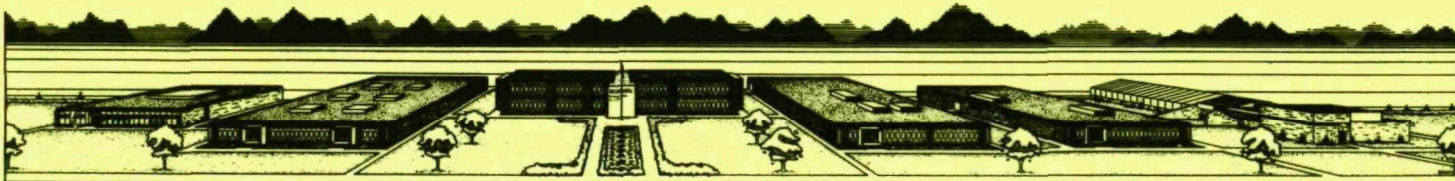


FINAL REPORT OF OFF-SITE SURVEILLANCE
FOR THE
PIN STRIPE EVENT, APRIL 25, 1966

by
Environmental Surveillance
Western Environmental Research Laboratory
ENVIRONMENTAL PROTECTION AGENCY

Published February 1972

This surveillance performed under a Memorandum of
Understanding (No. SF 54 373)
for the
U.S. ATOMIC ENERGY COMMISSION



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*Note: At the time this work was performed the Laboratory was named the Southwestern Radiological Health Laboratory, and was part of the U. S. Department of Health, Education, and Welfare, Public Health Service, Environmental Control Administration, Bureau of Radiological Health.

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Grateful appreciation is extended to the State Health Departments of California, Colorado, Idaho, and Utah for their assistance and cooperation, which was essential to the completion of the Surveillance Project.

Special appreciation is extended to the many off-site residents for their invaluable contribution of time in providing milk, water, and vegetation samples, and to those who agreed to participate in the in vivo thyroid analysis.

ABSTRACT

The Public Health Service provided off-site surveillance in support of the Pin Stripe Event conducted on April 25, 1966, at the Nevada Test Site. This support consisted of tracking the effluent, monitoring radiation dosage to the off-site population, collecting and analyzing environmental samples of air, milk, water and vegetation, and conducting an intensive public relations program for the off-site residents.

The maximum net gamma exposure rate measured by a portable survey instrument was 8 mR/hr. This reading was taken along a gravel road used only occasionally and well away from any continuously occupied area. The highest net gamma exposure rate measured at a continuously occupied location was 1.5 mR/hr. The above exposure rates were taken during cloud passage.

The maximum gross beta concentration found on an air filter from a continuously populated area was 25,000 pCi/m³. This filter showed a ¹³¹I concentration of 5300 pCi/m³. The highest concentration of ¹³¹I in a domestic water supply was 3860 pCi/l and the highest concentration of ¹³¹I in a single milk sample was 4800 pCi/l. This concentration (4800 pCi/l) appeared three days after the event and was not representative of the levels of ¹³¹I actually consumed by any off-site resident. Dilution of milk from this dairy with milk from dairies outside of the contaminated area, lowered the level of ¹³¹I to a maximum of 100 pCi/l.

Off-site residents in the affected area, who volunteered, were counted for thyroid burdens in a mobile thyroid counting trailer. The highest total integrated dose was less than 300 mrad.

All levels of environmental radiation contamination were below presently accepted safety criteria as established by the U. S. Atomic Energy Commission Standards for Radiation Protection, chapter 0524, dated 8/12/63.

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INTRODUCTION

The Pin Stripe Event was an underground nuclear experiment conducted as part of the Department of Defense Weapons Testing Program. Pin Stripe was detonated at 1138 PDT, (1838 GMT) on April 25, 1966, in Area 11, at the Atomic Energy Commission's Nevada Test Site.

Radioactive effluent was accidentally released. A cloud rose to about 5500 feet within 9 minutes after H-hour, and by H + one hour, the cloud had risen to about 10,500 feet mean sea level. Southwesterly winds carried the released material northeasterly into the off-site area. Seepage of gaseous fission products continued for several days following this event. Wind direction shifted approximately 180° by April 27 and small amounts (less than 10 pCi/m^3) of fresh fission products were found on prefilters as far south as Indio, California. By May 4 all air sampling media were at background levels.

The subject of this report is the off-site surveillance provided by the Public Health Service (PHS) for the U. S. Atomic Energy Commission (AEC) in support of the Pin Stripe Event. Under a Memorandum of Understanding with the AEC, the PHS conducts a program of radiological monitoring and environmental sampling in the off-site area surrounding the Nevada Test Site and the Nellis Air Force Range. The overall complex of the Nevada Test Site and the Nellis Air Force Range includes the Nuclear Rocket Development Station and the Tonopah Test Range and for simplicity will be called the test range complex throughout this report.

I. OPERATIONAL PROCEDURES

A. External Exposure Measurements

1. Ground Monitoring

Ground monitors tracked the effluent cloud with portable radiation detection instruments. Each monitor was equipped with the following instruments: Eberline E-500B, Precision Model 111 Standard "Scintillator", and Victoreen Radector Model No. AGB-50-B-SR.

The Eberline E-500B has a range of 0 to 200 milliroentgens per hour (mR/hr) beta and/or gamma over four scales with an external halogen filled G.M. tube detector and a 0 to 2000 mR/hr gamma only range from an internal Anton 302 tube detector.

The Precision Model 111 Standard "Scintillator" is used primarily for low level gamma detection and provides for a range of 0 to 5 mR/hr over six linear scales.

The Radector has a range of 0.05 to 50,000 mR/hr over two logarithmic scales. This instrument uses an inert gas ionization chamber as the detector.

The above instruments are accurate to within ± 20 percent as calibrated with ^{137}Cs and can be read to two significant figures.

2. Aerial Cloud Tracking

A U. S. Air Force U-3A aircraft, manned by two PHS monitors equipped with portable instruments identical to those of the ground monitors, tracked the effluent cloud to assist in positioning

ground monitors. In addition to the instruments already described, the aerial monitors used a Victoreen Radector, Model II, (0.1 to 1,000,000 mR/hr range) and were also evaluating a Baird Atomic Gamma Scintillation Rate Meter Type NE-148A with a 0 - 3 mR/hr range in three linear scales. Two PHS C-45 aircraft containing various sampling and measurement equipment were also used as aids in cloud tracking. However, their primary purpose was cloud sampling and measurements to determine cloud size and content. The results of this surveillance are the subject of a separate report.

3. Exposure Rate Recorders

Eberline Model RM-11 exposure rate recorders were located at 23 stations around the test range complex. (See Figure 1). These recorders use a Geiger tube detector with a range of 0.01 to 100 mR/hr. Exposure rate is recorded on a 4-cycle log scale strip chart with a capacity of 30 hours continuous recording. These recorders are accurate to within ± 20 percent calibrated with a ^{137}Cs source.

4. Film Badges and Dosimetry

The PHS routinely maintains 65 film badge stations containing 5 film badges each off the test range complex and assigns one film badge to each of approximately 120 off-site residents. The badge uses Du Pont type 555 film. This film is accurate to ± 50 percent in the 30 to 100 mR range and ± 10 percent in the 100 to 2000 mR range. The lower limit of detection is 30 mR.

The PHS also maintains 21 stations which are equipped with three Edgerton, Germeshausen and Grier Model TL-12 thermoluminescent dosimeters (TLD). The detection range of this device is 5 mR to 5000 R with reading accuracy at ± 10 percent and with a standard deviation at the 98 percent confidence level of 2.83%.

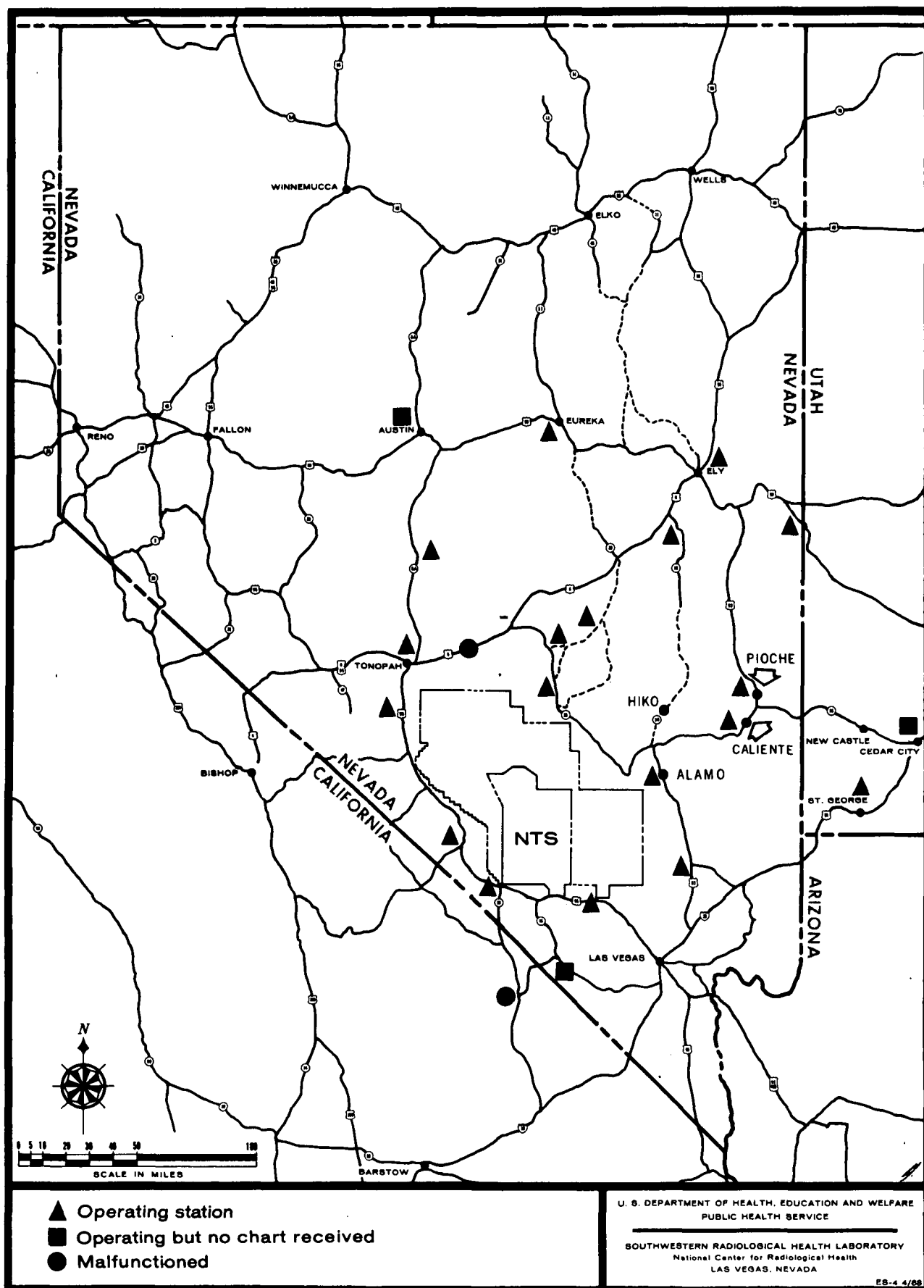


Figure 1. RM-11 Exposure rate recorder stations.

B. Environmental Sampling

1. Air Samples

On the day of the test, the AEC-PHS Air Surveillance Network (ASN) consisted of 104 Gelman "Tempest" air samplers. These samplers operate continuously at off-site locations with one or more samplers located in each state west of the Mississippi River except Montana and North Dakota. The network was supplemented by six standby stations located in the states of Colorado, Idaho, Utah and Wyoming. Standby stations are operated only when the station operator is notified by the Southwestern Radiological Health Laboratory (SWRHL) to begin sampling. There were also five portable air samplers placed downwind.

The "Tempest" air sampler used by the SWRHL uses a Gast Model 1550 vacuum pump driven by an electric motor. The pump has a flow rate of approximately 10 cfm.

The sampler is designed to use a 4-inch diameter filter paper (prefilter) and a Mine Safety Appliance Co. (MSA) charcoal cartridge. The ASN uses Whatman 541 filter paper for routine air sampling. The total volume of air sampled is calculated from an average vacuum reading (which in turn indicates the average flow rate) and the total time of sampling.

Air sampling stations operating during Pin Stripe surveillance activities are shown in Figures 2 and 3. In addition to the "Tempest" samplers, each mobile monitoring team was equipped with portable gasoline generator powered air samplers using the same filters as the "Tempest". The air mover in this system is a Gast Model 7040 positive displacement pressure-vacuum pump coupled to a Rockwell Model 415 gas meter for measurement of air flow. The flow rate of this system averages 6 cfm.

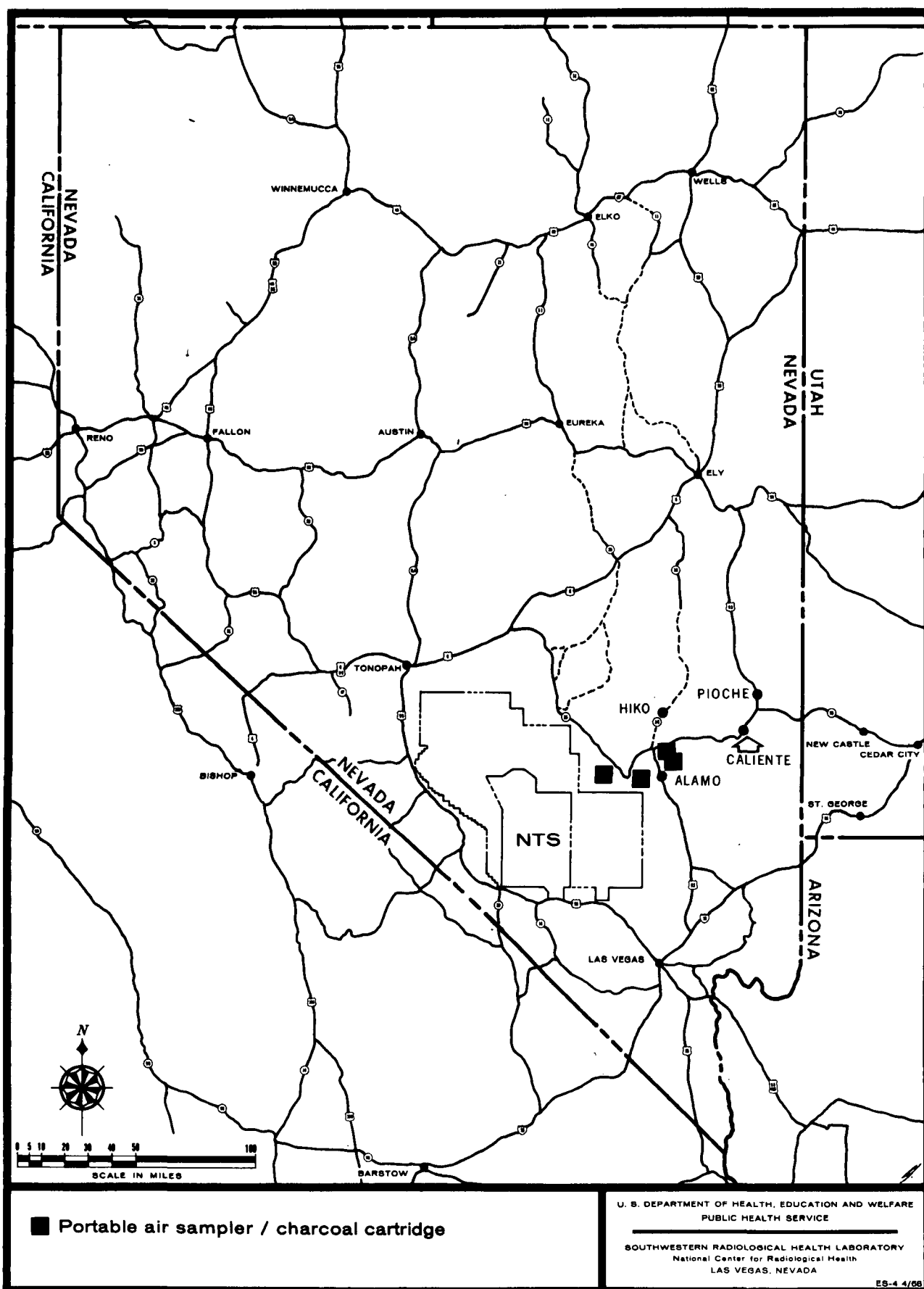


Figure 2. Portable air samplers operating in Nevada during the Pin Stripe Event.

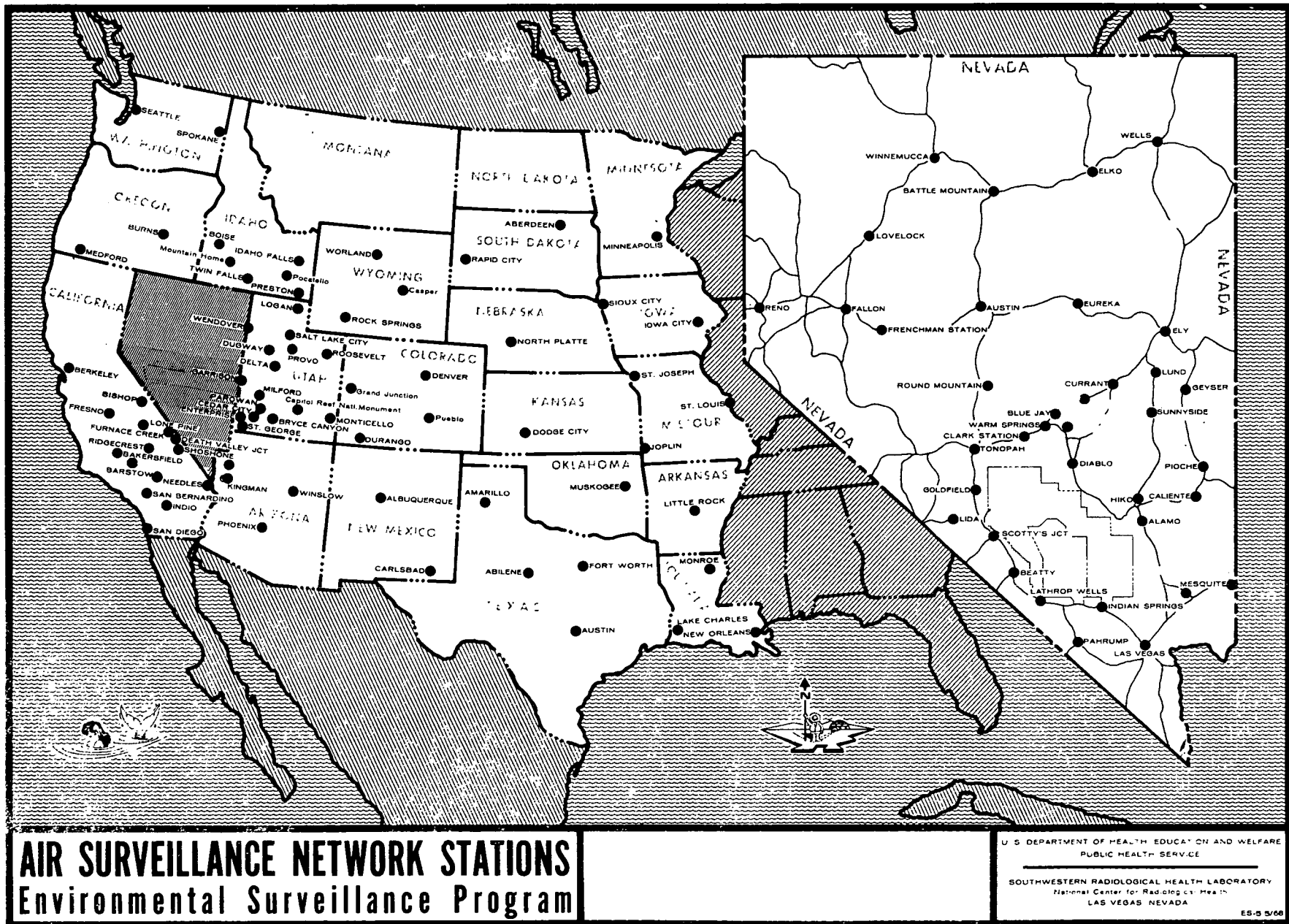


Figure 3. Air sampling stations operating during the Pin Stripe Event.

2. Milk Samples

The SWRHL milk sampling program consists of a routine milk sampling network, a standby milk sampling network, and special sampling in the event of a release of airborne radioactivity from nuclear testing activities.

From 20 to 30 producing dairy farms and individual family cows in Nevada, western Utah, and eastern California, are routinely sampled each month. The number sampled varies because of the availability of fresh cows on ranches producing milk for their own use. Normally these samples are collected by personnel from the laboratory.

Approximately 155 producing dairies in 11 western states are provided mail-in milk sample containers; pre-labeled, franked, and with appropriate instructions. Any or all of these sampling locations can be activated by telephone through the regional offices of the Public Health Service. The regional office contacts the appropriate state milk control agency which in turn contacts the local milk control agency or the producer. A follow-up telegram is sent to the regional Public Health Service office. This procedure requires from one to four days before the first sample is collected, depending upon the organizational structure of the state milk control agencies.

The SWRHL also conducts a continuous survey of off-site milk sampling locations. Possible sources for milk sampling are indexed and located on milk sampling maps. In the event of a release of radioactive effluent, monitors are able to begin sampling an area immediately.

3. Water Samples

Approximately 80 water samples are routinely collected each month from wells, streams, ponds, lakes and urban water systems. After a contaminating event, sampling is expanded to include all domestic and livestock water sources in the affected area. Water samples are collected at all locations where milk samples are collected, with the exception of the standby milk sampling network. Precipitation samples are collected when possible.

4. Vegetation Samples

Vegetation samples are collected only after a known release of radioactive effluent. These samples are collected to delineate deposition pattern, to determine where milk samples should be obtained, and to estimate radioisotope concentrations in milk. In addition to the wild plants (such as creosote bush), pasture and dry feed samples are collected when available.

Because of the highly variable collection ability of various plants, the impossibility of establishing completely consistent collection and counting techniques, and the highly complex role of micro-meteorology in ground deposition, it is not practical to use vegetation results to assess human exposures. Vegetation sampling results are, therefore, reported as fresh fission products detectable or not detectable. At the time of the event, dairy cattle in the fallout sectors were being fed stored feed, hay, green chop and some cows were on pasture. Samples of the feed which were representative of the cows' feed at different locations were collected.

5. In Vivo Thyroid Investigation

Seventy-eight off-site residents were counted for specific gamma emitting isotopes in a mobile thyroid counting trailer following this event.

II. ANALYTICAL PROCEDURES

A. Air Samples

All air samples are returned to the SWRHL in Las Vegas for analysis. Filters are counted for gross beta activity in a Beckman "Wide Beta" low background (6 ± 1 cpm beta) proportional system which has an efficiency of 45% for 0.54 MeV betas. If significant activity (10 pCi/m^3) is detected on the initial count, a minimum of two additional counts are made in the first 48 hours following collection. All other filters are recounted at five and twelve days after collection. Computation of activity is based on establishing a decay constant for each sample and this constant is used to extrapolate the activity to the end of the collection period. The decay equation used is $A/A_0 = e^{-\lambda t}$.

Gamma emitting isotopes on filter papers and charcoal cartridges are identified and quantitated by placing them directly on a 4- by 4-inch NaI(Tl) crystal coupled to a TMC Model 404-C gamma pulse height analyzer calibrated for energies of 0-2 MeV. Quantities determined are extrapolated to the end of the collection period using the individual decay constants.

