EEG-43

PREOPERATIONAL RADIATION SURVEILLANCE OF THE WIPP PROJECT BY EEG 1985-1988

Jim Kenney
John Rodgers
Jenny Chapman
Kevin Shenk

Environmental Evaluation Group
New Mexico

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Reports

EEG-1 Goad, Donna, A Compilation of Site Selection Criteria Considerations and Concerns Appearing in the Literature on the Deep Disposal of Radioactive Wastes, June 1979.

EEG-2 Review Comments on Geological Characterization Report, Waste Isolation Pilot Plant (WIPP) Site, Southeastern New Mexico SAND 78-1596, Volume I and II, December 1978.

EEG-3 Neill, Robert H., et al, (eds.) Radiological Health Review of the Draft Environmental Impact Statement (DOE/EIS-0026-D) Waste Isolation Pilot Plant, U.S. Department of Energy, August 1979.

EEG-4 Little, Marshall S., Review Comments on the Report of the Steering Committee on Waste Acceptance Criteria for the Waste Isolation Pilot Plant, February 1980.

EEG-5 Channell, James K., Calculated Radiation Doses From Deposition of Material Released in Hypothetical Transportation Accidents Involving WIPP-Related Radioactive Wastes, October 1980.

EEG-6 Geotechnical Considerations for Radiological Hazard Assessment of WIPP. A Report of a Meeting Held on January 17-18, 1980, April 1980.

EEG-7 Chaturvedi, Lokesh, WIPP Site and Vicinity Geological Field Trip. A Report of a Field Trip to the Proposed Waste Isolation Pilot Plant Project in Southeastern New Mexico, June 16 to 18, 1980, October 1980.

EEG-8 Wofsy, Carla, The Significance of Certain Rustler Aquifer Parameters for Predicting Long-Term Radiation Doses from WIPP, September 1980.

EEG-9 Spiegler, Peter, An Approach to Calculating Upper Bounds on Maximum Individual Doses From the Use of Contaminated Well Water Following a WIPP Repository Breach, September 1981.

EEG-10 Radiological Health Review of the Final Environmental Impact Statement (DOE/EIS-0026) Waste Isolation Pilot Plant, U. S. Department of Energy, January 1981.

EEG-11 Channell, James K., Calculated Radiation Doses From Radionuclides Brought to the Surface if Future Drilling Intercepts the WIPP Repository and Pressurized Brine, January 1982.

(Continued on Back Cover)

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Jim Kenney
John Rodgers[1]
Jenny Chapman[2]
Kevin Shenk

Environmental Evaluation Group
P.O. Box 3149, 505 North Main Street
Carlsbad, New Mexico 88221

and

7007 Wyoming Boulevard NE, Suite F-2
Albuquerque, New Mexico 87109

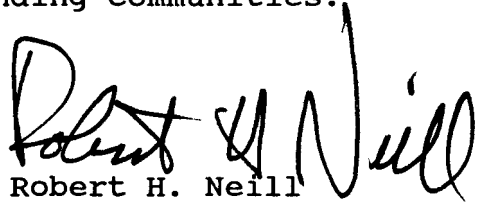
January 1990

[1] Currently Staff Member, Health Physics Group, Los Alamos National Laboratory, Los Alamos, NM 87545
[2] Currently Staff Hydrogeologist, Water Resources Center, Desert Research Institute, Las Vegas, NV 89120

FOREWORD

The purpose of the Environmental Evaluation Group (EEG) is to conduct an independent technical evaluation of the Waste Isolation Pilot Plant (WIPP) Project to ensure protection of the public health and safety and the environment. The WIPP Project, located in southeastern New Mexico, is being constructed as a repository for permanent disposal of transuranic (TRU) radioactive wastes generated by the national defense programs. The EEG was established in 1978 with funds provided by the U. S. Department of Energy (DOE) to the State of New Mexico. Public Law 100-456, the National Defense Authorization Act, Fiscal Year 1989, Section 1433, assigned EEG to the New Mexico Institute of Mining and Technology and provided for continued funding from DOE through a contract (DE-AC04-89AL58309).

EEG performs independent technical analyses of the suitability of the proposed site; the design of the repository, its planned operation, and its long-term integrity; suitability and safety of the transportation systems; suitability of the Waste Acceptance Criteria and the generator sites' compliance with them; and related subjects. These analyses include assessments of reports issued by the DOE and its contractors, other federal agencies and organizations, as they relate to the potential health, safety and environmental impacts from WIPP. Another important function of EEG is independent environmental monitoring of background radioactivity in air, water, and soil, both on-site and in surrounding communities.



Robert H. Neill
Director

EEG STAFF

Sally C. Ballard, B.S., Laboratory Scientist

Lynda S. Bartlett, B.A., Administrative Secretary

William T. Bartlett, Ph.D., Health Physicist

Radene Bradley, Secretary III

James K. Channell, Ph.D., P.E., CHP, Sr. Environmental Engineer

Lokesh Chaturvedi, Ph.D., Deputy Director & Engineering Geologist

Laura H. Connolly, M.A., Librarian/Editor

Anthony F. Gallegos, Ph.D., Sr. Performance Assessment Specialist

Jim W. Kenney, M.S., Environmental Scientist & Supervisor

Porfirio J. Martinez, Jr., Environmental Technician

C. Robert McFarland, B.S., Sr. Quality Assurance Engineer

Robert H. Neill, M.S., Director

Kevin J. Shenk, M.S., Health Physicist

Susan Stokum, Administrative Secretary

Carla Tafoya, Secretary III

Brenda J. West, B.A., Administrative Officer

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EXECUTIVE SUMMARY

The purpose of the EEG preoperational monitoring program is to document the existing concentrations of selected radionuclides in the area of WIPP. The basic methodology for conducting environmental surveillance of the WIPP facility has been developed and baseline data established. Such radionuclide baseline data are important in order to determine whether WIPP operations have affected concentrations of these radionuclides in the environment. EEG data are generally consistent with similar data obtained by DOE during the preoperational phase of WIPP.

Since the beginning of the preoperational radiation monitoring program in late 1985, the EEG has collected 815 air particulate samples, 123 water samples, 12 biota samples and three sediment samples. Analyses of the majority of these samples have provided 3,749 specific radionuclide concentrations in the WIPP environment and in surrounding communities.

As would be expected, analyses of air particulates frequently indicated a detectable presence of naturally occurring Ra-226, Ra-228, Th-228, Th-230, and Th-232. Cs-137 was detected in air samples collected during the calendar quarter of the Soviet disaster at Chernobyl. Fallout from this event was detected by air surveillance networks worldwide.

Radionuclide data from the analyses of water samples were consistent with other published findings for water from this area. Observed concentration of naturally occurring decay products of U-238 were not in equilibrium with the parent. This is consistent with differential radionuclide mobility in the environment. Ra-226 and Ra-228 were detected in a large number of samples with a high chloride content. Such

a positive relationship is consistent with other published DOE preoperational data for this area. One noted inconsistency in the EEG data was the detection of Cs-137 in a small number of brine water samples. This detection is attributed to an artifact of analysis of water with a large amount of potassium (K-40). The radiochemistry methodology has been changed to eliminate this observed counting artifact.

1.0 Introduction

The Waste Isolation Pilot Plant (WIPP) project is authorized under Public Law 96-164 for the express purpose of providing a research and development facility to demonstrate the safe disposal of radioactive waste resulting from the defense activities of the United States. The U. S. Department of Energy (DOE) is responsible for providing a full-scale facility for the permanent isolation of transuranic (TRU) defense waste. The present mission calls for the disposal of up to 176,000 m^3 (6.2 million cubic feet) of contact-handled (CH) waste and 7,080 m^3 (250,000 ft^3) of remote-handled (RH) TRU waste. Under authorizing legislation, the WIPP facility is exempt from U. S. Nuclear Regulatory Commission (NRC) regulations.

In addition to DOE Orders, U. S. Environmental Protection Agency (EPA) Standards, 40 CFR Part 191, "Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High Level and Transuranic Radioactive Waste," became effective for the WIPP project in November of 1985. Subpart A of these standards limits the radiation exposure to members of the public from waste emplacement and storage operations at DOE disposal facilities which are not regulated by NRC. Subpart B establishes performance standards for long-term containment, thereby limiting releases of radioactivity to the accessible environment. Subpart B of the standards was vacated by the First Circuit Court of Boston in June 1987 on the grounds that they were less stringent than the requirements of the Clean Water Act of 1971. Subsequently, the State of New Mexico and DOE signed an agreement to continue demonstration of compliance with the vacated standards until new ones are promulgated.

In order to review health and safety programs for the safe transport and storage of TRU waste in New Mexico and generally encourage public confidence in the WIPP project, the State of New Mexico and the DOE entered into a Consultation and Cooperation (C & C) Agreement in July 1981 and a Supplemental Stipulated Agreement in December 1982. Agreement for DOE funding of this review in the project is contained in the Supplemental Stipulated Agreement (United States District Court, Civil Action No. 81-0363 J.B., Filed December 28, 1982). This Agreement defines the EEG's environmental radiation surveillance plan as follows: "The State agrees to provide such independent environmental monitoring verification services to DOE. The parties agree that such verification services by the State could result in the best available assurance to the citizens of New Mexico as to the adequacy of the environmental monitoring program for WIPP." In addition, the Agreement specifies: "In broadest possible terms, the environmental monitoring program for WIPP shall include: (a) preoperational monitoring involving the collection, analyses and evaluation of environmental samples as a baseline for later comparisons; (b) operations monitoring on and off the site through and including decontamination and decommissioning of the site; and (c) post-operations monitoring on and off the site after the WIPP facility has been closed." The data contained in this report was collected to fulfill the preoperational monitoring task specified in the agreement.

The 1988 Modification to the Working Agreement of the C & C Agreement provides EEG an independent fixed air sampler (FAS) in the underground repository exhaust air system. This modification enables EEG to operate a FAS at Station A, located at the top of the exhaust shaft before exhaust air is discharged to the environment, and another FAS at Station B to sample filtered air from the underground before it is discharged to the environment. Samples collected from these

locations will provide an independent verification of any release which occurs from the underground portion of the WIPP facility.

2.0 Environmental Setting of the WIPP Site

The WIPP facility is located in Eddy County in southeastern New Mexico, approximately 42 km (26 mi) east of Carlsbad (Figure 1). The facility is located on a sandy plain at an elevation of 1040 km (3410 ft) above sea level.

Prominent natural features near the facility include Livingston Ridge and Nash Draw, about 8 km (5 mi) west of the facility. Nash Draw is a shallow 8 km (5 mi) wide drainage course characterized by surface impoundments of brine water. Livingston Ridge is a northwest-facing bluff that marks the eastern edges of Nash Draw. Other prominent features of the region include the Pecos River, located about 22 km (14 mi) west of the facility, and the Carlsbad Caverns about 68 km (42 mi) west-southwest of the WIPP facility.

The nearest population centers include the Village of Loving (population 1,500), located 29 km (18 mi) southwest of the facility, and the City of Carlsbad (population 28,400), located 42 km (26 mi) west of the facility. Other towns within an 80 km (50 mi) radius include Artesia, Eunice, Hobbs, Jal and Lovington.

The climate in the region of the facility is semi-arid with an average annual precipitation of 280 to 330 mm (11 to 13 in). Much of the precipitation falls during intense summer thunderstorm events. Winds are generally from the southeast with an average speed of 14 km/hr (8.8 mi/hr).

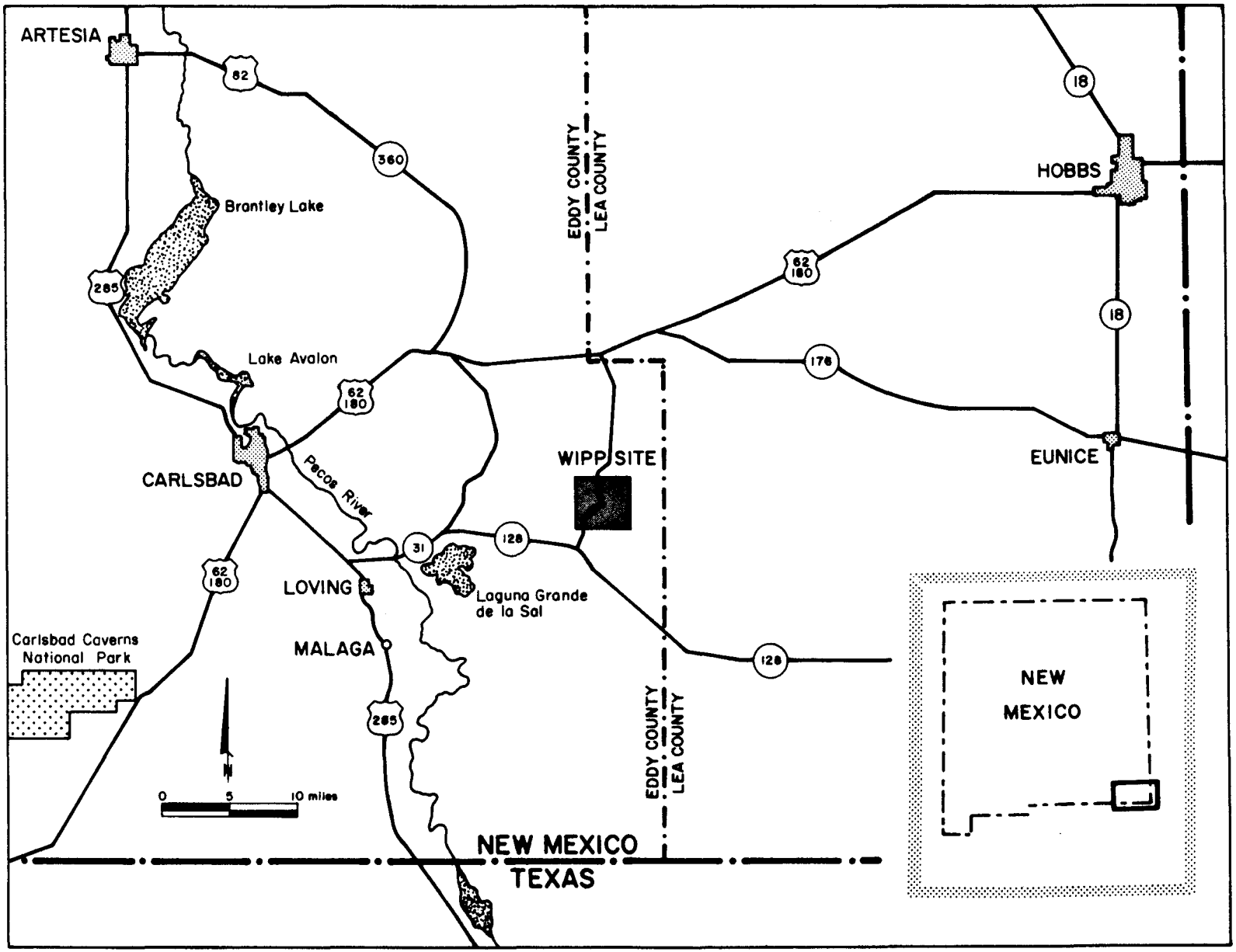

Figure 1. Location of the WIPP Site

Surface structures of the facility are located in Sections 20 and 21 of Township 22 south, Range 21 east, N.M.P.M., in Eddy County, New Mexico with the surface areas around WIPP divided into several zones (Figure 2). Zone I, located in Sections 20 and 21 of Township 22 South, Range 31 East, has an area of 14 ha (35 acres). It contains most of the surface structures associated with WIPP and is enclosed by chain link fence with restricted access. The Secured Area Boundary surrounds Zone I and is marked with a barbed wire fence. Zone II is the next larger subdivision of the facility. It is 728 ha (1800 acres) in size and represents the maximum extent of the area available for underground development. The WIPP outermost facility boundary, which encompasses four square miles, provides a one mile buffer area around Zone II and contains 4,144 ha (10,240 acres or 16 sections).

Three ranches (Mills, Smith and Mobley) have property within 8 km (5 mi) of the facility. The Mills ranch headquarters is located 5.6 km (3.5 mi) south-southwest of the facility center, the Smith headquarters is 8.8 km (5.5 mi) west-northwest of the facility and the Mobley ranch is 9.6 km (6 mi) southwest of the facility. The Mills ranch uses well water for stock and domestic uses. Water is provided to the Smith Ranch from pipelines used by International Mineral and Chemical Corporation (IMCC) and New Mexico Potash Corporation from groundwater sources in the Capitan Reef Formation and the Ogallala Formation, respectively. Water used for domestic purposes is hauled to Mobley Ranch from various public water supply systems, while stock water is obtained from wells near the ranch headquarters about 10 km (6 mi) from the facility.

Current plans call for the purchase of existing potash lease within the 16 sections comprising the WIPP facility

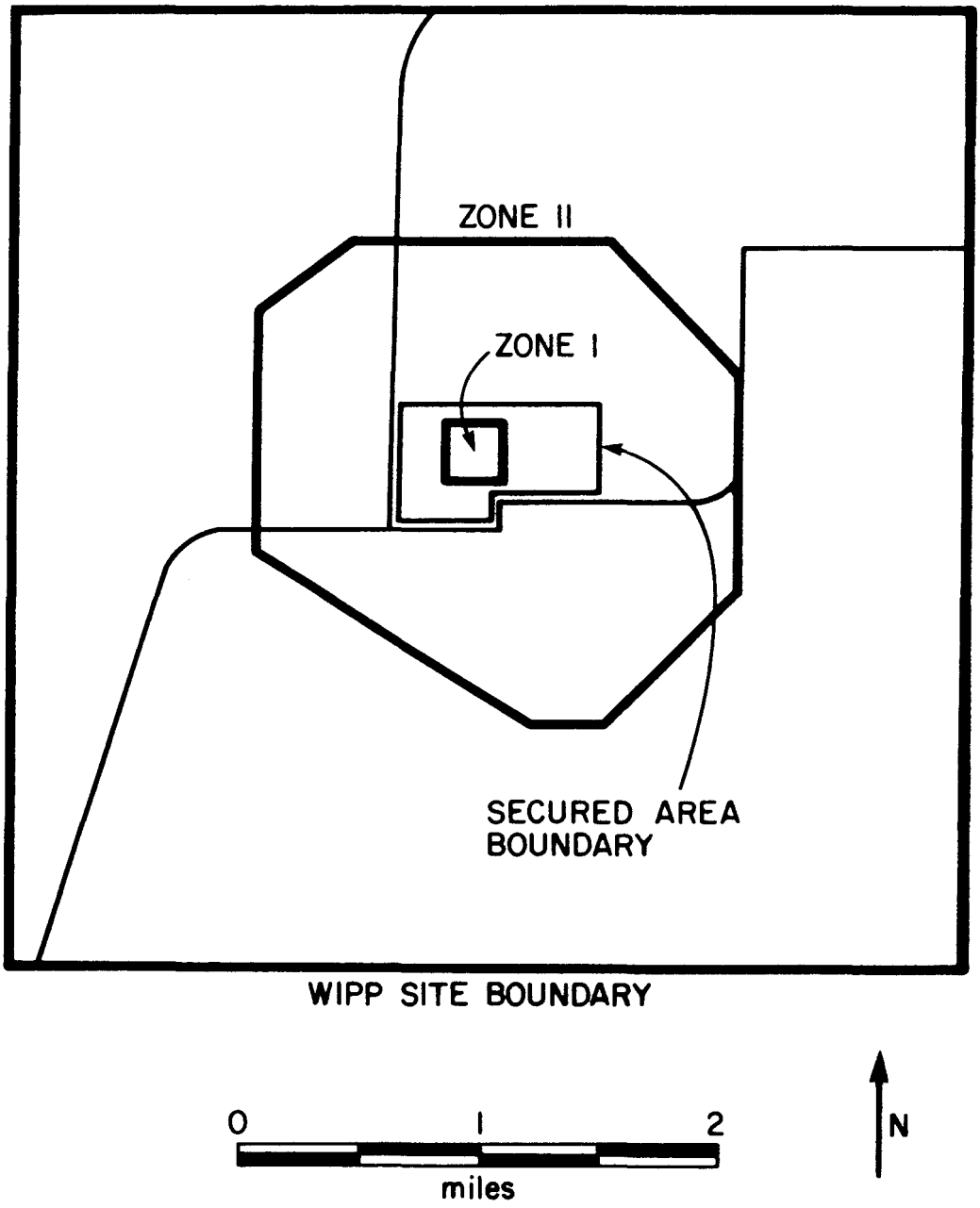

Figure 2. Zones at the WIPP Site

by DOE. However, extractive oil and gas production will continue as close as 4 km (2.5 mi) from the facility. Although there are no dairies in the area of the WIPP facility, a large amount of alfalfa is grown in the Pecos Valley south of Artesia, New Mexico which is used in cattle feeding operations in Texas and New Mexico. Cotton and pecans are the other major crops grown in the Pecos Valley area between Artesia and Malaga, New Mexico.

Geologically, the WIPP repository horizon is situated at a depth of 655 m (2,150 ft) below land surface in the Permian-age Salado Formation (Figure 3). The Salado is a 610 m (2000 ft) thick, bedded-salt Formation overlain by the Rustler Formation. The Rustler Formation consists of anhydrite and siltstone beds and contains two major water bearing zones, the Magenta and Culebra Dolomites at 170 m (568 ft) and 205 m (672 ft) below land surface, respectively. Each of these is approximately 7.5 m (25 ft) thick. Transport in the water-bearing units of the Rustler Formation represent the main hydrologic pathway to the biosphere. The Culebra Dolomite is considered to be the most important hydrologic pathway for release calculations because it is the most transmissive unit in the area. The most recent interpretation (Lappin, et al., 1989) of Culebra freshwater-head data indicates a southerly flow across the WIPP site with westerly flow occurring south of the site. Radiological baseline data for the Culebra and the less productive Magenta Dolomite are being collected because of their importance to long-term release scenarios.

The Capitan Reef Formation provides public drinking water for the communities of Carlsbad, Loving and Otis. The Reef aquifer and the Rustler water-bearing zones are not connected hydrogeologically. However, in response to the importance of the reef as a water source, radiologic data

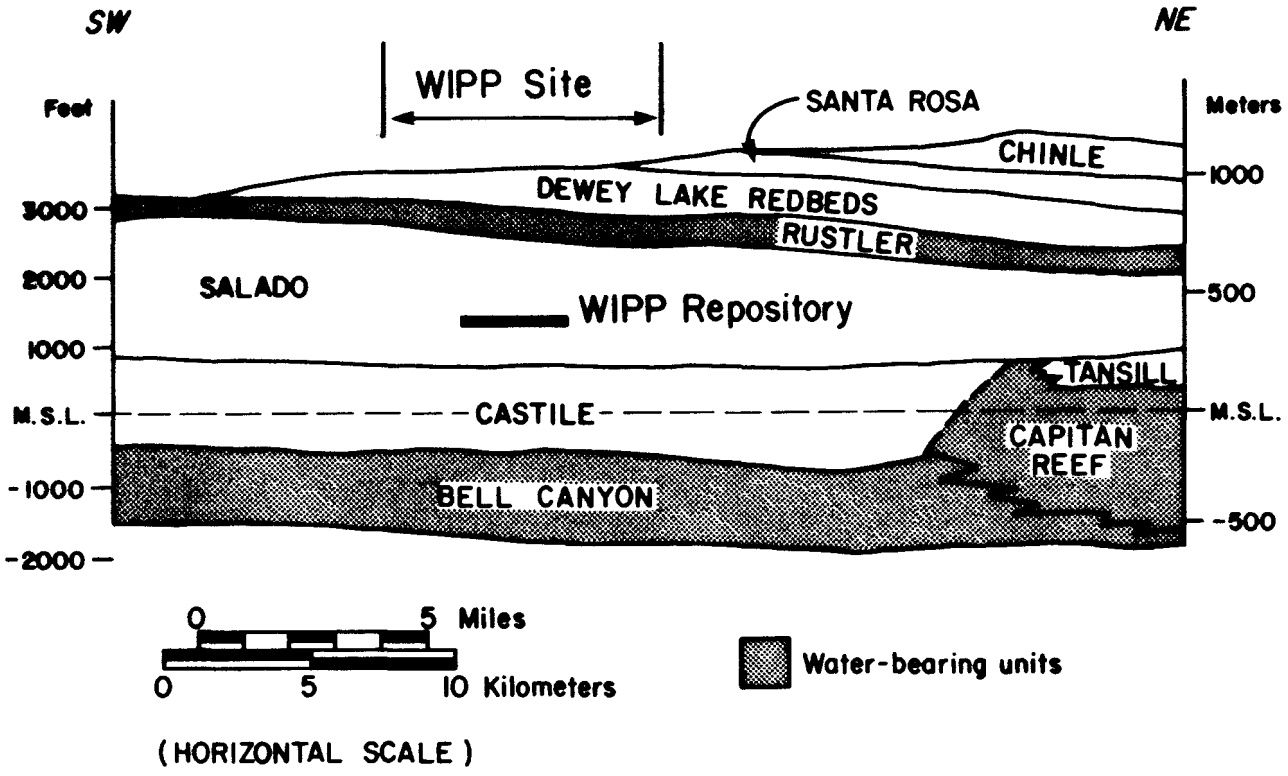

Figure 3. Stratigraphy at the WIPP Site

from public water supply systems in these communities are being collected.

3.0 Summary of the Preoperational Program

The Environmental Evaluation Group implemented a pre-operational environmental surveillance plan (Spiegler, 1984) to establish baseline data on potential exposure pathways as summarized in Table 1. A high priority continues to be assigned to air sampling and analysis because of the potential for on-site or transportation-related accidents which could result in airborne release and the fact that air monitoring provides an early warning detection system. The preoperational data collection program includes sampling of other environmental pathways such as groundwater, surface water, public drinking water, biota, soil and sediment. Radiochemical analyses of environmental samples is performed for long-lived radionuclides Pu-238, Pu-239 + 240, Am-241, (plus the naturally occurring radionuclides U, Th, Ra) and long-lived fission products such as Cs-137 and Sr-90, which are found in the WIPP-waste radionuclide inventory.

3.1 Air Surveillance

The exhaust air effluent from the underground will not be continuously filtered because of the high pressure differential created across the high efficiency particulate air (HEPA) filters and the resulting large power requirements to adequately ventillate the underground facilities. Hence, there is the potential for chronic, unfiltered, low-level releases of TRU contaminants during the emplacement or retrieval process. Acute releases could result from accidents, prior to the shifting of exhausst air through the HEPA filters.

The first level of environmental air sampling (excluding the effluent air sampling at Stations A and B) occurs near the perimeter of the facility in the predominant downwind direction. The air samplers located within the facility boundary are continuously operated low volume air samplers (LVAS) which collect air particulate samples on 102 mm (4 in) borosilicate microfiber filters at a rate of 142 l/min (5 ft^3/min). High volume air samples (HVAS) are collected every sixth day in the nearby communities of Artesia, Carlsbad, Hobbs, and Loving, New Mexico. The air sampling flow rate of the HVAS units is 1,133 l/min (40 ft^3/min) through a 20.3 cm X 25.4 cm (8 X 10 in) filter paper.

The implementation of the air surveillance program (Figure 4) is based on strategic placement of continuously operated low volume air sampler (LVAS) units within WIPP Zones I and II. The LVAS unit designated as S-1 is located approximately 225 m (740 ft) northwest of the underground exhaust stack within the Zone I boundary. The S-1 sampler is approximately 90 m (300 ft) from the north line (FNL) of Zone I and 150 m (500 ft) from the east line (FEL) of Zone I. The LVAS unit designated as S-2 is located approximately 500 m (1600 ft) northeast of the WIPP exhaust shaft and LVAS unit S-3 is located approximately 1,000 m (3300 ft) northwest of the WIPP exhaust shaft. EEG's use of continuous air samplers within the facility boundaries will provide independent verification of DOE data needed todetermine WIPP compliance with DOE orders and EPA dose limits to the public.

A high volume air sampling system has been deployed by EEG in nearby population centers to provide some potential for detection of releases which could occur from transportation accidents or site releases and subsequent atmospheric dispersion. A high volume air sampler (HVAS) is located at ground level in Artesia at the west end of J. C. Park near

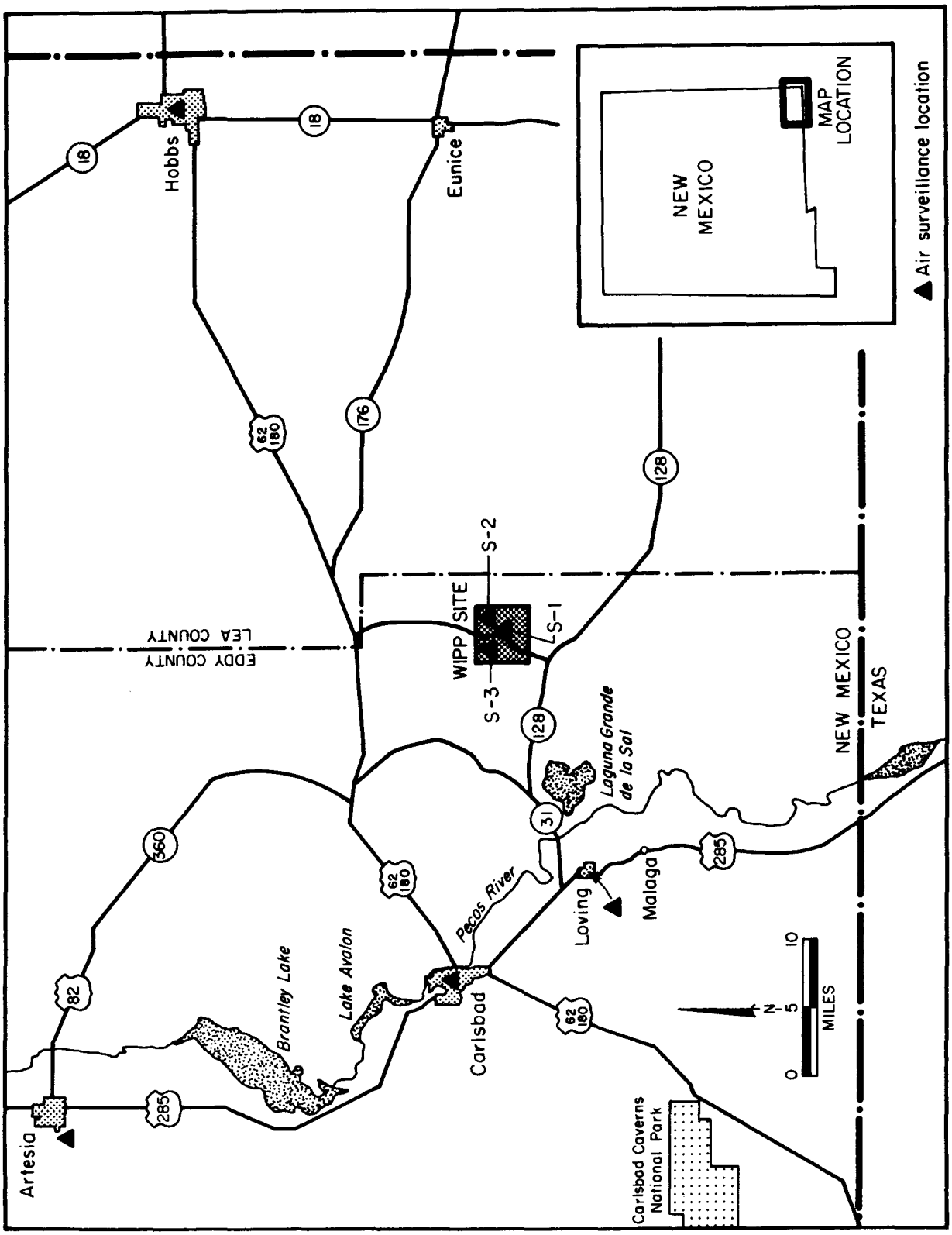

Figure 4. Air Sampling Locations

the intersection of 26th Street and Dr. R. W. Harper Drive (Township 17S, Range 25E, Section 24). The Carlsbad HVAS is located near the intersection of McKay Street and Guadalupe Street (Township 22S, Range 27E, Section 6). The Loving HVAS is located near the intersection of 5th Street and Elm Street (Township 23S, Range 28E, Section 21). The HVAS in Hobbs is located near the intersection of Dalmont Street and Snyder Street (Township 18S, Range 38E, Section 34). HVAS units are located on rooftops in Carlsbad, Hobbs and Loving to provide better security for the samplers. The purpose of the HVAS network is to provide a large sample volume over a cross section of the year, similar to the EPA ambient air monitoring program. The HVAS network and associated data base will provide the baseline data necessary to evaluate an airborne release or long-term changes in the background levels of transuranics in the atmosphere.

3.2 Water Surveillance

Groundwater has been collected from water-bearing zones of the Santa Rosa, Dewey Lake Redbeds, Culebra Dolomite Member of the Rustler, Magenta Dolomite Member of the Rustler, Bell Canyon and Capitan Reef Formations. Water samples from the WIPP observation wells are collected by DOE and provided to EEG as splits from their sample. Samples collected from surface water sources are collected by EEG staff. In all cases the samples are collected with the aliquot designated for radiochemical analysis being acidified with nitric acid to reduce the pH to less than 2.0. Samples designated for tritium determination are collected in 240 mL glass containers with conical-shaped polyethylene caps to prevent air entrapment. Surface water, groundwater and public drinking water samples are sent to a private laboratory for radiochemical analysis. The radiochemical analyses for water samples are reported in Tables A8 - A10 of Appendix A along with counting error and MDL for each analysis.

Groundwater samples are collected by DOE from 21 area monitoring wells (Figure 5) and splits of these samples are provided to EEG for determination of selected radiochemical and stable chemical parameters. The location and formation sampled for each well is contained in Table 2. Interpretation of the groundwater chemistry data was discussed by Chapman (1988). The major ion data are useful for determining flow paths in the water bearing units above the WIPP repository level. Data on the concentrations and distribution of thorium, radium and uranium can be used to help predict the mobility of similar radionuclides in the hydrogeochemical setting at WIPP. Flow path and radionuclide mobility information are both necessary for analyzing release scenarios to determine if WIPP complies with long-term disposal requirements contained in EPA regulations (40 CFR Part 191). Radionuclide data collected from groundwater samples will become part of the data-base used to evaluate long-term performance of the repository, providing documentation of pre-waste levels for later comparison.

The surface water surveillance program consists of routine sampling of eight locations as shown in Figure 6. Water collected from the Pecos River in Carlsbad provides radionuclide baseline data and a comparison for similar data from the Pierce Canyon area about 19 km (12 mi) downstream from Carlsbad. It is suggested by Mercer (1983) that saturated zones in the Rustler Formation discharge to the Pecos River near Malaga Bend, about a mile before the river enters Pierce Canyon. Because of the role of the Rustler Formation as a hydrologic pathway, preoperational data from samples in these regions are important. Radionuclide baseline data are collected from surface water in Laguna Grande de la Sal which is located 13 km (8 mi) southwest of the WIPP facility. The saline lake is in the storm water

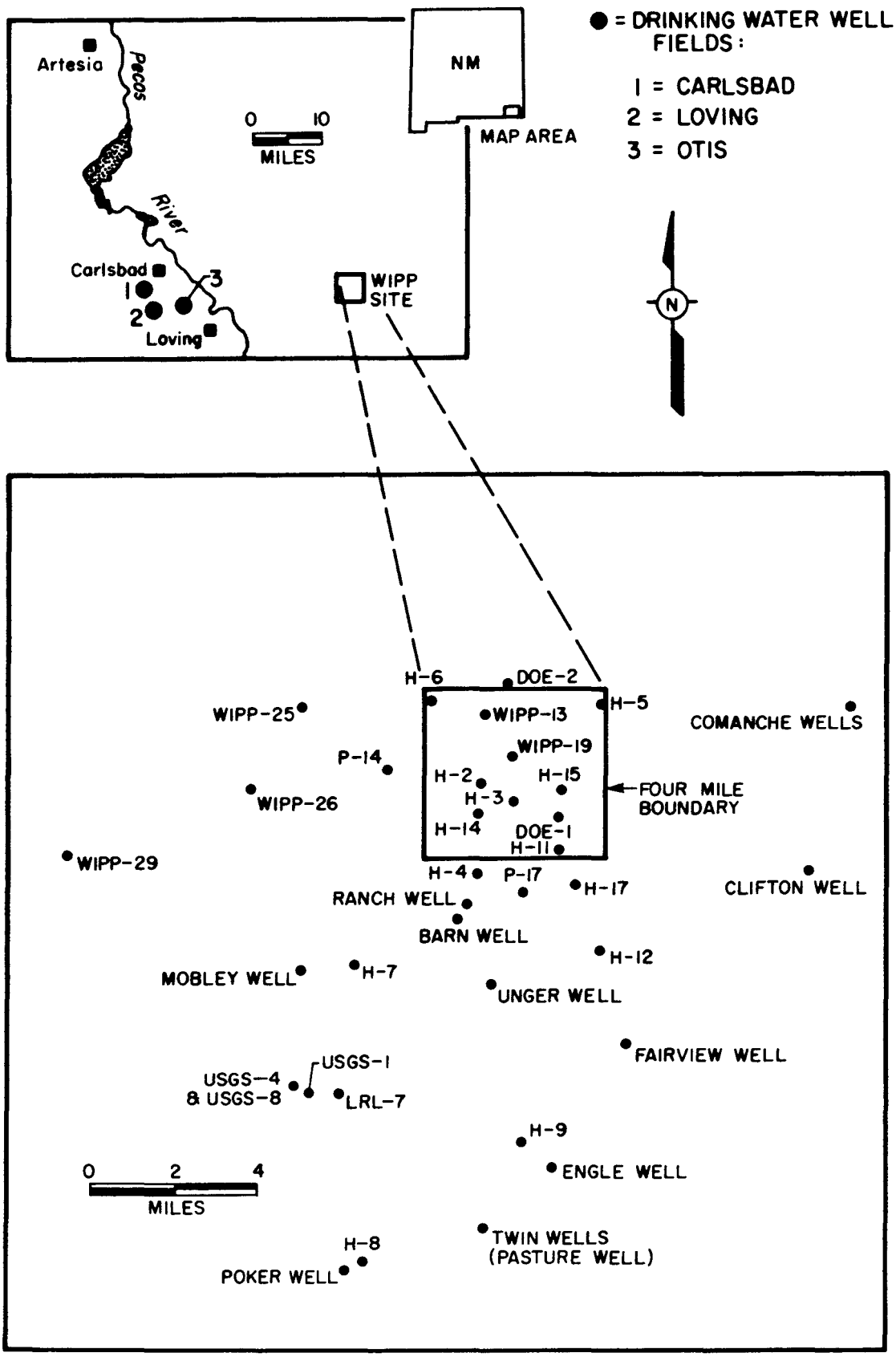

Figure 5. Groundwater Sampling Locations

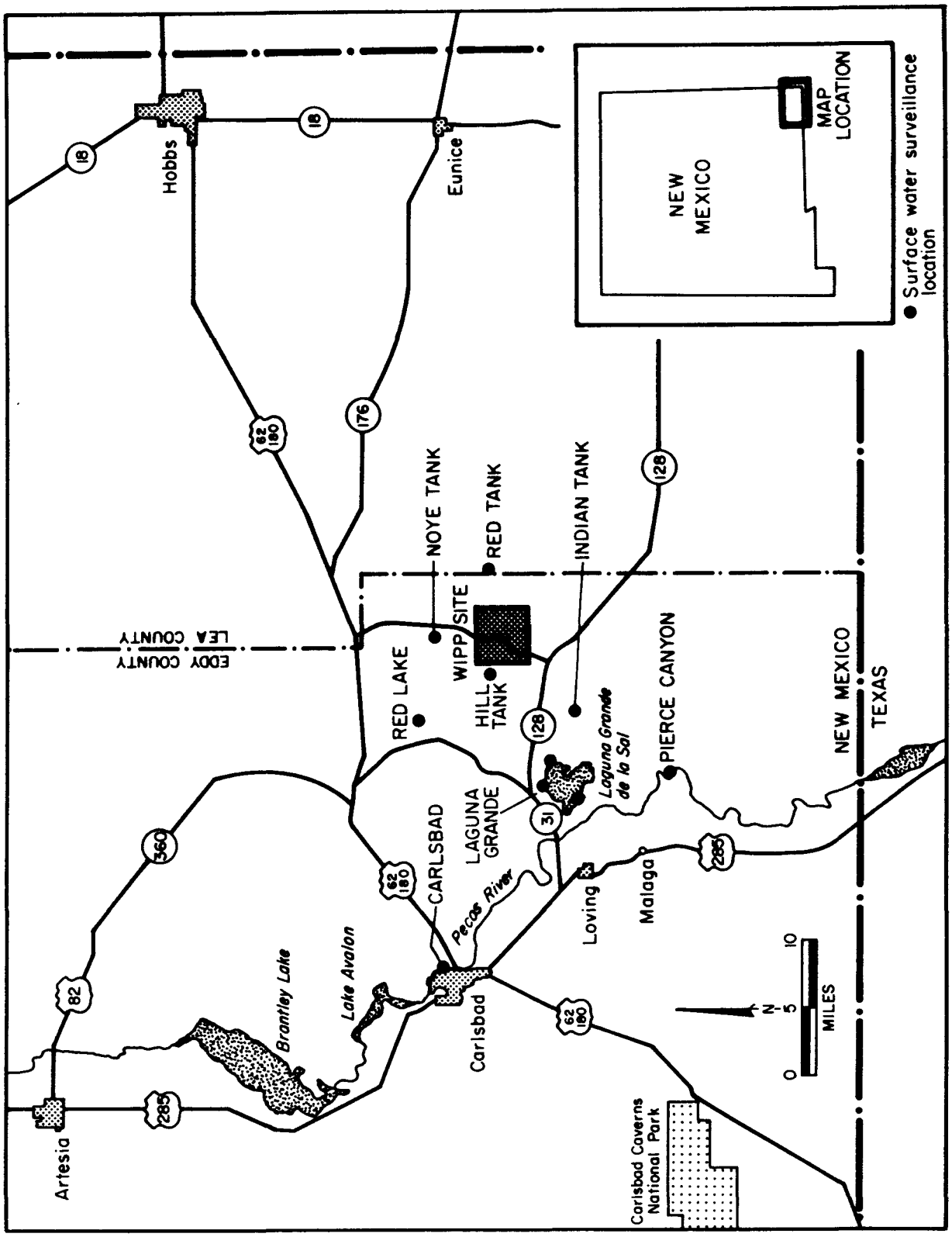

Figure 6. Surface Water Sampling Locations

drainage from the facility and is a discharge point for shallow groundwater in Nash Draw. Because particulates in air emissions from WIPP operations would be expected to fall onto the area watershed, EEG is collecting water from five nearby rain catchment basins used for stock and game watering. Since surface contamination on site is possible EEG is collecting storm water runoff from the Zone I area.

New Mexico Water Supply Regulations establish a maximum contaminant level (MCL) for Sr-90, tritium, gross alpha, and Ra-226+228, in public drinking water systems. EEG is collecting samples from the Carlsbad, Loving/Malaga and Otis water supply systems (Figure 5). Analytical data from public drinking water system samples are contained in Table 8.

Mercer (1983) summarized chemical analyses performed by the U.S. Geological Survey on samples from wells drilled for WIPP. Radiochemical analyses for groundwater were reported by Cooper and Glanzman (1971) as part of the Gnome project site investigations, about 7 miles southwest of the WIPP facility. Simpson et al. (1985) report a wide variety of radionuclide analyses of surface and groundwater in the Delaware Basin in an investigation of the mobility of radionuclides in high-chloride environments. Lambert and Carter (1987) discussed uranium isotope disequilibrium with regard to Rustler groundwater near WIPP.

Field and laboratory results from DOE's Water Quality Sampling Program are available in Uhland and Randall (1986), Uhland et al. (1987) and Randall (1988). Data from groundwater in the Culebra Dolomite Member of the Rustler Formation is presented in this report while a more complete discussion of the Culebra data is presented in Chapman (1988) and Ramey (1985).

3.3 Soil and Sediment Surveillance

Soil and sediment in the area of WIPP contain a record of deposited radioactive fallout from past atmospheric nuclear testing. It is believed that a certain amount of this deposited fallout may become resuspended in air particulates under certain atmospheric and soil conditions. Since the fallout contains many of the same radionuclides as WIPP waste, this data is an important component of the environmental baseline data set. Soil sampling stations are located near each HVAS location and within Zone II at WIPP. In addition, soil samples are routinely provided to EEG as split samples from the DOE soil sampling program.

Sediment sampling locations include Indian Tank, Laguna Grande de la Sal and the Pecos River at Pierce Canyon (Figure 6). Radionuclide analyses performed on soil and sediment samples are listed in Table 1 and data from these analyses are contained in Table A11 of Appendix A.

3.4 Biota Surveillance

Potential ecosystem transport processes affecting radioactivity releases from the WIPP site include the atmospheric dispersion and subsequent contamination of soil, surface water and vegetation surrounding the WIPP facility. Through ingestion of game, livestock or fish that had access to contaminated vegetation, water or soil, man could become involved in the release pathway.

EEG biotic samples are received as split samples from the DOE environmental program. Biotic samples are sent to a private laboratory for radiochemical determination of Pu-238, Pu-239+240, Cs-137 and Am-241. Radiochemical data from analysis of biota samples are presented in Table A12 of Appendix A.

3.5 Gnome Site Surveillance

In 1961, the U.S. Atomic Energy Commission detonated a 3.1 kiloton nuclear device at a depth of 360 m (1184 ft) below land surface in the Salado Formation about 48 km (30 mi) southeast of Carlsbad. The event was code-named Project Gnome and was a part of the larger Plowshare Program. Because this detonation was 14 km (9 mi) southwest of the WIPP facility, it is important to know the amount, extent, and migration of contamination resulting from this project. Tritium, cesium-137, and strontium-90 radionuclides were also introduced into observation wells in the area as tracers.

Atmospheric venting and plume migration occurred at the time of detonation and further surface contamination resulted from post shot operations at the site. DOE undertook decontamination and decommissioning of the Gnome site in 1978 (Lantz 1978). The EEG preoperational monitoring program, therefore, includes surface water and bottom sediment surveillance of Indian Tank, which is an earthen rain catchment basin used for stock watering and located in the area of the fallout path of the plume northwest of the Gnome site.

While the Gnome site is under DOE jurisdiction, the EPA has contracted with DOE to collect samples from 11 wells in the area of Gnome and reports results of these analyses in a comprehensive annual radiological monitoring report (Fontana 1988) as required by DOE Order 5484.1. In March of 1986, EEG received splits of EPA samples from four contaminated wells near the Gnome site. The results of radiochemical examination of these samples are presented in Table A13 of Appendix A.

Radiochemical analyses for groundwater about 11 km (7 mi) southwest of the WIPP facility were reported by Cooper and Glanzman (1971) as part of the Gnome Project site investigations. These Gnome analyses included gross alpha and gross beta, uranium, radium and strontium 90.

3.6 WIPP Effluent Surveillance

The two major effluent streams at the WIPP facility are exhaust air from the underground repository waste area and sewage effluent. Unfiltered air is exhausted at approximately 201 m^3/s (425,000 ft^3/m) through an exhaust shaft to the environment. The EEG will be operating a fixed air sampler (FAS) which collects particulates from the unfiltered exhaust air at the top of the exhaust shaft before the effluent air is discharged to the environment. The samples from this FAS, known as Station A, will be sent to a private laboratory for radiochemical analysis after initial screening in the EEG laboratory to determine gross alpha and gross beta activity. The analytical suite determined radiochemically will be the same as that described for HVAS and LVAS filters.

Underground exhaust air will be diverted through HEPA filters located on the surface if the continuous air monitors (CAM) in the underground area or the CAMs sampling air in the exhaust shaft near the surface (Station A) detect a radioactive release. HEPA-filtered air will then be exhausted to the environment at a rate of 28.3 m^3/s (60,000 ft^3/m) through an alternate exhaust duct. EEG will operate a FAS in the sample stream from the alternate exhaust duct. This FAS system, located in final discharge air, is designated as Station B. Samples collected at Station B will be analyzed as described above for Station A samples.

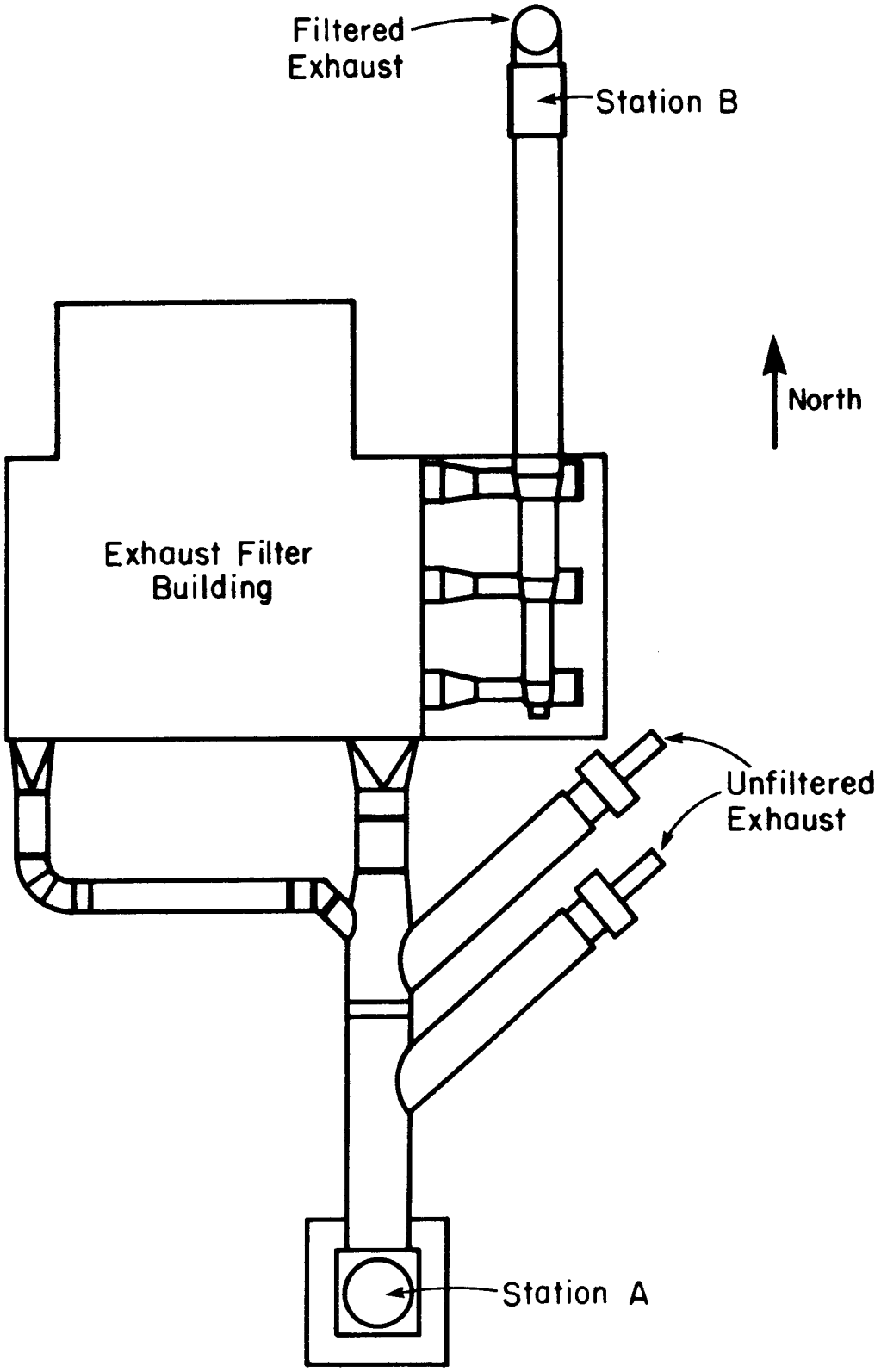

Figure 7. Location of Stations A & B

In order to determine the total amount of radioactivity released from the underground at WIPP, in the event of an accident, it is necessary to operate FAS units at both Station A and B. First, contamination could potentially be released to the environment through the exhaust stacks just beyond Station A before CAM alarms initiate HEPA filtration, or if valves which divert the air flow to the filters fail to close completely during an accident situation. Hence an FAS unit at Station A is essential. Second, station B is sampled with a FAS unit to quantify any release which might be discharged to the environment through leakage or failure of the HEPA filtration system which serves the underground repository, and otherwise verify that no further discharge occurred once the bypass valves close. Through analysis of filters from Stations A and B, EEG should have enough data to determine the extent of any significant release through the repository exhaust.

Air exhausted from the Waste Handling Building will be double HEPA-filtered continuously before discharge to the environment. DOE will maintain CAM systems and a FAS in the exhaust duct from this facility. However, EEG will not operate a FAS in this exhaust system due to the low probability of a release through this redundant HEPA-filtered discharge.

Although DOE procedures indicate that potentially contaminated water from waste handling operations will not be introduced into the WIPP sewage system, the EEG preoperational monitoring program includes sampling of effluent contained in the lined evaporation ponds. Analytical suites performed on sewage effluent samples are like those for other water samples designated in Table 1.

4.0 Discussion of Findings

The radiochemical analyses of the WIPP samples taken by EEG were performed by Accu-Labs Research, Inc. of Wheat Ridge, Colorado. The equations used by Accu-Labs in their reporting of the individual radionuclide activity concentrations and counting error at the 95 percent confidence level are presented below. Gross alpha and gross beta activity levels were determined using proportional counting systems. Analyses were preceded by one or more chemical separations.

