	60	—	—	—	—	—
Uranium	5	1586	09/20/01	F	1	0	—	[0.003]	20	0/1	5000	0/1
Uranium	5	1586	09/20/01	NF	1	0	—	[0.003]	—	—	—	—
Vanadium	5	1586	09/20/01	F	1	0	—	[0.482]	—	—	—	—
Vanadium	5	1586	09/20/01	NF	1	1	0.906	—	—	—	—	—
Zinc	5	1586	09/20/01	F	1	1	3.64	—	5000	0/1	10000	0/1
Zinc	5	1586	09/20/01	NF	1	1	6.49	—	—	—	—	—

Table D-23 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD	5	1586	09/20/01	NF	1	1	-78	—	—	—	—	—
$\delta^{15}N$	5	1586	09/20/01	NF	1	1	-0.5	—	—	—	—	—
$\delta^{18}O$	5	1586	09/20/01	NF	1	1	-11.2	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-24
Regional Well R-19 Screen 6 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	6	1730	09/21/01	NF[e]	1	1	27000	—[f]	—			
pH	6	1730	09/21/01	NF	1	1	7.17	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	6	1730	09/21/01	NF	1	1	130.3	—	—	0/1	—	0/1
Temperature (°C)	6	1730	09/21/01	NF	1	1	22.7	—	—	0/1	—	0/1
Turbidity (NTU[g])	6	1730	09/21/01	NF	1	1	1.1	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as CO_3)	6	1730	09/21/01	F[h]	1	1	66700	—	—	—	—	—
Aluminum	6	1730	09/21/01	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	6	1730	09/21/01	NF	1	0	—	[9.54]	—	—	—	—
Ammonia	6	1730	09/21/01	F	1	1	490	—	—	—	—	—
Antimony	6	1730	09/21/01	F	1	0	—	[0.07]	6	0/1	—	—
Antimony	6	1730	09/21/01	NF	1	0	—	[0.05]	—	—	—	—
Arsenic	6	1730	09/21/01	F	1	1	4.88	—	50	0/1	100	0/1
Arsenic	6	1730	09/21/01	NF	1	0	—	[2.6]	—	—	—	—
Barium	6	1730	09/21/01	F	1	1	14.2	—	2000	0/1	1000	0/1
Barium	6	1730	09/21/01	NF	1	1	14.8	—	—	—	—	—
Beryllium	6	1730	09/21/01	F	1	0	—	[0.003]	4	0/1	—	—
Beryllium	6	1730	09/21/01	NF	1	0	—	[0.003]	—	—	—	—
Boron	6	1730	09/21/01	F	1	0	—	[3.39]	—	—	750	0/1
Boron	6	1730	09/21/01	NF	1	0	—	[3.39]	—	—	—	—
Bromide	6	1730	09/21/01	F	1	0	—	[20]	—	—	—	—
Cadmium	6	1730	09/21/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	6	1730	09/21/01	NF	1	0	—	[0.017]	—	—	—	—