Average concentration of activity during cloud passage cannot always be calculated since it is not possible to define the duration of cloud passage at all locations. However, the integrated air concentrations, expressed as pCi-hr/m^3 , may be directly compared for the various stations, in addition to serving as a measure of the potential inhalation exposure.

B. Milk and Water Samples

Milk and water samples are collected in one-gallon quantities. These samples are emptied into 3.5-liter Marinelli beakers and are counted on 4- by 4-inch crystals for gamma analysis. If, for any reason, a full 3.5-liter sample cannot be obtained, the sample volume is increased to 3.5 liters by the addition of distilled water to maintain a uniform counting geometry, and appropriate adjustments are made to calculate the activity concentration in the original sample. When this is done, the threshold detectabilities given in Table 1 are proportionately increased. In addition to gamma spectrometry, most milk samples containing radioiodine are analyzed by radiochemistry for $^{89-90}\text{Sr}$ after gamma analysis.

C. Vegetation Samples

Upon arrival in the laboratory, vegetation samples are placed in clean plastic bags and are given an immediate count on a 4- by 4-inch NaI(Tl) crystal, connected to a scaler-timer, for gross gamma activity to determine which samples and, therefore, which locations may have been contaminated. The samples are then analyzed by gamma spectroscopy on the same systems as the other sample types.

D. Sensitivity

Statistical evaluation of gamma spectral analyses is difficult and open to discussion. However, on the basis of experience with various types of samples, empirical values have been determined as the approximate threshold detectabilities for various isotopes on the sample types usually collected. These are listed in Table 1 and necessarily include the following assumptions:

- a. Count time in days after formation as indicated by footnotes.
- b. Prefilters collect unfractionated fission products resulting in a complex spectrum.
- c. MSA charcoal collects gaseous fission products only (primarily iodines).
- d. An eight isotope matrix is employed for computation and isotopes other than those examined are present in amounts which are small relative to those eight.
- e. Natural activity on air samples is approximately five times system background.

Table 1. Threshold detectability at time of count of several radio-nuclides in various samples, pCi.

| Sample type | Notes | ^{131}I | $^{132}\text{Te-I}$ | ^{133}I | ^{135}I | ^{137}Cs | $^{140}\text{Ba-La}$ | Length of count |
|---------------|-------|------------------|---------------------|------------------|------------------|-------------------|----------------------|-----------------|
| Filter | 1 | 500 | 1000 | 500 | 1000 | | 500 | 10 min. |
| | 2 | 200 | | 200 | | | 200 | 10 min. |
| Charcoal | 1 | 200 | | 400 | 200 | | 400 | 10 min. |
| Cartridge | 2 | 100 | | | 100 | | | 10 min. |
| Water (pCi/l) | 3 | 20 | 40-50 | 20-30 | 40-50 | | 20 | 40 min. |
| Milk (pCi/l) | 4 | 20 | | 20-30 | | 10 | 20 | 40 min. |

1 - Counted at less than 3 days after formation

2 - Counted at 3 days or more after formation

3 - With $^{137}\text{Cs} \leq 100$ pCi

4 - Assuming insignificant amounts of other nuclides, and all given isotopes less than 10 times the detection limit.

III. RESULTS

The Pin Stripe venting resulted in gaseous and particulate contamination in the off-site populated areas.

Ground monitors were positioned according to data obtained from aerial and on-site monitoring and U. S. Weather Bureau predictions (ESSA-ARL). Wind speeds and directions for five periods before and after detonation are shown in Table 2.

Table 2. Upper air data from Yucca Lake on April 25, 1966.

| Height (Ft. MSL) | Wind direction & speed (Deg/Kts) at times indicated(hrs/PDT) | | | | |
|---------------------|--|--------|--------|--------|--------|
| | 0600 | 1142 | 1400 | 1525 | 1600 |
| Surface | Calm | 170/12 | 230/13 | 220/12 | 180/10 |
| 5,000 | 230/04 | 220/10 | 220/06 | 220/12 | 200/10 |
| 6,000 | 250/12 | 230/13 | 220/10 | 220/10 | 210/12 |
| 7,000 | 240/09 | 230/10 | 220/13 | 230/08 | 220/11 |
| 9,000 | 250/11 | 220/07 | 210/10 | 230/10 | 230/11 |
| 10,000 | 250/07 | 220/05 | 190/12 | 240/12 | 230/06 |
| 11,000 | 230/02 | 220/06 | 190/14 | 230/13 | 240/07 |
| 12,000 | 210/02 | 210/08 | 220/10 | 240/13 | 260/12 |
| 13,000 | 190/02 | 210/08 | 220/08 | 250/13 | 250/11 |
| 14,000 | 240/06 | 270/10 | 270/08 | 270/14 | 280/13 |

A. Exposure Rate Measurements

1. Aerial Monitoring

The cloud tracking mission of the U. S. Air Force U-3A aircraft lasted from 1135 to 1642 hours, PDT. Since the measurements

taken by this aircraft serve only to augment the effectiveness of the surveillance program (particularly the positioning of ground monitors), and do not represent exposures to people on the ground, they are not presented in this report.

2. Ground Monitoring

Pin Stripe effluent was first detected off-site, northeast of Groom Lake at 1355 hours and arrived at Highway 25, 6.5 miles W of Hancock Summit at 1435. By 1630 hours, gamma exposure rates above background were detected from Coyote Summit to Alamo, Nevada, along Highways 25 and 93. Cloud arrival at various locations indicated the cloud was moving at about 15-17 miles per hour. The furthest north that effluent was detected by a ground monitor was at Pioche, 112 miles northeast of ground zero. The cloud reached this location at about 1800 hours. Exposure rates along Highway 25 ranged from 0.07 to 6.0 mR/hr with the majority of the readings around 1.0 mR/hr. The maximum exposure rate measured (at 3 feet above ground level) in the off-site area was 8 mR/hr, net gamma, between 1402 and 1405 hours, PDT, 18 miles NE of Groom Lake. This location is along a gravel road used only occasionally by vehicles.

The maximum reading at a continuously populated area was 1.5 mR/hr at Hiko at 1600, PDT. Selected monitoring data are presented in Table 3. Estimated infinite whole body gamma exposures derived from ground monitoring data at two locations are shown in Table 4. These estimated infinite exposures are based on monitoring readings obtained after cloud passage and not on the peak readings obtained during cloud passage.

Table 3. Selected ground monitoring results in off-site populated areas April 25, 1966, at 3 feet above ground level.*

| Location | Time of peak γ exposure rate PDT | Net peak γ ex- posure rate mR/hr* |
|-------------|--|---|
| Alamo | 1555-1600 | 0.23 |
| Ash Springs | 1610 | 0.9 |
| Caliente | 1814 | 0.02 |
| Hiko | 1600 | 1.5 |
| Pioche | 1840-1856 | 0.05 |

*E-500B portable survey instrument.

Table 4. Estimated infinite gamma exposure at two populated locations.

| Location | Net γ at 24 hrs | Infinite exposure |
|---------------|-----------------|-------------------|
| Hiko, Nevada | 0.1 | 12 mR |
| Alamo, Nevada | 0.04 | 5 mR |

3. Exposure Rate Recorders

RM-11 recorder charts collected after the Pin Stripe Event showed exposure rates above background at Alamo, Caliente and Pioche. Results are shown in Table 5.

Table 5. Exposure rates occurring off the test range complex on April 25, 1966, as measured by RM-11 recorders.

| Location | Time of peak exposure rate (PST) | Time exposure rates rose above background | Net peak ex- posure rate mR/hr |
|----------|--|--|--------------------------------------|
| Alamo | 4/25 1600 | 4/25, 1510 | 0.15 |
| Caliente | 4/25 1755-1805 | 4/25, 1740 4/25, 1925 | 0.01 |
| Pioche | 4/25 1845 | 4/25, 1750 | 0.04 |

4. Film Badges

One film badge collected after the Pin Stripe Event showed

an exposure at the detection limit. This badge was taken from a film badge station at Hancock Summit, an unpopulated location on Highway 25. This badge showed a total exposure of 30 mR and was exposed from 3/31/66 - 5/10/66. TLD's from Hancock Summit showed no detectable exposures above normal background levels, nor did TLD's from any other location show net exposures above background.

No personnel badges showed exposures at or above the detection limit.

B. Environmental Sampling

1. Air Sampling

Nineteen permanent air sampling stations and five temporary-portable stations in the off-site area showed detectable amounts of fresh fission products (primarily radioiodines) on prefilters, cartridges, or both. These stations are shown in Figure 4. The area in which fresh fission products were found by air sampling, extended to Indio, California, on the south; Ridgecrest, California, on the west; Salt Lake City, Utah, to the northeast; and Denver, Colorado, to the east.

Wind direction on the day of the event was from the southwest, therefore the highest concentrations were found to the northeast of surface ground zero. Comparison of radioiodine concentration on pre-filters and charcoal cartridges suggests that the radioiodines were mostly particulate. This assumption is strengthened by the fact that considerable visible material was ejected at the time of the detonation.

Wind direction changed approximately 180° late on April 26 or early on April 27. Seepage of gaseous material from surface zero continued for several days. This material was carried to the south

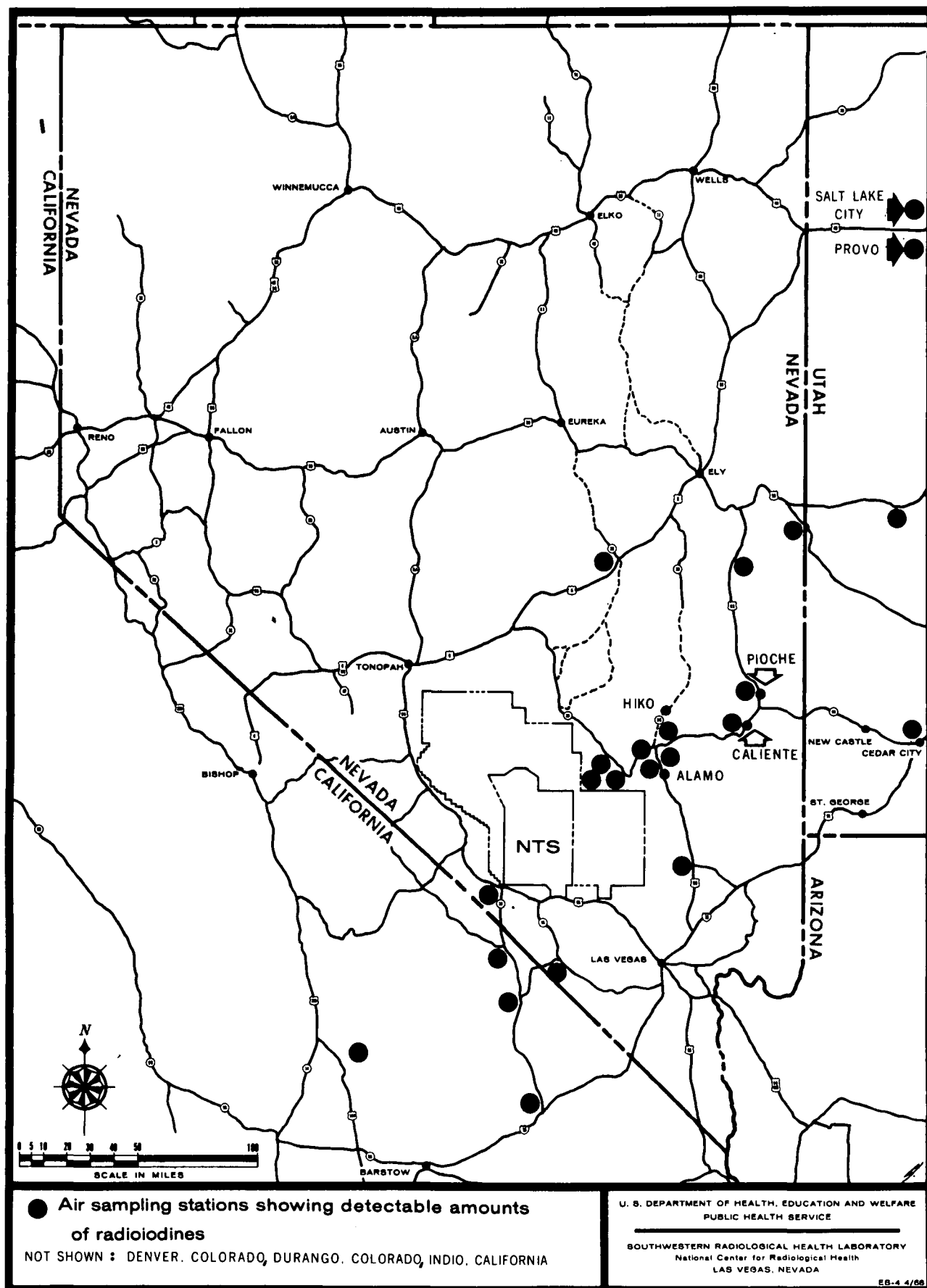


Figure 4.

and was detected by air samplers as far south as Indio, California. A small amount (0.5 pCi/m^3) of ^{131}I was detected on a charcoal cartridge exposed at Alamo, Nevada, as late as May 3. Examination of air filters was limited to gamma pulse height analysis and gross beta counting. It is not possible, therefore, to definitely determine whether such a small amount of radioiodine was gaseous material from continuing seepage or resuspension of particulate material deposited earlier. By May 4 no stations showed detectable amounts of fresh fission products.

Table 7 lists eight stations where concentrations of ^{131}I were in excess of 50 pCi/m^3 . All other stations, where gamma pulse height analysis was performed on filters, were below 10 pCi/m^3 ^{131}I . All stations showing detectable amounts of ^{131}I are listed in Appendix I.

2. Water Sampling

A total of 187 water samples was collected by the off-site surveillance program for Pin Stripe. Sampling locations are shown in Figure 5, and all water sampling results are listed in Appendix II. Four samples from one domestic tap showed measureable concentrations of ^{131}I . These are shown in Table 6. These concentrations of ^{131}I at the Davis Ranch were due to the completely open supply from which the domestic water was taken.

Table 6. Domestic water supply samples containing ^{131}I pCi/l.

| Location | Date Collected | Source | Gross Beta* | Gross Alpha | ^{131}I | ^{132}I | ^{133}I | ^{135}I |
|--------------|----------------|-----------|-------------|-------------|------------------|------------------|------------------|------------------|
| Hiko, Nevada | 4/26 | Open tank | 151 | 1.4 | 3860 | 80 | 270 | - |
| Davis Ranch | 4/27 | " " | 35 | 0.1 | 50 | 30 | 60 | - |
| Davis Ranch | 4/28 | " " | 19 | 2.5 | 30 | - | - | - |
| Davis Ranch | 4/30 | " " | 8 | 3.3 | 40 | - | - | - |

*Activity other than iodine.

Table 7. Air sampling stations with concentrations of ^{131}I in excess of 50 pCi/m³ on prefilters.

| Location | COLLECTION | | | | | | | ISOTOPIC ANALYSIS | | | | | | | |
|----------------------------|-----------------|----------|------------|--------------------------|-----------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|
| | Sampling Period | | Total Hrs. | Volume (m ³) | Collector | Gross Beta | | ^{131}I | | ^{132}I | | ^{133}I | | ^{135}I | |
| | Start Day | Stop Day | | | | pCi/m ³ | pCi-Hr/m ³ | pCi/m ³ | pCi-Hr/m ³ | pCi/m ³ | pCi-Hr/m ³ | pCi/m ³ | pCi-Hr/m ³ | pCi/m ³ | pCi-Hr/m ³ |
| 6.5 mi W of Hancock Summit | 25 | 1413 | 25 | 1700 | 3.1 | 26 | P | 50,000 | 160,000 | 3,500 | 11,000 | 12,000 | 37,000 | 4,100 | 13,000 |
| | | | | | | | C | | 150 | | 470 | 1,200 | 3,700 | 500 | 1,600 |
| 18 mi NE of Groom Lake | 25 | 1400 | 25 | 1535 | 1.6 | 32 | P | 45,000 | 72,000 | 5,100 | 8,200 | 38,000 | 61,000 | 12,000 | 19,000 |
| | | | | | | | C | | 290 | | 460 | 2,600 | 4,200 | 880 | 1,400 |
| Hancock Summit | 25 | 1435 | 25 | 1745 | 3.1 | 32 | P | 34,000 | 110,000 | 2,600 | 8,100 | 8,900 | 28,000 | 3,000 | 9,300 |
| | | | | | | | C | | 170 | | 530 | 1,500 | 4,600 | 660 | 2,000 |
| Ash Springs, Nevada | 25 | 1430 | 25 | 1755 | 3.3 | 35 | P | 25,000 | 83,000 | 5,300 | 17,000 | 18,000 | 59,000 | 5,600 | 18,000 |
| | | | | | | | C | | 130 | | 430 | 950 | 3,100 | 290 | 960 |
| Hiko-Crystal Springs | 25 | 1430 | 25 | 1810 | 3.8 | 35 | P | 21,000 | 80,000 | 1,600 | 6,100 | 6,800 | 26,000 | 1,900 | 7,200 |
| | | | | | | | C | | 400 | | 1,500 | 1,200 | 4,600 | 800 | 3,000 |
| Hiko, Nevada | 25 | 0810 | 25 | 1800 | 10.9 | 226 | P | 3,500 | 38,000 | 510 | 5,600 | 1,900 | 21,000 | 650 | 7,100 |
| | | | | | | | C | | 39 | | 430 | 330 | 3,600 | 150 | 1,600 |
| Pioche, Nevada | 25 | 1525 | 25 | 1925 | 3.9 | 81 | P | 2,200 | 9,000 | 1,100 | 4,300 | 200 | 800 | 350 | 1,400 |
| | | | | | | | C | | 53 | | 210 | 40 | 160 | 250 | 970 |
| Alamo, Nevada | 25 | 0730 | 26 | 0725 | 23.8 | 407 | P | 710 | 17,000 | 57 | 1,400 | 140 | 3,300 | 110 | 2,600 |
| | | | | | | | C | | 19 | | 450 | 86 | 2,000 | 75 | 1,800 |

P - Whatman 541 filter (prefilter)

C - Mine Safety Appliance Co. Charcoal cartridge

Gross beta and radionuclide data extrapolated to end of collection period

pCi-Hr/m³ was computed using the actual sampling time, which in some cases will differ from the total time between time on and time off, which may be only approximate.

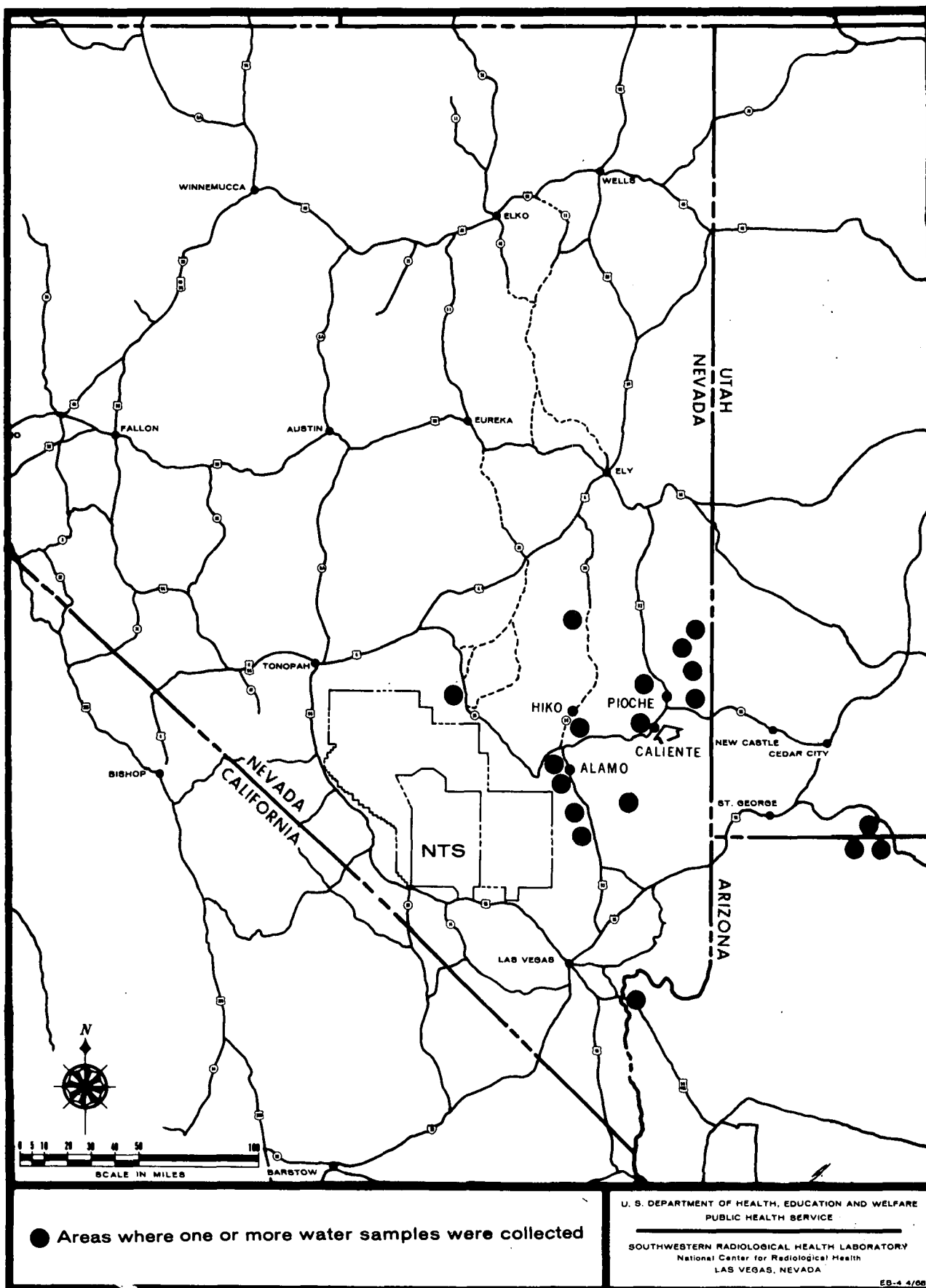


Figure 5.

3. Vegetation Samples

Five hundred and seventy-one vegetation samples from 123 locations were collected and analyzed for gamma emitting isotopes. Of these, fresh fission products were found at 95 separate locations.

All sampling locations are listed in Appendix III and the general areas sampled are shown on Figure 6. For the reasons stated in Operational Procedures, vegetation samples are shown as fresh fission products detected or not detected.