The data for the radiochemical analyses are presented in the appendices. The activity concentration for most radionuclides was calculated per the following:

$$\text{Radionuclide Activity Concentration} = \frac{(\text{Net cpm})}{(E)(V)(R_C)(R_S)}$$

Where: Net cpm = gross cpm - background cpm

E = Counting efficiency in counts per disintegration

V = Sample volume or weight

R_C = Fractional chemical yield of carrier

R_S = Average recovery for standards

The counting error was calculated at the 95 percent confidence level from the following equation:

$$\text{Counting Error} = \frac{1.96 \left[\frac{S}{D_S} + \frac{B}{D_B} \right]^{\frac{1}{2}}}{(E)(V)(R_C)(R_S)}$$

Where: 1.96 = Factor to achieve 95 percent confidence level

S = Sample gross count rate

B = Blank counts

D_S = Sample counting time in minutes

D_B = Blank counting time in minutes

This report assumes that the minimum detectable level (MDL) of radionuclides in radiochemically analyzed samples is:

$$MDL = 1.96 \left[\sigma_{S+B}^2 + \sigma_B^2 \right]^{\frac{1}{2}}$$

Where: σ_{S+B} = Standard deviation of the sample plus background

σ_B = Standard deviation of the background

The standard procedures for calculating lower limits of detection are based only on the use of σ_B (EPA 1980). The EPA methodology is based on the concept that the σ_{S+B} and the σ_B are roughly equivalent. However, in the data reported to EEG the values of σ_{S+B} are much greater than those of σ_B. Calculation for the standard deviation of the net activity is based upon the above equation (EPA 1980). Table 3 is a tabulation of the number of instances where the WIPP samples exceeded the MDL.

4.1 Air Data

During the preoperational phase of WIPP, an aliquot of each environmental air sample is counted after 5, 29 and 170+ hours of decay (time elapsed from the end of air sampling) to determine gross alpha and gross beta activities, before being sent to a private laboratory for final destructive radiochemical analysis. Prompt detection of an airborne release is complicated by the presence of the decay products

of radon and thoron in the ambient air. These alpha and beta emitters create a substantial, persistent, and time-varying alpha and beta background activity. Data collected following 5 and 29 hours of decay are not included in this report but will be analyzed in detail in a planned EEG report that will describe the complexities of rapid screening and discrimination of the naturally occurring background signals.

Gross alpha and gross beta data collected from air samples following 170+ hours of decay are considered to be long-lived activity. This residual activity represented in Figures 7 - 20 is considered to be attributable to long-lived members of the uranium and thorium decay chain and any transuranic radionuclides which may be present on the filter.

The fluctuations in gross beta and gross alpha activity are due to changes in atmospheric and soil conditions that have the effect of changing the emission rate and atmospheric dispersion rate of radon decay products. These environmental factors are more readily apparent in the early gross alpha and gross beta counts which occur before the radon and thoron progeny have decayed.

The annual gross alpha and gross beta data for the HVAS particulate samples are represented in Figures 7 - 14 and annual LVAS particulate data are shown in Figures 15 - 20. Corresponding gross alpha, gross beta and gravi- metric data are presented in Tables B1 - B7 of Appendix B. Following routine counting of the air filters by EEG personnel, the filters are sent to a private laboratory for destructive radiochemical analysis. Radiochemical analysis provides isotopic specific information on composite samples from each sampling location for each calendar quarter (Tables A1 - A7 of Appendix A).

Noticeable in the 1986 radiochemical air data are positive values, well above the MDL reported for Cs-137 during the second quarter. These data were collected during the fallout period following the Chernobyl disaster in the Soviet Union which occurred during late April and early May 1986.

During the 35th week of 1988 a large mobile building was relocated within 3 m (10 ft) of the Site-1 LVAS which caused the sampling location to be inconsistent with EPA guidelines for siting of ambient air samplers. The Site-1 air sampler was not restarted until after the 52nd week of 1988 when it was relocated in an open area approximately 46 m (150 ft) south of the original location. The lack of data from this sampler during this period can be noted in Table B5 and Figure 15.

4.2 Water Data

Table 1 is a tabulation of the number of instances where the WIPP samples exceeded the minimum detectable level (MDL). The nuclides reported to be above the MDL are all from the uranium and thorium decay series. The following discussion is arranged by geological formation, from stratigraphically lowest to highest.

4.2.1 Bell Canyon Formation

Ra-226 was the only radionuclide detected above the MDL. At 45 X 10^{-9} uCi/ml Ra-226 content is intermediate in the range found in other Delaware Basin groundwater.

A full radionuclide suite was not analyzed in the one Bell Canyon sample. It would be worthwhile to try and collect another sample, preferably from the Hays Sandstone (the most

permeable unit) to determine background levels of Am-241, Pu-238, Pu-239+240, Cs-137, Sr-90, Ra-228 U-233+234, U-235 and U-238.

4.2.2 Salado Formation

The Salado Formation primarily consists of halite with several potash rich zones in the upper part and clay and anhydrite marker beds interspersed throughout. No distinct water-bearing zones have been identified in the Salado, though the Formation appears to be brine-saturated with permeabilities in the micro- to nano-darcy range (Bredehoeft, 1988). Some boreholes drilled in the facility fill with brine, and samples from two such holes were collected by EEG for analysis.

The analyses of these samples were performed prior to the establishment of the preoperational monitoring program and the laboratory report did not include sufficient data to estimate MDLs. However, the recorded activities of gross α, β, and Ra-226 are much greater than the counting errors, lending confidence that they were detected in the samples.

Ra-226 occurs at relatively high activities (1 nCi/l) in the Salado samples. This may be related to the increased solubility of radium in high chloride brine. The clay-rich marker beds are likely to contain Th-230, that is decaying to Ra-226. The gross α activity is probably the result of Ra-226 and possibly uranium in solution. Salado samples have relatively high gross β activities (19 and 18 nCi/L). This is probably a reflection of K-40 activity. The brines have high total K contents ($\geq$17 g/L) and as the proportion of K-40 in total K is virtually a constant in geologic media, the increased K content implies increased K-40.

Given the difficulty of sample collection from the surface, it is unlikely that brine from the Salado will be monitored for future radionuclide releases. However, there is a need to determine the solubility of waste nuclides in the Salado brine for performance assessment calculations, and useful data might be obtained by examining a larger suite of nuclides in Salado brine. In particular, samples should be analyzed for the uranium and thorium isotopes.

4.2.3 Rustler Formation

The Culebra Dolomite Member has been the focus of groundwater sampling from the Rustler Formation. A detailed presentation of the radiochemical characteristics of Culebra groundwater can be found in Chapman (1988). The following radionuclides have been detected at levels above the MDL in the Culebra: Ra-226, Ra-228, U-233+234, U-238, Th-228, Cs-137, gross alpha and gross beta. The radium, uranium, and thorium isotopes are members of the naturally occurring uranium and thorium decay series. It is notable that radium, in particular, is sometimes present in relatively large amounts (≥1 nCi/L). The good correlation between Cl^- and both Ra-226 and Ra-228 activities is probably due to the greater mobility of radium in higher chloride water. Tanner (1964) suggested that the association of high Cl^- and high Ra was due to competition for absorption sites by the balancing component of cations in high chloride brines. The occurrence of dissolved Th-228 also suggests an increased solubility of some radionuclides in chloride-rich brines. The amount of uranium detected is consistent with dissolved uranium in an oxidized state. Gross α activity probably results from U-233+234 activity, as samples with gross α above the MDL do not have the highest Ra-226 contents.

The detection of Cs-137 in the Rustler water is surprising because the only possible source is atmospheric fallout. It

was detected in wells where the Culebra is confined and 500 to 600 feet below surface, so it is difficult to postulate a rapid connection with surface recharge. As discussed in Chapman (1988), it is more likely that the reported Cs-137 is an artifact of the analysis of water with a high potassium (and thus K-40) content. The reported gross β activity is probably also related to K-40.

With the exception of Cs-137, all other radionuclides detected in Culebra groundwater above the MDL are members of naturally occurring decay chains. The other radionuclides analyzed but not detected included Am-241, Pu-239+240, Pu-238, and H-3. Th-230 and U-235 were reported very close to the MDL and are not considered statistically significant. A subsequent sample from the well where Th-230 was identified did not yield a value above the MDL and the well with U-235 has not had a another analysis performed to verify that nuclide's presence. Enrichment techniques were not used for the tritium analysis, making the detection levels insuitable for groundwater dating.

4.3 Soil and Sediment

Data obtained from radiochemical analyses of sediment samples are contained in Table 11 of Appendix A. The Laguna Grande de la Sal sediment sample was a composite of samples collected from the north, south and east perimeter of the lake. Sediment samples collected near the WIPP facility were found to contain measurable amounts of Cs-137. These measurements are consistent with values obtained by DOE (Reith et al. 1986, Banz et al. 1987 and Flynn et al. 1988).

4.4 Biota

Table 12 of Appendix A contains results of radiochemical analyses of rabbit, fish, quail, vegetation and beef samples collected from areas near WIPP. These samples were provided to EEG as splits from DOE samples. None of the values reported exceeded the MDL limits.

4.5 Gnome Project

Radiochemical analyses of groundwater samples collected from wells in the area of the Gnome Project are reported in Table A13 of Appendix A. All samples were provided to EEG as splits of EPA samples. Tritium, Cs-137 and Sr-90 values above the MDL are consistent with measurements reported by Fontana et al. (1988) for corresponding Gnome area samples. Samples from uncontrolled wells in the Gnome area will be collected in the future to provide information on any migration of the contaminants.

4.6 WIPP Site Effluent

The effluent sampling systems for the underground exhaust air at the WIPP facility were complete at the time of this report and no data were available. The fixed air sampler (FAS) located in the unfiltered exhaust air duct (Station A) will sample continuously. Filters from this FAS will be screened and composited for radiochemical analysis. A second FAS (Station B) will be provided for EEG near the point of discharge to the environment in the HEPA filtered exhaust duct. Filters from Station A and B will be analyzed as indicated in Table 1. Results of radiochemical analysis of WIPP sewage effluent are contained in Table 14 of Appendix A.

5.0 Quality Assurance

Quality Assurance (QA) for the purposes of this report is defined as the use of standardized practices and procedures to assure that the highest level of quality is maintained. The QA program consists of an ongoing comparison of analytical data with previous data collected by EEG and other organizations, radiochemical quality control through the use of blank or duplicate samples, recognized reference standards and the use of accepted practices for sample acquisition, handling, and analysis.

The procedures used for sample acquisition, handling and analysis are contained in the Environmental Evaluation Group Environmental Procedures Manual (EPM). This manual is based on widely recognized procedures such as Standard Methods for the Examination of Water and Wastewater (APHA 1971), EPA "National Primary and Secondary Ambient Air Quality Standards" (40 CFR Part 50), and "A Guide for Environmental Radiation Surveillance at U.S. Department of Energy Installations" (Corley 1981).

The Environmental Evaluation Group's vendor for radiochemical analyses of environmental samples maintains a separate QA program. The major components of the vendor program are periodic calibration of counting instruments using standards traceable to the National Institute of Standards Technology, routine determination of chemical yields, and ongoing assessment of reagent quality. An independent check on the quality of the radiochemical analysis vendor is provided by the Crosscheck Interlaboratory Program which is administered by the Environmental Protection Agency.

6.0 Conclusions and Recommendations

The data contained in this report establish a baseline of radionuclide concentrations in certain critical environmental media in the vicinity of the WIPP facility. The data found in this report closely parallel those found in WIPP site environmental reports over the same time period (Reith et al. 1986, Banz et al. 1987 and Flynn et al. 1988) in terms of preoperational levels of the primoidal and fallout radionuclides in the WIPP environment. One major event in fallout-derived airborne radioactivity, observed by both groups, was the detection of increased levels of Cs-137 from Chernobyl fallout.

The issuance of this report by the Environmental Evaluation Group marks a transition between a purely baseline monitoring program and the implementation of changes in its environmental surveillance program in preparation for an operational WIPP facility. A significant change will be the establishment of a program to independently analyze the airborne effluent from the underground ventilation systems. In support of this program, the capability to analyze samples spectrometrically in the EEG laboratory prior to destructive radiochemical analysis is being developed. This capability will include screening of the environmental air and soil samples. Other programmatic changes include replacement of intermittently operated high volume air samplers to continuously operated low volume air samplers in the communities near the WIPP facility and a decreased number of radiochemical analyses of groundwater samples and a small increase in the frequency of surface-water site sampling.

Table 1. Preoperational Radiological Surveillance Program at WIPP

ENVIRONMENTAL MEDIUM	LOCATION	SAMPLING/ ANALYSIS FREQUENCY	PARAMETER
Air	Offsite High Volume Air Sampler 4 Locations Offsite	Weekly/ Quarterly Composite	gross alpha, gross beta, Pu-238, Pu-239+240, Am-241, Cs-137, Sr-90, Th-228, Th-230, Th-232, Ra-226, Ra-228
	Onsite Low Volume Air Sampler 3 Locations Onsite	Continuous/ Quarterly Composite	gross alpha, gross beta, Pu-238, Pu-239+240, Am-241, Cs-137, Sr-90, Th-228, Th-230, Th-232, Ra-226, Ra-228
Surface Water	Pecos River 2 Locations	Semiannually/ Semiannually	gross alpha, gross beta, Pu-238, Pu-239+240, Am-241, Tritium, Cs-137, Sr-90, Ra-226, Ra-228, U-233+234, U-235, U-238, Th-228, Th-230, Th-232
	Laguna Grande de La Sal	Semiannually/ Semiannually	gross alpha, gross beta Pu-238, Pu-239+240, Am-241, Tritium, Cs-137, Sr-90, Ra-226, Ra-228, U-233+234, U-235, U-238, Th-228, Th-230, Th-232
	Ponds 2 Locations	Semiannually/ Semiannually	gross alpha, gross beta, Pu-238, Pu-239+240, Am-241, Tritium, Cs-137, Sr-90, Ra-226, Ra-228, U-233+234, U-235, U-238, Th-228, Th-230, Th-232
Ground Water	21 Wells	Annually/ Annually	gross alpha, gross beta, Pu-238, Pu-239+240, Am-241, Tritium, Cs-137, Sr-90, Ra-226, Ra-228, U-233+234, U-235, U-238, Th-228, Th-230, Th-232
Municipal Drinking Water	3 Systems	Annually/ Annually	gross alpha, gross beta Pu-238, Pu-239+240, Am-241, Tritium, Cs-137, Sr-90, Ra-226, Ra-228, U-233+234, U-235, U-238, Th-228, Th-230, Th-232

Table 1 (Continued). Preoperational Radiological Surveillance Program at WIPP

ENVIRONMENTAL MEDIUM	LOCATION	SAMPLING/ ANALYSIS FREQUENCY	PARAMETER
Soil and Sediment	3 Sites	Annually/ Annually	gross alpha, gross beta, Pu-238, Pu-239+240, Cs-137, Sr-90, U-233+234, U-235, U-238, Th-228, Th-230, Th-232
Biota	2 Specimens*	Annually/ Annually	Pu-238, Pu-239+240, Am-241, Tritium, Cs-137
Facility Effluents			
Air	2 Underground Ventilation Exhaust (Sta. A & B)	Continuously	gross alpha, gross beta, Pu-238, Pu-239+240, Am-241, Cs-137, Sr-90, Th-232, Th-230, Th-228, Ra-226, Ra-228
Sewage	1 Lagoon	Semiannually	gross alpha, gross beta, Pu-238, Pu-239+240, Am-241, Tritium, Cs-137, Sr-90, Ra-226, Ra-228, U-233+234, U-235, U-238, Th-228, Th-230, Th-232

*Sampling performed by DOE

Table 2. Location of Wells for Groundwater Sampling

WELL I.D.	TOWNSHIP	RANGE	SECTION	DISTANCE FROM SECTION LINE (FT)	FORMATION SAMPLED
Mobley Well	T21S	R32E	Sec.31	Not Available	Culebra Dolomite**
Comanche	T22S	R32E	Sec.14	N/A	Santa Rosa**
Clifton Well	T23S	R32E	Sec. 3	N/A	Santa Rosa**
Barn Well	T23S	R31E	Sec. 7	N/A	Dewey Lake Redbuds**
Fairview Well	T23S	R32E	Sec.26	N/A	Dewey Lake Redbuds**
Unger Well	T23S	R31E	Sec.17	N/A	Dewey Lake Redbuds**
Engle	T24S	R32E	Sec. 4*	240 FSL 1500 FEL	Culebra Dolomite**
Poker Well	T24S	R30E	Sec.12	N/A	Culebra Dolomite**
Ranch Well	T23S	R31E	Sec. 7	N/A	Dewey Lake Redbuds**
DOE-1	T22S	R31E	Sec.28*	182.4 FSL 607.8 FEL	Culebra Dolomite**
DOE-2	T22S	R31E	Sec. 8*	704.07 FSL 128.19 FEL	Bell Canyon/ Culebra**
H-2a	T22S	R31E	Sec.29*	726.96 FNL 1697.64 FWL	Culebra Dolomite**
H-3B-1	T22S	R31E	Sec.29*	2085.3 FSL 138.1 FEL	Magenta Dolomite**
H-3b-3	T22S	R31E	Sec.29*	2022.35 FSL 217.30 FEL	Culebra Dolomite**
H4B	T23S	R31E	Sec. 5*	498.47 FNL 632.54 FWL	Culebra Dolomite**
H-6b	T22S	R31E	Sec.18*	196.34 FNL 322.96 FWL	Culebra**

Table 2 (Continued). Location of Wells for Groundwater Sampling

WELL I.D.	TOWNSHIP	RANGE	SECTION	DISTANCE FROM SECTION LINE (FT)	FORMATION SAMPLED
H-6c	T22S	R31E	Sec.18*	281.06 FNL 374.47 FWL	Magenta**
H-7b	T23S	R30E	Sec.14*	2565.8 FNL 2563.45 FWL	Culebra**
H-8B	T24S	R30E	Sec.23*	1994 FNL 1405.4 FEL	Culebra**
H-9b	T24S	R31E	Sec. 4*	2391.04 FNL 238.63 FWL	Culebra**
H-11b3	T22S	R31E	Sec.33*	1501.7 FSL 105.2 FEL	Culebra**
H-12	T23S	R31E	Sec.15*	23.1 FNL 91.9 FEL	Culebra**
H-14	T22S	R31E	Sec.29*	372.6 FSL 562.4 FWL	Culebra**
H-15	T22S	R31E	Sec.28*	88.7 FNL 174.3 FEL	Culebra**
H-17	T23S	R31E	Sec. 3*	1465.5 FSL 994.1 FWL	Culebra**
P-14	T22S	R30E	Sec.24*	307.9 FSL 615.8 FWL	Culebra**
WIPP-25	T22S	R30E	Sec.15*	1852.77 FSL 2838.10 FEL	Culebra Dolomite**
WIPP-26	T22S	R30E	Sec.29*	2232.27 FNL 12.2 FEL	Culebra Dolomite**

*From Gonzales (1989)
**From Randall (1988)

Note: FNL = feet from north line of section
FEL = feet from east line of section
FSL = feet from south line of section
FWL = feet from west line of section

TABLE 3. STATISTICAL ANALYSES OF RADIOCHEMICAL DATA

ANALYSIS	GROUND WATER		SURFACE WATER		SOIL & SEDIMENT		PUBLIC WATER		LOW VOLUME AIR SAMPLE		HIGH VOLUME AIR SAMPLE	
	>MDL µCi/ml	% of Total	>MDL µCi/ml	% of Total	>MDL µCi/g	% of Total	>MDL µCi/ml	% of Total	>MDL µCi/ml	% of Total	>MDL µCi/ml	% of Total
Gross Alpha	5	7	1	6	1	33						
Gross Beta	19	26	13	72	3	100	2	25				
Cs-137	4	5	2	11	2	67					9	19
Sr-90	1	1	1	6	1	33						
Ra-226	54	74	9	44			2	33	5	21	13	27
Ra-228	37	51	4	22					2	8	2	4
U-238	41	56	11	61			3	50				
U-235	10	14	4	22								
U-233+234	45	62	12	67			4	67				
Th-232	1	1	4	22					4	17	18	38
Th-230	6	8	3	17					10	42	24	50
Th-228	25	34	1	11			1	17	1	4	17	35