Table D-24 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	6	1730	09/21/01	F	1	1	5060	—	—	—	—	—
Calcium	6	1730	09/21/01	NF	1	1	5080	—	—	—	—	—
Chloride	6	1730	09/21/01	F	1	1	1700	—	250000	0/1	250000	0/1
Chromium	6	1730	09/21/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Chromium	6	1730	09/21/01	NF	1	0	—	[1.31]	—	—	—	—
Cobalt	6	1730	09/21/01	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	6	1730	09/21/01	NF	1	0	—	[0.737]	—	—	—	—
Copper	6	1730	09/21/01	F	1	0	—	[1.02]	1300	0/1	1000	0/1
Copper	6	1730	09/21/01	NF	1	0	—	[1.02]	—	—	—	—
Cyanide (total)	6	1730	09/21/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	6	1730	09/21/01	F	1	1	275	—	4000	0/1	1600	0/1
Iron	6	1730	09/21/01	F	1	1	4080	—	300	1/1	1000	1/1
Iron	6	1730	09/21/01	NF	1	1	4100	—	—	—	—	—
Lead	6	1730	09/21/01	F	1	0	—	[0.011]	15	0/1	50	0/1
Lead	6	1730	09/21/01	NF	1	0	—	[0.011]	—	—	—	—
Magnesium	6	1730	09/21/01	F	1	1	1420	—	—	—	—	—
Magnesium	6	1730	09/21/01	NF	1	1	1420	—	—	—	—	—
Manganese	6	1730	09/21/01	F	1	1	409	—	50	1/1	200	1/1
Manganese	6	1730	09/21/01	NF	1	1	406	—	—	—	—	—
Mercury	6	1730	09/21/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	6	1730	09/21/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	6	1730	09/21/01	F	1	1	5.19	—	—	—	—	—
Molybdenum	6	1730	09/21/01	NF	1	1	5.15	—	—	—	—	—
Nickel	6	1730	09/21/01	F	1	0	—	[1.26]	100	0/1	200	0/1
Nickel	6	1730	09/21/01	NF	1	0	—	[1.26]	—	—	—	—
Nitrate-Nitrite (as N)	6	1730	09/21/01	F	1	0	—	[6.9]	10000	0/1	—	—
Oxalate	6	1730	09/21/01	F	1	1	758	—	—	—	—	—

Table D-24 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Perchlorate	6	1730	09/21/01	F	1	0	—	[0.958]	—	—	—	—
Potassium	6	1730	09/21/01	F	1	1	1550	—	—	—	—	—
Potassium	6	1730	09/21/01	NF	1	1	1530	—	—	—	—	—
Selenium	6	1730	09/21/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	6	1730	09/21/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	6	1730	09/21/01	F	1	1	77682	—	—	—	—	—
Silica	6	1730	09/21/01	NF	1	1	77254	—	—	—	—	—
Silver	6	1730	09/21/01	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	6	1730	09/21/01	NF	1	0	—	[0.666]	—	—	—	—
Sodium	6	1730	09/21/01	F	1	1	20200	—	—	—	—	—
Sodium	6	1730	09/21/01	NF	1	1	20500	—	—	—	—	—
Lab Specific Conductance	6	1730	09/21/01	F	1	1	93	—	—	—	—	—
Strontium	6	1730	09/21/01	F	1	1	28	—	—	—	—	—
Strontium	6	1730	09/21/01	NF	1	1	31.6	—	—	—	—	—
Sulfate	6	1730	09/21/01	F	1	0	—	[62]	250000	0/1	600000	0/1
Thallium	6	1730	09/21/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	6	1730	09/21/01	NF	1	0	—	[0.021]	—	—	—	—
Total Kjeldahl Nitrogen	6	1730	09/21/01	F	1	1	920	—	—	—	—	—
Phosphorus (as PO_4)	6	1730	09/21/01	F	1	1	100	—	—	—	—	—
Uranium	6	1730	09/21/01	F	1	0	—	[0.2]	20	0/1	5000	0/1
Uranium	6	1730	09/21/01	NF	1	0	—	[0.2]	—	—	—	—
Vanadium	6	1730	09/21/01	F	1	0	—	[0.482]	—	—	—	—
Vanadium	6	1730	09/21/01	NF	1	0	—	[0.482]	—	—	—	—
Zinc	6	1730	09/21/01	F	1	1	5.99	—	5000	0/1	10000	0/1
Zinc	6	1730	09/21/01	NF	1	1	5	—	—	—	—	—