4. Milk Samples

Six hundred and fifty-five milk samples from 80 separate dairies, processing plants, or individual ranches, were collected for the Pin Stripe Event. Six hundred and fifty milk samples were analyzed for gamma emitting isotopes and selected samples were subjected to ^{89}Sr and ^{90}Sr analysis. Of the 650 samples with complete gamma information, 187 contained detectable amounts of ^{131}I . The maximum concentration of ^{131}I was found in a sample from the Schofield Dairy at Hiko, Nevada. This sample had a concentration of 4800 pCi/l and was collected April 27, 1966. Four other locations had peak ^{131}I concentrations above 1000 pCi/l. These were the L. Lee Dairy at Alamo, Nevada, (1400 pCi/l); the Sharp Ranch at Alamo (2100 pCi/l); the Davis Ranch at Hiko (3500 pCi/l); and the Donahue Ranch at Ursine, Nevada, (1100 pCi/l). By the second day after the event, several factors had modified the normal disposition of milk from the five locations mentioned above. All the milk being produced by family cows at the Davis, Donahue, and Sharp Ranches was taken for sampling purposes. Uncontaminated milk and dairy products were substituted in lieu of cash payments. At the Schofield Dairy at Hiko, stored hay from Utah was purchased by the Government and substituted for the green chop being fed at that time. The feed

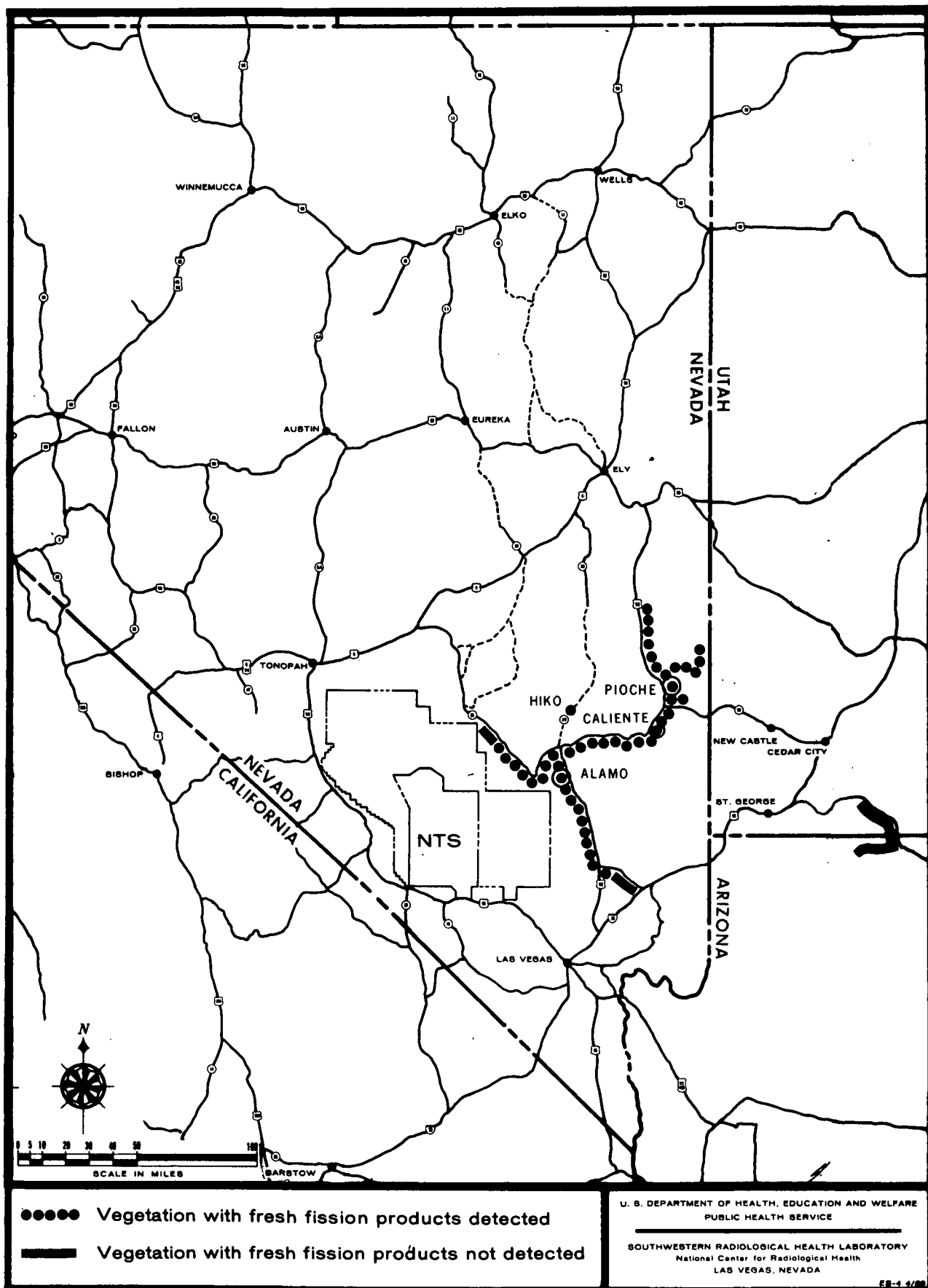


Figure 6. Vegetation sampling along roads.

substitution program is the subject of another report, "Preventive Action Taken at Schofield's Dairy, Hiko, Nevada, Following an Accidental Release of Radioactivity from the Nevada Test Site," - SWRHL-56r.

Milk from the L. Lee Dairy and the Schofield Dairy was diluted with uncontaminated milk from dairies outside the affected areas. Sampling of milk from the tank truck at the processing plant showed a maximum of 100 pCi/l ^{131}I . Milk collected at the retail outlets from this processing plant showed no detectable radioiodines. Milk sampling locations are shown in Figures 7 and 8. Table 8 lists milk samples with the highest ^{131}I concentrations from each location sampled. Appendix IV lists the results of all milk samples collected for this event. Figure 9 shows ^{131}I concentration versus time at the Sharp Ranch in Alamo, Nevada.

5. Feed Substitution Study

The decision to substitute dry hay was prompted by vegetation sampling of green alfalfa feed from the Schofield Dairy. By 0300 on the morning of April 26, results from gamma analysis of these samples indicated the possibility of ^{131}I levels in milk reaching 5×10^4 pCi/l. PHS and AEC officials decided to substitute dry hay to keep radioiodine levels as low as possible, and to provide experimental information under actual field conditions for future planning purposes. Four cows from the Schofield Dairy herd were rented by the SWRHL and continued on the fresh alfalfa. All the milk from these four cows was withheld from consumption. Figure 10 compares the milk from these four cows, and the milk from the remainder of the herd. Measured levels of ^{131}I peaked out at less than 1/10 predicted levels. The reasons for this disparity are not completely understood. Analysis of milk samples from other dairies or ranches in the area showed ^{131}I

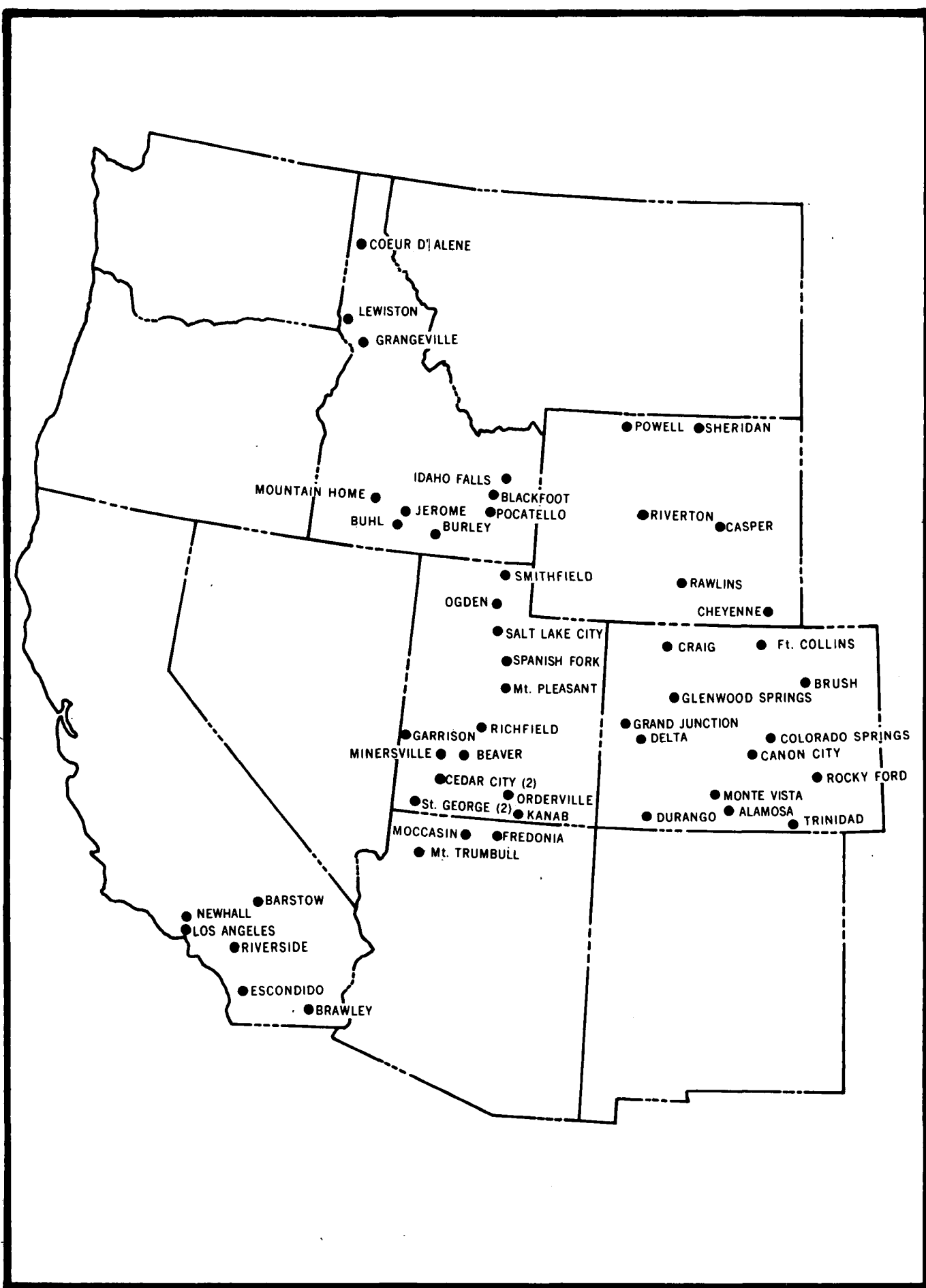


Figure 8. Milk sampling locations other than in Nevada.

Table 8. Milk samples containing highest levels of ^{131}I from each location that showed fresh fission products.

| Collection Data | | Analytical Data | | | | |
|---------------------|-----------------|---------------------|---------------------|----------------------|---------------------|---------------------|
| Location | Date of milking | Activity (pCi/l) | | | | |
| | | $^{131}_{\text{I}}$ | $^{133}_{\text{I}}$ | $^{137}_{\text{Cs}}$ | $^{89}_{\text{Sr}}$ | $^{90}_{\text{Sr}}$ |
| Alamo, Nevada | | | | | | |
| Wright Dairy | 4/26/66 | 50 | 330 | 45 | ND* | 3 |
| Leo Stewart Dairy | 4/27/66 | 270 | 850 | 45 | ND | 6 |
| M. K. Stewart Dairy | 4/28/66 | 590 | 770 | ND | ND | 4 |
| Sharp Ranch | 4/28/66 | 2100 | 5100 | ND | 5 | 3 |
| L. Lee Dairy | 4/28/66 | 1400 | 1800 | ND | ND | 6 |
| Frehner Dairy | 5/09/66 | 60 | ND | 20 | No Chemistry | |
| | 5/10/66 | 60 | ND | 25 | ND | 2 |
| Caliente, Nevada | | | | | | |
| Young Ranch | 4/27/66 | 30 | 90 | 30 | No Chemistry | |
| | 4/28/66 | 30 | 70 | 30 | No Chemistry | |
| | 4/30/66 | 30 | ND | 15 | ND | 4 |
| Charlton Ranch | 4/28/66 | 130 | ND | 85 | No Chemistry | |
| Raymond Ranch | 4/30/66 | 100 | 500 | ND | ND | 10 |
| Tennille Ranch | 5/01/66 | 50 | ND | 45 | ND | 3 |
| Hiko, Nevada | | | | | | |
| Davis Ranch | 4/27/66 | 3500 | 7800 | ND | 15 | 4 |
| Schofield Dairy | 4/27/66 | 4800 | 12,000 | ND | 10 | 3 |
| Las Vegas, Nevada | | | | | | |
| Anderson Dairy #4 | 5/16/66 | 100 | ND | 15 | ND | 5 |
| (milk from Alamo) | 5/19/66 | 100 | ND | 20 | ND | 5 |
| Panaca, Nevada | | | | | | |
| E. Deck Ranch | 4/27/66 | 70 | 220 | 60 | No Chemistry | |
| K. Lee Ranch | 4/30/66 | 170 | 60 | 40 | ND | 8 |
| Pioche, Nevada | | | | | | |
| Del Mue Ranch | 4/27/66 | 30 | ND | 60 | No Chemistry | |
| Ursine, Nevada | | | | | | |
| Donahue Ranch | 4/28/66 | 1100 | 1200 | 45 | ND | 15 |

Table 8. Milk samples containing highest levels of ^{131}I from each location that showed fresh fission products. (continued)

| Collection Data | | Analytical Data | | | | |
|---|-----------------|------------------|------------------|-------------------|------------------|------------------|
| Location | Date of milking | Activity (pCi/l) | | | | |
| | | ^{131}I | ^{133}I | ^{137}Cs | ^{89}Sr | ^{90}Sr |
| Fredonia, Arizona Button Ranch | 5/02/66 | 70 | ND | 45 | ND | 10 |
| Mt. Trumbull, Arizona O. Bundy Ranch | 5/02/66 | 20 | ND | 35 | ND | 6 |
| Spanish Fork, Utah Town Pride Dairy | 4/28/66 | 60 | ND | 85 | ND | 10 |
| Idaho Falls, Idaho Wallace Dairy | 4/29/66 | 70 | ND | 30 | ND | 10 |

*ND = Not detected. Minimum detectable levels are: ^{89}Sr , 5 pCi/l; ^{133}I , 20 pCi/l; ^{137}Cs , 10 pCi/l.

Note: The strontium results listed are, for the most part, composites of 3 or 4 days samples. Compositing was necessary because of the large number of samples processed following this event.

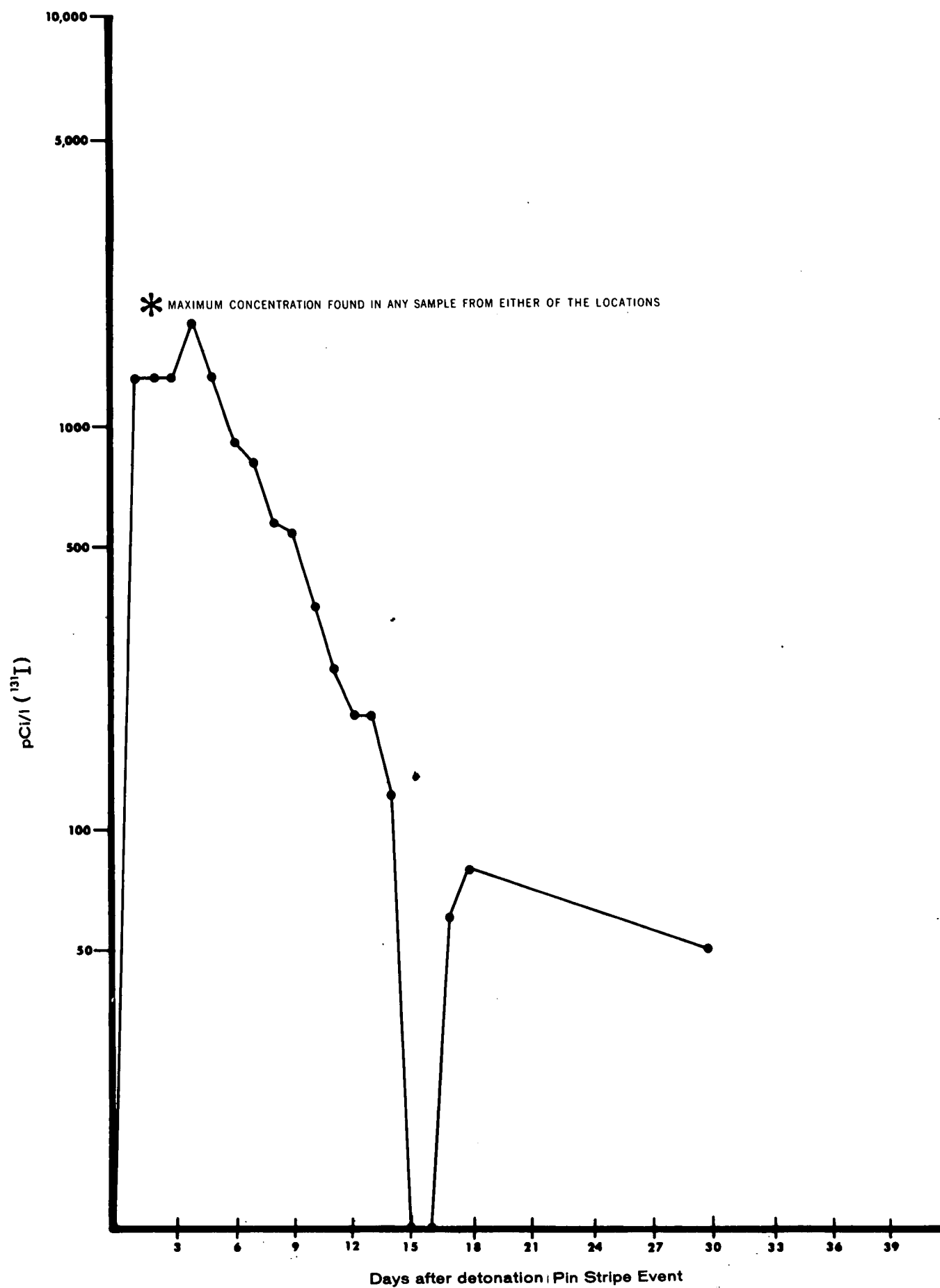


Figure 9. ^{131}I concentration in milk from two cows on pasture in Alamo, Nevada.

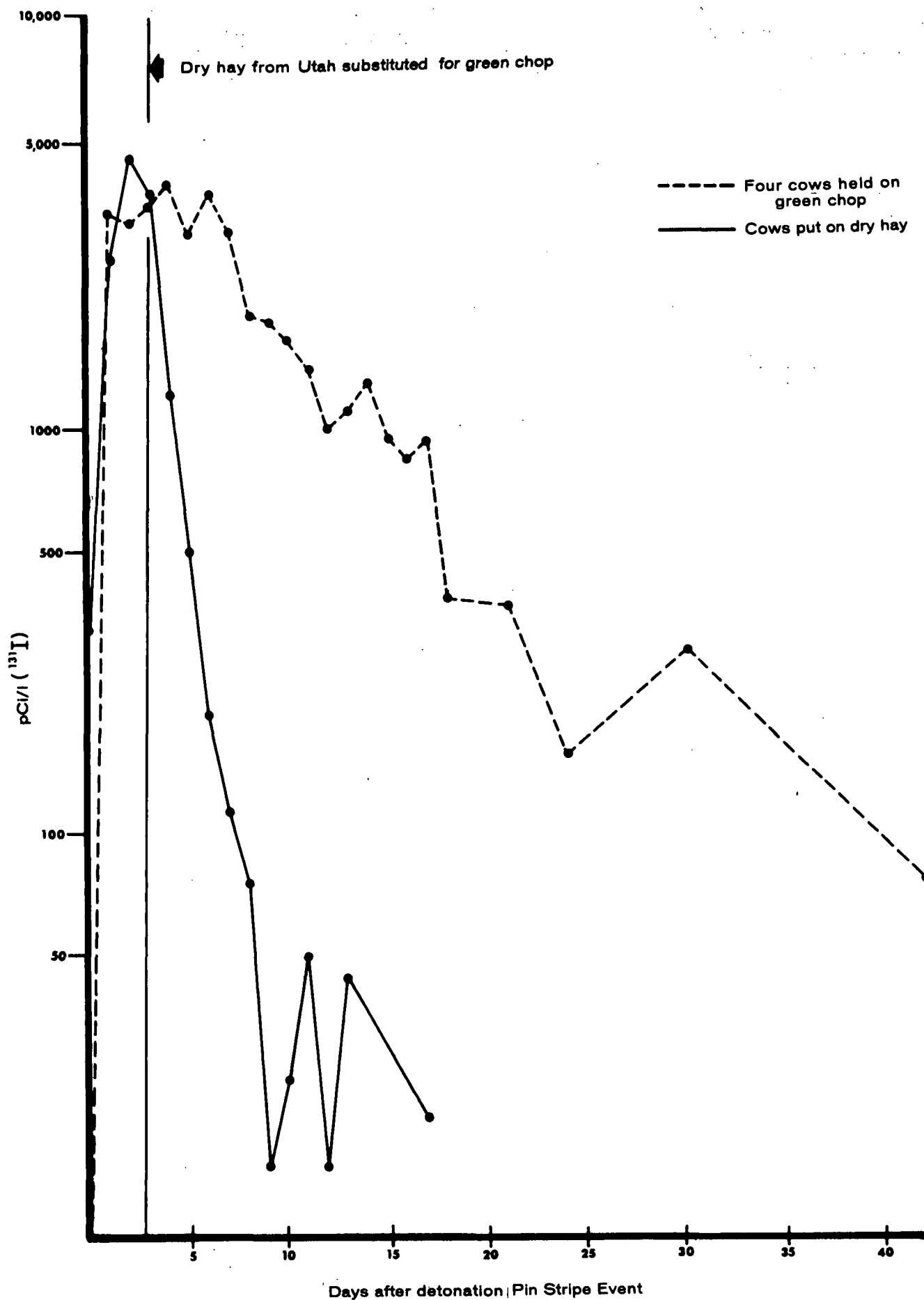


Figure 10. Comparison of ^{131}I concentration in milk from the same dairy after substitution of dry hay for green chop.

concentrations well within acceptable limits. A detailed report of the results of this experiment was released by the Bioenvironmental Research Program of the SWRHL, "Dairy Farm Radioiodine Studies Following the Pin Stripe Event of April 25, 1966," - SWRHL-41r.

6. Thyroid Analysis

The Pin Stripe Event provided the first opportunity to use the SWRHL thyroid analysis trailer under actual field conditions. The trailer is a commercially available travel trailer equipped with a 5- by 2-inch NaI crystal detector, multi-channel analyzer, and proper shadow shielding. The trailer, with generator equipped pick-up, is completely self contained and it is possible to determine actual thyroid exposures in the field. Based on information derived from aircraft measurements and reported iodine measurements in some milk samples, the thyroid analysis trailer was moved to the Alamo area. The first measurements were made 50 hours following the venting at a ranch 15 miles north of Alamo; however, high backgrounds and extremely low thyroid burdens necessitated moving the thyroid trailer into the town of Alamo for most of the measurements.

Spectra taken at this time were characterized by rather large quantities of ^{132}I . As an initial, and certainly conservative, estimate of the exposure, the ^{132}Te precursor was assumed to be fixed in the body with the ^{132}I in equilibrium. Measurements taken several days later demonstrated that this probably was not the case. The ^{132}I peaks were probably due to external ^{132}Te on the children and small lung burdens of ^{132}Te .

The trailer was taken to Ursine, Nevada, on April 30, 1966, and children representing families from Pioche, Panaca, and Ursine were counted. The highest dose measured at this location was below 50 mrad.

All exposures were computed assuming inhalation at the time of cloud passage. The dose conversion factors used were 0.028 mrad/pCi/gram thyroid for ^{133}I , and 0.128 mrad/pCi/gram thyroid for ^{131}I . Theoretical thyroid weights for children were used to calculate the exposures from the burdens measured by the thyroid counter.

A summary of all the information obtained is shown in Table 9. The information in the table represents the maximum upper limits of possible thyroid absorbed doses.

Table 9. Number of people within a given range of computed thyroid dose.

| Location | Back-ground | BKG-50 mrad | 50-150 mrad | 150-300 mrad | Total |
|----------|-------------|-------------|-------------|--------------|-------|
| Alamo | 10 | 17 | 6 | 0 | 33 |
| Hiko | 5 | 19 | 8 | 2 | 34 |
| Ursine | 4 | 1 | 0 | 0 | 5 |
| Pioche | 1 | 0 | 0 | 0 | 1 |
| Panaca | 5 | 0 | 0 | 0 | 5 |

Male children - 37
 Female children - 33
 Female adults - 8

IV. CONCLUSIONS

The sampling and analysis of environmental factors following the Pin Stripe Event was extensive and a large effort was made to document the external and internal exposures to ionizing radiation resulting from Pin Stripe.

