PEACH BOTTOM ATOMIC POWER STATION

Radiological Regional Environmental Monitoring Program Report #16

January 1, 1980 Through December 31, 1980

Prepared For

PHILADELPHIA ELECTRIC COMPANY

By

RADIATION MANAGEMENT CORPORATION

University City Science Center
3508 Market Street
Philadelphia, Pa. 19104

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I. INTRODUCTION

1. INTRODUCTION

Radiation Management Corporation (RMC) began conducting a radiological environmental monitoring program in September 1970 for the Philadelphia Electric Company in connection with the Peach Bottom Atomic Power Station (PBAPS) located in Peach Bottom Township, York County, Pennsylvania. This RMC program complements an existing program being conducted by others which has been carried out since March 1960. PBAPS is located along the Susquehanna River, between Holtwood and Conowingo Dams which are about 14 miles apart. The pond created by Conowingo Dam is called Conowingo Pond.

The initial loading of fuel into Peach Bottom Unit #1, a 40 MWe (Net) high temperature gas-cooled reactor, was started on February 5, 1966, and initial criticality was achieved March 3, 1966. Final shutdown of Peach Bottom Unit #1 was on October 31, 1974. Peach Bottom Unit #2 and #3 are boiling water reactors each with a power output of approximately 1050 MWe (Net). The first fuel was loaded into Unit #2 on August 9, 1973, and criticality was first achieved on September 16, 1973. The fuel was loaded into Unit #3 on July 5, 1974 and criticality was first achieved on August 7, 1974. Peach Bottom Unit #2 first reached full power on June 16, 1974. Peach Bottom Unit #3 first reached full power on December 21, 1974.

Results of the RMC portion of the overall regional radiological environmental monitoring program have been reported in semi-annual and annual reports. Semi-annual reports were discontinued after 1975. This report contains data for samples representing the period January 1, 1980 through December 31, 1980.

A special preoperational report[1] for Peach Bottom Units #2 and #3 has been issued previously which summarizes results of all analyses performed by RMC on samples collected from the start of the RMC portion of the overall program through August 8, 1973, the day before fuel was first loaded into Peach Bottom Unit #2.

A. PROGRAM OBJECTIVES

1. Identify, measure, and evaluate existing radionuclides in the environs of the Peach Bottom Site and any fluctuations in radioactivity levels which may occur.

2. Monitor and evaluate ambient radiation levels.

3. Determine, within the scope of the program, any measurable quantity of radioactivity introduced to the environment by the operation of the Peach Bottom Atomic Power Station.

4. Complement other existing radiological environmental monitoring programs at Peach Bottom Atomic Power Station.

B. PROGRAM IMPLEMENTATION

In order to achieve these objectives, Radiation Management Corporation performed the following analyses on samples collected during the period of this report.

1. Measured and evaluated concentrations of aqueous tritium in surface water, discharge water, well water, and milk.

2. Measured and evaluated concentrations of alpha emitters in surface water.

3. Measured and evaluated concentrations of beta emitters in surface water, discharge water, well water, precipitation and air particulates.

4. Identified, measured and evaluated gamma emitting radionuclides in surface water, discharge water, precipitation, air particulates, milk and soil.

5. Measured and evaluated concentrations of I-131 in milk and air.

6. Measured and evaluated concentrations of Sr-89 and Sr-90 in soil and milk.

7. Measured ambient gamma radiation levels in the environment and evaluated the variations with time and location with respect to the Site.

II. RMC PROGRAM DESCRIPTION

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A. SAMPLE COLLECTION AND TLD PLACEMENT PROCEDURES

The program being conducted by RMC is described in Tables I and II and Figures 1-3.

1. Sample Collection

a. Water (except precipitation)

All samples were collected in new polyethylene bottles. All persons involved in sample collection and handling were advised not to wear tritium luminous dial watches in order to avoid possible cross contamination from that source. Sample containers were rinsed at least twice with the water to be sampled before collection.

All water samples were grab samples except those collected at stations 1LL, 1MM, 6I and 4L. Weekly samples were taken from a tank which continually collects a sample at these four locations. The weekly samples were composited into a monthly sample for analysis. Collection methods are described in more detail in Table II, Section V.

b. Precipitation

Precipitation was collected in an apparatus consisting of a new polyethylene bottle with a plastic funnel 8 inches in diameter. The bottle was replaced monthly and the sample bottle was shipped to RMC for analysis. The amount of precipitation was recorded continuously by a separate rain gauge at station 1A.

c. Air Particulates

Air particulate samples were obtained using a vacuum sampler and glass fiber filters, approximately 2" in diameter. The filter was replaced weekly and sent to RMC for analysis. The vacuum sampler was run continuously at approximately 1 cubic foot per minute.

d. Air Iodine

Air iodine samples were obtained using a vacuum sampler and charcoal filters, approximately 2" in diameter. The filter was replaced weekly and sent to RMC for analysis. The vacuum sampler was run continuously at approximately 1 cubic foot per minute.

e. Milk

Milk samples were collected in new polyethylene bottles from the bulk tank at each farm, refrigerated and shipped immediately. No preservative was added.

f. Soil

Soil samples consisting of seven cores, 2" in diameter and 6" deep were collected from a 50 X 50 ft. area at each sampling location. Top soil (upper 1 inch) and bottom soil (lower 5 inches) were separated, then sealed in separate plastic bags, and shipped to RMC.

2. TLD Placement

A system using thermoluminescent dosimeters (TLDs) was used to measure the direct radiation levels in the PBAPS environment. The TLD stations were placed on and around the Peach Bottom Site using the "three ring concept". Two on-site stations, designated as plant complex stations are not included in any of the three rings.

a. A site boundary ring near and within the site perimeter, representing fencepost doses, i.e., at locations where the doses are greater than maximum annual off-site doses from station releases;

b. A middle ring extending to approximately 10 miles from the Site, designed to measure possible exposures to close-in population;

c. An outer ring extending from approximately 10 to about 60 miles from the Site, and considered not to be affected by Station releases;

d. The specific location of each station was determined by the following criteria:

(1) The presence of relatively densely populated areas;

(2) Areas where estimated annual dose from the Station, if any, would be more significant, were calculated from site meteorological data taking into account distance and elevation for each of the 36 ten-degree sectors around the Site;

(3) On hills and (where practical) within sight of the stack, and free from local obstructions;

(4) Near the closest house to the stack in the prevailing downwind direction.

e. Each TLD set (4 TLDs per set) was placed in a sealed polyethylene package to verify the integrity of the dosimeters when collected. Two packages were kept in a locked formica "birdhouse" or polyethylene jar, about six feet above the ground or supporting surface at each location. At each station one package was exchanged for measurement on a monthly schedule, and one on a quarterly schedule.

B. PROGRAM CHANGES

Effective with samples collected in 1980, the following changes have been made. All of the changes are in accordance with current NRC guidelines for monitoring programs. None of these changes involve the PBAPS technical specification program.

1. Sampling

   a. Environmental Dosimetry - Twelve additional stations were added to the sampling program beginning in July 1980. These stations provided additional geographical coverage around PBAPS. Sample frequency was monthly and quarterly.

   b. Environmental Dosimetry - Station 1K was removed from the sampling program beginning in January 1980 because it was not representative of off-site doses.

   c. Air particulates - Samples from station 4A were transferred from Interex Corporation to RMC beginning in February 1980.

   d. Air iodine - Eight stations were established to sample iodine in air beginning in March 1980. Sample frequency was weekly.

   e. Milk - Farm H went out of business and was replaced beginning in January 1980 with a new dairy (Farm O) located west of Conowingo Pond.

C. ANALYSES PERFORMED

The schedule of analyses performed by RMC is listed by sample type in Table II. This schedule was followed except where noted below. Table III lists the type and number of analyses performed during this period by sample type and station location. Methods used in performing these analyses can be found in Appendix A of PBAPS Radiological Environmental Monitoring Program Report #12, January 1, 1976 - December 31, 1976.

D. EXCEPTIONS TO THE PROGRAM

1. Surface water samples were collected the last week of each month for I-131 from stations 4L and 6L prior to September 1980 as a special study.

2. Discharge water samples were not taken from station 1MM from 12/27/80 to 1/09/80 due to a pump malfunction.

3. Air particulate and air iodine samples were not taken from station 1Z from 5/24 to 5/31 and 9/21 to 9/28 due to a pump malfunction.

4. Air iodine samples were not taken from stations 1B, 2 and 3A from 11/30 to 12/6 due to a pump malfunction.

5. I-131 results were not available for air iodine samples taken at stations 1B, 1Z, 2, 13A, 5, 6B and 14 between 8/3 to 8/9 due to analytical error.

III. RESULTS AND DISCUSSION

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A. DATA INTERPRETATION AND STATISTICAL ANALYSIS

Several factors are important in the interpretation of the data. In order to avoid undue repetition in the discussion which follows, these factors are described below.

1. Grab Sampling

Grab sampling is a useful and acceptable procedure for taking environmental samples of a medium in which the concentration of radionuclides is expected to vary slowly with time or where intermittent sampling is deemed sufficient to establish the radiological characteristics of the medium. This method, however, is only representative of the sampled medium for that specific location and instant of time. As a result, variation in the radionuclide concentrations of the samples will normally occur. Since these variations will tend to counterbalance one another, the extraction of averages based upon repetitive grab samples is valid.

2. Minimum Detectable Levels (MDL)

It is characteristic of environmental monitoring data that many results occur at or below the specified detection level. Formal statistical error analysis of groups of such data is difficult. Pragmatic approaches to the problem include counting the detection level entries as zero, as half the detection level value, or as full detection level value. For reporting and calculation of averages, any result occurring at or below the minimum detectable level is considered to be at that level. Averages obtained using this method are therefore biased high.

3. Standard Deviation of Analytical Results

Within the data tables an approximate 95% (2 sigma) confidence interval is supplied for those data points at and above the minimum detectable level. These intervals represent the range of values into which 95% of repeated counts of the sample would fall.

4. Table Means and Standard Deviations

Results for each type of sample were grouped according to the analysis performed. Means and standard deviations of these results were calculated. These standard deviations represent the variability of measured results for different samples rather than single analysis uncertainty. For these calculations, all results below the MDL were considered to be at the MDL. As a result, the means are biased high, and the standard deviations are biased low.

B. DISCUSSION OF RESULTS

Results are summarized in brief form in Tables IV, V and VI (Section V). Tables of results for individual sample types and analyses performed can be found in Section V, Tables VII to XXVII. Graphical presentations of results can be found in Section VI.

1. Surface Water

Samples were taken from eight stations on a monthly schedule. Three stations (1LL, 6I and 4L) were continuous composite samples and five (1Q, 4F, 4G, 6A and 13A) were grab samples. Station 13B was sampled once in 1980. Of these stations, six could be affected by releases from Peach Bottom Atomic Power Station. The remaining stations (6A and 6I) were above Holtwood Dam and, therefore, could not be affected by plant discharges (refer to Figures 1 and 2, Section VI, for station locations). The following analyses were performed on surface water samples.

a. Tritium

Total samples from seven stations were analyzed for concentrations of aqueous tritium. Samples from stations 1LL, 1Q, 4L and 6I were analyzed on a monthly basis, while samples from stations 4F, 6A and 13A were composited monthly into a quarterly sample. Results of this analysis of surface water samples can be found in Tables VII and VIII, Section V. The concentrations detected were well within the range found during the Peach Bottom Units #2 and #3 preoperational period (1). Graphical comparisons of the unaffected stations (6A and 6I) above Holtwood Dam with potentially affected stations (4F and 4L) at Conowingo Dam showed no difference in concentrations, indicating no detectable addition of tritium to Conowingo Pond from the operation of PBAPS (Figures 4 and 5, Section VI).

b. Gross Alpha

Samples from four stations (4F, 4L, 6I and 6A) were analyzed for gross alpha concentrations in the soluble and insoluble fractions. Results of gross alpha analysis in surface water samples can be found in Tables VII and VIII, Section V. Results at all locations were generally at or below the minimum detectable level in the soluble fraction. Results of the insoluble fraction generally indicated a small amount of activity present. Those values were similar to those seen in previous years and can be attributed to the presence of sediment, a reservoir of fallout and natural alpha emitters.

c. Gross Beta

Samples from all eight stations, were analyzed for concentrations of gross beta in the soluble and insoluble fractions. Results of gross beta analysis in surface water samples can be found in Tables VII and VIII, Section V. The concentrations detected in the soluble and insoluble fractions were within the range observed during the preoperational period for Units #2 and #3. (1) A graphical compari-

son of two Conowingo Dam stations (4F and 4G) with one Holtwood Dam station (6A) shows the results of the soluble fraction to be generally the same for all three locations. However, results of the insoluble fraction differ significantly (Figures 6 and 7, Section VI). This difference can be attributed to the presence of varying amounts of sediment in samples taken at different depths. Samples from station 4F, with the highest concentrations of beta emitters in the insoluble fraction, contains the highest amount of sediment. Samples from stations 6A and 4G indicated lesser concentrations of beta emitters and sediment.

d. Gamma Spectrometry

Samples from all eight stations, were analyzed for gamma-emitting nuclides by gamma spectrometry. Results of gamma spectrometry on surface water samples can be found in Table IX, Section V. The nuclides searched for were below the minimum detectable level.

e. Iodine-131

Samples collected during the last week of each month from 1/19/80 to 9/6/80 from two stations (4L and 6I) were analyzed for concentrations of I-131. Results of I-131 analysis of surface water samples can be found in Table VIII, Section V. Most results were below the minimum detectable level. Detectable levels were found from station 4L in January and at station 6I in April and May with no significant differences between the upstream and downstream stations.