Table D-24 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD	6	1730	09/21/01	NF	1	1	-76	—	—	—	—	—
$\delta^{15}N$	6	1730	09/21/01	NF	1	1	+2.8	—	—	—	—	—
$\delta^{18}O$	6	1730	09/21/01	NF	1	1	-11.1	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-25
Regional Well R-19 Screen 7 Fourth Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	7	1835	09/24/01	NF[e]	1	1	110000	—[f]	—			
pH	7	1835	09/24/01	NF	1	1	7.55	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	7	1835	09/24/01	NF	1	1	431	—	—	0/1	—	0/1
Temperature (°C)	7	1835	09/24/01	NF	1	1	23.6	—	—	0/1	—	0/1
Turbidity (NTU[g])	7	1835	09/24/01	NF	1	1	17	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as CO_3)	7	1835	09/24/01	F[h]	1	1	160000	—	—	—	—	—
Aluminum	7	1835	09/24/01	F	1	0	—	[9.54]	50	0/1	5000	0/1
Aluminum	7	1835	09/24/01	NF	1	1	795	—	—	—	—	—
Ammonia	7	1835	09/24/01	F	1	1	270	—	—	—	—	—
Antimony	7	1835	09/24/01	F	1	0	—	[0.17]	6	0/1	—	—
Antimony	7	1835	09/24/01	NF	1	0	—	[0.15]	—	—	—	—
Arsenic	7	1835	09/24/01	F	1	1	11.4	—	50	0/1	100	0/1
Arsenic	7	1835	09/24/01	NF	1	1	11	—	—	—	—	—
Barium	7	1835	09/24/01	F	1	1	10.4	—	2000	0/1	1000	0/1
Barium	7	1835	09/24/01	NF	1	1	22	—	—	—	—	—
Beryllium	7	1835	09/24/01	F	1	1	0.01	—	4	0/1	—	—
Beryllium	7	1835	09/24/01	NF	1	1	0.12	—	—	—	—	—
Boron	7	1835	09/24/01	F	1	1	10.5	—	—	—	750	0/1
Boron	7	1835	09/24/01	NF	1	1	11.6	—	—	—	—	—
Bromide	7	1835	09/24/01	F	1	0	—	[20]	—	—	—	—
Cadmium	7	1835	09/24/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	7	1835	09/24/01	NF	1	0	—	[0.017]	—	—	—	—

Table D-25 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Calcium	7	1835	09/24/01	F	1	1	2840	—	—	—	—	—
Calcium	7	1835	09/24/01	NF	1	1	3450	—	—	—	—	—
Chloride	7	1835	09/24/01	F	1	1	2110	—	250000	0/1	250000	0/1
Chromium	7	1835	09/24/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Chromium	7	1835	09/24/01	NF	1	0	—	[2.09]	—	—	—	—
Cobalt	7	1835	09/24/01	F	1	0	—	[0.737]	—	—	50	0/1
Cobalt	7	1835	09/24/01	NF	1	0	—	[0.737]	—	—	—	—
Copper	7	1835	09/24/01	F	1	0	—	[1.02]	1300	0/1	1000	0/1
Copper	7	1835	09/24/01	NF	1	0	—	[1.02]	—	—	—	—
Cyanide (total)	7	1835	09/24/01	NF	1	0	—	[2.89]	—	—	—	—
Fluoride	7	1835	09/24/01	F	1	1	593	—	4000	0/1	1600	0/1
Iron	7	1835	09/24/01	F	1	1	109	—	300	0/1	1000	0/1
Iron	7	1835	09/24/01	NF	1	1	1070	—	—	—	—	—
Lead	7	1835	09/24/01	F	1	1	0.28	—	15	0/1	50	0/1
Lead	7	1835	09/24/01	NF	1	1	1.9	—	—	—	—	—
Magnesium	7	1835	09/24/01	F	1	1	754	—	—	—	—	—
Magnesium	7	1835	09/24/01	NF	1	1	969	—	—	—	—	—
Manganese	7	1835	09/24/01	F	1	1	89.5	—	50	1/1	200	0/1
Manganese	7	1835	09/24/01	NF	1	1	116	—	—	—	—	—
Mercury	7	1835	09/24/01	F	1	0	—	[0.064]	2	0/1	—	—
Mercury	7	1835	09/24/01	NF	1	0	—	[0.064]	—	—	2	0/1
Molybdenum	7	1835	09/24/01	F	1	1	31.3	—	—	—	—	—
Molybdenum	7	1835	09/24/01	NF	1	1	35.2	—	—	—	—	—
Nickel	7	1835	09/24/01	F	1	0	—	[1.26]	100	0/1	200	0/1
Nickel	7	1835	09/24/01	NF	1	1	2.73	—	—	—	—	—
Nitrate-Nitrite (as N)	7	1835	09/24/01	F	1	0	—	[6.9]	10000	0/1	—	—
Oxalate	7	1835	09/24/01	F	1	0	—	[190]	—	—	—	—