A. External Exposures

Whole body gamma exposure resulting from Pin Stripe effluent was determined by portable and fixed radiac instruments. Projection of infinite exposures from survey instrument readings taken on the day following the contaminating event, indicated a maximum infinite external exposure to any populated area to be 12 mR. Perhaps the most meaningful comparison that might be made of such an exposure is to compare it with background radiation exposures. Measurement of background exposures by thermoluminescent dosimeters from several locations throughout the state, show a range of approximately 100-200 mR/year. Thus, an infinite exposure dose of 12 mR would add about 10% to normal yearly background radiation.

B. Internal Exposures

The thyroid analysis trailer provided the PHS with an invaluable tool for evaluating radioiodine thyroid burdens of off-site residents. Due to the relatively low levels of iodine isotopes contained in the thyroids of those people

analyzed, the results are given in ranges rather than specific doses for each individual. Two individuals from the Hiko area showed thyroid absorbed doses in the 150-300 mrad range.

C. Health Implications

Considering the extremely small internal and external doses resulting from the Pin Stripe Event, it is concluded that the exposure to additional ionizing radiation was negligible.

APPENDICES

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| Appendix IV. Complete Milk Sampling Data | 59 |

Appendix I. Additional Air Sampling Results, April, 1966.

| Location | Collection | | | | | | | Results | | | | | | | | | |
|---------------------------|-----------------|-------------|-----------------|---------------------------------|------------|-------------------------------------|--|--------------------|-----------------------|---------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|----|----|
| | Sampling Period | | Total Time (Hr) | Sample Volume (m ³) | Col-lector | Beta Activity (pCi/m ³) | Beta Exposure (pCi-hr/m ³) | ¹³¹ I | | ¹³² Te-I | | ¹³³ I | | ¹³⁵ I | | | |
| | Start Day Hr | Stop Day Hr | | | | | | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | | |
| Baker, Calif. | 26 | 1400 | 27 | 1400 | 24.0 | 460 | P | 53.0 | 1300 | 9.3 | 220 | 3.7 | 88 | 280 | 6,600 | ND | ND |
| | 27 | 1400 | 28 | 1400 | 24.0 | 485 | P | 1.2 | 29 | | | | NGS* | | | | |
| | 28 | 1400 | 29 | 1400 | 24.0 | 472 | P | 2.1 | 50 | | | | | | | | |
| | 29 | 1400 | 30 | 1400 | 24.0 | 472 | P | 0.18 | 4.3 | | | | | | | | |
| Death Valley Jct., Calif. | 26 | 0645 | 27 | 0645 | 24.0 | 448 | P | 34.0 | 820 | 5.2 | 120 | 19 | 460 | ND | ND | ND | ND |
| | 26 | 0645 | 27 | 0645 | 24.0 | 448 | P | 34.0 | 820 | 5.2 | 120 | 19 | 460 | ND | ND | ND | ND |
| | 26 | 0645 | 27 | 0645 | 24.0 | 448 | C | | | | | | NGS* | | | | |
| | 27 | 0645 | 28 | 0645 | 24.0 | 485 | P | 0.78 | 19 | | | | | | | | |
| | 27 | 0645 | 28 | 0645 | 24.0 | 485 | C | | | | | | | | | | |
| | 28 | 0645 | 29 | 0645 | 24.0 | 472 | P | 1.3 | 31 | | | | | | | | |
| | 28 | 0645 | 29 | 0645 | 24.0 | 472 | C | | | | | | | | | | |
| | 29 | 0645 | 30 | 0645 | 23.9 | 483 | P | 0.22 | 5.2 | | | | | | | | |
| | 29 | 0645 | 30 | 0645 | 23.9 | 483 | C | | | | | | | | | | |
| | 30 | 0645 | 01 | 0700 | 24.3 | 491 | P | 0.18 | 4.4 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 30 | 0645 | 01 | 0700 | 24.3 | 491 | C | | | | | | NGS* | | | | |
| | | | | | | | | | | | | | | | | | |
| Indio, Calif. | 26 | 1000 | 27 | 1000 | 24.0 | 361 | P | 1.1 | 26 | | | | | | | | |
| | 27 | 1000 | 28 | 1015 | 24.2 | 364 | P | 4.1 | 99 | 0.54 | 13 | ND | ND | ND | ND | ND | ND |
| | 28 | 1015 | 29 | 1000 | 23.7 | 357 | P | 0.77 | 18 | | | | NGS* | | | | |
| Ridgecrest, Calif. | 26 | 1310 | 27 | 1347 | 26.6 | 455 | P | 0.12 | 3.2 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 | 1352 | 28 | 1301 | 23.2 | 409 | P | 0.41 | 9.5 | 0.28 | 6.5 | ND | ND | ND | ND | ND | ND |
| | 28 | 1309 | 29 | 1520 | 24.1 | 474 | P | 0.22 | 5.3 | ND | ND | ND | ND | ND | ND | ND | ND |
| Shoshone, Calif. | 25 | 1008 | 26 | 1037 | 24.4 | 455 | P | 0.01 | 0.24 | | | | NGS* | | | | |
| | 26 | 1039 | 27 | 1738 | 31.2 | 566 | P | 64 | 2000 | 9.31 | 290 | 29 | 910 | 99.3 | 3,100 | ND | ND |
| | 27 | 1741 | 28 | 1604 | 22.4 | 441 | P | 1.6 | 36 | | | | NGS* | | | | |
| | 28 | 1608 | 29 | 1900 | 26.7 | 512 | P | 1.1 | 29 | | | | | | | | |
| | 29 | 1903 | 30 | 1655 | 22.0 | 410 | P | 0.70 | 15. | ND | ND | ND | ND | ND | ND | ND | ND |

Appendix I. Additional Air Sampling Results, April, 1966 (continued)

| Location | Sampling Period | | Total Time (Hr) | Collection | | Beta Activity (pCi/m ³) | Beta Exposure (pCi-hr/m ³) | Results | | | | | | | |
|----------------|-----------------|-------------|-----------------|---------------------------------|-----------|-------------------------------------|--|--------------------|-----------------------|---------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|
| | | | | Sample Volume (m ³) | Collector | | | ¹³¹ I | | ¹³² Te-I | | ¹³³ I | | ¹³⁵ I | |
| | Start Day Hr | Stop Day Hr | | | | | | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ |
| Denver, Colo. | 26 0900 | 27 0900 | 23.9 | 495 | P | 1.3 | 31 | 0.27 | 6.4 | ND | ND | ND | ND | ND | ND |
| | 26 0900 | 27 0900 | 23.9 | 495 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 0900 | 28 0915 | 24.2 | 489 | P | 0.13 | 3.1 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 0900 | 28 0915 | 24.2 | 489 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| Durango, Colo. | 25 1830 | 26 1829 | 24.0 | 485 | P | 2.0 | 48 | 0.32 | 7.7 | 1.7 | 41 | 3.2 | 77 | ND | ND |
| | 25 1830 | 26 1829 | 24.0 | 485 | C | | | 0.42 | 10 | ND | ND | ND | ND | ND | ND |
| | 26 1830 | 27 1830 | 24.0 | 472 | P | 0.41 | 9.8 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 26 1830 | 27 1830 | 24.0 | 472 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 1832 | 28 1830 | 23.9 | 983 | P | 0.22 | 5.2 | ND | ND | ND | ND | ND | ND | ND | ND |
| Alamo, Nevada | 25 0730 | 26 0725 | 23.8 | 407 | P | 710 | 17,000 | 57 | 1,400 | 140 | 3,300 | 110 | 2,600 | 220 | 5,200 |
| | 25 0730 | 26 0725 | 23.8 | 407 | C | | | 19 | 450 | 86 | 2,000 | 75 | 1,800 | 100 | 2,400 |
| | 26 0725 | 27 0745 | 24.3 | 453 | P | 44 | 1,100 | 2.0 | 49 | 4.2 | 100 | 3.6 | 87 | ND | ND |
| | 26 0725 | 27 0745 | 24.3 | 453 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 0745 | 28 0805 | 24.2 | 464 | P | 0.53 | 13 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 0745 | 28 0805 | 24.2 | 464 | C | | | 0.88 | 21 | ND | ND | 1.1 | 27 | ND | ND |
| | 28 0805 | 29 0715 | 23.2 | 445 | P | 3.1 | 72 | 24 | 560 | ND | ND | ND | ND | ND | ND |
| | 28 0805 | 29 0715 | 23.2 | 445 | C | | | 0.77 | 18 | ND | ND | ND | ND | ND | ND |
| | 29 0715 | 30 0725 | 24.1 | 437 | P | 1.4 | 34 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 29 0715 | 30 0725 | 24.1 | 437 | C | | | 0.53 | 13 | ND | ND | ND | ND | ND | ND |
| | 30 0725 | 01 0735 | 24.2 | 476 | P | 0.40 | 9.7 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 30 0725 | 01 0735 | 24.2 | 476 | C | | | 0.45 | 11 | ND | ND | ND | ND | ND | ND |
| | 01 0735 | 02 0740 | 24.1 | 437 | P | 0.31 | 7.5 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 01 0735 | 02 0740 | 24.1 | 437 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 02 0740 | 03 0700 | 23.2 | 433 | P | 0.31 | 7.1 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 02 0740 | 03 0700 | 23.2 | 433 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 03 0700 | 04 0730 | 24.5 | 482 | P | 1.11 | 27 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 03 0700 | 04 0730 | 24.5 | 482 | C | | | 0.50 | 12 | ND | ND | ND | ND | ND | ND |

Appendix I. Additional Air Sampling Results, April, 1966 (continued)

| Location | Collection | | | | | | | Results | | | | | | | |
|-------------------------------|-----------------|----------|-----------------|---------------------------------|-----------|-------------------------------------|--|--------------------|-----------------------|---------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|
| | Sampling Period | | Total Time (Hr) | Sample Volume (m ³) | Collector | Beta Activity (pCi/m ³) | Beta Exposure (pCi-hr/m ³) | ¹³¹ I | | ¹³² Te-I | | ¹³³ I | | ¹³⁵ I | |
| | Start Day | Stop Day | | | | | | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ |
| Alamo Nevada (continued) | 04 0730 | 05 0715 | 23.8 | 420 | P | 0.39 | 9.4 | | | | | | | | |
| | 04 0730 | 05 0715 | 23.8 | 420 | C | | | | | | | | | | |
| | 05 0715 | 06 0700 | 23.7 | 430 | P | 0.13 | 3.0 | | | | | | | | |
| | 05 0715 | 06 0700 | 23.7 | 430 | C | | | | | | | | | | |
| Ash Springs, Nevada | 25 1430 | 25 1755 | 3.4 | 35 | P | 25,000 | 85,000 | 5,300 | 18,000 | 18,000 | 61,000 | 5,600 | 19,000 | 32,000 | 110,000 |
| | 25 1430 | 25 1755 | 3.4 | 35 | C | | | 130 | 430 | 950 | 3,200 | 290 | 990 | 6,300 | 21,000 |
| | 25 1755 | 26 1210 | 18.3 | 187 | P | 98 | 1,800 | 9.3 | 170 | 18 | 330 | 17 | 310 | 32 | 590 |
| | 25 1755 | 26 1210 | 18.3 | 187 | C | | | 9.1 | 170 | ND | ND | 48 | 880 | ND | ND |
| Caliente, Nevada | 25 0830 | 25 1910 | 10.6 | 230 | P | 120 | 1,300 | 7.0 | 74 | 15 | 160 | 17 | 180 | ND | ND |
| | 25 1510 | 25 1910 | 4.0 | 92 | C | | | 7.6 | 30 | ND | ND | 31 | 120 | ND | ND |
| | 25 1915 | 26 0830 | 13.2 | 287 | P | 6.8 | 90 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 25 1915 | 26 0830 | 13.2 | 287 | C | | | 1.2 | 16 | 0.65 | 8.6 | 2.5 | 33 | 1.7 | 22 |
| | 26 0830 | 27 0845 | 24.2 | 526 | P | 0.64 | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 26 0830 | 27 0845 | 24.2 | 526 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 0845 | 28 0810 | 23.2 | 493 | P | 0.14 | 3.2 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 28 0810 | 29 0825 | 24.2 | 514 | P | 0.74 | 18 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 29 0825 | 30 0825 | 24.0 | 509 | P | 0.36 | 8.6 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 30 0825 | 01 0730 | 23.0 | 488 | P | 0.10 | 2.1 | | | | | | | | |
| Curreant, Nevada | 25 0715 | 26 0715 | 24.4 | 543 | P | 0.06 | 1.3 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 25 0715 | 26 0715 | 24.4 | 543 | C | | | 0.41 | 10 | ND | ND | ND | ND | ND | ND |
| | 26 0715 | 27 0715 | 24.5 | 545 | P | 0.16 | 3.9 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 26 0715 | 27 0715 | 24.5 | 545 | C | | | 0.76 | | ND | ND | ND | ND | ND | ND |
| | 27 0715 | 28 0715 | 24.4 | 543 | P | 0.10 | 2.4 | | | | | | | | |
| | 27 0715 | 28 0715 | 24.4 | 543 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| Geyser Maint. Sta., Nevada | 25 1608 | 26 1600 | 24.6 | 459 | P | 5.7 | 140 | 1.2 | 30 | ND | ND | 4.0 | 98 | ND | ND |
| | 26 1603 | 27 1615 | 23.6 | 465 | P | 0.17 | 4.0 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 1618 | 28 1825 | 26.6 | 483 | P | 0.16 | 4.3 | ND | ND | ND | ND | ND | ND | ND | ND |

Appendix I. Additional Air Sampling Results, April, 1966 (continued)

| Location | Sampling Period | | | | Total Time (Hr) | Collection | | Beta Activity (pCi/m ³) | Beta Exposure (pCi-hr/m ³) | Results | | | | | | | |
|------------------------------------|-----------------|------|------|------|-----------------|---------------------------------|-----------|-------------------------------------|--|--------------------|-----------------------|---------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|
| | Start | | Stop | | | Sample Volume (m ³) | Collector | | | ¹³¹ I | | ¹³² Te-I | | ¹³³ I | | ¹³⁵ I | |
| | Day | Hr | Day | Hr | | | | | | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ |
| Groom Lake - 18 mi. NE, Nevada | 25 | 1400 | 25 | 1535 | 1.6 | 32 | P | 45,000 | 72,000 | 5,100 | 8,200 | 38,000 | 61,000 | 12,000 | 19,000 | 78,000 | 120,000 |
| | 25 | 1400 | 25 | 1535 | 1.6 | 32 | C | | | 290 | 460 | 2,600 | 4,200 | 880 | 1,400 | 16,000 | 26,000 |
| Hancock Summit, Nevada | 25 | 1435 | 25 | 1745 | 3.1 | 32 | P | 34,000 | 110,000 | 2,600 | 8,100 | 8,900 | 28,000 | 3,000 | 9,300 | 17,000 | 53,000 |
| | 25 | 1435 | 25 | 1745 | 3.1 | 32 | C | | | 170 | 530 | 1,500 | 4,600 | 660 | 2,000 | 10,000 | 31,000 |
| Hancock Summit - 6.5 mi. W, Nevada | 25 | 1413 | 25 | 1700 | 2.8 | 26 | P | 50,000 | 140,000 | 3,500 | 9,700 | 12,000 | 34,000 | 4,100 | 11,000 | 19,000 | 53,000 |
| | 25 | 1413 | 25 | 1700 | 2.8 | 26 | C | | | 150 | 420 | 1,200 | 3,400 | 500 | 1,400 | 7,800 | 22,000 |
| Hiko - Crystal Springs, Nevada | 25 | 1430 | 25 | 1810 | 3.7 | 35 | P | 21,000 | 78,000 | 1,600 | 5,900 | 6,800 | 25,000 | 1,900 | 7,000 | 10,000 | 37,000 |
| | 25 | 1430 | 25 | 1810 | 3.7 | 35 | C | | | 400 | 1,500 | 1,200 | 4,400 | 800 | 3,000 | 7,000 | 26,000 |
| | 25 | 0810 | 25 | 1800 | 10.9 | 226 | P | 3,500 | 38,000 | 510 | 5,600 | 1,900 | 21,000 | 650 | 7,100 | 3,600 | 39,000 |
| | 25 | 0810 | 25 | 1800 | 10.9 | 226 | C | | | 39 | 435 | 330 | 3,600 | 150 | 1,600 | 1,700 | 19,000 |
| | 25 | 1800 | 26 | 0950 | 14.0 | 290 | P | 100 | 1,400 | 9.6 | 130 | 22 | 300 | 16 | 220 | 27 | 380 |
| | 25 | 1800 | 26 | 0950 | 14.0 | 290 | C | | | 52 | 730 | 84 | 1,200 | 290 | 4,100 | 86 | 1,200 |
| | 26 | 0950 | 27 | 0800 | 22.1 | 458 | P | 16 | 360 | 3.1 | 69 | 8.8 | 200 | 12 | 270 | ND | ND |
| | 26 | 0950 | 27 | 0800 | 22.1 | 458 | C | | | 1.7 | 38 | 0.97 | 21 | 7.1 | 160 | ND | ND |
| | 27 | 0800 | 28 | 0800 | 24.0 | 497 | P | 0.58 | 14 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 | 0800 | 28 | 0800 | 24.0 | 497 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 28 | 0800 | 29 | 0805 | 24.1 | 499 | P | 4.7 | 110 | 0.84 | 20 | ND | ND | ND | ND | ND | ND |
| | 28 | 0800 | 29 | 0805 | 24.1 | 499 | C | | | 0.71 | 17 | ND | ND | ND | ND | ND | ND |
| | 29 | 0805 | 30 | 0805 | 24.0 | 497 | P | 0.60 | 14 | 0.20 | 4.8 | ND | ND | ND | ND | ND | ND |
| | 29 | 0805 | 30 | 0805 | 24.0 | 497 | C | | | 0.57 | 14 | ND | ND | ND | ND | ND | ND |
| | 30 | 0805 | 01 | 0805 | 24.0 | 497 | P | 0.54 | 13 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 30 | 0805 | 01 | 0805 | 24.0 | 497 | C | | | 0.62 | 15 | ND | ND | ND | ND | ND | ND |
| | 01 | 0805 | 02 | 0805 | 24.0 | 497 | P | 0.24 | 5.7 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 01 | 0805 | 02 | 0805 | 24.0 | 497 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |

Appendix I. Additional Air Sampling Results, April, 1966 (continued)

| Location | Collection | | | | | | | Results | | | | | | | |
|------------------------------------|-----------------|-------------|-----------------|---------------------------------|------------|-------------------------------------|--|--------------------|-----------------------|---------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|
| | Sampling Period | | Total Time (Hr) | Sample Volume (m ³) | Col-lector | Beta Activity (pCi/m ³) | Beta Exposure (pCi-hr/m ³) | ¹³¹ I | | ¹³² Te-I | | ¹³³ I | | ¹³⁵ I | |
| | Start Day Hr | Stop Day Hr | | | | | | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ |
| Lathrop Wells, Nevada | 25 | 0635 | 26 | 0635 | 23.9 | 483 | P | 0.10 | 2.4 | ND | ND | ND | ND | ND | ND |
| | 25 | 0635 | 26 | 0635 | 23.9 | 483 | C | | | | | NGS* | | | |
| | 26 | 0635 | 27 | 0625 | 23.8 | 469 | P | 2.8 | 67 | 0.48 | 11 | ND | ND | ND | ND |
| | 26 | 0635 | 27 | 0625 | 23.8 | 469 | C | | | | | NGS* | | | |
| | 27 | 0625 | 28 | 0545 | 23.3 | 471 | P | 0.77 | 18 | ND | ND | ND | ND | ND | ND |
| | 27 | 0625 | 28 | 0545 | 23.3 | 471 | C | | | | | NGS* | | | |
| | 28 | 0545 | 29 | 0605 | 24.2 | 476 | P | 0.91 | | | | | | | |
| | 28 | 0545 | 29 | 0605 | 24.2 | 476 | C | | | | | | | | |
| | 29 | 0605 | 01 | 0605 | 48.0 | 945 | P | 0.24 | | | | | | | |
| | 29 | 0605 | 01 | 0605 | 48.0 | 945 | C | | | ND | ND | ND | ND | ND | ND |
| Moapa - Warm Springs Ranch, Nevada | 25 | 0800 | 26 | 0800 | 23.0 | 476 | P | 0.13 | 3 | ND | ND | ND | ND | ND | ND |
| | 25 | 0800 | 26 | 0800 | 23.0 | 476 | C | | | ND | ND | ND | ND | ND | ND |
| | 26 | 0800 | 27 | 0830 | 24.5 | 470 | P | 0.42 | 10 | 0.20 | 4.9 | ND | ND | ND | ND |
| | 26 | 0800 | 27 | 0830 | 24.5 | 470 | C | | | ND | ND | ND | ND | ND | ND |
| | 27 | 0830 | 28 | 0800 | 23.5 | 451 | P | 0.27 | 6.3 | ND | ND | ND | ND | ND | ND |
| | 27 | 0830 | 28 | 0800 | 23.5 | 451 | C | | | ND | ND | ND | ND | ND | ND |
| | 28 | 0800 | 29 | 0800 | 24.0 | 497 | P | 1.1 | 26 | ND | ND | ND | ND | ND | ND |
| | 28 | 0800 | 29 | 0800 | 24.0 | 497 | C | | | ND | ND | ND | ND | ND | ND |
| | 29 | 0800 | 30 | 0800 | 24.0 | 460 | P | 0.42 | 10 | ND | ND | ND | ND | ND | ND |
| | 29 | 0800 | 30 | 0800 | 24.0 | 460 | C | | | ND | ND | ND | ND | ND | ND |
| Pahrump, Nevada | 25 | | 26 | | 23.6 | 440 | P | 0.12 | 2.8 | | | NGS* | | | |
| | 26 | 1200 | 27 | 1200 | 24.1 | 450 | P | 12.0 | 290 | 1.81 | 44 | 5.1 | 120 | ND | ND |
| | 27 | 1200 | 29 | 1200 | 48.0 | 846 | P | 1.4 | 67 | ND | ND | ND | ND | ND | ND |
| | 29 | 1200 | 30 | 1200 | 23.7 | 442 | P | 0.31 | 7.3 | ND | ND | ND | ND | ND | ND |
| | 30 | 1200 | 01 | 1200 | 24.3 | 478 | P | 0.31 | 7.5 | ND | ND | ND | ND | ND | ND |