2. Discharge Water

Samples were taken from two stations (1M and 1M1) on a monthly schedule (refer to Figure 1, Section VI, for station locations). The following analyses were performed on discharge water samples.

a. Tritium

Total samples from both stations were analyzed for concentrations of aqueous tritium on a monthly basis. Results of tritium analysis in discharge water samples can be found in Tables X and XI, Section V. The concentrations detected were well within the range found during the Peach Bottom Units #2 and #3 preoperational period (1). A graphical comparison of concentrations of aqueous tritium results for composite surface water and discharge water samples showed no significant differences (Figure 8, Section VI).

b. Gross Beta

Monthly samples from both stations were analyzed for gross beta concentrations in the soluble and insoluble fractions. Results of these analyses in discharge water samples can be found in Tables X and XI, Section V. The concentrations detected were within the range found during the Peach Bottom Units #2 and #3 preoperational period (1). Graphical comparisons of results for composite surface and discharge water samples showed no significant differences in concentration in either the soluble or the insoluble fractions (Figures 9 and 10, Section VI).

c. Gamma Spectrometry

Samples from both stations were analyzed for gamma-emitting nuclides by spectrometry. Results of gamma spectrometric analysis of samples from all stations are given in Table XII, Section V. All nuclides were less than the minimum detectable level.

3. Well Water

Samples were taken from four stations on a quarterly schedule. Two stations (1U and 1V) were located within the Site area. The other stations were located approximately one mile (station 40) and 10 miles (station 7) from the plant. These station locations are shown in Figures 1 and 2, Section VI. The following analyses were performed on well water samples.

a. Tritium

Total samples from all four stations were analyzed for aqueous tritium concentrations. Results of tritium analysis of well water samples can be found in Table XIII, Section V. Results of all samples were well within the range found during the Peach Bottom Units #2 and #3 preoperational period (1). A graphical comparison of the distant site-area, and on-site wells showed that tritium levels have been gradually decreasing with time due to the cessation of routine atmospheric nuclear weapons testing (Figure 11, Section VI).

b. Gross Beta

Samples from all four stations were analyzed for gross beta concentrations in the soluble and insoluble fractions. Results of gross beta analysis on well water samples can be found in Table XI Section V. The concentrations detected were within the range found during the Peach Bottom Units #2 and #3 preoperational period (1).

4. Precipitation

Precipitation was collected from two stations on a monthly schedule. Station 1A is located at the on-site Peach Bottom Weather Station #1. Station 8, located in Colora, MD., is approximately 10 miles from the Site (for station location, refer to Figures 1, and 2 Section VI). The following analyses were performed on precipitation samples.

a. Gross Beta

Monthly samples were analyzed for gross beta concentrations in the total sample. Results of gross beta analysis in precipitation samples can be found in Table XIV, Section V. Most concentrations detected were within the range found during the Peach Bottom Units #2 and #3 preoperational period (1). Samples collected from Stations 1A and 8 between 11/01/80 and 1/10/81 showed significantly higher levels than the rest of the year. These values reflect the worldwide fallout from the Chinese atmospheric nuclear weapons test of October 15.

b. Gamma Spectrometry

Monthly samples were analyzed for gamma-emitting nuclides by spectrometry of the total sample. Results of gamma spectrometric analysis of samples from both stations are given in Table XV, Section V. The only nuclide detected was naturally-occurring Be-7.

5. Air Particulates

Continuous air particulate samples were collected from two stations (1Z and 4A) located at the on-site Peach Bottom Weather Station #1 and the intermediate distant Conowingo Dam Powerhouse roof, respectively (for station locations, see Figure 1 and 2, Section VI). The following analyses were performed on air particulate samples.

a. Gross Beta

Weekly samples were analyzed for concentrations of gross beta activity. Results of gross beta analysis of air particulate samples can be found in Table XVI, Section V. Results observed were similar to levels observed in previous years until the beginning of November. (2) The increased activity in November and December can be attributed to world-wide fallout from the Chinese atmospheric nuclear weapons test. Similar concentrations have been detected throughout the Middle Atlantic Region.

b. Gamma Spectrometry

Monthly composite samples were analyzed for gamma-emitting nuclides by gamma spectrometry. Results of gamma spectrometric analysis are given in Table XVII, Section V. Be-7 was detected in all 23 samples and is the result of cosmic ray activity. Several other nuclides found (K-40, Zr-95, Nb-95, Ru-103, Cs-137, Ce-141 and Ra-226) were similar to those detected in previous years. These concentrations can be attributed to world-wide fallout from the Chinese atmospheric nuclear weapons test. Similar concentrations have been detected throughout the Middle Atlantic Region. Extremely low levels of Co-60, Zn-65, Cs-134 and Cs-137 were detected at on-site station (1Z) in July. These may be due to PBAPS operation. However, no similar activity was found at any off-site station and the dose consequence was very small.

6. Air Iodine

Continuous air samples were collected at eight stations and analyzed weekly for I-131. Three stations (1B, 1Z, 2) were located within the Site area. Four stations (3A, 5, 6B, 14) were located at intermediate distances of 1.9 to 5.8 miles from the Site. One station (12D) was located 62 miles from the Site. Results of I-131 analysis can be found in Table XVIII, Section V. Of the 331 analyses performed all results were less than the minimum detectable level.

7. Milk

Milk was sampled at eleven farms; three farms (G, J and O) located within

two miles of PBAPS were designated "near farms"; four farms (D, L, M and N) located 3 to 5 miles from PBAPS were designated as "intermediate farms"; and four farms (A, B, C and E) located greater than five miles from PBAPS were designated as "distant farms". The following analyses were performed on milk samples.

a. Tritium

Milk from four farms (A, C, G and J) was analyzed for tritium concentrations in the aqueous fraction on a quarterly basis. Results of tritium determinations in milk samples can be found in Table XIX, Section V. Concentrations detected were generally within the range found during the Peach Bottom Units #2 and #3 preoperational period (1).

b. Iodine-131

Milk from eight farms (A, B, C, D, G, J, N and O) near Peach Bottom was analyzed for concentrations of I-131, monthly in January, February, March and December. Weekly sampling was resumed during the last week of March and continued through the fourth week of November. Three additional farms (L, M and E) were sampled and analyzed quarterly for I-131. Results of I-131 analysis can be found in Tables XIX and XX, Section V and Figure 12, Section VI.

Except for farms C and E, Iodine-131 activity was detected in milk samples taken from all farms beginning October 27. These concentrations were attributed to fallout from the Chinese atmospheric nuclear weapons test of October 15, since similar levels were detected at near and distant farms. Similar concentrations were also observed throughout the Middle Atlantic region. Samples taken October 27 at farms A, B, G, J, N and O showed concentrations of I-131 ranging from .07 to .20 pCi/l. Farms A, D, G and N showed concentrations of I-131 ranging from .13 to .20 pCi/l on samples collected November 3. Samples collected November 10 at farms A, B, D and N showed detectable concentrations ranging from .09 to .40 pCi/l. Farms J, L, M and N showed detectable concentrations ranging from .07 to .29 pCi/l on November 17. Detectable levels ranging from .07 to .33 pCi/l were observed in samples taken from farms A, B, G, J and N on November 24. Concentrations at all farms dropped to near or below the detection limit of .07 pCi/l by the December 16 sampling.

The concentrations detected averaged 0.1±0.2 pCi/l for the six week period at all farms. The maximum hypothetical dose to an infant's thyroid was calculated to be .05 mrem. This calculation was done using the assumptions of USNRC Regulatory Guide 1.109, Rev. 1, October 1977 which include an infant drinking 0.9 liters of milk per day and an I-131 ingestion dose factor of 0.0139 mrem/pCi.

c. Sr-89 & Sr-90

One milk sample was collected at farm J in each quarter and analyzed for Sr-89 and Sr-90. Results can be found in Table XIX, Section V. These concentrations were similar to those observed in previous years.

d. Gamma Spectrometry

One milk sample collected at farm J in each quarter was analyzed for gamma-

emitting nuclides by gamma spectrometry. Results can be found in Table XXI, Section V. Nuclides detected were naturally-occurring K-40 and Cs-137. Cesium-137 is commonly found in milk as a result of world-wide fallout.

8. Soil

Samples were taken at three locations, one on-site station (2) and two distant stations (3A and 5) located about four miles away from PBAPS (for station locations, see Figures 1 and 2, Section VI). The area at station 2 is heavily wooded with rock outcroppings. The soil at this location would be expected to contain substantial humus from the accumulation of natural vegetation debris. Station 3A is covered only with grass. Station 5 is a combination of grass and cultivated land. The following analyses were performed on soil samples.

a. Strontium-89 and Strontium-90

Samples from all stations were analyzed for Sr-89 and Sr-90 concentrations in the top one inch and bottom five inches separately. Results of Sr-90 and Sr-89 analysis in soil samples can be found in Table XXIII, Section V. Concentrations of Sr-90 detected were within the range found during the PBAPS Units #2 and #3 preoperational period (1). Concentrations of Sr-89 were at or near the minimum detectable level in all samples. Graphical comparisons of Sr-90 in the top one inch and bottom cut showed no significant differences between on-site and distant locations (Figures 13 and 14, Section VI).

b. Gamma Spectrometry

Samples from all stations were analyzed for gamma-emitting nuclides by Ge(Li) gamma spectrometry (Table XXIII, Section V). Nuclides identified were generally the same as those found during the PBAPS Units #2 and #3 preoperational period with most at the same or lower concentrations (1). Some naturally-occurring nuclides were found (K-40, Th-232, Ra-226). Small concentrations of Cs-137 were detected in all twelve samples. The 30 year half-life and biological assimilation of Cs-137 accounts for the continued appearance of this nuclide in soil samples many years after atmospheric testing of nuclear weapons. Differences in concentration of Cs-137 at the on-site location (2) can be attributed to the accumulation of vegetative debris at this location (see Figures 15 and 16, Section VI). Since no Cs-134 or other Station related nuclides were found in any of these samples, the Cs-137 can be attributed to worldwide fallout.

9. Ambient Gamma Radiation

Ambient gamma radiation levels were measured with calcium sulfate: Tm thermoluminescent dosimeters.

Twelve stations (1B, 1C, 1D, 1E, 1F, 1G, 1H, 1J, 1L, 1M, 2 and 1NN) were located around the Site boundary and designated as the "site boundary ring" for comparison purposes. Twenty-six stations (3A, 4K, 5, 6B, 14, 15, 17, 22, 23, 26, 27, 31, 32, 33A, 38, 40, 42, 43, 44, 45, 46, 47, 48, 49, 50 and 51) were located within a 10 mile radius of the Site and designated as the "middle ring". Seven

stations (12B, 16, 18, 19, 20, 21B and 24) were located from 10 to 60 miles from the Site and designated as the "outer ring". Two stations (1A and 1I) located within the plant complex constitute a fourth group called plant-complex stations, since they could be more directly affected by plant activities and do not represent doses to the public (for station locations, see Figures 1, 2 and 3, Section VI). Results of TLD measurements are listed in Tables XXIV, XXV and XXVI, Section V.

Stations 1NN, 40, 42, 43, 44, 45, 46, 47, 48, 49, 50 and 51 which were added to the program in July were not used in calculating the TLD summary tables (Tables VI and XXVI).

The annual average of monthly, and quarterly, radiation levels were within the range found during the Peach Bottom Units #2 and #3 preoperational period (1). Graphical comparisons of the site-boundary, middle and outer rings on monthly and quarterly readings showed no differences in ambient radiation levels with distance from PBAPS, indicating no measurable Station contribution (Table XXVI, Section V, Figures 17 and 18, Section VI).

As reported in the 1979 PBAPS Radiological Environmental Monitoring Program report, an investigation concerning the September monthly results was conducted. The investigation arose when certain locations which generally have a monthly ambient gamma radiation level between 7 and 9 mR showed somewhat lower levels in September; whereas locations which generally have low radiation levels showed the reverse trend. A comparison of the September data with data collected in a special study indicated that the September data were anomalous.

An initial investigation indicated that the TLDs were not subjected to any unusual handling, either in the field or in the laboratory. As a result of this investigation both the TLDs and the reader used to calculate the September data were further investigated. The reader was calibrated according to manufacturer's recommendation and the TLDs were exposed to 10 mR, utilizing a standardized Cs-137 source. The results showed an average response of 10.4±0.6 mR which indicates that the TLDs are acceptable. In light of these results and considering that this phenomenon has not recurred, no obvious conclusions can be made to explain the September data.

IV. SUMMARY AND CONCLUSIONS

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This report on the radiological environmental monitoring program conducted at the Peach Bottom Atomic Power Station for Philadelphia Electric Company by Radiation Management Corporation covers the period January 1, 1980 to December 31, 1980. During this period 4076 analyses were performed on 3464 samples.

Surface water and discharge water samples were analyzed for concentrations of tritium, gross beta, and gamma-emitting nuclides. Surface water was also analyzed for concentrations of gross alpha. Comparisons of unaffected stations with potentially affected stations, in Conowingo Pond, showed no significant difference in concentrations of the radionuclides studied. It was shown that no significant differences existed between the preoperational and operational periods; therefore, it can be concluded that the levels of radioactivity in Conowingo Pond water have not been measurably influenced by the operation of the Peach Bottom Atomic Power Station.

High sensitivity I-131 analyses were performed on weekly air samples. All results were less than the minimum detectable level.

High sensitivity I-131 analyses were also performed on weekly milk samples while cows were on pasture and on monthly samples while cows were not grazing. Low concentrations measured in the fall were attributed to fallout from the Chinese atmospheric nuclear weapons testing which occurred October 15.

Soil samples were analyzed for concentrations of Sr-90, Sr-89 and gamma-emitting nuclides and levels observed were similar to preoperational data.

Environmental gamma radiation measurements were made using thermoluminescent dosimeters. Results from the site-boundary, middle and outer rings were found to be not significantly different, so it can be concluded that the operation of Peach Bottom Atomic Power Station did not produce measurable levels of ambient gamma radiation at any off-site location.

In assessing all the data gathered for this report and comparing the results with preoperational data, it is evident that the operation of the Peach Bottom Atomic Power Station resulted in no significant radiological impact on the environment.

REFERENCES

(1) Radiation Management Corporation Publication, Peach Bottom Atomic Power Station Preoperational Radiological Monitoring Report for Units #2 and #3, January 1974, Philadelphia, Pa.

(2) Interex Corporation, Peach Bottom Atomic Power Station Regional Environs Radiation Monitoring Program Preoperational Summary Report, Units #2 and #3, February 5, 1966 through August 8, 1973, June 1977, Natick, Mass.