Table D-25 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Perchlorate	7	1835	09/24/01	F	1	0	—	[0.958]	—	—	—	—
Potassium	7	1835	09/24/01	F	1	1	1640	—	—	—	—	—
Potassium	7	1835	09/24/01	NF	1	1	1820	—	—	—	—	—
Selenium	7	1835	09/24/01	F	1	0	—	[3.49]	50	0/1	50	0/1
Selenium	7	1835	09/24/01	NF	1	0	—	[3.49]	—	—	—	—
Silica	7	1835	09/24/01	F	1	1	54356	—	—	—	—	—
Silica	7	1835	09/24/01	NF	1	1	55640	—	—	—	—	—
Silver	7	1835	09/24/01	F	1	0	—	[0.666]	100	0/1	50	0/1
Silver	7	1835	09/24/01	NF	1	0	—	[0.666]	—	—	—	—
Sodium	7	1835	09/24/01	F	1	1	109000	—	—	—	—	—
Sodium	7	1835	09/24/01	NF	1	1	116000	—	—	—	—	—
Lab Specific Conductance	7	1835	09/24/01	F	1	1	68	—	—	—	—	—
Strontium	7	1835	09/24/01	F	1	1	28.7	—	—	—	—	—
Strontium	7	1835	09/24/01	NF	1	1	36.6	—	—	—	—	—
Sulfate	7	1835	09/24/01	F	1	1	34600	—	250000	0/1	600000	0/1
Thallium	7	1835	09/24/01	F	1	0	—	[0.021]	2	0/1	—	—
Thallium	7	1835	09/24/01	NF	1	1	0.1	—	—	—	—	—
Total Kjeldahl Nitrogen	7	1835	09/24/01	F	1	1	570	—	—	—	—	—
Phosphorus (as PO_4)	7	1835	09/24/01	F	1	1	160	—	—	—	—	—
Uranium	7	1835	09/24/01	F	1	1	0.89	—	20	0/1	5000	0/1
Uranium	7	1835	09/24/01	NF	1	1	1.33	—	—	—	—	—
Vanadium	7	1835	09/24/01	F	1	1	0.582	—	—	—	—	—
Vanadium	7	1835	09/24/01	NF	1	1	0.913	—	—	—	—	—
Zinc	7	1835	09/24/01	F	1	1	4	—	5000	0/1	10000	0/1
Zinc	7	1835	09/24/01	NF	1	1	16.9	—	—	—	—	—

Table D-25 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Stable Isotope (‰)												
δD	7	1835	09/24/01	NF	1	1	-77	—	—	—	—	—
$\delta^{15}N$	7	1835	09/24/01	NF	1	1	+3.2	—	—	—	—	—
$\delta^{18}O$	7	1835	09/24/01	NF	1	1	-11.3	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-26
Regional Well R-19 Screen 2 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acenaphthene	2	909	09/13/01	NF[e]	1	1	0.18	—[f]	—	—	—	—
Acenaphthylene	2	909	09/13/01	NF	1	1	0.16	—	—	—	—	—
Acetone	2	909	09/13/01	NF	1	1	3.1	—	—	—	—	—
Anthracene	2	909	09/13/01	NF	1	1	0.2	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	2	909	09/13/01	NF	1	1	0.17	—	6	0/1	—	—
Fluoranthene	2	909	09/13/01	NF	1	1	0.19	—	—	—	—	—
Phenanthrene	2	909	09/13/01	NF	1	1	0.24	—	—	—	—	—
Pyrene	2	909	09/13/01	NF	1	1	0.19	—	—	—	—	—
Dissolved Organic Carbon	2	909	09/13/01	F	1	1	0.562	—	—	—	—	—
Total Organic Carbon	2	909	09/13/01	NF	1	1	0.73	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