Appendix I. Additional Air Sampling Results, April, 1966 (continued)

| Location | Collection | | | | | | | Results | | | | | | | | | |
|--|-----------------|---------|-----------------|--------------------|------------|------------------------|---------------------------|---------|-----------|---------|-----------|--------|-----------|--------|-----------|-----|-------|
| | Sampling Period | | Total Time (Hr) | Sample Volume (m³) | Col-lector | Beta Activity (pCi/m³) | Beta Exposure (pCi-hr/m³) | ¹³¹I | | ¹³²Te-I | | ¹³³I | | ¹³⁵I | | | |
| | Start Day | Stop Hr | | | | | | pCi/m³ | pCi-hr/m³ | pCi/m³ | pCi-hr/m³ | pCi/m³ | pCi-hr/m³ | pCi/m³ | pCi-hr/m³ | | |
| Pioche, Nevada | 25 | 0800 | 25 | 1520 | 7.4 | 153 | P | 0.19 | 1.4 | | | | | | | | |
| | 25 | 1525 | 25 | 1928 | 3.9 | 81 | P | 2,200 | 9,000 | 1,100 | 4,300 | 200 | 800 | 350 | 1,400 | ND | ND |
| | 25 | 1525 | 25 | 1928 | 3.9 | 81 | C | | | 53 | 200 | 40 | 160 | 250 | 970 | 600 | 2,300 |
| | 25 | 1925 | 26 | 0800 | 12.0 | 242 | P | 140 | 1,700 | 11 | 130 | 24 | 290 | 21 | 250 | 63 | 760 |
| | 25 | 1925 | 26 | 0800 | 12.0 | 242 | C | | | 7.1 | 85 | ND | ND | 23 | 280 | 25 | 300 |
| | 26 | 0800 | 27 | 0800 | 24.0 | 472 | P | 1.8 | 43 | 0.56 | 13 | ND | ND | 1.09 | 26 | ND | ND |
| | 27 | 0800 | 28 | 0800 | 24.0 | 485 | P | 0.37 | 8.9 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 28 | 0800 | 29 | 0800 | 24.0 | 497 | P | 1.0 | 24 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 29 | 0800 | 30 | 0800 | 24.0 | 497 | P | 0.48 | 12 | ND | ND | ND | ND | ND | ND | ND | ND |
| Cedar City, Utah | 25 | 1225 | 26 | 1225 | 24.0 | 485 | P | 1.5 | 36 | 0.25 | 6 | ND | ND | ND | ND | ND | ND |
| | 25 | 1225 | 26 | 1225 | 24.0 | 485 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 26 | 1225 | 27 | 1445 | 26.3 | 518 | P | 0.13 | 3.4 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 26 | 1225 | 27 | 1445 | 26.3 | 518 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| Garrison, Utah | 25 | 0800 | 26 | 0800 | 23.7 | 503 | P | 96 | 230 | 8.6 | 200 | 22 | 520 | 38 | 900 | ND | ND |
| | 26 | 0800 | 27 | 0800 | 24.0 | 497 | P | 0.33 | 8 | ND | ND | ND | ND | ND | ND | ND | ND |
| Headquarters Desert Experimental Station, Utah | 25 | 0815 | 26 | 0830 | 23.9 | 507 | P | 87 | 2,100 | 4.1 | 100 | 11 | 260 | 17 | 410 | ND | ND |
| | 26 | 0833 | 27 | 0814 | 23.3 | 459 | P | 1.3 | 30 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 | 0815 | 28 | 0808 | 23.6 | 501 | P | 0.09 | 2.1 | ND | ND | ND | ND | ND | ND | ND | ND |
| Provo, Utah | 25 | 0852 | 26 | 0855 | 24.0 | 449 | P | 33 | 790 | 1.2 | 29 | 3.4 | 82 | 5.6 | 130 | ND | ND |
| | 26 | 0855 | 27 | 0900 | 24.1 | 437 | P | 0.66 | 16 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 26 | 0855 | 27 | 0900 | 24.1 | 437 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 | 0900 | 28 | 0900 | 24.0 | 411 | P | 0.09 | 2.2 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 27 | 0900 | 28 | 0900 | 24.0 | 411 | C | | | ND | ND | ND | ND | ND | ND | ND | ND |

Appendix I. Additional Air Sampling Results, April, 1966 (continued)

| Location | Collection | | | | | | | Results | | | | | | | |
|----------------------|-----------------|-------------|-----------------|---------------------------------|------------|-------------------------------------|--|--------------------|-----------------------|---------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|
| | Sampling Period | | Total Time (Hr) | Sample Volume (m ³) | Col-lector | Beta Activity (pCi/m ³) | Beta Exposure (pCi-hr/m ³) | ¹³¹ I | | ¹³² Te-I | | ¹³³ I | | ¹³⁵ I | |
| | Start Day Hr | Stop Day Hr | | | | | | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ | pCi/m ³ | pCi-hr/m ³ |
| Salt Lake City, Utah | 25 0840 | 26 0840 | 24.0 | 472 | P | 1.7 | 41 | ND | ND | ND | ND | ND | ND | ND | ND |
| | 26 0840 | 27 0840 | 24.0 | 497 | P | 0.01 | 2.3 | 0.38 | 9.1 | ND | ND | 1.0 | 24 | ND | ND |
| | 27 0840 | 28 0845 | 24.0 | 497 | P | 0.08 | 1.8 | ND | ND | ND | ND | ND | ND | ND | ND |

Notes: NGS* - Not gamma scanned. ND - Not detected. P = Prefilter C = Charcoal cartridge

Appendix II. Complete Water Sampling Data

Samples designated as "Tap" indicate water taken from taps in a dwelling place regardless of the source of the water. Those designated "Spring" were collected at the spring regardless of the subsequent use of the water. Samples labeled "Tank" were taken from a stock tank or trough, and were not used for human consumption with one important exception. The domestic tap supply at the Davis Ranch near Hiko, Nevada, consisted of a pipe connected directly to the stock tank.

Additional samples were collected at the L. Lee Dairy at Alamo, and the Schofield Dairy at Hiko. These samples were collected as part of a special research project conducted by the Bioenvironmental Research program and were reported separately in the final report on Pin Stripe by this program (SWRHL-41r).

Appendix II. Complete Water Sampling Data

| Location | Source | Date Collected | Gross Alpha | Gross Beta | ^{131}I $^{132}\text{Te-I}$ ^{133}I ^{135}I | | | |
|---|--------|----------------|-------------|------------|--|----|----|----|
| | | | | | pCi/l | | | |
| 23 miles south of Pipe Spgs. Nat'l Monument Arizona | Tank | 5/02/66 | 1.7 | 29 | | | | |
| Fredonia, Arizona 1/2 mile west | Pond | 5/01/66 | 5.8 | 24 | | | | |
| 15 miles west of Pipe Spgs. Nat'l Monument Arizona | Spring | 4/30/66 | 1.4 | < 1 | | | | |
| Jacob Lake, Arizona | Pond | 5/01/66 | 2.1 | 20 | | | | |
| Moccasin Indian School Moccasin, Arizona | Pond | 4/30/66 | <0.1 | < 1 | | | | |
| Kaibab Nat'l Forest Camp Mt. Trumbull, Ariz. | Pond | 5/02/66 | 0.6 | 6 | | | | |
| Mt. Trumbull, Arizona | Tank | 5/02/66 | 0.3 | 131 | | | | |
| Kanab, Utah Jackson Reservoir | Lake | 5/01/66 | <0.1 | 25 | | | | |
| Orderville Ranch Chamberlain, Utah | Tank | 5/01/66 | <0.1 | 5 | | | | |
| Butler Ranch, Nevada 31 mi. S Alamo | Pond | | 0.7 | 5 | | | | |
| Alamo, Nevada Frehner Dairy | Tank | 4/26/66 | 1.1 | 27 | 8.0 | 30 | 60 | 40 |
| | Tank | 4/27/66 | <0.1 | 41 | 110 | | | |
| | Tank | 4/28/66 | <0.1 | 32 | 90 | | | |
| | Tank | 4/29/66 | 0.7 | 11 | | | | |
| | Tank | 4/30/66 | <0.1 | 17 | | | | |
| | Tank | 5/01/66 | 2.8 | 21 | | | | |
| | Tank | 5/02/66 | <0.1 | 21 | | | | |
| | Tank | 5/07/66 | 2.5 | 12 | | | | |
| | Tank | 5/10/66 | 1.4 | 23 | | | | |
| | Tank | 5/13/66 | <0.1 | 25 | | | | |

Appendix II. Complete Water Sampling Data(continued)

| Location | Source | Date Collected | Gross Alpha | Gross Beta | ¹³¹ I | ¹³² Te-I | ¹³³ I | ¹³⁵ I |
|----------------------------|--------|----------------|-------------|------------|------------------|---------------------|------------------|------------------|
| | | | | | pCi/l | | | |
| Alamo, Nevada | | | | | | | | |
| L. Lee Dairy | Tank | 4/26/66 | 1.4 | 38 | 80 | 30 | 80 | |
| Alamo, Nevada | | | | | | | | |
| Mann Ranch | Tank | 5/01/66 | 1.7 | 39 | | | | |
| | Tank | 5/02/66 | <0.1 | 42 | | | | |
| Alamo, Nevada | | | | | | | | |
| A. Sharp Ranch | Tank | 4/26/66 | <0.1 | 54 | 200 | 50 | 60 | 120 |
| | Tap | 4/27/66 | 0.3 | 32 | | | | |
| | Tank | 4/28/66 | 0.3 | 19 | 120 | | | |
| | Tank | 4/29/66 | 0.7 | 14 | | | | |
| | Tank | 4/30/66 | 0.3 | 10 | | | | |
| | Tank | 5/01/66 | <0.1 | 12 | | | | |
| | Tank | 5/02/66 | 1.7 | 12 | | | | |
| | Tank | 5/05/66 | 1.7 | 17 | | | | |
| | Tank | 5/06/66 | 0.6 | 12 | | | | |
| | Tank | 5/07/66 | 1.7 | 13 | | | | |
| | Tank | 5/08/66 | <0.1 | 16 | 110 | | | |
| | Tank | 5/09/66 | 1.4 | 24 | | | | |
| | Tank | 5/10/66 | 5.5 | 32 | | | | |
| Alamo, Nevada | | | | | | | | |
| Leo Stewart Dairy | Tank | 4/25/66 | NGA | NGB | | 280 | 250 | 410 |
| | Tank | 4/26/66 | 1.5 | 28 | 130 | | | |
| | Tank | 4/27/66 | 0.3 | 19 | | | | |
| | Tank | 4/28/66 | 1.7 | 29 | | | | |
| | Tank | 4/29/66 | 1.4 | 25 | | | | |
| | Tank | 4/30/66 | <0.1 | 13 | | | | |
| | Tank | 5/01/66 | <0.1 | 16 | | | | |
| | Tank | 5/02/66 | <0.1 | 28 | | | | |
| | Tank | 5/07/66 | 1.1 | 19 | | | | |
| | Tank | 5/10/66 | 1.1 | 31 | | | | |
| | Tank | 5/13/66 | <0.1 | 35 | | | | |
| Pahranagat Lake, Nevada | Lake | 4/27/66 | 6.5 | 34 | | | | |
| Alamo, Nevada | | | | | | | | |
| M. K. Stewart | Tank | 4/26/66 | 1.1 | 96 | 220 | 130 | 130 | 160 |

Appendix II. Complete Water Sampling Data (continued)

| Location | Source | Date Collected | Gross Alpha | Gross Beta | ¹³¹ I | ¹³² Te-I | ¹³³ I | ¹³⁵ I |
|---|--------|----------------|-------------|------------|------------------|---------------------|------------------|------------------|
| | | | | | pCi/l | | | |
| Alamo, Nevada | | | | | | | | |
| M.K. Stewart | Tank | 4/27/66 | 0.6 | 27 | | | | |
| | Tank | 4/28/66 | 1.1 | 26 | | | | |
| | Tank | 4/29/66 | <0.1 | 13 | | | | |
| | Tank | 4/30/66 | 0.6 | 23 | | | | |
| | Tank | 5/01/66 | 0.6 | 13 | | | | |
| | Tank | 5/02/66 | <0.1 | 13 | | | | |
| | Tank | 5/10/66 | 1.4 | 19 | | | | |
| | Tank | 5/13/66 | <0.1 | 25 | | | | |
| Alamo, Nevada | | | | | | | | |
| Wright Dairy | Tank | 4/26/66 | 1.4 | 36 | 200 | 70 | 80 | 130 |
| | Tank | 4/27/66 | 0.3 | 25 | | | | |
| | Tank | 4/28/66 | 1.1 | 15 | | | | |
| | Tank | 4/29/66 | 1.3 | 14 | | | | |
| | Tank | 4/30/66 | 3.9 | 17 | | | | |
| | Tank | 5/01/66 | 1.1 | 6 | | | | |
| | Tank | 5/02/66 | <0.1 | 6 | | | | |
| Ash Springs Nevada | Stream | 4/25/66 | NGA | NGB | 230 | 330 | 480 | 440 |
| Caliente, Nevada 1 mile north | Spring | 4/27/66 | 1.4 | 26 | | | | |
| Caliente, Nevada 4 miles north | Pond | 5/01/66 | 5.0 | 19 | | | | |
| Caliente, Nevada 3 miles north on Beaver Dam Road | Spring | 5/01/66 | 2.8 | 13 | | | | |
| Caliente, Nevada Raymond Ranch | Pond | 4/30/66 | 0.6 | 10 | | | | |
| | Pond | 5/02/66 | 1.1 | 16 | | | | |
| | Pond | 5/03/66 | 1.4 | 13 | | | | |
| | Pond | 5/06/66 | 1.4 | 10 | | | | |
| Caliente, Nevada Oxborrow Ranch | Tap | 4/30/66 | 1.7 | 7 | | | | |
| | Tap | 5/03/66 | 0.3 | 4 | | | | |
| | Tap | 5/06/66 | 1.1 | 5 | | | | |

Appendix II. Complete Water Sampling Data (continued)

| Location | Source | Date Collected | Gross Alpha | Gross Beta | ¹³¹ I | ¹³² Te-I | ¹³³ I | ¹³⁵ I |
|------------------------------------|--------|----------------|-------------|------------|------------------|---------------------|------------------|------------------|
| | | | | | pCi/l | | | |
| Caliente, Nevada Mathew's Ranch | Spring | 4/28/66 | <0.1 | < 1 | | | | |
| Caliente, Nevada Charlton Ranch | Spring | 4/27/66 | 1.4 | 16 | | | | |
| | Spring | 4/28/66 | 4.4 | 8 | | | | |
| | Tap | 4/29/66 | 0.7 | 8 | | | | |
| | Tap | 4/30/66 | 2.2 | 9 | | | | |
| | Tap | 5/01/66 | 0.3 | 11 | | | | |
| | Tap | 5/02/66 | 2.8 | 6 | | | | |
| Caliente, Nevada Tennille Ranch | Tap | 5/02/66 | 13 | 32 | | | | |
| | Tap | 5/03/66 | 8.3 | 36 | | | | |
| | Tap | 5/06/66 | 1.7 | 7 | | | | |
| Caliente, Nevada Young Ranch | Spring | 4/26/66 | 1.7 | 17 | | | | |
| | Spring | 4/27/66 | 2.5 | 16 | | | | |
| | Stream | 4/27/66 | 0.6 | 8 | | | | |
| | Spring | 4/28/66 | 6.9 | 20 | | | | |
| | Spring | 4/29/66 | 1.1 | 10 | | | | |
| | Spring | 4/30/66 | 1.1 | 17 | | | | |
| | Spring | 5/01/66 | 4.7 | 10 | | | | |
| | Spring | 5/03/66 | 2.8 | 9 | | | | |
| Diablo, Nevada | Tap | 5/10/66 | 0.3 | 8 | | | | |
| Elgin, Nevada Ballow Ranch | Stream | 4/29/66 | 0.3 | 8 | | | | |
| | Spring | 4/29/66 | 3.3 | 10 | | | | |
| | Stream | 4/30/66 | 1.7 | 12 | | | | |
| | Spring | 4/30/66 | 1.7 | 2 | | | | |
| | Stream | 5/01/66 | 0.3 | 7 | | | | |
| | Spring | 5/01/66 | 3.6 | 12 | | | | |
| | Tap | 5/02/66 | 1.1 | 3 | | | | |
| Hiko, Nevada Hiko pond | Pond | 4/27/66 | 5.8 | 92 | 70 | | 110 | |
| Hiko, Nevada Fish & Game Dept. | Pond | 4/28/66 | 1.7 | 23 | 60 | | | |

Appendix II. Complete Water Sampling Data (continued)

| Location | Source | Date Collected | Gross Alpha | Gross Beta | ^{131}I | $^{132}\text{Te-I}$ | ^{133}I | ^{135}I |
|-----------------|--------|----------------|-------------|------------|------------------|---------------------|------------------|------------------|
| pCi/l | | | | | | | | |
| Hiko, Nevada | | | | | | | | |
| Crystal Springs | Spring | 4/27/66 | <0.1 | 10 | | | | |
| Hiko, Nevada | | | | | | | | |
| Davis Ranch | Tap | 4/26/66 | 1.4 | 151 | 3860 | 80 | 270 | |
| | Tap | 4/27/66 | <0.1 | 35 | 50 | 30 | 60 | |
| | Tap | 4/28/66 | 2.5 | 19 | 30 | | | |
| | Tap | 4/29/66 | 5.0 | 29 | | | | |
| | Tap | 4/30/66 | 3.3 | 8 | 40 | | | |
| | Tap | 5/01/66 | 3.6 | 14 | | | | |
| | Tap | 5/02/66 | 4.7 | 11 | | | | |
| | Tap | 5/03/66 | 3.3 | 10 | | | | |
| | Tap | 5/04/66 | 3.3 | 17 | | | | |
| | Tap | 5/05/66 | 3.9 | 8 | | | | |
| | Tap | 5/06/66 | 3.6 | 13 | | | | |
| | Tap | 5/07/66 | 2.8 | 16 | | | | |
| | Tap | 5/08/66 | 2.5 | 14 | | | | |
| | Tap | 5/09/66 | 3.9 | 12 | | | | |
| | Tap | 5/13/66 | <0.1 | 11 | | | | |
| Hiko, Nevada | | | | | | | | |
| Schofield Dairy | Tank | 4/25/66 | NGA | NGB | 500 | 820 | 1100 | 940 |
| | Tank | 4/26/66 | 6.9 | 136 | | | | |
| | Tank | 4/27/66 | 3.6 | 79 | | | 140 | |
| | Tap | 4/27/66 | 4.4 | 30 | | | | |
| Panaca, Nevada | | | | | | | | |
| C & G Ranch | Spring | 4/27/66 | 1.4 | 16 | | | | |
| | Spring | 4/28/66 | 4.4 | 8 | 70 | | | |
| | Spring | 4/29/66 | 0.3 | 18 | | | | |
| | Spring | 4/30/66 | 0.3 | 12 | | | | |
| | Spring | 5/01/66 | 0.3 | 4 | | | | |
| | Tap | 5/02/66 | 2.8 | 8 | | | | |
| Panaca, Nevada | | | | | | | | |
| E. Deck Ranch | Tap | 4/26/66 | <0.1 | 8 | | | | |
| | Spring | 4/27/66 | <0.1 | 9 | | | | |
| | Spring | 4/28/66 | 0.3 | 9 | | | | |
| | Spring | 4/29/66 | 0.7 | 20 | | | | |
| | Spring | 4/30/66 | <0.1 | 25 | | | | |
| | Tank | 5/11/66 | 0.3 | 21 | | | | |

Appendix II. Complete Water Sampling Data (continued)

| Location | Source | Date Collected | Gross Alpha | Gross Beta | ^{131}I | $^{132}\text{Te-I}$ | ^{133}I | ^{135}I |
|--------------------------------------|--------|----------------|-------------|------------|------------------|---------------------|------------------|------------------|
| pCi/l | | | | | | | | |
| Panaca, Nevada | | | | | | | | |
| K. Lee Ranch | Tank | 4/26/66 | 0.6 | 36 | | | | |
| | Tap | 5/02/66 | 2.2 | 2 | | | | |
| | Tap | 5/03/66 | 2.8 | 7 | | | | |
| | Tap | 5/06/66 | 1.7 | 8 | | | | |
| Pioche, Nevada | | | | | | | | |
| Delmue Ranch | Stream | 4/27/66 | 1.4 | 20 | | | | |
| | Stream | 4/28/66 | 1.4 | 14 | | | | |
| | Stream | 4/29/66 | 2.5 | 19 | | | | |
| | Stream | 4/30/66 | 3.3 | 11 | | | | |
| | Stream | 5/01/66 | 1.7 | 13 | | | | |
| Pioche, Nevada | | | | | | | | |
| Rose Valley Ranch | Stream | 4/26/66 | | | | | | |
| | Stream | 4/27/66 | 2.8 | 15 | | | | |
| | Stream | 4/29/66 | 5.8 | 15 | | | | |
| | Stream | 4/30/66 | 3.9 | 17 | | | | |
| | Stream | 5/01/66 | 0.9 | 21 | | | | |
| Pioche, Nevada | | | | | | | | |
| Horlacher Ranch | Tap | 5/03/66 | 0.6 | 2 | | | | |
| Pioche, Nevada | | | | | | | | |
| County Courthouse | Tap | 4/26/66 | <0.1 | 7 | | | | |
| | Tap | 4/27/66 | 1.4 | 20 | | | | |
| Sunnyside, Nevada | | | | | | | | |
| Adams-McGill Res | Lake | 5/05/66 | 1.7 | 18 | | | | |
| Ursine, Nevada | | | | | | | | |
| Meadow Valley Res | Lak | 4/30/66 | 1.7 | 11 | | | | |
| Ursine, Nevada | | | | | | | | |
| 3.9 miles north of Meadow Valley Res | Stream | 4/30/66 | 2.5 | 17 | | | | |
| Ursine, Nevada | | | | | | | | |
| 1/4 mile west | Stream | 4/29/66 | 4.4 | 10 | | | | |
| | Stream | 4/30/66 | 1.4 | 12 | | | | |
| | Stream | 5/01/66 | 2.8 | 14 | | | | |
| Ursine, Nevada | | | | | | | | |
| 6.8 miles northeast | Stream | 5/01/66 | 1.1 | 16 | | | | |

Appendix II. Complete Water Sampling Data (continued)

| Location | Source | Date Collected | Gross Alpha | Gross Beta | ^{131}I | $^{132}\text{Te-I}$ | ^{133}I | ^{135}I |
|---|--------|----------------|-------------|------------|------------------|---------------------|------------------|------------------|
| Ursine, Nevada 7 miles north | Stream | 4/26/66 | <0.1 | 23 | 60 | | 70 | 120 |
| | Stream | 4/29/66 | <0.1 | 14 | | | | |
| Ursine, Nevada 13 miles north in Eagle Valley | Tank | 4/29/66 | 1.1 | 15 | | | | |
| Ursine, Nevada 16 miles north in Eagle Valley | Tank | 4/29/66 | 1.4 | 42 | | | | |
| | Tank | 5/01/66 | 1.1 | 14 | | | | |
| Ursine, Nevada Eagle Valley Lake | Lake | 4/27/66 | <0.1 | 42 | | | | |
| | Lake | 4/28/66 | 3.9 | 13 | | | | |
| | Lake | 4/29/66 | 3.3 | 15 | | | | |
| Ursine, Nevada Eagle Valley Creek | Stream | 4/27/66 | 4.5 | 20 | | | | |
| | Stream | 4/28/66 | <0.1 | <1.0 | | | | |
| | Stream | 4/28/66 | 0.6 | 13 | | | | |
| | Stream | 4/28/66 | 0.6 | 19 | | | | |
| Ursine, Nevada Donahue Ranch | Tank | 4/28/66 | 4.7 | 60 | | | | |
| | Tank | 4/29/66 | 2.2 | 4 | | | | |
| | Tank | 5/01/66 | 0.8 | 8 | | | | |
| | Tank | 5/02/66 | 1.1 | 5 | | | | |
| | Stream | 5/03/66 | 6.1 | 21 | | | | |
| | Stream | 5/06/66 | 3.6 | 5 | | | | |
| Ursine, Nevada Lytle Ranch | Tank | 4/26/66 | <0.1 | 23 | 280 | 90 | 90 | 40 |
| | Tank | 4/27/66 | 1.4 | 10 | | | | |
| | Tank | 4/28/66 | 2.2 | 15 | | | | |
| | Tank | 4/29/66 | <0.1 | 10 | | | | |
| | Tank | 4/30/66 | 2.2 | 14 | | | | |
| | Tank | 5/01/66 | 2.3 | 16 | | | | |
| | Tank | 5/02/66 | 2.2 | 5 | | | | |
| | Tank | 5/03/66 | 1.7 | 6 | | | | |
| Ursine, Nevada McCrosky Ranch | Tap | 5/02/66 | <0.1 | 9 | | | | |

Appendix III. Vegetation Sampling Data

Samples designated as "hay", "pasture", "green chop", or "silage" were collected to be representative of dairy cattle feed at milk sampling locations. Hay, as listed in the Appendix, is dry vegetation in storage which may or may not have been covered during cloud passage. "Natural" refers to any naturally growing or native vegetation which was not being used as dairy cattle feed.