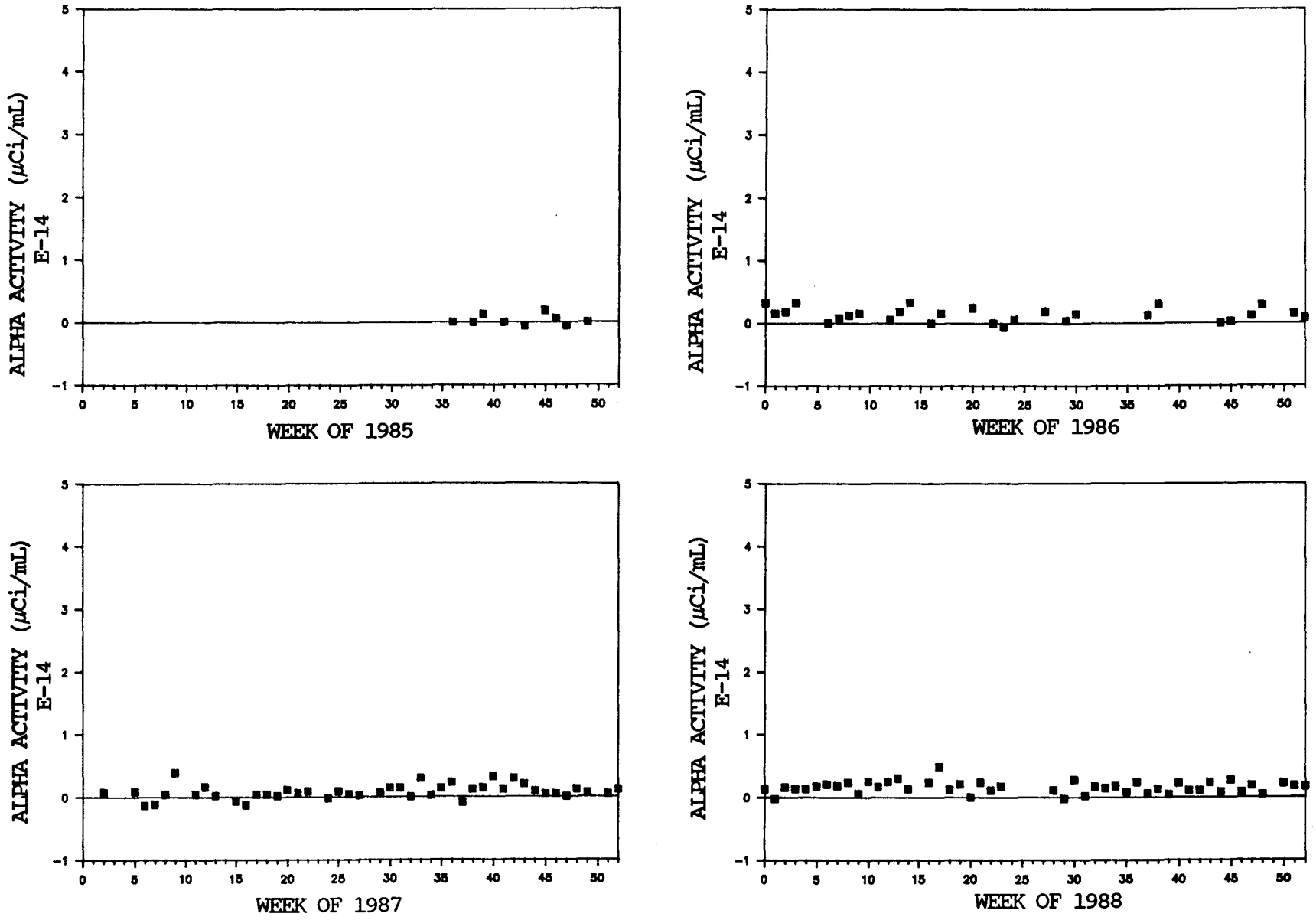

Figure 8. Alpha Activity For High Volume Air Samples - Artesia, NM

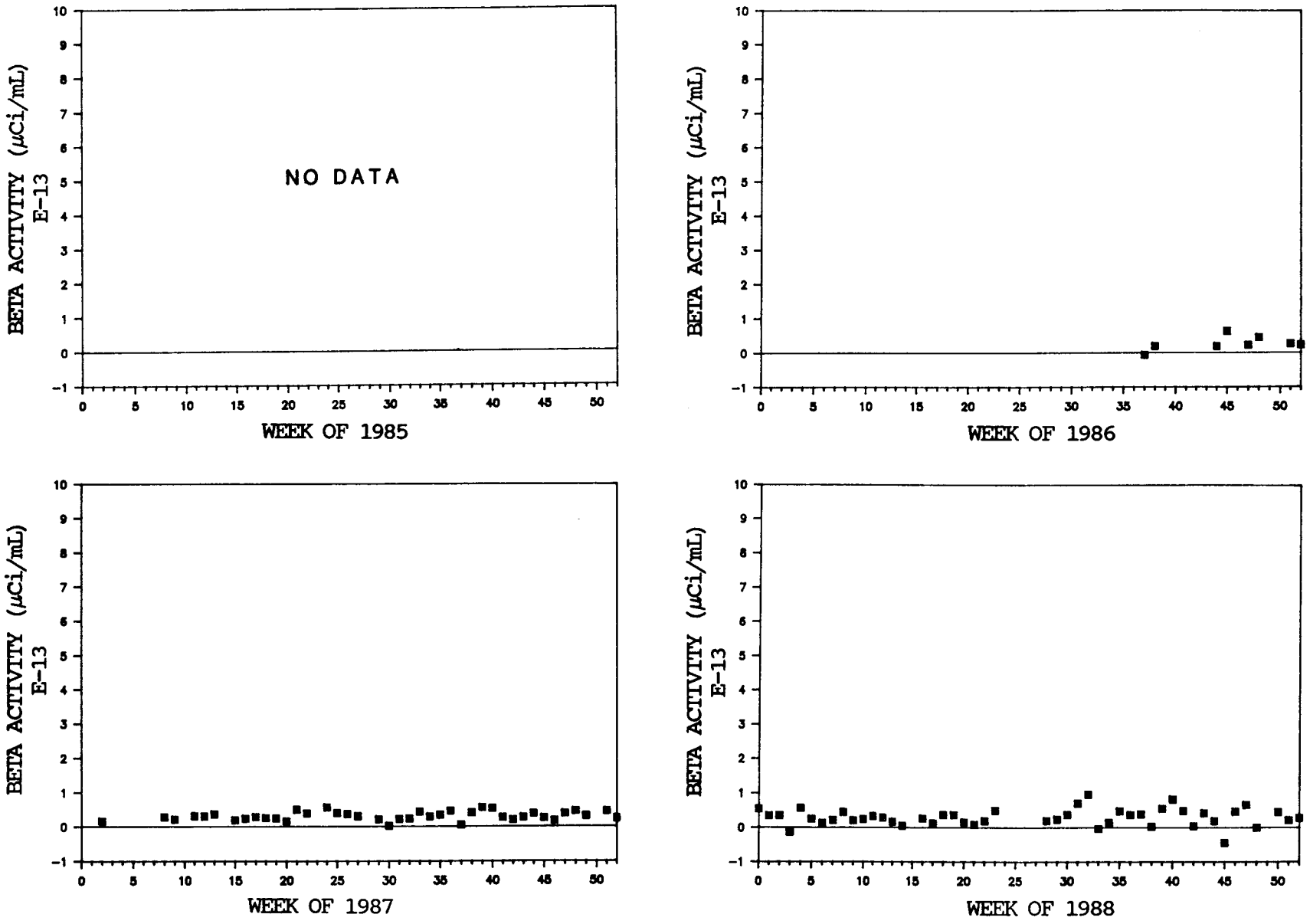

Figure 9. Beta Activity For High Volume Air Samples - Artesia, NM

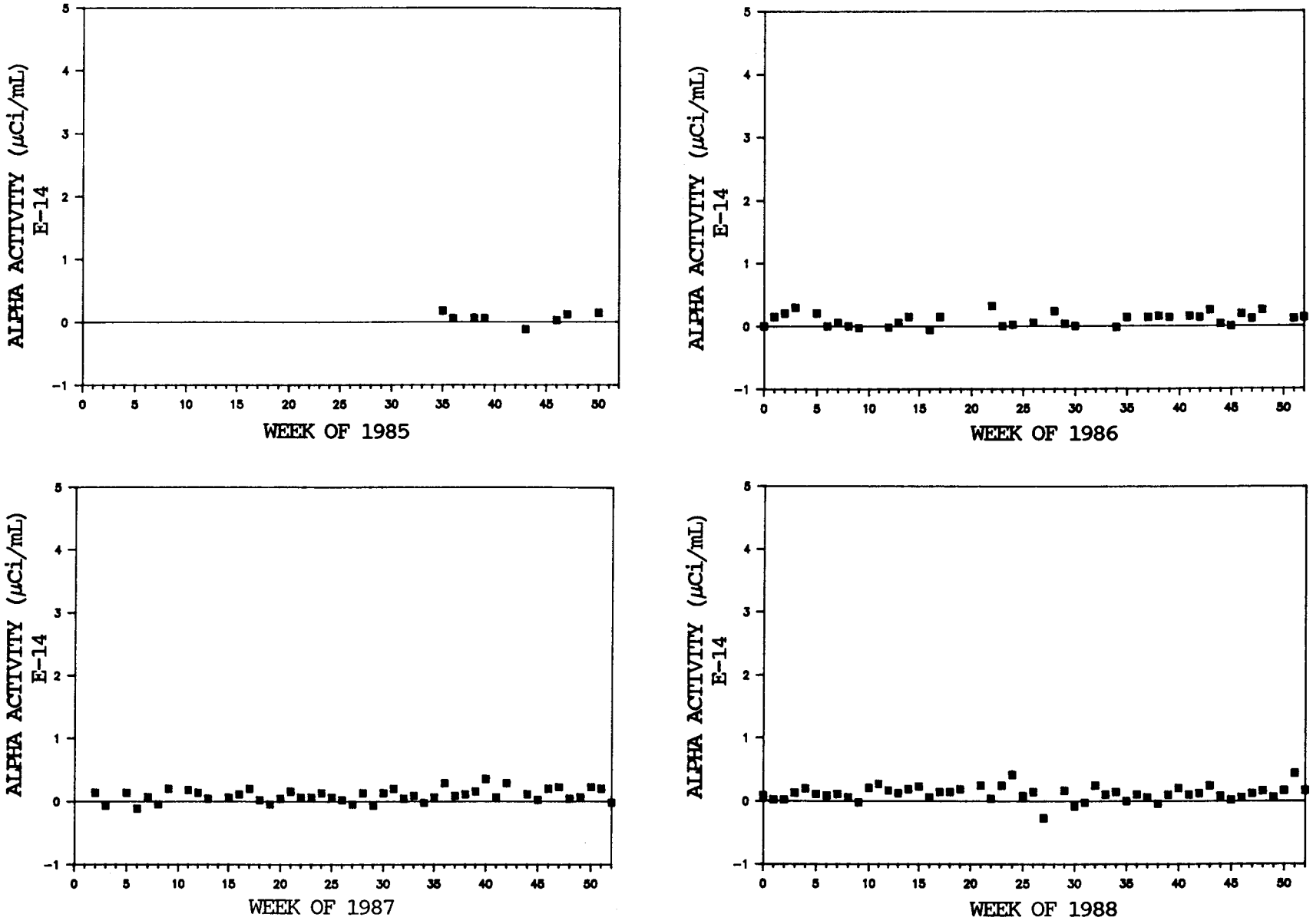

Figure 10. Alpha Activity For High Volume Air Samples - Carlsbad, NM

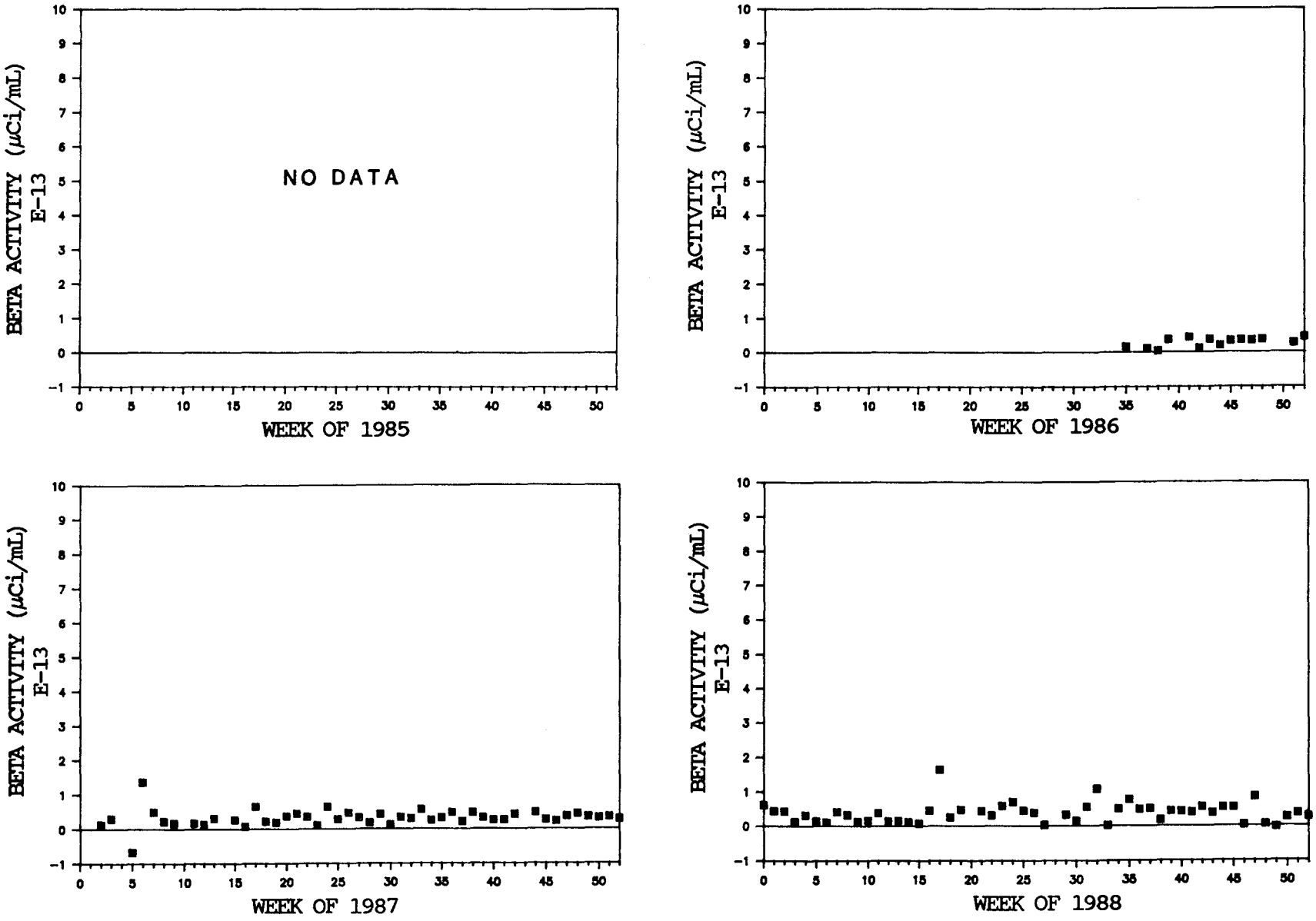

Figure 11. Beta Activity For High Volume Air Samples - Carlsbad, NM

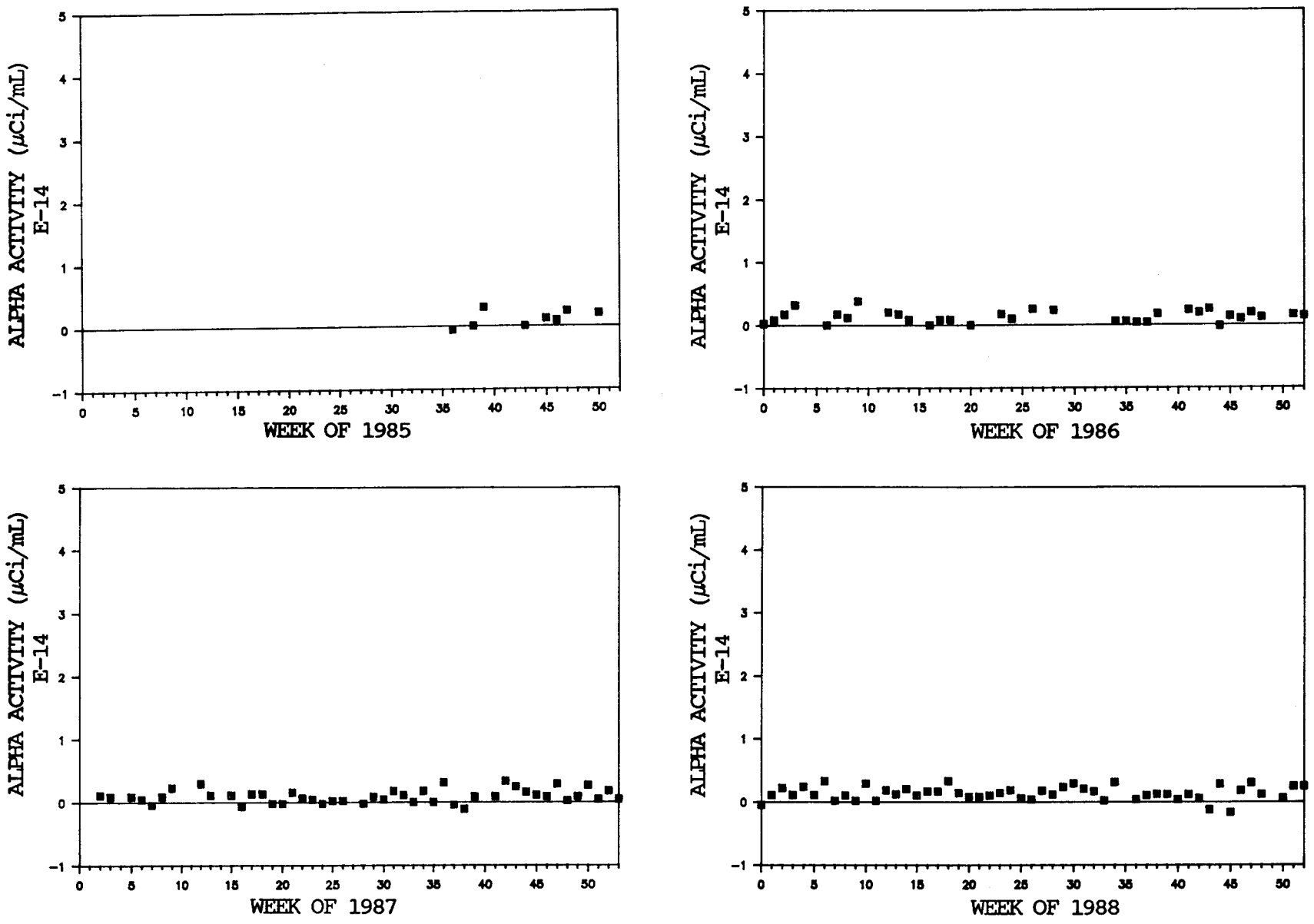

Figure 12. Alpha Activity For High Volume Air Samples - Hobbs, NM

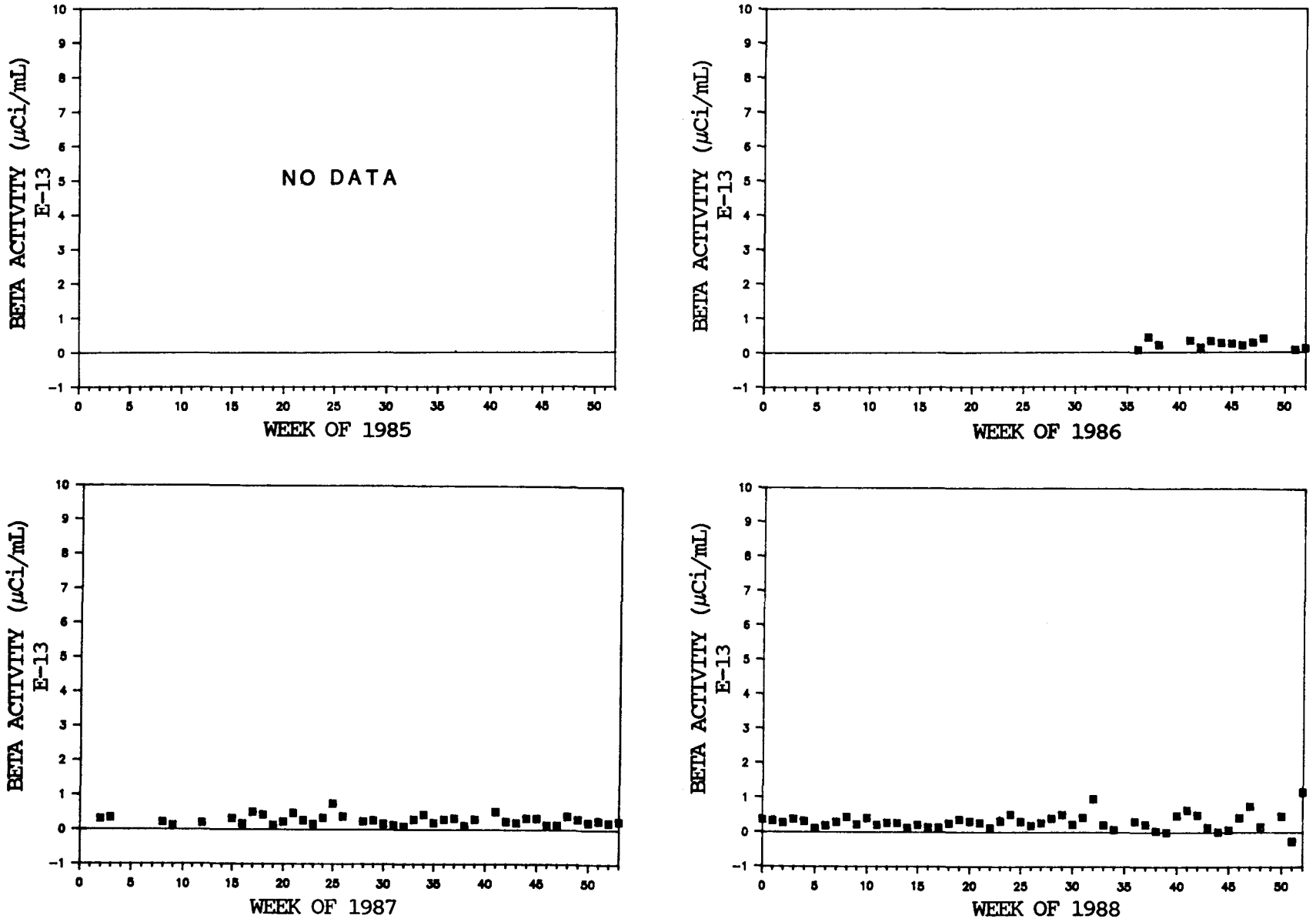

Figure 13. Beta Activity For High Volume Air Samples - Hobbs, NM

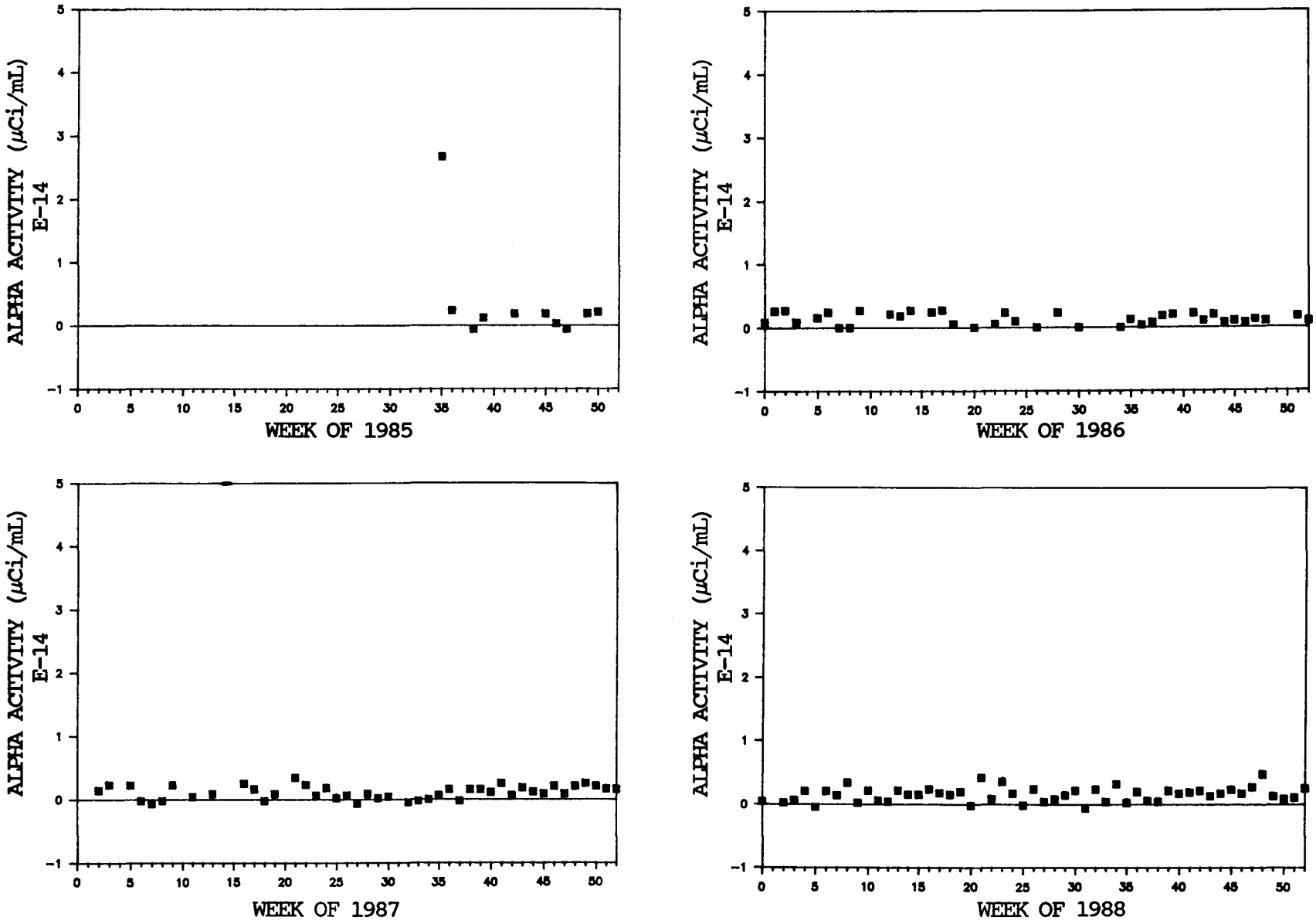

Figure 14. Alpha Activity For High Volume Air Samples - Loving, NM

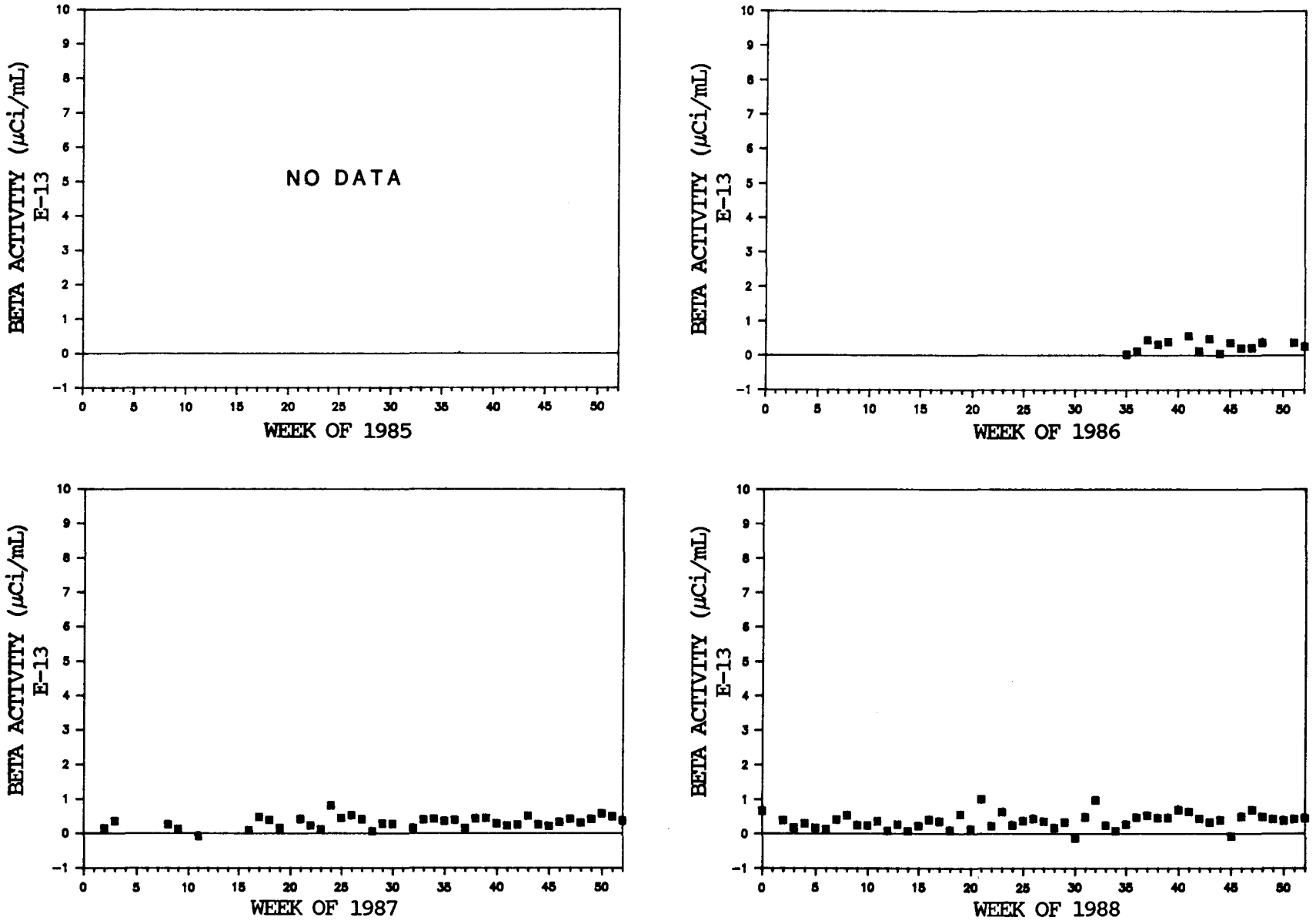

Figure 15. Beta Activity For High Volume Air Samples - Loving, NM

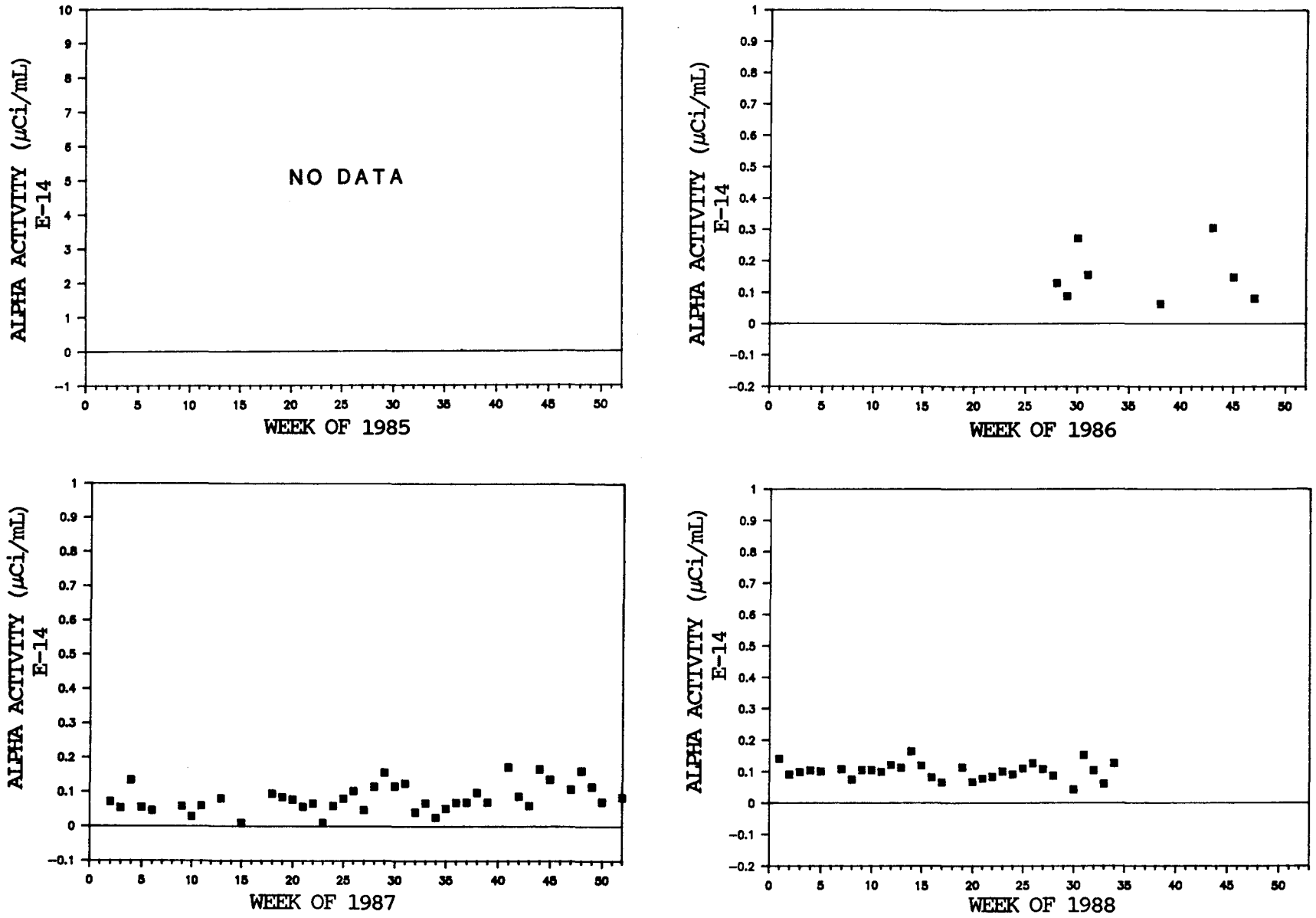

Figure 16. Alpha Activity For Low Volume Air Samples - Site 1

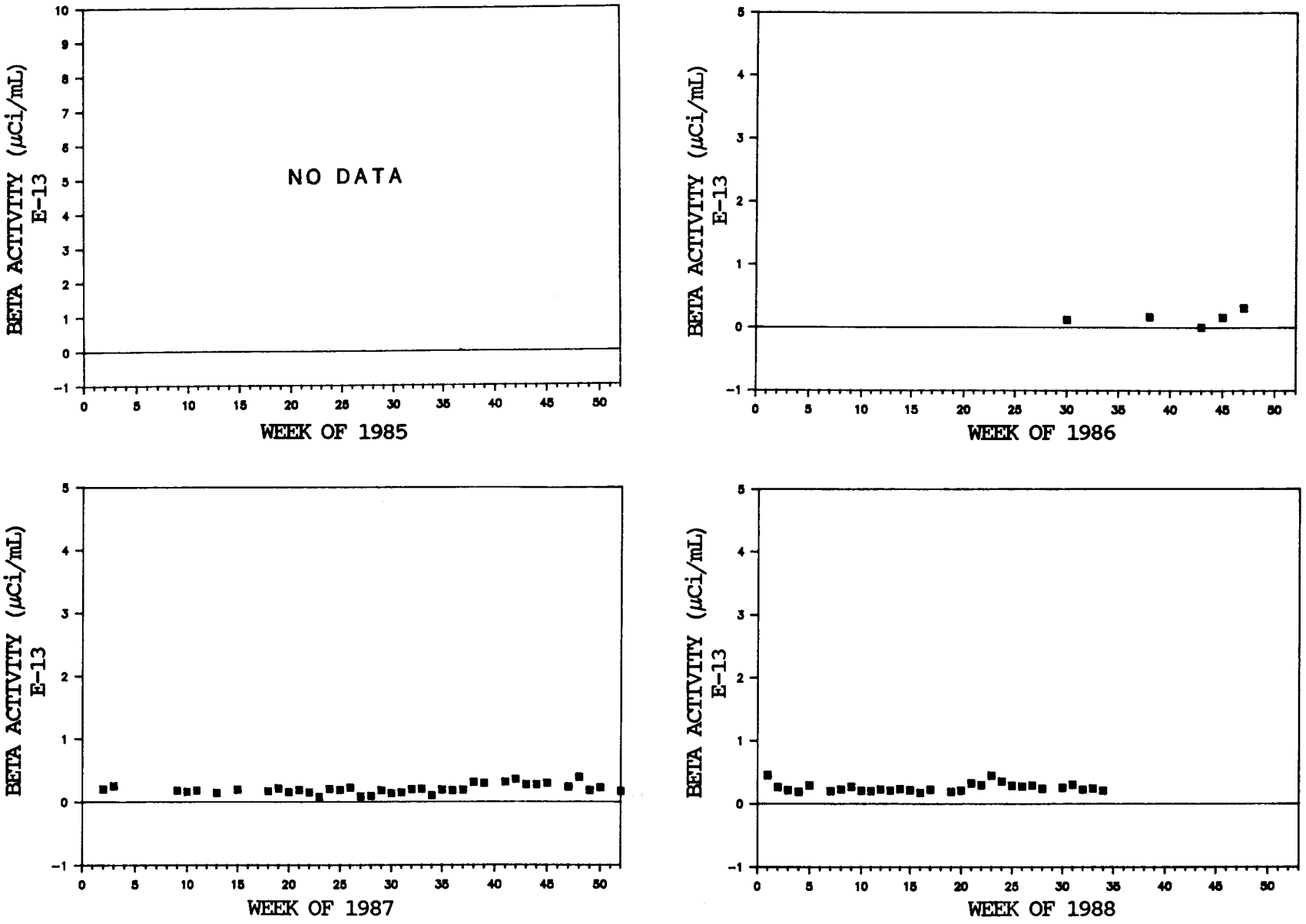

Figure 17. Beta Activity For Low Volume Air Samples - Site 1

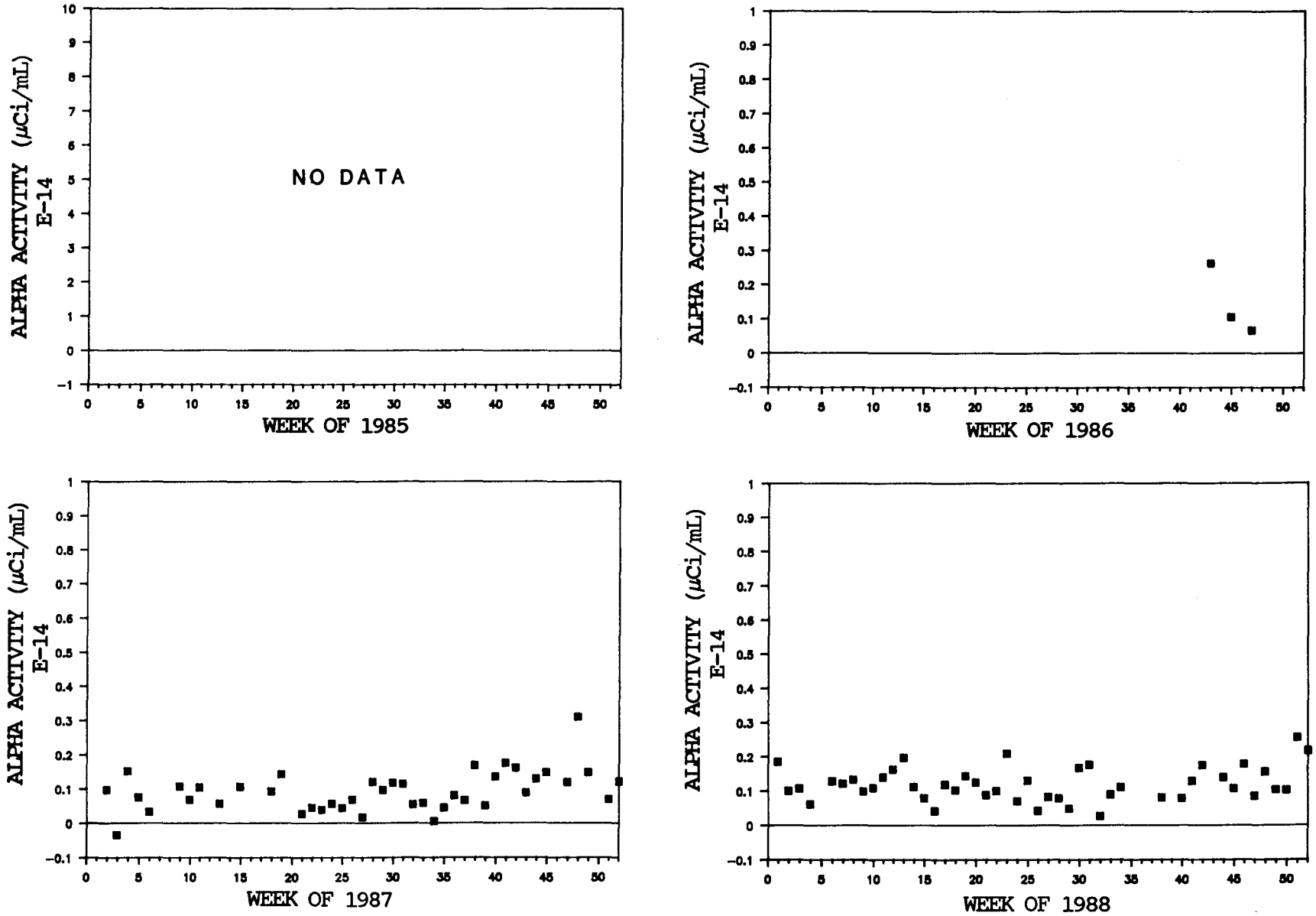

Figure 18. Alpha Activity For Low Volume Air Samples - Site 2

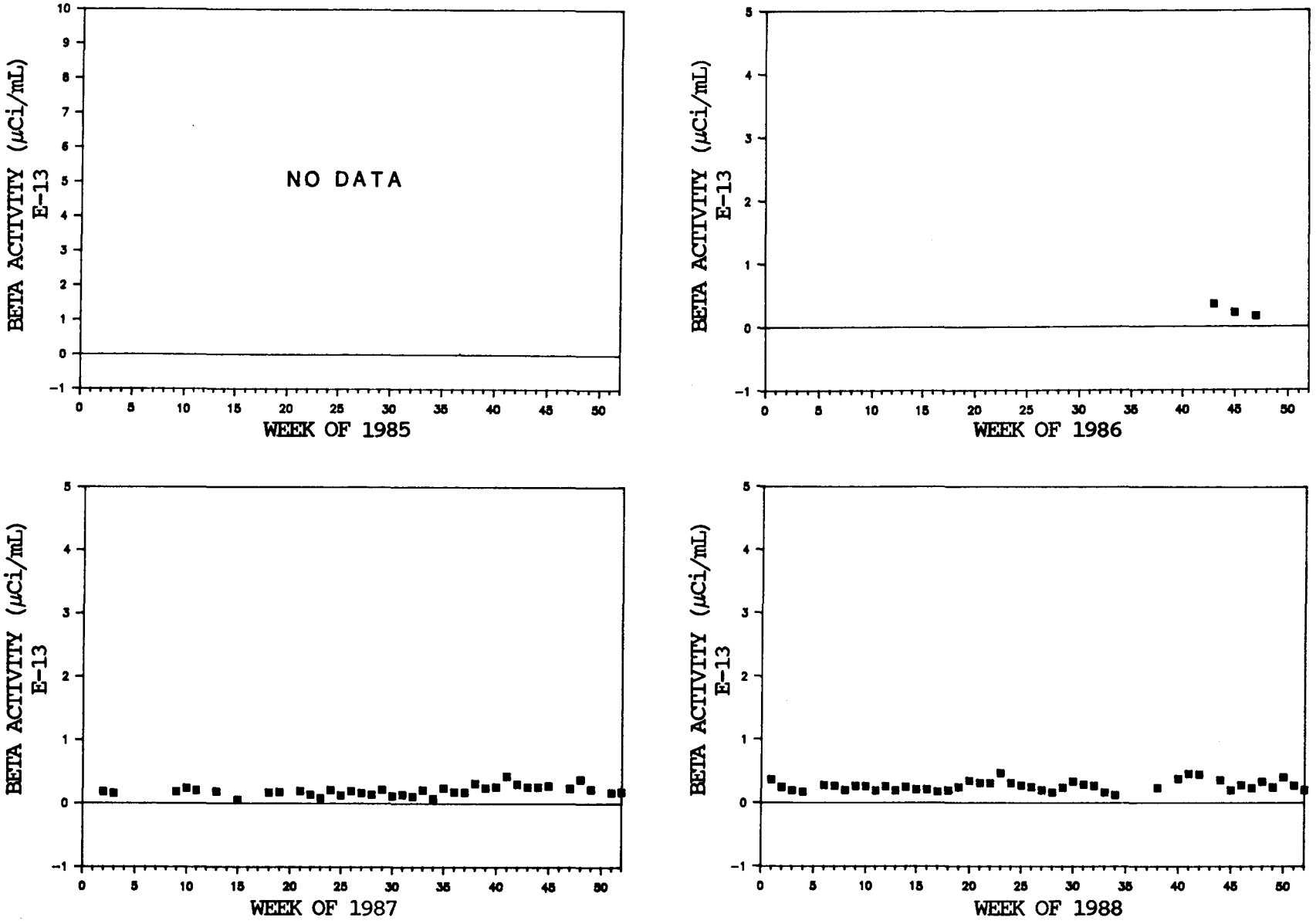

Figure 19. Beta Activity For Low Volume Air Samples - Site 2

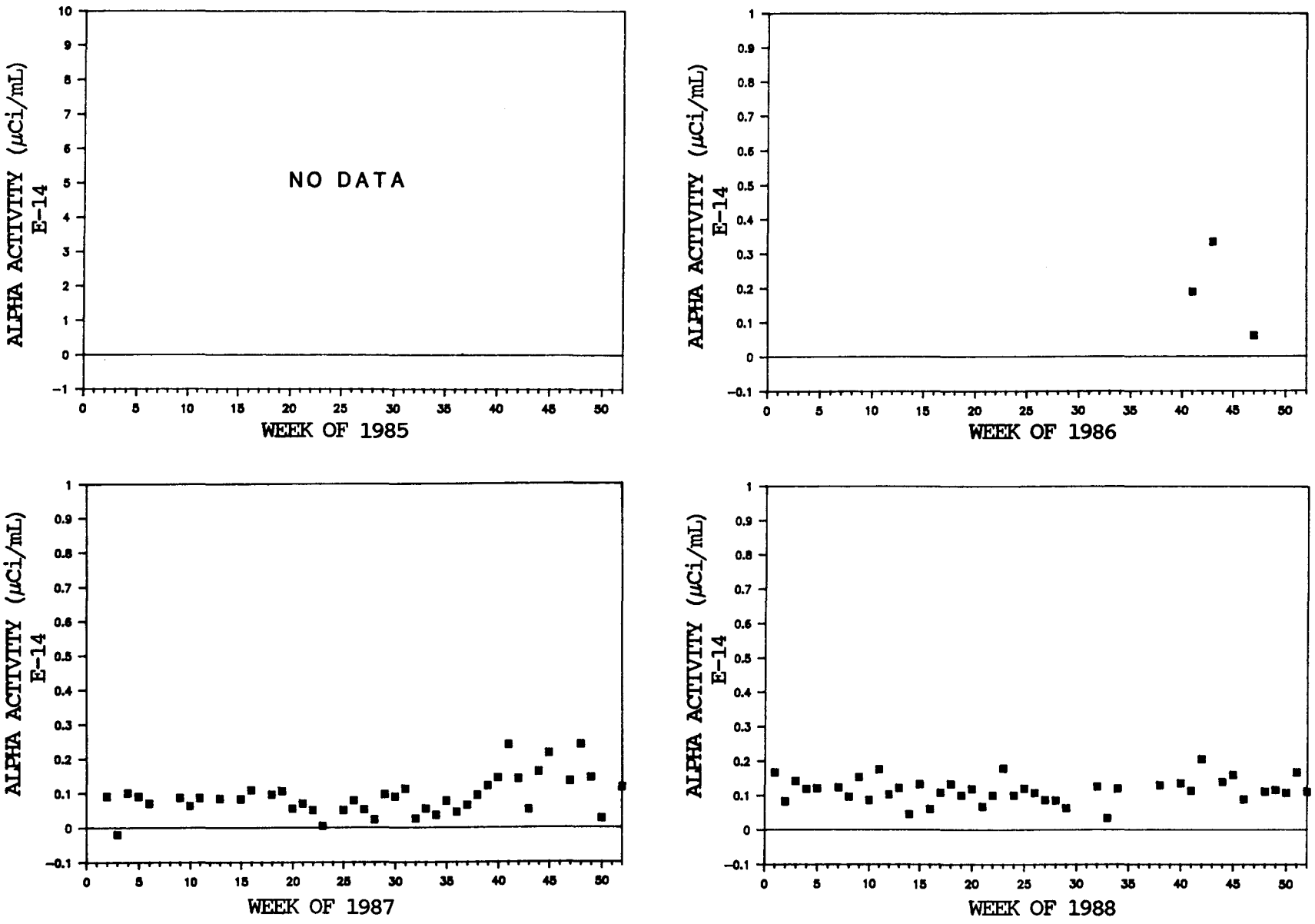

Figure 20. Alpha Activity For Low Volume Air Samples - Site 3

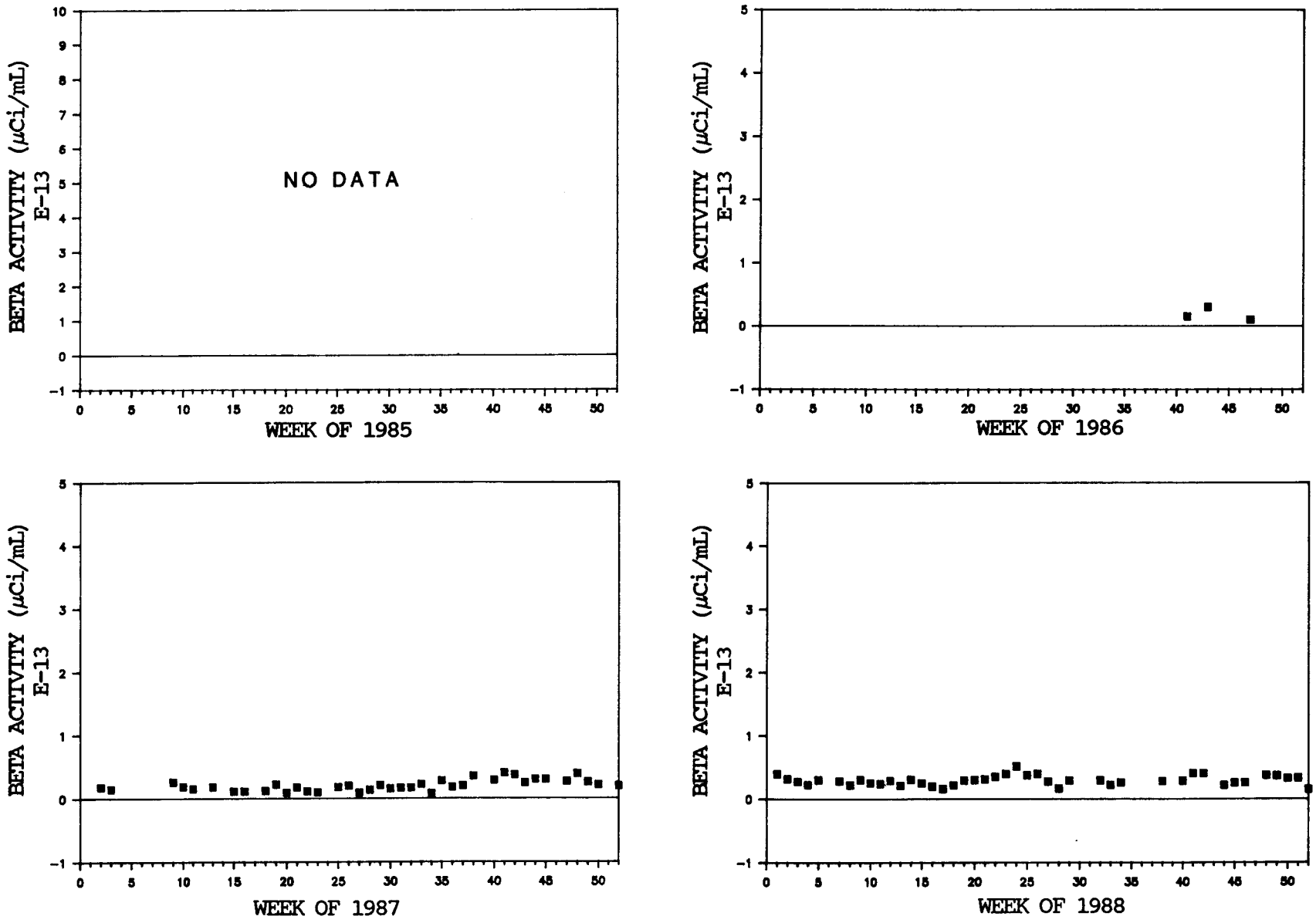

Figure 21. Beta Activity For Low Volume Air Samples - Site 3

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Appendix A

RADIOCHEMISTRY DATA

Note:

1. "Counting Error" represents the variability of the radioactive disintegration process at the 95% confidence level.

2. "MDL" stands for Minimum Detectable Level. See report section 4.0 Discussion of Findings for a discussion of the MDL.

3. "HVAS" stands for High Volume Air Sampler.

4. "LVAS" stands for Low Volume Air Sampler.

Table A1. Radiochemical Analysis of LVAS Samples - Site 1

SITE 1 - 4TH QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.4E-06	8.5E-06	1.1E-05	6.6E-17	2.3E-16	2.9E-16
Pu-238	1.1E-05	3.5E-05	3.5E-05	3.0E-16	9.6E-16	9.6E-16
Pu-239+240	0.0E+00	1.9E-05	2.2E-05	0.0E+00	5.3E-16	5.9E-16
Cs-137	1.2E-05	7.3E-05	9.2E-05	3.3E-16	2.0E-15	2.5E-15
Sr-90	1.2E-05	4.1E-05	5.0E-05	3.3E-16	1.1E-15	1.4E-15
Ra-226	1.9E-05	1.5E-05	1.6E-05	5.3E-16	4.0E-16	4.3E-16
Ra-228	-3.0E-05	5.0E-05	6.2E-05	-8.2E-16	1.4E-15	1.7E-15
Th-233	1.2E-06	3.7E-06	3.7E-06	3.3E-17	9.9E-17	1.0E-16
Th-230	2.4E-06	7.3E-06	7.5E-06	6.6E-17	2.0E-16	2.0E-16
Th-228	2.4E-06	6.1E-06	6.6E-06	6.6E-17	1.6E-16	1.8E-16

SITE 1 - 1ST QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-2.9E-07	1.7E-06	1.7E-06	-7.8E-18	4.7E-17	4.7E-17
Pu-238	-2.9E-07	1.4E-06	1.4E-06	-7.8E-18	3.9E-17	3.9E-17
Pu-239+240	2.9E-07	8.6E-07	8.7E-07	7.8E-18	2.3E-17	2.3E-17
Cs-137	1.5E-05	2.4E-05	2.9E-05	4.2E-16	6.5E-16	8.0E-16
Sr-90	-1.4E-06	1.5E-05	1.9E-05	-3.9E-17	4.2E-16	5.1E-16
Ra-226	1.4E-06	3.7E-06	3.7E-06	3.9E-17	1.0E-16	1.0E-16
Ra-228	3.4E-06	1.4E-05	1.7E-05	9.3E-17	3.9E-16	4.7E-16
Th-233	1.1E-06	1.1E-06	1.2E-06	3.1E-17	3.1E-17	3.4E-17
Th-230	1.7E-06	3.4E-06	3.5E-06	4.7E-17	9.3E-17	9.4E-17
Th-228	5.7E-07	1.4E-06	1.4E-06	1.6E-17	3.9E-17	3.9E-17

SITE 1 - 2ND QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.4E-07	1.7E-06	1.7E-06	6.5E-18	4.6E-17	4.6E-17
Pu-238	-1.7E-06	1.9E-06	1.9E-06	-4.6E-17	5.2E-17	5.3E-17
Pu-239+240	1.2E-06	1.7E-06	1.8E-06	3.3E-17	4.6E-17	4.9E-17
Cs-137	4.1E-06	2.1E-05	2.5E-05	1.1E-16	5.6E-16	6.8E-16
Sr-90	-1.9E-06	1.4E-05	1.7E-05	-5.2E-17	3.7E-16	4.5E-16
Ra-226	0.0E+00	4.4E-06	4.4E-06	0.0E+00	1.2E-16	1.2E-16
Ra-228	2.7E-05	1.5E-05	1.7E-05	7.2E-16	3.9E-16	4.6E-16
Th-233	9.7E-07	9.7E-07	9.7E-07	2.6E-17	2.6E-17	2.6E-17
Th-230	2.4E-07	1.7E-06	1.7E-06	6.5E-18	4.6E-17	4.6E-17
Th-228	1.2E-06	1.2E-06	1.2E-06	3.3E-17	3.3E-17	3.3E-17

Table A1. Radiochemical Analysis of LVAS Samples - Site 1

SITE 1 - 3RD QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.2E-07	1.3E-06	1.4E-06	5.8E-18	3.5E-17	3.7E-17
Pu-238	-2.2E-07	2.2E-06	2.2E-06	-5.8E-18	5.8E-17	5.8E-17
Pu-239+240	2.2E-07	1.1E-06	1.1E-06	5.8E-18	2.9E-17	2.9E-17
Cs-137	5.2E-06	1.1E-05	1.3E-05	1.4E-16	2.9E-16	3.5E-16
Sr-90	-2.2E-06	9.3E-06	1.2E-05	-5.8E-17	2.5E-16	3.2E-16
Ra-226	-1.7E-06	2.6E-06	2.6E-06	-4.7E-17	7.0E-17	7.0E-17
Ra-228	5.8E-06	1.2E-05	1.5E-05	1.6E-16	3.3E-16	3.9E-16
Th-233	2.2E-06	1.9E-06	2.0E-06	5.8E-17	5.2E-17	5.5E-17
Th-230	4.5E-05	8.6E-06	8.7E-06	1.2E-15	2.3E-16	2.4E-16
Th-228	2.2E-07	8.6E-07	9.0E-07	5.8E-18	2.3E-17	2.4E-17

SITE 1 - 4TH QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.2E-07	1.3E-06	1.3E-06	5.9E-18	3.5E-17	3.6E-17
Pu-238	-8.7E-07	3.1E-06	3.1E-06	-2.4E-17	8.2E-17	8.3E-17
Pu-239+240	4.4E-07	1.1E-06	1.1E-06	1.2E-17	2.9E-17	3.0E-17
Cs-137	8.7E-06	2.8E-05	3.0E-05	2.4E-16	7.7E-16	8.0E-16
Sr-90	-2.0E-06	9.4E-06	1.2E-05	-5.3E-17	2.5E-16	3.1E-16
Ra-226	-2.2E-07	2.2E-06	2.2E-06	-5.9E-18	5.9E-17	5.9E-17
Ra-228	-4.4E-07	1.0E-05	1.3E-05	-1.2E-17	2.8E-16	3.5E-16
Th-233	2.2E-07	4.4E-07	4.7E-07	5.9E-18	1.2E-17	1.3E-17
Th-230	2.6E-06	1.7E-06	1.8E-06	7.1E-17	4.7E-17	4.7E-17
Th-228	2.2E-07	6.5E-07	6.8E-07	5.9E-18	1.8E-17	1.8E-17

SITE 1 - 1ST QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.9E-07	7.4E-07	7.4E-07	-5.0E-18	2.0E-17	2.0E-17
Pu-238	0.0E+00	3.0E-06	3.0E-06	0.0E+00	8.0E-17	8.1E-17
Pu-239+240	7.4E-07	1.5E-06	1.5E-06	2.0E-17	4.0E-17	4.1E-17
Cs-137	-2.0E-06	1.1E-05	1.4E-05	-5.5E-17	3.0E-16	3.7E-16
Sr-90	-2.8E-06	5.2E-06	6.4E-06	-7.5E-17	1.4E-16	1.7E-16
Ra-226	1.7E-06	2.8E-06	2.8E-06	4.5E-17	7.5E-17	7.5E-17
Ra-228	3.1E-06	9.1E-06	1.1E-05	8.5E-17	2.5E-16	3.0E-16
Th-233	-1.9E-07	1.9E-07	5.0E-07	-5.0E-18	5.0E-18	1.4E-17
Th-230	9.3E-07	1.7E-06	1.8E-06	2.5E-17	4.5E-17	5.0E-17
Th-228	-7.4E-07	1.3E-06	1.3E-06	-2.0E-17	3.5E-17	3.6E-17

Table A1. Radiochemical Analysis of LVAS Samples - Site 1

SITE 1 - 2ND QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	7.8E-07	1.8E-06	1.8E-06	2.1E-17	4.8E-17	4.9E-17
Pu-238	-2.4E-06	2.7E-06	2.8E-06	-6.4E-17	7.4E-17	7.4E-17
Pu-239+240	2.0E-07	1.6E-06	1.6E-06	5.3E-18	4.2E-17	4.3E-17
Cs-137	8.2E-06	9.2E-06	1.1E-05	2.2E-16	2.5E-16	3.0E-16
Sr-90	-3.9E-07	7.6E-06	9.4E-06	-1.1E-17	2.1E-16	2.5E-16
Ra-226	4.1E-06	2.9E-06	3.0E-06	1.1E-16	7.9E-17	8.0E-17
Ra-228	7.6E-06	1.6E-05	1.9E-05	2.1E-16	4.2E-16	5.1E-16
Th-233	3.9E-07	5.9E-07	6.4E-07	1.1E-17	1.6E-17	1.7E-17
Th-230	4.1E-06	2.0E-06	2.0E-06	1.1E-16	5.3E-17	5.4E-17
Th-228	1.4E-06	1.4E-06	1.4E-06	3.7E-17	3.7E-17	3.9E-17

SITE 1 - 3RD QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	0.0E+00	1.5E-06	1.5E-06	0.0E+00	4.0E-17	4.0E-17
Pu-238	-9.1E-07	2.0E-06	2.0E-06	-2.5E-17	5.4E-17	5.5E-17
Pu-239+240	-9.1E-07	1.5E-06	1.5E-06	-2.5E-17	4.0E-17	4.0E-17
Cs-137	4.4E-06	7.3E-06	8.9E-06	1.2E-16	2.0E-16	2.4E-16
Sr-90	-9.1E-07	9.0E-06	1.1E-05	-2.5E-17	2.4E-16	3.0E-16
Ra-226	2.9E-06	2.0E-06	2.1E-06	7.9E-17	5.4E-17	5.6E-17
Ra-228	1.3E-06	1.0E-05	1.3E-05	3.5E-17	2.8E-16	3.4E-16
Th-233	1.5E-06	1.1E-06	1.1E-06	4.0E-17	3.0E-17	3.0E-17
Th-230	0.0E+00	9.1E-07	9.4E-07	0.0E+00	2.5E-17	2.5E-17
Th-228	1.8E-07	1.1E-06	1.3E-06	4.9E-18	3.0E-17	3.4E-17

Table A2. Radiochemical Analysis of LVAS Samples - Site 2

SITE 2 - 4TH QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-3.7E-06	6.1E-06	6.1E-06	-9.9E-17	1.7E-16	1.7E-16
Pu-238	-1.8E-05	2.6E-05	2.6E-05	-5.0E-16	6.9E-16	6.9E-16
Pu-239+240	-3.7E-06	1.2E-05	1.2E-05	-9.9E-17	3.3E-16	3.3E-16
Cs-137	2.4E-05	7.3E-05	9.3E-05	6.6E-16	2.0E-15	2.5E-15
Sr-90	0.0E+00	4.8E-05	5.8E-05	0.0E+00	1.3E-15	1.6E-15
Ra-226	1.6E-05	1.7E-05	1.9E-05	4.3E-16	4.6E-16	5.2E-16
Ra-228	7.8E-05	7.3E-05	8.8E-05	2.1E-15	2.0E-15	2.4E-15
Th-233	-1.2E-06	2.4E-06	2.7E-06	-3.3E-17	6.6E-17	7.2E-17
Th-230	1.2E-06	8.6E-06	8.8E-06	3.3E-17	2.3E-16	2.4E-16
Th-228	1.2E-06	7.3E-06	7.6E-06	3.3E-17	2.0E-16	2.1E-16

SITE 2 - 1ST QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	6.2E-07	2.5E-06	2.5E-06	1.7E-17	6.7E-17	6.9E-17
Pu-238	0.0E+00	1.5E-06	1.6E-06	0.0E+00	4.2E-17	4.2E-17
Pu-239+240	-6.2E-07	9.2E-07	9.3E-07	-1.7E-17	2.5E-17	2.5E-17
Cs-137	6.2E-06	1.7E-05	2.1E-05	1.7E-16	4.6E-16	5.6E-16
Sr-90	8.0E-06	1.5E-05	1.9E-05	2.2E-16	4.2E-16	5.0E-16
Ra-226	-1.8E-06	4.0E-06	4.0E-06	-5.0E-17	1.1E-16	1.1E-16
Ra-228	-3.4E-06	1.7E-05	2.1E-05	-9.1E-17	4.6E-16	5.6E-16
Th-233	0.0E+00	6.2E-07	6.7E-07	0.0E+00	1.7E-17	1.8E-17
Th-230	-6.2E-07	3.4E-06	3.4E-06	-1.7E-17	9.1E-17	9.2E-17
Th-228	1.8E-06	2.2E-06	2.4E-06	5.0E-17	5.8E-17	6.5E-17

SITE 2 - 2ND QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-2.7E-07	1.6E-06	1.6E-06	-7.2E-18	4.3E-17	4.4E-17
Pu-238	-5.4E-07	2.7E-06	2.7E-06	-1.4E-17	7.2E-17	7.3E-17
Pu-239+240	-5.4E-07	1.3E-06	1.4E-06	-1.4E-17	3.6E-17	3.7E-17
Cs-137	1.3E-06	2.5E-05	3.1E-05	3.6E-17	6.9E-16	8.4E-16
Sr-90	-1.6E-06	1.7E-05	2.1E-05	-4.3E-17	4.6E-16	5.7E-16
Ra-226	1.1E-06	5.1E-06	5.1E-06	2.9E-17	1.4E-16	1.4E-16
Ra-228	8.8E-06	1.6E-05	2.0E-05	2.4E-16	4.4E-16	5.4E-16
Th-233	-2.7E-07	8.0E-07	8.7E-07	-7.2E-18	2.2E-17	2.4E-17
Th-230	2.7E-06	2.7E-06	2.8E-06	7.2E-17	7.2E-17	7.5E-17
Th-228	1.3E-06	1.6E-06	1.6E-06	3.6E-17	4.3E-17	4.4E-17

Table A2. Radiochemical Analysis of LVAS Samples - Site 2

SITE 2 - 3RD QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	4.3E-07	1.1E-06	1.1E-06	1.2E-17	2.9E-17	3.0E-17
Pu-238	0.0E+00	2.2E-06	2.2E-06	0.0E+00	5.9E-17	5.9E-17
Pu-239+240	8.7E-07	1.1E-06	1.1E-06	2.3E-17	2.9E-17	3.0E-17
Cs-137	-1.5E-06	1.2E-05	1.5E-05	-4.1E-17	3.3E-16	4.0E-16
Sr-90	1.1E-05	1.9E-05	2.4E-05	3.0E-16	5.2E-16	6.4E-16
Ra-226	-1.1E-06	4.1E-06	4.2E-06	-2.9E-17	1.1E-16	1.1E-16
Ra-228	5.4E-06	1.0E-05	1.3E-05	1.5E-16	2.8E-16	3.4E-16
Th-233	8.7E-07	8.7E-07	9.1E-07	2.3E-17	2.3E-17	2.5E-17
Th-230	8.0E-06	2.8E-06	2.9E-06	2.2E-16	7.6E-17	7.8E-17
Th-228	-2.2E-07	4.3E-07	4.4E-07	-5.9E-18	1.2E-17	1.2E-17

SITE 2 - 4TH QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-4.1E-07	1.2E-06	1.2E-06	-1.1E-17	3.3E-17	3.3E-17
Pu-238	0.0E+00	2.9E-06	2.9E-06	0.0E+00	7.7E-17	7.8E-17
Pu-239+240	0.0E+00	1.0E-06	1.1E-06	0.0E+00	2.8E-17	2.9E-17
Cs-137	2.0E-06	2.5E-05	2.6E-05	5.5E-17	6.6E-16	6.9E-16
Sr-90	2.5E-06	9.0E-06	1.1E-05	6.6E-17	2.4E-16	3.0E-16
Ra-226	-4.1E-07	1.8E-06	1.9E-06	-1.1E-17	5.0E-17	5.0E-17
Ra-228	-4.1E-06	1.0E-05	1.3E-05	-1.1E-16	2.8E-16	3.4E-16
Th-233	0.0E+00	2.0E-07	2.7E-07	0.0E+00	5.5E-18	7.2E-18
Th-230	6.1E-07	1.2E-06	1.3E-06	1.7E-17	3.3E-17	3.4E-17
Th-228	-2.0E-07	4.1E-07	4.2E-07	-5.5E-18	1.1E-17	1.1E-17

SITE 2 - 1ST QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	0.0E+00	7.7E-07	7.9E-07	0.0E+00	2.1E-17	2.1E-17
Pu-238	-9.7E-07	2.9E-06	2.9E-06	-2.6E-17	7.8E-17	7.9E-17
Pu-239+240	-1.9E-07	1.2E-06	1.2E-06	-5.2E-18	3.1E-17	3.3E-17
Cs-137	9.7E-06	1.0E-05	1.2E-05	2.6E-16	2.8E-16	3.4E-16
Sr-90	-9.7E-07	5.6E-06	6.9E-06	-2.6E-17	1.5E-16	1.9E-16
Ra-226	0.0E+00	3.1E-06	3.1E-06	0.0E+00	8.4E-17	8.4E-17
Ra-228	1.1E-05	8.7E-06	1.0E-05	3.1E-16	2.4E-16	2.8E-16
Th-233	1.7E-06	1.2E-06	1.2E-06	4.7E-17	3.1E-17	3.2E-17
Th-230	1.5E-06	1.4E-06	1.4E-06	4.2E-17	3.7E-17	3.7E-17
Th-228	-7.7E-07	1.4E-06	1.4E-06	-2.1E-17	3.7E-17	3.7E-17

Table A2. Radiochemical Analysis of LVAS Samples - Site 2

SITE 2 - 2ND QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	4.0E-07	1.8E-06	1.8E-06	1.1E-17	4.9E-17	5.0E-17
Pu-238	2.4E-06	3.4E-06	3.4E-06	6.5E-17	9.2E-17	9.3E-17
Pu-239+240	0.0E+00	1.6E-06	1.6E-06	0.0E+00	4.3E-17	4.4E-17
Cs-137	7.4E-06	1.0E-05	1.2E-05	2.0E-16	2.7E-16	3.3E-16
Sr-90	-2.4E-06	9.4E-06	1.2E-05	-6.5E-17	2.5E-16	3.1E-16
Ra-226	4.0E-07	2.8E-06	2.8E-06	1.1E-17	7.6E-17	7.6E-17
Ra-228	-3.2E-06	9.6E-06	1.2E-05	-8.7E-17	2.6E-16	3.2E-16
Th-233	2.0E-07	4.0E-07	4.4E-07	5.4E-18	1.1E-17	1.2E-17
Th-230	2.8E-06	2.0E-06	2.1E-06	7.6E-17	5.4E-17	5.7E-17
Th-228	-2.0E-07	8.0E-07	8.2E-07	-5.4E-18	2.2E-17	2.2E-17

SITE 2 - 3RD QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-5.2E-07	2.1E-06	2.1E-06	-1.4E-17	5.6E-17	5.6E-17
Pu-238	-5.2E-07	3.1E-06	3.1E-06	-1.4E-17	8.4E-17	8.5E-17
Pu-239+240	1.0E-06	2.6E-06	2.6E-06	2.8E-17	7.0E-17	7.1E-17
Cs-137	8.1E-06	1.1E-05	1.3E-05	2.2E-16	2.9E-16	3.5E-16
Sr-90	3.6E-06	1.4E-05	1.7E-05	9.9E-17	3.9E-16	4.7E-16
Ra-226	6.2E-06	2.9E-06	3.0E-06	1.7E-16	7.7E-17	8.1E-17
Ra-228	5.2E-06	1.3E-05	1.5E-05	1.4E-16	3.4E-16	4.2E-16
Th-233	7.8E-07	1.0E-06	1.1E-06	2.1E-17	2.8E-17	3.1E-17
Th-230	1.3E-05	4.2E-06	4.3E-06	3.5E-16	1.1E-16	1.2E-16
Th-228	0.0E+00	1.0E-06	1.1E-06	0.0E+00	2.8E-17	2.9E-17

Table A3. Radiochemical Analysis of LVAS Samples - Site 3

SITE 3 - 4TH QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	7.1E-07	1.7E-06	2.0E-06	1.9E-17	4.5E-17	5.5E-17
Pu-238	-2.8E-06	6.2E-06	6.2E-06	-7.7E-17	1.7E-16	1.7E-16
Pu-239+240	0.0E+00	2.6E-06	2.6E-06	0.0E+00	7.0E-17	7.1E-17
Cs-137	-2.4E-06	1.7E-05	2.0E-05	-6.4E-17	4.5E-16	5.5E-16
Sr-90	3.3E-06	6.4E-06	7.8E-06	9.0E-17	1.7E-16	2.1E-16
Ra-226	1.4E-06	3.3E-06	3.8E-06	3.8E-17	9.0E-17	1.0E-16
Ra-228	4.3E-06	1.5E-05	1.8E-05	1.2E-16	4.0E-16	4.8E-16
Th-233	0.0E+00	4.7E-07	4.8E-07	0.0E+00	1.3E-17	1.3E-17
Th-230	-7.1E-07	9.5E-07	9.5E-07	-1.9E-17	2.6E-17	2.6E-17
Th-228	7.1E-07	1.2E-06	1.2E-06	1.9E-17	3.2E-17	3.2E-17

SITE 3 - 1ST QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-3.8E-06	7.7E-06	7.7E-06	-1.0E-16	2.1E-16	2.1E-16
Pu-238	1.3E-06	6.4E-06	6.4E-06	3.5E-17	1.7E-16	1.7E-16
Pu-239+240	-1.3E-06	3.8E-06	3.9E-06	-3.5E-17	1.0E-16	1.0E-16
Cs-137	2.2E-05	6.5E-05	7.8E-05	5.9E-16	1.8E-15	2.1E-15
Sr-90	1.0E-05	7.2E-05	8.7E-05	2.8E-16	1.9E-15	2.3E-15
Ra-226	1.3E-05	1.8E-05	1.8E-05	3.5E-16	4.8E-16	4.9E-16
Ra-228	-5.6E-05	9.1E-05	1.1E-04	-1.5E-15	2.5E-15	3.0E-15
Th-233	6.4E-06	5.1E-06	5.2E-06	1.7E-16	1.4E-16	1.4E-16
Th-230	9.9E-05	2.6E-05	2.6E-05	2.7E-15	6.9E-16	7.0E-16
Th-228	-1.3E-06	5.1E-06	5.2E-06	-3.5E-17	1.4E-16	1.4E-16

SITE 3 - 2ND QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.2E-06	1.8E-06	1.8E-06	-3.2E-17	4.8E-17	4.8E-17
Pu-238	-3.0E-07	1.5E-06	1.5E-06	-8.0E-18	4.0E-17	4.1E-17
Pu-239+240	-3.0E-07	8.9E-07	9.0E-07	-8.0E-18	2.4E-17	2.4E-17
Cs-137	8.0E-06	2.6E-05	3.3E-05	2.2E-16	7.0E-16	8.9E-16
Sr-90	-3.0E-07	1.7E-05	2.0E-05	-8.0E-18	4.5E-16	5.5E-16
Ra-226	1.8E-06	5.9E-06	5.9E-06	4.8E-17	1.6E-16	1.6E-16
Ra-228	8.9E-06	1.5E-05	1.8E-05	2.4E-16	4.1E-16	4.9E-16
Th-233	5.9E-07	1.2E-06	1.2E-06	1.6E-17	3.2E-17	3.2E-17
Th-230	0.0E+00	1.8E-06	1.8E-06	0.0E+00	4.8E-17	4.8E-17
Th-228	8.9E-07	1.2E-06	1.2E-06	2.4E-17	3.2E-17	3.2E-17

Table A3. Radiochemical Analysis of LVAS Samples - Site 3

SITE 3 - 3RD QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	4.9E-07	7.3E-07	7.6E-07	1.3E-17	2.0E-17	2.1E-17
Pu-238	-9.8E-07	2.4E-06	2.4E-06	-2.6E-17	6.6E-17	6.6E-17
Pu-239+240	4.9E-07	1.2E-06	1.2E-06	1.3E-17	3.3E-17	3.3E-17
Cs-137	1.4E-05	1.3E-05	1.6E-05	3.8E-16	3.6E-16	4.4E-16
Sr-90	1.1E-05	1.2E-05	1.5E-05	3.0E-16	3.2E-16	3.9E-16
Ra-226	-1.7E-06	2.9E-06	2.9E-06	-4.6E-17	7.9E-17	8.0E-17
Ra-228	5.9E-06	1.2E-05	1.5E-05	1.6E-16	3.2E-16	3.9E-16
Th-233	9.8E-07	9.8E-07	1.0E-06	2.6E-17	2.6E-17	2.8E-17
Th-230	2.1E-05	4.9E-06	4.9E-06	5.6E-16	1.3E-16	1.3E-16
Th-228	2.4E-07	7.3E-07	7.6E-07	6.6E-18	2.0E-17	2.1E-17

SITE 3 - 4TH QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-4.3E-07	1.3E-06	1.3E-06	-1.2E-17	3.5E-17	3.6E-17
Pu-238	-1.3E-06	3.0E-06	3.1E-06	-3.5E-17	8.2E-17	8.3E-17
Pu-239+240	1.1E-06	1.5E-06	1.5E-06	2.9E-17	4.1E-17	4.1E-17
Cs-137	6.3E-06	1.9E-05	2.3E-05	1.7E-16	5.1E-16	6.2E-16
Sr-90	-4.3E-07	1.1E-05	1.3E-05	-1.2E-17	2.9E-16	3.6E-16
Ra-226	4.3E-07	2.2E-06	2.2E-06	1.2E-17	5.8E-17	5.8E-17
Ra-228	6.3E-06	1.2E-05	1.4E-05	1.7E-16	3.2E-16	3.9E-16
Th-233	2.2E-07	4.3E-07	4.4E-07	5.8E-18	1.2E-17	1.2E-17
Th-230	8.6E-07	1.1E-06	1.1E-06	2.3E-17	2.9E-17	3.0E-17
Th-228	8.6E-07	8.6E-07	9.1E-07	2.3E-17	2.3E-17	2.4E-17

SITE 3 - 1ST QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-2.0E-07	8.1E-07	8.2E-07	-5.5E-18	2.2E-17	2.2E-17
Pu-238	0.0E+00	3.2E-06	3.2E-06	0.0E+00	8.8E-17	8.8E-17
Pu-239+240	8.1E-07	1.4E-06	1.4E-06	2.2E-17	3.8E-17	3.9E-17
Cs-137	8.7E-06	1.1E-05	1.3E-05	2.4E-16	2.9E-16	3.5E-16
Sr-90	-4.1E-06	5.7E-06	7.0E-06	-1.1E-16	1.5E-16	1.9E-16
Ra-226	-4.1E-07	3.4E-06	3.5E-06	-1.1E-17	9.3E-17	9.3E-17
Ra-228	6.1E-07	9.7E-06	1.2E-05	1.6E-17	2.6E-16	3.2E-16
Th-233	2.2E-06	1.4E-06	1.4E-06	6.0E-17	3.8E-17	3.9E-17
Th-230	2.0E-07	8.1E-07	8.3E-07	5.5E-18	2.2E-17	2.2E-17
Th-228	4.1E-07	1.8E-06	1.9E-06	1.1E-17	4.9E-17	5.0E-17

Table A3. Radiochemical Analysis of LVAS Samples - Site 3

SITE 3 - 2ND QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.0E-07	1.8E-06	1.8E-06	5.3E-18	4.8E-17	4.9E-17
Pu-238	-1.6E-06	2.7E-06	2.7E-06	-4.2E-17	7.4E-17	7.4E-17
Pu-239+240	2.0E-07	1.6E-06	1.6E-06	5.3E-18	4.2E-17	4.2E-17
Cs-137	3.5E-06	1.1E-05	1.3E-05	9.5E-17	3.0E-16	3.6E-16
Sr-90	-5.1E-06	7.8E-06	1.0E-05	-1.4E-16	2.1E-16	2.8E-16
Ra-226	-2.0E-07	2.9E-06	3.0E-06	-5.3E-18	7.9E-17	8.0E-17
Ra-228	-5.9E-07	8.4E-06	1.0E-05	-1.6E-17	2.3E-16	2.8E-16
Th-233	3.1E-06	1.8E-06	1.8E-06	8.4E-17	4.8E-17	4.8E-17
Th-230	3.9E-06	2.0E-06	2.0E-06	1.1E-16	5.3E-17	5.3E-17
Th-228	4.3E-06	2.0E-06	2.0E-06	1.2E-16	5.3E-17	5.5E-17

SITE 3 - 3RD QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	3.9E-07	1.5E-06	1.6E-06	1.0E-17	4.2E-17	4.2E-17
Pu-238	5.8E-07	2.3E-06	2.3E-06	1.6E-17	6.3E-17	6.3E-17
Pu-239+240	9.7E-07	1.9E-06	2.0E-06	2.6E-17	5.2E-17	5.3E-17
Cs-137	3.3E-06	8.1E-06	9.8E-06	8.9E-17	2.2E-16	2.7E-16
Sr-90	9.7E-07	8.7E-06	1.1E-05	2.6E-17	2.4E-16	2.9E-16
Ra-226	2.7E-06	2.1E-06	2.2E-06	7.3E-17	5.7E-17	6.0E-17
Ra-228	-5.0E-06	9.5E-06	1.2E-05	-1.4E-16	2.6E-16	3.2E-16
Th-233	3.9E-07	3.9E-07	4.0E-07	1.0E-17	1.0E-17	1.1E-17
Th-230	2.7E-06	1.4E-06	1.4E-06	7.3E-17	3.7E-17	3.7E-17
Th-228	-1.9E-07	5.8E-07	5.9E-07	-5.2E-18	1.6E-17	1.6E-17

Table A4. Radiochemical Analysis of HVAS Samples - Artesia

ARTESIA - 4TH QUARTER - 1985

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	4.5E-07	9.1E-07	9.3E-07	1.2E-17	2.5E-17	2.5E-17
Pu-238	-2.3E-06	3.6E-06	3.6E-06	-6.1E-17	9.8E-17	9.8E-17
Pu-239+240	-4.5E-07	2.7E-06	3.3E-06	-1.2E-17	7.4E-17	9.0E-17
Cs-137	-4.5E-06	1.4E-05	1.7E-05	-1.2E-16	3.7E-16	4.5E-16
Sr-90	6.8E-06	1.4E-05	1.7E-05	1.8E-16	3.7E-16	4.5E-16
Ra-226	1.6E-06	2.0E-06	2.3E-06	4.3E-17	5.5E-17	6.1E-17
Ra-228	1.9E-05	2.1E-05	2.5E-05	5.2E-16	5.6E-16	6.8E-16
Th-232	4.5E-07	6.8E-07	7.1E-07	1.2E-17	1.8E-17	1.9E-17
Th-230	4.1E-06	2.3E-06	2.3E-06	1.1E-16	6.1E-17	6.2E-17
Th-228	1.1E-06	2.0E-06	2.1E-06	3.1E-17	5.5E-17	5.6E-17

ARTESIA - 1ST QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	6.8E-07	1.1E-06	1.1E-06	1.8E-17	3.1E-17	3.1E-17
Pu-238	-2.5E-06	3.6E-06	3.8E-06	-6.7E-17	9.8E-17	1.0E-16
Pu-239+240	4.5E-07	2.3E-06	2.3E-06	1.2E-17	6.1E-17	6.2E-17
Cs-137	-4.5E-06	1.1E-05	1.4E-05	-1.2E-16	3.1E-16	3.8E-16
Sr-90	8.6E-06	1.3E-05	1.6E-05	2.3E-16	3.5E-16	4.2E-16
Ra-226	4.8E-06	2.3E-06	2.4E-06	1.3E-16	6.1E-17	6.6E-17
Ra-228	3.2E-06	1.5E-05	1.8E-05	8.6E-17	4.1E-16	5.0E-16
Th-232	4.5E-07	6.8E-07	7.1E-07	1.2E-17	1.8E-17	1.9E-17
Th-230	2.3E-06	1.6E-06	1.6E-06	6.1E-17	4.3E-17	4.3E-17
Th-228	2.3E-06	2.0E-06	2.0E-06	6.1E-17	5.5E-17	5.5E-17

ARTESIA - 2ND QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-5.7E-07	1.4E-06	1.4E-06	-1.5E-17	3.8E-17	3.8E-17
Pu-238	2.6E-06	3.1E-06	3.2E-06	6.9E-17	8.4E-17	8.5E-17
Pu-239+240	8.5E-07	2.0E-06	2.1E-06	2.3E-17	5.4E-17	5.7E-17
Cs-137	3.7E-04	2.8E-05	3.1E-05	1.0E-14	7.7E-16	8.4E-16
Sr-90	7.9E-06	1.2E-05	1.5E-05	2.1E-16	3.4E-16	4.1E-16
Ra-226	1.4E-06	2.8E-06	3.1E-06	3.8E-17	7.7E-17	8.3E-17
Ra-228	-5.7E-07	1.5E-05	1.8E-05	-1.5E-17	4.1E-16	5.0E-16
Th-232	5.7E-07	1.1E-06	1.2E-06	1.5E-17	3.1E-17	3.1E-17
Th-230	8.5E-07	1.7E-06	1.7E-06	2.3E-17	4.6E-17	4.6E-17
Th-228	8.5E-07	2.3E-06	2.3E-06	2.3E-17	6.1E-17	6.3E-17

Table A4. Radiochemical Analysis of HVAS Samples - Artesia

ARTESIA - 3RD QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.8E-06	2.3E-06	2.3E-06	-4.9E-17	6.1E-17	6.2E-17
Pu-238	5.4E-06	5.9E-06	5.9E-06	1.5E-16	1.6E-16	1.6E-16
Pu-239+240	1.4E-06	3.6E-06	4.0E-06	3.7E-17	9.8E-17	1.1E-16
Cs-137	1.8E-05	3.6E-05	4.4E-05	4.9E-16	9.8E-16	1.2E-15
Sr-90	-9.1E-07	2.5E-05	3.1E-05	-2.5E-17	6.9E-16	8.4E-16
Ra-226	2.7E-06	5.0E-06	5.6E-06	7.4E-17	1.3E-16	1.5E-16
Ra-228	-1.6E-05	3.9E-05	4.8E-05	-4.3E-16	1.0E-15	1.3E-15
Th-232	1.4E-06	1.4E-06	1.4E-06	3.7E-17	3.7E-17	3.8E-17
Th-230	4.5E-07	1.8E-06	1.8E-06	1.2E-17	4.9E-17	4.9E-17
Th-228	4.5E-07	3.2E-06	3.2E-06	1.2E-17	8.6E-17	8.6E-17