Table D-27
Regional Well R-19 Screen 3 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acenaphthylene	3	1190	09/18/01	NF[e]	1	1	0.2	—[f]	—	—	—	—
Acetone	3	1190	09/18/01	NF	1	1	2.1	—	—	—	—	—
Anthracene	3	1190	09/18/01	NF	1	1	0.25	—	—	—	—	—
Benzo(b)fluoranthene	3	1190	09/18/01	NF	1	1	0.17	—	—	—	—	—
DDT[4,4'-]	3	1190	09/18/01	NF	1	1	0.021	—	—	—	—	—
Fluoranthene	3	1190	09/18/01	NF	1	1	0.22	—	—	—	—	—
Phenanthrene	3	1190	09/18/01	NF	1	1	0.28	—	—	—	—	—
Pyrene	3	1190	09/18/01	NF	1	1	0.23	—	—	—	—	—
Dissolved Organic Carbon	3	1190	09/18/01	F[g]	1	1	0.327	—	—	—	—	—
Total Organic Carbon	3	1190	09/18/01	NF	1	1	0.5	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] F = Filtered.

Table D-28
Regional Well R-19 Screen 4 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Total Organic Carbon	4	1413	09/19/01	F[e]	1	1	0.47	—[f]	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] F = Filtered.

[f] — = Not available or not applicable.

Table D-29
Regional Well R-19 Screen 5 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acetone	5	1586	09/20/01	NF[e]	1	1	13.1	—[f]	—	—	—	—
Benzene	5	1586	09/20/01	NF	1	1	0.22	—	5	0/1	10	0/1
Dissolved Organic Carbon	5	1586	09/20/01	F[g]	1	1	6.9	—	—	—	—	—
Humic Substances, Hydrophilic Acids	5	1586	09/20/01	F	1	1	1.3	—	—	—	—	—
Humic Substances, Hydrophilic Bases	5	1586	09/20/01	F	1	1	0.2	—	—	—	—	—
Humic Substances, Hydrophilic Neutrals	5	1586	09/20/01	F	1	1	0.2	—	—	—	—	—
Humic Substances, Hydrophilic Total	5	1586	09/20/01	F	1	1	1.7	—	—	—	—	—
Humic Substances, Hydrophobic Acids	5	1586	09/20/01	F	1	1	2.9	—	—	—	—	—
Humic Substances, Hydrophobic Bases	5	1586	09/20/01	F	1	1	0.1	—	—	—	—	—
Humic Substances, Hydrophobic Neutrals	5	1586	09/20/01	F	1	1	2.2	—	—	—	—	—
Humic Substances, Hydrophobic Total	5	1586	09/20/01	F	1	1	5.2	—	—	—	—	—
Total Organic Carbon	5	1586	09/20/01	NF	1	1	6.43	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] F = Filtered.

Table D-30
Regional Well R-19 Screen 6 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Dissolved Organic Carbon	6	1730	09/21/01	F[e]	1	1	3.3	—[f]	—	—	—	—
Humic Substances, Hydrophilic Acids	6	1730	09/21/01	F	1	1	0.9	—	—	—	—	—
Humic Substances, Hydrophilic Bases	6	1730	09/21/01	F	1	1	0.1	—	—	—	—	—
Humic Substances, Hydrophilic Neutrals	6	1730	09/21/01	F	1	1	0.6	—	—	—	—	—
Humic Substances, Hydrophilic Total	6	1730	09/21/01	F	1	1	1.6	—	—	—	—	—
Humic Substances, Hydrophobic Acids	6	1730	09/21/01	F	1	1	0.4	—	—	—	—	—
Humic Substances, Hydrophobic Bases	6	1730	09/21/01	F	1	1	0	—	—	—	—	—
Humic Substances, Hydrophobic Neutrals	6	1730	09/21/01	F	1	1	1.3	—	—	—	—	—
Humic Substances, Hydrophobic Total	6	1730	09/21/01	F	1	1	1.7	—	—	—	—	—
Total Organic Carbon	6	1730	09/21/01	NF[g]	1	1	2.96	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] F = Filtered.