Appendix III. Vegetation Sampling Data

| Location | Date Collected | No. of Samples | Type | Fresh fission Products |
|---------------|----------------------|----------------|---------------|------------------------|
| Alamo, Nevada | | | | |
| Frehner Dairy | 4/26 | 1 | Silage | P |
| | 4/27 | 1 | Hay | ND |
| | 4/28 | 1 | Silage | |
| | 4/29, 30 | 2 | Silage | ND |
| | 5/01 | 1 | Hay | P |
| | 5/02 | 1 | Silage | ND |
| | 5/6, 7, 8, 9 | | | |
| | 5/10, 13 | 6 | Green chop | P |
| | | | | |
| L. Lee Dairy | 4/26 | 2 | Green chop | P |
| | 4/27, 29, 30 | 4 | Grain | P |
| | 4/28 | 1 | Grain | ND |
| | 4/29, 30 | 2 | Grain | P |
| | 5/1, 3, 5, 8 | 4 | Grain | P |
| | 5/2, 3, 6, 7 | 4 | Grain | ND |
| | 5/9, 10, 11, 12 | 4 | Grain | ND |
| | 5/13 | 1 | Grain | P |
| | 5/1, 6, 7, 8, 9 | 5 | Fresh alfalfa | P |
| | 5/10, 11, 12, 13 | 7 | Fresh alfalfa | P |
| | 4/26, 28, 29, 30 | 4 | Hay | P |
| | 4/27, 30 | 2 | Hay | ND |
| | 5/2, 3, 4, 5 | 8 | Hay | P |
| | 5/7, 9, 11, 12 | 4 | Hay | P |
| | 5/6, 7, 8, 10, 13 | 6 | Hay | ND |
| | 4/26, 27 | 36 | Green Chop | P |
| | 4/28, 29, 30 | 4 | Green Chop | P |
| | 5/1, 2, 3, 4 | 11 | Green Chop | P |
| | 5/5, 6, 7, 8 | 8 | Green Chop | P |
| | 5/9, 11, 13, 25 | 4 | Green Chop | P |
| | | | | |
| | | | | |
| Mann Ranch | 5/1, 2 | 2 | Hay | ND |
| Sharp Ranch | 4/26, 27, 28, 28, 30 | 5 | Pasture | P |
| | 4/26 | 1 | Hay | P |
| | 5/1-10 | 10 | Pasture | P |
| Leo Stewart | 4/25, 26 | 2 | Hay | P |
| | 4/27 | 1 | Hay | ND |
| | 4/28 | 1 | Green Chop | P |
| | 4/29, 30 | 2 | Hay | P |

P -positive
 ND-not detectable

Appendix III. Vegetation Sampling Data(continued)

| Location | Date Collected | No. of Samples | Type | Fresh fission Products |
|--------------------------|-------------------|----------------|------------|------------------------|
| Alamo, Nevada(continued) | | | | |
| Leo Stewart (continued) | | | | |
| | 5/1, 2 | 2 | Hay | ND |
| | 5/6, 7, 8, 10, 13 | 5 | Green Chop | P |
| M. K. Stewart Dairy | 4/25 | 1 | Hay | P |
| | 4/26, 27, 28 | 3 | Green Chop | P |
| | 4/29, 30 | 2 | Silage | ND |
| | 5/1, 2 | 2 | Silage | ND |
| | 5/10, 13 | 2 | Green Chop | P |
| Wright Dairy | 4/26 | 1 | Silage | P |
| | 4/27 | 1 | Hay | P |
| | 4/28, 29, 30 | 3 | Hay | ND |
| | 5/1, 2 | 2 | Hay | ND |
| Highway 93 at Alamo | 4/28 | 1 | Natural | P |
| 5 mi S of Alamo | 4/28 | 1 | Natural | P |
| 10 mi S of Alamo | 4/28 | 1 | Natural | P |
| 15 mi S of Alamo | 4/28 | 1 | Natural | P |
| 20 mi S of Alamo | 4/28 | 1 | Natural | P |
| 25 mi S of Alamo | 4/28 | 1 | Natural | P |
| 29.5 mi S of Alamo | 4/28 | 1 | Natural | P |
| (Butler Ranch turnoff) | | | | |
| Caliente, Nevada | | | | |
| Charlton Ranch | 4/27, 28, 29 | 3 | Green Chop | ND |
| L. Mathews Ranch | 4/28, 29, 30 | 3 | Pasture | P |
| | 4/28 | 1 | Green Chop | P |
| | 4/29, 30 | 2 | Hay | ND |
| | 5/1 | 1 | Pasture | P |
| | 5/1 | 1 | Hay | ND |
| Oxborrow Ranch | 4/30 & 5/1 | 2 | Hay | ND |
| Raymond Ranch | 4/30 & 5/1 | 2 | Pasture | ND |
| | 5/2, 3 | 2 | Hay | ND |
| Tennille Ranch | 4/30 | 1 | Pasture | ND |
| | 5/1 | 1 | Pasture | P |

P -positive

ND-not detectable

Appendix III. Vegetation Sampling Data(continued)

| Location | Date Collected | No. of Samples | Type | Fresh fission Products |
|-----------------------------|----------------------------|----------------|------------|------------------------|
| Caliente, Nevada(continued) | | | | |
| Young Ranch | 4/26 | 1 | Hay | P |
| | 4/27, 30 | 2 | Hay | ND |
| | 4/26, 27, 29, 30 | 4 | Pasture | P |
| | 4/28 | 1 | Natural | P |
| | 4/29 | 1 | Green Chop | ND |
| | 5/1 | 1 | Hay | ND |
| | 5/1 | 1 | Pasture | P |
| Highway 93 at Caliente | 4/28, 29 and 30 | 3 | Natural | P |
| | 5/1 | 1 | Natural | P |
| 1 mi N of Caliente | 4/26, 27 | 2 | Natural | P |
| 4 mi N of Caliente | 4/26, 27 | 2 | Natural | P |
| 5 mi N of Caliente | 4/28, 29 | 2 | Natural | P |
| 5 mi N of Caliente | 4/30 | 1 | Natural | ND |
| 5 mi N of Caliente | 5/1 | 1 | Natural | P |
| 7 mi N of Caliente | 4/26, 27 | 2 | Natural | P |
| 10 mi N of Caliente | 4/26, 27, 28 29, and 30 | 5 | Natural | P |
| 10 mi N of Caliente | 5/1 | 1 | Natural | ND |
| 13 mi N of Caliente | 4/27 | 1 | Natural | P |
| 15 mi N of Caliente | 4/28, 29, 30 | 3 | Natural | P |
| 15 mi N of Caliente | 5/1 | 1 | Natural | P |
| 16 mi N of Caliente | 4/26, 27 | 2 | Natural | P |
| 19 mi N of Caliente | 4/26, 27 | 2 | Natural | P |
| 22 mi N of Caliente | 4/26, 27 | 2 | Natural | P |
| Elgin, Nevada | | | | |
| Blue Ranch | 4/29 | 1 | Green Chop | ND |
| | 4/30 & 5/1 | 2 | Hay | ND |
| Highway 93, Glendale, Nev. | 4/30 | 1 | Natural | ND |
| 5 mi N of Glendale | 4/30 | 1 | Natural | ND |
| 10 mi N of Glendale | 4/30 | 1 | Natural | ND |
| 15 mi N of Glendale | 4/30 | 1 | Natural | P |
| 20 mi N of Glendale | 4/30 | 1 | Natural | ND |
| 25 mi N of Glendale | 4/30 | 1 | Natural | P |
| 30 mi N of Glendale | 4/30 | 1 | Natural | P |
| (Butler Ranch turnoff) | | | | |

P -positive
ND-not detectable

Appendix III. Vegetation Sampling Data (continued)

| Location | Date Collected | No. of Samples | Type | Fresh fission Products |
|---------------------------------|------------------|----------------|---------------|------------------------|
| Hiko, Nevada | | | | |
| Davis Ranch | 4/26-30 | 5 | Pasture | P |
| | 5/1-7 | 7 | Pasture | P |
| | 5/8, 9, 13, 25 | 4 | Pasture | P |
| Schofield Dairy | 4/25 | 1 | Pasture | P |
| | 4/26-29 | 6 | Hay | P |
| | 4/30 | 1 | Hay | ND |
| | 4/30 & 5/1 | 2 | Hay | P |
| | 5/1 | 1 | Hay | ND |
| | 5/2-6 | 9 | Hay | P |
| | 5/6&7 | 2 | Hay | ND |
| | 5/7-10 | 5 | Hay | P |
| | 5/11, 12/13 | 3 | Hay | P |
| | 4/26, 28, 29, 30 | 5 | Fresh alfalfa | P |
| | 5/1-6 | 11 | Fresh alfalfa | P |
| | 5/7-11 | 10 | Fresh alfalfa | P |
| | 5/12 & 5/13 | 4 | Fresh alfalfa | P |
| | 5/13 | 1 | Fresh alfalfa | ND |
| | 4/26, 28, 29, 30 | 4 | Grain | ND |
| | 4/27 | 2 | Grain | P |
| | 5/1, 2, 5, 6, 7 | 5 | Grain | P |
| | 5/3, 4 | 2 | Grain | ND |
| | 5/8, 9, 12 | 3 | Grain | ND |
| | 5/10, 11, 13 | 3 | Grain | P |
| | 4/25-27 | 32 | Green Chop | P |
| | 4/28-30 | 6 | Green Chop | P |
| | 5/1-4 | 8 | Green Chop | P |
| | 5/5-8 | 8 | Green Chop | P |
| | 5/9-12 | 5 | Green Chop | P |
| | 5/13, 16, 19, 25 | 4 | Green Chop | P |
| Coyote Summit, 30 mi W of | | | | |
| Jct. US 93 & 25 on Hway 25 | 4/26 | 1 | Natural | ND |
| 25 mi W Jct. 93 & 25 on Hway 25 | 4/26 | 1 | Natural | P |
| 20 mi W Jct. 93 & 25 on Hway 25 | 4/26 | 1 | Natural | P |

P -positive

ND-not detectable

Appendix III. Vegetation Sampling Data (continued)

| Location | Date Collected | No. of Samples | Type | Fresh fission Products |
|---|----------------|----------------|------------|------------------------|
| Hancock Summit, 15 mi W | | | | |
| Jct. 93 & 25 on Hway 25 | 4/26 | 1 | Natural | P |
| 10 mi W Jct. 93 & 25 on Hway 25 | 4/26 | 1 | Natural | P |
| 5 mi W Jct 93 & 25 on Hway 25 | 4/26 | 1 | Natural | P |
| Jct. of US 93 & Hway 25, Hiko, Nevada | 4/26 | 2 | Natural | P |
| 5 mi E Jct 93 & 25 on US 93 | 4/26 | 1 | Natural | P |
| 10 mi E Jct 93 & 25 on US 93 | 4/26 | 1 | Natural | P |
| 15 mi E Jct 93 & 25 on US 93 | 4/26 | 1 | Natural | P |
| 20 mi E Jct 93 & 25 on US 93 | 4/26 | 1 | Natural | P |
| Delamar Jct., 25 mi E of Jct 93 & 25 on US 93 | 4/26 | 1 | Natural | P |
| 30 mi E Jct 93 & 25 on US 93 | 4/26 | 1 | Natural | P |
| 35 mi E Jct 93 & 25 on US 93 | 4/26 | 1 | Natural | P |
| 40 mi E Jct 93 & 25 on US 93 | 4/26 | 1 | Natural | P |
| Panaca, Nevada | | | | |
| C & G Ranch | 4/27, 28 | 2 | Green Chop | ND |
| | 4/29, 30 & 5/1 | 3 | Hay | ND |
| E. Deck Ranch | 4/26 | 1 | Hay | P |
| | 4/26 | 1 | Green Chop | P |
| | 4/27 | 1 | Grass | P |
| | 4/27, 29, 30 | 3 | Hay | ND |
| | 4/29, 30 | 1 | Grass | ND |
| | 4/30 | 1 | Pasture | P |
| | 5/1 | 1 | Grass | ND |

P -positive

ND-not detectable

Appendix III. Vegetation Sampling Data (continued)

| Location | Date Collected | No. of Samples | Type | Fresh fission Products |
|--------------------------------|----------------|----------------|---------|------------------------|
| NW side of Panaca | 4/27 | 1 | Natural | P |
| Panaca, 5 mi N on Delmue Ranch | 4/30 & 5/1 | 2 | Natural | P |
| 5 mi N of Panaca on US 93 | 4/30 | 1 | Natural | P |
| 5 mi N of Panaca on US 93 | 5/1 | 1 | Natural | P |
| 5 mi E of Panaca on Hway 25 | 4/27, 28, 30 | 3 | Natural | ND |
| 5 mi E of Panaca on Hway 25 | 4/29 & 5/1 | 2 | Natural | P |
| 10 mi E of Panaca on Hway 25 | 4/27, 29 & 5/1 | 3 | Natural | P |
| 10 mi E of Panaca on Hway 25 | 4/28, 30 | 2 | Natural | ND |
| 15 mi E of Panaca on Hway 25 | 4/28, 29 | 2 | Natural | ND |
| Pioche, Nevada | | | | |
| Delmue Ranch | 4/27, 30 | 2 | Hay | P |
| | 4/27, 29 | 2 | Pasture | P |
| | 4/28 & 5/1 | 3 | Natural | P |
| | 5/1 | 1 | Hay | ND |
| Horlacher Ranch | 4/27-30 | 4 | Natural | P |
| | 4/27-30 | 4 | Hay | ND |
| | 5/1 | 1 | Natural | P |
| | 5/1 | 1 | Hay | ND |
| Rose Valley Ranch | 4/26, 27 | 2 | Hay | P |
| | 4/26 | 1 | Pasture | P |
| | 4/27, 28, 29 | 4 | Natural | P |
| 5 mi N or Pioche on US 93 | 4/27, 28 | 2 | Natural | P |
| 10 mi N of Pioche on US 93 | 4/27, 28 | 2 | Natural | P |
| 15 mi N of Pioche on US 93 | 4/28 | 1 | Natural | P |
| 20 mi N of Pioche on US 93 | 4/28 | 1 | Natural | P |

P -positive

ND-not detectable

Appendix III. Vegetation Sampling Data (continued)

| Location | Date Collected | No. of Samples | Type | Fresh fission Products |
|-------------------------------|------------------|----------------|---------|------------------------|
| 25 mi N of Pioche on US 93 | 4/28 | 1 | Natural | P |
| 30 mi N of Pioche on US 93 | 4/28 | 1 | Natural | P |
| 35 mi N of Pioche on US 93 | 4/28 | 1 | Natural | P |
| 40 mi N of Pioche on US 93 | 4/28 | 1 | Natural | P |
| 45 mi N of Pioche on US 93 | 4/28 | 1 | Natural | ND |
| 50 mi N of Pioche on US 93 | 4/28 | 1 | Natural | P |
| 55 mi N of Pioche on US 93 | 4/28 | 1 | Natural | P |
| Delmue Ranch road, Pioche | 4/29 | 1 | Natural | P |
| 2 mi S of Delmue Ranch Pioche | 4/27 | 1 | Natural | P |
| 5 mi S of Delmue Ranch Pioche | 4/28 & 5/1 | 2 | Natural | P |
| 5 mi N of Delmue Ranch Pioche | 4/29 & 5/1 | 2 | Natural | P |
| 10 mi N of Delmue Rn., Pioche | 4/29 & 5/1 | 1 | Natural | P |
| 3.5 mi E of Pioche | 5/1 | 1 | Natural | P |
| 5 mi E of Pioche | 4/29, 30 & 5/1 | 3 | Natural | P |
| 10 mi E of Pioche | 4/29, 30 & 5/1 | 3 | Natural | P |
| Ursine, Nevada | | | | |
| Burnt Cabin Ranch | 5/1 | 1 | Natural | P |
| Donahue Ranch | 4/28 | 1 | Pasture | P |
| | 4/29 | 1 | Hay | P |
| | 5/2, 3, 5, 6, 10 | 5 | Pasture | P |
| | 5/4 | 1 | Pasture | ND |
| Lytle Ranch | 4/26 | 1 | Pasture | P |
| | 4/27-30 | 4 | Hay | ND |
| | 5/1 | 1 | Hay | ND |

P -positive

ND-not detectable

Appendix III. Vegetation Sampling Data (continued)

| Location | Date Collected | No. of Samples | Type | Fresh fission Products |
|--|----------------|----------------|---------|------------------------|
| 1/4 mi W of Ursine | 4/28; 29, 30 | 3 | Natural | P |
| 1/4 mi W of Ursine | 5/1 | 1 | Natural | P |
| 5 mi W of Ursine | 4/28 | 1 | Natural | P |
| 10 mi W of Ursine | 4/28 | 1 | Natural | P |
| 5 mi N of Ursine | 4/27-30 | 4 | Natural | P |
| 5 mi N of Ursine | 5/1 | 1 | Natural | P |
| 6.5 mi N of Ursine | 4/27 | 1 | Natural | P |
| 7.0 mi N of Ursine | 4/26 | 1 | Natural | P |
| 8.5 mi N of Ursine | 4/27 | 1 | Natural | P |
| 10 mi N of Ursine | 4/28, 29 & 5/1 | 3 | Natural | P |
| 15 mi N of Ursine | 4/29 & 5/1 | 2 | Natural | P |
| 20 mi N of Ursine | 4/29 & 5/1 | 2 | Natural | P |
| Meadow Valley Reservoir Ursine | 4/30 | 1 | Natural | P |
| 1/2 mi W of Fredonia, Arizona | 5/1 | 1 | Natural | ND |
| 8 mi W of Fredonia, Ariz. | 5/1 | 1 | Natural | ND |
| Moccasin, Arizona | 4/30 | 1 | Natural | ND |
| Mt. Trumbull, Arizona | 5/2 | 1 | Natural | ND |
| 16 mi E of Mt. Trumbull | 5/2 | 1 | Natural | ND |
| Pipe Springs National Monu- ment, Arizona | 4/30 | 1 | Natural | ND |
| 5 mi S of Pipe Springs | 5/2 | 1 | Natural | ND |
| Matheson Dairy, Cedar City, Utah | 4/27 | 1 | Silage | ND |
| | 4/27 | 1 | Hay | ND |
| Gonders Ranch, Garrison, Utah | 5/4 | 1 | Hay | ND |
| | 5/4 | 1 | Natural | P |
| Airport, Kanab, Utah | 5/1 | 1 | Natural | ND |
| 2 mi S of Mt. Carmel Jct., Utah | 5/1 | 1 | Natural | ND |
| R. Cox Dairy | 4/27 | 1 | Pasture | ND |
| St. George, Utah | 4/27 | 1 | Silage | ND |
| | 4/27 | 1 | Hay | ND |