ARTESIA - 4TH QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-9.7E-07	2.9E-06	3.0E-06	-2.6E-17	7.9E-17	8.1E-17
Pu-238	4.2E-06	4.9E-06	4.9E-06	1.1E-16	1.3E-16	1.3E-16
Pu-239+240	1.6E-06	2.6E-06	2.6E-06	4.4E-17	7.0E-17	7.1E-17
Cs-137	1.3E-05	1.3E-05	1.6E-05	3.5E-16	3.5E-16	4.3E-16
Sr-90	4.9E-06	1.5E-05	1.8E-05	1.3E-16	3.9E-16	4.8E-16
Ra-226	2.3E-06	2.9E-06	3.2E-06	6.1E-17	7.9E-17	8.5E-17
Ra-228	7.4E-06	2.4E-05	2.9E-05	2.0E-16	6.5E-16	7.8E-16
Th-232	3.2E-06	2.3E-06	2.4E-06	8.8E-17	6.1E-17	6.4E-17
Th-230	1.6E-06	1.9E-06	2.0E-06	4.4E-17	5.3E-17	5.3E-17
Th-228	1.3E-06	2.3E-06	2.3E-06	3.5E-17	6.1E-17	6.2E-17

ARTESIA - 1ST QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.5E-07	1.8E-06	1.8E-06	6.8E-18	4.8E-17	4.8E-17
Pu-238	-2.5E-07	1.3E-06	1.3E-06	-6.8E-18	3.4E-17	3.4E-17
Pu-239+240	0.0E+00	7.6E-07	8.2E-07	0.0E+00	2.0E-17	2.2E-17
Cs-137	1.8E-06	1.4E-05	1.8E-05	4.8E-17	3.9E-16	4.8E-16
Sr-90	4.0E-06	1.7E-05	2.1E-05	1.1E-16	4.6E-16	5.6E-16
Ra-226	7.6E-07	3.3E-06	3.3E-06	2.0E-17	8.9E-17	8.9E-17
Ra-228	-3.5E-06	1.8E-05	2.2E-05	-9.5E-17	4.8E-16	5.9E-16
Th-232	1.5E-06	1.5E-06	1.6E-06	4.1E-17	4.1E-17	4.3E-17
Th-230	7.6E-07	3.3E-06	3.4E-06	2.0E-17	8.9E-17	9.2E-17
Th-228	5.0E-07	1.5E-06	1.5E-06	1.4E-17	4.1E-17	4.2E-17

Table A4. Radiochemical Analysis of HVAS Samples - Artesia

ARTESIA - 2ND QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	4.5E-07	6.8E-07	6.9E-07	1.2E-17	1.8E-17	1.9E-17
Pu-238	-4.5E-07	1.1E-06	1.1E-06	-1.2E-17	3.1E-17	3.1E-17
Pu-239+240	0.0E+00	6.8E-07	6.9E-07	0.0E+00	1.8E-17	1.9E-17
Cs-137	1.1E-06	1.5E-05	1.9E-05	3.1E-17	4.2E-16	5.0E-16
Sr-90	4.5E-06	1.8E-05	2.2E-05	1.2E-16	4.9E-16	5.9E-16
Ra-226	7.7E-06	4.3E-06	4.3E-06	2.1E-16	1.2E-16	1.2E-16
Ra-228	2.5E-05	1.8E-05	2.1E-05	6.7E-16	4.9E-16	5.8E-16
Th-232	6.8E-07	1.1E-06	1.2E-06	1.8E-17	3.1E-17	3.2E-17
Th-230	1.8E-06	2.0E-06	2.1E-06	4.9E-17	5.5E-17	5.8E-17
Th-228	1.8E-06	1.4E-06	1.4E-06	4.9E-17	3.7E-17	3.9E-17

ARTESIA - 3RD QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.6E-07	3.2E-07	3.5E-07	-4.4E-18	8.8E-18	9.5E-18
Pu-238	-1.1E-06	4.7E-06	4.7E-06	-3.1E-17	1.3E-16	1.3E-16
Pu-239+240	1.5E-06	2.1E-06	2.1E-06	3.9E-17	5.7E-17	5.7E-17
Cs-137	6.5E-07	1.3E-05	1.6E-05	1.8E-17	3.6E-16	4.4E-16
Sr-90	8.6E-06	1.0E-05	1.2E-05	2.3E-16	2.8E-16	3.3E-16
Ra-226	-1.6E-06	2.8E-06	2.8E-06	-4.4E-17	7.4E-17	7.5E-17
Ra-228	3.4E-06	8.9E-06	1.1E-05	9.2E-17	2.4E-16	2.9E-16
Th-232	2.9E-06	1.3E-06	1.3E-06	7.9E-17	3.5E-17	3.6E-17
Th-230	4.0E-06	1.8E-06	1.9E-06	1.1E-16	4.8E-17	5.2E-17
Th-228	8.1E-07	8.1E-07	8.2E-07	2.2E-17	2.2E-17	2.2E-17

ARTESIA - 4TH QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-3.5E-07	1.0E-06	1.1E-06	-9.4E-18	2.8E-17	2.9E-17
Pu-238	5.2E-07	2.6E-06	2.6E-06	1.4E-17	7.1E-17	7.1E-17
Pu-239+240	3.5E-07	1.0E-06	1.1E-06	9.4E-18	2.8E-17	2.9E-17
Cs-137	1.3E-05	1.7E-05	2.1E-05	3.6E-16	4.6E-16	5.6E-16
Sr-90	-1.1E-05	1.4E-05	1.8E-05	-3.0E-16	3.9E-16	4.8E-16
Ra-226	4.5E-06	2.4E-06	2.5E-06	1.2E-16	6.6E-17	6.6E-17
Ra-228	1.3E-05	1.4E-05	1.7E-05	3.5E-16	3.8E-16	4.6E-16
Th-232	7.0E-07	1.0E-06	1.2E-06	1.9E-17	2.8E-17	3.2E-17
Th-230	6.3E-06	3.3E-06	3.4E-06	1.7E-16	9.0E-17	9.1E-17
Th-228	3.8E-06	2.6E-06	2.7E-06	1.0E-16	7.1E-17	7.4E-17

Table A4. Radiochemical Analysis of HVAS Samples - Artesia

ARTESIA - 1ST QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	7.6E-07	9.1E-07	9.8E-07	2.0E-17	2.5E-17	2.7E-17
Pu-238	-1.8E-06	2.3E-06	2.3E-06	-4.9E-17	6.1E-17	6.1E-17
Pu-239+240	-3.0E-07	9.1E-07	9.2E-07	-8.2E-18	2.5E-17	2.5E-17
Cs-137	9.1E-07	7.6E-06	9.3E-06	2.5E-17	2.0E-16	2.5E-16
Sr-90	9.1E-07	4.4E-06	5.4E-06	2.5E-17	1.2E-16	1.5E-16
Ra-226	1.8E-06	2.4E-06	2.4E-06	4.9E-17	6.5E-17	6.6E-17
Ra-228	1.5E-07	9.8E-06	1.2E-05	4.1E-18	2.7E-16	3.3E-16
Th-232	1.4E-06	7.6E-07	7.6E-07	3.7E-17	2.0E-17	2.0E-17
Th-230	2.7E-06	1.2E-06	1.2E-06	7.4E-17	3.3E-17	3.3E-17
Th-228	3.2E-06	1.7E-06	1.7E-06	8.6E-17	4.5E-17	4.6E-17

ARTESIA - 2ND QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	1.3E-06	2.6E-06	2.8E-06	3.6E-17	7.1E-17	7.7E-17
Pu-238	3.8E-07	3.2E-06	3.2E-06	1.0E-17	8.7E-17	8.7E-17
Pu-239+240	5.7E-07	1.5E-06	1.5E-06	1.5E-17	4.1E-17	4.1E-17
Cs-137	7.7E-06	1.0E-05	1.2E-05	2.1E-16	2.8E-16	3.3E-16
Sr-90	7.6E-07	1.0E-05	1.3E-05	2.0E-17	2.8E-16	3.4E-16
Ra-226	1.1E-06	3.0E-06	3.0E-06	3.1E-17	8.2E-17	8.2E-17
Ra-228	-3.2E-06	1.3E-05	1.5E-05	-8.7E-17	3.4E-16	4.2E-16
Th-232	1.7E-06	1.1E-06	1.2E-06	4.6E-17	3.1E-17	3.2E-17
Th-230	2.6E-06	1.7E-06	1.7E-06	7.1E-17	4.6E-17	4.6E-17
Th-228	5.7E-06	2.1E-06	2.1E-06	1.5E-16	5.6E-17	5.7E-17

ARTESIA - 3RD QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-4.9E-07	1.3E-06	1.3E-06	-1.3E-17	3.5E-17	3.5E-17
Pu-238	0.0E+00	1.9E-06	2.0E-06	0.0E+00	5.3E-17	5.4E-17
Pu-239+240	0.0E+00	1.5E-06	1.5E-06	0.0E+00	3.9E-17	4.0E-17
Cs-137	-2.1E-06	8.3E-06	1.0E-05	-5.7E-17	2.2E-16	2.7E-16
Sr-90	-3.6E-06	6.0E-06	7.4E-06	-9.6E-17	1.6E-16	2.0E-16
Ra-226	1.1E-06	1.8E-06	1.9E-06	3.1E-17	4.8E-17	5.1E-17
Ra-228	4.2E-06	7.6E-06	9.2E-06	1.1E-16	2.1E-16	2.5E-16
Th-232	6.5E-07	6.5E-07	6.6E-07	1.8E-17	1.8E-17	1.8E-17
Th-230	4.4E-06	1.8E-06	1.8E-06	1.2E-16	4.8E-17	4.8E-17
Th-228	1.1E-06	1.1E-06	1.1E-06	3.1E-17	3.1E-17	3.1E-17

Table A5. Radiochemical Analysis of HVAS Samples - Carlsbad

CARLSBAD - 4TH QUARTER - 1985

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-5.0E-07	7.6E-07	8.2E-07	-1.4E-17	2.0E-17	2.2E-17
Pu-238	-3.0E-06	3.3E-06	3.3E-06	-8.2E-17	8.9E-17	8.9E-17
Pu-239+240	5.0E-07	2.0E-06	2.0E-06	1.4E-17	5.4E-17	5.5E-17
Cs-137	6.8E-05	3.8E-05	4.3E-05	1.8E-15	1.0E-15	1.2E-15
Sr-90	3.8E-06	1.3E-05	1.6E-05	1.0E-16	3.5E-16	4.2E-16
Ra-226	1.3E-06	3.3E-06	3.8E-06	3.4E-17	8.9E-17	1.0E-16
Ra-228	5.3E-06	2.0E-05	2.5E-05	1.4E-16	5.5E-16	6.7E-16
Th-232	2.5E-07	1.0E-06	1.1E-06	6.8E-18	2.7E-17	3.0E-17
Th-230	7.6E-07	1.3E-06	1.3E-06	2.0E-17	3.4E-17	3.5E-17
Th-228	-5.0E-07	1.5E-06	1.5E-06	-1.4E-17	4.1E-17	4.1E-17

CARLSBAD - 1ST QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	6.8E-07	1.1E-06	1.2E-06	1.8E-17	3.1E-17	3.2E-17
Pu-238	-2.3E-07	3.9E-06	4.2E-06	-6.1E-18	1.0E-16	1.1E-16
Pu-239+240	-1.1E-06	1.4E-06	1.4E-06	-3.1E-17	3.7E-17	3.7E-17
Cs-137	2.5E-05	2.0E-05	2.4E-05	6.7E-16	5.5E-16	6.6E-16
Sr-90	9.5E-06	1.0E-05	1.3E-05	2.6E-16	2.8E-16	3.4E-16
Ra-226	3.6E-06	2.5E-06	2.6E-06	9.8E-17	6.7E-17	7.1E-17
Ra-228	7.7E-06	1.6E-05	2.0E-05	2.1E-16	4.4E-16	5.4E-16
Th-232	3.4E-06	3.4E-06	3.9E-06	9.2E-17	9.2E-17	1.1E-16
Th-230	-4.5E-07	6.8E-07	7.8E-07	-1.2E-17	1.8E-17	2.1E-17
Th-228	2.0E-06	2.9E-06	3.0E-06	5.5E-17	8.0E-17	8.0E-17

CARLSBAD - 2ND QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.3E-06	4.5E-06	5.7E-06	-3.5E-17	1.2E-16	1.5E-16
Pu-238	3.2E-07	3.2E-06	3.3E-06	8.8E-18	8.8E-17	8.8E-17
Pu-239+240	6.5E-07	1.6E-06	1.6E-06	1.8E-17	4.4E-17	4.4E-17
Cs-137	3.2E-05	1.9E-05	2.3E-05	8.8E-16	5.3E-16	6.2E-16
Sr-90	1.5E-05	2.1E-05	2.6E-05	3.9E-16	5.7E-16	7.0E-16
Ra-226	4.5E-06	3.9E-06	4.3E-06	1.2E-16	1.1E-16	1.2E-16
Ra-228	8.7E-06	1.9E-05	2.3E-05	2.4E-16	5.2E-16	6.3E-16
Th-232	1.3E-06	1.3E-06	1.3E-06	3.5E-17	3.5E-17	3.5E-17
Th-230	1.3E-06	1.6E-06	1.6E-06	3.5E-17	4.4E-17	4.4E-17
Th-228	1.6E-06	2.6E-06	2.6E-06	4.4E-17	7.0E-17	7.1E-17

Table A5. Radiochemical Analysis of HVAS Samples - Carlsbad

CARLSBAD - 3RD QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	1.0E-06	2.5E-06	2.5E-06	2.7E-17	6.8E-17	6.8E-17
Pu-238	7.6E-07	2.5E-06	2.5E-06	2.0E-17	6.8E-17	6.8E-17
Pu-239+240	2.5E-07	1.3E-06	1.3E-06	6.8E-18	3.4E-17	3.4E-17
Cs-137	1.3E-05	1.5E-05	1.8E-05	3.4E-16	4.1E-16	5.0E-16
Sr-90	9.1E-06	1.4E-05	1.6E-05	2.5E-16	3.7E-16	4.4E-16
Ra-226	9.3E-06	3.3E-06	3.4E-06	2.5E-16	8.9E-17	9.2E-17
Ra-228	-2.3E-06	1.5E-05	1.8E-05	-6.1E-17	3.9E-16	4.9E-16
Th-232	7.6E-07	7.6E-07	7.6E-07	2.0E-17	2.0E-17	2.1E-17
Th-230	3.0E-06	1.8E-06	1.8E-06	8.2E-17	4.8E-17	4.8E-17
Th-228	-2.5E-07	1.8E-06	1.8E-06	-6.8E-18	4.8E-17	4.8E-17

CARLSBAD - 4TH QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-8.2E-07	1.0E-06	1.0E-06	-2.2E-17	2.8E-17	2.8E-17
Pu-238	0.0E+00	2.3E-06	2.3E-06	0.0E+00	6.1E-17	6.1E-17
Pu-239+240	6.2E-07	1.4E-06	1.5E-06	1.7E-17	3.9E-17	3.9E-17
Cs-137	2.9E-05	3.3E-05	4.0E-05	7.8E-16	8.9E-16	1.1E-15
Sr-90	-8.2E-07	6.6E-06	8.0E-06	-2.2E-17	1.8E-16	2.2E-16
Ra-226	1.9E-06	2.3E-06	2.6E-06	5.0E-17	6.1E-17	7.0E-17
Ra-228	6.2E-06	1.4E-05	1.7E-05	1.7E-16	3.8E-16	4.6E-16
Th-232	2.1E-07	4.1E-07	4.5E-07	5.6E-18	1.1E-17	1.2E-17
Th-230	-2.1E-07	1.0E-06	1.1E-06	-5.6E-18	2.8E-17	2.9E-17
Th-228	6.2E-07	1.0E-06	1.0E-06	1.7E-17	2.8E-17	2.8E-17

CARLSBAD - 1ST QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.1E-06	1.4E-06	1.4E-06	-3.1E-17	3.7E-17	3.9E-17
Pu-238	-6.8E-07	1.1E-06	1.1E-06	-1.8E-17	3.1E-17	3.1E-17
Pu-239+240	-2.3E-07	6.8E-07	6.9E-07	-6.1E-18	1.8E-17	1.9E-17
Cs-137	2.5E-05	1.6E-05	2.0E-05	6.7E-16	4.3E-16	5.3E-16
Sr-90	7.7E-06	1.5E-05	1.9E-05	2.1E-16	4.2E-16	5.0E-16
Ra-226	1.4E-06	2.9E-06	3.0E-06	3.7E-17	8.0E-17	8.0E-17
Ra-228	-1.4E-06	1.4E-05	1.8E-05	-3.7E-17	3.7E-16	4.8E-16
Th-232	6.8E-07	6.8E-07	8.3E-07	1.8E-17	1.8E-17	2.2E-17
Th-230	6.8E-07	2.5E-06	2.6E-06	1.8E-17	6.7E-17	7.1E-17
Th-228	9.1E-07	1.4E-06	1.4E-06	2.5E-17	3.7E-17	3.8E-17

Table A5. Radiochemical Analysis of HVAS Samples - Carlsbad

CARLSBAD - 2ND QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	1.9E-07	7.6E-07	7.9E-07	5.1E-18	2.0E-17	2.1E-17
Pu-238	1.9E-07	1.9E-06	1.9E-06	5.1E-18	5.1E-17	5.1E-17
Pu-239+240	0.0E+00	9.4E-07	9.6E-07	0.0E+00	2.6E-17	2.6E-17
Cs-137	-2.8E-06	1.8E-05	1.9E-05	-7.7E-17	4.9E-16	5.1E-16
Sr-90	4.7E-06	1.4E-05	1.7E-05	1.3E-16	3.8E-16	4.6E-16
Ra-226	7.0E-06	5.1E-06	5.1E-06	1.9E-16	1.4E-16	1.4E-16
Ra-228	1.7E-05	1.4E-05	1.7E-05	4.5E-16	3.8E-16	4.6E-16
Th-232	7.6E-07	9.4E-07	9.7E-07	2.0E-17	2.6E-17	2.6E-17
Th-230	9.4E-07	1.5E-06	1.5E-06	2.6E-17	4.1E-17	4.1E-17
Th-228	0.0E+00	5.7E-07	6.5E-07	0.0E+00	1.5E-17	1.8E-17

CARLSBAD - 3RD QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	4.3E-07	7.1E-07	7.5E-07	1.1E-17	1.9E-17	2.0E-17
Pu-238	5.7E-07	1.4E-06	1.4E-06	1.5E-17	3.8E-17	3.8E-17
Pu-239+240	1.4E-07	7.1E-07	7.1E-07	3.8E-18	1.9E-17	1.9E-17
Cs-137	1.0E-05	1.1E-05	1.3E-05	2.8E-16	2.9E-16	3.5E-16
Sr-90	4.3E-07	9.6E-06	1.2E-05	1.1E-17	2.6E-16	3.1E-16
Ra-226	1.3E-06	2.3E-06	2.3E-06	3.4E-17	6.1E-17	6.1E-17
Ra-228	-2.8E-07	1.0E-05	1.3E-05	-7.7E-18	2.8E-16	3.4E-16
Th-232	1.3E-06	5.7E-07	5.9E-07	3.4E-17	1.5E-17	1.6E-17
Th-230	2.6E-06	8.5E-07	8.7E-07	6.9E-17	2.3E-17	2.3E-17
Th-228	2.1E-06	7.1E-07	7.2E-07	5.7E-17	1.9E-17	1.9E-17

CARLSBAD - 4TH QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-5.2E-07	8.7E-07	8.8E-07	-1.4E-17	2.4E-17	2.4E-17
Pu-238	-3.5E-07	2.4E-06	2.5E-06	-9.4E-18	6.6E-17	6.6E-17
Pu-239+240	0.0E+00	8.7E-07	8.8E-07	0.0E+00	2.4E-17	2.4E-17
Cs-137	6.6E-06	1.5E-05	1.8E-05	1.8E-16	4.1E-16	5.0E-16
Sr-90	1.4E-06	1.5E-05	1.8E-05	3.8E-17	4.0E-16	4.9E-16
Ra-226	2.4E-06	2.3E-06	2.3E-06	6.6E-17	6.1E-17	6.1E-17
Ra-228	3.8E-06	1.6E-05	1.9E-05	1.0E-16	4.3E-16	5.3E-16
Th-232	4.7E-06	2.3E-06	2.3E-06	1.3E-16	6.1E-17	6.3E-17
Th-230	1.2E-05	3.7E-06	3.8E-06	3.3E-16	9.9E-17	1.0E-16
Th-228	1.0E-06	1.2E-06	1.3E-06	2.8E-17	3.3E-17	3.4E-17

Table A5. Radiochemical Analysis of HVAS Samples - Carlsbad

CARLSBAD - 1ST QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	4.5E-07	7.6E-07	7.7E-07	1.2E-17	2.0E-17	2.1E-17
Pu-238	-9.1E-07	2.7E-06	2.8E-06	-2.5E-17	7.4E-17	7.5E-17
Pu-239+240	-1.7E-06	2.3E-06	2.3E-06	-4.5E-17	6.1E-17	6.2E-17
Cs-137	-1.8E-06	8.3E-06	1.0E-05	-4.9E-17	2.2E-16	2.8E-16
Sr-90	-1.1E-06	3.9E-06	4.9E-06	-2.9E-17	1.1E-16	1.3E-16
Ra-226	1.2E-06	2.4E-06	2.4E-06	3.3E-17	6.5E-17	6.5E-17
Ra-228	1.2E-06	8.9E-06	1.1E-05	3.3E-17	2.4E-16	2.9E-16
Th-232	2.3E-06	1.5E-06	1.6E-06	6.1E-17	4.1E-17	4.4E-17
Th-230	2.6E-06	1.5E-06	1.5E-06	6.9E-17	4.1E-17	4.2E-17
Th-228	6.0E-07	1.1E-06	1.1E-06	1.6E-17	2.9E-17	2.9E-17

CARLSBAD - 2ND QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.4E-07	1.3E-06	1.3E-06	-3.8E-18	3.4E-17	3.5E-17
Pu-238	0.0E+00	2.4E-06	2.4E-06	0.0E+00	6.5E-17	6.6E-17
Pu-239+240	2.8E-07	1.3E-06	1.4E-06	7.7E-18	3.4E-17	3.7E-17
Cs-137	9.4E-06	9.9E-06	1.2E-05	2.5E-16	2.7E-16	3.2E-16
Sr-90	-1.1E-06	8.2E-06	1.0E-05	-3.1E-17	2.2E-16	2.7E-16
Ra-226	3.7E-05	2.8E-06	2.8E-06	1.0E-15	7.7E-17	7.7E-17
Ra-228	2.1E-06	8.1E-06	9.9E-06	5.7E-17	2.2E-16	2.7E-16
Th-232	-1.4E-07	5.7E-07	5.9E-07	-3.8E-18	1.5E-17	1.6E-17
Th-230	4.3E-07	9.9E-07	1.0E-06	1.1E-17	2.7E-17	2.7E-17
Th-228	5.7E-07	7.1E-07	7.3E-07	1.5E-17	1.9E-17	2.0E-17

CARLSBAD - 3RD QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-6.5E-07	1.1E-06	1.1E-06	-1.8E-17	3.1E-17	3.1E-17
Pu-238	1.8E-06	2.3E-06	2.3E-06	4.8E-17	6.1E-17	6.2E-17
Pu-239+240	1.6E-07	1.5E-06	1.5E-06	4.4E-18	3.9E-17	4.0E-17
Cs-137	2.6E-06	8.6E-06	1.0E-05	7.0E-17	2.3E-16	2.8E-16
Sr-90	-2.1E-06	4.9E-06	6.0E-06	-5.7E-17	1.3E-16	1.6E-16
Ra-226	3.4E-06	2.1E-06	2.3E-06	9.2E-17	5.7E-17	6.1E-17
Ra-228	3.4E-06	1.5E-05	1.8E-05	9.2E-17	4.0E-16	4.9E-16
Th-232	4.9E-07	4.9E-07	5.0E-07	1.3E-17	1.3E-17	1.4E-17
Th-230	2.8E-06	1.6E-06	1.6E-06	7.4E-17	4.4E-17	4.4E-17
Th-228	1.3E-06	1.1E-06	1.1E-06	3.5E-17	3.1E-17	3.1E-17

Table A6. Radiochemical Analysis of HVAS Samples - Hobbs

HOBBS - 4TH QUARTER - 1985

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.8E-07	1.4E-06	1.5E-06	7.7E-18	3.8E-17	4.2E-17
Pu-238	-2.6E-06	6.5E-06	6.5E-06	-6.9E-17	1.8E-16	1.8E-16
Pu-239+240	-1.7E-06	2.8E-06	2.9E-06	-4.6E-17	7.7E-17	7.8E-17
Cs-137	2.8E-05	2.0E-05	2.4E-05	7.7E-16	5.4E-16	6.4E-16
Sr-90	8.2E-06	1.1E-05	1.4E-05	2.2E-16	3.1E-16	3.7E-16
Ra-226	2.8E-06	2.6E-06	2.7E-06	7.7E-17	6.9E-17	7.3E-17
Ra-228	6.8E-06	2.0E-05	2.5E-05	1.8E-16	5.5E-16	6.7E-16
Th-232	1.1E-06	8.5E-07	8.6E-07	3.1E-17	2.3E-17	2.3E-17
Th-230	4.3E-06	2.3E-06	2.3E-06	1.1E-16	6.1E-17	6.2E-17
Th-228	5.7E-07	2.0E-06	2.0E-06	1.5E-17	5.4E-17	5.4E-17

HOBBS - 1ST QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	1.1E-06	1.4E-06	1.4E-06	3.1E-17	3.7E-17	3.7E-17
Pu-238	-2.3E-07	2.7E-06	2.7E-06	-6.1E-18	7.4E-17	7.4E-17
Pu-239+240	6.8E-07	1.8E-06	1.9E-06	1.8E-17	4.9E-17	5.1E-17
Cs-137	-9.1E-06	3.9E-05	4.7E-05	-2.5E-16	1.0E-15	1.3E-15
Sr-90	1.0E-05	1.2E-05	1.5E-05	2.7E-16	3.3E-16	4.0E-16
Ra-226	4.1E-06	4.5E-06	5.3E-06	1.1E-16	1.2E-16	1.4E-16
Ra-228	9.1E-06	3.2E-05	3.9E-05	2.5E-16	8.6E-16	1.0E-15
Th-232	1.4E-06	1.6E-06	1.6E-06	3.7E-17	4.3E-17	4.4E-17
Th-230	4.5E-06	2.9E-06	3.0E-06	1.2E-16	8.0E-17	8.0E-17
Th-228	1.4E-06	2.5E-06	2.5E-06	3.7E-17	6.7E-17	6.9E-17

HOBBS - 2ND QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.1E-06	1.4E-06	1.4E-06	-3.1E-17	3.8E-17	3.8E-17
Pu-238	2.3E-06	3.1E-06	3.1E-06	6.1E-17	8.4E-17	8.4E-17
Pu-239+240	1.4E-06	2.0E-06	2.0E-06	3.8E-17	5.4E-17	5.5E-17
Cs-137	3.7E-04	2.8E-05	3.0E-05	1.0E-14	7.7E-16	8.2E-16
Sr-90	1.4E-06	1.3E-05	1.6E-05	3.8E-17	3.5E-16	4.3E-16
Ra-226	2.3E-06	3.1E-06	3.4E-06	6.1E-17	8.4E-17	9.3E-17
Ra-228	5.1E-06	1.4E-05	1.7E-05	1.4E-16	3.8E-16	4.6E-16
Th-232	2.3E-06	1.4E-06	1.5E-06	6.1E-17	3.8E-17	4.0E-17
Th-230	2.0E-06	1.7E-06	1.7E-06	5.4E-17	4.6E-17	4.6E-17
Th-228	2.6E-06	2.6E-06	2.6E-06	6.9E-17	6.9E-17	6.9E-17

Table A6. Radiochemical Analysis of HVAS Samples - Hobbs

HOBBS - 3RD QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.0E-06	1.3E-06	1.3E-06	-2.7E-17	3.4E-17	3.5E-17
Pu-238	-1.0E-06	5.3E-06	5.3E-06	-2.7E-17	1.4E-16	1.4E-16
Pu-239+240	-2.5E-07	3.8E-06	4.3E-06	-6.8E-18	1.0E-16	1.2E-16
Cs-137	7.6E-06	1.8E-05	2.2E-05	2.0E-16	4.8E-16	5.9E-16
Sr-90	1.3E-06	1.5E-05	1.9E-05	3.4E-17	4.2E-16	5.0E-16
Ra-226	2.5E-07	3.0E-06	3.4E-06	6.8E-18	8.2E-17	9.2E-17
Ra-228	5.0E-07	1.9E-05	2.4E-05	1.4E-17	5.2E-16	6.4E-16
Th-232	1.3E-06	2.0E-06	2.2E-06	3.4E-17	5.4E-17	6.0E-17
Th-230	7.6E-07	2.3E-06	2.5E-06	2.0E-17	6.1E-17	6.6E-17
Th-228	1.8E-06	3.3E-06	3.3E-06	4.8E-17	8.9E-17	8.9E-17

HOBBS - 4TH QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.6E-06	3.6E-06	4.8E-06	-4.3E-17	9.8E-17	1.3E-16
Pu-238	2.5E-06	2.7E-06	2.8E-06	6.7E-17	7.4E-17	7.5E-17
Pu-239+240	4.5E-07	1.4E-06	1.4E-06	1.2E-17	3.7E-17	3.7E-17
Cs-137	2.3E-06	4.5E-05	5.6E-05	6.1E-17	1.2E-15	1.5E-15
Sr-90	6.8E-07	1.3E-05	1.6E-05	1.8E-17	3.5E-16	4.3E-16
Ra-226	2.5E-06	2.3E-06	2.5E-06	6.7E-17	6.1E-17	6.8E-17
Ra-228	7.9E-06	1.4E-05	1.7E-05	2.1E-16	3.7E-16	4.5E-16
Th-232	6.8E-07	9.1E-07	9.3E-07	1.8E-17	2.5E-17	2.5E-17
Th-230	4.5E-07	1.8E-06	1.8E-06	1.2E-17	4.9E-17	4.9E-17
Th-228	6.8E-07	1.1E-06	1.1E-06	1.8E-17	3.1E-17	3.1E-17

HOBBS - 1ST QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.5E-07	2.0E-06	2.0E-06	6.8E-18	5.4E-17	5.5E-17
Pu-238	-5.0E-07	1.3E-06	1.3E-06	-1.4E-17	3.4E-17	3.4E-17
Pu-239+240	-5.0E-07	7.6E-07	7.6E-07	-1.4E-17	2.0E-17	2.1E-17
Cs-137	6.3E-06	1.8E-05	2.2E-05	1.7E-16	4.9E-16	6.0E-16
Sr-90	9.6E-06	1.6E-05	2.0E-05	2.6E-16	4.4E-16	5.4E-16
Ra-226	0.0E+00	3.5E-06	3.5E-06	0.0E+00	9.5E-17	9.5E-17
Ra-228	7.1E-06	1.4E-05	1.7E-05	1.9E-16	3.7E-16	4.5E-16
Th-232	7.6E-07	1.0E-06	1.1E-06	2.0E-17	2.7E-17	3.0E-17
Th-230	-2.5E-07	2.8E-06	2.8E-06	-6.8E-18	7.5E-17	7.5E-17
Th-228	-5.0E-07	1.0E-06	1.0E-06	-1.4E-17	2.7E-17	2.7E-17

Table A6. Radiochemical Analysis of HVAS Samples - Hobbs

HOBBS - 2ND QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-8.7E-07	1.0E-06	1.1E-06	-2.4E-17	2.8E-17	2.9E-17
Pu-238	-3.5E-07	8.7E-07	8.8E-07	-9.4E-18	2.4E-17	2.4E-17
Pu-239+240	-1.7E-07	5.2E-07	5.3E-07	-4.7E-18	1.4E-17	1.4E-17
Cs-137	3.1E-06	1.5E-05	1.8E-05	8.5E-17	4.1E-16	5.0E-16
Sr-90	1.7E-06	1.9E-05	2.3E-05	4.7E-17	5.2E-16	6.3E-16
Ra-226	2.6E-06	4.4E-06	4.4E-06	7.1E-17	1.2E-16	1.2E-16
Ra-228	1.4E-05	1.3E-05	1.6E-05	3.9E-16	3.6E-16	4.3E-16
Th-232	8.7E-07	1.0E-06	1.1E-06	2.4E-17	2.8E-17	3.0E-17
Th-230	1.0E-06	1.4E-06	1.5E-06	2.8E-17	3.8E-17	4.0E-17
Th-228	1.2E-06	1.0E-06	1.1E-06	3.3E-17	2.8E-17	2.9E-17

HOBBS - 3RD QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	3.8E-07	7.6E-07	7.7E-07	1.0E-17	2.0E-17	2.1E-17
Pu-238	-5.7E-07	2.5E-06	2.5E-06	-1.5E-17	6.6E-17	6.7E-17
Pu-239+240	1.9E-07	1.1E-06	1.2E-06	5.1E-18	3.1E-17	3.2E-17
Cs-137	1.3E-05	1.6E-05	1.9E-05	3.4E-16	4.2E-16	5.1E-16
Sr-90	9.8E-06	1.3E-05	1.6E-05	2.7E-16	3.6E-16	4.4E-16
Ra-226	2.8E-06	3.6E-06	3.6E-06	7.7E-17	9.7E-17	9.7E-17
Ra-228	1.3E-05	1.0E-05	1.3E-05	3.5E-16	2.8E-16	3.4E-16
Th-232	1.7E-06	1.9E-06	1.9E-06	4.6E-17	5.1E-17	5.1E-17
Th-230	1.9E-06	2.1E-06	2.1E-06	5.1E-17	5.6E-17	5.7E-17
Th-228	0.0E+00	2.8E-06	2.9E-06	0.0E+00	7.7E-17	7.8E-17

HOBBS - 4TH QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	0.0E+00	9.7E-07	9.8E-07	0.0E+00	2.6E-17	2.7E-17
Pu-238	1.5E-06	2.3E-06	2.3E-06	3.9E-17	6.1E-17	6.2E-17
Pu-239+240	-4.9E-07	6.5E-07	6.5E-07	-1.3E-17	1.8E-17	1.8E-17
Cs-137	3.9E-06	1.5E-05	1.9E-05	1.1E-16	4.1E-16	5.1E-16
Sr-90	1.6E-06	6.6E-06	8.1E-06	4.4E-17	1.8E-16	2.2E-16
Ra-226	8.1E-07	2.3E-06	2.3E-06	2.2E-17	6.1E-17	6.2E-17
Ra-228	6.5E-06	1.9E-05	2.4E-05	1.8E-16	5.3E-16	6.4E-16
Th-232	1.6E-06	1.1E-06	1.2E-06	4.4E-17	3.1E-17	3.2E-17
Th-230	5.2E-06	2.1E-06	2.1E-06	1.4E-16	5.7E-17	5.7E-17
Th-228	1.5E-06	1.1E-06	1.2E-06	3.9E-17	3.1E-17	3.1E-17

Table A6. Radiochemical Analysis of HVAS Samples - Hobbs

HOBBS - 1ST QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	4.5E-07	6.0E-07	6.1E-07	1.2E-17	1.6E-17	1.6E-17
Pu-238	7.6E-07	2.4E-06	2.4E-06	2.0E-17	6.5E-17	6.5E-17
Pu-239+240	0.0E+00	9.1E-07	9.1E-07	0.0E+00	2.5E-17	2.5E-17
Cs-137	5.7E-06	8.6E-06	1.0E-05	1.6E-16	2.3E-16	2.8E-16
Sr-90	-1.5E-07	4.1E-06	5.0E-06	-4.1E-18	1.1E-16	1.4E-16
Ra-226	2.0E-06	2.3E-06	2.3E-06	5.3E-17	6.1E-17	6.1E-17
Ra-228	7.0E-06	9.8E-06	1.2E-05	1.9E-16	2.7E-16	3.2E-16
Th-232	1.7E-06	1.8E-06	1.8E-06	4.5E-17	4.9E-17	5.0E-17
Th-230	1.1E-05	5.1E-06	5.4E-06	3.0E-16	1.4E-16	1.4E-16
Th-228	2.4E-06	2.4E-06	2.6E-06	6.5E-17	6.5E-17	7.0E-17

HOBBS - 2ND QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	9.1E-07	1.5E-06	1.5E-06	2.5E-17	4.1E-17	4.1E-17
Pu-238	4.5E-07	3.0E-06	3.1E-06	1.2E-17	8.2E-17	8.3E-17
Pu-239+240	7.6E-07	1.8E-06	1.9E-06	2.0E-17	4.9E-17	5.1E-17
Cs-137	2.6E-06	8.5E-06	1.0E-05	6.9E-17	2.3E-16	2.8E-16
Sr-90	2.4E-06	7.6E-06	9.2E-06	6.5E-17	2.0E-16	2.5E-16
Ra-226	2.1E-06	2.3E-06	2.3E-06	5.7E-17	6.1E-17	6.1E-17
Ra-228	2.1E-06	1.0E-05	1.2E-05	5.7E-17	2.7E-16	3.3E-16
Th-232	1.4E-06	1.2E-06	1.3E-06	3.7E-17	3.3E-17	3.4E-17
Th-230	2.1E-06	1.7E-06	1.7E-06	5.7E-17	4.5E-17	4.6E-17
Th-228	2.6E-06	1.8E-06	1.9E-06	6.9E-17	4.9E-17	5.2E-17

HOBBS - 3RD QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-4.9E-07	1.3E-06	1.3E-06	-1.3E-17	3.5E-17	3.5E-17
Pu-238	6.5E-07	2.1E-06	2.1E-06	1.8E-17	5.7E-17	5.7E-17
Pu-239+240	1.6E-07	1.5E-06	1.5E-06	4.4E-18	3.9E-17	4.0E-17
Cs-137	8.1E-07	1.0E-05	1.2E-05	2.2E-17	2.7E-16	3.3E-16
Sr-90	3.2E-06	1.4E-05	1.7E-05	8.8E-17	3.7E-16	4.6E-16
Ra-226	2.8E-06	1.9E-06	2.1E-06	7.4E-17	5.3E-17	5.6E-17
Ra-228	-1.6E-06	1.9E-05	2.4E-05	-4.4E-17	5.3E-16	6.4E-16
Th-232	2.1E-06	1.1E-06	1.1E-06	5.7E-17	3.1E-17	3.1E-17
Th-230	1.9E-06	1.3E-06	1.3E-06	5.3E-17	3.5E-17	3.5E-17
Th-228	2.1E-06	1.3E-06	1.3E-06	5.7E-17	3.5E-17	3.5E-17

Table A7. Radiochemical Analysis of HVAS Samples - Loving

LOVING - 4TH QUARTER - 1985

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.7E-06	3.2E-06	3.2E-06	7.4E-17	8.6E-17	8.8E-17
Pu-238	-2.3E-07	3.2E-06	3.2E-06	-6.1E-18	8.6E-17	8.6E-17
Pu-239+240	-6.8E-07	1.4E-06	1.4E-06	-1.8E-17	3.7E-17	3.7E-17
Cs-137	0.0E+00	1.6E-05	2.0E-05	0.0E+00	4.3E-16	5.3E-16
Sr-90	1.3E-05	1.2E-05	1.5E-05	3.4E-16	3.4E-16	4.1E-16
Ra-226	6.8E-06	4.5E-06	5.1E-06	1.8E-16	1.2E-16	1.4E-16
Ra-228	6.8E-06	2.5E-05	3.0E-05	1.8E-16	6.7E-16	8.2E-16
Th-232	4.5E-07	9.1E-07	9.3E-07	1.2E-17	2.5E-17	2.5E-17
Th-230	1.1E-06	1.4E-06	1.4E-06	3.1E-17	3.7E-17	3.7E-17
Th-228	2.3E-06	2.0E-06	2.1E-06	6.1E-17	5.5E-17	5.6E-17

LOVING - 1ST QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.3E-07	1.1E-06	1.1E-06	6.1E-18	3.1E-17	3.1E-17
Pu-238	0.0E+00	2.9E-06	3.0E-06	0.0E+00	8.0E-17	8.0E-17
Pu-239+240	2.5E-06	3.9E-06	4.6E-06	6.7E-17	1.0E-16	1.2E-16
Cs-137	3.9E-05	2.7E-05	3.3E-05	1.0E-15	7.4E-16	8.8E-16
Sr-90	3.2E-06	9.5E-06	1.2E-05	8.6E-17	2.6E-16	3.1E-16
Ra-226	2.3E-06	3.4E-06	3.9E-06	6.1E-17	9.2E-17	1.1E-16
Ra-228	1.3E-05	1.7E-05	2.0E-05	3.4E-16	4.5E-16	5.5E-16
Th-232	1.8E-06	1.1E-06	1.2E-06	4.9E-17	3.1E-17	3.2E-17
Th-230	2.3E-06	1.4E-06	1.4E-06	6.1E-17	3.7E-17	3.7E-17
Th-228	6.8E-07	1.6E-06	1.6E-06	1.8E-17	4.3E-17	4.3E-17

LOVING - 2ND QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	1.0E-06	2.5E-06	2.5E-06	2.7E-17	6.8E-17	6.8E-17
Pu-238	1.5E-06	3.5E-06	3.7E-06	4.1E-17	9.5E-17	1.0E-16
Pu-239+240	-2.5E-07	1.8E-06	1.8E-06	-6.8E-18	4.8E-17	4.8E-17
Cs-137	5.8E-04	5.0E-05	5.3E-05	1.6E-14	1.4E-15	1.4E-15
Sr-90	1.0E-06	8.6E-06	1.0E-05	2.7E-17	2.3E-16	2.8E-16
Ra-226	1.8E-06	2.5E-06	2.7E-06	4.8E-17	6.8E-17	7.3E-17
Ra-228	-5.0E-07	1.3E-05	1.6E-05	-1.4E-17	3.6E-16	4.4E-16
Th-232	2.0E-06	1.3E-06	1.3E-06	5.4E-17	3.4E-17	3.5E-17
Th-230	1.3E-06	1.3E-06	1.3E-06	3.4E-17	3.4E-17	3.5E-17
Th-228	2.3E-06	2.0E-06	2.0E-06	6.1E-17	5.4E-17	5.5E-17

Table A7. Radiochemical Analysis of HVAS Samples - Loving

LOVING - 3RD QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-5.7E-07	2.3E-06	2.3E-06	-1.5E-17	6.1E-17	6.2E-17
Pu-238	-1.4E-06	6.0E-06	6.0E-06	-3.8E-17	1.6E-16	1.6E-16
Pu-239+240	-5.7E-07	3.7E-06	4.0E-06	-1.5E-17	1.0E-16	1.1E-16
Cs-137	5.7E-06	1.4E-05	1.8E-05	1.5E-16	3.8E-16	4.8E-16
Sr-90	1.2E-05	1.7E-05	2.0E-05	3.1E-16	4.5E-16	5.5E-16
Ra-226	3.1E-06	3.1E-06	3.4E-06	8.4E-17	8.4E-17	9.3E-17
Ra-228	-2.8E-07	1.4E-05	1.7E-05	-7.7E-18	3.8E-16	4.6E-16
Th-232	2.8E-07	8.5E-07	1.1E-06	7.7E-18	2.3E-17	3.0E-17
Th-230	4.0E-06	2.0E-06	2.0E-06	1.1E-16	5.4E-17	5.4E-17
Th-228	0.0E+00	2.0E-06	2.0E-06	0.0E+00	5.4E-17	5.4E-17

LOVING - 4TH QUARTER - 1986

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	1.2E-06	2.3E-06	2.3E-06	3.3E-17	6.1E-17	6.2E-17
Pu-238	-4.1E-07	2.7E-06	2.7E-06	-1.1E-17	7.2E-17	7.3E-17
Pu-239+240	-1.0E-06	1.2E-06	1.2E-06	-2.8E-17	3.3E-17	3.4E-17
Cs-137	4.1E-06	2.1E-05	2.5E-05	1.1E-16	5.6E-16	6.7E-16
Sr-90	2.1E-07	7.8E-06	9.5E-06	5.6E-18	2.1E-16	2.6E-16
Ra-226	4.9E-06	3.3E-06	3.7E-06	1.3E-16	8.9E-17	1.0E-16
Ra-228	6.8E-06	1.8E-05	2.1E-05	1.8E-16	4.7E-16	5.8E-16
Th-232	4.1E-07	6.2E-07	6.2E-07	1.1E-17	1.7E-17	1.7E-17
Th-230	0.0E+00	1.0E-06	1.0E-06	0.0E+00	2.8E-17	2.8E-17
Th-228	8.2E-07	1.0E-06	1.0E-06	2.2E-17	2.8E-17	2.8E-17

LOVING - 1ST QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.5E-06	3.3E-06	3.3E-06	-4.1E-17	8.9E-17	8.9E-17
Pu-238	-1.0E-06	1.3E-06	1.3E-06	-2.7E-17	3.4E-17	3.5E-17
Pu-239+240	-5.0E-07	7.6E-07	7.8E-07	-1.4E-17	2.0E-17	2.1E-17
Cs-137	0.0E+00	3.0E-05	3.5E-05	0.0E+00	8.2E-16	9.4E-16
Sr-90	3.0E-06	1.4E-05	1.8E-05	8.2E-17	3.9E-16	4.8E-16
Ra-226	1.3E-06	3.5E-06	3.5E-06	3.4E-17	9.5E-17	9.5E-17
Ra-228	1.4E-05	1.5E-05	1.8E-05	3.9E-16	4.1E-16	4.9E-16
Th-232	2.5E-07	7.6E-07	7.8E-07	6.8E-18	2.0E-17	2.1E-17
Th-230	1.3E-06	3.3E-06	3.4E-06	3.4E-17	8.9E-17	9.1E-17
Th-228	2.0E-06	1.8E-06	1.8E-06	5.4E-17	4.8E-17	4.8E-17

Table A7. Radiochemical Analysis of HVAS Samples - Loving

LOVING - 2ND QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.1E-06	1.4E-06	1.5E-06	-3.1E-17	3.7E-17	4.0E-17
Pu-238	-4.5E-07	1.1E-06	1.1E-06	-1.2E-17	3.1E-17	3.1E-17
Pu-239+240	-4.5E-07	6.8E-07	6.9E-07	-1.2E-17	1.8E-17	1.9E-17
Cs-137	8.8E-06	2.1E-05	2.5E-05	2.4E-16	5.6E-16	6.8E-16
Sr-90	-5.4E-06	1.9E-05	2.3E-05	-1.5E-16	5.1E-16	6.2E-16
Ra-226	8.6E-06	5.9E-06	5.9E-06	2.3E-16	1.6E-16	1.6E-16
Ra-228	6.6E-06	1.5E-05	1.9E-05	1.8E-16	4.2E-16	5.0E-16
Th-232	9.1E-07	1.1E-06	1.2E-06	2.5E-17	3.1E-17	3.2E-17
Th-230	9.1E-07	1.8E-06	1.8E-06	2.5E-17	4.9E-17	5.0E-17
Th-228	6.8E-07	9.1E-07	1.2E-06	1.8E-17	2.5E-17	3.2E-17

LOVING - 3RD QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	1.5E-07	4.5E-07	4.7E-07	4.1E-18	1.2E-17	1.3E-17
Pu-238	-6.0E-07	1.5E-06	1.5E-06	-1.6E-17	4.1E-17	4.1E-17
Pu-239+240	6.0E-07	7.6E-07	7.7E-07	1.6E-17	2.0E-17	2.1E-17
Cs-137	5.6E-06	1.0E-05	1.2E-05	1.5E-16	2.7E-16	3.3E-16
Sr-90	1.8E-06	8.5E-06	1.0E-05	4.9E-17	2.3E-16	2.8E-16
Ra-226	2.3E-06	2.1E-06	2.1E-06	6.1E-17	5.7E-17	5.7E-17
Ra-228	2.3E-06	8.9E-06	1.1E-05	6.1E-17	2.4E-16	3.0E-16
Th-232	1.1E-06	6.0E-07	6.3E-07	2.9E-17	1.6E-17	1.7E-17
Th-230	6.0E-07	7.6E-07	7.6E-07	1.6E-17	2.0E-17	2.0E-17
Th-228	1.4E-06	9.1E-07	1.0E-06	3.7E-17	2.5E-17	2.8E-17

LOVING - 4TH QUARTER - 1987

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.6E-07	9.7E-07	9.8E-07	-4.4E-18	2.6E-17	2.7E-17
Pu-238	-1.6E-07	2.3E-06	2.3E-06	-4.4E-18	6.1E-17	6.2E-17
Pu-239+240	4.9E-07	9.7E-07	9.9E-07	1.3E-17	2.6E-17	2.7E-17
Cs-137	8.1E-06	1.9E-05	2.0E-05	2.2E-16	5.3E-16	5.5E-16
Sr-90	8.1E-06	1.6E-05	1.9E-05	2.2E-16	4.2E-16	5.2E-16
Ra-226	2.6E-06	2.6E-06	2.6E-06	7.0E-17	7.0E-17	7.0E-17
Ra-228	3.2E-06	1.9E-05	2.3E-05	8.8E-17	5.3E-16	6.3E-16
Th-232	6.5E-07	6.5E-07	7.0E-07	1.8E-17	1.8E-17	1.9E-17
Th-230	1.5E-06	1.1E-06	1.2E-06	3.9E-17	3.1E-17	3.2E-17
Th-228	9.7E-07	8.1E-07	8.4E-07	2.6E-17	2.2E-17	2.3E-17

Table A7. Radiochemical Analysis of HVAS Samples - Loving

LOVING - 1ST QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	0.0E+00	7.0E-07	7.1E-07	0.0E+00	1.9E-17	1.9E-17
Pu-238	-1.4E-06	2.6E-06	2.6E-06	-3.8E-17	7.1E-17	7.1E-17
Pu-239+240	3.5E-07	1.2E-06	1.2E-06	9.4E-18	3.3E-17	3.4E-17
Cs-137	1.1E-05	1.2E-05	1.4E-05	2.9E-16	3.3E-16	3.9E-16
Sr-90	1.7E-07	4.9E-06	6.0E-06	4.7E-18	1.3E-16	1.6E-16
Ra-226	5.2E-06	2.6E-06	2.6E-06	1.4E-16	7.1E-17	7.1E-17
Ra-228	2.1E-05	1.9E-05	2.3E-05	5.7E-16	5.2E-16	6.2E-16
Th-232	1.9E-06	1.2E-06	1.3E-06	5.2E-17	3.3E-17	3.4E-17
Th-230	2.3E-06	1.4E-06	1.4E-06	6.1E-17	3.8E-17	3.9E-17
Th-228	-7.0E-07	1.2E-06	1.2E-06	-1.9E-17	3.3E-17	3.3E-17

LOVING - 2ND QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	2.8E-07	1.3E-06	1.3E-06	7.7E-18	3.4E-17	3.6E-17
Pu-238	9.9E-07	2.4E-06	2.4E-06	2.7E-17	6.5E-17	6.6E-17
Pu-239+240	7.1E-07	1.3E-06	1.3E-06	1.9E-17	3.4E-17	3.5E-17
Cs-137	9.5E-06	8.5E-06	1.0E-05	2.6E-16	2.3E-16	2.8E-16
Sr-90	-5.7E-07	5.4E-06	6.6E-06	-1.5E-17	1.5E-16	1.8E-16
Ra-226	1.6E-06	2.1E-06	2.1E-06	4.2E-17	5.7E-17	5.8E-17
Ra-228	1.7E-05	1.1E-05	1.4E-05	4.6E-16	3.1E-16	3.7E-16
Th-232	1.3E-06	1.1E-06	1.2E-06	3.4E-17	3.1E-17	3.3E-17
Th-230	2.6E-06	1.8E-06	2.0E-06	6.9E-17	5.0E-17	5.3E-17
Th-228	6.0E-06	2.4E-06	2.5E-06	1.6E-16	6.5E-17	6.6E-17

LOVING - 3RD QUARTER - 1988

	ACTIVITY CONC (Bq/m3)	COUNTING ERROR (Bq/m3)	MDL (Bq/m3)	ACTIVITY CONC (uCi/mL)	COUNTING ERROR (uCi/mL)	MDL (uCi/mL)
Am-241	-1.5E-07	1.2E-06	1.2E-06	-4.1E-18	3.3E-17	3.3E-17
Pu-238	1.4E-06	2.0E-06	2.0E-06	3.7E-17	5.3E-17	5.4E-17
Pu-239+240	-4.5E-07	1.4E-06	1.4E-06	-1.2E-17	3.7E-17	3.7E-17
Cs-137	-6.0E-07	1.1E-05	1.3E-05	-1.6E-17	2.9E-16	3.6E-16
Sr-90	-9.1E-07	4.2E-06	5.3E-06	-2.5E-17	1.1E-16	1.4E-16
Ra-226	4.4E-06	1.8E-06	1.9E-06	1.2E-16	4.9E-17	5.2E-17
Ra-228	3.0E-06	1.5E-05	1.8E-05	8.2E-17	4.0E-16	4.8E-16
Th-232	7.6E-07	6.0E-07	6.2E-07	2.0E-17	1.6E-17	1.7E-17
Th-230	1.4E-06	1.1E-06	1.1E-06	3.7E-17	2.9E-17	2.9E-17
Th-228	4.5E-07	7.6E-07	7.7E-07	1.2E-17	2.0E-17	2.1E-17

Table A8. RADIOCHEMICAL ANALYSES OF PUBLIC DRINKING WATER SUPPLY SYSTEMS

ANALYTIC PARAMETER	LOVING WATER SUPPLY 10-29-85			LOVING WATER SUPPLY 9-12-86			LOVING WATER SUPPLY 1-11-88		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	4	±4	4.73	4	±6	7.33	-1	±3	3.92
Gross Beta	4	±3	3.66	3	±3	3.66	3	±3	3.44
Am-241	N/A			0.0	±0.1	0.11	0.0	±0.1	0.11
Pu-238	N/A			-0.4	±1.1	1.10	0.0	±0.1	0.11
Pu-239+240	N/A			0.2	±0.3	0.30	0.0	±0.1	0.11
H-3	N/A			0	±220	269.48	-50	±160	196.2
Cs-137	N/A			0.2	±0.6	0.73	0.0	±1.0	1.08
Sr-90	N/A			0.2	±0.5	0.63	0.4	±0.6	0.71
Ra-226	N/A			0.2	±0.2	0.22	0.0	±0.2	0.22
Ra-228	N/A			1.2	±2.0	2.43	-0.5	±1.3	1.60
U-238	N/A			0.6	±0.4	0.41	0.5	±0.2	0.20
U-235	N/A			0.0	±0.1	0.11	0.0	±0.1	0.11
U-233+234	N/A			1.1	±0.5	0.50	1.3	±0.3	0.30
Th-232	N/A			0.0	±0.1	0.13	0.0	±0.1	0.11
Th-230	N/A			0.0	±0.1	0.11	-0.1	±0.3	0.30
Th-228	N/A			-0.1	±0.1	0.11	0.0	±0.1	0.11