V. TABLES

TABLE I

RMC STATION DESIGNATION AND SAMPLE IDENTIFICATION SYSTEM

VV-WWW-XXYZ General code for identification of samples, where:

VV - Power Plant identification code

PB - Peach Bottom Atomic Power Station

WWW - Type of Sample

APT - Air Particulates

AIO - Air Iodine

IDM - Immersion Dose

MLK - Milk

DWA - Discharge Water

RWA - Rain Water

SWA - Surface Water

WWA - Well Water

SOL - Soil

XX - Angular Sector of Sampling Location

Compass is divided into 36 sectors of 10 degrees each with center at Peach Bottom off-gas stack. Sector 36 is centered due North, and others are numbered in a clockwise direction. Sector 00 is used to designate an unidentified direction.

Y - Radial Zone of Sampling Location (In this report, the Radial distance from the Peach Bottom off-gas stack for all regional stations).

S:	on-site location	D:	3-4 miles off-site
A:	0-1 mile off-site	E:	4-5 miles off-site
B:	1-2 miles off-site	F:	5-10 miles off-site
C:	2-3 miles off-site	G:	10-20 miles off-site
		H:	20-100 miles off-site

Z - Station's Numerical Designation within sector and zone, using 1,2,3.... in each sector and zone.

TABLE II

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
A. SURFACE WATER					
1LL	Peach Bottom Units 2&3 Intake - Composite	PB-SWA-6S4	Continuous sampler On site at Units 2&3 Intake 1200' ENE of Units 2 & 3	Water is continuously sampled from the Peach Bottom Units 2&3 Intake and is collected in a 190 gallon tank. Each week 2 qts. are withdrawn from the tank prior to draining the tank and placed in a 2 gallon polyethylene bottle to form a monthly composite sample.	Tritium - Monthly Gross Beta (S+I) - Monthly Gamma Spec - Monthly
1Q	Peach Bottom Unit #2 Intake	PB-SWA-6S3	On site at Unit #2 Intake about 1200' ENE of Units 2&3	Two gallon grab sample is collected in front of intake structure monthly.	Same as station 1LL above
4F	Conowingo Dam El. 33' MSL	PB-SWA-14F2	In the Conowingo Hydro-electric Station, 8.6 miles SE of Units 2 & 3.	Two gallon grab sample is taken monthly from the same header which is used for the composite sample (4L). This header continuously draws pond water from about elevation 33' MSL. This sample and PB-SWA-14F3 samples are collected at the same time.	Tritium - quarterly comp. Gross Alpha (S+I) - monthly Gross Beta (S+I) - monthly Gamma Spec - monthly
4G	Conowingo Dam Surface	PB-SWA-14F3	At Conowingo Dam in Maryland, 8.5 miles SE of Units 2&3. Water sample is taken from Conowingo Pond on upstream side of dam.	Two gallon grab sample is collected near the surface of the pond on the upstream side of the dam monthly.	Gross Beta (S+I) - monthly Gamma Spec - monthly
4L	Conowingo Dam El. 33' MSL - Composite	PB-SWA-14F5	Continuous sampler in Conowingo Hydroelectric Station; about 8.6 miles SE of Units 2 & 3.	Water is continuously sampled from a header which draws Pond water from elevation 33' MSL and is collected in a 175 gal. tank. Each week 2 qts. are withdrawn from the tank prior to draining the tank and placed in a 2 gal. polyethylene bottle to form a monthly composite sample.	Tritium - monthly Gross Alpha (S+I) - monthly Gross Beta (S+I) - monthly Gamma Spec - monthly
6A	Holtwood Dam Hydroelectric Station	PB-SWA-33F1	At Holtwood Dam, Pa., 5.8 miles NW of Units 2&3.	Two gallon grab sample is collected from Holtwood Pond at Hydroelectric Station intake monthly.	Same as station 4F above

TABLE II (cont.)

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
6I	Holtwood Dam Hydroelectric Station-Composite	PB-SWA-33F4	Continuous sampler at Holtwood Dam, Pa., 5.8 miles NW of Units 2 & 3.	Water is continuously sampled from the Holtwood Hydroelectric Station Intake and is collected in a 175 gal. tank. Each week 2 qts. are withdrawn from the tank prior to draining the tank and placed in a 2 gal. polyethylene bottle to form a monthly composite sample.	Tritium - monthly Gross Alpha (S+I) - monthly Gross Beta (S+I) - monthly Gamma Spec - monthly
13A	Chester Water Intake-Pond	PB-SWA-11C1	On east shore of Conowingo Pond at Chester Water Authority Intake, 2.4 miles ESE of Units 2 & 3.	Two gallon grab sample is collected from Conowingo Pond near the shore monthly.	Tritium - quarterly comp. Gross Beta (S+I) - monthly Gamma Spec - monthly
13B	Chester Water Intake-pump Discharge	PB-SWA-11C2	At Chester Water Authority Intake. The same as PB-SW-11C1 but the sample is collected from the pump discharge.	Two gallon grab sample is collected from pump discharge during any month that the pump operates.	Gross Beta (S+I) - monthly Gamma Spec - monthly
B. DISCHARGE WATER					
1M	Peach Bottom Canal Discharge	PB-DWA-13S2	Located at Canal Discharge structure; 1.0 miles SE of Units 2 & 3.	Two gallon grab sample is collected at the exit of the discharge canal monthly.	Tritium - monthly Gross Beta (S+I) - monthly Gamma Spec - monthly
1MM	Peach Bottom Canal - Discharge - Composite	PB-DWA-13S5	A continuous sampler on site at canal discharge 1.0 miles SE of Units 2 & 3.	Water is continuously sampled from the Peach Bottom Unit 2&3 discharge canal and is collected in a 190 gallon tank. Each week 2 qts. are withdrawn from the tank prior to draining the tank and placed in a 2 gal. polyethylene bottle to form a monthly composite sample.	Same as station 1M above

TABLE II (cont.)

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
C. WELL WATER					
1U	Peach Bottom Site-Utility Building	PB-WWA-15S2	Well at plant site. 1400' S of Units 2 & 3.	Well pump is run for several minutes prior to sampling in order to flush the sample line. Then two gallon grab sample is taken from the building faucet quarterly.	Tritium - quarterly Gross Beta (S+I) - quarterly
1V	Peach Bottom Site Info. Cent	PB-WWA-12S2	Well at plant site. 1400' SSE of Units 2 & 3.	Same as station 1U above	Same as station 1U above
7	Darlington, Md. Area	PB-WWA-16F1	9.6 miles SSE of Units 2 & 3 in Harford Co., Md.	Same as station 1U above	Same as station 1U above
40	Peach Bottom Site Area	PB-WWA-21B2	Well in site Area, 1.5 miles SW of Units 2 & 3.	Same as station 1U above	Same as station 7 above
D. AIR PARTICULATES - AIR IODINE					
1B	Peach Bottom Weather Station #2	PB-AIO-33S1	On site, 0.3 miles SE of Units 2 & 3.	About 1 cfm continuous flow through charcoal filter (approx. 2" diam.) is installed for a week and replaced.	I-131 - weekly
1Z	Peach Bottom Weather Station #1	PB-APT-11S4	On site at Weather Station #1, 0.3 miles SE of Units 2&3.	About 1 cfm continuous flow through glass fiber and charcoal filters (approx. 2" diam.) are installed for a week and replaced.	Gross Beta - weekly I-131 - weekly Gamma Spec - monthly comp.
2	Peach Bottom Site 130° Sector Hill	PB-AIO-13S1	On site, 0.9 miles SE of Units 2 & 3.	Same as station 1B above	I-131 - weekly
3A	Delta, PA. Substation	PB-AIO-23D1	3.6 miles SW of Units 2 & 3 at Delta, PA.	Same as station 1B above	I-131 - weekly
4A	Conowingo Dam Powerhouse roof	PB-AIO-14F	8.6 miles SE of Units 2 & 3 on Powerhouse roof in Cecil County, MD.	About 1 cfm continuous flow through a glass fiber filter (approx. 2" diam.) is installed for a week and replaced.	Gross Beta - weekly Gamma Spec - monthly comp.
5	Wakefield, PA	PB-AIO-8E1	At Wakefield, PA., 4.6 miles E of Units 2 & 3.	Same as station 1B above	I-131 - weekly

TABLE II (cont.)

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
D. AIR PARTICULATES - AIR IODINE (cont.)					
6B	Holtwood Dam Hydroelectric Station	PB-AIO-33F2	On the roof of Hydroelectric Station, 5.8 miles NW of Units 2 & 3.	Same as station 1B above	I-131 - weekly
14	Peters Creek	PB-AIO-10C1	1.9 miles ESE of Units 2 & 3 near mouth of Peters Creek	Same as station 1B above	I-131 - weekly
12D	Phila., PA 2301 Market St.	PB-AIO-8H2	62 miles ENE of Units 2 & 3 on the roof of 2301 Market Street	Same as station 1B above	I-131 - weekly
E. PRECIPITATION					
1A	Peach Bottom Weather Station #1	PB-RWA-11S1	On site at Weather Station #1, 0.3 miles SE of Units 2 & 3.	The sample from the rain collector is shipped to RMC monthly. The rain collector consists of an 8-inch diameter plastic funnel connected to a two-gallon polyethylene container.	Gross Beta - monthly Gamma Spec - monthly
8	Colora, Md.	PB-RWA-12F1	9.9 miles ESE of Units 2 & 3 in Cecil, Co., Md.	Same as station 1A above	Same as station 1A above
F. MILK					
	Regional Farm A	PB-MLK-24F1	Distant regional farms surrounding the site, designated "A", "B" and "C" on the west side of Conowingo Pond and "E" on the east side of Conowingo Pond. Nearby regional farms surrounding the Peach Bottom site on the west side of Conowingo Pond are designated "G", "H"	Two gallon grab sample is collected at each farm from a tank containing milk from all cows weekly while cows are on pasture, monthly otherwise. Samples are shipped to RMC.	I-131 - weekly Aq tritium - quarterly
	Regional Farm B	PB-MLK-19G1			I-131 - weekly
	Regional Farm C	PB-MLK-31F1			Same as station A above
	Regional Farm D	PB-MLK-5D1			Same as station B above

TABLE II (cont.)

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
F. MILK (cont.)					
	Regional Farm E	PB-MLK-36F1	and "O". Regional farms at intermediate distance from Peach Bottom on the east side are designated "D", "L", "M" and "N".	Same as station A above except quarterly	I-131 - quarterly
	Regional Farm G	PB-MLK-20B1			Same as station A above
	Regional Farm J	PB-MLK-28A1			I-131 - weekly Aq tritium - quarterly Sr-89 & -90 - quarterly Gamma Spec - quarterly
	Regional Farm L	PB-MLK-5B1		Same as station A above except quarterly	I-131 - quarterly
	Regional Farm M	PB-MLK-7C1		Same as station A above except quarterly	Same as station L above
	Regional Farm N	PB-MLK-11C3			Same as station B above
	Regional Farm O	PB-MLK-22C1			Same as station B above
G. SOIL					
2	Peach Bottom 130° Sector Hill	PB-SOL-13S1	On site, 0.9 miles SE of Units 2 & 3.	Seven cores (2" in diameter and 6" deep) are collected from a 50 X 50 ft. area semi-annually. Top 1 inch and bottom 5 inches are separated, sealed in plastic bags, and shipped to RMC.	Gamma Spec- semi-annual Sr-89 & -90 - semi-annual
3A	Delta, Pa. Substation	PB-SOL-23D1	3.6 miles SW of Units 2 & 3 at Delta, Pa.	Same as station 2 above	Same as station 2 above
5	Wakefield, Pa.	PB-SOL-8E1	4.6 miles E of Units 2 & 3 at Wakefield, Pa.	Same as station 2 above	Same as station 2 above

TABLE II (cont.)

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
H. ENVIRONMENTAL DOSIMETRY - TLD					
	At each of the following stations there are 2 environmental dosimeter packets with 4 TLDs per package. One packet is replaced monthly, and one quarterly. The packets for each time period are collected and replaced on the same day at all the stations.				
1A	Peach Bottom Weather Station #1	PB-IDM-11S1	On site, 0.3 miles SE of Units 2 & 3.	Procedure for collection is described in the placement procedure in Sec. II., A.	TLD - monthly & quarterly
1B	Peach Bottom Weather Station #2	PB-IDM-33S1	On site, 0.5 miles NW of Units 2 & 3.		TLD - monthly & quarterly
1C	Peach Bottom South Substation Rd.	PB-IDM-16S1	On site, 0.9 miles SSE of Units 2 & 3.		TLD - monthly & quarterly
1D	Peach Bottom 140° Sector Site Boundary	PB-IDM-14S1	On site, 0.7 miles SE of Units 2 & 3.		TLD - monthly & quarterly
1E	Peach Bottom 350° Sector Site Boundary	PB-IDM-35S1	On site, 0.6 miles NNW of Units 2 & 3.		TLD - monthly & quarterly
1F	Peach Bottom 200° Sector Hill	PB-IDM-20S1	On site, 0.6 miles SSW of Units 2 & 3.		TLD - monthly & quarterly
1G	Peach Bottom North Substation	PB-IDM-30S1	On site, 0.7 miles WNW of Units 2 & 3.		TLD - monthly & quarterly
1H	Peach Bottom Site 270° Sector Hill	PB-IDM-27S1	On site, 0.6 miles W of Units 2 & 3.		TLD - monthly & quarterly
1I	Peach Bottom South Substation	PB-IDM-15S1	On site, 0.6 miles SSE of Units 2 & 3.		TLD - monthly & quarterly
1J	Peach Bottom Site 180° Sector Hill	PB-IDM-18S1	On site, 0.7 miles S of Units 2 & 3.		TLD - monthly & quarterly

TABLE II (cont.)