P -positive

ND-not detectable

Appendix IV. Complete Milk Sampling Data

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|---------------|--------------------|----------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Alamo, Nevada | | | | | | | |
| Frehner Dairy | 4/25 | PM | ND | 80 | 30 | ND | 5 |
| | 4/26 | AM | 50 | 390 | 30 | ND | 5 |
| | 4/26 | PM | 50 | 430 | ND | no chem | |
| | 4/27 | AM | 30 | 190 | 30 | no chem | |
| | 4/27 | PM | 40 | 110 | 25 | no chem | |
| | 4/28 | PM | ND | ND | ND | no chem | |
| | 4/29 | AM | 50 | 40 | 30 | no chem | |
| | 4/29 | PM | ND | ND | 20 | no chem | |
| | 4/30 | AM | ND | ND | 30 | no chem | |
| | 4/30 | PM | ND | ND | 20 | no chem | |
| | 5/01 | AM | ND | ND | 15 | no chem | |
| | 5/01 | PM | ND | ND | 15 | no chem | |
| | 5/02 | AM | ND | ND | ND | no chem | |
| | 5/02 | PM | ND | ND | ND | no chem | |
| | 5/03 | AM | ND | ND | ND | ND | 5 |
| | 5/03 | PM | ND | ND | 40 | no chem | |
| | 5/04 | AM | ND | ND | 35 | no chem | |
| | 5/04 | PM | ND | ND | 25 | no chem | |
| | 5/05 | AM | ND | ND | 20 | no chem | |
| | 5/05 | PM | ND | ND | 15 | no chem | |
| | 5/06 | AM | 50 | ND | 10 | no chem | |
| | 5/06 | PM | 30 | ND | 20 | no chem | |
| | 5/07 | AM | 50 | ND | 20 | no chem | |
| | 5/07 | PM | ND | ND | 20 | no chem | |
| | 5/08 | AM | 50 | ND | 20 | no chem | |
| | 5/08 | PM | 50 | ND | 10 | no chem | |
| | 5/09 | AM | ND | ND | 10 | no chem | |
| | 5/09 | PM | 60 | ND | 20 | no chem | |
| | 5/10 | AM | 60 | ND | 25 | no chem | |
| | 5/11 | AM | ND | ND | ND | no chem | |
| | 5/12 | AM | ND | ND | ND | no chem | |
| | 5/13 | AM | ND | ND | 15 | ND | 2 |
| L. Lee Dairy | 4/25 | PM | 90 | 280 | 50 | ND | 5 |
| | 4/26 | AM | 600 | 340 | 65 | no chem | |
| | 4/26 | PM | 600 | 1900 | ND | no chem | |
| | 4/27 | AM | 1100 | 3600 | ND | ND | 5 |
| | 4/27 | PM | 980 | 2500 | ND | ND | 5 |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|-----------------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Alamo, Nevada | | | | | | | |
| L. Lee Dairy (continued) | 4/28 | AM | 800 | 1400 | ND | ND | 6 |
| | 4/28 | PM | 1400 | 1700 | ND | ND | 6 |
| | 4/29 | AM | 800 | 730 | ND | ND | 6 |
| | 4/29 | PM | 760 | 540 | ND | ND | 6 |
| | 4/30 | AM | 440 | 260 | ND | ND | 4 |
| | 4/30 | PM | 530 | 210 | ND | ND | 4 |
| | 5/01 | AM | 630 | 190 | ND | ND | 5 |
| | 5/01 | PM | 610 | 150 | ND | ND | 5 |
| | 5/02 | AM | 460 | ND | 60 | ND | 7 |
| | 5/02 | PM | 520 | ND | 65 | ND | 7 |
| | 5/03 | AM | 450 | ND | 35 | ND | 6 |
| | 5/03 | PM | 450 | ND | 40 | ND | 6 |
| | 5/04 | AM | 300 | ND | 55 | ND | 5 |
| | 5/04 | PM | 340 | ND | 60 | ND | 5 |
| | 5/05 | AM | 290 | ND | 60 | no chem | |
| | 5/05 | PM | 260 | ND | 55 | no chem | |
| | 5/06 | AM | 200 | ND | 55 | no chem | |
| | 5/06 | PM | 220 | ND | 50 | no chem | |
| | 5/07 | AM | 200 | ND | 50 | no chem | |
| | 5/07 | PM | 220 | ND | 45 | no chem | |
| | 5/08 | AM | 130 | ND | 40 | no chem | |
| | 5/08 | PM | 150 | ND | 40 | no chem | |
| | 5/09 | AM | 210 | ND | 45 | ND | 8 |
| | 5/25 | PM | 60 | ND | 15 | 5 | 4 |
| | 6/07 | PM | 20 | ND | 15 | 5 | 5 |
| | 6/13 | AM | NA* | NA | NA | 15 | 2 |
| | 6/17 | AM | ND | ND | ND | ND | 5 |
| | 6/20 | AM | 20 | ND | 20 | ND | 3 |
| | 7/07 | AM | NA | NA | 20 | NA | NA |
| | 7/14 | AM | ND | ND | 25 | 5 | 1 |
| | 7/22 | AM | ND | ND | 10 | ND | 4 |
| | 7/27 | AM | ND | ND | 10 | ND | 3 |
| | 8/03 | AM | ND | ND | 10 | ND | 2 |
| Mann Ranch | 4/30 | PM | ND | ND | ND | no chem | |
| | 5/01 | AM | ND | ND | 30 | no chem | |
| | 5/01 | PM | ND | ND | 20 | no chem | |
| | 5/02 | AM | ND | ND | 30 | no chem | |
| | 5/02 | PM | ND | ND | ND | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|---------------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Alamo, Nevada | | | | | | | |
| Mann Ranch (continued) | 5/03 | AM | ND | ND | 35 | no chem | |
| | 5/03 | PM | ND | ND | 20 | no chem | |
| | 5/04 | AM | ND | ND | 20 | no chem | |
| | 5/04 | PM | ND | ND | 25 | no chem | |
| | 5/05 | AM | ND | ND | ND | no chem | |
| Sharp Ranch | 4/26 | AM | 1600 | 7300 | ND | ND | 5 |
| | 4/26 | PM | 1000 | 5500 | ND | no chem | |
| | 4/27 | AM | 2000 | 7800 | ND | no chem | |
| | 4/27 | PM | 840 | 2400 | ND | no chem | |
| | 4/28 | AM | 2100 | 5100 | ND | 5 | 3 |
| | 4/28 | PM | 570 | 840 | 45 | 5 | 3 |
| | 4/29 | AM | 1800 | 1800 | ND | no chem | |
| | 4/30 | AM | 1300 | 650 | 90 | no chem | |
| | 4/30 | PM | 1500 | 480 | 110 | 5 | 3 |
| | 5/01 | AM | 1200 | 320 | 160 | no chem | |
| | 5/01 | PM | 780 | 180 | 80 | no chem | |
| | 5/02 | AM | 800 | 110 | 80 | 5 | 5 |
| | 5/03 | AM | 570 | ND | 30 | 5 | 4 |
| | 5/04 | AM | 520 | ND | 60 | 5 | 4 |
| | 5/05 | AM | 430 | ND | 65 | no chem | |
| | 5/05 | PM | 270 | ND | 50 | no chem | |
| | 5/06 | AM | 250 | ND | 70 | no chem | |
| | 5/07 | AM | 190 | ND | 30 | no chem | |
| | 5/08 | AM | 190 | ND | 40 | no chem | |
| | 5/09 | AM | 120 | ND | 20 | no chem | |
| | 5/10 | AM | ND | ND | 25 | ND | 5 |
| | 5/11 | AM | ND | ND | 20 | ND | 5 |
| | 5/12 | AM | 60 | ND | 25 | ND | 6 |
| | 5/13 | AM | 80 | ND | 30 | ND | 7 |
| | 5/25 | AM | 50 | ND | 20 | 25 | 5 |
| Leo Stewart Dairy | 4/25 | PM | 70 | 240 | 40 | ND | 6 |
| | 4/26 | AM | 60 | 280 | 45 | no chem | |
| | 4/26 | PM | 50 | 400 | 25 | no chem | |
| | 4/27 | AM | 270 | 850 | 45 | ND | 6 |
| | 4/27 | PM | 40 | 110 | 25 | no chem | |
| | 4/28 | AM | 190 | 400 | ND | ND | 8 |
| | 4/28 | PM | 220 | 270 | 25 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|----------------------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Alamo, Nevada | | | | | | | |
| Leo Stewart Dairy (continued) | 4/29 | AM | 100 | 100 | 45 | no chem | |
| | 4/29 | PM | 60 | 40 | 35 | no chem | |
| | 4/30 | AM | 60 | ND | 40 | ND | 7 |
| | 4/30 | PM | 30 | ND | 50 | ND | 7 |
| | 5/01 | AM | ND | ND | 30 | no chem | |
| | 5/02 | AM | ND | ND | 35 | no chem | |
| | 5/02 | PM | ND | ND | ND | no chem | |
| | 5/03 | AM | ND | ND | 35 | ND | 7 |
| | 5/03 | PM | ND | ND | 40 | no chem | |
| | 5/04 | AM | 130 | ND | 50 | no chem | |
| | 5/04 | PM | 100 | ND | 35 | no chem | |
| | 5/05 | AM | 90 | ND | 35 | ND | 4 |
| | 5/05 | PM | ND | ND | 45 | no chem | |
| | 5/06 | AM | 20 | ND | 40 | no chem | |
| | 5/06 | PM | 40 | ND | 50 | no chem | |
| | 5/07 | AM | 160 | ND | 55 | no chem | |
| | 5/07 | PM | 100 | ND | 15 | no chem | |
| | 5/08 | AM | 110 | ND | 30 | no chem | |
| | 5/08 | PM | 70 | ND | 35 | no chem | |
| | 5/09 | AM | ND | ND | 15 | no chem | |
| | 5/09 | PM | ND | ND | 20 | no chem | |
| | 5/10 | AM | 20 | ND | 30 | no chem | |
| | 5/11 | AM | ND | ND | 25 | no chem | |
| | 5/12 | AM | ND | ND | 20 | no chem | |
| | 5/13 | AM | ND | ND | 40 | ND | 9 |
| M. K. Stewart Dairy | 4/25 | PM | ND | 90 | 35 | ND | 9 |
| | 4/26 | AM | 30 | 130 | 15 | no chem | |
| | 4/26 | PM | ND | 60 | ND | no chem | |
| | 4/27 | AM | 170 | 630 | 50 | no chem | |
| | 4/27 | PM | 280 | 870 | 40 | no chem | |
| | 4/28 | AM | 340 | 610 | ND | no chem | |
| | 4/28 | PM | 590 | 770 | ND | no chem | |
| | 4/29 | AM | 500 | 470 | 45 | no chem | |
| | 4/29 | PM | 300 | ND | 50 | no chem | |
| | 4/30 | AM | 190 | 100 | 75 | ND | 4 |
| | 4/30 | PM | 150 | 70 | ND | ND | 4 |
| | 5/01 | AM | 80 | 20 | 45 | no chem | |
| | 5/01 | PM | ND | ND | 35 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|------------------------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Alamo, Nevada | | | | | | | |
| M. K. Stewart Dairy (continued) | 5/02 | AM | ND | ND | 50 | no chem | |
| | 5/02 | PM | 30 | ND | 30 | no chem | |
| | 5/03 | AM | ND | ND | 30 | no chem | |
| | 5/03 | PM | ND | ND | 50 | ND | 3 |
| | 5/04 | AM | ND | ND | ND | no chem | |
| | 5/04 | PM | ND | ND | ND | no chem | |
| | 5/05 | AM | ND | ND | ND | ND | 3 |
| | 5/05 | PM | ND | ND | 35 | no chem | |
| | 5/06 | AM | ND | ND | 20 | no chem | |
| | 5/06 | PM | ND | ND | 30 | no chem | |
| | 5/07 | AM | 30 | ND | 35 | no chem | |
| | 5/07 | PM | ND | ND | 15 | no chem | |
| | 5/08 | AM | ND | ND | 15 | no chem | |
| | 5/08 | PM | ND | ND | 25 | no chem | |
| | 5/09 | AM | ND | ND | 15 | no chem | |
| | 5/09 | PM | ND | ND | 10 | no chem | |
| | 5/10 | AM | ND | ND | 20 | no chem | |
| | 5/11 | AM | ND | ND | 25 | no chem | |
| | 5/12 | AM | 80 | ND | 20 | no chem | |
| | 5/13 | AM | 40 | ND | 15 | ND | 4 |
| Wright Dairy | 4/25 | PM | ND | 100 | 10 | ND | 3 |
| | 4/26 | AM | 50 | 330 | 45 | ND | 3 |
| | 4/26 | PM | 30 | 170 | 20 | no chem | |
| | 4/27 | AM | ND | 110 | 20 | no chem | |
| | 4/27 | PM | ND | ND | ND | no chem | |
| | 4/28 | AM | ND | ND | 10 | no chem | |
| | 4/28 | PM | 30 | ND | 15 | no chem | |
| | 4/29 | AM | ND | ND | 35 | no chem | |
| | 4/29 | PM | ND | ND | 25 | no chem | |
| | 4/30 | AM | ND | ND | 25 | no chem | |
| | 4/30 | PM | ND | ND | ND | ND | 3 |
| | 5/01 | AM | ND | ND | ND | no chem | |
| | 5/01 | PM | ND | ND | 15 | no chem | |
| | 5/02 | AM | 20 | ND | 30 | no chem | |
| | 5/03 | PM | ND | ND | 10 | no chem | |
| | 5/04 | AM | ND | ND | ND | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Caliente, Nevada | | | | | | | |
| Charlton Ranch | 4/28 | PM | 130 | ND | 85 | no chem | |
| | 4/29 | AM & PM | ND | ND | 10 | no chem | |
| | 4/30 | AM & PM | ND | ND | 15 | no chem | |
| | 5/01 | PM | ND | ND | 25 | no chem | |
| | 5/04 | AM | ND | ND | 20 | no chem | |
| | 5/06 | AM | ND | ND | 10 | no chem | |
| Oxborrow Ranch | 4/30 | AM | ND | ND | 25 | no chem | |
| | 5/01 | AM | ND | ND | 25 | no chem | |
| | 5/03 | AM | ND | ND | ND | no chem | |
| | 5/05 | AM | ND | ND | ND | ND | 4 |
| | 5/07 | AM | ND | ND | 30 | no chem | |
| | 5/09 | AM | ND | ND | 15 | no chem | |
| Raymond Ranch | 4/30 | AM | 100 | 500 | ND | no chem | |
| | 5/01 | AM | ND | ND | 40 | no chem | |
| | 5/02 | AM | 70 | ND | 15 | no chem | |
| | 5/03 | AM | 50 | ND | 35 | no chem | |
| | 5/04 | AM | ND | ND | ND | ND | 10 |
| | 5/08 | AM | ND | ND | 15 | ND | 3 |
| | 5/10 | AM | ND | ND | 15 | | |
| Tennille Ranch | 4/29 | PM | 40 | 20 | 15 | ND | 5 |
| | 4/30 | PM | ND | ND | ND | no chem | |
| | 5/01 | PM | 50 | ND | 45 | no chem | |
| | 5/03 | AM | ND | ND | ND | ND | 3 |
| | 5/04 | AM | 20 | ND | 10 | no chem | |
| | 5/06 | AM | ND | ND | 15 | no chem | |
| | 5/08 | AM | ND | ND | 15 | no chem | |
| | 5/10 | AM | ND | ND | 15 | no chem | |
| Young Ranch | 4/25 | PM | ND | ND | 25 | no chem | |
| | 4/27 | AM | 30 | 90 | 30 | no chem | |
| | 4/28 | AM | 30 | 70 | 30 | no chem | |
| | 4/29 | PM | ND | ND | ND | no chem | |
| | 4/30 | PM | 30 | ND | 15 | no chem | |
| | 5/03 | AM | ND | ND | ND | ND | 4 |
| | 5/05 | AM | ND | ND | ND | no chem | |
| | 5/07 | AM | ND | ND | 25 | no chem | |
| | 5/10 | AM | ND | ND | 15 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|-----------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Elgin, Nevada | | | | | | | |
| Blue Ranch | 4/28 | PM | ND | ND | 35 | no chem | |
| | 4/29 | PM | ND | ND | 40 | no chem | |
| | 4/30 | PM | ND | ND | 40 | no chem | |
| | 5/01 | PM | ND | ND | 55 | no chem | |
| | 5/04 | AM | ND | ND | 55 | no chem | |
| Hiko, Nevada | | | | | | | |
| Davis Ranch | 4/26 | PM | 1800 | 7100 | ND | 5 | 3 |
| | 4/27 | PM | 3500 | 7800 | ND | no chem | |
| | 4/28 | PM | 2900 | 3500 | ND | 15 | 4 |
| | 4/29 | PM | 2000 | 1200 | ND | 20 | 4 |
| | 4/30 | PM | 2200 | 1100 | ND | no chem | |
| | 5/01 | PM | 1700 | 620 | ND | no chem | |
| | 5/02 | PM | 3000 | 650 | ND | no chem | |
| | 5/03 | PM | 2300 | 570 | ND | 50 | 7 |
| | 5/04 | PM | 1800 | 260 | ND | 35 | 5 |
| | 5/05 | PM | 970 | ND | ND | no chem | |
| | 5/06 | PM | 700 | ND | ND | no chem | |
| | 5/07 | PM | 510 | ND | ND | no chem | |
| | 5/08 | PM | 350 | ND | ND | no chem | |
| | 5/09 | PM | 240 | ND | 45 | 20 | 5 |
| | 5/10 | PM | 240 | ND | 75 | 15 | 7 |
| | 5/11 | PM | 130 | ND | 60 | 10 | 6 |
| | 5/12 | PM | 130 | ND | 80 | 10 | 5 |
| | 5/25 | PM | 80 | ND | 45 | | 5 |
| | 6/07 | PM | ND | ND | ND | 15 | 2 |
| | 6/14 | AM | ND | ND | ND | 20 | 8 |
| | 6/20 | PM | ND | ND | 10 | 15 | 6 |
| | 6/29 | AM | NA | NA | NA | 10 | 5 |
| | 7/05 | AM | NA | NA | 30 | 5 | 3 |
| | 7/12 | NA | NA | NA | 30 | 5 | 3 |
| | 7/18 | NA | 70 | ND | 25 | NA | NA |
| | 7/26 | PM | ND | ND | 25 | ND | 4 |
| Schofield Dairy | 4/25 | PM | 320 | 1000 | ND | ND | 4 |
| | 4/26 | AM | 1900 | 6100 | ND | 5 | 4 |
| | 4/26 | PM | 3300 | 20,000 | ND | 5 | 4 |
| | 4/27 | AM | 4400 | 15,000 | ND | 10 | 3 |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|--|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Schofield Dairy (continued) | 4/27 | PM | 4800 | 12,000 | ND | no chem | |
| | 4/28 | AM | 4000 | 6,700 | ND | 10 | 3 |
| | 4/28 | PM | 3700 | 4,700 | ND | 10 | 3 |
| | 4/29 | AM | 1500 | 1,400 | ND | ND | 4 |
| | 4/29 | PM | 1000 | 730 | ND | ND | 4 |
| | 4/30 | AM | 500 | 290 | ND | ND | 5 |
| | 4/30 | PM | 450 | 150 | ND | ND | 5 |
| | 5/01 | AM | 250 | 70 | 160 | ND | 5 |
| | 5/01 | PM | 140 | 40 | ND | ND | 5 |
| | 5/02 | AM | 130 | ND | 30 | ND | 5 |
| | 5/02 | PM | 100 | ND | 40 | ND | 5 |
| | 5/03 | AM | 80 | ND | 60 | ND | 5 |
| | 5/03 | PM | 70 | ND | 30 | ND | 5 |
| | 5/04 | AM | ND | ND | 30 | ND | 5 |
| | 5/04 | PM | 30 | ND | 20 | ND | 5 |
| | 5/05 | AM | ND | ND | 15 | no chem | |
| | 5/05 | PM | 40 | ND | 30 | no chem | |
| | 5/06 | AM | 40 | ND | 25 | no chem | |
| | 5/06 | PM | 60 | ND | 30 | no chem | |
| | 5/07 | AM | 30 | ND | 35 | ND | 11 |
| | 5/07 | PM | ND | ND | 25 | no chem | |
| | 5/08 | AM | 50 | ND | 35 | no chem | |
| | 5/08 | PM | 40 | ND | 20 | no chem | |
| | 5/13 | PM | ND | ND | 25 | ND | 5 |
| Las Vegas, Nevada | | | | | | | |
| Anderson Dairy #1 (Milk from Hidden Valley, Nevada) | 4/26 | AM | ND | ND | 25 | no chem | |
| | 4/28 | AM | ND | ND | 20 | no chem | |
| | 4/29 | AM | ND | ND | 25 | no chem | |
| | 4/30 | AM | ND | ND | 25 | no chem | |
| Anderson Dairy #2 (Milk from St. George, Utah) | 4/26 | AM | ND | ND | ND | no chem | |
| | 4/28 | AM | ND | ND | 10 | no chem | |
| | 4/29 | AM | ND | ND | ND | no chem | |
| | 5/01 | PM | ND | ND | 50 | no chem | |
| | 5/03 | PM | ND | ND | 25 | no chem | |
| | 5/05 | PM | ND | ND | 20 | no chem | |
| | 5/07 | PM | ND | ND | 25 | no chem | |
| | 5/09 | PM | ND | ND | 30 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|----------------------|--------------------|----------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Las Vegas, Nevada | | | | | | | |
| Anderson Dairy #3 | 4/25 | AM | ND | ND | 10 | no chem | |
| (Milk from Mesquite, | 4/28 | AM | ND | ND | 20 | no chem | |
| Nev., Logandale, | 4/28 | PM | ND | ND | 30 | no chem | |
| Nev., and Miners- | 4/29 | PM | ND | ND | 15 | no chem | |
| ville, Utah) | 5/01 | PM | ND | ND | 20 | no chem | |
| | 5/02 | PM | ND | ND | 35 | ND | 7 |
| | 5/03 | PM | ND | ND | 15 | no chem | |
| | 5/04 | PM | ND | ND | 35 | no chem | |
| | 5/05 | PM | ND | ND | 20 | no chem | |
| | 5/07 | PM | ND | ND | 15 | no chem | |
| | 5/08 | PM | ND | ND | 30 | no chem | |
| | 5/09 | PM | ND | ND | 20 | no chem | |
| Anderson Dairy #4 | 4/28 | AM | ND | ND | 30 | no chem | |
| (Milk from Alamo, | 4/30 | AM | ND | ND | ND | no chem | |
| Nev.) | 5/01 | PM | ND | ND | 30 | no chem | |
| | 5/02 | AM | 60 | ND | 40 | no chem | |
| | 5/02 | PM | ND | ND | ND | no chem | |
| | 5/04 | AM | ND | ND | ND | no chem | |
| | 5/04 | PM | 50 | ND | 30 | no chem | |
| | 5/05 | AM | ND | ND | 30 | no chem | |
| | 5/06 | AM | ND | ND | 20 | no chem | |
| | 5/06 | PM | ND | ND | 25 | no chem | |
| | 5/07 | AM | ND | ND | 30 | no chem | |
| | 5/08 | AM | ND | ND | 25 | no chem | |
| | 5/08 | PM | 60 | ND | 10 | ND | 5 |
| | 5/09 | AM | ND | ND | 30 | no chem | |
| | 5/10 | AM | ND | ND | 25 | ND | 5 |
| | 5/10 | PM | 30 | ND | 25 | no chem | |
| | 5/12 | PM | ND | ND | 20 | no chem | |
| | 5/14 | PM | ND | ND | 20 | no chem | |
| | 5/16 | PM | 100 | ND | 15 | no chem | |
| | 5/19 | AM | 100 | ND | 20 | no chem | |
| Anderson Dairy #5 | | | | | | | |
| (Processed Milk) | 5/02 | AM | ND | ND | 10 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|--------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Las Vegas, Nevada | | | | | | | |
| Arden Dairy | 4/26 | PM | ND | ND | 10 | no chem | |
| | 4/28 | AM | ND | ND | ND | no chem | |
| | 4/29 | AM | ND | ND | 15 | no chem | |
| | 4/29 | PM | ND | ND | 15 | no chem | |
| | 4/30 | AM | ND | ND | 30 | no chem | |
| | 5/01 | AM | ND | ND | ND | no chem | |
| | 5/02 | AM | ND | ND | 30 | no chem | |
| | 5/03 | AM | ND | ND | 25 | no chem | |
| Meadow Gold Dairy | 4/29 | PM | ND | ND | 30 | no chem | |
| | 5/02 | AM | ND | ND | 10 | no chem | |
| Vegas Valley Farms | 4/26 | AM | ND | ND | 15 | no chem | |
| | 4/28 | AM | ND | ND | 30 | no chem | |
| Lund, Nevada | | | | | | | |
| McKenzie Dairy | 4/24 | PM | ND | ND | 30 | no chem | |
| | 4/26 | AM | ND | ND | 20 | no chem | |
| | 4/27 | AM | ND | ND | 30 | no chem | |
| | 4/28 | AM | ND | ND | 35 | no chem | |
| | 4/29 | AM | ND | ND | 20 | no chem | |
| | 5/05 | AM | ND | ND | 30 | no chem | |
| Panaca, Nevada | | | | | | | |
| C & G Ranch | 4/28 | AM | ND | ND | ND | no chem | |
| | 4/29 | PM | ND | ND | 35 | no chem | |
| | 4/30 | PM | ND | ND | 70 | no chem | |
| | 5/02 | AM | ND | ND | 90 | no chem | |
| E. Deck Ranch | 4/26 | AM | 50 | 160 | 55 | no chem | |
| | 4/27 | AM | 70 | 220 | 60 | no chem | |
| | 4/28 | AM | ND | ND | 35 | no chem | |
| | 4/29 | AM | ND | ND | 35 | no chem | |
| | 4/30 | AM | ND | ND | 30 | no chem | |
| | 5/01 | AM | ND | ND | 40 | no chem | |
| | 5/02 | AM | ND | ND | 60 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|-------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Panaca, Nevada | | | | | | | |
| K. Lee Ranch | 4/26 | AM | ND | ND | 15 | no chem | |
| | 4/27 | AM | 20 | 210 | ND | no chem | |
| | 4/30 | AM | 50 | 20 | 35 | no chem | |
| | 4/30 | PM | 170 | 60 | 40 | no chem | |
| | 5/02 | AM | 160 | ND | 65 | no chem | |
| | 5/03 | AM | 120 | ND | 40 | no chem | |
| | 5/04 | AM | 100 | ND | 50 | no chem | |
| | 5/05 | AM | ND | ND | 10 | no chem | |
| | 5/06 | AM | 50 | ND | 30 | no chem | |
| | 5/07 | AM | ND | ND | 25 | no chem | |
| | 5/08 | AM | ND | ND | 15 | no chem | |
| | 5/09 | AM | ND | ND | 30 | no chem | |
| | 5/10 | AM | ND | ND | 15 | no chem | |
| Pioche, Nevada | | | | | | | |
| Delmue Ranch | 4/27 | AM | 30 | ND | 60 | no chem | |
| Horlacher Ranch | 4/27 | AM | ND | ND | 50 | no chem | |
| | 4/28 | AM | ND | ND | 20 | no chem | |
| | 4/29 | AM | ND | ND | 50 | no chem | |
| | 4/30 | AM | ND | ND | 25 | no chem | |
| | 5/01 | AM | ND | ND | 20 | no chem | |
| | 5/03 | AM | ND | ND | 45 | no chem | |
| Rose Valley Ranch | 4/26 | PM | ND | ND | 15 | no chem | |
| Ursine, Nevada | | | | | | | |
| Donahue Ranch | 4/28 | PM | 1100 | 1200 | 45 | no chem | |
| | 5/03 | AM | 320 | ND | 20 | ND | 15 |
| | 5/04 | AM | ND | ND | 40 | ND | 19 |
| | 5/05 | AM | 170 | ND | 25 | no chem | |
| | 5/06 | AM | 140 | ND | 10 | no chem | |
| | 5/10 | AM | 70 | ND | 15 | ND | 14 |
| Lytle Ranch | 4/27 | AM | ND | ND | 20 | no chem | |
| | 4/28 | AM | ND | ND | 30 | no chem | |
| | 4/29 | AM | ND | ND | ND | no chem | |
| | 4/30 | AM | ND | ND | 30 | no chem | |
| | 5/01 | AM | ND | ND | 30 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|---------------------|--------------------|----------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Ursine, Nevada | | | | | | | |
| Lytle Ranch | 5/02 | AM | ND | ND | 30 | no chem | |
| (continued) | 5/03 | AM | ND | ND | 50 | no chem | |
| McCrosky Ranch | 5/01 | AM | ND | ND | 65 | no chem | |
| | 5/02 | AM | ND | ND | 50 | no chem | |
| | 5/04 | AM | ND | ND | 40 | no chem | |
| Fredonia, Arizona | | | | | | | |
| M. Button Ranch | 4/30 | PM | ND | ND | ND | no chem | |
| | 5/01 | AM | ND | ND | ND | ND | 9 |
| | 5/02 | AM | 70 | ND | 45 | ND | 10 |
| | 5/04 | PM | ND | ND | ND | no chem | |
| | 5/05 | AM | ND | ND | 10 | no chem | |
| Moccasin, Arizona | | | | | | | |
| O. Johnson Ranch | 4/30 | PM | ND | ND | 40 | no chem | |
| | 5/01 | AM | ND | ND | ND | no chem | |
| | 5/02 | AM | ND | ND | 55 | no chem | |
| Mt. Trumbull, Ariz. | | | | | | | |
| O. Bundy Ranch | 5/02 | AM | 20 | ND | 35 | ND | 6 |
| Barstow, Calif. | | | | | | | |
| Hills Dairy | 5/04 | PM | ND | ND | 15 | no chem | |
| | 5/05 | AM | ND | ND | 25 | no chem | |
| | 5/06 | AM | ND | ND | ND | no chem | |
| | 5/08 | AM | ND | ND | 10 | no chem | |
| | 5/09 | AM | ND | ND | 10 | no chem | |
| | 5/10 | AM | ND | ND | ND | ND | 1 |
| | 5/16 | AM | ND | ND | ND | no chem | |
| Brawley, Calif. | | | | | | | |
| Dateland Dairy | 5/04 | AM | ND | ND | ND | no chem | |
| | 5/05 | AM | ND | ND | 10 | no chem | |
| | 5/07 | AM | ND | ND | ND | no chem | |
| Escondido, Calif. | | | | | | | |
| Bernard Dairy | 5/04 | AM | ND | ND | 10 | ND | 2 |
| | 5/05 | AM | ND | ND | 15 | no chem | |
| | 5/07 | AM | ND | ND | 10 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|-------------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Los Angeles, Calif. | | | | | | | |
| Jessup Farms | 5/05 | AM | ND | ND | 15 | ND | 2 |
| | 5/06 | AM | ND | ND | 25 | no chem | |
| | 5/07 | AM | ND | ND | 20 | no chem | |
| | 5/08 | AM | ND | ND | 20 | no chem | |
| | 5/09 | AM | ND | ND | 25 | no chem | |
| | 5/10 | AM | ND | ND | 10 | no chem | |
| | 5/11 | AM | ND | ND | 20 | no chem | |
| Newhall, Calif. | | | | | | | |
| Burbank Creamery | 5/05 | AM | ND | ND | 60 | no chem | |
| | 5/06 | AM | ND | ND | ND | no chem | |
| Riverside, Calif. | | | | | | | |
| Orange Crest Dairy | 5/04 | PM | ND | ND | 10 | ND | 2 |
| | 5/05 | PM | ND | ND | 15 | no chem | |
| | 5/06 | PM | ND | ND | 15 | no chem | |
| | 5/07 | PM | ND | ND | 10 | no chem | |
| | 5/08 | PM | ND | ND | 20 | no chem | |
| | 5/09 | PM | ND | ND | ND | no chem | |
| Alamosa, Colorado | | | | | | | |
| Alamosa Milk Co. | 4/29 | AM | ND | ND | 20 | no chem | |
| | 4/30 | AM | ND | ND | 20 | no chem | |
| | 5/03 | AM | ND | ND | 20 | no chem | |
| | 5/04 | AM | ND | ND | 10 | no chem | |
| Brush, Colorado | | | | | | | |
| McLagan Bros. Creamery | 4/27 | AM | ND | ND | 10 | no chem | |
| | 4/28 | AM | ND | ND | 55 | no chem | |
| | 4/29 | AM | ND | ND | 45 | no chem | |
| | 4/30 | PM | ND | ND | ND | no chem | |
| | 5/01 | PM | ND | ND | ND | no chem | |
| | 5/02 | PM | ND | ND | 30 | no chem | |
| Canon City, Colo. | | | | | | | |
| Monarch Dairy, Inc. | 4/26 | PM | ND | ND | 15 | no chem | |
| | 4/29 | AM | ND | ND | 15 | no chem | |
| Colorado Springs, Colo. | | | | | | | |
| Senton Dairy Co. | 4/28 | AM | ND | ND | 30 | no chem | |
| | 4/30 | AM | ND | ND | 10 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|--------------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ^{131}I | ^{133}I | ^{137}Cs | ^{89}Sr | ^{90}Sr |
| Senton Dairy Co. | 5/01 | AM | ND | ND | 20 | ND | 1 |
| (continued) | 5/02 | AM | ND | ND | 25 | no chem | |
| Craig, Colorado | | | | | | | |
| Yampa Valley Dairy | 4/28 | PM | ND | ND | 10 | no chem | |
| | 5/01 | PM | ND | ND | 30 | no chem | |
| | 5/04 | PM | ND | ND | 15 | no chem | |
| | 5/08 | PM | ND | ND | 20 | no chem | |
| | 5/09 | PM | ND | ND | 20 | no chem | |
| | 5/11 | PM | ND | ND | 30 | no chem | |
| Delta, Colorado | | | | | | | |
| Arden Meadow Gold Dairy | 4/27 | AM | ND | ND | ND | no chem | |
| | 4/28 | PM | ND | ND | 30 | no chem | |
| | 4/29 | PM | ND | ND | 25 | no chem | |
| Durango, Colo. | | | | | | | |
| Clover Rich Dairy | 4/28 | PM | ND | ND | 15 | no chem | |
| | 4/29 | PM | ND | ND | 20 | no chem | |
| | 4/30 | PM | ND | ND | 15 | no chem | |
| | 5/01 | AM | ND | ND | 20 | no chem | |
| | 5/02 | PM | ND | ND | 10 | ND | 14 |
| | 5/03 | AM | ND | ND | 25 | no chem | |
| Ft. Collins, Colo. | | | | | | | |
| Poudre Valley Creamery | 4/27 | AM | ND | ND | 35 | no chem | |
| | 4/28 | AM | ND | ND | 40 | no chem | |
| | 4/29 | AM | ND | ND | 40 | no chem | |
| | 4/30 | AM | ND | ND | ND | no chem | |
| | 5/01 | AM | ND | ND | 25 | ND | 10 |
| | 5/02 | AM | ND | ND | 35 | ND | 10 |
| | 5/03 | AM | ND | ND | 45 | no chem | |
| | 5/04 | AM | ND | ND | 30 | no chem | |
| Glenwood Springs, Colo. | | | | | | | |
| Glenwood Creamery | 4/26 | PM | ND | ND | 40 | no chem | |
| | 4/27 | AM | ND | ND | 35 | no chem | |
| | 4/28 | AM | ND | ND | 40 | no chem | |
| | 4/29 | PM | ND | ND | 35 | no chem | |
| | 5/03 | AM | ND | ND | 40 | no chem | |
| Grand Junction, Colo. | | | | | | | |
| Clymer's Rose Glen Dairy | 4/26 | AM | ND | ND | ND | no chem | |
| | 4/27 | PM | ND | ND | 20 | no chem | |
| | 4/29 | AM | ND | ND | 15 | ND | 10 |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|-----------------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Grand Junction, Colo. | | | | | | | |
| Clymer's Rose Glen Dairy | 5/01 | PM | ND | ND | ND | no chem | |
| | 5/02 | PM | ND | ND | 10 | no chem | |
| Monte Vista, Colo. | | | | | | | |
| Sunrise Creamery | 4/29 | AM | ND | ND | 10 | no chem | |
| Rocky Ford, Colo. | | | | | | | |
| Rocky Ford Coop. Creamery | 4/27 | AM | ND | ND | ND | ND | 6 |
| | 4/28 | AM | ND | ND | 20 | no chem | |
| | 4/29 | AM | ND | ND | ND | no chem | |
| | 4/30 | AM | ND | ND | ND | no chem | |
| | 4/30 | PM | ND | ND | 15 | no chem | |
| | 5/02 | AM | ND | ND | 20 | no chem | |
| | 5/02 | PM | ND | ND | ND | no chem | |
| Trinidad, Colo. | | | | | | | |
| Petramala Dairy | 4/27 | AM | ND | ND | ND | no chem | |
| | 4/28 | PM | ND | ND | 10 | no chem | |
| | 4/29 | PM | ND | ND | 10 | no chem | |
| | 4/30 | AM | ND | ND | ND | no chem | |
| | 5/01 | AM | ND | ND | 75 | no chem | |
| | 5/03 | PM | ND | ND | 30 | no chem | |
| Blackfoot, Idaho | | | | | | | |
| Cammack Dairy | 4/26 | PM | ND | ND | 10 | no chem | |
| | 4/27 | AM | ND | ND | 25 | no chem | |
| | 4/28 | AM | ND | ND | 65 | no chem | |
| Buhl, Idaho | | | | | | | |
| Smith's Dairy Products Inc. | 4/26 | PM | ND | ND | 25 | no chem | |
| | 4/27 | AM | ND | ND | 45 | no chem | |
| | 4/28 | AM | ND | ND | 25 | no chem | |
| | 4/29 | AM | ND | ND | 55 | no chem | |
| | 4/30 | AM | ND | ND | 20 | no chem | |
| | 5/02 | AM | ND | ND | 20 | no chem | |
| Burley, Idaho | | | | | | | |
| Wymore Dairy | 4/26 | AM | ND | ND | 25 | no chem | |
| | 4/27 | AM | ND | ND | 45 | no chem | |
| | 4/28 | AM | ND | ND | 55 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|----------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Burley, Idaho | 4/29 | AM | ND | ND | 40 | no chem | |
| Wymore Dairy | 4/30 | AM | ND | ND | 40 | no chem | |
| (continued) | 5/02 | AM | ND | ND | 55 | no chem | |
| | 5/03 | AM | ND | ND | 40 | no chem | |
| Coeur d'Alene, Idaho | 4/26 | AM | ND | ND | 65 | no chem | |
| Coeur d'Alene | 4/27 | AM | ND | ND | 70 | no chem | |
| Creamery | 4/28 | PM | ND | ND | 60 | no chem | |
| | 4/29 | PM | ND | ND | 80 | no chem | |
| | 4/30 | PM | ND | ND | 55 | no chem | |
| Grangeville, Idaho | 4/27 | AM | ND | ND | 75 | no chem | |
| Grangeville | 4/27 | PM | ND | ND | 10 | ND | 29 |
| Creamery | 4/29 | AM | ND | ND | 75 | ND | 15 |
| | 5/01 | PM | ND | ND | 70 | ND | 20 |
| | 5/02 | PM | ND | ND | 65 | no chem | |
| | 5/04 | AM | ND | ND | 70 | no chem | |
| | 5/04 | PM | ND | ND | 80 | no chem | |
| Idaho Falls, Idaho | 4/26 | PM | ND | ND | 50 | no chem | |
| Wallace Dairy | 4/29 | AM | 70 | ND | 30 | no chem | |
| | 5/02 | AM | 30 | ND | 55 | ND | 10 |
| | 5/10 | AM | ND | ND | 30 | no chem | |
| | 5/11 | AM | ND | ND | 35 | no chem | |
| | 5/13 | AM | ND | ND | 25 | no chem | |
| | 5/17 | AM | ND | ND | 40 | no chem | |
| | 5/18 | AM | ND | ND | 15 | ND | 13 |
| Jerome, Idaho | 4/26 | PM | ND | ND | 30 | no chem | |
| Ida Gem Dairymen, | 4/27 | AM | ND | ND | ND | no chem | |
| Inc. | 4/28 | AM | ND | ND | 10 | no chem | |
| | 4/29 | AM | ND | ND | 25 | ND | 10 |
| | 4/30 | AM | ND | ND | 35 | no chem | |
| Lewiston, Idaho | 4/25 | PM | ND | ND | 30 | no chem | |
| Golden Grain Dairy | 4/28 | PM | ND | ND | ND | no chem | |
| Producers, Inc. | 4/29 | AM | ND | ND | ND | no chem | |
| | 4/29 | PM | ND | ND | 35 | no chem | |
| | 5/01 | AM | ND | ND | 15 | no chem | |
| | 5/02 | AM | ND | ND | 45 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|---------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Mt. Home, Idaho | | | | | | | |
| Clover Hollow Dairy | 4/26 | AM | ND | ND | 35 | no chem | |
| Pocatello, Idaho | | | | | | | |
| Ward's Dairy | 4/26 | AM | ND | ND | 40 | no chem | |
| | 4/27 | AM | ND | ND | 15 | no chem | |
| | 4/28 | AM | ND | ND | 15 | no chem | |
| | 4/29 | AM | ND | ND | 50 | no chem | |
| | 4/30 | AM | ND | ND | 35 | ND | 10 |
| Beaver, Utah | | | | | | | |
| G. Robert's Dairy | 4/26 | PM | ND | ND | 85 | no chem | |
| | 4/27 | AM | ND | ND | 45 | no chem | |
| Cedar City, Utah | | | | | | | |
| Matheson Dairy | 4/26 | PM | ND | ND | 40 | no chem | |
| | 4/27 | AM | ND | ND | 35 | no chem | |
| | 4/27 | PM | ND | ND | 10 | no chem | |
| Meadow Gold Dairy | 4/29 | PM | ND | ND | 15 | ND | 6 |
| | 5/02 | AM | ND | ND | 20 | no chem | |
| | 5/03 | AM | ND | ND | 10 | no chem | |
| | 5/03 | PM | ND | ND | 10 | no chem | |
| | 5/04 | PM | ND | ND | 55 | no chem | |
| | 5/05 | PM | ND | ND | 25 | ND | 8 |
| | 5/06 | PM | ND | ND | 45 | no chem | |
| Garrison, Utah | | | | | | | |
| Gonder's Dairy | 5/03 | PM | ND | ND | 20 | no chem | |
| | 5/04 | AM | ND | ND | 40 | no chem | |
| | 5/05 | AM | ND | ND | 40 | no chem | |
| | 5/06 | AM | ND | ND | 40 | no chem | |
| Kanab, Utah | | | | | | | |
| J. Johnson Ranch | 4/30 | PM | ND | ND | 45 | ND | 7 |
| | 5/01 | AM | ND | ND | 45 | ND | 8 |
| | 5/02 | AM | ND | ND | 65 | ND | 10 |
| Minersville, Utah | 4/30 | AM | ND | ND | 25 | no chem | |
| Minersville Dairy | 5/01 | PM | ND | ND | 50 | no chem | |
| | 5/02 | AM | ND | ND | 15 | no chem | |
| | 5/04 | PM | ND | ND | 25 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|--|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ^{131}I | ^{133}I | ^{137}Cs | ^{89}Sr | ^{90}Sr |
| Mt. Pleasant, Utah Brooklawn Creamery | 4/27 | AM | ND | ND | 35 | no chem | |
| | 4/28 | AM | ND | ND | 20 | no chem | |
| | 4/29 | AM | ND | ND | 20 | no chem | |
| | 5/01 | AM | ND | ND | 10 | no chem | |
| | 5/02 | AM | ND | ND | 50 | ND | 17 |
| | 5/02 | PM | ND | ND | 40 | ND | 17 |
| | 5/03 | AM | ND | ND | 10 | no chem | |
| | 5/04 | AM | ND | ND | 45 | no chem | |
| Ogden, Utah Maple Leaf Dairy | 4/27 | AM | ND | ND | 70 | no chem | |
| | 4/30 | PM | ND | ND | ND | ND | 4 |
| | 5/03 | PM | ND | ND | 40 | no chem | |
| Orderville, Utah Chamberlain Ranch | 5/01 | AM | ND | ND | 25 | no chem | |
| | 5/01 | PM | ND | ND | 10 | ND | 5 |
| Richfield, Utah Ideal Dairy | 4/29 | PM | ND | ND | 30 | ND | 5 |
| | 5/04 | AM | ND | ND | 40 | no chem | |
| St. George, Utah R. Cox Dairy | 4/26 | PM | ND | ND | 30 | no chem | |
| | 4/29 | PM | ND | ND | 25 | no chem | |
| | 4/30 | PM | ND | ND | 25 | no chem | |
| | 5/01 | AM | ND | ND | 25 | no chem | |
| | 5/03 | AM | ND | ND | 30 | no chem | |
| | 5/04 | AM | ND | ND | ND | no chem | |
| | 5/06 | AM | ND | ND | 30 | no chem | |
| | | | | | | | |
| St. George Ice Co. | 4/30 | AM | ND | ND | ND | no chem | |
| | 5/01 | AM | ND | ND | 20 | no chem | |
| | 5/02 | AM | ND | ND | 25 | no chem | |
| Salt Lake City, Utah Salt Lake Dairy Pool | 4/25 | PM | ND | ND | 15 | ND | 10 |
| | 4/28 | AM | ND | ND | 45 | ND | 14 |
| | 4/29 | AM | ND | ND | 20 | ND | 12 |
| | 4/29 | PM | ND | ND | 35 | no chem | |
| | 5/02 | AM | ND | ND | 50 | no chem | |
| | 5/03 | AM | ND | ND | 30 | no chem | |
| | 5/07 | PM | ND | ND | 45 | no chem | |
| | | | | | | | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|---------------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Smithfield, Utah | 4/26 | AM | ND | ND | 30 | no chem | |
| Cache Valley Dairy | 4/29 | AM | ND | ND | 40 | no chem | |
| Products | 5/02 | PM | ND | ND | ND | ND | 17 |
| | 5/03 | PM | ND | ND | 25 | no chem | |
| | 5/04 | PM | ND | ND | 45 | no chem | |
| Spanish Fork, Utah | | | | | | | |
| Town Pride Dairy | 4/25 | AM | ND | ND | ND | ND | 9 |
| | 4/27 | AM | ND | ND | 40 | no chem | |
| | 4/28 | AM | 60 | ND | 85 | no chem | |
| | 4/29 | AM | 20 | ND | 30 | ND | 10 |
| | 4/30 | PM | ND | ND | 30 | no chem | |
| | 5/01 | AM | ND | ND | 30 | no chem | |
| | 5/02 | AM | ND | ND | 35 | no chem | |
| | 5/04 | AM | ND | ND | 45 | no chem | |
| | 5/06 | AM | ND | ND | 45 | no chem | |
| Casper, Wyoming | | | | | | | |
| Meadow Gold Dairy | 4/28 | AM | ND | ND | 25 | no chem | |
| | 4/28 | PM | ND | ND | ND | no chem | |
| | 4/29 | AM | ND | ND | 10 | no chem | |
| | 4/30 | AM | ND | ND | ND | no chem | |
| | 5/02 | AM | ND | ND | 10 | no chem | |
| | 5/04 | AM | ND | ND | 30 | no chem | |
| | 5/06 | AM | ND | ND | 35 | no chem | |
| Cheyenne, Wyoming | | | | | | | |
| Dairy Gold Foods | 4/25 | PM | ND | ND | 20 | ND | 11 |
| | 4/26 | PM | ND | ND | 15 | no chem | |
| | 4/27 | PM | ND | ND | 25 | no chem | |
| | 4/28 | PM | ND | ND | ND | no chem | |
| | 4/29 | PM | ND | ND | 20 | no chem | |
| | 5/01 | PM | ND | ND | ND | no chem | |
| | 5/02 | PM | ND | ND | 20 | no chem | |
| | 5/03 | PM | ND | ND | 20 | no chem | |
| Powell, Wyoming | 4/26 | AM | ND | ND | 35 | no chem | |
| Cream of the Valley Dairy | 4/26 | PM | ND | ND | 15 | no chem | |
| | 4/26 | PM | ND | ND | 50 | no chem | |
| | 4/27 | AM | ND | ND | 30 | no chem | |
| | 4/27 | PM | ND | ND | 30 | no chem | |