*Counting error at 95% confidence level

Table A8. RADIOCHEMICAL ANALYSES OF PUBLIC DRINKING WATER SUPPLY SYSTEMS									
ANALYTIC PARAMETER	CARLSBAD WATER SUPPLY 9-12-86			CARLSBAD WATER SUPPLY 1-11-88					
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	-1	±4	4.97	2	±5	6.03		±	
Gross Beta	4	±2	2.61	6	±3	3.44		±	
Am-241	0.0	±0.1	0.11	0.0	±0.1	0.11		±	
Pu-238	0.4	±0.7	0.71	0.0	±0.1	0.11		±	
Pu-239+240	0.2	±0.2	0.20	0.0	±0.1	0.11		±	
H-3	60	±220	267.07	-120	±160	196.20		±	
Cs-137	0.1	±0.6	0.71	0.0	±0.9	0.98		±	
Sr-90	0.0	±0.5	0.63	0.1	±0.6	0.71		±	
Ra-226	0.3	±0.2	0.22	0.5	±0.2	0.20		±	
Ra-228	0.7	±1.4	1.70	-0.4	±1.1	1.36		±	
U-238	-0.3	±0.5	0.50	0.8	±0.2	0.20		±	
U-235	-0.1	±0.1	0.13	0.1	±0.1	0.11		±	
U-233+234	0.6	±0.4	0.40	4.2	±0.5	0.50		±	
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11		±	
Th-230	0.1	±0.1	0.11	-0.1	±0.3	0.30		±	
Th-228	-0.1	±0.1	0.11	0.1	±0.1	0.11		±	

*Counting error at 95% confidence level

Table A8. RADIOCHEMICAL ANALYSES OF PUBLIC DRINKING WATER SUPPLY SYSTEMS									
ANALYTIC PARAMETER	OTIS WATER SUPPLY 10-29-85			OTIS WATER SUPPLY 9-12-86			OTIS WATER SUPPLY 1-11-88		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	2	±6	7.09	5	±10	11.60	-1	±9	11.24
Gross Beta	3	±4	4.97	4	±5	5.80	4	±5	6.27
Am-241	N/A			-0.1	±0.3	0.30	0.0	±0.1	0.11
Pu-238	N/A			0.1	±0.8	0.80	0.0	±0.1	0.11
Pu-239+240	N/A			0.0	±0.5	0.50	0.0	±0.1	0.11
H-3	N/A			-150	±220	269.48	-80	±160	196.2
Cs-137	N/A			-0.2	±0.7	0.86	0.0	±1.0	1.08
Sr-90	N/A			0.0	±0.4	0.50	0.3	±0.5	0.60
Ra-226	N/A			-0.1	±0.3	0.31	0.0	±0.1	0.11
Ra-228	N/A			0.8	±1.5	1.81	-0.1	±1.1	0.34
U-238	N/A			0.7	±0.4	0.42	0.8	±0.2	0.20
U-235	N/A			0.0	±0.1	0.11	0.1	±0.1	0.11
U-233+234	N/A			2.2	±0.6	0.61	2.3	±0.4	0.40
Th-232	N/A			0.0	±0.1	0.11	0.0	±0.1	0.11
Th-230	N/A			0.0	±0.1	0.11	-0.2	±0.3	0.30
Th-228	N/A			-0.1	±0.1	0.11	0.4	±0.2	0.20

*Counting error at 95% confidence level

Table A9. RADIOCHEMICAL ANALYSES OF SURFACE WATER									
ANALYTIC PARAMETER	PECOS RIVER/CARLSBAD 12-17-85			PECOS RIVER/PIERCE CANYON 12-17-85			INDIAN TANK 10-23-86		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	4	±18	21.74	11	±47	56.84	1	±2	2.61
Gross Beta	5	±14	17.26	37	±36	43.25	11	±3	3.25
Am-241	N/A			N/A			0.1	±0.1	0.11
Pu-238	0.00	±0.11	0.11	0.02	±0.10	0.10	0.0	±0.6	0.60
Pu-239+240	0.00	±0.08	0.08	-0.01	±0.07	0.07	0.2	±0.2	0.20
H-3	180	±200	243.44	-30	±200	243.44	-110	±220	269.48
Cs-137	N/A			N/A			0.3	±0.8	0.99
Sr-90	N/A			N/A			0.0	±0.7	0.84
Ra-226	0.2	±0.1	0.13	0.1	±0.1	0.11	0.2	±0.2	0.20
Ra-228	0.1	±1.0	1.23	0.5	±0.8	0.95	0.9	±2.0	2.46
U-238	N/A			N/A			0.2	±0.2	0.20
U-235	N/A			N/A			0.0	±0.1	0.11
U-233+234	N/A			N/A			0.0	±0.1	0.11
Th-232	N/A			N/A			0.0	±0.1	0.11
Th-230	N/A			N/A			0.3	±0.2	0.20
Th-228	N/A			N/A			0.2	±0.2	0.20

*Counting error at 95% confidence level

Table A9. RADIOCHEMICAL ANALYSES OF SURFACE WATER									
ANALYTIC PARAMETER	LAGUNA GRANDE 4-18-86			LAGUNA GRANDE 10-23-86			PECOS RIVER/CARLSBAD 4-17-86		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	100	±3300	4054.35	-2300	±3300	4285.35	5	±26	31.43
Gross Beta	21000	±3000	3399.19	18000	±3000	3439.55	18	±16	19.38
Am-241	0.5	±2.1	2.45	-0.2	±0.6	0.62	0.1	±0.3	0.31
Pu-238	-0.5	±6.8	6.84	0.7	±4.5	4.50	0.1	±0.8	0.80
Pu-239+240	-1.0	±3.2	3.31	-1.6	±2.3	2.37	0.1	±0.3	0.30
H-3	-150	±220	271.93	-40	±220	269.48	-30	±230	280.08
Cs-137	9.8	±1.7	1.94	28	±10	11.82	0.3	±1.2	1.49
Sr-90	-8.0	±8.3	10.18	1	±17	20.92	-0.6	±0.7	0.84
Ra-226	5.9	±1.0	1.06	10	±1	1.00	0.1	±0.2	0.24
Ra-228	5.9	±3.8	4.54	7.9	±1.9	2.19	0.7	±1.3	1.57
U-238	12	±3	3.02	7.4	±2.0	2.08	1.4	±0.5	0.50
U-235	0.7	±0.7	0.71	0.1	±0.2	0.22	0.3	±0.2	0.20
U-233+234	29	±5	5.02	17	±3	3.01	3.6	±0.8	0.80
Th-232	0.9	±2.7	3.10	0.0	±0.1	0.16	0.1	±0.1	0.11
Th-230	-1.7	±2.5	2.73	2.2	±1.4	1.41	0.0	±0.1	0.11
Th-228	-1.3	±1.3	1.50	0.0	±0.8	0.83	-0.1	±0.2	0.20

*Counting error at 95% confidence level

Table A9. RADIOCHEMICAL ANALYSES OF SURFACE WATER									
ANALYTIC PARAMETER	PECOS RIVER/CARLSBAD 10-21-86			PECOS RIVER/PIERCE CANYON 4-17-86			PECOS RIVER/PIERCE CANYON 10-21-86		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	26	±56	56.13	20	±120	146.55	0	±56	56.13
Gross Beta	46	±95	95.08	100	±70	83.91	31	±51	51.14
Am-241	0.0	±0.1	0.11	-0.1	±0.2	0.20	0.0	±0.1	0.11
Pu-238	-0.1	±0.2	0.20	-0.1	±0.6	0.60	0.0	±0.1	0.11
Pu-239+240	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
H-3	-20	±150	183.18	-100	±230	280.08	30	±150	183.18
Cs-137	0.4	±2.1	2.16	0.8	±1.2	1.47	-0.6	±2.7	2.75
Sr-90	2.3	±5.0	5.04	0.1	±0.5	0.60	2.1	±3.2	3.26
Ra-226	0.3	±0.2	0.20	0.4	±0.3	0.33	0.1	±0.2	0.20
Ra-228	0.4	±1.2	1.30	0.3	±1.0	1.21	0.0	±1.4	1.49
U-238	2.4	±0.9	0.90	3.5	±0.7	0.71	5.8	±2.0	2.00
U-235	0.0	±0.2	0.20	0.4	±0.2	0.20	-0.1	±0.4	0.40
U-233+234	2.9	±0.9	0.90	5.9	±0.9	0.90	8.6	±2.4	2.40
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
Th-230	-0.1	±0.2	0.22	0.1	±0.2	0.20	0.2	±0.3	0.31
Th-228	0.0	±0.1	0.11	0.1	±0.3	0.30	0.4	±0.4	0.40

*Counting error at 95% confidence level

Table A9. RADIOCHEMICAL ANALYSES OF SURFACE WATER									
ANALYTIC PARAMETER	INDIAN TANK 6-19-87			LAGUNA GRANDE 6-18-87			RED LAKE 6-19-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	1	±3	3.66	-2200	±3200	4181.63	2	±3	3.44
Gross Beta	11	±5	5.80	21000	±4000	4407.37	17	±3	3.44
Am-241	0.1	±0.1	0.11	-0.3	±0.7	0.71	0.1	±0.1	0.11
Pu-238	-0.1	±0.3	0.30	0.6	±1.1	1.11	0.1	±0.4	0.40
Pu-239+240	0.0	±0.2	0.20	0.2	±0.5	0.52	0.0	±0.3	0.33
H-3	-50	±220	267.07	N/A			0	±220	267.07
Cs-137	0.0	±1.3	1.41	0.0	±1.9	2.06	0.0	±1.2	1.30
Sr-90	0.4	±0.8	0.97	19	±36	43.72	-0.3	±0.6	0.71
Ra-226	0.3	±0.2	0.22	4.9	±0.3	0.30	0.2	±0.2	0.20
Ra-228	0.6	±1.1	1.38	2.9	±3.4	4.16	0.0	±1.8	2.20
U-238	-0.1	±0.3	0.34	11	±1	1.01	0.1	±0.4	0.41
U-235	0.1	±0.2	0.20	1.3	±0.4	0.40	0.0	±0.2	0.20
U-233+234	0.0	±0.5	0.50	23	±2	2.00	0.5	±0.7	0.73
Th-232	0.1	±0.1	0.11	0.0	±0.2	0.29	0.1	±0.1	0.11
Th-230	0.0	±0.1	0.11	-1.7	±2.0	2.03	0.0	±0.1	0.11
Th-228	0.1	±0.1	0.11	1.0	±2.0	2.02	0.0	±0.1	0.11

*Counting error at 95% confidence level

Table A9. RADIOCHEMICAL ANALYSES OF SURFACE WATER									
ANALYTIC PARAMETER	HILL TANK 3-22-88			INDIAN TANK 3-22-88			NOYE TANK 3-22-88		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	2	±3	3.44	4	±4	4.52	14	±11	12.48
Gross Beta	18	±3	3.44	16	±3	3.44	44	±7	7.96
Am-241	0.1	±0.2	0.20	0.0	±0.2	0.20	0.1	±0.2	0.20
Pu-238	0.0	±0.5	0.50	0.0	±0.5	0.50	-0.1	±0.5	0.50
Pu-239+240	0.0	±0.2	0.24	0.0	±0.2	0.20	0.0	±0.2	0.20
H-3	-60	±150	183.18	-110	±150	183.18	160	±150	183.18
Cs-137	-0.1	±0.5	0.60	-0.2	±0.5	0.63	-0.1	±0.5	0.63
Sr-90	0.2	±0.5	0.60	0.5	±0.5	0.60	0.5	±0.5	0.60
Ra-226	0.1	±0.2	0.20	0.6	±0.2	0.20	0.7	±0.2	0.22
Ra-228	0.1	±0.7	0.86	1.2	±1.2	1.42	1.5	±1.0	1.18
U-238	0.2	±0.1	0.11	0.2	±0.2	0.20	0.5	±0.3	0.31
U-235	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
U-233+234	0.0	±0.1	0.11	0.2	±0.1	0.11	0.5	±0.3	0.30
Th-232	0.5	±0.3	0.30	0.4	±0.2	0.20	0.8	±0.3	0.30
Th-230	0.1	±0.2	0.20	0.1	±0.2	0.20	0.7	±0.3	0.30
Th-228	0.0	±0.1	0.11	0.3	±0.2	0.20	0.7	±0.3	0.30

*Counting error at 95% confidence level

Table A9. RADIOCHEMICAL ANALYSES OF SURFACE WATER									
ANALYTIC PARAMETER	PECOS/PIERCE CANYON 6-7-88			RED LAKE 3-22-88			RED TANK 3-22-88		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	-36	±92	116.52	1	±5	6.03	1	±3	3.44
Gross Beta	110	±60	70.28	32	±4	4.34	28	±4	4.34
Am-241	0.0	±0.2	0.20	-0.1	±0.1	0.13	0.1	±0.3	0.31
Pu-238	-0.1	±0.6	0.61	-0.3	±0.5	0.51	-0.1	±0.5	0.50
Pu-239+240	0.1	±0.2	0.20	0.1	±0.2	0.20	0.1	±0.2	0.20
H-3	20	±150	183.18	-10	±150	183.18	70	±150	183.18
Cs-137	0.5	±1.0	1.04	-0.1	±0.5	0.63	-0.3	±0.5	0.63
Sr-90	0.2	±0.4	0.47	0.6	±0.5	0.58	0.1	±0.5	0.60
Ra-226	0.1	±0.2	0.20	0.2	±0.2	0.20	0.3	±0.2	0.20
Ra-228	0.8	±0.8	0.99	1.1	±0.6	0.71	2.7	±1.3	1.55
U-238	2.2	±0.4	0.40	0.6	±0.3	0.30	0.2	±0.2	0.20
U-235	0.2	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
U-233+234	5.6	±0.6	0.60	0.6	±0.3	0.30	0.3	±0.2	0.20
Th-232	0.0	±0.1	0.11	0.4	±0.3	0.30	0.2	±0.2	0.20
Th-230	0.4	±0.3	0.30	0.0	±0.2	0.20	0.2	±0.2	0.20
Th-228	0.0	±0.1	0.11	0.1	±0.2	0.24	0.2	±0.2	0.22

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER

ANALYTIC PARAMETER	BARN WELL 11-4-87			CLIFTON WELL 10-28-87			COMANCHE WELL 10-26-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	8	±8	8.85	69	±18	18.48	8	±6	6.68
Gross Beta	2	±5	6.27	26	±6	7.09	-2	±3	3.92
Am-241	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
Pu-238	-0.1	±0.2	0.20	-0.2	±0.2	0.20	0.1	±0.3	0.30
Pu-239+240	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
H-3	40	±150	183.18	-30	±150	183.18	-10	±150	183.18
Cs-137	0.3	±0.8	0.95	0.6	±0.8	0.95	0.2	±0.7	0.86
Sr-90	0.2	±0.9	1.10	0.5	±1.0	1.23	0.1	±0.5	0.81
Ra-226	0.0	±0.2	0.20	0.3	±0.2	0.20	0.2	±0.2	0.20
Ra-228	-0.3	±0.7	0.86	0.7	±0.8	0.81	0.7	±0.9	1.08
U-238	1.3	±0.3	0.30	14	±1	1.00	3.1	±0.4	0.41
U-235	0.0	±0.1	0.11	0.8	±0.2	0.20	0.1	±0.1	0.11
U-233+234	3.9	±0.4	0.40	25	±1	1.00	6.1	±0.6	0.60
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.13
Th-230	0.2	±0.2	0.22	0.0	±0.1	0.11	0.0	±0.1	0.16
Th-228	0.0	±0.1	0.11	0.2	±0.1	0.11	0.0	±0.1	0.11

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	DOE-1 C 7-28-87			ENGLE WELL 12-8-87			FAIRVIEW 11-16-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	-700	±1200	1515.33	12	±34	41.12	0	±27	33.22
Gross Beta	600	±1000	1205.35	340	±30	33.80	-1	±16	19.62
Am-241	0.0	±0.4	0.41	0.0	±0.2	0.24	0.0	±0.1	0.11
Pu-238	-0.1	±0.7	0.71	0.0	±0.2	0.20	-0.1	±0.2	0.20
Pu-239+240	0.0	±0.2	0.20	0.0	±0.1	0.11	0.0	±0.1	0.11
H-3	10	±160	193.80	-140	±190	232.84	30	±150	183.18
Cs-137	0.0	±1.2	1.30	0.7	±0.7	0.84	0.0	±0.7	0.84
Sr-90	0.5	±1.6	1.96	-0.1	±0.8	0.97	0.1	±0.8	0.99
Ra-226	190	±10	10.00	10	±1	1.00	0.1	±0.2	0.20
Ra-228	13	±2	2.20	3.0	±0.8	1.71	-0.1	±0.7	0.84
U-238	2.0	±0.7	0.70	0.4	±0.2	0.20	1.5	±0.3	0.33
U-235	0.3	±0.3	0.30	0.0	±0.1	0.11	0.0	±0.1	0.11
U-233+234	8.1	±1.4	1.40	1.3	±0.3	0.30	2.7	±0.4	0.40
Th-232	0.1	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
Th-230	0.0	±0.2	0.20	0.1	±0.1	0.11	0.0	±0.1	0.11
Th-228	5.5	±0.7	0.71	0.1	±0.1	0.11	0.1	±0.1	0.11

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	H-3b-1 M 9-2-87			H-4b C 9-27-87			H-4c M 10-5-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	300	±1500	1808.03	290	±260	296.73	60	±240	288.35
Gross Beta	290	±740	895.74	200	±110	133.54	110	±180	219.82
Am-241	0.0	±0.2	0.20	-0.1	±0.1	0.11	0.1	±0.4	0.41
Pu-238	-0.1	±0.3	0.30	0.0	±0.2	0.20	-0.2	±0.4	0.40
Pu-239+240	0.0	±0.1	0.11	0.0	±0.1	0.11	-0.1	±0.2	0.20
H-3	-20	±160	198.67	60	±160	198.67	50	±210	258.90
Cs-137	0.0	±1.2	1.30	0.0	±1.2	1.30	0.0	±1.2	1.30
Sr-90	0.4	±1.1	1.36	-0.6	±1.2	1.49	2.1	±5.4	6.59
Ra-226	140	±10	10.00	74	±1	1.00	25	±1	1.00
Ra-228	14	±2	2.15	5.8	±1.2	1.38	3.9	±1.4	1.63
U-238	1.4	±0.5	0.50	2.3	±0.3	0.30	-0.1	±0.3	0.31
U-235	0.2	±0.2	0.20	0.2	±0.1	0.11	0.0	±0.2	0.20
U-233+234	12	±1	1.00	13	±1	1.00	0.0	±0.5	0.50
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.2	0.22
Th-230	-0.2	±0.2	0.20	-0.1	±0.2	0.20	0.7	±0.4	0.45
Th-228	5.0	±0.8	0.80	2.5	±0.5	0.51	0.8	±0.4	0.41

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	H-6c M 11-4-87			H-7b C 2-25-87			H-8b C 2-11-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	10	±41	49.28	7	±28	33.56	49	±31	35.07
Gross Beta	57	±52	62.87	8	±18	21.74	6	±26	31.43
Am-241	0.1	±0.4	0.40	0.0	±0.1	0.11	0.0	±0.1	0.11
Pu-238	-0.1	±0.6	0.60	0.1	±0.2	0.20	0.0	±0.6	0.60
Pu-239+240	0.0	±0.3	0.30	0.0	±0.1	0.11	-0.2	±0.3	0.30
H-3	-80	±210	258.90	120	±150	185.63	-20	±210	256.46
Cs-137	0.0	±1.2	1.30	0.0	±1.1	1.19	0.0	±1.3	1.41
Sr-90	-0.2	±4.2	5.13	-0.5	±0.9	1.12	1.2	±2.4	3.90
Ra-226	10	±1	1.00	1.0	±0.2	0.20	3.0	±0.2	0.20
Ra-228	3.5	±0.3	0.89	0.3	±0.7	0.84	0.6	±0.9	1.10
U-238	3.3	±1.6	1.61	3.5	±0.5	0.50	3.6	±0.8	0.80
U-235	-0.1	±0.3	0.31	0.3	±0.1	0.11	0.1	±0.2	0.20
U-233+234	14	±3	3.00	9.6	±0.7	0.70	19	±2	2.00
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
Th-230	0.0	±0.2	0.22	-0.1	±0.2	0.20	0.0	±0.2	0.20
Th-228	0.0	±0.2	0.20	0.1	±0.2	0.20	0.1	±0.2	0.11

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER

ANALYTIC PARAMETER	H-9b C 1-29-87			H-11B3 C 9-2-87			H-12 C 1-16-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	46	±32	36.35	-64	±82	106.08	-100	±1400	1725.97
Gross Beta	22	±26	31.67	69	±55	65.83	800	±1100	1311.97
Am-241	0.0	±0.1	0.11	0.1	±0.8	0.80	-0.3	±0.3	0.33
Pu-238	-0.1	±0.4	0.40	-0.5	±0.6	0.62	-0.1	±0.9	0.90
Pu-239+240	-0.1	±0.2	0.20	0.0	±0.2	0.20	0.1	±0.4	0.40
H-3	60	±210	256.46	150	±160	193.80	40	±210	256.46
Cs-137	0.0	±1.2	1.30	0.0	±1.1	1.19	0.0	±1.4	1.52
Sr-90	-0.1	±4.8	5.91	-0.4	±1.0	1.23	1.0	±3.1	3.79
Ra-226	8.7	±0.3	0.30	27	±1	1.00	240	±10	10.00
Ra-228	1.2	±0.9	1.10	1.3	±1.7	2.04	35	±3	3.25
U-238	8.3	±1.2	1.20	0.1	±0.2	0.20	0.2	±0.7	0.71
U-235	0.9	±0.4	0.40	0.0	±0.1	0.11	-0.1	±0.3	0.33
U-233+234	20	±2	2.00	0.3	±0.2	0.20	1.4	±1.4	1.41
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11	-0.1	±0.2	0.22
Th-230	0.0	±0.2	0.22	1.9	±0.5	0.50	1.2	±0.6	0.61
Th-228	0.4	±0.2	0.22	0.3	±0.2	0.20	19	±2	2.00

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	H-14 C 5-26-87			H-15 C 5-11-87			H-17 C 10-27-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	90	±190	223.54	-100	±2400	2955.30	800	±1300	1525.98
Gross Beta	200	±200	213.85	1600	±1900	2280.82	1000	±1300	1571.67
Am-241	0.1	±0.5	0.51	0.3	±0.9	0.92	-0.1	±0.3	0.30
Pu-238	-0.3	±0.4	0.40	0.0	±0.6	0.60	-0.2	±0.5	0.50
Pu-239+240	-0.1	±0.2	0.20	-0.2	±0.2	0.24	0.0	±0.3	0.30
H-3	80	±220	267.07	40	±220	269.48	-110	±210	258.90
Cs-137	0.0	±1.2	1.30	0.0	±1.7	1.84	0.0	±1.3	1.41
Sr-90	-2.8	±3.8	4.71	0.3	±6.1	7.41	1.0	±3.6	4.37
Ra-226	89	±2	2.00	430	±10	10.00	320	±10	10.00
Ra-228	8.4	±1.3	1.45	28	±2	2.22	24	±2	2.06
U-238	1.3	±0.8	0.81	0.7	±0.6	0.61	2.1	±0.7	0.72
U-235	0.3	±0.4	0.42	0.1	±0.3	0.33	0.0	±0.3	0.30
U-233+234	13	±2	2.01	3.8	±0.7	0.73	13	±1	1.01
Th-232	0.0	±0.1	0.13	-0.1	±0.3	0.34	0.1	±0.4	0.50
Th-230	0.9	±1.1	1.19	0.0	±0.6	0.65	0.8	±1.0	1.06
Th-228	3.5	±1.1	1.13	8.3	±2.6	2.63	6.5	±1.5	1.55

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	MOBLEY WELL 6-19-87			P-14 C 6-18-87			P-17 C 10-21-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	29	±39	45.13	-50	±220	274.42	-300	±820	1034.62
Gross Beta	-2	±20	24.59	86	±11	76.50	1100	±700	839.08
Am-241	-0.1	±0.1	0.11	-0.1	±0.3	0.33	0.0	±0.4	0.42
Pu-238	-0.2	±0.4	0.40	-0.1	±0.6	0.61	0.0	±0.5	0.50
Pu-239+240	0.0	±0.2	0.20	0.1	±0.3	0.31	0.0	±0.3	0.31
H-3	-140	±210	258.90	-50	±180	219.82	70	±160	196.20
Cs-137	0.0	±1.2	1.30	0.0	±1.2	1.30	0.0	±1.2	1.30
Sr-90	-0.5	±0.8	0.99	-0.1	±0.8	0.97	0.2	±1.4	1.73
Ra-226	0.7	±0.3	0.31	55	±1	1.00	120	±10	10.00
Ra-228	0.0	±1.6	2.04	8.2	±1.3	1.45	14	±2	2.24
U-238	4.1	±0.9	0.90	1.9	±0.3	0.30	0.6	±0.3	0.30
U-235	0.0	±0.1	0.11	0.3	±0.1	0.11	0.0	±0.1	0.11
U-233+234	10	±1	1.00	4.8	±0.5	0.50	7.3	±0.9	0.90
Th-232	0.0	±0.1	0.11	0.1	±0.2	0.20	0.0	±0.1	0.11
Th-230	0.1	±0.2	0.20	0.0	±0.3	0.30	-0.1	±0.2	0.20
Th-228	0.0	±0.1	0.11	4.3	±1.0	1.01	7.0	±1.0	1.00

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER

ANALYTIC PARAMETER	POKER WELL 12-19-87			RANCH WELL 12-20-87			UNGER WELL 11-18-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	28	±20	21.70	0	±31	34.32	-6	±24	29.80
Gross Beta	20	±12	14.19	-9	±18	22.48	-11	±15	18.81
Am-241	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
Pu-238	-0.2	±0.2	0.20	-0.1	±0.2	0.20	-0.2	±0.2	0.20
Pu-239+240	0.1	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
H-3	-20	±150	183.18	-20	±150	183.18	100	±150	183.18
Cs-137	0.2	±0.7	0.86	0.5	±0.7	0.86	-0.3	±0.7	0.89
Sr-90	1.6	±0.6	0.71	0.3	±0.9	1.10	-0.5	±0.6	0.64
Ra-226	0.3	±0.2	0.20	0.1	±0.2	0.22	0.0	±0.2	0.20
Ra-228	-0.1	±0.8	0.99	0.0	±0.9	1.08	0.1	±0.7	0.84
U-238	1.6	±0.3	0.30	2.5	±0.4	0.40	2.7	±0.4	0.43
U-235	0.0	±0.1	0.11	0.1	±0.1	0.11	0.1	±0.1	0.11
U-233+234	4.0	±0.4	0.40	9.6	±0.7	0.70	5.2	±0.6	0.61
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.13
Th-230	0.0	±0.1	0.11	0.1	±0.2	0.20	-0.1	±0.1	0.11
Th-228	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	WIPP-13 C 2-16-87			WIPP-19 C 7-14-87			WIPP-25 C 4-15-87		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	-10	±660	806.01	100	±1000	1229.33	160	±180	206.37
Gross Beta	400	±530	641.67	400	±1000	1229.33	110	±90	109.91
Am-241	0.1	±0.2	0.20	-0.5	±0.6	0.61	-0.1	±0.1	0.11
Pu-238	-0.1	±1.0	1.00	0.3	±2.0	2.00	-0.1	±0.1	0.11
Pu-239+240	-0.5	±0.5	0.50	-0.9	±1.0	1.01	0.0	±0.1	0.11
H-3	0	±210	256.46	-10	±220	267.07	-50	±150	185.63
Cs-137	0.0	±1.3	1.30	0.0	±1.3	1.41	0.0	±1.1	1.19
Sr-90	2	±10	12.29	0.9	±3.9	4.76	-0.4	±1.0	1.23
Ra-226	92	±1	1.00	69	±4	4.09	11	±1	1.01
Ra-228	18	±2	2.24	19	±2	2.17	5.8	±3.6	3.76
U-238	14	±1	1.00	2.6	±0.8	0.81	3.2	±0.5	0.51
U-235	0.3	±0.3	0.30	0.1	±0.3	0.33	0.2	±0.1	0.11
U-233+234	29	±1	1.00	19	±2	2.00	9.9	±0.9	0.90
Th-232	-0.1	±0.2	0.24	0.0	±0.2	0.22	0.0	±0.1	0.11
Th-230	0.1	±0.5	0.53	0.7	±1.0	1.00	-0.3	±0.9	0.91
Th-228	7.1	±1.4	1.41	9.4	±1.7	1.72	3.3	±1.1	1.11

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	WIPP-26 C 4-1-87								
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	50	±150	178.49		±			±	
Gross Beta	170	±100	118.24		±			±	
Am-241	0.1	±0.2	0.20		±			±	
Pu-238	0.0	±0.3	0.30		±			±	
Pu-239+240	0.0	±0.1	0.11		±			±	
H-3	-120	±150	185.63		±			±	
Cs-137	0.0	±1.2	1.30		±			±	
Sr-90	0.1	±0.9	1.10		±			±	
Ra-226	15	±1	1.00		±			±	
Ra-228	2.7	±1.9	2.26		±			±	
U-238	4.9	±0.6	0.61		±			±	
U-235	1.0	±0.3	0.30		±			±	
U-233+234	8.9	±0.8	0.80		±			±	
Th-232	0.1	±0.1	0.13		±			±	
Th-230	0.3	±0.3	0.30		±			±	
Th-228	0.2	±0.3	0.30		±			±	

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
	DOE-1 C 7-3-86			DOE-2 C 8-27-86			H-2a C 4-21-86		
ANALYTIC PARAMETER	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	700	±1700	2021.36	480	±480	544.27	290	±190	213.21
Gross Beta	2000	±1000	1205.35	10	±510	622.83	110	±90	107.55
Am-241	0.2	±1.7	1.73	0.0	±0.4	0.41	-0.1	±0.2	0.20
Pu-238	-4	±11	11.03	-1.8	±2.6	2.60	-0.2	±0.7	0.70
Pu-239+240	-1.0	±5.2	5.21	-0.3	±1.3	1.33	0.0	±0.3	0.30
H-3	240	±220	269.48	-90	±220	271.93	10	±220	269.48
Cs-137	5.1	±2.1	2.49	1.4	±2.7	3.30	0.2	±1.8	2.20
Sr-90	0.0	±1.3	1.60	-0.1	±1.7	2.09	-0.5	±1.1	1.34
Ra-226	120	±10	10.00	180	±10	10.00	45	±2	2.01
Ra-228	22	±3	3.25	18	±2	2.17	6.2	±2.6	3.10
U-238	1.8	±1.0	1.07	5.2	±1.2	1.24	1.8	±0.8	0.80
U-235	-0.1	±0.1	0.23	0.0	±0.1	0.11	0.2	±0.2	0.20
U-233+234	7.5	±2.0	2.01	19	±2	2.00	17	±2	2.04
Th-232	0.5	±1.3	1.65	0.1	±0.7	0.94	0.0	±0.1	0.11
Th-230	0.3	±3.0	3.01	0.8	±1.0	1.01	0.1	±0.2	0.20
Th-228	4.2	±3.1	3.11	1.6	±1.8	1.80	0.2	±0.4	0.41

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	H-3b-1 M 9-16-86			H-3b-3 C 5-5-86			H-4b C 11-13-86		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	-38	±93	117.31	-310	±480	624.55	90	±250	299.01
Gross Beta	43	±49	59.20	410	±400	482.14	230	±150	178.49
Am-241	0.1	±0.3	0.30	0.9	±1.0	1.01	0.2	±1.2	1.21
Pu-238	1.2	±3.5	3.87	-2.2	±3.5	3.51	0.8	±1.2	1.20
Pu-239+240	-1.0	±1.2	1.30	-0.1	±1.8	1.85	0.2	±0.6	0.60
H-3	-70	±220	269.48	30	±220	269.48	-30	±210	258.90
Cs-137	0.8	±1.2	1.44	1.6	±1.3	1.55	1.1	±2.8	3.43
Sr-90	-0.2	±0.6	0.73	-1.3	±1.5	1.81	0.4	±2.0	2.43
Ra-226	24	±1	1.02	130	±10	10.00	30	±1	1.00
Ra-228	3.1	±1.7	2.04	16	±2	2.28	5.8	±1.9	2.57
U-238	0.0	±0.1	0.13	5.2	±3.9	4.14	1.0	±2.2	2.29
U-235	0.0	±0.1	0.11	0.6	±1.3	1.41	-0.3	±0.6	0.62
U-233+234	-0.1	±0.2	0.20	7.6	±4.5	4.58	14	±3	3.03
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.43	0.0	±0.1	0.11
Th-230	0.1	±0.2	0.20	-0.1	±0.1	0.20	0.0	±0.4	0.40
Th-228	-0.2	±0.3	0.30	2.0	±1.6	1.61	0.7	±0.9	0.90

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
	H-4c C 11-4-86			H-5b C 5-20-86			H-5c M 10-24-86		
ANALYTIC PARAMETER	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	130	±230	273.08	300	±1800	2174.34	-10	±71	87.11
Gross Beta	270	±180	215.10	1900	±1000	1205.35	42	±45	54.24
Am-241	-0.1	±0.1	0.11	0.2	±1.8	1.82	0.0	±0.3	0.30
Pu-238	-0.1	±0.4	0.40	-0.4	±7.7	7.72	-0.1	±0.7	0.71
Pu-239+240	-0.1	±0.2	0.20	-1.4	±4.0	4.58	0.2	±0.3	0.31
H-3	-110	±210	256.46	-60	±230	280.08	-20	±220	269.48
Cs-137	0.0	±1.3	1.41	4.0	±1.3	1.53	0.0	±1.1	1.34
Sr-90	1.9	±4.6	5.58	0.0	±0.9	1.10	-0.1	±0.7	1.86
Ra-226	22	±1	1.00	260	±10	10.00	12	±1	1.01
Ra-228	2.5	±1.2	1.44	25	±2	2.28	1.9	±1.2	1.44
U-238	0.0	±0.3	0.33	0.1	±0.3	0.31	0.1	±0.3	0.37
U-235	0.0	±0.2	0.20	0.0	±0.1	0.13	0.0	±0.1	0.11
U-233+234	-0.1	±0.4	0.40	1.8	±1.2	1.22	0.1	±0.3	0.30
Th-232	0.0	±0.1	0.13	0.0	±0.1	0.23	0.0	±0.1	0.11
Th-230	1.3	±0.5	0.52	-0.1	±2.9	2.94	0.0	±0.2	0.20
Th-228	1.7	±0.5	0.50	12	±5	5.03	0.1	±0.4	0.40

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
	H-6b C 7-28-86			H-7b C 3-26-86			H-8b C 1-22-86		
ANALYTIC PARAMETER	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	540	±490	553.11	48	±38	42.64	N/A		
Gross Beta	10	±510	622.83	23	±19	22.81	N/A		
Am-241	1.0	±2.1	2.10	0.0	±0.3	0.30	N/A		
Pu-238	1.3	±1.6	2.01	-0.4	±0.7	0.70	0.01	±0.19	0.19
Pu-239+240	2.7	±3.1	3.12	0.2	±0.3	0.30	-0.03	±0.13	0.13
H-3	-100	±220	271.93	-120	±230	280.08	N/A		
Cs-137	0.1	±2.8	3.43	0.9	±1.4	1.68	N/A		
Sr-90	0.7	±1.7	2.07	-0.6	±0.6	0.71	N/A		
Ra-226	2.8	±0.4	0.41	1.9	±0.5	0.54	0.0	±0.3	0.33
Ra-228	-0.2	±1.8	2.22	2.0	±2.4	2.91	0.7	±0.9	1.08
U-238	1.3	±1.2	1.20	7.4	±3.4	3.49	N/A		
U-235	0.0	±0.4	0.41	-0.1	±0.3	0.37	N/A		
U-233+234	7.1	±1.7	1.70	11	±4	4.03	N/A		
Th-232	-0.2	±0.8	1.05	0.0	±0.1	0.11	N/A		
Th-230	-0.5	±1.8	1.82	-0.1	±0.1	0.11	N/A		
Th-228	0.4	±1.6	1.60	0.1	±0.3	0.30	N/A		

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER

ANALYTIC PARAMETER	H-11b3 C 6-4-86			P-14 C 2-26-86			P-17 C 3-17-86		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	-300	±1300	1620.44	N/A			N/A		
Gross Beta	1600	±1000	1182.39	N/A			N/A		
Am-241	0.4	±1.8	1.82	N/A			N/A		
Pu-238	-6	±11	11.15	0.00	±0.10	0.10	0.30	±0.51	0.52
Pu-239+240	-1.7	±5.0	5.02	0.02	±0.06	0.06	0.13	±0.34	0.41
H-3	10	±220	269.48	29	±91	110.73	80	±200	245.87
Cs-137	3.3	±1.3	1.55	N/A			N/A		
Sr-90	-0.7	±0.9	1.08	N/A			N/A		
Ra-226	170	±10	10.00	50	±2	2.00	98	±3	3.01
Ra-228	22	±2	2.17	17	±3	3.32	18	±1	1.12
U-238	2.9	±2.5	2.55	N/A			N/A		
U-235	0.0	±0.1	0.16	N/A			N/A		
U-233+234	12	±3	3.01	N/A			N/A		
Th-232	0.0	±0.1	0.20	N/A			N/A		
Th-230	-1.2	±2.5	2.51	N/A			N/A		
Th-228	3.7	±2.6	2.63	N/A			N/A		

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	P-17 C 12-18-86			RANCH WELL 6-18-86			TWIN WELL 1-31-86		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	-250	±790	985.31	3	±28	33.80	N/A		
Gross Beta	1000	±600	713.96	6	±16	19.38	N/A		
Am-241	0.1	±0.3	0.31	0.0	±0.6	0.61	N/A		
Pu-238	0.2	±0.8	0.80	-0.1	±0.6	0.60	-0.01	±0.09	0.09
Pu-239+240	0.1	±0.4	0.40	0.2	±0.2	0.22	-0.01	±0.07	0.07
H-3	-160	±210	256.46	70	±230	280.08	-30	±200	243.44
Cs-137	0.0	±1.4	1.52	1.1	±2.3	2.78	N/A		
Sr-90	0.3	±4.4	5.39	0.3	±0.4	0.50	N/A		
Ra-226	100	±10	10.00	0.2	±0.2	0.22	0.1	±0.4	0.45
Ra-228	19	±2	2.17	0.3	±0.9	1.10	1.5	±1.6	1.94
U-238	0.6	±0.6	0.60	3.2	±0.4	0.40	N/A		
U-235	0.0	±0.3	0.30	0.1	±0.1	0.11	N/A		
U-233+234	6.1	±1.2	1.20	8.5	±0.7	0.70	N/A		
Th-232	-0.1	±0.2	0.20	0.0	±0.1	0.11	N/A		
Th-230	-0.2	±0.4	0.40	0.0	±0.2	0.20	N/A		
Th-228	7.0	±1.3	1.30	0.0	±0.2	0.20	N/A		

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	WIPP-25 C 2-12-86								
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	N/A				±			±	
Gross Beta	N/A				±			±	
Am-241	N/A				±			±	
Pu-238	-0.06	±0.14	0.14		±			±	
Pu-239+240	-0.02	±0.07	0.07		±			±	
H-3	-5	±90	109.91		±			±	
Cs-137	N/A				±			±	
Sr-90	N/A				±			±	
Ra-226	24	±2	2.01		±			±	
Ra-228	9.5	±1.8	2.02		±			±	
U-238	N/A				±			±	
U-235	N/A				±			±	
U-233+234	N/A				±			±	
Th-232	N/A				±			±	
Th-230	N/A				±			±	
Th-228	N/A				±			±	

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	DOE-1 C 4-24-85			DOE-2 BELL CANYON 7-23-85			DOE-2 C 3-12-85		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	-10	±780	1013.88	190	±820	985.58	850	±820	962.88
Gross Beta	200	±1000	1229.33	1000	±1100	1335.35	440	±380	665.86
Am-241	N/A			N/A			N/A		
Pu-238	N/A			N/A			N/A		
Pu-239+240	N/A			N/A			N/A		
H-3	40	±200	258.13	-60	±200	248.34	20	±210	256.46
Cs-137	N/A			N/A			N/A		
Sr-90	N/A			N/A			N/A		
Ra-226	160	±10	10.00	45	±7	7.22	170	±10	10.07
Ra-228	N/A			N/A			N/A		
U-Total,mg/L	0.059		0.0008	0.041		0.0008	0.053		0.0008
U-235	N/A			N/A			N/A		
U-233+234	N/A			N/A			N/A		
Th-232	0.0	±0.2	0.20	-0.4	±0.5	1.09	0.1	±0.7	0.71
Th-230	0.1	±0.6	0.60	0.8	±3.1	3.38	-0.9	±1.3	1.31
Th-228	-0.2	±1.3	1.33	1.6	±3.8	3.92	4.0	±2.4	2.43

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	ENGLE WELL 3-5-85			H-3b1 M 7-1-85			H-3b3 C 2-4-85		
	ACTIVITY µCi/ml (E-9	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	19	±33	39.36	10	±43	51.41	150	±670	814.22
Gross Beta	45	±19	22.58	35	±53	64.17	450	±370	445.51
Am-241	N/A			N/A			N/A		
Pu-238	N/A			N/A			N/A		
Pu-239+240	N/A			N/A			N/A		
H-3	-80	±200	248.34	20	±200	245.87	-10	±210	256.46
Cs-137	N/A			N/A			N/A		
Sr-90	N/A			N/A			N/A		
Ra-226	5.6	±1.0	1.03	11	±1	1.00	130	±10	10.10
Ra-228	N/A			N/A			N/A		
U-Total,mg/L	0.020		0.0008	0.029		0.0008	0.035		0.0008
U-235	N/A			N/A			N/A		
U-233+234	N/A			N/A			N/A		
Th-232	0.4	±0.8	0.83	0.0	±0.1	0.11	-0.1	±0.5	0.53
Th-230	-0.1	±0.4	0.52	0.0	±0.1	0.11	-0.8	±1.4	1.42
Th-228	-0.7	±1.5	1.52	0.3	±0.3	0.31	2.0	±2.2	2.31

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	H-4b C 7-25-85			H-5b C 8-26-85			H-6b C 9-15-85		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	220	±160	180.77	180	±750	859.89	60	±470	568.40
Gross Beta	130	±170	206.81	2000	±1100	1311.97	370	±370	445.51
Am-241	N/A			N/A			N/A	±	
Pu-238	N/A			N/A			N/A	±	
Pu-239+240	N/A			N/A			N/A	±	
H-3	50	±210	256.46	140	±210	256.46	30	±200	245.87
Cs-137	N/A			N/A			N/A	±	
Sr-90	N/A			N/A			N/A	±	
Ra-226	62	±8	8.24	340	±10	10.01	2.6	±0.8	0.84
Ra-228	N/A			N/A			N/A	±	
U-Total,mg/L	0.053		0.0008	0.053		0.0013	0.056	±	0.0013
U-235	N/A			N/A			N/A	±	
U-233+234	N/A			N/A			N/A	±	
Th-232	-0.1	±0.4	0.43	0.0	±0.1	0.23	0.0	±0.1	0.16
Th-230	-0.1	±1.6	1.62	0.2	±0.8	0.81	1.0	±0.9	0.92
Th-228	-1.3	±1.3	1.31	1.0	±2.0	2.02	-0.9	±1.4	1.41

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	H-9b C 11-14-85			H-11b3 C 6-4-85			H-12 C 8-9-85		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	N/A			490	±570	639.63	190	±660	761.69
Gross Beta	N/A			1200	±900	1075.52	1300	±1100	1328.95
Am-241	N/A			N/A			N/A		
Pu-238	-0.02	±0.06	0.06	N/A			N/A		
Pu-239+240	-0.02	±0.04	0.04	N/A			N/A		
H-3	110	±190	232.84	-30	±200	245.87	80	±210	256.46
Cs-137	N/A			N/A			N/A		
Sr-90	N/A			N/A			N/A		
Ra-226	8.8	±0.9	0.92	150	±10	10.00	280	±20	20.12
Ra-228	1.1	±0.6	0.73	N/A			N/A		
U-Total,mg/L	N/A			0.060		0.0008	0.039		0.0008
U-235	N/A			N/A			N/A		
U-233+234	N/A			N/A			N/A		
Th-232	N/A			0.0	±0.1	0.11	-0.2	±0.3	0.33
Th-230	N/A			-0.2	±0.5	0.50	-0.6	±0.7	0.72
Th-228	N/A			-0.2	±0.8	0.80	0.7	±1.3	1.31

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
	WIPP-26 C 11-25-85			WIPP-29 C 12-14-85					
ANALYTIC PARAMETER	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	N/A			N/A				±	
Gross Beta	N/A			N/A				±	
Am-241	N/A			N/A				±	
Pu-238	0.06	±0.10	0.10	0.20	±0.29	0.30		±	
Pu-239+240	0.04	±0.08	0.09	-0.07	±0.21	0.24		±	
H-3	-20	±190	232.84	130	±200	243.44		±	
Cs-137	N/A			N/A				±	
Sr-90	N/A			N/A				±	
Ra-226	17	±1	1.00	12	±1	1.00		±	
Ra-228	12	±1	1.07	N/A				±	
U-238	N/A			N/A				±	
U-235	N/A			N/A				±	
U-233+234	N/A			N/A				±	
Th-232	N/A			N/A				±	
Th-230	N/A			N/A				±	
Th-228	N/A			N/A				±	

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	BARN WELL 4-20-88			CLIFTON WELL 6-28-88			COMANCHE WELL 6-27-88		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	0	±7	8.63	47	±16	17.05	4	±6	7.09
Gross Beta	3	±5	6.27	23	±6	6.88	7	±3	3.44
Am-241	0.0	±0.1	0.11	0.0	±0.2	0.20	0.0	±0.2	0.22
Pu-238	0.0	±0.1	0.11	-0.1	±0.5	0.50	0.2	±0.5	0.50
Pu-239+240	0.0	±0.1	0.11	0.0	±0.2	0.20	0.0	±0.2	0.22
H-3	20	±150	183.18	-20	±150	183.18	-80	±150	183.18
Cs-137	0.0	±1.1	1.19	-0.1	±0.5	0.65	0.6	±0.6	0.65
Sr-90	-0.3	±0.4	0.50	0.1	±0.4	0.50	-0.3	±0.5	0.63
Ra-226	0.1	±0.2	0.20	0.2	±0.2	0.20	0.2	±0.2	0.20
Ra-228	0.3	±0.9	1.08	0.7	±0.6	0.71	0.9	±0.7	0.84
U-238	1.5	±0.3	0.30	13	±1	1.00	0.2	±0.1	0.11
U-235	0.1	±0.1	0.11	0.4	±0.2	0.20	0.0	±0.1	0.11
U-233+234	4.2	±0.6	0.60	26	±1	1.00	0.2	±0.1	0.11
Th-232	0.2	±0.2	0.20	0.4	±0.3	0.31	-0.1	±0.1	0.11
Th-230	-0.1	±0.2	0.20	0.1	±0.2	0.20	0.0	±0.2	0.22
Th-228	0.0	±0.2	0.20	0.1	±0.2	0.20	0.0	±0.1	0.11

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	FAIRVIEW 7-6-88			H-2a C 8-12-88			H-3b3 C 8-24-88		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	3	±30	36.64	-60	±120	151.53	110	±560	678.30
Gross Beta	12	±17	20.68	150	±100	120.54	330	±280	335.63
Am-241	0.0	±0.2	0.20	-0.1	±0.1	0.11	0.0	±0.3	0.30
Pu-238	0.0	±0.5	0.51	-0.1	±0.3	0.30	0.3	±0.6	0.61
Pu-239+240	-0.1	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.2	0.20
H-3	-20	±150	183.18	20	±160	193.80	-30	±160	198.67
Cs-137	0.1	±0.5	0.63	0.0	±1.1	1.19	0.0	±1.2	0.54
Sr-90	0.3	±0.2	0.26	-0.8	±1.2	1.47	-0.1	±1.1	1.36
Ra-226	0.1	±0.2	0.20	48	±1	1.00	130	±10	10.00
Ra-228	0.5	±0.6	0.71	2.6	±1.3	1.55	11	±2	2.28
U-238	3.6	±0.4	0.40	2.6	±0.5	0.52	1.9	±0.5	0.51
U-235	0.2	±0.1	0.11	0.2	±0.2	0.20	0.1	±0.1	0.11
U-233+234	7.9	±0.6	0.60	16	±1	1.00	13	±1	1.00
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11	0.1	±0.1	0.11
Th-230	0.2	±0.2	0.20	0.1	±0.3	0.31	0.4	±0.3	0.30
Th-228	0.0	±0.1	0.11	1.3	±0.4	0.41	6.3	±0.8	0.80

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	MOBLEY WELL 4-14-88			POKER WELL 7-7-88			RANCH WELL 4-20-88		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	4	±33	40.30	7	±20	24.11	38	±36	40.87
Gross Beta	11	±21	25.65	7	±11	13.35	4	±18	21.74
Am-241	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.2	0.20
Pu-238	0.0	±0.2	0.20	0.0	±0.1	0.11	0.0	±0.4	0.40
Pu-239+240	0.0	±0.1	0.11	0.0	±0.1	0.11	0.1	±0.1	0.11
H-3	-70	±150	183.18	0	±150	183.18	40	±150	183.18
Cs-137	0.0	±1.1	1.19	0.0	±1.1	1.19	0.0	±1.3	1.41
Sr-90	-0.6	±1.2	1.52	0.0	±0.3	0.37	-0.6	±2.3	2.80
Ra-226	0.5	±0.3	0.30	0.5	±0.2	0.22	0.0	±0.4	0.41
Ra-228	-0.2	±0.5	0.60	0.3	±0.7	0.84	1.7	±1.3	1.55
U-238	4.3	±1.0	1.01	1.7	±0.8	0.83	2.8	±0.6	0.60
U-235	0.2	±0.2	0.20	0.1	±0.2	0.22	0.5	±0.2	0.20
U-233+234	9.4	±1.5	0.51	2.3	±0.9	0.92	8.7	±1.0	1.00
Th-232	0.0	±0.1	0.11	0.0	±0.1	0.11	0.1	±0.1	0.11
Th-230	-0.2	±0.4	0.40	0.0	±0.2	0.20	0.3	±0.4	0.40
Th-228	-0.2	±0.3	0.30	0.0	±0.2	0.20	-0.1	±0.4	0.41

*Counting error at 95% confidence level

Table A10. RADIOCHEMICAL ANALYSES OF GROUNDWATER									
ANALYTIC PARAMETER	TWIN WELL 8-3-88			UNGER WELL 7-6-88			BLANK-DISTILLED WATER 6-28-88		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	1	±6	7.09	3	±10	11.82	0	±1	1.31
Gross Beta	5	±3	3.66	24	±16	19.15	0	±2	2.36
Am-241	-0.1	±0.1	0.13	0.0	±0.2	0.20	0.1	±0.1	0.11
Pu-238	0.0	±0.5	0.50	0.0	±0.2	0.20	0.0	±0.1	0.11
Pu-239+240	0.0	±0.2	0.20	0.0	±0.1	0.11	0.0	±0.1	0.11
H-3	-40	±150	183.18	0	±150	183.18	N/A		
Cs-137	-0.2	±0.5	0.63	0.0	±1.1	1.19	0.0	±1.0	1.08
Sr-90	-0.3	±0.5	0.60	-0.2	±1.2	1.47	-0.3	±0.5	0.63
Ra-226	0.0	±0.2	0.20	0.1	±0.3	0.31	0.0	±0.2	0.22
Ra-228	0.4	±0.7	0.84	0.0	±0.5	0.60	-0.3	±1.2	1.47
U-238	1.0	±0.3	0.30	2.4	±0.6	0.60	0.0	±0.1	0.11
U-235	0.0	±0.1	0.11	0.6	±0.3	0.30	0.0	±0.1	0.11
U-233+234	2.0	±0.4	0.40	4.6	±0.8	0.80	0.1	±0.1	0.11
Th-232	0.0	±0.1	0.11	0.3	±0.3	0.30	0.0	±0.1	0.11
Th-230	-0.1	±0.1	0.11	-0.3	±0.4	0.41	-0.2	±0.3	0.30
Th-228	0.0	±0.1	0.11	0.1	±0.4	0.43	0.0	±0.1	0.11

*Counting error at 95% confidence level

Table A11. RADIOCHEMICAL ANALYSES OF SOIL AND SEDIMENT									
ANALYTIC PARAMETER	SEDIMENT-INDIAN TANK 10-23-86			SEDIMENT-LAGUNA GRANDE 10-23-86			SEDIMENT-PECOS AT PIERCE 4-17-86		
	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)
Gross Alpha	21	±11	12.28	3	±8	9.46	10	±10	11.60
Gross Beta	34	±6	6.88	20	±6	6.88	14	±5	5.80
Am-241	N/A			N/A			N/A		
Pu-238	-0.04	±0.18	0.18	-0.05	±0.18	0.18	-0.10	±0.22	0.22
Pu-239+240	-0.10	±0.14	0.14	-0.05	±0.15	0.16	0.03	±0.13	0.13
H-3	N/A			N/A			N/A		
Cs-137	1.6	±0.7	0.82	0.3	±0.5	0.60	0.8	±0.5	0.60
Sr-90	1.9	±1.7	2.07	2.4	±1.7	2.04	0.4	±0.8	0.97
Ra-226	N/A			N/A			N/A		
Ra-228	N/A			N/A			N/A		
U-238	N/A			N/A			N/A		
U-235	N/A			N/A			N/A		
U-233+234	N/A			N/A			N/A		
Th-232	N/A			N/A			N/A		
Th-230	N/A			N/A			N/A		
Th-228	N/A			N/A			N/A		