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
H. ENVIRONMENTAL DOSIMETRY - TLD (cont.)					
1L	Peach Bottom Unit 3 Intake	PB-IDM-6S2	Located near Unit 3 Intake structure; 0.2 miles ENE of Units 2 & 3.		TLD - monthly & quarterly
1M	Peach Bottom Canal Discharge	PB-IDM-13S2	Located near Canal Discharge structure; 1.0 miles SE of Units 2 & 3.		TLD - monthly & quarterly
1NN	Peach Bottom Site	PB-IDM-26S1	On site, 0.5 miles WSW of Units 2 & 3.		TLD - monthly & quarterly
2	Peach Bottom Site 130° Sector Hill	PB-IDM-13S1	On site, 0.9 miles SE of Units 2 & 3.		TLD - monthly & quarterly
3A	Delta, Pa. Substation	PB-IDM-23D1	3.6 miles SW of Units 2 & 3.		TLD - monthly & quarterly
4K	Conowingo Dam Powerhouse Roof	PB-IDM-14F1	On roof of Conowingo Powerhouse, 8.6 miles SE of Units 2 & 3.		TLD - monthly & quarterly
5	Wakefield, Pa.	PB-IDM-8E1	At Wakefield, Pa. 4.6 miles E of Units 2 & 3.		TLD - monthly & quarterly
6B	Holtwood Dam Hydroelectric Station	PB-IDM-33F2	On roof of Hydroelectric Station, 5.8 miles NW of Units 2 & 3.		TLD - monthly & quarterly
12B	Phila., Pa. 3508 Market St.	PB-IDM-8H1	On roof of Radiation Management Corp., Philadelphia, Pa., 64 miles E of Units 2 & 3.		TLD - monthly & quarterly
14	Peters Creek	PB-IDM-10C1	1.9 miles ESE of Units 2 & 3 near the mouth of Peters Creek		TLD - monthly & quarterly
15	Silver Spring Road	PB-IDM-35D1	3.6 miles N of Units 2 & 3 near Silver Spring Road		TLD - monthly & quarterly
16	Nottingham, Pa. Substation	PB-IDM-9G1	12.8 miles E of Units 2 & 3 at Nottingham Substation		TLD - monthly & quarterly

TABLE II (cont.)

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
H. ENVIRONMENTAL DOSIMETRY - TLD (cont.)					
17	Riverview Road	PB-IDM-11E1	4.0 miles ESE of Units 2 & 3 near Riverview Road.		TLD - monthly & quarterly
18	Fawn Grove, Pa.	PB-IDM-26F1	10 miles W of Units 2 & 3 at Fawn Grove, Pa.		TLD - monthly & quarterly
19	Red Lion, Pa.	PB-IDM-30G1	20.6 miles WNW of Units 2 & 3 at Red Lion, Pa.		TLD - monthly & quarterly
20	Bel Air, Md. Area	PB-IDM-20G1	15.1 miles SSW of Units 2 & 3 near Bel Air, Maryland.		TLD - monthly & quarterly
21B	Lancaster, Pa. Area	PB-IDM-35G1	19 miles NNW of Units 2 & 3 near Lancaster, Pa.		TLD - monthly & quarterly
22	Eagle Road	PB-IDM-3C1	2.4 miles NNE of Units 2 & 3 near Eagle Road.		TLD - monthly & quarterly
23	Peach Bottom 150° Sector Hill Off site	PB-IDM-15B1	Off-site Hill 1.0 miles SSE of Units 2 & 3.		TLD - monthly & quarterly
24	Harrisville, Md. Substation	PB-IDM-11G1	10.9 miles ESE of Units 2 & 3 at Harris Substation		TLD - monthly & quarterly
26	Slab Road	PB-IDM-21E1	4.2 miles NW of Units 2 & 3 near Slab Road.		TLD - monthly & quarterly
27	N. Cooper Road	PB-IDM-18C1	2.6 miles S of Units 2 & 3 near N. Cooper Road.		TLD - monthly & quarterly
31	Pilotown Road	PB-IDM-13F1	4.9 miles SE of Units 2 & 3 near Pilotown Road.		TLD - monthly & quarterly
32	Slate Hill Road	PB-IDM-6C1	2.7 miles ENE of Units 2 & 3 near Slate Hill Road.		TLD - monthly & quarterly
33A	Fulton Main Weather Station	PB-IDM-6B2	1.7 miles ENE of Units 2 & 3		TLD - monthly & quarterly
38	Peach Bottom Road	PB-IDM-8D1	3.0 miles E of Units 2 & 3 near Peach Bottom Road.		TLD - monthly & quarterly

TABLE II (cont.)

RMC SAMPLE COLLECTION AND ANALYSIS PROGRAM

ENV. STATION NO.	STATION NAME	RMC STATION DESIGNATION	STATION LOCATION DIRECTION & DISTANCE FROM PEACH BOTTOM	COLLECTION METHOD & FREQUENCY	ANALYSIS AND FREQUENCY PERFORMED
40	Peach Bottom Site Area	PB-IDM-21B2	In site area about 1.2 miles SW of Units 2 & 3.		TLD - monthly & quarterly
42	Muddy Run Environmental Lab	PB-IDM-35E1	4.2 miles NNW of Units 2 & 3.		TLD - monthly & quarterly
43	Drumore Township School	PB-IDM-2F1	5.0 miles NNE of Units 2 & 3.		TLD - monthly & quarterly
44	Goshen Mill Road	PB-IDM-5F1	5.1 miles NE of Units 2 & 3.		TLD - monthly & quarterly
45	PB - Keeney Line	PB-IDM-7D1	3.3 miles ENE of Units 2 & 3.		TLD - monthly & quarterly
46	Broad Creek	PB-IDM-16E1	4.5 miles SSE of Units 2 & 3 near Flintville Road.		TLD - monthly & quarterly
47	Broad Creek Scout Camp	PB-IDM-18E1	4.3 miles S of Units 2 & 3		TLD - monthly & quarterly
48	Macton Substation	PB-IDM-20E1	5.0 miles SSW of Units 2 & 3		TLD - monthly & quarterly
49	PB-Conestone Line	PB-IDM-25D1	4.1 miles WSW of Units 2 & 3.		TLD - monthly & quarterly
50	TRANSCO Pumping Station	PB-IDM-26E1	4.9 miles W of Units 2 & 3.		TLD - monthly & quarterly
51	Fin Substation	PB-IDM-29D1	4.0 miles WNW of Units 2 & 3.		TLD - monthly & quarterly

TABLE III

SUMMARY OF ANALYSES PERFORMED ON SAMPLES COLLECTED DURING 1980

Station No.	RMC Designation	Location	Number of Samples	Type of Analysis							Total Analyses
				H-3	Gross Beta	Gross Alpha	TLD	Gamma Spec.	I-131	Sr-89	Sr-90	
A. SURFACE WATER												
1Q	PB-SW-6S3	Peach Bottom Unit #2 Intake - Grab	12	12	24			12				48
1LL	PB-SW-6S4	Peach Bottom Unit #2 & 3 Intake - Composite	12	12	24			12				48
13A	PB-SW-11C1	Chester Water Intake Pond	12	4	24			12				40
13B	PB-SW-11C2	Chester Water Intake - Pump Discharge	1	1	2			1				4
4F	PB-SW-14F2	Conowingo Dam El 33' MSL-Grab	12	4	24	24		12				64
4G	PB-SW-14F3	Conowingo Dam Surface-Grab	12		24			12				36
4L	PB-SW-14F5	Conowingo Dam El 33' - Composite	12	12	24	24		12	9			81
6A	PB-SW-33F1	Holtwood Dam Hydroelectric Station	12	4	24	24		12				64
6I	PB-SW-33F4	Holtwood Dam Hydroelectric Station	12	12	24	24		12	8			80

TABLE III (CONT.)

SUMMARY OF ANALYSES PERFORMED ON SAMPLES COLLECTED DURING 1980

Station No.	RMC Designation	Location	Number of Samples	Type of Analysis							Total Analyses
				H-3	Gross Beta	Gross Alpha	TLD	Gamma Spec.	I-131	Sr-89	Sr-90	
B. DISCHARGE WATER												
1M	PB-DW-13S2	Peach Bottom Canal Discharge-Grab	12	12	24			12				48
1MM	PB-DW-13S5	Peach Bottom Canal Discharge - Composite	12	12	24			12				48
C. WELL WATER												
1U	PB-WW-15S2	Peach Bottom site Utility Bldg.	4	4	8							12
1V	PB-WW-12S2	Peach Bottom Site Info. Center	4	4	8							12
40	PB-WW-21B2	Peach Bottom Site Area	4	4	8							12
7	PB-WW-16F1	Darlington, MD Area	4	4	8							12
D. AIR IODINE AND PARTICULATES												
1B	PB-AIO-33S1	Peach Bottom Weather Station #2	43						43			43
1Z	PB-AP-11S4	Peach Bottom Weather Station #1	52		51			12	42			105
2	PB-AIO-13S1	Peach Bottom Site 130° Sector Hill	42						42			42

TABLE III (CONT.)

SUMMARY OF ANALYSES PERFORMED ON SAMPLES COLLECTED DURING 1980

Station No.	RMC Designation	Location	Number of Samples	Type of Analysis						Total Analyses
				H-3	Gross Beta	Gross Alpha	TLD	Gamma Spec.	I-131	Sr-89	Sr-90	
D. AIR IODINE AND PARTICULATES (continued)												
3A	PB-AIO-23D1	Delta, PA Substation	43						43			43
4A	PB-AP-14F	Conowingo Dam Powerhouse Roof	47		47				11			58
5	PB-AIO-8E1	Wakefield, PA	43						43			43
6B	PB-AIO-33F2	Holtwood Dam Hydroelectric Station	43						43			43
14	PB-AIO-10C1	Peters Creek	43						43			43
12D	PB-AIO-8H2	Phila., PA 2301 Market St.	43						43			43
E. RAIN WATER												
1A	PB-RW-11S1	Peach Bottom Weather Station #1	12		12			12				24
8	PB-RW-12F1	Colora, MD	12		12			12				24
F. MILK												
	PB-M-24F1	Regional Farm A	39	4					39			43
	PB-M-19G1	Regional Farm B	39						39			39

TABLE II' (CONT.)

SUMMARY OF ANALYSES PERFORMED ON SAMPLES COLLECTED DURING 1980

Station No.	RMC Designation	Location	Number of Samples	Type of Analysis						Total Analyses
				H-3	Gross Beta	Gross Alpha	TLD	Gamma Spec.	I-131	Sr-89	Sr-90	
F. MILK (continued)												
	PB-M-31F1	Regional Farm C	39	4					39			43
	PB-M-5D1	Regional Farm D	39						39			39
	PB-M-36F1	Regional Farm E	5						5			5
	PB-M-20B1	Regional Farm G	39	4					39			43
	PB-M-28A1	Regional Farm J	39	4				4	39	4	4	55
	PB-M-5B1	Regional Farm L	5						5			5
	PB-M-7C1	Regional Farm M	5						5			5
	PB-M-11C3	Regional Farm N	39						39			39
	PB-M-22C1	Regional Farm O	39						39			39
G. SOIL												
2	PB-E-13S1	Peach Bottom 130° Sector Hill	4					4		4	4	12
3A	PB-E-23D1	Delta, PA Substation	4					4		4	4	12
5	PB-E-8E1	Wakefield, PA	4					4		4	4	12

TABLE III (CONT.)

SUMMARY OF ANALYSES PERFORMED ON SAMPLES COLLECTED DURING 1980

Station No.	RMC Designation	Location	Number of Samples	Type of Analysis						Total Analyses
				H-3	Gross Beta	Gross Alpha	TLD	Gamma Spec.	I-131	Sr-89	Sr-90	
H. ENVIRONMENTAL DOSIMETRY												
1A	PB-1D-11S1	Peach Bottom Weather Station #1	64				64					64
1B	PB-1D-33S1	Peach Bottom Weather Station #2	64				64					64
1C	PB-1D-16S1	Peach Bottom South Substation Road	64				64					64
1D	PB-1D-14S1	Peach Bottom 140° Sector Site Boundary	64				64					64
1E	PB-1D-35S1	Peach Bottom 350° Sector Site Boundary	64				64					64
1F	PB-1D-20S1	Peach Bottom 200° Sector Hill	63				63					63
1G	PB-1D-30S1	Peach Bottom North Substation	63				63					63
1H	PB-1D-27S1	Peach Bottom 270° Sector Hill	64				64					64
1I	PB-1D-15S1	Peach Bottom South Substation	64				64					64
1J	PB-1D-18S1	Peach Bottom 180° Sector Hill	64				64					64

TABLE III (CONT.)

SUMMARY OF ANALYSES PERFORMED ON SAMPLES COLLECTED DURING 1980

Station No.	RMC Designation	Location	Number of Samples	Type of Analysis						Total Analyses
				Gross H-3 Beta	Gross Alpha	Gamma TLD Spec.	I-131	Sr-89	Sr-90	
H. ENVIRONMENTAL DOSIMETRY (continued)										
1L	PB-ID-6S2	Peach Bottom Units 2 & 3 Intake	64			64				64
1M	PB-ID-13S2	Peach Bottom Canal-Discharge	64			64				64
1NN	PB-ID-26S1	Peach Bottom Site	28			28				28
2	PB-ID-13S1	Peach Bottom 130° Sector Hill	64			64				64
3A	PB-ID-23D1	Delta, PA Substation	64			64				64
4K	PB-ID-14F1	Conowingo Dam Powerhouse Roof	64			64				64
5	PB-ID-8E1	Wakefield, PA	63			63				63
6B	PB-ID-33F2	Holtwood Dam Hydroelectric Station	64			64				64
12B	PB-ID-8H1	Phila., PA 3508 Market Street	64			64				64
14	PB-ID-10C1	Peters Creek	64			64				64
15	PB-ID-36D1	Silver Spring Rd.	64			64				64
16	PB-ID-9G1	Nottingham, PA Substation	61			61				61
17	PB-ID-11E1	Riverview Rd.	64			64				64

TABLE III (CONT.)

SUMMARY OF ANALYSES PERFORMED ON SAMPLES COLLECTED DURING 1980

Station No.	RMC Designation	Location	Number of Samples	Type of Analysis						Total Analyses
				H-3	Gross Beta	Gross Alpha	Gamma TLD	Gamma Spec.	I-131	Sr-89	Sr-90	
H. ENVIRONMENTAL DOSIMETRY (continued)												
18	PB-ID-26F1	Fawn Grove, PA	64				64					64
19	PB-ID-30G1	Red Lion, PA	64				64					64
20	PB-ID-20G1	Bel Air, MD Area	64				64					64
21B	PB-ID-35G1	Lancaster, PA	64				64					64
22	PB-ID-3C1	Eagle Road	64				64					64
23	PB-ID-15B1	Off-site 150° Sector Hill	64				64					64
24	PB-ID-11G1	Harrisville, MD	63				63					63
26	PB-ID-31E1	Slab Road	64				64					64
27	PB-ID-18C1	N. Cooper Road	64				64					64
31	PB-ID-13F1	Pilotown Road	64				64					64
32	PB-ID-6C1	Slate Hill Road	64				64					64
33A	PB-ID-6B2	Fulton Weather Station	63				63					63
38	PB-ID-8D1	Peach Bottom Road	64				64					64
40	PB-ID-21B2	Peach Bottom Site Area	27				27					27
42	PB-ID-35E1	Muddy Run Environmental Lab	27				27					27

TABLE III (CONT.)