[f] — = Not available or not applicable.

[g] NF = Nonfiltered.

Table D-31
Regional Well R-19 Screen 7 Fourth Round Sample Results: Data Summary for Detected Organic Chemicals

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acetone	7	1834	09/24/01	NF[e]	1	1	5.7	—[f]	—	—	—	—
Chloromethane	7	1834	09/24/01	NF	1	1	1.8	—	—	—	—	—
Dissolved Organic Carbon	7	1834	09/24/01	F[g]	1	1	5.5	—	—	—	—	—
Humic Substances, Hydrophilic Acids	7	1834	09/24/01	F	1	1	1.4	—	—	—	—	—
Humic Substances, Hydrophilic Bases	7	1834	09/24/01	F	1	1	0.3	—	—	—	—	—
Humic Substances, Hydrophilic Neutrals	7	1834	09/24/01	F	1	1	0.4	—	—	—	—	—
Humic Substances, Hydrophilic Total	7	1834	09/24/01	F	1	1	2.1	—	—	—	—	—
Humic Substances, Hydrophobic Acids	7	1834	09/24/01	F	1	1	1.9	—	—	—	—	—
Humic Substances, Hydrophobic Bases	7	1834	09/24/01	F	1	1	0	—	—	—	—	—
Humic Substances, Hydrophobic Neutrals	7	1834	09/24/01	F	1	1	1.5	—	—	—	—	—
Humic Substances, Hydrophobic Total	7	1834	09/24/01	F	1	1	3.4	—	—	—	—	—
Total Organic Carbon	7	1834	09/24/01	NF	1	1	4.14	—	—	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from *New Mexico Water Quality Control Commission Regulations, Ground and Surface Water Protection*, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or not applicable.

[g] F = Filtered.