*Counting error at 95% confidence level

Table A12. RADIOCHEMICAL ANALYSES OF BIOTA									
ANALYTIC PARAMETER	RABBIT 2-12-86			VEGETATION 9-8-86			QUAIL 1987		
	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)
Gross Alpha	N/A			N/A			N/A		
Gross Beta	N/A			N/A			N/A		
Am-241	N/A			N/A			0.01	±0.01	0.01
Pu-238	0.18	±0.20	0.21	-0.10	±0.17	0.17	-0.01	±0.02	0.02
Pu-239+240	-0.01	±0.07	0.07	-0.11	±0.15	0.15	-0.01	±0.02	0.02
H-3	N/A			N/A			N/A		
Cs-137	N/A			N/A			0.0	±1.0	1.08
Sr-90	N/A			N/A			N/A		
Ra-226	N/A			N/A			N/A		
Ra-228	N/A			N/A			N/A		
U-238	N/A			N/A			N/A		
U-235	N/A			N/A			N/A		
U-233+234	N/A			N/A			N/A		
Th-232	N/A			N/A			N/A		
Th-230	N/A			N/A			N/A		
Th-228	N/A			N/A			N/A		

*Counting error at 95% confidence level

Table A12. RADIOCHEMICAL ANALYSES OF BIOTA									
ANALYTIC PARAMETER	FISH 1987			RABBIT 1987			SMITH BEEF MEAT 1986		
	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)
Gross Alpha	N/A			N/A			N/A		
Gross Beta	N/A			N/A			N/A		
Am-241	0.00	±0.01	0.01	0.01	±0.01	0.01	0.00	±0.01	0.01
Pu-238	-0.02	±0.02	0.02	-0.02	±0.03	0.03	0.00	±0.01	0.01
Pu-239+240	-0.01	±0.01	0.01	0.00	±0.02	0.02	0.00	±0.01	0.01
H-3	N/A			N/A			N/A		
Cs-137	0.00	±1.0	1.08	0.0	±1.0	1.08	0.0	±1.0	1.08
Sr-90	N/A			N/A			N/A		
Ra-226	N/A			N/A			N/A		
Ra-228	N/A			N/A			N/A		
U-238	N/A			N/A			N/A		
U-235	N/A			N/A			N/A		
U-233+234	N/A			N/A			N/A		
Th-232	N/A			N/A			N/A		
Th-230	N/A			N/A			N/A		
Th-228	N/A			N/A			N/A		

*Counting error at 95% confidence level

Table A12. RADIOCHEMICAL ANALYSES OF BIOTA									
ANALYTIC PARAMETER	SMITH BEEF BONES 1986			STELL BEEF MEAT 1986			STELL BEEF BONES 1986		
	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)
Gross Alpha	N/A			N/A			N/A		
Gross Beta	N/A			N/A			N/A		
Am-241	0.03	±0.06	0.06	0.00	±0.01	0.01	-0.01	±0.04	0.04
Pu-238	-0.06	±0.12	0.12	0.00	±0.01	0.01	-0.05	±0.11	0.11
Pu-239+240	-0.06	±0.08	0.08	0.00	±0.01	0.01	-0.03	±0.07	0.07
H-3	N/A			N/A			N/A		
Cs-137	0.0	±1.0	1.08	0.0	±1.0	1.08	0.0	±1.0	1.08
Sr-90	N/A			N/A			N/A		
Ra-226	N/A			N/A			N/A		
Ra-228	N/A			N/A			N/A		
U-238	N/A			N/A			N/A		
U-235	N/A			N/A			N/A		
U-233+234	N/A			N/A			N/A		
Th-232	N/A			N/A			N/A		
Th-230	N/A			N/A			N/A		
Th-228	N/A			N/A			N/A		

*Counting error at 95% confidence level

Table A12. RADIOCHEMICAL ANALYSES OF BIOTA									
ANALYTIC PARAMETER	RABBIT 5-16-88			QUAIL 11-23-87 to 12-6-87			FISH 5-18-88 to 5-24-88		
	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)	ACTIVITY µCi/g (E-6)	COUNTING ERROR* (E-6)	MDL µCi/g (E-6)
Gross Alpha	N/A			N/A			N/A		
Gross Beta	N/A			N/A			N/A		
Am-241	0.00	±0.01	0.01	0.00	±0.01	0.01	0.00	±0.01	0.01
Pu-238	0.00	±0.01	0.01	0.00	±0.01	0.01	0.00	±0.01	0.01
Pu-239+240	0.00	±0.01	0.01	0.00	±0.01	0.01	0.00	±0.01	0.01
H-3	N/A			N/A			N/A		
Cs-137	0.0	±0.1	0.11	0.0	±0.1	0.11	0.0	±0.1	0.11
Sr-90	N/A			N/A			N/A		
Ra-226	N/A			N/A			N/A		
Ra-228	N/A			N/A			N/A		
U-238	N/A			N/A			N/A		
U-235	N/A			N/A			N/A		
U-233+234	N/A			N/A			N/A		
Th-232	N/A			N/A			N/A		
Th-230	N/A			N/A			N/A		
Th-228	N/A			N/A			N/A		

*Counting error at 95% confidence level

Table A13. RADIOCHEMICAL ANALYSES OF GNOME SITE GROUNDWATER									
ANALYTIC PARAMETER	USGS #1 3-19-86			USGS #4 3-21-86			USGS #8 3-21-86		
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha		±			±			±	
Gross Beta		±			±			±	
Am-241	0.18	±0.25	0.27	-0.03	±0.07	0.07	0.13	±0.17	0.17
Pu-238	0.04	±0.10	0.10	-0.03	±0.11	0.11	-0.07	±0.11	0.11
Pu-239+240	0.01	±0.06	0.06	0.13	±0.07	0.07	-0.03	±0.05	0.05
H-3	40	±180	219.82	160,000	±10,000	10000.80	110,000	±10,000	10000.8
Cs-137	-0.08	±1.2	1.49	2.7	±1.5	1.78	110	±10	10.05
Sr-90	0.0	±0.7	0.74	9100	±100	100.00	7000	±100	100.00
Ra-226		±			±			±	
Ra-228		±			±			±	
U-238	1.7	±0.4	0.40	0.75	±0.38	0.38	-0.04	±0.25	0.25
U-235	0.04	±0.12	0.12	0.04	±0.13	0.13	-0.01	±0.11	0.11
U-234	5.1	±0.7	0.70	2.2	±0.6	0.60	-0.17	±0.40	0.40
Th-232		±			±			±	
Th-230		±			±			±	
Th-228		±			±			±	

*Counting error at 95% confidence

Table A13. RADIOCHEMICAL ANALYSES OF GNOME SITE GROUNDWATER									
	LRL #7 3-21-86			USGS #1 4-12-88			USGS #1 7-6-88		
ANALYTIC PARAMETER	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha		±		34	±41	47.28	13	±38	45.16
Gross Beta		±		26	±20	23.87	20	±22	26.71
Am-241	-0.02	±0.09	0.09	0.0	±0.1	0.11	0.0	±0.1	0.11
Pu-238	0.09	±0.18	0.18	0.0	±0.1	0.11	0.1	±0.2	0.20
Pu-239+240	-0.01	±0.09	0.11	0.0	±0.1	0.11	0.1	±0.1	0.11
H-3	18,000	±1000	1014.05	-20	±150	183.18	20	±150	183.18
Cs-137	190	±10	10.03	0.0	±1.1	1.19	0.0	±1.1	1.19
Sr-90	1.7	±0.8	0.84	-0.1	±1.1	1.34	0.0	±0.9	1.10
Ra-226		±		4.9	±0.5	0.52	4.8	±0.3	0.30
Ra-228		±		1.0	±0.6	0.73	0.9	±0.8	0.97
U-238	-0.04	±0.35	0.35	2.2	±0.5	0.50	2.0	±0.4	0.40
U-235	-0.01	±0.11	0.11	0.1	±0.1	0.11	0.1	±0.1	0.11
U-233+234	-0.15	±0.40	0.40	6.4	±0.8	0.80	6.1	±0.6	0.60
Th-232		±		0.2	±0.2	0.22	0.0	±0.1	0.11
Th-230		±		-0.2	±0.5	0.52	0.0	±0.2	0.20
Th-228		±		0.2	±0.4	0.42	0.1	±0.2	0.20

*Counting error at 95% confidence level

Table A14. RADIOCHEMICAL ANALYSES OF WIPP SEWAGE EFFLUENT									
ANALYTIC PARAMETER	WIPP SEWAGE LAGOON 5-13-88								
	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)	ACTIVITY µCi/ml (E-9)	COUNTING ERROR* (E-9)	MDL µCi/ml (E-9)
Gross Alpha	0	±9	10.99		±			±	
Gross Beta	380	±20	20.63		±			±	
Am-241	0.0	±0.1	0.11		±			±	
Pu-238	-0.1	±0.1	0.11		±			±	
Pu-239+240	0.0	±0.1	0.11		±			±	
H-3	40	±200	243.44		±			±	
Cs-137	0.0	±0.8	0.97		±			±	
Sr-90	0.0	±0.7	0.84		±			±	
Ra-226	0.7	±0.6	0.60		±			±	
Ra-228	0.6	±2.5	3.04		±			±	
U-238	0.7	±0.2	0.20		±			±	
U-235	0.0	±0.1	0.11		±			±	
U-233+234	0.9	±0.2	0.20		±			±	
Th-232	-0.1	±0.1	0.13		±			±	
Th-230	0.1	±0.2	0.22		±			±	
Th-228	0.1	±0.2	0.20		±			±	

*Counting error at 95% confidence level

Appendix B

GROSS ALPHA AND BETA AIR DATA

Note:

1. "MDL" stands for Minimum Detectable Level. See report section 4.1 Data Analysis for a discussion of the MDL calculation.

2. "Counting Error" represents the variability of the radioactive disintegration process at the 95% confidence level.

3. "HVAS" stands for High Volume Air Sampler.

4. "LVAS" stands for Low Volume Air Sampler.

TABLE B1. HIGH VOLUME AIR SAMPLER DATA - ARTESIA, NM - 1985

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SMPL VOL (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCI/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCI/mL)
09/11/85	36	301.50	325	70	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
09/25/85	38	141.00	325	70	3.33E-03	3.33E-03	0.234	0.00E+00	0.00E+00					
10/03/85	39	151.70	325	34	5.00E-03	1.67E-03	0.234	4.38E-05	1.18E-15					
10/17/85	41	180.90	325	28	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
10/31/85	43	348.70	325	70	1.67E-03	3.33E-03	0.234	-2.19E-05	-5.92E-16					
11/15/85	45	179.50	325	62	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
11/21/85	46	143.20	325	21	3.33E-03	1.67E-03	0.234	2.19E-05	5.92E-16					
11/26/85	47	152.00	325	70	0.00E+00	1.67E-03	0.234	-2.19E-05	-5.92E-16					
12/10/85	49	203.70	325	20	3.33E-03	3.33E-03	0.234	0.00E+00	0.00E+00					

TABLE B1. HIGH VOLUME AIR SAMPLER DATA - ARTESIA, NM - 1986

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SMPL VOL (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCI/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCI/mL)
01/01/86	0	175.60	325	55	1.17E-02	2.50E-03	0.234	1.21E-04	3.26E-15					
01/09/86	1	201.00	325	80	5.00E-03	8.33E-04	0.234	5.48E-05	1.48E-15					
01/16/86	2	178.00	325	40	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
01/22/86	3	325.30	325	211	1.17E-02	2.50E-03	0.234	1.21E-04	3.26E-15					
02/12/86	6	180.30	325	36	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
02/19/86	7	178.20	325	81	5.00E-03	2.67E-03	0.234	3.07E-05	8.29E-16					
02/26/86	8	202.80	325	96	5.00E-03	1.67E-03	0.234	4.38E-05	1.18E-15					
03/05/86	9	658.70	325	169	6.67E-03	2.50E-03	0.234	5.48E-05	1.48E-15					
03/26/86	12	465.30	325	151	1.67E-03	0.00E+00	0.234	2.19E-05	5.92E-16					
04/02/86	13	298.40	325	198	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
04/09/86	14	373.20	325	130	1.17E-02	2.50E-03	0.234	1.21E-04	3.26E-15					
04/23/86	16	632.00	325	119	5.00E-03	5.00E-03	0.234	0.00E+00	0.00E+00					
04/30/86	17	373.00	325	79	5.00E-03	8.33E-04	0.234	5.48E-05	1.48E-15					
05/20/86	20	561.80	325	59	1.00E-02	3.33E-03	0.234	8.77E-05	2.37E-15					
06/04/86	22	178.50	325	49	3.33E-03	3.33E-03	0.234	0.00E+00	0.00E+00					
06/10/86	23	228.00	325	64	0.00E+00	1.67E-03	0.234	-2.19E-05	-5.92E-16					
06/18/86	24	299.00	325	61	3.89E-03	2.22E-03	0.234	2.19E-05	5.92E-16					
07/12/86	27	320.50	325	85	7.22E-03	2.22E-03	0.234	6.57E-05	1.78E-15					
07/23/86	29	155.00	325	49	3.33E-03	2.22E-03	0.234	1.46E-05	3.95E-16					
07/30/86	30	157.50	325	70	7.22E-03	3.33E-03	0.234	5.11E-05	1.38E-15					
09/16/86	37	182.00	325	62	4.44E-03	1.11E-03	0.234	4.38E-05	1.18E-15	2.69E+00	2.72E+00	0.351	-2.24E-04	-6.05E-15
09/22/86	38	227.00	325	40	8.33E-03	0.00E+00	0.234	1.10E-04	2.96E-15	2.82E+00	2.74E+00	0.351	7.21E-04	1.95E-14
11/07/86	44	346.00	325	30	2.22E-03	2.22E-03	0.234	0.00E+00	0.00E+00	2.81E+00	2.73E+00	0.351	7.01E-04	1.90E-14
11/12/86	45	224.70	325	48	2.78E-03	2.22E-03	0.234	7.31E-06	1.97E-16	2.87E+00	2.61E+00	0.351	2.33E-03	6.30E-14
11/26/86	47	300.75	325	97	4.44E-03	1.11E-03	0.234	4.38E-05	1.18E-15	2.82E+00	2.72E+00	0.351	8.77E-04	2.37E-14
12/03/86	48	228.60	325	51	8.33E-03	5.56E-04	0.234	1.02E-04	2.76E-15	2.85E+00	2.66E+00	0.351	1.66E-03	4.48E-14
12/26/86	51	180.00	325	36	4.44E-03	5.56E-04	0.234	5.11E-05	1.38E-15	2.90E+00	2.79E+00	0.351	9.74E-04	2.63E-14
12/31/86	52	346.20	325	17	5.00E-03	2.78E-03	0.234	2.92E-05	7.90E-16	2.87E+00	2.78E+00	0.351	8.28E-04	2.24E-14

TABLE B1. HIGH VOLUME AIR SAMPLER DATA - ARTESIA, NM - 1987

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SMPL VOL (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCI/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCI/mL)
01/14/87	2	178.00	325	43	3.33E-03	1.11E-03	0.234	2.92E-05	7.90E-16	2.84E+00	2.76E+00	0.363	6.03E-04	1.63E-14
02/03/87	5	180.00	325	70	5.56E-03	3.33E-03	0.206	3.32E-05	8.97E-16					
02/12/87	6	323.50	325	68	2.78E-03	6.11E-03	0.206	-4.98E-05	-1.35E-15					
02/17/87	7	206.00	325	22	3.33E-03	6.11E-03	0.206	-4.15E-05	-1.12E-15					
02/24/87	8	177.00	325	22	6.11E-03	5.00E-03	0.206	1.66E-05	4.49E-16	2.91E+00	2.79E+00	0.363	1.04E-03	2.81E-14
03/03/87	9	201.50	325	37	1.11E-02	1.67E-03	0.205	1.42E-04	3.83E-15	2.84E+00	2.76E+00	0.338	8.14E-04	2.20E-14
03/17/87	11	178.80	325	22	3.33E-03	2.22E-03	0.205	1.67E-05	4.51E-16	2.86E+00	2.73E+00	0.338	1.18E-03	3.18E-14
03/24/87	12	203.50	325	73	5.56E-03	1.67E-03	0.205	5.84E-05	1.58E-15	2.85E+00	2.73E+00	0.338	1.13E-03	3.06E-14
03/31/87	13	181.50	325	92	5.00E-03	4.44E-03	0.205	8.34E-06	2.25E-16	2.05E+00	1.90E+00	0.338	1.35E-03	3.65E-14
04/16/87	15	205.00	325	101	2.22E-03	3.89E-03	0.208	-2.47E-05	-6.66E-16	1.97E+00	1.89E+00	0.345	7.23E-04	1.96E-14
04/23/87	16	203.00	325	57	1.67E-03	5.00E-03	0.208	-4.93E-05	-1.33E-15	2.03E+00	1.94E+00	0.345	8.67E-04	2.34E-14
04/30/87	17	179.50	325	58	4.44E-03	3.33E-03	0.208	1.64E-05	4.44E-16	1.99E+00	1.87E+00	0.345	1.06E-03	2.87E-14
05/07/87	18	204.00	325	28	5.00E-03	3.89E-03	0.208	1.64E-05	4.44E-16	1.97E+00	1.86E+00	0.345	9.41E-04	2.54E-14
05/14/87	19	201.00	325	59	6.11E-03	5.56E-03	0.208	8.22E-06	2.22E-16	2.04E+00	1.93E+00	0.345	9.07E-04	2.45E-14
05/21/87	20	203.50	325	32	5.00E-03	2.22E-03	0.208	4.11E-05	1.11E-15	1.97E+00	1.90E+00	0.345	5.70E-04	1.54E-14
05/28/87	21	189.50	325	54	4.44E-03	2.78E-03	0.208	2.47E-05	6.66E-16	2.07E+00	1.86E+00	0.345	1.86E-03	5.02E-14
06/02/87	22	225.50	325	95	5.56E-03	3.33E-03	0.208	3.29E-05	8.88E-16	2.05E+00	1.89E+00	0.345	1.44E-03	3.90E-14
06/20/87	24	183.00	325	102	2.78E-03	3.33E-03	0.208	-8.22E-06	-2.22E-16	2.11E+00	1.88E+00	0.345	2.08E-03	5.62E-14
06/26/87	25	265.00	325	92	6.11E-03	3.89E-03	0.208	3.29E-05	8.88E-16	2.06E+00	1.90E+00	0.345	1.46E-03	3.95E-14
07/02/87	26	176.50	325	101	5.56E-03	4.44E-03	0.208	1.64E-05	4.44E-16	2.07E+00	1.92E+00	0.345	1.34E-03	3.63E-14
07/08/87	27	176.50	325	64	4.44E-03	3.89E-03	0.208	8.22E-06	2.22E-16	2.02E+00	1.89E+00	0.345	1.12E-03	3.03E-14
07/26/87	29	180.50	325	168	6.11E-03	4.44E-03	0.208	2.47E-05	6.66E-16	2.06E+00	1.96E+00	0.368	7.85E-04	2.12E-14
08/02/87	30	178.50	325	52	6.11E-03	2.78E-03	0.208	4.93E-05	1.33E-15	2.01E+00	2.00E+00	0.368	8.36E-05	2.26E-15
08/08/87	31	180.00	325	94	6.11E-03	2.78E-03	0.208	4.93E-05	1.33E-15	2.07E+00	1.97E+00	0.368	7.99E-04	2.16E-14
08/14/87	32	175.50	325	48	4.44E-03	4.44E-03	0.208	0.00E+00	0.00E+00	2.02E+00	1.92E+00	0.368	8.45E-04	2.28E-14
08/20/87	33	201.00	325	65	1.17E-02	4.44E-03	0.208	1.07E-04	2.89E-15	2.04E+00	1.85E+00	0.368	1.60E-03	4.32E-14
08/25/87	34	177.00	325	41	6.11E-03	5.56E-03	0.208	8.22E-06	2.22E-16	1.98E+00	1.85E+00	0.368	1.08E-03	2.93E-14
08/31/87	35	177.00	325	40	5.00E-03	1.67E-03	0.208	4.93E-05	1.33E-15	2.04E+00	1.89E+00	0.368	1.25E-03	3.39E-14
09/12/87	36	183.50	325	62	8.33E-03	2.78E-03	0.208	8.22E-05	2.22E-15	2.14E+00	1.93E+00	0.368	1.70E-03	4.61E-14
09/18/87	37	169.50	325	23	4.44E-03	6.67E-03	0.208	-3.29E-05	-8.88E-16	1.96E+00	1.94E+00	0.371	1.89E-04	5.11E-15
09/24/87	38	169.00	325	156	6.67E-03	3.89E-03	0.208	4.11E-05	1.11E-15	2.09E+00	1.91E+00	0.371	1.50E-03	4.06E-14
09/30/87	39	171.00	325	177	8.89E-03	5.56E-03	0.208	4.93E-05	1.33E-15	2.23E+00	1.98E+00	0.371	2.07E-03	5.60E-14
10/12/87	40	169.50	325	211	1.22E-02	4.44E-03	0.208	1.15E-04	3.11E-15	2.12E+00	1.88E+00	0.371	1.96E-03	5.30E-14
10/18/87	41	169.50	325	121	5.56E-03	2.78E-03	0.208	4.11E-05	1.11E-15	2.04E+00	1.92E+00	0.371	9.77E-04	2.64E-14
10/24/87	42	240.00	325	82	1.00E-02	2.78E-03	0.208	1.07E-04	2.89E-15	2.09E+00	2.00E+00	0.371	7.14E-04	1.93E-14
10/30/87	43	217.00	325	122	7.78E-03	2.78E-03	0.208	7.40E-05	2.00E-15	2.00E+00	1.88E+00	0.371	1.00E-03	2.71E-14
11/05/87	44	274.00	325	66	5.56E-03	3.33E-03	0.208	3.29E-05	8.88E-16	2.26E+00	2.10E+00	0.371	1.40E-03	3.79E-14
11/11/87	45	177.50	325	60	6.11E-03	5.00E-03	0.208	1.64E-05	4.44E-16	2.04E+00	1.93E+00	0.371	9.35E-04	2.53E-14
11/17/87	46	176.50	325	57	5.00E-03	3.89E-03	0.208	1.64E-05	4.44E-16	2.08E+00	2.00E+00	0.371	6.45E-04	1.74E-14
11/29/87	47	177.00	325	57	5.00E-03	5.00E-03	0.208	0.00E+00	0.00E+00	2.12E+00	1.95E+00	0.371	1.42E-03	3.85E-14
12/05/87	48	398.50	325	113	8.89E-03	6.11E-03	0.208	4.11E-05	1.11E-15	2.08E+00	1.88E+00	0.371	1.66E-03	4.50E-14
12/11/87	49	253.50	325	136	6.11E-03	4.44E-03	0.208	2.47E-05	6.66E-16	2.04E+00	1.90E+00	0.371	1.14E-03	3.09E-14
12/23/87	51	177.50	325	64	4.44E-03	3.33E-03	0.208	1.64E-05	4.44E-16	2.05E+00	1.85E+00	0.371	1.67E-03	4.52E-14
12/29/87	52	177.00	325	30	6.67E-03	3.89E-03	0.208	4.11E-05	1.11E-15	1.98E+00	1.87E+00	0.371	8.89E-04	2.40E-14

TABLE B1. HIGH VOLUME AIR SAMPLER DATA - ARTESIA, NM - 1988

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SMPL VOL (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCI/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCI/mL)
01/04/88	0	181.50	325	45	8.33E-03	5.00E-03	0.208	4.93E-05	1.33E-15	2.12E+00	1.88E+00	0.371	2.03E-03	5.48E-14
01/10/88	1	274.00	325	26	3.33E-03	3.89E-03	0.208	-8.22E-06	-2.22E-16	2.05E+00	1.89E+00	0.371	1.29E-03	3.47E-14
01/16/88	2	179.00	325	53	8.89E-03	5.00E-03	0.208	5.75E-05	1.55E-15	2.02E+00	1.87E+00	0.371	1.28E-03	3.46E-14
01/22/88	3	249.00	325	47	6.67E-03	3.33E-03	0.208	4.93E-05	1.33E-15	1.83E+00	1.89E+00	0.371	-5.07E-04	-1.37E-14
01/28/88	4	177.00	325	95	6.11E-03	2.78E-03	0.208	4.93E-05	1.33E-15	2.14E+00	1.89E+00	0.371	2.09E-03	5.64E-14
02/03/88	5	202.00	325	115	8.33E-03	3.89E-03	0.208	6.57E-05	1.78E-15	2.03E+00	1.92E+00	0.371	9.17E-04	2.48E-14
02/15/88	6	178.00	325	116	8.33E-03	3.33E-03	0.208	7.40E-05	2.00E-15	2.00E+00	1.94E+00	0.371	4.93E-04	1.33E-14
02/21/88	7	180.50	325	46	8.89E-03	4.44E-03	0.208	6.57E-05	1.78E-15	1.97E+00	1.87E+00	0.371	7.88E-04	2.13E-14
02/27/88	8	174.00	325	84	8.33E-03	2.22E-03	0.220	8.55E-05	2.31E-15	2.09E+00	1.90E+00	0.360	1.65E-03	4.47E-14
03/04/88	9	179.00	325	66	5.56E-03	3.89E-03	0.220	2.33E-05	6.30E-16	2.00E+00	1.91E+00	0.360	7.55E-04	2.04E-14
03/10/88	10	180.00	325	336	1.11E-02	4.44E-03	0.220	9.32E-05	2.52E-15	2.00E+00	1.90E+00	0.360	8.93E-04	2.41E-14
03/16/88	11	180.00	325	204	8.33E-03	3.89E-03	0.220	6.22E-05	1.68E-15	2.05E+00	1.91E+00	0.360	1.21E-03	3.26E-14
03/22/88	12	180.00	325	143	1.11E-02	4.44E-03	0.220	9.32E-05	2.52E-15	2.06E+00	1.94E+00	0.360	1.05E-03	2.85E-14
04/03/88	13	173.00	325	137	1.11E-02	3.33E-03	0.220	1.09E-04	2.94E-15	2.01E+00	1.94E+00	0.360	5.98E-04	1.62E-14
04/09/88	14	250.00	325	230	4.44E-03	1.11E-03	0.220	4.66E-05	1.26E-15	1.99E+00	1.97E+00	0.360	1.90E-04	5.13E-15
04/21/88	16	178.00	325	317	1.22E-02	6.11E-03	0.220	8.55E-05	2.31E-15	2.08E+00	1.97E+00	0.360	9.64E-04	2.61E-14
04/27/88	17	177.50	325	132	1.61E-02	3.33E-03	0.220	1.79E-04	4.83E-15	1.95E+00	1.90E+00	0.360	4.51E-04	1.22E-14
05/09/88	18	202.50	325	94	7.22E-03	3.89E-03	0.220	4.66E-05	1.26E-15	2.10E+00	1.94E+00	0.360	1.35E-03	3.66E-14
05/15/88	19	181.50	325	129	9.44E-03	3.89E-03	0.220	7.77E-05	2.10E-15	2.07E+00	1.91E+00	0.360	1.36E-03	3.68E-14
05/21/88	20	226.00	325	25	4.44E-03	4.44E-03	0.220	0.00E+00	0.00E+00	2.02E+00	1.95E+00	0.360	5.65E-04	1.53E-14
05/27/88	21	243.50	325	90	9.44E-03	3.33E-03	0.220	8.55E-05	2.31E-15	2.00E+00	1.96E+00	0.360	3.28E-04	8.86E-15
06/02/88	22	179.00	325	104	7.22E-03	4.44E-03	0.220	3.89E-05	1.05E-15	2.02E+00	1.94E+00	0.360	7.08E-04	1.91E-14
06/08/88	23	202.00	325	123	6.67E-03	2.22E-03	0.220	6.22E-05	1.68E-15	2.10E+00	1.89E+00	0.360	1.84E-03	4.98E-14
07/14/88	28	178.30	325	201	7.22E-03	4.44E-03	0.220	3.89E-05	1.05E-15	2.14E+00	2.05E+00	0.350	7.47E-04	2.02E-14
07/20/88	29	180.30	325	30	5.00E-03	5.56E-03	0.220	-7.77E-06	-2.10E-16	2.05E+00	1.95E+00	0.350	8.94E-04	2.42E-14
07/26/88	30	226.20	325	83	1.00E-02	2.78E-03	0.220	1.01E-04	2.73E-15	2.17E+00	2.02E+00	0.350	1.38E-03	3.74E-14
08/07/88	31	245.80	325	61	6.11E-03	5.56E-03	0.220	7.77E-06	2.10E-16	2.39E+00	2.09E+00	0.359	2.61E-03	7.05E-14
08/13/88	32	274.30	325	67	7.22E-03	2.78E-03	0.220	6.22E-05	1.68E-15	2.55E+00	2.14E+00	0.359	3.55E-03	9.60E-14
08/19/88	33	181.90	325	125	6.67E-03	2.78E-03	0.220	5.44E-05	1.47E-15	2.53E+00	2.55E+00	0.359	-1.43E-04	-3.86E-15
08/25/88	34	278.00	325	151	6.67E-03	2.22E-03	0.220	6.22E-05	1.68E-15	2.35E+00	2.29E+00	0.359	5.24E-04	1.42E-14
08/31/88	35	178.00	325	90	8.33E-03	6.11E-03	0.220	3.11E-05	8.40E-16	2.67E+00	2.47E+00	0.359	1.77E-03	4.77E-14
09/06/88	36	177.50	325	114	8.89E-03	2.78E-03	0.220	8.55E-05	2.31E-15	2.47E+00	2.31E+00	0.359	1.36E-03	3.67E-14
09/18/88	37	202.60	325	82	5.00E-03	3.33E-03	0.220	2.33E-05	6.30E-16	2.52E+00	2.36E+00	0.359	1.41E-03	3.82E-14
09/24/88	38	227.80	325	31	7.22E-03	3.89E-03	0.220	4.66E-05	1.26E-15	2.55E+00	2.54E+00	0.359	1.00E-04	2.70E-15
09/30/88	39	251.50	325	70	5.56E-03	4.44E-03	0.225	1.52E-05	4.11E-16	2.47E+00	2.24E+00	0.352	2.03E-03	5.49E-14
10/06/88	40	179.00	325	40	1.00E-02	3.89E-03	0.225	8.36E-05	2.26E-15	3.10E+00	2.76E+00	0.352	3.03E-03	8.18E-14
10/12/88	41	178.80	325	54	7.22E-03	4.44E-03	0.225	3.80E-05	1.03E-15	2.83E+00	2.63E+00	0.352	1.78E-03	4.80E-14
10/18/88	42	203.50	325	129	6.67E-03	3.89E-03	0.225	3.80E-05	1.03E-15	2.51E+00	2.49E+00	0.352	1.51E-04	4.07E-15
10/30/88	43	203.00	325	83	1.11E-02	5.00E-03	0.224	8.39E-05	2.27E-15	2.54E+00	2.36E+00	0.357	1.55E-03	4.19E-14
11/05/88	44	226.50	325	60	5.00E-03	2.78E-03	0.224	3.05E-05	8.25E-16	2.68E+00	2.60E+00	0.357	6.94E-04	1.88E-14
11/11/88	45	221.50	325	221	7.78E-03	5.56E-04	0.224	9.92E-05	2.68E-15	2.51E+00	2.70E+00	0.357	-1.64E-03	-4.43E-14
11/17/88	46	275.00	325	113	5.00E-03	2.78E-03	0.224	3.05E-05	8.25E-16	2.59E+00	2.40E+00	0.357	1.71E-03	4.62E-14
11/23/88	47	299.50	325	38	6.67E-03	1.67E-03	0.224	6.87E-05	1.86E-15	2.80E+00	2.52E+00	0.357	2.43E-03	6.56E-14
11/29/88	48	178.50	325	60	6.67E-03	5.56E-03	0.224	1.53E-05	4.13E-16	2.61E+00	2.61E+00	0.357	-1.92E-05	-5.18E-16
12/17/88	50	397.00	325	42	7.22E-03	1.67E-03	0.216	7.91E-05	2.14E-15	2.36E+00	2.17E+00	0.345	1.65E-03	4.47E-14
12/23/88	51	321.50	325	116	6.11E-03	1.67E-03	0.219	6.24E-05	1.69E-15	2.40E+00	2.31E+00	0.345	7.83E-04	2.12E-14
12/29/88	52	275.25	325	44	7.78E-03	3.33E-03	0.219	6.24E-05	1.69E-15	2.46E+00	2.35E+00	0.332	1.01E-03	2.74E-14

TABLE B2. HIGH VOLUME AIR SAMPLER DATA - CARLSBAD, NM - 1985

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
09/09/85	35	264.50	325	150	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
09/12/85	36	183.80	325	64	3.33E-03	1.67E-03	0.234	2.19E-05	5.92E-16					
09/24/85	38	176.70	325	58	5.00E-03	3.33E-03	0.234	2.19E-05	5.92E-16					
10/03/85	39	152.00	325	48	3.33E-03	1.67E-03	0.234	2.19E-05	5.92E-16					
10/31/85	43	349.00	325	93	0.00E+00	3.33E-03	0.234	-4.38E-05	-1.18E-15					
11/20/85	46	151.70	325	31	3.33E-03	2.50E-03	0.234	1.10E-05	2.96E-16					
11/26/85	47	152.80	325	41	5.00E-03	1.67E-03	0.234	4.38E-05	1.18E-15					
12/20/85	50	169.50	325	85	6.67E-03	2.67E-03	0.234	5.26E-05	1.42E-15					

TABLE B2. HIGH VOLUME AIR SAMPLER DATA - CARLSBAD, NM - 1986

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/01/86	0	175.30	325	54	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
01/09/86	1	200.50	325	85	5.00E-03	8.33E-04	0.234	5.48E-05	1.48E-15					
01/16/86	2	396.50	325	74	8.33E-03	2.50E-03	0.234	7.67E-05	2.07E-15					
01/22/86	3	325.50	325	221	8.33E-03	0.00E+00	0.234	1.10E-04	2.96E-15					
02/05/86	5	152.00	325	49	6.67E-03	8.33E-04	0.234	7.67E-05	2.07E-15					
02/12/86	6	179.80	325	45	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
02/19/86	7	195.80	325	45	1.67E-03	0.00E+00	0.234	2.19E-05	5.92E-16					
02/26/86	8	202.00	325	71	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
03/05/86	9	659.00	325	174	1.67E-03	2.50E-03	0.234	-1.10E-05	-2.96E-16					
03/26/86	12	153.20	325	166	1.67E-03	2.22E-03	0.234	-7.31E-06	-1.97E-16					
04/02/86	13	299.00	325	218	3.33E-03	1.67E-03	0.234	2.19E-05	5.92E-16					
04/09/86	14	370.00	325	186	6.67E-03	2.50E-03	0.234	5.48E-05	1.48E-15					
04/23/86	16	631.80	325	134	3.33E-03	5.00E-03	0.234	-2.19E-05	-5.92E-16					
04/30/86	17	373.50	325	0	5.00E-03	8.33E-04	0.234	5.48E-05	1.48E-15					
06/04/86	22	178.70	325	249	1.17E-02	2.50E-03	0.234	1.21E-04	3.26E-15					
06/10/86	23	227.70	325	105	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
06/18/86	24	300.00	325	102	2.22E-03	1.67E-03	0.234	7.31E-06	1.97E-16					
07/02/86	26	230.00	325	86	4.44E-03	2.78E-03	0.234	2.19E-05	5.92E-16					
07/16/86	28	321.50	325	120	8.89E-03	2.22E-03	0.234	8.77E-05	2.37E-15					
07/23/86	29	155.50	325	59	3.33E-03	2.22E-03	0.234	1.46E-05	3.95E-16					
07/30/86	30	158.50	325	132	3.33E-03	3.33E-03	0.234	0.00E+00	0.00E+00					
08/28/86	34	203.50	325	45	2.22E-03	2.78E-03	0.234	-7.31E-06	-1.97E-16					
09/04/86	35	300.00	325	53	3.89E-03	0.00E+00	0.234	5.11E-05	1.38E-15	2.80E+00	2.72E+00	0.417	5.98E-04	1.62E-14
09/15/86	37	182.50	325	56	5.56E-03	1.67E-03	0.234	5.11E-05	1.38E-15	2.77E+00	2.72E+00	0.351	4.24E-04	1.15E-14
09/22/86	38	227.50	325	43	4.44E-03	0.00E+00	0.234	5.84E-05	1.58E-15	2.75E+00	2.74E+00	0.351	1.31E-04	3.55E-15
10/02/86	39	730.50	325	105	4.44E-03	5.56E-04	0.234	5.11E-05	1.38E-15	2.79E+00	2.63E+00	0.351	1.36E-03	3.69E-14
10/17/86	41	369.00	325	129	5.00E-03	5.56E-04	0.234	5.84E-05	1.58E-15	2.81E+00	2.63E+00	0.351	1.55E-03	4.19E-14
10/24/86	42	513.00	325	57	5.56E-03	1.67E-03	0.234	5.11E-05	1.38E-15	2.79E+00	2.75E+00	0.351	4.29E-04	1.16E-14
10/29/86	43	394.00	325	91	8.89E-03	1.67E-03	0.234	9.50E-05	2.57E-15	2.90E+00	2.75E+00	0.351	1.33E-03	3.61E-14
11/07/86	44	182.00	325	60	4.44E-03	3.33E-03	0.234	1.46E-05	3.95E-16	2.81E+00	2.72E+00	0.351	7.21E-04	1.95E-14
11/12/86	45	227.50	325	68	2.22E-03	2.22E-03	0.234	0.00E+00	0.00E+00	2.87E+00	2.73E+00	0.351	1.24E-03	3.36E-14
11/19/86	46	299.00	325	86	6.11E-03	5.56E-04	0.234	7.31E-05	1.97E-15	2.86E+00	2.71E+00	0.351	1.25E-03	3.38E-14
11/26/86	47	301.50	325	86	4.44E-03	1.11E-03	0.234	4.38E-05	1.18E-15	2.86E+00	2.72E+00	0.351	1.22E-03	3.29E-14
12/03/86	48	228.00	325	131	7.78E-03	5.56E-04	0.234	9.50E-05	2.57E-15	2.82E+00	2.66E+00	0.351	1.33E-03	3.59E-14
12/26/86	51	179.50	325	55	4.44E-03	1.11E-03	0.234	4.38E-05	1.18E-15	2.91E+00	2.79E+00	0.351	9.93E-04	2.69E-14
12/31/86	52	338.70	325	97	6.67E-03	2.78E-03	0.234	5.11E-05	1.38E-15	2.97E+00	2.78E+00	0.351	1.65E-03	4.46E-14

TABLE B2. HIGH VOLUME AIR SAMPLER DATA - CARLSBAD, NM - 1987

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/14/87	2	171.50	325	94	4.44E-03	1.11E-03	0.206	4.98E-05	1.35E-15	2.82E+00	2.76E+00	0.363	4.85E-04	1.31E-14
01/20/87	3	193.50	325	52	5.00E-03	6.67E-03	0.206	-2.49E-05	-6.73E-16	2.80E+00	2.67E+00	0.363	1.08E-03	2.93E-14
02/03/87	5	180.50	325	177	7.22E-03	3.89E-03	0.206	4.98E-05	1.35E-15	6.31E+00	6.61E+00	0.363	-2.48E-03	-6.69E-14
02/12/87	6	324.50	325	98	3.33E-03	6.11E-03	0.206	-4.15E-05	-1.12E-15	6.56E+00	5.97E+00	0.363	5.06E-03	1.37E-13
02/17/87	7	202.00	325	43	5.00E-03	3.33E-03	0.206	2.49E-05	6.73E-16	7.14E+00	6.92E+00	0.363	1.79E-03	4.84E-14
02/24/87	8	177.50	325	25	3.89E-03	5.00E-03	0.206	-1.66E-05	-4.49E-16	2.88E+00	2.79E+00	0.363	7.77E-04	2.10E-14
03/03/87	9	195.00	325	67	6.67E-03	1.67E-03	0.205	7.50E-05	2.03E-15	2.82E+00	2.76E+00	0.338	6.27E-04	1.69E-14
03/17/87	11	172.50	325	54	6.67E-03	2.22E-03	0.205	6.67E-05	1.80E-15	2.80E+00	2.73E+00	0.338	6.52E-04	1.76E-14
03/24/87	12	204.50	325	101	5.00E-03	1.67E-03	0.205	5.00E-05	1.35E-15	2.79E+00	2.73E+00	0.338	5.41E-04	1.46E-14
03/31/87	13	368.50	325	92	5.56E-03	4.44E-03	0.205	1.67E-05	4.51E-16	2.02E+00	1.90E+00	0.338	1.10E-03	2.97E-14
04/16/87	15	205.50	325	74	5.56E-03	3.89E-03	0.208	2.47E-05	6.66E-16	2.00E+00	1.89E+00	0.345	9.51E-04	2.57E-14
04/24/87	16	203.50	325	66	6.11E-03	3.33E-03	0.208	4.11E-05	1.11E-15	2.04E+00	2.01E+00	0.345	2.58E-04	6.96E-15
04/30/87	17	175.00	325	74	6.11E-03	1.11E-03	0.208	7.40E-05	2.00E-15	2.10E+00	1.83E+00	0.345	2.41E-03	6.51E-14
05/07/87	18	200.00	325	33	4.44E-03	3.89E-03	0.208	8.22E-06	2.22E-16	1.95E+00	1.86E+00	0.345	7.53E-04	2.04E-14
05/14/87	19	197.50	325	65	3.33E-03	4.44E-03	0.208	-1.64E-05	-4.44E-16	2.01E+00	1.93E+00	0.345	6.44E-04	1.74E-14
05/21/87	20	200.00	325	57	5.00E-03	3.89E-03	0.208	1.64E-05	4.44E-16	2.06E+00	1.92E+00	0.345	1.30E-03	3.51E-14
05/29/87	21	186.00	325	86	6.67E-03	2.78E-03	0.208	5.75E-05	1.55E-15	2.04E+00	1.86E+00	0.345	1.62E-03	4.38E-14
06/02/87	22	226.00	325	127	5.00E-03	3.33E-03	0.208	2.47E-05	6.66E-16	2.03E+00	1.89E+00	0.345	1.31E-03	3.54E-14
06/08/87	23	250.00	325	31	5.56E-03	3.89E-03	0.208	2.47E-05	6.66E-16	1.99E+00	1.95E+00	0.345	3.82E-04	1.03E-14
06/20/87	24	183.50	325	99	6.67E-03	3.33E-03	0.208	4.93E-05	1.33E-15	2.14E+00	1.88E+00	0.345	2.34E-03	6.32E-14
06/26/87	25	273.00	325	60	5.00E-03	3.33E-03	0.208	2.47E-05	6.66E-16	2.02E+00	1.91E+00	0.345	9.86E-04	2.66E-14
07/02/87	26	171.00	325	130	5.00E-03	4.44E-03	0.208	8.22E-06	2.22E-16	2.10E+00	1.92E+00	0.345	1.67E-03	4.51E-14
07/08/87	27	171.00	325	81	2.78E-03	3.89E-03	0.208	-1.64E-05	-4.44E-16	2.03E+00	1.89E+00	0.345	1.22E-03	3.31E-14
07/14/87	28	172.50	325	176	6.11E-03	2.78E-03	0.208	4.93E-05	1.33E-15	2.03E+00	1.95E+00	0.368	6.78E-04	1.83E-14
07/26/87	29	175.00	325	61	2.78E-03	4.44E-03	0.208	-2.47E-05	-6.66E-16	2.15E+00	1.96E+00	0.368	1.59E-03	4.31E-14
08/01/87	30	173.00	325	65	6.11E-03	2.78E-03	0.208	4.93E-05	1.33E-15	2.05E+00	2.00E+00	0.368	4.37E-04	1.18E-14
08/07/87	31	172.50	325	143	7.78E-03	2.78E-03	0.208	7.40E-05	2.00E-15	2.11E+00	1.97E+00	0.368	1.19E-03	3.23E-14
08/13/87	32	170.50	325	50	5.56E-03	4.44E-03	0.208	1.64E-05	4.44E-16	2.05E+00	1.92E+00	0.368	1.07E-03	2.89E-14
08/19/87	33	195.00	325	97	6.67E-03	4.44E-03	0.208	3.29E-05	8.88E-16	2.10E+00	1.85E+00	0.368	2.06E-03	5.57E-14
08/25/87	34	171.00	325	52	5.00E-03	5.56E-03	0.208	-8.22E-06	-2.22E-16	1.96E+00	1.85E+00	0.368	9.29E-04	2.51E-14
09/06/87	35	171.00	325	36	4.44E-03	2.78E-03	0.208	2.47E-05	6.66E-16	2.06E+00	1.92E+00	0.368	1.13E-03	3.06E-14
09/12/87	36	177.00	325	80	1.00E-02	2.78E-03	0.208	1.07E-04	2.89E-15	2.13E+00	1.93E+00	0.368	1.69E-03	4.56E-14
09/18/87	37	172.00	325	48	8.89E-03	6.67E-03	0.208	3.29E-05	8.88E-16	2.03E+00	1.94E+00	0.371	7.33E-04	1.98E-14
09/24/87	38	172.00	325	86	6.67E-03	3.89E-03	0.208	4.11E-05	1.11E-15	2.12E+00	1.91E+00	0.371	1.72E-03	4.66E-14
09/30/87	39	170.50	325	86	9.44E-03	5.56E-03	0.208	5.75E-05	1.55E-15	2.13E+00	1.98E+00	0.371	1.19E-03	3.21E-14
10/12/87	40	170.50	325	116	1.33E-02	4.44E-03	0.208	1.31E-04	3.55E-15	1.99E+00	1.88E+00	0.371	9.35E-04	2.53E-14
10/18/87	41	170.50	325	50	4.44E-03	2.78E-03	0.208	2.47E-05	6.66E-16	2.03E+00	1.92E+00	0.371	8.85E-04	2.39E-14
10/24/87	42	218.50	325	104	1.00E-02	2.78E-03	0.208	1.07E-04	2.89E-15	2.05E+00	1.88E+00	0.371	1.47E-03	3.97E-14
11/05/87	44	224.50	325	79	5.00E-03	2.22E-03	0.208	4.11E-05	1.11E-15	2.31E+00	2.10E+00	0.371	1.77E-03	4.79E-14
11/11/87	45	171.00	325	72	5.56E-03	5.00E-03	0.208	8.22E-06	2.22E-16	2.04E+00	1.93E+00	0.371	9.77E-04	2.64E-14
11/23/87	46	194.50	325	110	8.33E-03	3.33E-03	0.208	7.40E-05	2.00E-15	2.06E+00	1.97E+00	0.371	7.88E-04	2.13E-14
11/29/87	47	170.50	325	65	1.06E-02	5.00E-03	0.208	8.22E-05	2.22E-15	2.11E+00	1.95E+00	0.371	1.30E-03	3.51E-14
12/05/87	48	392.00	325	142	7.22E-03	6.11E-03	0.208	1.64E-05	4.44E-16	2.07E+00	1.88E+00	0.371	1.56E-03	4.21E-14
12/11/87	49	247.00	325	101	6.11E-03	4.44E-03	0.208	2.47E-05	6.66E-16	2.06E+00	1.90E+00	0.371	1.29E-03	3.47E-14
12/17/87	50	246.50	325	66	8.33E-03	2.78E-03	0.208	8.22E-05	2.22E-15	2.05E+00	1.90E+00	0.371	1.17E-03	3.16E-14
12/23/87	51	178.00	325	149	8.33E-03	3.33E-03	0.208	7.40E-05	2.00E-15	2.00E+00	1.85E+00	0.371	1.28E-03	3.45E-14
12/29/87	52	177.50	325	59	3.33E-03	3.89E-03	0.208	-8.22E-06	-2.22E-16	2.00E+00	1.87E+00	0.371	1.04E-03	2.80E-14

TABLE B2. HIGH VOLUME AIR SAMPLER DATA - CARLSBAD, NM - 1988

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/04/88	0	176.00	325	66	7.22E-03	5.00E-03	0.208	3.29E-05	8.88E-16	2.15E+00	1.88E+00	0.371	2.29E-03	6.19E-14
01/10/88	1	268.50	325	43	4.44E-03	3.89E-03	0.208	8.22E-06	2.22E-16	2.09E+00	1.89E+00	0.371	1.66E-03	4.48E-14
01/16/88	2	174.00	325	111	5.56E-03	5.00E-03	0.208	8.22E-06	2.22E-16	2.06E+00	1.87E+00	0.371	1.56E-03	4.22E-14
01/22/88	3	243.50	325	91	6.67E-03	3.33E-03	0.208	4.93E-05	1.33E-15	1.95E+00	1.89E+00	0.371	4.84E-04	1.31E-14
01/28/88	4	171.50	325	114	7.78E-03	2.78E-03	0.208	7.40E-05	2.00E-15	2.02E+00	1.89E+00	0.371	1.13E-03	3.05E-14
02/03/88	5	196.50	325	88	6.67E-03	3.89E-03	0.208	4.11E-05	1.11E-15	1.98E+00	1.92E+00	0.371	5.62E-04	1.52E-14
02/15/88	6	173.50	325	151	5.56E-03	3.33E-03	0.208	3.29E-05	8.88E-16	1.99E+00	1.94E+00	0.371	3.96E-04	1.07E-14
02/21/88	7	175.00	325	56	7.22E-03	4.44E-03	0.208	4.11E-05	1.11E-15	2.06E+00	1.87E+00	0.371	1.54E-03	4.17E-14
02/27/88	8	181.50	325	101	3.89E-03	2.22E-03	0.220	2.33E-05	6.30E-16	2.03E+00	1.90E+00	0.360	1.15E-03	3.11E-14
03/04/88	9	179.50	325	66	3.33E-03	3.89E-03	0.220	-7.77E-06	-2.10E-16	1.97E+00	1.91E+00	0.360	5.13E-04	1.39E-14
03/10/88	10	180.50	325	312	1.00E-02	4.44E-03	0.220	7.77E-05	2.10E-15	1.97E+00	1.90E+00	0.360	6.08E-04	1.64E-14
03/16/88	11	180.50	325	200	1.11E-02	3.89E-03	0.220	1.01E-04	2.73E-15	2.07E+00	1.91E+00	0.360	1.40E-03	3.79E-14
03/22/88	12	180.50	325	95	8.89E-03	4.44E-03	0.220	6.22E-05	1.68E-15	2.00E+00	1.94E+00	0.360	5.41E-04	1.46E-14
04/03/88	13	197.00	325	96	6.11E-03	2.78E-03	0.220	4.66E-05	1.26E-15	1.94E+00	1.87E+00	0.360	5.84E-04	1.58E-14
04/09/88	14	250.50	325	162	6.11E-03	1.11E-03	0.220	6.99E-05	1.89E-15	2.02E+00	1.97E+00	0.360	4.27E-04	1.16E-14
04/15/88	15	178.50	325	81	9.44E-03	3.33E-03	0.220	8.55E-05	2.31E-15	1.97E+00	1.94E+00	0.360	2.80E-04	7.57E-15
04/21/88	16	172.50	325	301	7.78E-03	6.11E-03	0.220	2.33E-05	6.30E-16	2.16E+00	1.97E+00	0.360	1.64E-03	4.44E-14
04/27/88	17	178.00	325	175	7.22E-03	3.33E-03	0.220	5.44E-05	1.47E-15	2.61E+00	1.90E+00	0.360	6.10E-03	1.65E-13
05/09/88	18	203.00	325	123	7.78E-03	3.89E-03	0.220	5.44E-05	1.47E-15	2.05E+00	1.94E+00	0.360	9.31E-04	2.52E-14
05/15/88	19	176.00	325	69	8.89E-03	3.89E-03	0.220	6.99E-05	1.89E-15	2.11E+00	1.91E+00	0.360	1.69E-03	4.56E-14
05/27/88	21	251.00	325	129	1.00E-02	3.33E-03	0.220	9.32E-05	2.52E-15	2.15E+00	1.96E+00	0.360	1.59E-03	4.30E-14
06/02/88	22	173.50	325	149	5.56E-03	4.44E-03	0.220	1.55E-05	4.20E-16	2.07E+00	1.94E+00	0.360	1.14E-03	3.08E-14
06/08/88	23	202.50	325	151	8.89E-03	2.22E-03	0.220	9.32E-05	2.52E-15	2.14E+00	1.89E+00	0.360	2.17E-03	5.88E-14
06/20/88	24	178.00	325	137	1.44E-02	3.33E-03	0.220	1.55E-04	4.20E-15	2.34E+00	2.04E+00	0.360	2.55E-03	6.88E-14
06/26/88	25	274.00	325	82	5.56E-03	3.33E-03	0.220	3.11E-05	8.40E-16	2.09E+00	1.91E+00	0.350	1.61E-03	4.34E-14
07/02/88	26	171.20	325	62	6.11E-03	2.22E-03	0.220	5.44E-05	1.47E-15	2.09E+00	1.94E+00	0.350	1.39E-03	3.75E-14
07/08/88	27	321.80	325	52	4.44E-03	1.17E-02	0.220	-1.01E-04	-2.73E-15	2.07E+00	2.05E+00	0.350	1.17E-04	3.17E-15
07/26/88	29	226.70	325	78	7.22E-03	2.78E-03	0.220	6.22E-05	1.68E-15	2.16E+00	2.02E+00	0.360	1.21E-03	3.27E-14
08/01/88	30	227.80	325	91	4.44E-03	6.67E-03	0.220	-3.11E-05	-8.40E-16	2.21E+00	2.15E+00	0.360	5.60E-04	1.51E-14
08/07/88	31	253.00	325	43	5.00E-03	5.56E-03	0.220	-7.77E-06	-2.10E-16	2.32E+00	2.09E+00	0.360	2.03E-03	5.48E-14
08/13/88	32	269.00	325	31	9.44E-03	2.78E-03	0.220	9.32E-05	2.52E-15	2.60E+00	2.14E+00	0.360	3.99E-03	1.08E-13
08/19/88	33	182.40	325	73	5.56E-03	2.78E-03	0.220	3.89E-05	1.05E-15	2.55E+00	2.55E+00	0.360	4.75E-05	1.28E-15
08/25/88	34	300.00	325	92	9.44E-03	5.56E-03	0.220	5.44E-05	1.47E-15	2.43E+00	2.21E+00	0.360	1.86E-03	5.03E-14
08/31/88	35	250.30	325	63	4.44E-03	4.44E-03	0.220	0.00E+00	0.00E+00	2.57E+00	2.24E+00	0.359	2.80E-03	7.55E-14
09/06/88	36	178.50	325	57	5.56E-03	2.78E-03	0.220	3.89E-05	1.05E-15	2.52E+00	2.31E+00	0.359	1.75E-03	4.72E-14
09/18/88	37	203.70	325	34	5.00E-03	3.33E-03	0.220	2.33E-05	6.30E-16	2.57E+00	2.36E+00	0.359	1.82E-03	4.92E-14
09/24/88	38	226.80	325	52	4.44E-03	5.56E-03	0.220	-1.55E-05	-4.20E-16	2.50E+00	2.43E+00	0.359	6.52E-04	1.76E-14
09/30/88	39	250.50	325	60	7.22E-03	4.44E-03	0.225	3.80E-05	1.03E-15	2.42E+00	2.24E+00	0.352	1.61E-03	4.36E-14
10/06/88	40	174.00	325	74	9.44E-03	3.89E-03	0.225	7.60E-05	2.05E-15	2.94E+00	2.76E+00	0.352	1.58E-03	4.27E-14
10/12/88	41	297.80	325	72	7.22E-03	4.44E-03	0.225	3.80E-05	1.03E-15	2.48E+00	2.31E+00	0.352	1.43E-03	3.86E-14
10/24/88	42	177.50	325	130	9.44E-03	6.11E-03	0.225	4.56E-05	1.23E-15	2.41E+00	2.18E+00	0.352	2.02E-03	5.46E-14
10/30/88	43	203.50	325	119	1.17E-02	5.00E-03	0.224	9.16E-05	2.48E-15	2.51E+00	2.36E+00	0.357	1.36E-03	3.66E-14
11/05/88	44	227.50	325	165	5.00E-03	2.78E-03	0.224	3.05E-05	8.25E-16	2.84E+00	2.60E+00	0.357	2.00E-03	5.41E-14
11/11/88	45	228.00	325	162	2.22E-03	1.67E-03	0.224	7.63E-06	2.06E-16	2.72E+00	2.49E+00	0.357	1.98E-03	5.36E-14
11/17/88	46	270.50	325	100	4.44E-03	2.78E-03	0.224	2.29E-05	6.19E-16	2.41E+00	2.40E+00	0.357	1.01E-04	2.72E-15
11/23/88	47	300.00	325	120	5.00E-03	1.67E-03	0.224	4.58E-05	1.24E-15	2.88E+00	2.52E+00	0.357	3.11E-03	8.40E-14
11/29/88	48	168.00	325	123	1.00E-02	5.56E-03	0.224	6.11E-05	1.65E-15	2.64E+00	2.61E+00	0.357	1.92E-04	5.18E-15
12/11/88	49	178.50	325	39	4.44E-03	2.78E-03	0.216	2.37E-05	6.42E-16	2.49E+00	2.51E+00	0.345	-1.24E-04	-3.35E-15
12/17/88	50	396.50	325	63	6.11E-03	1.67E-03	0.216	6.33E-05	1.71E-15	2.27E+00	2.17E+00	0.345	9.36E-04	2.53E-14
12/23/88	51	255.00	325	226	1.33E-02	1.67E-03	0.219	1.64E-04	4.43E-15	2.31E+00	2.17E+00	0.332	1.30E-03	3.52E-14
12/29/88	52	274.75	325	105	7.78E-03	3.33E-03	0.219	6.24E-05	1.69E-15	2.45E+00	2.35E+00	0.332	9.83E-04	2.66E-14