SUMMARY OF ANALYSES PERFORMED ON SAMPLES COLLECTED DURING 1980

Station No.	RMC Designation	Location	Number of Samples	Type of Analysis							Total Analyses
				H-3	Gross Beta	Gross Alpha	TLD	Gamma Spec.	I-131	Sr-89	Sr-90	
H. ENVIRONMENTAL DOSIMETRY (continued)												
43	PB-ID-2F1	Drumore Township School	27				27					27
44	PB-ID-5F1	Goshen Mill Road	28				28					28
45	PB-ID-7D1	PB-Keeney Line	28				28					28
46	PB-ID-16D1	Broad Creek	28				28					28
47	PB-ID-18E1	Broad Creek Scout Camp	28				28					28
48	PB-ID-20E1	Macton Substation	28				28					28
49	PB-ID-25D1	PB-Conastone Line	28				28					28
50	PB-ID-26E1	TRANSCO Pumping	28				28					28
51	PB-ID-29D1	Fin Substation	28				28					28
TOTAL			3464	117	396	96	2565	184	686	16	16	4076

TABLE IV

SUMMARY OF RADIOACTIVITY CONCENTRATIONS

Sample Type and Location	Analysis	No. of Samples Analyzed	Number Detected	Period * Minimum	Period * Maximum	Period ** Mean	Pre-op *** Mean	Units
SURFACE WATER								
Potentially	Aqueous Tritium (Grab)	12	6	<60	190 ± 70	96 ± 87	320 ± 250	pCi/l
Affected	Aqueous Tritium (Grab-Quarterly Comp.)	8	1	<50	110 ± 50	71 ± 35	-	pCi/l
Stations	Aqueous Tritium (Composite)	24	9	<50	160 ± 70	84 ± 59	240 ± 30	pCi/l
(1Q, 4F,	Gross Beta (Soluble-Grab)	48	48	.6±.4	3.5 ± 0.4	1.9 ± 1.1	3.3 ± 2.6	pCi/l
4G, 13A-Grab)	Gross Beta (Soluble-Composite)	24	24	.9±.4	2.8 ± 0.5	1.8 ± 1.1	3.5 ± 2.6	pCi/l
(1LL & 4L	Gross Beta (Insoluble-Grab)	48	38	<.2	6.8 ± 0.6	1.4 ± 3.5	3.4 ± 3.1	pCi/l
-Composite)	Gross Beta (Insoluble-Composite)	24	15	<.3	1.7 ± 0.4	.73 ± .99	3.4 ± 2.6	pCi/l
(4F & 13A	Gross Alpha (Soluble-Grab)	12	3	<.3	.9 ± .8	.68 ± .38	-	pCi/l
- Quarterly,	Gross Alpha (Soluble-Composite)	12	0	<.08	<.9	<.55	-	pCi/l
Composite for	Gross Alpha (Insoluble-Grab)	12	8	<.1	3.4 ± 0.9	1.0 ± 2.2	-	pCi/l
Tritium)	Gross Alpha (Insoluble-Composite)	12	7	<.1	1.3 ± 0.4	.33 ± 0.8	-	pCi/l
Unaffected	Aqueous Tritium (Grab-Quarterly Comp.)	4	2	<70	120 ± 70	85 ± 48	-	pCi/l
Stations	Aqueous Tritium (Composite)	12	6	<60	140 ± 70	88 ± 50	-	pCi/l
(6A-Grab)	Gross Beta (Soluble-Grab)	12	12	1.1±0.4	3.1 ± 0.5	1.9 ± 1.3	3.5 ± 0.4	pCi/l
(6I-Composite)	Gross Beta (Soluble-Composite)	12	12	1.1±0.4	2.8 ± 0.4	2.0 ± 1.1	-	pCi/l
(6A-Quarterly	Gross Beta (Insoluble-Grab)	12	8	<.2	3.3 ± 0.4	0.9 ± 1.8	3.7 ± 4.5	pCi/l
Composite for	Gross Beta (Insoluble-Composite)	12	5	<.2	3.3 ± 0.4	0.7 ± 1.7	-	pCi/l
Tritium)	Gross Alpha (Soluble-Grab)	12	2	<.3	2.5 ± 0.9	0.8 ± 1.2	-	pCi/l
	Gross Alpha (Soluble-Composite)	12	1	<.07	1	.58 ± .55	-	pCi/l
	Gross Alpha (Insoluble-Grab)	12	8	<.1	1.8 ± 0.7	0.5 ± 1.2	-	pCi/l
	Gross Alpha (Insoluble-Composite)	12	4	<.1	1.5 ± 0.6	.39 ± .89	-	pCi/l

TABLE IV (CONT.)

SUMMARY OF RADIOACTIVITY CONCENTRATIONS

Sample Type and Location	Analysis	No. of Samples Analyzed	Number Detected	Period * Minimum	Period * Maximum	Period ** Mean	Pre-op *** Mean	Units
DISCHARGE WATER								
Potentially Affected Stations	Aqueous Tritium (Grab)	12	5	<60	210 ± 60	94 ± 96	310 ± 200	pCi/l
	Aqueous Tritium (Composite)	12	4	<60	130 ± 70	78 ± 41	480 ± 30	pCi/l
(1M - Grab)	Gross Beta (Soluble-Grab)	12	12	1.2 ± 0.4	2.9 ± 0.5	2.1 ± 1.1	3.4 ± 0.6	pCi/l
(1MM-Composite)	Gross Beta (Soluble-Composite)	12	12	1.6 ± 0.4	7.1 ± 0.6	2.6 ± 3.0	3.4 ± 0.6	pCi/l
	Gross Beta (Insoluble-Grab)	12	9	<.3	1.4 ± 0.4	.70 ± .77	3.2 ± 1.3	pCi/l
	Gross Beta (Insoluble-Composite)	12	8	<.3	1.9 ± 0.4	0.9 ± 1.3	4.3 ± 2.5	pCi/l
WELL WATER								
On-Site Wells	Aqueous Tritium	8	3	<60	120 ± 70	78 ± 42	270 ± 300	pCi/l
(1U + 1V)	Gross Beta (Soluble)	8	4	<.3	1.1 ± 0.4	.44 ± .58	3.1 ± 0.8	pCi/l
	Gross Beta (Insoluble)	8		<.2	2.8 ± 0.4	0.9 ± 1.7	3.2 ± 1.2	pCi/l
Site Area	Aqueous Tritium	4	4	80 ± 70	110 ± 60	90 ± 28	410 ± 100	pCi/l
(40)	Gross Beta (Soluble)	4		<.3	.9 ± .4	.53 ± .53	3.0 ± 0.1	pCi/l
	Gross Beta (Insoluble)	4		<.3	1.7 ± 0.4	0.9 ± 1.2	3.0	pCi/l
Distant	Aqueous Tritium	4	0	<60	<70	<63	-	pCi/l
Well (7)	Gross Beta (Soluble)	4	4	1.1 ± 0.3	1.6 ± 0.4	1.4 ± 0.4	-	pCi/l
	Gross Beta (Insoluble)	4	1	<.3	1.6 ± 0.3	0.6 ± 1.3	-	pCi/l
RAIN WATER								
On-Site (1A)	Gross Beta (Total)	12	11	<2	40 ± 3	9 ± 21	4.8 ± 6.4	pCi/l
	Gross Beta (Total-Surface Density)	12	11	70 ± 40	900 ± 100	300 ± 510	-	pCi/m^2

TABLE IV (CONT.)

SUMMARY OF RADIOACTIVITY CONCENTRATIONS

Sample Type and Location	Analysis	No. of Samples Analyzed	Number Detected	Period * Minimum	Period * Maximum	Period * * Mean	Pre-op * * * Mean	Units
RAIN WATER (Cont.)								
Distant (8)	Gross Beta (Total)	12	12	3 ± 1	89 ± 4	13 ± 48	-	pCi/l
	Gross Beta (Total-Surface Density)	12	12	60 ± 20	1300 ± 60	430 ± 770	-	pCi/m^2
AIR PARTICULATES								
Weather Station #1 (1Z)	Gross Beta	50	50	.006 ± .004	.089 ± .009	.033 ± .032	-	pCi/m^3
Distant (4A)		47	46	<.003	.078 ± .008	.030 ± .031		pCi/m^3
AIR IODINE	I-131							
1B		41	0	<.010	<.090	<.018	-	pCi/m^3
1Z		40	0	<.010	<.089	<.020	-	pCi/m^3
2		40	0	<.010	<.086	<.018	-	pCi/m^3
3A		41	0	<.011	<.095	<.019	-	pCi/m^3
5		42	0	<.011	<.265	<.033	-	pCi/m^3
6B		42	0	<.011	<.109	<.025	-	pCi/m^3
14		42	0	<.010	<.098	<.023	-	pCi/m^3
12D		43	0	<.010	<.086	<.019	-	pCi/m^3
MILK								
Near Farms (G,J,O)	Tritium (Aqueous Fraction)	8	6	<50	110 ± 60	58 ± 14	-	pCi/l (milk)
(G, J only for Tritium)	Tritium (Aqueous Fraction)	8	6	<60	130 ± 70	75 ± 28	140 ± 248	pCi/l (water)
	I-131	117	7	<.04	.22 ± .06	.058 ± .059	0.2	pCi/l (milk)
	Sr-89 (Quarterly-Grab, Farm J)	4	1	<2.0	<10	5.0 ± 7.1	-	pCi/l (milk)
	Sr-90 (Quarterly-Grab, Farm J)	4	4	2.2 ± 0.7	7 ± 2	4.0 ± 4.3	-	pCi/l (milk)
Intermediate Farms (D,L,M,N)	I-131	88	9	<.04	.40 ± .08	.07 ± .11	0.2	pCi/l (milk)

TABLE IV (CONT.)

SUMMARY OF RADIOACTIVITY CONCENTRATIONS

Sample Type and Location	Analysis	No. of Samples Analyzed	Number Detected	Period Minimum *	Period Maximum *	Period Mean **	Pre-op Mean ***	Units
MILK (cont.)								
Distant Farms (A,B,C,E)	Tritium (Aqueous Fraction)	8	7	< 50	110 ± 60	76 ± 45	-	pCi/l (milk)
(A, C only for Tritium)	Tritium (Aqueous Fraction)	8	7	< 70	130 ± 70	100 ± 48	103 ± 73	pCi/l (water)
	I-131	122	9	< .03	.33 ± .06	.060 ± .074	.02	pCi/l (milk)
SOIL								
On-Site Location (2)	Sr-89 (top 1")	2	1	< .08	.1 ± .1	.090 ± .028	-	pCi/g (dry)
	(bottom)	2	1	< .06	.2 ± .1	.13 ± .20	-	pCi/g (dry)
	Sr-90 (top 1")	2	2	.66 ± .07	.66 ± .08	.66	2.1	pCi/g (dry)
	(bottom)	2	2	.37 ± .05	.45 ± .08	.41 ± .11	0.1	pCi/g (dry)
Distant Location (3A & 5)	SR-89 (top 1")	4	3	< .03	.13 ± .06	.088 ± .087	-	pCi/g (dry)
	(bottom)	4	0	< .04	< .06	< .05	-	pCi/g (dry)
	SR-90 (top 1")	4	4	.03 ± .02	.19 ± .04	.14 ± .15	0.6	pCi/g (dry)
	(bottom)	4	4	.04 ± .03	.20 ± .04	.14 ± .14	0.4	pCi/g (dry)

* All results above the MDL are quoted with a two sigma counting error.

** A two sigma deviation of the data is included with each mean. No value is given when only one result appears.

*** A two sigma deviation of the data is included with each mean. A dash indicates that this analysis was not performed during the pre-operational period. Pre-op mean was calculated using pre-operational data where the minimum detectable levels were the same as those in 1974.

(1) Results reported in pCi/g (wet) are calculated using the prepared sample weight before drying.

TABLE V

SUMMARY OF GAMMA SPECTROMETRY

SAMPLE TYPE	# OF SAMPLES ANALYZED	NUCLIDES FOUND	# OF SAMPLES WITH NUCLIDE DETECTED	PERIOD* MINIMUM	PERIOD* MAXIMUM	PERIOD** MEAN	PRE-OP*** MEAN	UNITS
Surface Water - Potentially Affected Stations								
(1Q, 4F, 4G, 13A, 13B - Grab)	49	None						
(1LL, 4L - Composite)	24	None						
Surface Water - Unaffected Stations								
(6A - Grab)	12	None						
(6I - Composite)	12	None						
Discharge Water - Potentially Affected Stations								
(1M - Grab)	12	None						
(1MM - Composite)	12	None						
Precipitation - On-site Station								
(1A - Composite)	10	Be-7	1	-	62±30	62	-	pCi/l
Precipitation - Distant Station								
(8 - Composite)	10	Be-7	4	71±10	130±30	92±52	-	pCi/l
Air Particulates - Weather Station #1								
(1Z)	12	Be-7	12	61±20	160±16	11[illegible]8	-	10^{-3} pCi/m^3
		K-40	1	-	23±2	23	-	10^{-3} pCi/m^3
		Co-60	1	-	12±2	12	-	10^{-3} pCi/m^3
		Zn-65	1	-	21±4	21	-	10^{-3} pCi/m^3
		Zr-95	1	-	8±2	8	-	10^{-3} pCi/m^3
		Nb-95	2	5±2	12±2	8.5±9.9	-	10^{-3} pCi/m^3
		Ru-103	2	5±2	8±2	6.3±4.8	-	10^{-3} pCi/m^3
		Cs-137	3	2±1	6±1	3.2±4.7	-	10^{-3} pCi/m^3
		La-140	1	-	13±4	13	-	10^{-3} pCi/m^3
		Ce-141	1	-	7±2	7	-	10^{-3} pCi/m^3
		Ce-144	1	-	2±1	2	-	10^{-3} pCi/m^3
		Ra-226	1	-	1.5±0.5	1.5	-	10^{-3} pCi/m^3
Air Particulates - Conowingo Dam								
(4A)	11	Be-7	11	65±20	200±20	131±83	-	10^{-3} pCi/m^3
		Zr-95	1	-	8±2	8	-	10^{-3} pCi/m^3

TABLE V (cont.)