Table D-32
Regional Well R-19 Screen 2 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	2	909	09/13/01	F[c]	1	0	—[d]	[0.00573]	15[e]	0/2
Cesium-134	2	909	09/13/01	F	1	0	—	[-1.94]	—	—
Cesium-137	2	909	09/13/01	F	1	0	—	[-3.32]	—	—
Cobalt-60	2	909	09/13/01	F	1	0	—	[1.41]	—	—
Europium-152	2	909	09/13/01	F	1	0	—	[-1.71]	—	—
Gross Alpha Radiation	2	909	09/13/01	NF[f]	1	0	—	[0.704]	—	—
Gross Beta Radiation	2	909	09/13/01	NF	1	1	1.79	—	—	—
Gross Gamma Radiation	2	909	09/13/01	NF	1	0	—	[40.5]	—	—
Plutonium-238	2	909	09/13/01	F	1	0	—	[0.00183]	15[e]	0/1
Plutonium-239	2	909	09/13/01	F	1	0	—	[-0.000367]	15[e]	0/1
Ruthenium-106	2	909	09/13/01	F	1	0	—	[23.4]	—	—
Strontium-90	2	909	09/13/01	F	1	0	—	[0.191]	8	0/1
Tritium	2	909	09/13/01	NF	1	0	—	[-0.15965]	20000	0/1
Uranium-234	2	909	09/13/01	F	1	1	0.225	—	—	—
Uranium-235	2	909	09/13/01	F	1	0	—	[0.00716]	—	—
Uranium-238	2	909	09/13/01	F	1	1	0.115	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-33
Regional Well R-19 Screen 3 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	3	1190	09/18/01	F[c]	1	0	—[d]	[0.00524]	15[e]	0/2
Cesium-134	3	1190	09/18/01	F	1	0	—	[1.71]	—	—
Cesium-137	3	1190	09/18/01	F	1	0	—	[0.0887]	—	—
Cobalt-60	3	1190	09/18/01	F	1	0	—	[0.0583]	—	—
Europium-152	3	1190	09/18/01	F	1	0	—	[9.12]	—	—
Gross Alpha Radiation	3	1190	09/18/01	NF[f]	1	0	—	[0.868]	—	—
Gross Beta Radiation	3	1190	09/18/01	NF	1	1	1.77	—	—	—
Gross Gamma Radiation	3	1190	09/18/01	NF	1	0	—	[1.11]	—	—
Plutonium-238	3	1190	09/18/01	F	1	0	—	[-0.00066]	15[e]	0/1
Plutonium-239	3	1190	09/18/01	F	1	0	—	[-0.00132]	15[e]	0/1
Ruthenium-106	3	1190	09/18/01	F	1	0	—	[-32.2]	—	—
Strontium-90	3	1190	09/18/01	F	1	0	—	[0.605]	8	0/1
Tritium	3	1190	09/18/01	NF	1	0	—	[0.12772]	20000	0/1
Uranium-234	3	1190	09/18/01	F	1	1	0.27	—	—	—
Uranium-235	3	1190	09/18/01	F	1	0	—	[0.00499]	—	—
Uranium-238	3	1190	09/18/01	F	1	1	0.0866	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-34
Regional Well R-19 Screen 4 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	4	1413	09/19/01	F[c]	1	0	—[d]	[0.0108]	15[e]	0/2
Cesium-134	4	1413	09/19/01	F	1	0	—	[0.0749]	—	—
Cesium-137	4	1413	09/19/01	F	1	0	—	[1.32]	—	—
Cobalt-60	4	1413	09/19/01	F	1	0	—	[3.21]	—	—
Europium-152	4	1413	09/19/01	F	1	0	—	[-0.762]	—	—
Gross Alpha Radiation	4	1413	09/19/01	NF[f]	1	0	—	[1.21]	—	—
Gross Beta Radiation	4	1413	09/19/01	NF	1	1	1.72	—	—	—
Gross Gamma Radiation	4	1413	09/19/01	NF	1	0	—	[32.5]	—	—
Plutonium-238	4	1413	09/19/01	F	1	0	—	[0.000436]	15[e]	0/1
Plutonium-239	4	1413	09/19/01	F	1	0	—	[0.000436]	15[e]	0/1
Ruthenium-106	4	1413	09/19/01	F	1	0	—	[16.3]	—	—
Strontium-90	4	1413	09/19/01	F	1	0	—	[0.349]	8	0/1
Tritium	4	1413	09/19/01	NF	1	0	—	[0.19158]	20000	0/1
Uranium-234	4	1413	09/19/01	F	1	1	0.165	—	—	—
Uranium-235	4	1413	09/19/01	F	1	0	—	[0.00151]	—	—
Uranium-238	4	1413	09/19/01	F	1	1	0.104	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-35
Regional Well R-19 Screen 5 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	5	1586	09/20/01	F[c]	1	0	—[d]	[-0.00118]	15[e]	0/2
Cesium-134	5	1586	09/20/01	F	1	0	—	[-1.43]	—	—
Cesium-137	5	1586	09/20/01	F	1	0	—	[3.08]	—	—
Cobalt-60	5	1586	09/20/01	F	1	0	—	[0.427]	—	—
Europium-152	5	1586	09/20/01	F	1	0	—	[-1.09]	—	—
Gross Alpha Radiation	5	1586	09/20/01	F	1	0	—	[0.788]	—	—
Gross Beta Radiation	5	1586	09/20/01	NF[f]	1	1	3.58	—	—	—
Gross Gamma Radiation	5	1586	09/20/01	NF	1	0	—	[51.5]	—	—
Plutonium-238	5	1586	09/20/01	F	1	0	—	[-0.00197]	15[e]	0/1
Plutonium-239	5	1586	09/20/01	F	1	0	—	[-0.000985]	15[e]	0/1
Ruthenium-106	5	1586	09/20/01	F	1	0	—	[-33.3]	—	—
Strontium-90	5	1586	09/20/01	F	1	0	—	[0.157]	8	0/1
Tritium	5	1586	09/20/01	NF	1	0	—	[0.19158]	20000	0/1
Uranium-234	5	1586	09/20/01	F	1	1	0.0219	—	—	—
Uranium-235	5	1586	09/20/01	F	1	0	—	[0.0047]	—	—
Uranium-238	5	1586	09/20/01	F	1	0	—	[0.00878]	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-36
Regional Well R-19 Screen 6 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	6	1730	09/21/01	F[c]	1	0	—[d]	[0.0112]	15[e]	0/2
Cesium-134	6	1730	09/21/01	F	1	0	—	[4]	—	—
Cesium-137	6	1730	09/21/01	F	1	0	—	[3.07]	—	—
Cobalt-60	6	1730	09/21/01	F	1	0	—	[1.05]	—	—
Europium-152	6	1730	09/21/01	F	1	0	—	[-0.523]	—	—
Gross Alpha Radiation	6	1730	09/21/01	NF[f]	1	0	—	[0.9]	—	—
Gross Beta Radiation	6	1730	09/21/01	NF	1	1	2.13	—	—	—
Gross Gamma Radiation	6	1730	09/21/01	NF	1	0	—	[-120]	—	—
Plutonium-238	6	1730	09/21/01	F	1	0	—	[-0.00074]	15[e]	0/1
Plutonium-239	6	1730	09/21/01	F	1	0	—	[-0.00148]	15[e]	0/1
Ruthenium-106	6	1730	09/21/01	F	1	0	—	[-29.7]	—	—
Strontium-90	6	1730	09/21/01	F	1	0	—	[0.0498]	8	0/1
Tritium	6	1730	09/21/01	NF	1	0	—	[0.47895]	20000	0/1
Uranium-234	6	1730	09/21/01	F	1	1	0.0356	—	—	—
Uranium-235	6	1730	09/21/01	F	1	0	—	[0]	—	—
Uranium-238	6	1730	09/21/01	F	1	0	—	[0.0141]	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-37
Regional Well R-19 Screen 7 Fourth Round Sample Results: Data Summary for Radionuclides

Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	7	1834	09/24/01	F[c]	1	0	—[d]	[0.00864]	15[e]	0/2
Cesium-134	7	1834	09/24/01	F	1	0	—	[-8.94]	—	—
Cesium-137	7	1834	09/24/01	F	1	0	—	[-4.19]	—	—
Cobalt-60	7	1834	09/24/01	F	1	0	—	[12.7]	—	—
Europium-152	7	1834	09/24/01	F	1	0	—	[-6.57]	—	—
Gross Alpha Radiation	7	1834	09/24/01	NF[f]	1	1	6.76	—	—	—
Gross Beta Radiation	7	1834	09/24/01	NF	1	1	3.12	—	—	—
Gross Gamma Radiation	7	1834	09/24/01	NF	1	0	—	[17.8]	—	—
Plutonium-238	7	1834	09/24/01	F	1	0	—	[0]	15[e]	0/1
Plutonium-239	7	1834	09/24/01	F	1	0	—	[0.00464]	15[e]	0/1
Ruthenium-106	7	1834	09/24/01	F	1	0	—	[21.9]	—	—
Strontium-90	7	1834	09/24/01	F	1	0	—	[0.226]	8	0/1
Tritium	7	1834	09/24/01	NF	1	0	—	[0.22351]	20000	0/1
Uranium-234	7	1834	09/24/01	F	1	1	0.799	—	—	—
Uranium-235	7	1834	09/24/01	F	1	0	—	[0.0134]	—	—
Uranium-238	7	1834	09/24/01	F	1	1	0.315	—	—	—

[a] The static water level for the regional aquifer at R-19 was 1178 ft when the well was drilled.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from *National Primary Drinking Water Regulations*, 40 CFR Part 141. US EPA secondary MCLs are from *National Secondary Drinking Water Regulations*, 40 CFR Part 143. State of New Mexico MCLs are from *Drinking Water Regulations*, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or not applicable.

[e] Based on an MCL of 15 pCi/L (including radium-226, but excluding radon and uranium).

[f] NF = Nonfiltered.