TABLE B3. HIGH VOLUME AIR SAMPLER DATA - HOBBS, NM - 1985

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
09/11/85	36	298.00	325	86	0.00E+00	1.67E-03	0.234	-2.19E-05	-5.92E-16					
09/24/85	38	177.30	325	146	3.33E-03	3.33E-03	0.234	0.00E+00	0.00E+00					
10/03/85	39	151.50	325	307	1.00E-02	1.67E-03	0.234	1.10E-04	2.96E-15					
10/30/85	43	337.00	325	96	3.33E-03	3.33E-03	0.234	0.00E+00	0.00E+00					
11/15/85	45	179.20	325	67	5.00E-03	1.67E-03	0.234	4.38E-05	1.18E-15					
11/20/85	46	151.80	325	35	5.00E-03	2.50E-03	0.234	3.29E-05	8.88E-16					
11/26/85	47	152.70	325	99	8.33E-03	1.67E-03	0.234	8.77E-05	2.37E-15					
12/19/85	50	178.50	325	120	8.33E-03	2.67E-03	0.234	7.45E-05	2.01E-15					

TABLE B3. HIGH VOLUME AIR SAMPLER DATA - HOBBS, NM - 1986

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/01/86	0	175.80	325	67	3.33E-03	2.50E-03	0.234	1.10E-05	2.96E-16					
01/10/86	1	165.20	325	81	3.33E-03	8.33E-04	0.234	3.29E-05	8.88E-16					
01/16/86	2	178.50	325	211	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
01/22/86	3	325.70	325	242	1.17E-02	2.50E-03	0.234	1.21E-04	3.26E-15					
02/12/86	6	179.50	325	45	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
02/18/86	7	204.30	325	274	5.00E-03	0.00E+00	0.234	6.57E-05	1.78E-15					
02/26/86	8	203.20	325	129	5.00E-03	1.67E-03	0.234	4.38E-05	1.18E-15					
03/05/86	9	658.80	325	287	1.33E-02	2.50E-03	0.234	1.42E-04	3.85E-15					
03/26/86	12	464.50	325	182	6.67E-03	8.33E-04	0.234	7.67E-05	2.07E-15					
04/02/86	13	298.70	325	204	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
04/09/86	14	373.70	325	178	5.00E-03	2.50E-03	0.234	3.29E-05	8.88E-16					
04/23/86	16	632.30	325	211	5.00E-03	5.00E-03	0.234	0.00E+00	0.00E+00					
04/30/86	17	372.50	325	112	3.33E-03	8.33E-04	0.234	3.29E-05	8.88E-16					
05/06/86	18	230.50	325	535	3.33E-03	8.33E-04	0.234	3.29E-05	8.88E-16					
05/20/86	20	562.00	325	95	3.33E-03	3.33E-03	0.234	0.00E+00	0.00E+00					
06/10/86	23	227.50	325	98	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
06/18/86	24	300.50	325	71	5.00E-03	2.22E-03	0.234	3.65E-05	9.87E-16					
07/02/86	26	230.50	325	184	1.00E-02	2.78E-03	0.234	9.50E-05	2.57E-15					
07/16/86	28	321.00	325	146	8.89E-03	2.22E-03	0.234	8.77E-05	2.37E-15					
08/28/86	34	203.00	325	48	4.44E-03	2.78E-03	0.234	2.19E-05	5.92E-16					
09/04/86	35	298.50	325	29	1.67E-03	0.00E+00	0.234	2.19E-05	5.92E-16					
09/10/86	36	182.50	325	36	2.78E-03	1.67E-03	0.234	1.46E-05	3.95E-16	2.74E+00	2.71E+00	0.417	2.71E-04	7.31E-15
09/16/86	37	202.50	325	45	2.78E-03	1.67E-03	0.234	1.46E-05	3.95E-16	2.86E+00	2.67E+00	0.351	1.63E-03	4.41E-14
09/22/86	38	732.20	325	52	5.56E-03	5.56E-04	0.234	6.57E-05	1.78E-15	2.73E+00	2.63E+00	0.351	7.99E-04	2.16E-14
10/17/86	41	672.00	325	66	8.33E-03	1.67E-03	0.234	8.77E-05	2.37E-15	2.89E+00	2.75E+00	0.351	1.25E-03	3.38E-14
10/22/86	42	564.50	325	472	7.22E-03	1.67E-03	0.234	7.31E-05	1.97E-15	2.81E+00	2.75E+00	0.351	5.31E-04	1.43E-14
10/29/86	43	394.50	325	61	8.89E-03	1.67E-03	0.234	9.50E-05	2.57E-15	2.88E+00	2.75E+00	0.351	1.22E-03	3.30E-14
11/07/86	44	346.50	325	40	1.67E-03	2.22E-03	0.234	-7.31E-06	-1.97E-16	2.85E+00	2.73E+00	0.351	1.01E-03	2.74E-14
11/12/86	45	228.50	325	66	6.11E-03	2.22E-03	0.234	5.11E-05	1.38E-15	2.84E+00	2.73E+00	0.351	9.50E-04	2.57E-14
11/19/86	46	228.50	325	62	5.00E-03	2.22E-03	0.234	3.65E-05	9.87E-16	2.88E+00	2.79E+00	0.351	7.65E-04	2.07E-14
11/26/86	47	300.00	325	74	6.67E-03	1.11E-03	0.234	7.31E-05	1.97E-15	2.84E+00	2.72E+00	0.351	1.02E-03	2.76E-14
12/03/86	48	227.50	325	71	3.89E-03	5.56E-04	0.234	4.38E-05	1.18E-15	2.83E+00	2.66E+00	0.351	1.47E-03	3.98E-14
12/26/86	51	174.00	325	39	5.00E-03	5.56E-04	0.234	5.84E-05	1.58E-15	2.82E+00	2.79E+00	0.351	2.58E-04	6.98E-15
12/31/86	52	345.75	325	113	4.44E-03	5.56E-04	0.234	5.11E-05	1.38E-15	2.83E+00	2.78E+00	0.351	4.19E-04	1.13E-14

TABLE B3. HIGH VOLUME AIR SAMPLER DATA - HOBBS, NM - 1987

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/14/87	2	177.00	325	58	3.89E-03	1.11E-03	0.206	4.15E-05	1.12E-15	2.90E+00	2.76E+00	0.363	1.14E-03	3.08E-14
01/20/87	3	200.50	325	54	8.89E-03	6.67E-03	0.206	3.32E-05	8.97E-16	2.82E+00	2.67E+00	0.363	1.28E-03	3.46E-14
02/03/87	5	171.00	325	121	5.56E-03	3.33E-03	0.206	3.32E-05	8.97E-16					
02/12/87	6	323.00	325	63	7.22E-03	6.11E-03	0.206	1.66E-05	4.49E-16					
02/17/87	7	205.50	325	64	5.00E-03	6.11E-03	0.206	-1.66E-05	-4.49E-16					
02/24/87	8	176.50	325	27	7.22E-03	5.00E-03	0.206	3.32E-05	8.97E-16	2.89E+00	2.79E+00	0.363	8.01E-04	2.16E-14
03/03/87	9	200.50	325	58	7.22E-03	1.67E-03	0.205	8.34E-05	2.25E-15	2.81E+00	2.76E+00	0.338	4.70E-04	1.27E-14
03/24/87	12	203.00	325	59	8.89E-03	1.67E-03	0.205	1.08E-04	2.93E-15	2.81E+00	2.73E+00	0.338	7.74E-04	2.09E-14
03/31/87	13	182.00	325	92	6.11E-03	3.33E-03	0.205	4.17E-05	1.13E-15	2.05E+00	2.76E+00	0.338	-6.50E-03	-1.76E-13
04/16/87	15	204.50	325	112	6.67E-03	3.89E-03	0.208	4.11E-05	1.11E-15	2.03E+00	1.89E+00	0.345	1.20E-03	3.24E-14
04/22/87	16	202.50	325	41	4.44E-03	6.11E-03	0.208	-2.47E-05	-6.66E-16	2.01E+00	1.94E+00	0.345	6.19E-04	1.67E-14
04/30/87	17	176.00	325	85	5.56E-03	2.22E-03	0.208	4.93E-05	1.33E-15	2.06E+00	1.85E+00	0.345	1.88E-03	5.08E-14
05/07/87	18	203.50	325	40	6.11E-03	2.78E-03	0.208	4.93E-05	1.33E-15	2.04E+00	1.86E+00	0.345	1.60E-03	4.33E-14
05/14/87	19	200.50	325	78	5.00E-03	5.56E-03	0.208	-8.22E-06	-2.22E-16	1.97E+00	1.91E+00	0.345	4.91E-04	1.33E-14
05/21/87	20	203.00	325	35	3.33E-03	3.89E-03	0.208	-8.22E-06	-2.22E-16	2.01E+00	1.92E+00	0.345	8.57E-04	2.32E-14
05/28/87	21	189.00	325	65	6.67E-03	2.78E-03	0.208	5.75E-05	1.55E-15	2.04E+00	1.85E+00	0.345	1.77E-03	4.78E-14
06/02/87	22	225.00	325	63	5.00E-03	3.33E-03	0.208	2.47E-05	6.66E-16	2.00E+00	1.89E+00	0.345	9.91E-04	2.68E-14
06/09/87	23	249.50	325	80	5.00E-03	3.89E-03	0.208	1.64E-05	4.44E-16	2.02E+00	1.95E+00	0.345	6.00E-04	1.62E-14
06/15/87	24	288.00	325	73	3.89E-03	4.44E-03	0.208	-8.22E-06	-2.22E-16	2.06E+00	1.92E+00	0.345	1.27E-03	3.43E-14
06/20/87	25	176.50	325	81	3.89E-03	3.33E-03	0.208	8.22E-06	2.22E-16	2.19E+00	1.88E+00	0.345	2.79E-03	7.54E-14
06/26/87	26	271.50	325	70	4.44E-03	3.89E-03	0.208	8.22E-06	2.22E-16	2.06E+00	1.90E+00	0.345	1.40E-03	3.78E-14
07/14/87	28	178.00	325	197	2.22E-03	2.78E-03	0.208	-8.22E-06	-2.22E-16	2.06E+00	1.95E+00	0.368	9.43E-04	2.55E-14
07/20/87	29	202.00	325	89	6.67E-03	4.44E-03	0.208	3.29E-05	8.88E-16	2.08E+00	1.95E+00	0.368	1.04E-03	2.81E-14
07/26/87	29	172.50	325	59	5.56E-03	4.44E-03	0.208	1.64E-05	4.44E-16	2.04E+00	1.96E+00	0.368	6.32E-04	1.71E-14
08/02/87	30	170.50	325	66	7.22E-03	2.78E-03	0.208	6.57E-05	1.78E-15	2.06E+00	2.00E+00	0.368	5.06E-04	1.37E-14
08/08/87	31	179.50	325	13	5.56E-03	2.78E-03	0.208	4.11E-05	1.11E-15	2.01E+00	1.97E+00	0.368	3.44E-04	9.29E-15
08/14/87	32	176.00	325	50	4.44E-03	4.44E-03	0.208	0.00E+00	0.00E+00	2.05E+00	1.92E+00	0.368	1.08E-03	2.91E-14
08/20/87	33	190.50	325	76	8.89E-03	4.44E-03	0.208	6.57E-05	1.78E-15	2.05E+00	1.85E+00	0.368	1.61E-03	4.36E-14
08/25/87	34	167.50	325	62	5.56E-03	5.56E-03	0.208	0.00E+00	0.00E+00	1.94E+00	1.85E+00	0.368	7.34E-04	1.98E-14
09/06/87	35	167.50	325	42	1.06E-02	2.78E-03	0.208	1.15E-04	3.11E-15	2.05E+00	1.92E+00	0.368	1.11E-03	2.99E-14
09/12/87	36	174.00	325	80	1.67E-03	2.78E-03	0.208	-1.64E-05	-4.44E-16	2.08E+00	1.93E+00	0.368	1.21E-03	3.28E-14
09/18/87	37	168.00	325	52	3.89E-03	6.67E-03	0.208	-4.11E-05	-1.11E-15	1.99E+00	1.94E+00	0.371	4.19E-04	1.13E-14
09/24/87	38	167.50	325	80	6.11E-03	3.89E-03	0.208	3.29E-05	8.88E-16	2.05E+00	1.91E+00	0.371	1.11E-03	3.00E-14
10/12/87	40	169.00	325	109	6.67E-03	4.44E-03	0.208	3.29E-05	8.88E-16	2.12E+00	1.88E+00	0.371	1.95E-03	5.27E-14
10/18/87	41	169.00	325	45	1.11E-02	2.78E-03	0.208	1.23E-04	3.33E-15	2.02E+00	1.92E+00	0.371	8.66E-04	2.34E-14
10/24/87	42	239.50	325	57	8.89E-03	2.78E-03	0.208	9.04E-05	2.44E-15	2.09E+00	2.00E+00	0.371	7.56E-04	2.04E-14
10/30/87	43	215.50	325	115	6.67E-03	2.78E-03	0.208	5.75E-05	1.55E-15	2.02E+00	1.88E+00	0.371	1.23E-03	3.32E-14
11/05/87	44	274.50	325	118	6.11E-03	3.33E-03	0.208	4.11E-05	1.11E-15	2.24E+00	2.10E+00	0.371	1.21E-03	3.26E-14
11/11/87	45	177.00	325	72	7.22E-03	5.00E-03	0.208	3.29E-05	8.88E-16	1.99E+00	1.93E+00	0.371	4.98E-04	1.34E-14
11/17/87	46	177.00	325	96	1.11E-02	3.89E-03	0.208	1.07E-04	2.89E-15	2.06E+00	2.00E+00	0.371	5.11E-04	1.38E-14
11/29/87	47	176.00	325	88	5.56E-03	5.00E-03	0.208	8.22E-06	2.22E-16	2.13E+00	1.95E+00	0.371	1.53E-03	4.15E-14
12/05/87	48	394.50	325	169	8.33E-03	6.11E-03	0.208	3.29E-05	8.88E-16	2.02E+00	1.88E+00	0.371	1.16E-03	3.14E-14
12/11/87	49	251.00	325	183	1.11E-02	4.44E-03	0.208	9.86E-05	2.67E-15	2.00E+00	1.90E+00	0.371	7.79E-04	2.10E-14
12/17/87	50	253.00	325	71	3.89E-03	2.78E-03	0.208	1.64E-05	4.44E-16	2.02E+00	1.90E+00	0.371	9.58E-04	2.59E-14
12/23/87	51	177.00	325	132	7.78E-03	3.33E-03	0.208	6.57E-05	1.78E-15	1.94E+00	1.85E+00	0.371	7.56E-04	2.04E-14
12/29/87	52	176.50	325	63	5.00E-03	3.89E-03	0.208	1.64E-05	4.44E-16	1.98E+00	1.87E+00	0.371	9.17E-04	2.48E-14

TABLE B3. HIGH VOLUME AIR SAMPLER DATA - HOBBS, NM - 1988

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/d)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/d)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/04/88	0	181.00	325	71	3.89E-03	5.00E-03	0.208	-1.64E-05	-4.44E-16	2.04E+00	1.88E+00	0.371	1.34E-03	3.61E-14
01/10/88	1	273.50	325	47	6.67E-03	3.89E-03	0.208	4.11E-05	1.11E-15	2.04E+00	1.89E+00	0.371	1.21E-03	3.28E-14
01/16/88	2	178.00	325	199	1.06E-02	5.00E-03	0.208	8.22E-05	2.22E-15	1.99E+00	1.87E+00	0.371	1.00E-03	2.70E-14
01/22/88	3	242.50	325	25	6.11E-03	3.33E-03	0.208	4.11E-05	1.11E-15	2.05E+00	1.89E+00	0.371	1.38E-03	3.74E-14
01/28/88	4	176.50	325	92	8.89E-03	2.78E-03	0.208	9.04E-05	2.44E-15	2.03E+00	1.89E+00	0.371	1.15E-03	3.11E-14
02/03/88	5	201.50	325	112	6.67E-03	3.89E-03	0.208	4.11E-05	1.11E-15	1.96E+00	1.92E+00	0.371	4.05E-04	1.10E-14
02/15/88	6	177.50	325	423	1.17E-02	3.33E-03	0.208	1.23E-04	3.33E-15	2.02E+00	1.94E+00	0.371	7.23E-04	1.96E-14
02/21/88	7	180.00	325	68	5.00E-03	4.44E-03	0.208	8.22E-06	2.22E-16	2.01E+00	1.87E+00	0.371	1.09E-03	2.94E-14
02/27/88	8	180.50	325	105	5.00E-03	2.22E-03	0.220	3.89E-05	1.05E-15	2.08E+00	1.90E+00	0.360	1.60E-03	4.32E-14
03/04/88	9	171.50	325	121	4.44E-03	3.89E-03	0.220	7.77E-06	2.10E-16	2.00E+00	1.91E+00	0.360	8.26E-04	2.23E-14
03/10/88	10	172.50	325	301	1.22E-02	4.44E-03	0.220	1.09E-04	2.94E-15	2.07E+00	1.90E+00	0.360	1.49E-03	4.02E-14
03/16/88	11	179.50	325	244	4.44E-03	3.89E-03	0.220	7.77E-06	2.10E-16	2.00E+00	1.91E+00	0.360	7.50E-04	2.03E-14
03/22/88	12	178.00	325	94	9.44E-03	4.44E-03	0.220	6.99E-05	1.89E-15	2.05E+00	1.94E+00	0.360	9.88E-04	2.67E-14
04/03/88	13	202.00	325	65	6.11E-03	2.78E-03	0.220	4.66E-05	1.26E-15	1.99E+00	1.87E+00	0.360	9.69E-04	2.62E-14
04/09/88	14	244.50	325	212	6.67E-03	1.11E-03	0.220	7.77E-05	2.10E-15	2.03E+00	1.97E+00	0.360	4.70E-04	1.27E-14
04/15/88	15	177.50	325	97	6.11E-03	3.33E-03	0.220	3.89E-05	1.05E-15	2.03E+00	1.94E+00	0.360	8.26E-04	2.23E-14
04/21/88	16	177.50	325	269	1.06E-02	6.11E-03	0.220	6.22E-05	1.68E-15	2.03E+00	1.97E+00	0.360	5.32E-04	1.44E-14
04/27/88	17	177.00	325	156	7.78E-03	3.33E-03	0.220	6.22E-05	1.68E-15	1.95E+00	1.90E+00	0.360	5.03E-04	1.36E-14
05/09/88	18	202.00	325	82	1.28E-02	3.89E-03	0.220	1.24E-04	3.36E-15	2.05E+00	1.94E+00	0.360	9.54E-04	2.58E-14
05/15/88	19	179.50	325	129	7.78E-03	3.89E-03	0.220	5.44E-05	1.47E-15	2.07E+00	1.91E+00	0.360	1.36E-03	3.67E-14
05/21/88	20	220.00	325	74	6.67E-03	4.44E-03	0.220	3.11E-05	8.40E-16	2.08E+00	1.95E+00	0.360	1.15E-03	3.11E-14
05/27/88	21	250.00	325	79	5.56E-03	3.33E-03	0.220	3.11E-05	8.40E-16	2.08E+00	1.96E+00	0.360	9.88E-04	2.67E-14
06/02/88	22	178.50	325	140	7.22E-03	4.44E-03	0.220	3.89E-05	1.05E-15	1.99E+00	1.94E+00	0.360	4.65E-04	1.26E-14
06/08/88	23	201.00	325	133	6.11E-03	2.22E-03	0.220	5.44E-05	1.47E-15	2.03E+00	1.89E+00	0.360	1.20E-03	3.25E-14
06/20/88	24	169.50	325	103	8.33E-03	3.33E-03	0.220	6.99E-05	1.89E-15	2.26E+00	2.04E+00	0.360	1.89E-03	5.12E-14
06/26/88	25	273.50	325	88	5.00E-03	3.33E-03	0.230	2.23E-05	6.03E-16	2.04E+00	1.91E+00	0.350	1.12E-03	3.02E-14
07/02/88	26	177.00	325	73	3.33E-03	2.22E-03	0.230	1.49E-05	4.02E-16	2.02E+00	1.94E+00	0.350	7.23E-04	1.95E-14
07/08/88	27	301.50	325	47	7.22E-03	2.22E-03	0.230	6.69E-05	1.81E-15	2.08E+00	1.97E+00	0.350	1.02E-03	2.75E-14
07/14/88	28	180.00	325	60	7.78E-03	4.44E-03	0.230	4.46E-05	1.21E-15	2.22E+00	2.05E+00	0.350	1.48E-03	4.00E-14
07/20/88	29	181.00	325	111	1.22E-02	5.56E-03	0.230	8.92E-05	2.41E-15	2.16E+00	1.95E+00	0.350	1.89E-03	5.10E-14
07/26/88	30	225.70	325	110	1.06E-02	2.78E-03	0.220	1.09E-04	2.94E-15	2.11E+00	2.02E+00	0.360	8.17E-04	2.21E-14
08/07/88	31	253.60	325	49	1.11E-02	5.56E-03	0.220	7.77E-05	2.10E-15	2.27E+00	2.09E+00	0.360	1.59E-03	4.29E-14
08/13/88	32	275.80	325	72	7.22E-03	2.78E-03	0.220	6.22E-05	1.68E-15	2.55E+00	2.14E+00	0.360	3.57E-03	9.65E-14
08/19/88	33	177.40	325	80	3.33E-03	2.78E-03	0.220	7.77E-06	2.10E-16	2.64E+00	2.55E+00	0.360	8.26E-04	2.23E-14
08/25/88	34	276.50	325	156	1.06E-02	2.22E-03	0.220	1.17E-04	3.15E-15	2.32E+00	2.29E+00	0.360	2.85E-04	7.70E-15
09/12/88	36	178.50	325	107	6.11E-03	5.00E-03	0.220	1.55E-05	4.20E-16	2.39E+00	2.26E+00	0.359	1.18E-03	3.19E-14
09/18/88	37	196.00	325	37	6.11E-03	3.33E-03	0.220	3.89E-05	1.05E-15	2.46E+00	2.36E+00	0.359	8.29E-04	2.24E-14
09/24/88	38	226.30	325	62	8.89E-03	5.56E-03	0.220	4.66E-05	1.26E-15	2.44E+00	2.43E+00	0.359	1.38E-04	3.73E-15
09/30/88	39	246.30	325	70	9.44E-03	6.11E-03	0.225	4.56E-05	1.23E-15	2.73E+00	2.73E+00	0.352	9.71E-06	2.63E-16
10/06/88	40	179.50	325	96	5.00E-03	3.89E-03	0.225	1.52E-05	4.11E-16	2.96E+00	2.76E+00	0.352	1.78E-03	4.82E-14
10/12/88	41	298.30	325	112	7.78E-03	4.44E-03	0.225	4.56E-05	1.23E-15	2.59E+00	2.31E+00	0.352	2.38E-03	6.43E-14
10/18/88	42	178.50	325	137	7.78E-03	6.11E-03	0.225	2.28E-05	6.16E-16	2.67E+00	2.46E+00	0.352	1.86E-03	5.04E-14
10/30/88	43	204.00	325	59	5.00E-03	8.33E-03	0.224	-4.58E-05	-1.24E-15	2.46E+00	2.40E+00	0.357	5.27E-04	1.42E-14
11/05/88	44	228.00	325	197	9.44E-03	1.67E-03	0.224	1.07E-04	2.89E-15	2.83E+00	2.82E+00	0.357	4.79E-05	1.29E-15
11/11/88	45	227.00	325	0	5.56E-04	5.00E-03	0.224	-6.11E-05	-1.65E-15	2.70E+00	2.67E+00	0.357	2.59E-04	6.99E-15
11/17/88	46	275.50	325	110	7.78E-03	2.78E-03	0.224	6.87E-05	1.86E-15	2.58E+00	2.40E+00	0.357	1.59E-03	4.30E-14
11/23/88	47	299.00	325	123	1.00E-02	1.67E-03	0.224	1.14E-04	3.09E-15	2.84E+00	2.52E+00	0.357	2.80E-03	7.56E-14
11/29/88	48	179.50	325	161	7.22E-03	3.89E-03	0.224	4.58E-05	1.24E-15	2.65E+00	2.58E+00	0.357	5.94E-04	1.60E-14
12/17/88	50	246.80	325	100	5.56E-03	3.89E-03	0.216	2.37E-05	6.42E-16	2.38E+00	2.19E+00	0.345	1.72E-03	4.65E-14
12/23/88	51	322.00	325	242	8.33E-03	1.67E-03	0.219	9.37E-05	2.53E-15	2.22E+00	2.31E+00	0.332	-9.06E-04	-2.45E-14
12/29/88	52	275.75	325	102	1.00E-02	3.33E-03	0.219	9.37E-05	2.53E-15	2.81E+00	2.35E+00	0.332	4.29E-03	1.16E-13

TABLE B4. HIGH VOLUME AIR SAMPLER DATA - LOVING, NM - 1985

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
09/07/85	35	302.70	325	92	7.67E-02	1.67E-03	0.234	9.86E-04	2.67E-14					
09/12/85	36	281.50	325	34	8.33E-03	1.67E-03	0.234	8.77E-05	2.37E-15					
09/24/85	38	177.00	325	75	1.67E-03	3.33E-03	0.234	-2.19E-05	-5.92E-16					
10/03/85	39	164.50	325	0	5.00E-03	1.67E-03	0.234	4.38E-05	1.18E-15					
10/23/85	42	479.50	325	49	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
11/15/85	45	179.50	325	155	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
11/20/85	46	152.30	325	53	3.33E-03	2.50E-03	0.234	1.10E-05	2.96E-16					
11/26/85	47	152.50	325	57	0.00E+00	1.67E-03	0.234	-2.19E-05	-5.92E-16					
12/10/85	49	203.80	325	60	8.33E-03	3.33E-03	0.234	6.57E-05	1.78E-15					
12/19/85	50	177.80	325	129	8.33E-03	2.67E-03	0.234	7.45E-05	2.01E-15					

TABLE B4. HIGH VOLUME AIR SAMPLER DATA - LOVING, NM - 1986

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/02/86	0	168.20	325	55	5.00E-03	2.50E-03	0.234	3.29E-05	8.88E-16					
01/09/86	1	200.30	325	60	8.33E-03	8.33E-04	0.234	9.86E-05	2.67E-15					
01/16/86	2	396.00	325	72	1.00E-02	2.50E-03	0.234	9.86E-05	2.67E-15					
01/22/86	3	326.00	325	241	5.00E-03	2.50E-03	0.234	3.29E-05	8.88E-16					
02/05/86	5	153.20	325	27	5.00E-03	8.33E-04	0.234	5.48E-05	1.48E-15					
02/12/86	6	180.20	325	41	8.33E-03	1.67E-03	0.234	8.77E-05	2.37E-15					
02/18/86	7	204.70	325	52	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
02/26/86	8	203.20	325	88	1.67E-03	1.67E-03	0.234	0.00E+00	0.00E+00					
03/05/86	9	658.20	325	170	1.00E-02	2.50E-03	0.234	9.86E-05	2.67E-15					
03/26/86	12	153.70	325	211	8.33E-03	2.50E-03	0.234	7.67E-05	2.07E-15					
04/02/86	13	298.20	325	192	6.67E-03	1.67E-03	0.234	6.57E-05	1.78E-15					
04/09/86	14	370.80	325	194	1.00E-02	2.50E-03	0.234	9.86E-05	2.67E-15					
04/23/86	16	632.70	325	127	1.17E-02	5.00E-03	0.234	8.77E-05	2.37E-15					
04/30/86	17	372.80	325	85	8.33E-03	8.33E-04	0.234	9.86E-05	2.67E-15					
05/07/86	18	230.00	325	194	1.67E-03	0.00E+00	0.234	2.19E-05	5.92E-16					
05/20/86	20	561.80	325	78	3.33E-03	3.33E-03	0.234	0.00E+00	0.00E+00					
06/04/86	22	178.80	325	86	5.00E-03	3.33E-03	0.234	2.19E-05	5.92E-16					
06/10/86	23	227.30	325	79	8.33E-03	1.67E-03	0.234	8.77E-05	2.37E-15					
06/18/86	24	299.50	325	91	5.00E-03	2.22E-03	0.234	3.65E-05	9.87E-16					
07/02/86	26	229.50	325	77	2.22E-03	2.22E-03	0.234	0.00E+00	0.00E+00					
07/16/86	28	322.00	325	168	8.89E-03	2.22E-03	0.234	8.77E-05	2.37E-15					
07/30/86	30	158.00	325	93	2.78E-03	2.78E-03	0.234	0.00E+00	0.00E+00					
08/26/86	34	202.50	325	0	2.78E-03	2.78E-03	0.234	0.00E+00	0.00E+00					
09/04/86	35	292.50	325	48	3.33E-03	0.00E+00	0.234	4.38E-05	1.18E-15	2.73E+00	2.72E+00	0.417	9.43E-05	2.55E-15
09/09/86	36	183.00	325	68	2.78E-03	1.67E-03	0.234	1.46E-05	3.95E-16	2.77E+00	2.71E+00	0.417	4.47E-04	1.21E-14
09/15/86	37	203.00	325	68	3.33E-03	1.11E-03	0.234	2.92E-05	7.90E-16	2.85E+00	2.67E+00	0.351	1.61E-03	4.34E-14
09/22/86	38	226.00	325	81	5.00E-03	0.00E+00	0.234	6.57E-05	1.78E-15	2.87E+00	2.74E+00	0.351	1.12E-03	3.03E-14
10/02/86	39	773.00	325	102	6.11E-03	5.56E-04	0.234	7.31E-05	1.97E-15	2.79E+00	2.63E+00	0.351	1.41E-03	3.80E-14
10/17/86	41	374.00	325	98	6.67E-03	5.56E-04	0.234	8.04E-05	2.17E-15	2.87E+00	2.63E+00	0.351	2.04E-03	5.50E-14
10/24/86	42	512.50	325	53	4.44E-03	1.67E-03	0.234	3.65E-05	9.87E-16	2.80E+00	2.75E+00	0.351	4.68E-04	1.26E-14
10/29/86	43	395.50	325	83	7.22E-03	1.67E-03	0.234	7.31E-05	1.97E-15	2.94E+00	2.75E+00	0.351	1.75E-03	4.73E-14
11/07/86	44	181.50	325	66	3.89E-03	1.67E-03	0.234	2.92E-05	7.90E-16	2.77E+00	2.75E+00	0.351	1.85E-04	5.00E-15
11/12/86	45	227.00	325	117	5.00E-03	2.22E-03	0.234	3.65E-05	9.87E-16	2.88E+00	2.73E+00	0.351	1.30E-03	3.51E-14
11/19/86	46	228.00	325	80	2.78E-03	5.56E-04	0.234	2.92E-05	7.90E-16	2.87E+00	2.79E+00	0.351	7.06E-04	1.91E-14
11/26/86	47	229.20	325	65	4.44E-03	1.11E-03	0.234	4.38E-05	1.18E-15	2.81E+00	2.72E+00	0.351	7.50E-04	2.03E-14
12/03/86	48	229.20	325	119	3.33E-03	5.56E-04	0.234	3.65E-05	9.87E-16	2.82E+00	2.66E+00	0.351	1.36E-03	3.67E-14
12/26/86	51	179.00	325	40	6.11E-03	1.11E-03	0.234	6.57E-05	1.78E-15	2.95E+00	2.79E+00	0.351	1.37E-03	3.71E-14
12/31/86	52	345.20	325	132	5.56E-03	2.78E-03	0.234	3.65E-05	9.87E-16	2.89E+00	2.78E+00	0.351	9.59E-04	2.59E-14

TABLE B4. HIGH VOLUME AIR SAMPLER DATA - LOVING, NM - 1987

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/14/87	2	177.50	325	101	4.44E-03	1.11E-03	0.206	4.98E-05	1.35E-15	2.83E+00	2.76E+00	0.363	5.42E-04	1.46E-14
01/20/87	3	200.00	325	43	6.67E-03	1.11E-03	0.206	8.30E-05	2.24E-15	2.82E+00	2.67E+00	0.363	1.27E-03	3.42E-14
02/03/87	5	179.50	325	182	8.89E-03	3.33E-03	0.206	8.30E-05	2.24E-15					
02/12/87	6	325.00	325	118	5.56E-03	6.11E-03	0.206	-8.30E-06	-2.24E-16					
02/17/87	7	207.00	325	51	4.44E-03	6.11E-03	0.206	-2.49E-05	-6.73E-16					
02/24/87	8	178.00	325	76	4.44E-03	5.00E-03	0.206	-8.30E-06	-2.24E-16	2.91E+00	2.79E+00	0.363	9.65E-04	2.61E-14
03/03/87	9	202.50	325	82	7.22E-03	1.67E-03	0.205	8.34E-05	2.25E-15	2.81E+00	2.76E+00	0.338	5.11E-04	1.38E-14
03/17/87	11	180.00	325	42	3.33E-03	2.22E-03	0.205	1.67E-05	4.51E-16	2.80E+00	2.83E+00	0.338	-2.88E-04	-7.79E-15
03/31/87	13	170.75	325	96	5.56E-03	3.33E-03	0.205	3.34E-05	9.01E-16	2.08E+00	2.76E+00	0.338	-6.20E-03	-1.68E-13
04/23/87	16	199.50	325	63	9.44E-03	3.33E-03	0.208	9.04E-05	2.44E-15	2.05E+00	2.01E+00	0.345	3.27E-04	8.84E-15
05/01/87	17	180.00	325	90	7.22E-03	3.33E-03	0.208	5.75E-05	1.55E-15	2.06E+00	1.87E+00	0.345	1.72E-03	4.66E-14
05/08/87	18	205.00	325	36	3.33E-03	3.89E-03	0.208	-8.22E-06	-2.22E-16	2.02E+00	1.86E+00	0.345	1.39E-03	3.76E-14
05/15/87	19	202.00	325	86	6.67E-03	4.44E-03	0.208	3.29E-05	8.88E-16	2.00E+00	1.93E+00	0.345	6.04E-04	1.63E-14
05/29/87	21	190.00	325	111	1.11E-02	2.78E-03	0.208	1.23E-04	3.33E-15	2.03E+00	1.86E+00	0.345	1.49E-03	4.03E-14
06/02/87	22	222.50	325	95	8.89E-03	3.33E-03	0.208	8.22E-05	2.22E-15	1.98E+00	1.89E+00	0.345	7.98E-04	2.16E-14
06/08/87	23	246.50	325	45	5.56E-03	3.89E-03	0.208	2.47E-05	6.66E-16	2.00E+00	1.95E+00	0.345	4.61E-04	1.25E-14
06/21/87	24	184.00	325	101	7.78E-03	3.33E-03	0.208	6.57E-05	1.78E-15	2.20E+00	1.86E+00	0.345	2.98E-03	8.06E-14
06/27/87	25	273.50	325	84	3.89E-03	3.33E-03	0.208	8.22E-06	2.22E-16	2.09E+00	1.91E+00	0.345	1.62E-03	4.38E-14
07/02/87	26	177.50	325	115	6.11E-03	4.44E-03	0.208	2.47E-05	6.66E-16	2.13E+00	1.92E+00	0.345	1.90E-03	5.13E-14
07/08/87	27	177.50	325	83	2.22E-03	3.89E-03	0.208	-2.47E-05	-6.66E-16	2.06E+00	1.89E+00	0.345	1.47E-03	3.96E-14
07/14/87	28	179.50	325	99	5.00E-03	2.78E-03	0.208	3.29E-05	8.88E-16	1.98E+00	1.95E+00	0.368	2.28E-04	6.15E-15
07/20/87	29	197.50	325	96	5.00E-03	4.44E-03	0.208	8.22E-06	2.22E-16	2.07E+00	1.95E+00	0.368	1.00E-03	2.71E-14
07/26/87	30	180.00	325	81	5.56E-03	4.44E-03	0.208	1.64E-05	4.44E-16	2.08E+00	1.96E+00	0.368	9.66E-04	2.61E-14
08/14/87	32	177.00	325	56	3.33E-03	4.44E-03	0.208	-1.64E-05	-4.44E-16	1.99E+00	1.92E+00	0.368	5.85E-04	1.58E-14
08/19/87	33	202.00	325	102	3.89E-03	4.44E-03	0.208	-8.22E-06	-2.22E-16	2.03E+00	1.85E+00	0.368	1.50E-03	4.06E-14
08/25/87	34	178.00	325	48	5.56E-03	5.56E-03	0.208	0.00E+00	0.00E+00	2.04E+00	1.85E+00	0.368	1.56E-03	4.21E-14
09/06/87	35	177.50	325	47	4.44E-03	2.78E-03	0.208	2.47E-05	6.66E-16	2.08E+00	1.92E+00	0.368	1.33E-03	3.60E-14
09/12/87	36	177.50	325	83	6.67E-03	2.78E-03	0.208	5.75E-05	1.55E-15	2.11E+00	1.93E+00	0.368	1.45E-03	3.93E-14
09/18/87	37	171.50	325	34	6.11E-03	6.67E-03	0.208	-8.22E-06	-2.22E-16	2.01E+00	1.94E+00	0.371	5.85E-04	1.58E-14
09/24/87	38	170.50	325	85	7.78E-03	3.89E-03	0.208	5.75E-05	1.55E-15	2.11E+00	1.91E+00	0.371	1.60E-03	4.33E-14
09/30/87	39	171.50	325	82	9.44E-03	5.56E-03	0.208	5.75E-05	1.55E-15	2.18E+00	1.98E+00	0.371	1.65E-03	4.46E-14
10/06/87	40	169.50	325	148	9.44E-03	6.67E-03	0.208	4.11E-05	1.11E-15	2.08E+00	1.96E+00	0.371	1.00E-03	2.70E-14
10/18/87	41	170.00	325	46	8.89E-03	2.78E-03	0.208	9.04E-05	2.44E-15	2.01E+00	1.92E+00	0.371	7.74E-04	2.09E-14
10/24/87	42	243.00	325	53	4.44E-03	2.78E-03	0.208	2.47E-05	6.66E-16	2.11E+00	2.00E+00	0.371	8.71E-04	2.35E-14
10/30/87	43	220.00	325	100	7.22E-03	2.78E-03	0.208	6.57E-05	1.78E-15	2.10E+00	1.88E+00	0.371	1.82E-03	4.93E-14
11/05/87	44	275.00	325	76	6.11E-03	3.33E-03	0.208	4.11E-05	1.11E-15	2.20E+00	2.10E+00	0.371	8.98E-04	2.43E-14
11/11/87	45	178.50	325	61	7.22E-03	5.00E-03	0.208	3.29E-05	8.88E-16	2.01E+00	1.93E+00	0.371	7.28E-04	1.97E-14
11/23/87	46	196.00	325	110	8.33E-03	3.33E-03	0.208	7.40E-05	2.00E-15	2.11E+00	1.97E+00	0.371	1.17E-03	3.18E-14
11/29/87	47	178.00	325	63	7.22E-03	5.00E-03	0.208	3.29E-05	8.88E-16	2.13E+00	1.95E+00	0.371	1.52E-03	4.11E-14
12/05/87	48	416.50	325	177	9.44E-03	4.44E-03	0.208	7.40E-05	2.00E-15	2.03E+00	1.90E+00	0.371	1.09E-03	2.95E-14
12/11/87	49	248.50	325	135	1.06E-02	4.44E-03	0.208	9.04E-05	2.44E-15	2.08E+00	1.90E+00	0.371	1.50E-03	4.05E-14
12/17/87	50	243.00	325	111	7.78E-03	2.78E-03	0.208	7.40E-05	2.00E-15	2.16E+00	1.90E+00	0.371	2.09E-03	5.65E-14
12/23/87	51	172.50	325	176	7.22E-03	3.33E-03	0.208	5.75E-05	1.55E-15	2.06E+00	1.85E+00	0.371	1.76E-03	4.76E-14
12/29/87	52	172.00	325	56	7.78E-03	3.89E-03	0.208	5.75E-05	1.55E-15	2.04E+00	1.87E+00	0.371	1.38E-03	3.74E-14

TABLE B4. HIGH VOLUME AIR SAMPLER DATA - LOVING, NM - 1988

COMPUTER DATE	WK OF YR	SAMPLE DECAY (h)	SAMPLE VOLUME (m3)	WT GAIN (mg)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA EFF (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA EFF (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/04/88	0	180.50	325	75	6.11E-03	5.00E-03	0.208	1.64E-05	4.44E-16	2.17E+00	1.88E+00	0.371	2.45E-03	6.61E-14
01/16/88	2	181.00	325	112	5.56E-03	5.00E-03	0.208	8.22E-06	2.22E-16	2.04E+00	1.88E+00	0.371	1.37E-03	3.70E-14
01/22/88	3	250.00	325	50	5.00E-03	3.33E-03	0.208	2.47E-05	6.66E-16	1.96E+00	1.89E+00	0.371	6.40E-04	1.73E-14
01/28/88	4	178.00	325	67	7.78E-03	2.78E-03	0.208	7.40E-05	2.00E-15	2.01E+00	1.89E+00	0.371	1.04E-03	2.80E-14
02/03/88	5	204.50	325	83	2.78E-03	3.89E-03	0.208	-1.64E-05	-4.44E-16	1.99E+00	1.92E+00	0.371	6.22E-04	1.68E-14
02/15/88	6	174.00	325	167	8.33E-03	3.33E-03	0.208	7.40E-05	2.00E-15	2.00E+00	1.94E+00	0.371	4.88E-04	1.32E-14
02/21/88	7	181.50	325	67	7.78E-03	4.44E-03	0.208	4.93E-05	1.33E-15	2.05E+00	1.87E+00	0.371	1.47E-03	3.97E-14
02/27/88	8	182.00	325	86	1.11E-02	2.22E-03	0.220	1.24E-04	3.36E-15	2.12E+00	1.90E+00	0.360	1.92E-03	5.20E-14
03/04/88	9	180.50	325	73	4.44E-03	3.89E-03	0.220	7.77E-06	2.10E-16	2.01E+00	1.91E+00	0.360	8.45E-04	2.28E-14
03/10/88	10	181.00	325	363	1.00E-02	4.44E-03	0.220	7.77E-05	2.10E-15	1.99E+00	1.90E+00	0.360	8.17E-04	2.21E-14
03/16/88	11	174.00	325	202	5.56E-03	3.89E-03	0.220	2.33E-05	6.30E-16	2.06E+00	1.91E+00	0.360	1.29E-03	3.49E-14
03/28/88	12	324.00	325	205	7.22E-03	6.11E-03	0.220	1.55E-05	4.20E-16	1.92E+00	1.88E+00	0.360	3.04E-04	8.21E-15
04/03/88	13	203.50	325	108	8.33E-03	2.78E-03	0.220	7.77E-05	2.10E-15	1.98E+00	1.87E+00	0.360	9.16E-04	2.48E-14
04/09/88	14	251.00	325	162	5.00E-03	1.11E-03	0.220	5.44E-05	1.47E-15	2.00E+00	1.97E+00	0.360	2.52E-04	6.80E-15
04/15/88	15	181.00	325	62	7.22E-03	3.33E-03	0.220	5.44E-05	1.47E-15	2.03E+00	1.94E+00	0.360	7.74E-04	2.09E-14
04/21/88	16	179.50	325	307	1.22E-02	6.11E-03	0.220	8.55E-05	2.31E-15	2.14E+00	1.97E+00	0.360	1.43E-03	3.88E-14
04/27/88	17	173.00	325	112	7.78E-03	3.33E-03	0.220	6.22E-05	1.68E-15	2.04E+00	1.90E+00	0.360	1.25E-03	3.39E-14
05/09/88	18	197.50	325	89	7.78E-03	3.89E-03	0.220	5.44E-05	1.47E-15	1.98E+00	1.94E+00	0.360	3.37E-04	9.11E-15
05/15/88	19	182.50	325	95	8.89E-03	3.89E-03	0.220	6.99E-05	1.89E-15	2.15E+00	1.91E+00	0.360	2.03E-03	5.49E-14
05/21/88	20	226.50	325	95	3.89E-03	4.44E-03	0.220	-7.77E-06	-2.10E-16	2.01E+00	1.95E+00	0.360	5.03E-04	1.36E-14
05/27/88	21	251.50	325	346	1.44E-02	3.33E-03	0.220	1.55E-04	4.20E-15	2.41E+00	1.96E+00	0.360	3.77E-03	1.02E-13
06/02/88	22	180.00	325	98	6.67E-03	4.44E-03	0.220	3.11E-05	8.40E-16	2.03E+00	1.94E+00	0.360	8.17E-04	2.21E-14
06/08/88	23	197.00	325	112	1.17E-02	2.22E-03	0.220	1.32E-04	3.57E-15	2.16E+00	1.89E+00	0.360	2.36E-03	6.38E-14
06/14/88	24	173.00	325	120	6.67E-03	2.22E-03	0.220	6.22E-05	1.68E-15	2.68E+00	2.58E+00	0.360	8.88E-04	2.40E-14
06/26/88	25	268.50	325	89	2.78E-03	3.33E-03	0.230	-7.43E-06	-2.01E-16	2.07E+00	1.91E+00	0.350	1.37E-03	3.71E-14
07/02/88	26	171.50	325	50	8.89E-03	2.22E-03	0.230	8.92E-05	2.41E-15	2.12E+00	1.94E+00	0.350	1.60E-03	4.32E-14
07/08/88	27	301.00	325	38	3.33E-03	2.22E-03	0.230	1.49E-05	4.02E-16	2.12E+00	1.97E+00	0.350	1.34E-03	3.62E-14
07/14/88	28	178.80	325	67	6.67E-03	4.44E-03	0.230	2.97E-05	8.03E-16	2.12E+00	2.05E+00	0.350	6.30E-04	1.70E-14
07/26/88	29	225.20	325	71	6.67E-03	2.78E-03	0.220	5.44E-05	1.47E-15	2.16E+00	2.02E+00	0.360	1.23E-03	3.31E-14
08/01/88	30	220.60	325	70	1.22E-02	6.67E-03	0.220	7.77E-05	2.10E-15	2.09E+00	2.15E+00	0.360	-4.99E-04	-1.35E-14
08/07/88	31	254.20	325	34	3.89E-03	5.56E-03	0.220	-2.33E-05	-6.30E-16	2.29E+00	2.09E+00	0.360	1.71E-03	4.62E-14
08/13/88	32	276.40	325	61	8.89E-03	2.78E-03	0.220	8.55E-05	2.31E-15	2.55E+00	2.14E+00	0.360	3.58E-03	9.66E-14
08/19/88	33	177.40	325	60	3.89E-03	2.78E-03	0.220	1.55E-05	4.20E-16	2.64E+00	2.55E+00	0.360	8.26E-04	2.23E-14
08/25/88	34	277.50	325	78	1.06E-02	2.22E-03	0.220	1.17E-04	3.15E-15	2.32E+00	2.29E+00	0.360	2.85E-04	7.70E-15
08/31/88	35	195.50	325	69	6.11E-03	5.56E-03	0.220	7.77E-06	2.10E-16	2.58E+00	2.47E+00	0.360	9.50E-04	2.57E-14
09/06/88	36	172.00	325	84	7.78E-03	2.78E-03	0.220	6.99E-05	1.89E-15	2.51E+00	2.31E+00	0.359	1.70E-03	4.58E-14
09/18/88	37	203.10	325	41	5.00E-03	3.33E-03	0.220	2.33E-05	6.30E-16	2.58E+00	2.36E+00	0.359	1.90E-03	5.13E-14
09/24/88	38	227.30	325	82	6.67E-03	5.56E-03	0.220	1.55E-05	4.20E-16	2.62E+00	2.43E+00	0.359	1.65E-03	4.45E-14
09/30/88	39	251.00	325	57	1.00E-02	4.44E-03	0.225	7.60E-05	2.05E-15	2.43E+00	2.24E+00	0.352	1.64E-03	4.44E-14
10/06/88	40	178.50	325	66	8.33E-03	3.89E-03	0.225	6.08E-05	1.64E-15	3.04E+00	2.76E+00	0.352	2.50E-03	6.75E-14
10/12/88	41	299.00	325	75	9.44E-03	4.44E-03	0.225	6.84E-05	1.85E-15	2.58E+00	2.31E+00	0.352	2.31E-03	6.25E-14
10/18/88	42	173.50	325	112	1.17E-02	6.11E-03	0.225	7.60E-05	2.05E-15	2.64E+00	2.46E+00	0.352	1.56E-03	4.23E-14
10/30/88	43	198.50	325	86	8.33E-03	5.00E-03	0.224	4.58E-05	1.24E-15	2.49E+00	2.36E+00	0.357	1.17E-03	3.16E-14
11/05/88	44	227.00	325	149	7.22E-03	2.78E-03	0.224	6.11E-05	1.65E-15	2.77E+00	2.60E+00	0.357	1.41E-03	3.80E-14
11/11/88	45	227.50	325	234	6.67E-03	5.56E-04	0.224	8.39E-05	2.27E-15	2.67E+00	2.70E+00	0.357	-2.87E-04	-7.76E-15
11/17/88	46	280.00	325	82	7.22E-03	2.78E-03	0.224	6.11E-05	1.65E-15	2.60E+00	2.40E+00	0.357	1.78E-03	4.81E-14
11/23/88	47	298.50	325	121	8.89E-03	1.67E-03	0.224	9.92E-05	2.68E-15	2.81E+00	2.52E+00	0.357	2.50E-03	6.77E-14
12/05/88	48	174.50	325	92	1.44E-02	2.22E-03	0.216	1.74E-04	4.71E-15	2.52E+00	2.32E+00	0.345	1.77E-03	4.78E-14
12/11/88	49	202.00	325	37	5.00E-03	1.67E-03	0.216	4.75E-05	1.28E-15	2.55E+00	2.37E+00	0.345	1.56E-03	4.22E-14
12/17/88	50	254.30	325	68	6.11E-03	3.89E-03	0.216	3.17E-05	8.56E-16	2.35E+00	2.19E+00	0.345	1.41E-03	3.80E-14
12/23/88	51	253.50	325	144	4.44E-03	1.67E-03	0.219	3.90E-05	1.05E-15	2.34E+00	2.17E+00	0.332	1.55E-03	4.20E-14
12/29/88	52	274.30	325	72	1.00E-02	3.33E-03	0.219	9.37E-05	2.53E-15	2.52E+00	2.35E+00	0.332	1.64E-03	4.44E-14