SUMMARY OF GAMMA SPECTROMETRY

SAMPLE TYPE	# OF SAMPLES ANALYZED	NUCLIDES FOUND	# OF SAMPLES WITH NUCLIDE DETECTED	PERIOD* MINIMUM	PERIOD* MAXIMUM	PERIOD** MEAN	PRE-OP*** MEAN	UNITS
Air Particulates - Conowingo Dam (cont.)								
(4A)	11	Nb-95	2	5±2	14±2	9.7±12.2	-	10^{-3} pCi/m^3
		Ru-103	2	3±2	10±2	6.7±9.5	-	10^{-3} pCi/m^3
		Cs-137	3	2±1	2.3±0.9	1.8±0.8	-	10^{-3} pCi/m^3
		Ce-141	2	4±2	9±2	6.9±7.1	-	10^{-3} pCi/m^3
Milk - Near Farm								
(J)	4	K-40	4	1300±130	1600±160	1420±261	-	pCi/l
		Cs-137	1	-	3±1	3	-	pCi/l
Soil - On-site Location								
(2)								
(Top 1")	2	Be-7	1	-	0.5±0.3	0.5	-	pCi/g(dry)
		K-40	2	12±1	18±2	15±8.5	19±7	pCi/g(dry)
		Cs-137	2	1.8±0.2	9.3±0.9	5.6±10.6	2.3±5.6	pCi/g(dry)
		Ra-226	2	1.1±0.1	1.4±0.1	1.3±0.4	1.0±0.2	pCi/g(dry)
		Th-232	2	1.3±0.1	1.5±0.2	1.4±0.3	1.2±0.4	pCi/g(dry)
(Bottom)	2	K-40	2	12±1	19±2	15.5±9.9	23±5	pCi/g(dry)
		Cs-137	2	1.0±0.1	2.2±0.2	1.6±1.7	1.1±3.5	pCi/g(dry)
		Ra-226	2	1.4±0.1	1.9±0.2	1.7±0.7	1.4±0.5	pCi/g(dry)
		Th-232	2	1.4±0.1	1.4±0.1	1.4±0	1.6±1.5	pCi/g(dry)
Soil -Distant Locations								
(3A & 5)								
(Top 1")	4	K-40	4	17±2	23±2	20±5.9	21±4	pCi/g(dry)
		Cs-137	4	0.25±0.03	1.1±0.1	0.8±0.78	0.6±0.8	pCi/g(dry)
		Ra-226	4	1.0±0.1	1.1±0.1	1.08±0.10	0.8±0.9	pCi/g(dry)
		Th-232	4	1.0±0.1	1.5±0.2	1.2±0.4	1.0±1.2	pCi/g(dry)
(Bottom)	4	K-40	4	19±2	22±2	20.5±2.6	21±26	pCi/g(dry)
		Cs-137	4	0.11±0.02	0.91±0.09	0.47±0.66	0.2±0.2	pCi/g(dry)
		Ra-226	4	1.0±0.1	1.1±0.7	1.08±0.10	0.1±1.0	pCi/g(dry)
		Th-232	4	1.0±0.1	1.4±0.1	1.2±0.3	0.9±1.1	pCi/g(dry)

* All results above the MDL are quoted with a two sigma counting error.

** MDL values are not included. Period mean was calculated using only positive values for the nuclide listed.

*** Pre-op mean was calculated using only positive pre-operational values and not MDLs for the nuclides listed. A dash indicates this analysis was not performed.

RMC
TABLE VI
SUMMARY OF AMBIENT DOSIMETRY PROGRAM
STANDARD MONTHLY EQUIVALENT AVERAGE DOSE

SAMPLE TYPE	LOCATION	NO. OF SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ; 2 SIGMA	PRE-OP(1) MEAN ; 2 SIGMA	UNITS
MONTHLY	SITE	526	3.49 ; 0.38	9.12 ; 0.76	6.43 ; 2.56	5.05 ; 2.05	MRAD/STD. MONTH
	MIDDLE RING	719	3.75 ; 0.38	9.51 ; 1.41	6.81 ; 2.35	5.70 ; 1.87	MRAD/STD. MONTH
	OUTER RING	328	4.93 ; 0.51	9.33 ; 1.38	6.84 ; 1.96	5.89 ; 1.37	MRAD/STD. MONTH
QUARTERLY	SITE	176	3.31 ; 0.17	8.25 ; 0.88	6.05 ; 2.47	5.14 ; 1.60	MRAD/STD. MONTH
	MIDDLE RING	240	3.88 ; 0.22	7.97 ; 0.31	6.53 ; 2.11	5.07 ; 1.25	MRAD/STD. MONTH
	OUTER RING	108	4.92 ; 0.43	8.54 ; 0.85	6.58 ; 1.83	5.44 ; 1.70	MRAD/STD. MONTH

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

(1) THE PRE-OPERATIONAL MEAN WAS CALCULATED FROM TLD READINGS 1-07-73 TO 8-05-73
STATIONS 1M, 31 AND 32 WERE ADDED TO THE PROGRAM 7-06-73 AND STATIONS 33A, 38,
WERE NOT IN THE PRE-OPERATIONAL PROGRAM

SITE BOUNDARY RING STATIONS- 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1J, 1L, 1M,

MIDDLE RING STATIONS - 3A, 4K, 5, 6B, 14, 15, 17, 22, 23, 26, 27, 31, 32, 33A, 38

OUTER RING STATIONS - 12B, 16, 18, 19, 20, 21B, 24

RMC
TABLE VII
ANALYTICAL DATA FOR SURFACE WATER GRAB SAMPLES
CONCENTRATION (PC/L)

STATION CODE		COLLECTION DATE	G.ALPHA SOLUBLE	G.ALPHA INSOLUBLE	G.BETA SOLUBLE	G.BETA INSOLUBLE	A.H3 TOTAL
1Q	80	01/06			1.6 ; .4	< .3	< 60
		02/03			1.4 ; .4	< .4	< 70
		03/01			1.7 ; .4	.4 ; .3	100 ; 60
		04/05			1.5 ; .4	1.2 ; .4	100 ; 70
		05/04			1.7 ; .4	2.1 ; .4	< 70
		05/31			1.8 ; .4	.4 ; .3	180 ; 90
		07/12			2.0 ; .4	.5 ; .3	90 ; 70
		08/09			2.0 ; .4	.5 ; .3	120 ; 70
		09/06			2.2 ; .4	.3 ; .3	< 70
		10/12			2.5 ; .4	.6 ; .3	190 ; 70
		11/01			3.1 ; .5	.4 ; .3	< 70
		12/06			1.8 ; .4	.9 ; .4	< 70
ANNUAL MEAN...					1.9 ; 1.0	.7 ; 1	99 ; 88
4F	80	01/06	< .3	< .2	1.1 ; .4	< .3	
		02/03	.6 ; .5	.5 ; .2	1.9 ; .5	.6 ; .4	
		03/01	< .5	2 ; 1	2.5 ; .4	5.5 ; .6	< 70
		04/05	.8 ; .5	2.6 ; .9	.9 ; .4	3.8 ; .4	
		05/04	< .5	3.4 ; .9	1.7 ; .4	3.8 ; .5	
		05/31	< .6	.3 ; .2	1.5 ; .4	.8 ; .3	< 70
		07/12	< .9	< .1	1.7 ; .4	< .3	
		08/09	< .8	1.5 ; .6	1.9 ; .4	3.4 ; .5	
		09/06	< .7	.5 ; .3	2.6 ; .4	.9 ; .3	< 50
		10/12	.9 ; .8	< .2	2.5 ; .4	.3 ; .3	
		11/01	< .9	.5 ; .3	2.3 ; .4	.9 ; .4	
		12/06	< .6	< .2	2.3 ; .4	.4 ; .4	< 70
ANNUAL MEAN...			.68 ; .38	1 ; 2.2	1.9 ; 1.1	1.8 ; 3.7	< 65
4G	80	01/06			1.2 ; .4	.3 ; .3	
		02/03			.9 ; .4	1.4 ; .4	
		03/01			1.7 ; .4	< .3	
		04/05			1.9 ; .4	.8 ; .4	
		05/04			2.2 ; .4	1.9 ; .4	
		05/31			1.3 ; .4	< .2	
		07/12			2.0 ; .4	< .3	
		08/09			2.0 ; .4	< .3	
		09/06			2.3 ; .4	< .3	
		10/12			2.6 ; .4	.4 ; .3	
		11/01			2.7 ; .5	.3 ; .3	
		12/06			2.2 ; .4	.7 ; .4	
ANNUAL MEAN...					1.9 ; 1.1	0.6 ; 1.1	

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

RMC

TABLE VII (CONTINUED)

ANALYTICAL DATA FOR SURFACE WATER GRAB SAMPLES

CONCENTRATION (PC/L)

STATION CODE		COLLECTION DATE	G.ALPHA SOLUBLE	G.ALPHA INSOLUBLE	G.BETA SOLUBLE	G.BETA INSOLUBLE	A.H3 TOTAL
6A	80	01/06	.7 ; .4	< .1	1.4 ; .4	< .3	
		02/03	< .3	.4 ; .2	1.1 ; .4	< .4	
		03/01	< .6	< .2	1.5 ; .4	< .3	< 70
		04/05	< .3	1.8 ; .7	1.4 ; .4	3.3 ; .4	
		05/04	2.5 ; .9	1.7 ; .5	2.2 ; .4	1.7 ; .4	
		05/31	< .6	.3 ; .2	1.2 ; .4	.4 ; .3	120 ; 70
		07/12	< 1	.2 ; .2	1.6 ; .4	.4 ; .3	
		08/09	< .8	< .1	2.5 ; .4	.5 ; .3	
		09/06	< .7	.8 ; .4	2.4 ; .4	1.2 ; .3	80 ; 50
		10/12	< .9	.5 ; .4	2.5 ; .4	< .2	
		11/01	< 1	.2 ; .2	3.1 ; .5	.6 ; .3	
		12/06	< .5	< .2	2.3 ; .4	1.5 ; .4	< 70
ANNUAL MEAN...			0.8 ; 1.2	0.5 ; 1.2	1.9 ; 1.3	0.9 ; 1.8	85 ; 48
13A	80	01/06			.6 ; .4	2.1 ; .4	
		02/03			1.1 ; .4	< .3	
		03/01			1.9 ; .4	.5 ; .3	< 70
		04/05			1.3 ; .4	5.1 ; .6	
		05/04			1.8 ; .4	3.6 ; .5	
		05/31			1.3 ; .4	.8 ; .3	< 60
		07/12			2.3 ; .4	6.5 ; .6	
		08/09			2.2 ; .4	4.6 ; .5	
		09/06			2.5 ; .4	.7 ; .3	110 ; 50
		10/12			3.5 ; .4	6.8 ; .6	
		11/01			2.3 ; .4	.6 ; .3	
		12/06			2.5 ; .4	.7 ; .4	< 70
ANNUAL MEAN...					1.9 ; 1.6	2.7 ; 5.0	78 ; 44
13B	80	11/13			2.8 ; .5	.6 ; .4	
MEAN (4F,13A)...			.68 ; .38	1.0 ; 2.2	1.9 ; 1.3	2.2 ; 4.4	71 ; 35
MEAN (4F,6A,13A)...			.75 ; .85	0.8 ; 1.8	1.9 ; 1.3	1.8 ; 3.9	76 ; 40
MEAN (1Q,4F,4G,13A)..			.68 ; .38	1.0 ; 2.2	1.9 ; 1.2	1.4 ; 3.5	88 ; 75

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

RHC
TABLE VIII
ANALYTICAL DATA FOR SURFACE WATER COMPOSITE SAMPLES
CONCENTRATION (PC/L)

STATION CODE		COLLECTION PERIOD	G.ALPHA SOLUBLE	G.ALPHA INSOLUBLE	G.BETA SOLUBLE	G.BETA INSOLUBLE	I-131 TOTAL	A.H3 TOTAL
1LL	80	01/04-02/01			1.4 ; .4	< .4		< 70
		02/01-02/29			1.5 ; .4	< .3		150 ; 60
		02/29-04/03			1.4 ; .4	1.4 ; .4		80 ; 70
		04/03-05/02			1.9 ; .4	1.5 ; .4		< 70
		05/02-05/30			1.0 ; .4	1.1 ; .3		< 80
		05/30-07/04			1.5 ; .4	.3 ; .3		< 70
		07/04-08/08			2.1 ; .4	1.5 ; .4		< 60
		08/08-09/05			2.5 ; .4	1.1 ; .3		70 ; 50
		09/05-10/10			2.6 ; .5	1.0 ; .3		< 60
		10/10-10/31			2.6 ; .4	.4 ; .3		< 70
		10/31-12/05			2.5 ; .4	< .4		< 70
		12/05-01/09			1.5 ; .5	1.2 ; .4		< 50
ANNUAL MEAN.....					1.9 ; 1.1	.88 ; .98		75 ; 50
4L	80	01/19-01/26					.11 ; .05	
		01/06-02/03	< .3	.4 ; .2	.9 ; .4	< .4		< 70
		02/03-03/01	< .5	< .2	1.9 ; .4	< .3		100 ; 60
		02/23-03/01					< .05	
		03/01-03/09					< .05	
		03/22-03/29					< .09	
		03/01-04/05	< .5	.6 ; .3	1.4 ; .4	1.4 ; .3		150 ; 70
		03/29-04/05					< .06	
		04/05-05/04	< .3	1.3 ; .4	1.6 ; .4	1.7 ; .4		< 70
		04/26-05/04					< .07	
		05/04-05/31	< .6	.2 ; .2	1.2 ; .4	< .3		< 60
		05/24-05/31					< .06	
		05/31-07/05	< .6	< .1	1.2 ; .3	< .3		100 ; 70
		07/05-08/09	< .8	.2 ; .1	1.5 ; .3	.6 ; .3		100 ; 70
		08/03-09/09					< .05	
		09/09-09/06	< .6	< .2	2.5 ; .4	.4 ; .3		< 70
		08/30-09/06					< .05	
		09/06-10/04	< .6	.2 ; .2	2.2 ; .4	.3 ; .3		160 ; 70
		10/04-11/01	< .9	.3 ; .2	2.3 ; .4	< .3		< 70
		11/01-12/06	< .8	< .2	2.8 ; .5	.6 ; .4		< 70
		12/06-01/10	< .08	< .1	2.0 ; .5	< .3		70 ; 60
ANNUAL MEAN.....			.55 ; .47	.33 ; .67	1.8 ; 1.2	.58 ; .95	.066 ; .043	93 ; 64