Appendix IV. Complete Milk Sampling Data(continued)

| Location | Date of Milking | Time of Day | pCi/l | | | | |
|-----------------------|-----------------|-------------|------------------|------------------|-------------------|------------------|------------------|
| | | | ¹³¹ I | ¹³³ I | ¹³⁷ Cs | ⁸⁹ Sr | ⁹⁰ Sr |
| Powell, Wyoming | 4/27 | PM | ND | ND | 15 | no chem | |
| Cream of the Valley | 4/29 | AM | ND | ND | 15 | no chem | |
| Dairy (continued) | 4/29 | PM | ND | ND | 20 | no chem | |
| | 4/30 | PM | ND | ND | 35 | no chem | |
| | 5/01 | PM | ND | ND | 10 | no chem | |
| | 5/02 | PM | ND | ND | ND | no chem | |
| Rawlins, Wyoming | 4/26 | PM | ND | ND | 30 | no chem | |
| Wyoming Dairy | 4/27 | PM | ND | ND | 30 | no chem | |
| Products | 4/29 | PM | ND | ND | 30 | no chem | |
| | 4/30 | PM | ND | ND | ND | no chem | |
| | 5/01 | PM | ND | ND | 25 | no chem | |
| | 5/02 | PM | ND | ND | 35 | no chem | |
| | 5/03 | PM | ND | ND | 45 | ND | 13 |
| Riverton, Wyoming | | | | | | | |
| Morning Star Dairy | 4/25 | PM | ND | ND | ND | no chem | |
| | 4/27 | PM | ND | ND | 30 | no chem | |
| | 4/29 | PM | ND | ND | 20 | no chem | |
| Sheridan, Wyoming | | | | | | | |
| Jersey Creamery, Inc. | 4/26 | AM | ND | ND | 40 | no chem | |
| | 4/27 | AM | ND | ND | 45 | no chem | |
| | 4/27 | AM | ND | ND | 30 | no chem | |
| | 4/28 | AM | ND | ND | 25 | no chem | |
| | 4/30 | AM | ND | ND | 15 | no chem | |

ND = Not detected. Minimum detectable levels are:

¹³¹I - 20 pCi/l; ¹³³I - 20 pCi/l; ¹³⁷Cs - 10 pCi/l;
⁸⁹Sr - 5 pCi/l; ⁹⁰Sr - 1 pCi/l.

*NA = Data not available.

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- 49 Richard S. Davidson, Battelle Memorial Institute, Columbus, Ohio
- 50 Frank E. Abbott, USAEC, Golden, Colorado
- 51 John M. Ward, President, Desert Research Institute, University of Nevada, Reno
- 52 - 53 DTIE, Oak Ridge, Tennessee (for public availability)