TABLE B5. LOW VOLUME AIR SAMPLER DATA - SITE 1 - 1986

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
07/18/86	28	1710	74	195.60	0.23	2.00E-02	1.11E-03	4.80E-05	1.30E-15		0.42				
07/25/86	29	1557	70	147.00	0.23	1.22E-02	5.56E-04	3.26E-05	8.80E-16		0.42				
08/01/86	30	1752	78	1246.50	0.23	4.06E-02	0.00E+00	1.01E-04	2.72E-15	1247.00	0.42	3.03E+00	2.71E+00	4.40E-04	1.19E-14
08/08/86	31	1727	74	166.60	0.23	2.39E-02	1.11E-03	5.73E-05	1.55E-15		0.42				
09/22/86	38	1761	30	236.50	0.23	1.17E-02	2.22E-03	2.33E-05	6.30E-16	237.50	0.35	3.10E+00	2.72E+00	6.21E-04	1.68E-14
10/31/86	43	1242	32	669.50	0.23	3.28E-02	5.56E-04	1.13E-04	3.05E-15	669.00	0.35	2.79E+00	2.79E+00	0.00E+00	0.00E+00
11/14/86	45	1228	39	337.00	0.23	1.61E-02	5.56E-04	5.51E-05	1.49E-15	337.50	0.35	3.05E+00	2.79E+00	5.92E-04	1.60E-14
11/28/86	47	566	19	261.75	0.23	5.00E-03	1.11E-03	2.99E-05	8.07E-16	262.75	0.35	2.94E+00	2.72E+00	1.13E-03	3.06E-14

TABLE B5. LOW VOLUME AIR SAMPLER DATA - SITE 1 - 1987

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/13/87	2	2106	66	238.90	0.23	1.39E-02	1.11E-03	2.64E-05	7.13E-16	239.40	0.35	3.33E+00	2.77E+00	7.58E-04	2.05E-14
01/23/87	3	801	8	163.50	0.21	8.33E-03	5.00E-03	1.98E-05	5.36E-16	166.80	0.36	2.94E+00	2.67E+00	9.35E-04	2.53E-14
01/30/87	4	1330	102	332.00	0.21	1.72E-02	3.33E-03	4.97E-05	1.34E-15	332.50	0.36				
02/06/87	5	1173	56	168.70	0.21	8.33E-03	3.33E-03	2.03E-05	5.49E-16	169.16	0.36				
02/13/87	6	1401	46	175.25	0.21	9.44E-03	4.44E-03	1.70E-05	4.59E-16	175.75	0.36				
03/06/87	9	1327	24	169.20	0.21	7.78E-03	1.67E-03	2.19E-05	5.93E-16	169.70	0.34	3.06E+00	2.76E+00	6.70E-04	1.81E-14
03/13/87	10	1448	44	236.30	0.21	8.89E-03	5.56E-03	1.10E-05	2.96E-16	236.80	0.34	3.13E+00	2.83E+00	6.04E-04	1.63E-14
03/20/87	11	1394	80	334.50	0.21	8.33E-03	1.67E-03	2.28E-05	6.15E-16	335.00	0.34	3.04E+00	2.73E+00	6.61E-04	1.79E-14
04/03/87	13	793	86	165.75	0.21	8.33E-03	3.33E-03	3.00E-05	8.11E-16	166.25	0.34	2.90E+00	2.76E+00	5.23E-04	1.41E-14
04/17/87	15	1391	96	169.00	0.21	5.00E-03	3.89E-03	3.80E-06	1.03E-16	169.50	0.35	2.24E+00	1.89E+00	7.19E-04	1.94E-14
05/08/87	18	1430	43	171.20	0.21	1.33E-02	2.78E-03	3.52E-05	9.50E-16	171.70	0.35	2.17E+00	1.86E+00	6.22E-04	1.68E-14
05/15/87	19	1437	52	167.75	0.21	1.50E-02	5.56E-03	3.13E-05	8.46E-16	168.25	0.35	2.32E+00	1.91E+00	8.07E-04	2.18E-14
05/22/87	20	1463	30	171.00	0.21	1.28E-02	3.89E-03	2.89E-05	7.82E-16	171.50	0.35	2.21E+00	1.92E+00	5.79E-04	1.57E-14
05/29/87	21	1509	48	145.25	0.21	9.44E-03	2.78E-03	2.10E-05	5.69E-16	145.75	0.35	2.22E+00	1.85E+00	7.06E-04	1.91E-14
06/05/87	22	1401	33	170.10	0.21	1.06E-02	3.33E-03	2.45E-05	6.63E-16	170.60	0.35	2.16E+00	1.89E+00	5.64E-04	1.52E-14
06/12/87	23	1431	19	169.00	0.21	5.00E-03	3.89E-03	3.70E-06	1.00E-16	169.50	0.35	2.13E+00	1.98E+00	2.96E-04	8.01E-15
06/19/87	24	1450	43	167.50	0.21	1.11E-02	4.44E-03	2.19E-05	5.92E-16	167.00	0.35	2.31E+00	1.92E+00	7.60E-04	2.05E-14
06/26/87	25	1412	42	274.00	0.21	1.22E-02	3.33E-03	3.00E-05	8.10E-16	274.50	0.35	2.25E+00	1.91E+00	6.97E-04	1.88E-14
07/08/87	26	2366	50	193.75	0.21	2.28E-02	3.89E-03	3.80E-05	1.03E-15	194.25	0.35	2.59E+00	1.89E+00	8.37E-04	2.26E-14
07/10/87	27	438	13	164.00	0.21	5.00E-03	3.33E-03	1.81E-05	4.90E-16	164.50	0.35	2.02E+00	1.97E+00	3.19E-04	8.62E-15
07/17/87	28	1407	45	165.25	0.21	1.72E-02	4.44E-03	4.32E-05	1.17E-15	165.75	0.37	2.14E+00	1.96E+00	3.39E-04	9.17E-15
07/24/87	29	1401	39	168.30	0.21	2.00E-02	2.78E-03	5.85E-05	1.58E-15	168.80	0.37	2.24E+00	1.89E+00	6.74E-04	1.82E-14
07/31/87	30	1410	31	173.00	0.21	1.56E-02	2.78E-03	4.32E-05	1.17E-15	173.50	0.37	2.22E+00	1.96E+00	4.97E-04	1.34E-14
08/07/87	31	1486	50	163.50	0.21	2.00E-02	5.56E-03	4.63E-05	1.25E-15	164.50	0.37	2.25E+00	1.94E+00	5.57E-04	1.50E-14
08/14/87	32	1403	36	164.50	0.21	8.89E-03	4.44E-03	1.51E-05	4.08E-16	165.00	0.37	2.31E+00	1.92E+00	7.45E-04	2.01E-14
08/21/87	33	1379	31	170.10	0.21	1.17E-02	4.44E-03	2.49E-05	6.74E-16	170.60	0.37	2.24E+00	1.85E+00	7.51E-04	2.03E-14
08/28/87	34	1368	17	162.25	0.21	6.67E-03	3.89E-03	9.67E-06	2.61E-16	162.75	0.37	2.16E+00	1.97E+00	3.73E-04	1.01E-14
09/04/87	35	1378	26	194.75	0.21	1.17E-02	6.11E-03	1.92E-05	5.19E-16	195.25	0.37	2.33E+00	1.96E+00	7.15E-04	1.93E-14
09/11/87	36	1442	24	167.50	0.21	1.17E-02	3.89E-03	2.57E-05	6.94E-16	168.00	0.37	2.35E+00	1.98E+00	6.80E-04	1.84E-14
09/17/87	37	1227	25	166.00	0.21	8.89E-03	2.22E-03	2.59E-05	6.99E-16	166.50	0.37	2.25E+00	1.92E+00	7.09E-04	1.91E-14
09/24/87	38	1382	22	169.50	0.21	1.39E-02	3.33E-03	3.64E-05	9.83E-16	170.00	0.37	2.46E+00	1.87E+00	1.15E-03	3.12E-14
10/01/87	39	1434	43	171.40	0.21	1.33E-02	5.56E-03	2.58E-05	6.98E-16	172.90	0.37	2.56E+00	1.98E+00	1.08E-03	2.93E-14
10/15/87	41	1283	54	264.00	0.21	2.00E-02	2.78E-03	6.39E-05	1.73E-15	264.50	0.37	2.47E+00	1.92E+00	1.17E-03	3.15E-14
10/22/87	42	1397	22	165.80	0.21	1.39E-02	4.44E-03	3.22E-05	8.70E-16	166.30	0.37	2.61E+00	1.93E+00	1.32E-03	3.58E-14
10/29/87	43	1431	24	168.75	0.21	1.39E-02	7.22E-03	2.22E-05	6.00E-16	169.25	0.37	2.46E+00	1.93E+00	1.01E-03	2.74E-14
11/05/87	44	1456	45	221.10	0.21	2.11E-02	2.22E-03	6.18E-05	1.67E-15	262.00	0.37	2.64E+00	2.10E+00	1.02E-03	2.75E-14
11/12/87	45	1450	26	311.50	0.21	2.06E-02	5.00E-03	5.11E-05	1.38E-15	312.00	0.37	2.63E+00	2.03E+00	1.10E-03	2.98E-14
11/23/87	47	2221	120	242.00	0.21	2.22E-02	3.33E-03	4.05E-05	1.09E-15	242.50	0.37	2.69E+00	1.97E+00	8.80E-04	2.38E-14
12/03/87	48	2033	92	431.00	0.21	3.22E-02	6.67E-03	5.99E-05	1.62E-15	431.50	0.37	2.98E+00	1.88E+00	1.46E-03	3.95E-14
12/11/87	49	1671	138	258.75	0.21	1.94E-02	4.44E-03	4.27E-05	1.16E-15	259.25	0.37	2.31E+00	1.90E+00	6.73E-04	1.82E-14
12/19/87	50	1593	45	218.00	0.21	1.17E-02	2.78E-03	2.66E-05	7.18E-16	218.50	0.37	2.40E+00	1.90E+00	8.36E-04	2.26E-14
12/31/87	52	2444	27	167.30	0.21	1.78E-02	1.67E-03	3.14E-05	8.48E-16	168.80	0.37	2.50E+00	1.93E+00	6.27E-04	1.70E-14

TABLE B5. LOW VOLUME AIR SAMPLER DATA - SITE 1 - 1988

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/07/88	1	1421	23	165.83	0.21	1.72E-02	1.67E-03	5.21E-05	1.41E-15	166.30	0.37	2.77E+00	1.89E+00	1.67E-03	4.50E-14
01/14/88	2	1416	19	192.60	0.21	1.39E-02	3.89E-03	3.36E-05	9.09E-16	193.10	0.37	2.40E+00	1.89E+00	9.68E-04	2.62E-14
01/22/88	3	1665	69	260.50	0.21	1.61E-02	3.33E-03	3.65E-05	9.88E-16	261.50	0.37	2.37E+00	1.89E+00	7.91E-04	2.14E-14
02/01/88	4	2068	44	168.50	0.21	2.00E-02	3.33E-03	3.84E-05	1.04E-15	169.00	0.37	2.45E+00	1.92E+00	6.97E-04	1.88E-14
02/08/88	5	1418	21	192.83	0.21	1.61E-02	5.00E-03	3.73E-05	1.01E-15	193.30	0.37	2.48E+00	1.92E+00	1.06E-03	2.88E-14
02/18/88	7	2132	120	193.75	0.21	2.00E-02	2.22E-03	3.97E-05	1.07E-15	194.25	0.37	2.43E+00	1.85E+00	7.38E-04	1.99E-14
02/25/88	8	1532	46	169.90	0.21	1.11E-02	2.22E-03	2.76E-05	7.47E-16	170.40	0.37	2.43E+00	1.96E+00	8.35E-04	2.26E-14
03/04/88	9	1498	74	290.80	0.22	1.78E-02	5.00E-03	3.88E-05	1.05E-15	291.30	0.36	2.49E+00	1.96E+00	9.88E-04	2.67E-14
03/09/88	10	1105	59	165.00	0.22	1.44E-02	5.00E-03	3.89E-05	1.05E-15	165.50	0.36	2.26E+00	1.96E+00	7.68E-04	2.08E-14
03/16/88	11	1784	221	197.30	0.22	1.83E-02	3.89E-03	3.68E-05	9.95E-16	196.80	0.36	2.38E+00	1.91E+00	7.35E-04	1.99E-14
03/24/88	12	2035	110	170.50	0.22	2.33E-02	3.33E-03	4.47E-05	1.21E-15	171.00	0.36	2.54E+00	1.92E+00	8.46E-04	2.29E-14
03/31/88	13	1885	170	266.00	0.22	2.33E-02	6.11E-03	4.15E-05	1.12E-15	266.50	0.36	2.41E+00	1.88E+00	7.78E-04	2.10E-14
04/06/88	14	1276	57	167.00	0.22	1.94E-02	2.22E-03	6.14E-05	1.66E-15	190.50	0.36	2.30E+00	1.91E+00	8.48E-04	2.29E-14
04/13/88	15	1464	70	171.25	0.22	1.56E-02	1.11E-03	4.48E-05	1.21E-15	171.75	0.36	2.39E+00	1.97E+00	7.85E-04	2.12E-14
04/20/88	16	1728	149	191.00	0.22	1.50E-02	3.33E-03	3.07E-05	8.29E-16	191.50	0.36	2.29E+00	1.90E+00	6.34E-04	1.71E-14
04/20/88	16	1447	61	164.75	0.22	1.33E-02	5.56E-03	2.44E-05	6.60E-16	165.75	0.36	2.32E+00	1.89E+00	8.29E-04	2.24E-14
05/05/88	18	1743	80	292.50	0.22	1.94E-02	3.33E-03	4.20E-05	1.14E-15	293.00	0.36	2.41E+00	1.98E+00	6.99E-04	1.89E-14
05/13/88	19	1636	551	241.00	0.22	1.28E-02	3.89E-03	2.47E-05	6.67E-16	241.50	0.36	2.37E+00	1.91E+00	7.78E-04	2.10E-14
05/18/88	20	1049	35	193.00	0.22	1.00E-02	3.33E-03	2.89E-05	7.81E-16	193.50	0.36	2.36E+00	1.90E+00	1.20E-03	3.24E-14
05/27/88	21	1872	296	261.00	0.22	1.61E-02	3.33E-03	3.10E-05	8.39E-16	261.50	0.36	2.70E+00	1.96E+00	1.09E-03	2.94E-14
06/01/88	22	948	150	219.50	0.22	1.22E-02	4.44E-03	3.73E-05	1.01E-15	220.00	0.36	2.50E+00	1.94E+00	1.66E-03	4.47E-14
06/09/88	23	1648	584	192.50	0.23	1.50E-02	2.22E-03	3.37E-05	9.11E-16	193.00	0.36	2.66E+00	1.89E+00	1.30E-03	3.52E-14
06/16/88	24	1421	154	166.70	0.23	1.89E-02	5.56E-03	4.08E-05	1.10E-15	167.20	0.36	2.94E+00	2.40E+00	1.06E-03	2.86E-14
06/23/88	25	1439	93	164.75	0.23	1.78E-02	2.22E-03	4.70E-05	1.27E-15	165.25	0.35	2.63E+00	2.12E+00	1.02E-03	2.75E-14
06/29/88	26	1207	88	217.00	0.23	1.44E-02	3.33E-03	4.00E-05	1.08E-15	217.50	0.35	2.36E+00	1.92E+00	1.06E-03	2.86E-14
07/07/88	27	1657	22	168.80	0.23	1.78E-02	5.56E-03	3.21E-05	8.67E-16	169.30	0.35	2.46E+00	1.95E+00	8.78E-04	2.37E-14
07/21/88	29	1426	83	172.50	0.22	1.06E-02	5.56E-03	1.59E-05	4.31E-16	173.00	0.35	2.42E+00	1.95E+00	9.42E-04	2.55E-14
07/28/88	30	1479	58	191.80	0.22	2.11E-02	2.78E-03	5.63E-05	1.52E-15	192.30	0.36	2.61E+00	2.02E+00	1.11E-03	3.00E-14
08/04/88	31	1292	87	455.25	0.22	1.67E-02	5.56E-03	3.91E-05	1.06E-15	454.25	0.36	2.51E+00	2.12E+00	8.28E-04	2.24E-14
08/11/88	32	1424	58	188.90	0.22	1.28E-02	5.56E-03	2.31E-05	6.23E-16	189.90	0.36	2.58E+00	2.12E+00	8.90E-04	2.40E-14
08/18/88	33	1331	38	213.30	0.22	1.67E-02	2.78E-03	4.74E-05	1.28E-15	214.30	0.36	2.89E+00	2.53E+00	7.65E-04	2.07E-14

TABLE B6. LOW VOLUME AIR SAMPLER DATA - SITE 2 - 1986

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
10/31/86	43	1011	13	691.25	0.23	2.33E-02	5.56E-04	9.80E-05	2.65E-15	690.75	0.35	3.27E+00	2.79E+00	1.34E-03	3.63E-14
11/14/86	45	975	23	238.25	0.23	9.44E-03	5.56E-04	3.96E-05	1.07E-15	239.25	0.35	3.08E+00	2.79E+00	8.35E-04	2.26E-14
11/28/86	47	1042	11	262.50	0.23	6.67E-03	5.56E-04	2.55E-05	6.89E-16	262.75	0.35	3.02E+00	2.79E+00	6.31E-04	1.70E-14

TABLE B6. LOW VOLUME AIR SAMPLER DATA - SITE 2 - 1987

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/13/87	2	1745	11	242.60	0.21	1.44E-02	1.11E-03	3.64E-05	9.83E-16	243.80	0.35	3.17E+00	2.77E+00	6.63E-04	1.79E-14
01/23/87	3	643	2	164.70	0.21	4.44E-03	6.11E-03	-1.23E-05	-3.34E-16	165.75	0.36	2.87E+00	2.73E+00	5.74E-04	1.55E-14
01/30/87	4	1113	13	329.20	0.21	1.67E-02	3.33E-03	5.70E-05	1.54E-15	328.80	0.36				
02/06/87	5	1027	16	172.75	0.21	9.44E-03	3.33E-03	2.83E-05	7.66E-16	172.25	0.36				
02/13/87	6	1449	23	170.75	0.21	8.33E-03	4.44E-03	1.28E-05	3.45E-16	171.25	0.36				
03/06/87	9	1448	15	166.25	0.21	1.56E-02	3.33E-03	4.02E-05	1.09E-15	165.75	0.34	3.08E+00	2.73E+00	7.03E-04	1.90E-14
03/13/87	10	1431	20	235.70	0.21	1.28E-02	5.00E-03	2.59E-05	7.00E-16	235.20	0.34	3.16E+00	2.73E+00	8.97E-04	2.43E-14
03/20/87	11	1346	19	336.00	0.21	1.33E-02	2.22E-03	3.93E-05	1.06E-15	335.50	0.34	3.08E+00	2.72E+00	7.77E-04	2.10E-14
04/03/87	13	831	15	330.80	0.21	8.33E-03	4.44E-03	2.23E-05	6.02E-16	331.30	0.34	2.08E+00	1.89E+00	6.82E-04	1.84E-14
04/17/87	15	1389	28	168.00	0.21	1.56E-02	3.89E-03	4.00E-05	1.08E-15	167.50	0.35	1.98E+00	1.89E+00	1.90E-04	5.13E-15
05/08/87	18	1432	24	173.70	0.21	1.22E-02	1.67E-03	3.51E-05	9.49E-16	173.20	0.35	2.17E+00	1.85E+00	6.26E-04	1.69E-14
05/15/87	19	1427	28	171.34	0.21	2.11E-02	5.00E-03	5.38E-05	1.45E-15	170.80	0.35	2.24E+00	1.91E+00	6.53E-04	1.76E-14
05/29/87	21	1476	21	149.75	0.21	6.11E-03	2.78E-03	1.08E-05	2.91E-16	149.25	0.35	2.22E+00	1.85E+00	7.18E-04	1.94E-14
06/05/87	22	1370	45	171.00	0.21	8.33E-03	3.33E-03	1.74E-05	4.70E-16	170.50	0.35	2.13E+00	1.89E+00	5.07E-04	1.37E-14
06/12/87	23	1406	11	171.50	0.21	8.33E-03	3.89E-03	1.51E-05	4.07E-16	171.00	0.35	2.12E+00	1.98E+00	3.00E-04	8.12E-15
06/19/87	24	1479	33	164.50	0.21	1.11E-02	4.44E-03	2.15E-05	5.80E-16	164.00	0.35	2.32E+00	1.92E+00	7.73E-04	2.09E-14
06/26/87	25	1413	11	274.50	0.21	8.33E-03	3.33E-03	1.69E-05	4.55E-16	274.00	0.35	2.14E+00	1.91E+00	4.65E-04	1.26E-14
07/08/87	26	2410	41	190.70	0.21	1.72E-02	3.89E-03	2.63E-05	7.12E-16	190.20	0.37	2.52E+00	1.89E+00	7.09E-04	1.92E-14
07/10/87	27	384	10	168.30	0.21	3.89E-03	3.33E-03	6.89E-06	1.86E-16	167.80	0.37	2.06E+00	1.97E+00	6.41E-04	1.73E-14
07/17/87	28	1404	36	168.80	0.21	1.78E-02	4.44E-03	4.52E-05	1.22E-15	168.30	0.37	2.24E+00	1.96E+00	5.41E-04	1.46E-14
07/24/87	29	1453	38	165.30	0.21	1.39E-02	2.78E-03	3.64E-05	9.84E-16	164.80	0.37	2.33E+00	1.89E+00	8.23E-04	2.22E-14
07/31/87	30	1434	23	166.60	0.21	1.61E-02	2.78E-03	4.43E-05	1.20E-15	167.10	0.37	2.20E+00	1.96E+00	4.46E-04	1.21E-14
08/07/87	31	1412	44	164.75	0.21	1.78E-02	5.00E-03	4.31E-05	1.16E-15	163.75	0.37	2.21E+00	1.94E+00	5.08E-04	1.37E-14
08/14/87	32	1368	31	169.30	0.21	1.06E-02	4.44E-03	2.13E-05	5.75E-16	168.80	0.37	2.12E+00	1.92E+00	4.03E-04	1.09E-14
08/21/87	33	1420	28	168.25	0.21	1.11E-02	4.44E-03	2.24E-05	6.04E-16	167.75	0.37	2.26E+00	1.85E+00	7.80E-04	2.11E-14
08/28/87	34	1426	6	163.20	0.21	4.44E-03	3.89E-03	1.86E-06	5.01E-17	162.67	0.37	2.11E+00	1.97E+00	2.76E-04	7.46E-15
09/04/87	35	1384	22	193.80	0.21	1.11E-02	6.11E-03	1.72E-05	4.65E-16	193.30	0.37	2.42E+00	1.96E+00	8.94E-04	2.42E-14
09/11/87	36	1305	19	167.75	0.21	1.22E-02	3.89E-03	3.04E-05	8.22E-16	167.25	0.37	2.31E+00	1.98E+00	6.65E-04	1.80E-14
09/17/87	37	1160	20	165.50	0.21	8.33E-03	2.22E-03	2.51E-05	6.78E-16	165.00	0.37	2.21E+00	1.92E+00	6.58E-04	1.78E-14
09/24/87	38	1412	21	168.70	0.21	2.22E-02	3.33E-03	6.37E-05	1.72E-15	168.20	0.37	2.48E+00	1.87E+00	1.17E-03	3.16E-14
10/01/87	39	1471	32	170.50	0.21	1.17E-02	5.56E-03	1.98E-05	5.35E-16	169.00	0.37	2.47E+00	1.98E+00	9.02E-04	2.44E-14
10/08/87	40	1406	58	170.40	0.21	2.06E-02	5.56E-03	5.08E-05	1.37E-15	170.90	0.37	2.45E+00	1.94E+00	9.64E-04	2.61E-14
10/15/87	41	1410	48	268.00	0.21	2.22E-02	2.78E-03	6.57E-05	1.77E-15	267.50	0.37	2.74E+00	1.92E+00	1.58E-03	4.28E-14
10/22/87	42	1535	23	165.20	0.21	2.39E-02	4.44E-03	6.03E-05	1.63E-15	164.70	0.37	2.57E+00	1.93E+00	1.13E-03	3.06E-14
10/30/87	43	1425	19	170.70	0.21	1.72E-02	7.22E-03	3.34E-05	9.03E-16	169.70	0.37	2.43E+00	1.93E+00	9.47E-04	2.56E-14
11/05/87	44	1146	19	258.80	0.21	1.50E-02	3.33E-03	4.85E-05	1.31E-15	218.10	0.37	2.51E+00	2.10E+00	9.56E-04	2.59E-14
11/12/87	45	1424	18	312.50	0.21	2.17E-02	5.00E-03	5.57E-05	1.51E-15	312.00	0.37	2.59E+00	2.03E+00	1.06E-03	2.86E-14
11/23/87	47	2128	52	242.00	0.21	2.33E-02	3.33E-03	4.48E-05	1.21E-15	241.50	0.37	2.69E+00	1.97E+00	9.19E-04	2.48E-14
12/03/87	48	2036	40	430.50	0.21	5.61E-02	6.67E-03	1.16E-04	3.13E-15	430.00	0.37	2.93E+00	1.88E+00	1.40E-03	3.77E-14
12/11/87	49	1565	41	263.50	0.21	2.28E-02	4.44E-03	5.58E-05	1.51E-15	263.00	0.37	2.38E+00	1.90E+00	8.24E-04	2.23E-14
12/23/87	51	2365	33	168.30	0.21	1.83E-02	5.00E-03	2.68E-05	7.26E-16	169.00	0.37	2.49E+00	1.92E+00	6.46E-04	1.75E-14
12/31/87	52	1638	19	172.50	0.21	1.72E-02	1.67E-03	4.52E-05	1.22E-15	171.00	0.37	2.34E+00	1.93E+00	6.84E-04	1.85E-14

TABLE B6. LOW VOLUME AIR SAMPLER DATA - SITE 2 - 1988

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/07/88	1	1456	19	167.75	0.21	2.28E-02	1.67E-03	6.90E-05	1.87E-15	167.25	0.37	2.63E+00	1.89E+00	1.37E-03	3.69E-14
01/14/88	2	1413	17	195.00	0.21	1.50E-02	3.89E-03	3.74E-05	1.01E-15	194.50	0.37	2.37E+00	1.89E+00	9.18E-04	2.48E-14
01/22/88	3	1630	24	267.50	0.21	1.72E-02	3.33E-03	4.06E-05	1.10E-15	266.50	0.37	2.32E+00	1.89E+00	7.18E-04	1.94E-14
02/01/88	4	2392	29	168.50	0.21	1.50E-02	3.33E-03	2.32E-05	6.28E-16	168.00	0.37	2.49E+00	1.92E+00	6.43E-04	1.74E-14
02/09/88	6	1593	12	171.00	0.21	2.11E-02	5.00E-03	4.82E-05	1.30E-15	171.50	0.37	2.53E+00	1.92E+00	1.03E-03	2.80E-14
02/18/88	7	1746	63	193.60	0.21	2.11E-02	4.44E-03	4.55E-05	1.23E-15	193.10	0.37	2.48E+00	1.85E+00	9.88E-04	2.67E-14
02/25/88	8	1489	29	167.40	0.21	1.78E-02	2.22E-03	4.97E-05	1.34E-15	167.90	0.37	2.37E+00	1.96E+00	7.43E-04	2.01E-14
03/04/88	9	1544	30	287.50	0.22	1.78E-02	5.00E-03	3.76E-05	1.02E-15	287.00	0.36	2.51E+00	1.96E+00	9.88E-04	2.67E-14
03/09/88	10	992	23	168.80	0.22	1.39E-02	5.00E-03	4.07E-05	1.10E-15	168.30	0.36	2.31E+00	1.96E+00	9.79E-04	2.64E-14
03/16/88	11	1495	87	197.00	0.22	2.11E-02	3.89E-03	5.24E-05	1.42E-15	197.50	0.36	2.30E+00	1.91E+00	7.17E-04	1.94E-14
03/24/88	12	1876	51	164.50	0.22	2.83E-02	3.33E-03	6.06E-05	1.64E-15	164.00	0.36	2.57E+00	1.92E+00	9.69E-04	2.62E-14
03/31/88	13	1514	96	265.80	0.22	3.06E-02	6.11E-03	7.34E-05	1.98E-15	265.30	0.36	2.28E+00	1.88E+00	7.20E-04	1.94E-14
04/06/88	14	1264	37	190.00	0.22	1.61E-02	4.44E-03	4.20E-05	1.13E-15	166.70	0.36	2.37E+00	1.95E+00	9.22E-04	2.49E-14
04/13/88	15	1419	47	167.00	0.22	1.17E-02	2.22E-03	3.03E-05	8.18E-16	166.50	0.36	2.39E+00	1.97E+00	8.10E-04	2.19E-14
04/20/88	16	1410	49	165.25	0.22	1.06E-02	5.56E-03	1.61E-05	4.36E-16	164.25	0.36	2.30E+00	1.89E+00	8.15E-04	2.20E-14
04/27/88	17	1473	75	190.75	0.22	1.78E-02	3.33E-03	4.46E-05	1.20E-15	190.25	0.36	2.25E+00	1.90E+00	6.74E-04	1.82E-14
05/05/88	18	1703	39	287.50	0.22	1.78E-02	3.33E-03	3.86E-05	1.04E-15	287.00	0.36	2.42E+00	1.98E+00	7.28E-04	1.97E-14
05/13/88	19	1597	68	241.00	0.22	2.28E-02	3.89E-03	5.38E-05	1.45E-15	240.50	0.36	2.43E+00	1.91E+00	9.11E-04	2.46E-14
05/19/88	20	1245	42	167.25	0.22	1.61E-02	3.33E-03	4.67E-05	1.26E-15	166.75	0.36	2.48E+00	1.90E+00	1.29E-03	3.48E-14
05/27/88	21	1656	28	262.50	0.22	1.56E-02	3.33E-03	3.35E-05	9.07E-16	262.00	0.36	2.66E+00	1.96E+00	1.16E-03	3.13E-14
06/03/88	22	1403	43	171.50	0.22	1.61E-02	4.44E-03	3.78E-05	1.02E-15	171.00	0.36	2.51E+00	1.94E+00	1.15E-03	3.10E-14
06/09/88	23	1259	42	192.50	0.22	2.39E-02	2.22E-03	7.82E-05	2.11E-15	192.00	0.36	2.68E+00	1.89E+00	1.74E-03	4.71E-14
06/16/88	24	1426	43	168.00	0.22	1.39E-02	5.56E-03	2.66E-05	7.18E-16	167.50	0.36	3.00E+00	2.40E+00	1.17E-03	3.16E-14
06/23/88	25	1390	32	166.20	0.23	1.78E-02	2.22E-03	4.87E-05	1.32E-15	165.70	0.35	2.62E+00	2.12E+00	1.03E-03	2.78E-14
06/29/88	26	1202	22	216.70	0.23	7.78E-03	3.33E-03	1.61E-05	4.34E-16	216.20	0.35	2.30E+00	1.91E+00	9.22E-04	2.49E-14
07/07/88	27	1635	136	168.70	0.23	1.72E-02	5.56E-03	3.10E-05	8.38E-16	169.20	0.35	2.37E+00	1.95E+00	7.37E-04	1.99E-14
07/14/88	28	1373	24	167.40	0.23	1.17E-02	2.22E-03	2.99E-05	8.08E-16	167.90	0.35	2.26E+00	1.97E+00	6.10E-04	1.65E-14
07/21/88	29	1433	22	169.70	0.23	1.17E-02	5.56E-03	1.85E-05	5.01E-16	170.20	0.35	2.39E+00	1.95E+00	8.91E-04	2.41E-14
07/28/88	30	1377	29	194.30	0.22	2.17E-02	2.78E-03	6.24E-05	1.69E-15	193.80	0.36	2.64E+00	2.02E+00	1.26E-03	3.40E-14
08/04/88	31	1271	33	361.00	0.22	2.39E-02	5.56E-03	6.56E-05	1.77E-15	360.00	0.36	2.61E+00	2.12E+00	1.07E-03	2.88E-14
08/11/88	32	1456	17	191.80	0.22	8.89E-03	5.56E-03	1.04E-05	2.81E-16	192.80	0.36	2.65E+00	2.12E+00	1.00E-03	2.71E-14
08/18/88	33	1430	21	216.10	0.22	1.33E-02	2.78E-03	3.36E-05	9.07E-16	217.10	0.36	2.87E+00	2.55E+00	6.35E-04	1.72E-14
08/25/88	34	1384	22	359.30	0.22	1.89E-02	6.11E-03	4.20E-05	1.13E-15	358.80	0.36	2.71E+00	2.47E+00	4.93E-04	1.33E-14
09/20/88	38	1414	21	171.20	0.22	1.50E-02	5.56E-03	3.04E-05	8.21E-16	171.70	0.36	2.91E+00	2.47E+00	8.67E-04	2.34E-14
10/04/88	40	1435	25	197.60	0.23	1.22E-02	2.22E-03	3.03E-05	8.19E-16	240.50	0.35	3.34E+00	2.63E+00	1.42E-03	3.83E-14
10/11/88	41	1442	28	216.30	0.23	2.06E-02	4.44E-03	4.86E-05	1.31E-15	216.80	0.35	3.49E+00	2.63E+00	1.71E-03	4.61E-14
10/18/88	42	1368	33	168.50	0.23	2.61E-02	5.56E-03	6.53E-05	1.77E-15	169.00	0.35	3.23E+00	2.43E+00	1.67E-03	4.50E-14
11/02/88	44	1594	41	170.50	0.22	2.22E-02	3.89E-03	5.23E-05	1.41E-15	171.00	0.36	3.58E+00	2.82E+00	1.33E-03	3.60E-14
11/08/88	45	1192	41	173.00	0.22	1.22E-02	1.67E-03	4.03E-05	1.09E-15	173.50	0.36	3.14E+00	2.82E+00	7.39E-04	2.00E-14
11/16/88	46	1654	59	318.50	0.22	2.72E-02	2.78E-03	6.72E-05	1.82E-15	341.50	0.36	3.10E+00	2.48E+00	1.04E-03	2.82E-14
11/21/88	47	1018	28	221.00	0.22	1.17E-02	4.44E-03	3.22E-05	8.72E-16	221.50	0.36	2.79E+00	2.48E+00	8.60E-04	2.32E-14
11/29/88	48	1556	28	171.50	0.22	2.17E-02	1.67E-03	5.84E-05	1.58E-15	172.00	0.36	3.21E+00	2.52E+00	1.24E-03	3.36E-14
12/06/88	49	1425	42	171.70	0.22	1.56E-02	3.33E-03	3.90E-05	1.05E-15	312.70	0.35	2.96E+00	2.51E+00	9.06E-04	2.45E-14
12/13/88	50	1642	20	171.00	0.22	1.56E-02	1.67E-03	3.84E-05	1.04E-15	170.50	0.35	3.26E+00	2.37E+00	1.54E-03	4.16E-14
12/20/88	51	1323	22	171.00	0.22	2.78E-02	0.00E+00	9.54E-05	2.58E-15	171.50	0.35	2.64E+00	2.16E+00	1.05E-03	2.82E-14
12/27/88	52	1417	22	172.30	0.22	2.72E-02	2.22E-03	8.02E-05	2.17E-15	172.80	0.33	2.87E+00	2.53E+00	7.41E-04	2.00E-14

TABLE B7. LOW VOLUME AIR SAMPLER DATA - SITE 3 - 1986

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
10/17/86	41	690	7	959.75	0.23	1.28E-02	1.67E-03	7.00E-05	1.89E-15	960.25	0.35	2.81E+00	2.68E+00	5.57E-04	1.50E-14
10/31/86	43	1134	21	691.00	0.23	3.28E-02	5.56E-04	1.24E-04	3.34E-15	691.50	0.35	3.23E+00	2.79E+00	1.10E-03	2.97E-14
11/28/86	47	1064	13	263.00	0.23	6.11E-03	5.56E-04	2.27E-05	6.14E-16	262.25	0.35	2.93E+00	2.79E+00	3.68E-04	9.96E-15

TABLE B7. LOW VOLUME AIR SAMPLER DATA - SITE 3 - 1987

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/13/87	2	2007	13	242.20	0.23	1.67E-02	1.11E-03	3.37E-05	9.11E-16	241.80	0.35	3.23E+00	2.77E+00	6.61E-04	1.79E-14
01/23/87	3	729	9	168.80	0.21	3.89E-03	5.00E-03	-7.26E-06	-1.96E-16	169.30	0.36	2.94E+00	2.79E+00	5.57E-04	1.50E-14
01/30/87	4	1278	10	329.60	0.21	1.33E-02	3.33E-03	3.73E-05	1.01E-15		0.36				
02/06/87	5	1111	16	336.50	0.21	1.11E-02	3.33E-03	3.33E-05	9.01E-16		0.36				
02/13/87	6	1321	18	332.80	0.21	1.17E-02	4.44E-03	2.60E-05	7.04E-16		0.36				
03/06/87	9	1290	13	166.20	0.21	1.39E-02	5.00E-03	3.28E-05	8.87E-16	166.60	0.34	3.14E+00	2.71E+00	9.74E-04	2.63E-14
03/13/87	10	1425	19	245.60	0.21	1.11E-02	3.89E-03	2.41E-05	6.52E-16	246.10	0.34	3.13E+00	2.79E+00	7.07E-04	1.91E-14
03/20/87	11	1384	18	336.50	0.21	1.11E-02	1.67E-03	3.25E-05	8.78E-16	337.00	0.34	3.00E+00	2.73E+00	5.83E-04	1.58E-14
04/03/87	13	850	24	329.10	0.21	1.00E-02	4.44E-03	3.11E-05	8.41E-16	328.60	0.35	2.10E+00	1.90E+00	6.72E-04	1.82E-14
04/17/87	15	1384	23	168.00	0.21	1.28E-02	3.89E-03	3.06E-05	8.27E-16	168.50	0.35	2.10E+00	1.89E+00	4.30E-04	1.16E-14
04/24/87	16	1447	30	168.20	0.21	1.56E-02	3.33E-03	4.02E-05	1.09E-15	168.70	0.35	2.23E+00	2.01E+00	4.28E-04	1.16E-14
05/08/87	18	1420	21	174.10	0.21	1.22E-02	1.67E-03	3.54E-05	9.57E-16	174.60	0.35	2.16E+00	1.93E+00	4.56E-04	1.23E-14
05/15/87	19	1419	25	171.70	0.21	1.78E-02	6.11E-03	3.92E-05	1.06E-15	172.20	0.35	2.30E+00	1.89E+00	8.22E-04	2.22E-14
05/22/87	20	1424	13	172.80	0.21	1.00E-02	3.89E-03	2.04E-05	5.52E-16	172.30	0.35	2.09E+00	1.92E+00	3.46E-04	9.34E-15
05/29/87	21	1430	19	150.40	0.21	1.06E-02	2.78E-03	2.59E-05	7.00E-16	150.90	0.35	2.17E+00	1.85E+00	6.50E-04	1.76E-14
06/05/87	22	1415	45	170.70	0.21	8.89E-03	3.33E-03	1.87E-05	5.05E-16	171.70	0.35	2.10E+00	1.89E+00	4.32E-04	1.17E-14
06/12/87	23	1411	13	171.50	0.21	4.44E-03	3.89E-03	1.87E-06	5.07E-17	172.00	0.35	2.16E+00	1.98E+00	3.68E-04	9.94E-15
06/26/87	25	1411	20	273.00	0.21	8.89E-03	3.33E-03	1.87E-05	5.07E-16	273.50	0.35	2.23E+00	1.91E+00	6.64E-04	1.79E-14
07/08/87	26	2368	39	193.80	0.21	1.83E-02	3.89E-03	2.90E-05	7.85E-16	194.30	0.35	2.50E+00	1.89E+00	7.37E-04	1.99E-14
07/10/87	27	394	10	169.25	0.21	5.00E-03	3.33E-03	2.01E-05	5.44E-16	169.75	0.35	2.02E+00	1.97E+00	3.34E-04	9.04E-15
07/17/87	28	1449	34	168.10	0.21	7.22E-03	4.44E-03	9.13E-06	2.47E-16	168.60	0.37	2.23E+00	1.96E+00	5.03E-04	1.36E-14
07/24/87	29	1453	35	166.00	0.21	1.39E-02	2.78E-03	3.64E-05	9.84E-16	166.50	0.37	2.31E+00	1.89E+00	7.73E-04	2.09E-14
07/31/87	30	1433	22	166.25	0.21	1.28E-02	2.78E-03	3.32E-05	8.98E-16	166.75	0.37	2.27E+00	1.96E+00	5.73E-04	1.55E-14
08/07/87	31	1400	43	166.25	0.21	1.78E-02	5.56E-03	4.16E-05	1.12E-15	166.75	0.37	2.26E+00	1.94E+00	6.16E-04	1.66E-14
08/14/87	32	1368	32	170.50	0.21	7.22E-03	4.44E-03	9.67E-06	2.61E-16	171.00	0.37	2.24E+00	1.92E+00	6.26E-04	1.69E-14
08/21/87	33	1420	29	169.50	0.21	1.06E-02	4.44E-03	2.05E-05	5.54E-16	170.00	0.37	2.29E+00	1.85E+00	8.29E-04	2.24E-14
08/28/87	34	1374	16	164.80	0.21	7.78E-03	3.89E-03	1.35E-05	3.64E-16	165.30	0.37	2.12E+00	1.97E+00	2.94E-04	7.94E-15
09/04/87	35	1382	21	194.80	0.21	1.44E-02	6.11E-03	2.87E-05	7.76E-16	195.30	0.37	2.49E+00	1.96E+00	1.03E-03	2.79E-14
09/11/87	36	1431	22	169.00	0.21	8.89E-03	3.89E-03	1.66E-05	4.50E-16	169.50	0.37	2.34E+00	1.98E+00	6.63E-04	1.79E-14
09/17/87	37	1209	20	166.50	0.21	8.33E-03	2.22E-03	2.41E-05	6.51E-16	167.00	0.37	2.26E+00	1.92E+00	7.49E-04	2.02E-14
09/24/87	38	1440	18	168.80	0.21	1.39E-02	3.33E-03	3.49E-05	9.43E-16	169.30	0.37	2.57E+00	1.87E+00	1.31E-03	3.53E-14
10/01/87	39	1418	24	171.25	0.21	1.67E-02	3.33E-03	4.48E-05	1.21E-15		0.37				
10/08/87	40	1387	54	171.75	0.21	2.11E-02	5.56E-03	5.34E-05	1.44E-15	171.25	0.37	2.49E+00	1.94E+00	1.07E-03	2.89E-14
10/15/87	41	1398	39	269.00	0.21	2.89E-02	2.78E-03	8.89E-05	2.40E-15	269.50	0.37	2.69E+00	1.92E+00	1.50E-03	4.06E-14
10/22/87	42	1461	21	166.20	0.21	2.06E-02	4.44E-03	5.25E-05	1.42E-15	166.70	0.37	2.68E+00	1.93E+00	1.39E-03	3.76E-14
10/29/87	43	1352	18	171.80	0.21	1.28E-02	7.22E-03	1.96E-05	5.29E-16	172.30	0.37	2.39E+00	1.93E+00	9.15E-04	2.47E-14
11/05/87	44	1458	32	259.00	0.21	2.17E-02	3.33E-03	5.99E-05	1.62E-15	259.50	0.37	2.70E+00	2.10E+00	1.12E-03	3.03E-14
11/12/87	45	1411	20	313.50	0.21	2.89E-02	5.00E-03	8.06E-05	2.18E-15	314.00	0.37	2.61E+00	2.03E+00	1.11E-03	3.01E-14
11/23/87	47	2213	46	242.30	0.21	2.67E-02	3.33E-03	5.02E-05	1.36E-15	242.80	0.37	2.78E+00	1.97E+00	9.97E-04	2.69E-14
12/03/87	48	2071	35	432.30	0.21	4.50E-02	6.11E-03	8.94E-05	2.42E-15	432.80	0.37	2.99E+00	1.88E+00	1.45E-03	3.92E-14
12/11/87	49	1627	44	264.30	0.21	2.28E-02	4.44E-03	5.37E-05	1.45E-15	264.80	0.37	2.48E+00	1.90E+00	9.67E-04	2.61E-14
12/19/87	50	1606	30	218.00	0.21	6.11E-03	2.78E-03	9.88E-06	2.67E-16	217.50	0.37	2.38E+00	1.90E+00	7.96E-04	2.15E-14
12/31/87	52	2263	24	173.50	0.21	2.22E-02	1.67E-03	4.33E-05	1.17E-15	174.00	0.37	2.54E+00	1.93E+00	7.27E-04	1.96E-14

TABLE B7. LOW VOLUME AIR SAMPLER DATA - SITE 3 - 1988

COMPUTER DATE	WK OF YR	SAMPLE VOLUME (m3)	WT GAIN (mg)	ALPHA DECAY (h)	ALPHA EFF (c/d)	GROSS ALPHA (c/s)	BKG ALPHA (c/s)	ALPHA CONC (Bq/m3)	ALPHA CONC (uCi/mL)	BETA DECAY (h)	BETA EFF (c/d)	GROSS BETA (c/s)	BKG BETA (c/s)	BETA CONC (Bq/m3)	BETA CONC (uCi/mL)
01/07/88	1	1411	22	169.50	0.21	2.00E-02	1.67E-03	6.19E-05	1.67E-15	170.00	0.37	2.65E+00	1.89E+00	1.46E-03	3.93E-14
01/14/88	2	1293	18	196.00	0.21	1.22E-02	3.89E-03	3.07E-05	8.29E-16	196.50	0.37	2.45E+00	1.89E+00	1.17E-03	3.15E-14
01/22/88	3	1605	20	269.30	0.21	2.11E-02	3.33E-03	5.27E-05	1.43E-15	269.80	0.37	2.49E+00	1.89E+00	1.02E-03	2.76E-14
02/01/88	4	2108	32	169.00	0.21	2.28E-02	3.33E-03	4.39E-05	1.19E-15	169.50	0.37	2.57E+00	1.92E+00	8.30E-04	2.24E-14
02/08/88	5	1305	12	194.50	0.21	1.72E-02	5.00E-03	4.46E-05	1.21E-15	194.00	0.37	2.46E+00	1.92E+00	1.10E-03	2.98E-14
02/18/88	7	1914	60	194.50	0.21	2.28E-02	4.44E-03	4.56E-05	1.23E-15	195.00	0.37	2.58E+00	1.85E+00	1.04E-03	2.80E-14
02/25/88	8	1491	27	170.30	0.21	1.33E-02	2.22E-03	3.55E-05	9.59E-16	169.80	0.37	2.41E+00	1.96E+00	8.17E-04	2.21E-14
03/04/88	9	1515	30	291.50	0.22	2.39E-02	5.00E-03	5.67E-05	1.53E-15	292.00	0.36	2.56E+00	1.96E+00	1.11E-03	3.00E-14
03/09/88	10	1111	23	169.80	0.22	1.28E-02	5.00E-03	3.18E-05	8.60E-16	170.30	0.36	2.33E+00	1.96E+00	9.22E-04	2.49E-14
03/16/88	11	1552	65	197.80	0.22	2.61E-02	3.89E-03	6.51E-05	1.76E-15	197.30	0.36	2.40E+00	1.91E+00	8.79E-04	2.38E-14
03/24/88	12	1998	48	166.30	0.22	2.00E-02	3.33E-03	3.79E-05	1.02E-15	166.80	0.36	2.69E+00	1.92E+00	1.07E-03	2.88E-14
03/31/88	13	1633	100	267.30	0.22	2.22E-02	6.11E-03	4.48E-05	1.21E-15	267.80	0.36	2.34E+00	1.88E+00	7.74E-04	2.09E-14
04/06/88	14	1367	32	190.50	0.22	9.44E-03	4.44E-03	1.66E-05	4.49E-16	191.00	0.36	2.47E+00	1.91E+00	1.12E-03	3.04E-14
04/13/88	15	1579	47	188.50	0.22	2.06E-02	3.33E-03	4.96E-05	1.34E-15	189.00	0.36	2.45E+00	1.93E+00	9.19E-04	2.48E-14
04/20/88	16	1546	33	165.50	0.22	1.33E-02	5.56E-03	2.29E-05	6.18E-16	166.00	0.36	2.29E+00	1.89E+00	7.23E-04	1.95E-14
04/27/88	17	1494	68	191.50	0.22	1.67E-02	3.33E-03	4.06E-05	1.10E-15	192.00	0.36	2.22E+00	1.90E+00	5.96E-04	1.61E-14
05/05/88	18	1786	42	288.25	0.22	2.28E-02	3.33E-03	4.95E-05	1.34E-15	288.75	0.36	2.49E+00	1.98E+00	7.99E-04	2.16E-14
05/13/88	19	1699	54	242.50	0.22	1.78E-02	3.89E-03	3.72E-05	1.00E-15	243.00	0.36	2.57E+00	1.91E+00	1.08E-03	2.91E-14
05/19/88	20	1369	45	169.30	0.22	1.67E-02	3.33E-03	4.43E-05	1.20E-15	169.80	0.36	2.45E+00	1.90E+00	1.10E-03	2.97E-14
05/27/88	21	1803	30	262.75	0.22	1.33E-02	3.33E-03	2.52E-05	6.81E-16	263.25	0.36	2.71E+00	1.96E+00	1.14E-03	3.09E-14
06/03/88	22	1502	42	172.50	0.22	1.67E-02	4.44E-03	3.70E-05	1.00E-15	173.00	0.36	2.64E+00	1.94E+00	1.29E-03	3.50E-14
06/09/88	23	1372	42	192.80	0.22	2.22E-02	2.22E-03	6.63E-05	1.79E-15	193.30	0.36	2.60E+00	1.89E+00	1.45E-03	3.91E-14
06/16/88	24	1429	49	170.25	0.22	1.72E-02	5.56E-03	3.71E-05	1.00E-15	170.75	0.36	3.37E+00	2.40E+00	1.90E-03	5.13E-14
06/23/88	25	1458	48	166.70	0.23	1.72E-02	2.22E-03	4.47E-05	1.21E-15	167.20	0.35	2.82E+00	2.12E+00	1.37E-03	3.71E-14
06/29/88	26	728	17	217.50	0.23	1.17E-02	5.00E-03	3.98E-05	1.08E-15	218.00	0.35	2.28E+00	1.91E+00	1.45E-03	3.92E-14
07/07/88	27	1654	25	170.00	0.23	1.78E-02	5.56E-03	3.21E-05	8.68E-16	170.50	0.35	2.53E+00	1.95E+00	1.01E-03	2.72E-14
07/14/88	28	1373	16	168.50	0.23	1.22E-02	2.22E-03	3.17E-05	8.56E-16	169.00	0.35	2.26E+00	1.97E+00	6.08E-04	1.64E-14
07/21/88	29	1442	24	193.25	0.23	1.44E-02	6.67E-03	2.35E-05	6.34E-16	193.75	0.35	2.50E+00	1.96E+00	1.07E-03	2.89E-14
08/11/88	32	1340	17	387.80	0.22	1.67E-02	2.78E-03	4.71E-05	1.27E-15	386.80	0.36	3.07E+00	2.55E+00	1.08E-03	2.91E-14
08/18/88	33	1344	22	217.40	0.22	6.67E-03	2.78E-03	1.32E-05	3.55E-16	216.40	0.36	2.94E+00	2.55E+00	8.13E-04	2.20E-14
08/25/88	34	1127	27	419.00	0.22	1.56E-02	4.44E-03	4.48E-05	1.21E-15	419.50	0.36	2.75E+00	2.37E+00	9.49E-04	2.56E-14
09/20/88	38	1418	24	172.00	0.22	2.11E-02	6.11E-03	4.81E-05	1.30E-15	171.50	0.36	3.00E+00	2.47E+00	1.04E-03	2.80E-14
10/04/88	40	1448	26	241.00	0.23	2.11E-02	4.44E-03	5.00E-05	1.35E-15	197.80	0.35	3.24E+00	2.71E+00	1.06E-03	2.86E-14
10/11/88	41	1375	29	217.30	0.23	1.78E-02	4.44E-03	4.22E-05	1.14E-15	216.80	0.35	3.35E+00	2.63E+00	1.50E-03	4.05E-14
10/18/88	42	1394	32	169.30	0.23	3.00E-02	5.56E-03	7.62E-05	2.06E-15	168.80	0.35	3.16E+00	2.43E+00	1.49E-03	4.02E-14
11/06/88	44	1124	55	173.00	0.22	1.44E-02	1.67E-03	5.17E-05	1.40E-15	172.50	0.36	3.15E+00	2.82E+00	8.02E-04	2.17E-14
11/16/88	45	1619	38	341.00	0.22	2.56E-02	4.44E-03	5.93E-05	1.60E-15	319.20	0.36	3.03E+00	2.48E+00	9.41E-04	2.54E-14
11/21/88	46	923	22	222.00	0.22	1.11E-02	4.44E-03	3.28E-05	8.87E-16	221.50	0.36	2.79E+00	2.48E+00	9.50E-04	2.57E-14
11/29/88	48	1531	45	172.50	0.22	1.56E-02	1.67E-03	4.12E-05	1.11E-15	172.00	0.36	3.28E+00	2.52E+00	1.38E-03	3.73E-14
12/06/88	49	1475	42	172.30	0.22	1.72E-02	3.33E-03	4.28E-05	1.16E-15	171.80	0.35	3.00E+00	2.30E+00	1.35E-03	3.64E-14
12/13/88	50	1633	25	171.00	0.22	1.61E-02	1.67E-03	4.02E-05	1.09E-15	171.50	0.35	3.05E+00	2.37E+00	1.20E-03	3.23E-14
12/20/88	51	1375	23	171.00	0.22	1.89E-02	0.00E+00	6.24E-05	1.69E-15	170.50	0.33	2.70E+00	2.16E+00	1.21E-03	3.27E-14
12/27/88	52	1475	22	173.30	0.22	1.56E-02	2.22E-03	4.11E-05	1.11E-15	172.80	0.33	2.79E+00	2.53E+00	5.48E-04	1.48E-14

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