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

RMC

TABLE VIII (CONTINUED)

ANALYTICAL DATA FOR SURFACE WATER COMPOSITE SAMPLES

CONCENTRATION (PC/L)

STATION CODE	COLLECTION PERIOD	G.ALPHA SOLUBLE	G.ALPHA INSOLUBLE	G.BETA SOLUBLE	G.BETA INSOLUBLE	I-131 TOTAL	A.H3 TOTAL
6I 80	01/19-01/27					< .06	
	01/06-02/03	< .4	.4 ; .2	1.2 ; .4	< .4		< 70
	02/03-03/01	.7 ; .7	< .1	1.8 ; .4	< .3		90 ; 60
	02/24-03/01					< .04	
	03/01-03/09					< .06	
	03/01-04/05	< .3	1.5 ; .6	1.7 ; .4	3.3 ; .4		140 ; 70
	03/29-04/05					.18 ; .05	
	04/05-05/04	< .5	.8 ; .3	2.0 ; .4	.9 ; .3		< 70
	04/27-05/04					< .07	
	05/04-05/31	< .5	< .1	1.1 ; .4	< .3		120 ; 60
	05/25-05/31					.17 ; .07	
	05/31-07/06	< 1	< .1	1.6 ; .4	< .3		< 70
	07/06-07/12					< .06	
	07/05-08/09	< .8	< .1	2.3 ; .4	< .3		80 ; 60
	08/09-09/06	< .7	< .2	2.8 ; .4	< .2		100 ; 50
	08/31-09/06					< .06	
	09/06-10/05	< .5	.9 ; .4	2.6 ; .4	1.0 ; .3		110 ; 70
	10/05-11/01	< 1	< .2	2.6 ; .4	.4 ; .3		< 70
	11/01-12/06	< .5	< .2	2.3 ; .4	.4 ; .4		< 70
	12/06-01/10	< .07	< .1	1.7 ; .5	< .3		< 60
ANNUAL MEAN.....		.58 ; .55	.39 ; .89	2.0 ; 1.1	0.7 ; 1.7	.09 ; .11	88 ; 50
MEAN (1LL,4L).....		< .55	.33 ; .67	1.8 ; 1.1	.73 ; .99	.066 ; .043	84 ; 59
MEAN (1LL,4L,6I).....		.56 ; .50	.36 ; .77	1.9 ; 1.1	0.7 ; 1.3	.076 ; .082	85 ; 55

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

TABLE IX

CONCENTRATIONS OF GAMMA EMITTERS* IN SURFACE WATER

Results in Units of pCi/l ± 2 sigma

GRAB SAMPLES

Env. Station No.	Sampling Dates											
	1-06-80	2-03-80	3-01-80	4-05-80	5-04-80	5-31-80	7-12-80	8-09-80	9-06-80	10-12-80	11-01-80	12-06-80
1Q	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL
4F	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL
4G	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL
6A	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL
13A	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL
13B											All<MDL(1)	

COMPOSITE SAMPLES

Env. Station No.	Sampling Period											
	1-06-80 to 2-03-80	2-03-80 to 3-01-80	3-01-80 to 4-05-80	4-07-80 to 5-04-80	5-04-80 to 5-31-80	5-31-80 to 7-05-80	7-05-80 to 8-09-80	8-49-80 to 9-06-80	9-06-80 to 10-04-80	10-04-80 to 11-01-80	11-01-80 to 12-06-80	1[illegible] 06-80 to -10-81
1LL(2)	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	A l<MDL
4L	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL
6I	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL(3)	All<MDL	All<MDL	All<MDL(4)	All<MDL(5)	All<MDL	All<MDL

* For typical minimum detectable levels of nuclides searched for and not found, see Table XXVII.

(1) Station 13B was sampled only once on 11/13/80.

(2) Sampling dates for station 1LL were 1/4-2/1; 2/1-2/29; 2/29-4/3; 4/3-5/2; 5/2-5/30; 5/30-7/4; 7/3-8/8; 8/8-9/5; 9/5-10/10; 10/10-10/31; 10/31-12/5; 12/5/80-1/9/81.

(3) Sampling dates for station 6I were 5/31-7/6

(4) Sampling dates for station 6I were 9/6-10/5.

(5) Sampling dates for station 6I were 10/5-11/1.

RMC
TABLE X
ANALYTICAL DATA FOR DISCHARGE WATER GRAB SAMPLES
CONCENTRATION (PC/L)

STATION CODE		COLLECTION DATE	G.BETA SOLUBLE	G.BETA INSOLUBLE	A.H3 TOTAL
1M	80	01/06	1.7 ; .4	< .3	< 60
		02/03	2.9 ; .5	< .4	90 ; 70
		03/01	2.1 ; .4	.7 ; .4	210 ; 60
		04/05	1.2 ; .4	1.4 ; .4	< 60
		05/04	2.0 ; .4	1.0 ; .3	< 70
		05/31	1.4 ; .4	.5 ; .3	130 ; 80
		07/12	1.7 ; .4	1.1 ; .4	160 ; 70
		08/09	2.7 ; .4	1.2 ; .3	< 60
		09/06	2.2 ; .4	< .3	< 70
		10/12	2.5 ; .5	.4 ; .3	80 ; 60
		11/01	2.8 ; .5	.4 ; .3	< 70
		12/06	2.3 ; .4	.7 ; .4	< 70
ANNUAL MEAN.....			2.1 ; 1.1	.70 ; .77	94 ; 96

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TABLE XI
ANALYTICAL DATA FOR DISCHARGE WATER COMPOSITE SAMPLES
CONCENTRATION (PC/L)

STATION CODE		COLLECTION PERIOD	G.BETA SOLUBLE	G.BETA INSOLUBLE	A.H3 TOTAL
1MM	80	01/04-02/01	2.2 ; .5	< .4	100 ; 70
		02/01-02/29	3.1 ; .4	.4 ; .3	< 60
		02/29-04/04	1.7 ; .4	1.7 ; .4	90 ; 60
		04/03-05/02	1.9 ; .4	1.9 ; .4	< 70
		05/02-05/30	2.2 ; .4	1.9 ; .4	< 80
		05/30-07/04	1.8 ; .4	.7 ; .3	130 ; 70
		07/04-08/08	2.2 ; .4	1.4 ; .4	< 60
		08/08-09/05	2.2 ; .4	1.1 ; .3	< 70
		09/05-10/10	7.1 ; .6	< .3	< 70
		10/10-10/31	3.1 ; .5	.6 ; .3	< 70
		10/31-12/05	2.5 ; .4	< .4	80 ; 70
		12/05-12/26	1.6 ; .4	<.3	< 60
		12/26-01/09	(A)	(A)	(A)
ANNUAL MEAN.....			2.6 ; 3.0	0.9 ; 1.3	78 ; 41

NOTES: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.
(A) SAMPLER OUT OF SERVICE FROM 12/27/80 TO 01/09/81.

TABLE XII

CONCENTRATIONS OF GAMMA EMITTERS* IN DISCHARGE WATER

Results in Units of pCi/l ± 2 sigma

GRAB SAMPLES

Env. Station No.	Sampling Dates											
	1-06-80	2-03-80	3-01-80	4-05-80	5-04-80	5-31-80	7-12-80	8-09-80	9-06-80	10-12-80	11-01-80	12-06-80
1M	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL

COMPOSITE SAMPLES

Env. Station No.	Sampling Period											
	1-04-80 to 2-01-80	2-01-80 to 2-29-80	2-29-80 to 4-03-80	4-03-80 to 5-02-80	5-02-80 to 5-30-80	5-30-80 to 7-04-80	7-03-80 to 8-08-80	8-08-80 to 9-05-80	9-05-80 to 10-10-80	10-10-80 to 10-31-80	10-31-80 to 12-05-80	12-05-80 to 12-26-80
1MM	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL	All<MDL

* For typical minimum detectable levels of nuclides searched for and nox found, see Table XXVII.

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TABLE XIII

ANALYTICAL DATA FOR WELL WATER SAMPLES

CONCENTRATION (PC/L)

STATION CODE	COLLECTION DATE	G.BETA SOLUBLE	G.BETA INSOLUBLE	A.H3 TOTAL
1U	80 01/06	1.1 ; .4	1.4 ; .4	< 62
	04/05	< .3	.8 ; .4	90 ; 60
	07/12	.3 ; .3	2.8 ; .4	< 70
	10/12	.6 ; .4	.9 ; .3	120 ; 70
ANNUAL MEAN....		.58 ; .75	1.5 ; 1.8	86 ; 52
1V	80 01/06	.3 ; .3	< .3	< 60
	04/05	< .3	< .3	< 60
	07/12	< .3	.5 ; .3	< 70
	10/12	< .3	< .2	90 ; 70
ANNUAL MEAN....		.30	.33 ; .25	70 ; 28
7	80 01/06	1.6 ; .4	< .3	< 60
	04/05	1.4 ; .4	< .3	< 60
	07/12	1.1 ; .3	< .3	< 70
	10/12	1.5 ; .4	1.6 ; .3	< 60
ANNUAL MEAN....		1.4 ; 0.4	0.6 ; 1.3	< 63
40	80 01/06	.5 ; .4	1.0 ; .4	110 ; 60
	04/05	< .3	< .3	80 ; 60
	07/12	.4 ; .3	1.7 ; .4	90 ; 70
	10/12	.9 ; .4	.5 ; .3	80 ; 70
ANNUAL MEAN....		.53 ; .53	0.9 ; 1.2	90 ; 28
ANNUAL MEAN (1U & 1V)....		.44 ; .58	0.9 ; 1.7	78 ; 42
QUARTERLY MEAN -TRITIUM (1U & 1V)				
	01/06			< 61
	04/05			75 ; 42
	07/12			< 70
	10/12			105 ; 42

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

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TABLE XIV

ANALYTICAL DATA FOR PRECIPITATION SAMPLES

CONCENTRATION

STATION CODE		COLLECTION PERIOD	VOLUME (ML)	G.BETA (PC/L)		G.BETA (PC/SQ. M.)	
1A	80	01/06-02/03	1268	4	; 1	160	; 60
		02/03-03/01	330	7	; 2	70	; 20
		03/01-04/05	3200	6	; 1	600	; 100
		04/05-05/04	2097	4	; 1	270	; 90
		05/04-05/31	600	16	; 2	300	; 30
		05/31-07/12	2420	6	; 2	500	; 100
		07/12-08/09	1570	4	; 1	210	; 60
		08/09-09/06	2120	2	; 1	120	; 70
		09/06-10/12	1180	2	; 1	70	; 40
		10/12-11/01	1650	<	2	<	80
		11/01-12/06	2250	13	; 2	900	; 100
		12/06-01/10	220	40	; 3	270	; 20
ANNUAL MEAN...				9	; 21	300	; 510
8	80	01/06-02/03	1215	3	; 1	120	; 50
		02/03-03/01	390	5	; 2	60	; 20
		03/01-04/05	4230	7	; 1	900	; 200
		04/05-05/04	4130	6	; 1	700	; 200
		05/04-05/31	1360	12	; 2	510	; 70
		05/31-07/12	3080	4	; 1	300	; 100
		07/12-08/09	2050	5	; 1	340	; 90
		08/09-09/06	1140	3	; 1	90	; 40
		09/06-10/12	1000	5	; 1	140	; 40
		10/12-11/01	1360	3	; 2	110	; 70
		11/01-12/06	1850	10	; 2	600	; 100
		12/06-01/10	465	89	; 4	1300	; 60
ANNUAL MEAN...				13	; 48	430	; 770

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

TABLE XV

CONCENTRATIONS OF GAMMA EMITTERS IN PRECIPITATION (TOTAL SAMPLE)

Results in Units of pCi/l ± 2 sigma

	STATION 1A		STATION 8	
DATE	NUCLIDES		NUCLIDES	
1-06-80 to 2-03-80		All*<MDL		All*<MDL
2-03-80 to 3-01-80		(1)		(1)
3-01-80 to 4-05-80		All*<MDL		All*<MDL
4-05-80 to 5-04-80		All*<MDL	Be-7 Others*	71±11 <MDL
5-04-80 to 5-31-80		All*<MDL	Be-7 Others*	80±35 <MDL
5-31-80 to 7-12-80		All*<MDL		All*<MDL
7-12-80 to 8-09-80		All*<MDL		All*<MDL
8-09-80 to 9-06-80		All*<MDL		All*<MDL
9-06-80 to 10-12-80		All*<MDL	Be-7 Others*	88±51 <MDL
10-12-80 to 11-01-80		All*<MDL		All* <MDL
11-01-80 to 12-06-80	Be-7 Others*	62±26 <MDL	Be-7 Others*	130±30 <MDL
12-06-80 to 1-10-81		(1)		(1)

* For typical minimum detectable levels of nuclides searched for and not found, see Table XXVII.

(1) Insufficient sample for analysis.

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TABLE XVI

ANALYTICAL DATA FOR AIR-PARTICULATE SAMPLES

CONCENTRATIONS OF GROSS BETA RADIOACTIVITY (PCI/M3)

	COLLECTION PERIOD	1Z	4A
80	12/28-01/06	.027 ; .004	(B)
	01/06-01/12	.050 ; .007	
	01/12-01/19	.027 ; .006	
	01/19-01/26	.025 ; .005	
	01/26-02/03	.034 ; .005	
	02/03-02/09	.020 ; .006	.014 ; .006
	02/09-02/17	.035 ; .005	.037 ; .005
	02/17-02/23	.028 ; .006	.022 ; .005
	02/23-03/01	.025 ; .005	.023 ; .005
	03/01-03/09	.024 ; .005	.024 ; .005
	03/09-03/15	.029 ; .006	.022 ; .005
	03/15-03/22	.025 ; .005	.025 ; .005
	03/22-03/29	.016 ; .004	.016 ; .004
	03/29-04/05	.016 ; .004	.018 ; .005
	04/05-04/12	.026 ; .005	.025 ; .005
	04/12-04/20	.025 ; .004	.022 ; .004
	04/20-04/26	.024 ; .005	.026 ; .006
	04/26-05/04	.016 ; .004	.014 ; .004
	05/04-05/10	.027 ; .005	.024 ; .005
	05/10-05/17	.022 ; .004	.016 ; .004
	05/17-05/24	.023 ; .004	.026 ; .005
	05/24--5/31	(A)	.035 ; .005
	05/31-06/07	.036 ; .006	.033 ; .005
	06/07-06/14	.024 ; .005	.024 ; .005
	06/14-06/22	.026 ; .004	.023 ; .004
	06/22-06/28	.036 ; .006	.032 ; .006
80	06/28-07/05	.058 ; .007	.027 ; .005
	07/05-07/12	.030 ; .005	.026 ; .005
	07/12-07/20	.034 ; .008	.030 ; .005
	07/20-07/26	.024 ; .007	.027 ; .006
	07/26-08/03	.036 ; .005	.035 ; .005
	08/03-08/09	.033 ; .006	.029 ; .006
	08/09-08/17	.082 ; .007	.048 ; .006
	08/17-08/23	.023 ; .006	.018 ; .005
	08/23-08/30	.041 ; .006	.036 ; .006
	08/30-09/06	.024 ; .005	.026 ; .005
	09/06-09/14	.028 ; .005	.035 ; .005
	09/14-09/21	.034 ; .005	.019 ; .004
	09/21-09/28	(A)	< .003
	09/28-10/04	.023 ; .005	.046 ; .007
	10/04-10/12	.031 ; .005	.022 ; .005
	10/12-10/19	.025 ; .005	.021 ; .005
	10/19-10/26	.016 ; .005	.012 ; .005
	10/26-11/01	.024 ; .006	.021 ; .006
	11/01-11/09	.042 ; .006	.042 ; .006
	11/09-11/15	.045 ; .007	.050 ; .007
	11/15-11/23	.047 ; .006	.044 ; .006
	11/23-11/30	.042 ; .006	.034 ; .006
	11/30-12/06	.053 ; .008	.068 ; .009
	12/06-12/13	.089 ; .009	.078 ; .008
	12/13-12/20	.068 ; .008	.070 ; .009
	12/20-12/27	.006 ; .004	.061 ; .007
	ANNUAL MEAN	.033 ; .032	.030 ; .031

NOTES: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.
(A) NO SAMPLE AVAILABLE, PUMP OUT OF SERVICE.
(B) STATION TRANSFERRED FROM ANOTHER CONSULTANT EFFECTIVE FEBRUARY 1980.

TABLE XVII

CONCENTRATIONS OF GAMMA EMITTERS* IN AIR PARTICULATES

Results in Units of 10^{-3} pCi/m^3 ± 2 sigma

Env. Station No. 1Z	Monthly Composite Periods											
	12-28-79 to 2-03-80	2-03-80 to 3-01-80	3-01-80 to 3-29-80	3-29-80 to 5-04-80	5-04-80 to 5-31-80	5-31-80 to 6-28-80	6-28-80 to 8-03-80	8-03-80 to 8-30-80	8-30-80[1] to 9-21-80	9-28-80 to 11-01-80	11-01-80 to 11-30-80	11-30-80 to 12-27-80
Be-7	116±16	150±17	130±14	130±13	120±14	160±16	110±14	120±14	100±13	83±15	61±15	62±13
K-40	<10	<20	<20	<10	<20	<10	<20	<20	<20	<10	<13	23±15
Co-60	<1	<1	<0.9	<0.7	<2	<2	12±2	<1	<1	<1	<1	<1
Zn-65	<1	<2	<2	[illegible]	<2	<2	21±4	<2	<1	<2	<2	<2
Zr-95	<1	<2	<1	[illegible]	<2	<1	<1	<1	<1	<2	<2	8±2
Nb-95	<1	<1	<0.9	<0.8	<1	<0.8	<1	<1	<1	<2	5±2	12±2
Ru-103	<1	<1	<0.9	<0.8	<1	<0.7	<0.8	<0.7	<1	<2	5±2	8±2
Cs-134	<0.9	<1	<1	<1	<1	<1	2±1	<0.8	<0.8	<0.8	<0.7	<0.8
Cs-137	2±1	<1	<0.9	<0.8	<1	1.9±0.8	6±1	<0.6	<0.9	<0.7	<0.8	<0.8
Ba-140	-	-	-	-	-	-	-	-	-	<0.7	<46	<15
La-140	-	-	-	13±[illegible]	-	-	-	-	-	<3	<22	<7
BaLa-140	<4	<6	<2	-	<2	<1	<3	<3	<4	-	-	-
Ce-141	<1	<2	<1	<1	<1	<1	<1	<1	<2	<2	<3	7±2
Ce-144	<3	<4	<6	<5	<6	<6	<4	<3	<5	<3	<5	<5
Ra-226	<3	<3	<2	<2	<4	<2	<3	<2	<2	1.5±0.5	<2	<2
Others*	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL

Env. Station No. 4A	Monthly Composite Periods										
	2-03-80[2] to 3-01-80	3-01-80 to 3-29-80	3-29-80 to 5-04-80	5-04-80 to 5-31-80	5-31-80 to 6-28-80	6-28-80 to 8-03-80	8-03-80 to 8-30-80	8-30-80 to 9-28-80	9-28-80 to 11-01-80	11-01-80 to 11-30-80	11-30-80 to 12-27-80
Be-7	150±15	120±13	160±18	150±15	200±20	160±16	150±15	81±11	130±19	65±15	78±14
Zr-95	<2	<1	<1	<1	<2	<1	<1	<1	<4	<4	8±2
Nb-95	<1	<1	<1	<0.8	<0.7	<0.9	<1	<0.8	<4	5±2	14±2
Ru-103	<1	<1	<0.9	<0.7	<0.7	<0.7	<1	<0.7	<3	3±2	10±2
Cs-137	2±1	<0.9	<1	2.3±0.9	<1	2±1	<0.7	<0.7	<1	<1	<0.9
Ce-141	<2	<1	<1	<1	<0.9	<1	<2	<1	<6	4±2	9±2
Others*	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL

* For typical minimum detectable levels of nuclides searched for and not found, see Table XXVII.

\- Indicates that no MDL was calculated for that nuclide.

(1) Sampler out of service from 9/21 to 9/28.

(2) Station PB-APT-4A began operation on 2-03-80.

TABLE XVIII

CONCENTRATIONS OF I-131 IN FILTERED AIR

Units pCi/m^3

STATION NUMBER COLLECTION DATE(1)	1B	1Z	2	3A	5*	6B*	14*	COLLECTION DATE	STATION NUMBER 12D
3/01/80 - 3/09/80	<.011	<.011	<.010	<.011	<.012	<.011	<.011	3/03 - 3/10	<.013
3/09/80 - 3/15/80	<.026	<.027	<.026	<.027	<.022	<.021	<.021	3/10 - 3/17	<.011
3/15/80 - 3/22/80	<.024	<.023	<.021	<.023	<.022	<.022	<.022	3/17 - 3/24	<.013
3/22/80 - 3/29/80	<.013	<.014	<.013	<.014	<.017	<.016	<.017	3/24 - 3/31	<.013
3/29/80 - 4/05/80	<.011	<.011	<.010	<.012	<.012	<.012	<.017	3/31 - 4/07	<.021
4/05/80 - 4/12/80	<.017	<.020	<.020	<.019	<.020	<.019	<.022	4/07 - 4/14	<.016
4/12/80 - 4/20/80	<.010	<.011	<.011	<.011	<.011	<.012	<.010	4/14 - 4/21	<.012
4/20/80 - 4/26/80	<.017	<.017	<.015	<.016	<.012	<.012	<.013	4/21 - 4/28	<.019
4/26/80 - 5/04/80	<.011	<.010	<.011	<.011	<.011	<.013	<.011	4/28 - 5/05	<.013
5/04/80 - 5/10/80	<.017	<.015	<.012	<.014	<.012	<.012	<.039	5/05 - 5/12	<.010
5/10/80 - 5/17/80	<.015	<.015	<.017	<.016	<.013	<.014	<.091	5/12 - 5/19	<.013
5/17/80 - 5/24/80	<.014	<.015	<.014	<.014	<.013	<.013	<.043	5/19 - 5/28	<.014
5/24/80 - 5/31/80	<.012	(2)	<.013	<.014	<.016	<.015	<.016	5/28 - 6/02	<.017
5/31/80 - 6/07/80	<.014	<.016	<.015	<.015	<.015	<.015	<.016	6/02 - 6/09	<.013
6/07/80 - 6/14/80	<.013	<.014	<.013	<.013	<.014	<.013	<.014	6/09 - 6/16	<.013
6/14/80 - 6/22/80	<.010	<.011	<.011	<.011	<.012	<.012	<.016	6/16 - 6/23	<.010
6/22/80 - 6/28/80	<.015	<.017	<.016	<.017	<.013	<.013	<.015	6/23 - 6/30	<.013
6/28/80 - 7/05/80	<.024	<.025	<.020	<.023	<.022	<.022	<.034(3)	6/30 - 7/07	<.018
7/05/80 - 7/12/80	<.012	<.014	<.014	<.015	<.031	<.016	<.015(4)	7/07 - 7/14	<.015
7/12/80 - 7/20/80	<.027	<.048	<.027	<.027	<.150	<.016	<.018	7/14 - 7/21	<.026
7/20/80 - 7/26/80	<.015	<.025	<.016	<.016	<.101	<.013	<.020	7/21 - 7/28	<.017
7/26/80 - 8/03/80	<.012	<.012	<.012	<.013	<.025	<.012	<.012	7/28 - 8/04	<.021
8/03/80 - 8/09/80(5)								8/04 - 8/11	<.014

TABLE XVIII (cont.)

CONCENTRATIONS OF I-131 IN FILTERED AIR

Units pCi/m^3

STATION NUMBER COLLECTION DATE(1)	1B	1Z	2	3A	5*	6B*	14*	COLLECTION DATE	STATION NUMBER 12D
8/09/80 - 8/17/80	<.010	<.012	<.011	<.011	<.265	<.011	<.013	8/11 - 8/18	<.012
8/17/80 - 8/23/80	<.019	<.022	<.020	<.021	<.014	<.014	<.015	8/18 - 8/25	<.012
8/23/80 - 8/30/80	<.015	<.015	(2)	<.016	<.036	<.020	<.018	8/25 - 9/02	<.015
8/30/80 - 9/06/80	<.090	<.089	<.086	<.095	<.178	<.109	<.098	9/02 - 9/08	<.086
9/06/80 - 9/14/80	<.027	<.028	<.029	<.027	<.043	<.040	<.040	9/08 - 9/15	<.028
9/14/80 - 9/21/80	<.014	<.014	<.014	<.015	<.015	<.017	<.017	9/15 - 9/22	<.015
9/21/80 - 9/28/80	<.017	(2)	<.015	<.017	<.012	<.014	<.012	9/22 - 9/29	<.012
9/28/80 - 10/04/80	<.017	<.017	<.015	<.017	<.013	<.014	<.013	9/29 - 10/06	<.012
10/04/80 - 10/12/80	<.012	<.011	<.010	<.012	<.013	<.014	<.012	10/06 - 10/04	<.019
10/12/80 - 10/19/80	<.012	<.015	<.014	<.013	<.015	<.014	<.014	10/14 - 10/20	<.016
10/19/80 - 10/26/80	<.014	<.014	<.012	<.014	<.014	<.014	<.013	10/20 - 10/27	<.019
10/26/80 - 11/01/80	<.023	<.024	<.023	<.025	<.022	<.024	<.022	10/27 - 11/03	<.033
11/01/80 - 11/09/80	<.016	<.016	<.017	<.017	<.019	<.021	<.020	11/03 - 11/10	<.020
11/09/80 - 11/15/80	<.031	<.031	<.027	<.028	<.021	<.023	<.023	11/10 - 11/17	<.014
11/15/80 - 11/23/80	<.014	<.014	<.013	<.014	<.015	<.016	<.015	11/17 - 11/24	<.018
11/23/80 - 11/30/80	<.022	<.021	<.021	<.021	<.029	<.028	<.029	11/24 - 12/01	<.019
11/30/80 - 12/06/80	(2)	<.016	(2)	(2)	<.013	<.012	<.013	12/01 - 12/08	<.014
12/06/80 - 12/13/80	<.016	<.018	<.015	<.016	<.014	<.013	<.014	12/08 - 12/15	<.020
12/13/80 - 12/20/80	<.018	<.023	<.020	<.022	<.025	<.026	<.026	12/15 - 12/22	<.021
12/20/80 - 12/27/80	<.021	<.026	<.023	<.024	<.023	<.025	<.025	12/22 - 12/29	<.086
Annual Average	<.018	<.020	<.018	<.419	<.033	<.019	<.023		<.019

(1) All stations put in service 3/01/80.
(2) No sample available; pump out of service.
(3) Sampling dates were 6/29/80 - 7/05/80.
(4) Sampling dates were 7/05/80 - 7/12/80.
(5) Results not available due to analytical error.

* Sampling dates for Stations 5, 6B and 14 in 1980 were as follows: 3/01-3/09; 3/09-3/16; 3/16-3/23; 3/23-3/29; 3/29-4/05; 4/05-4/12; 4/12-4/20; 4/20-4/27; 4/27-5/04; 5/04-5/11; 5/11-5/18; 5/18-5/25; 5/25-5/31; 5/31-6/07; 6/07-6/14; 8/14-6/22; 6/22-6/29; 6/29-7/6; 7/6-7/12; 7/12-7/19; 7/19-7/26; 7/26-8/03; 8/03-8/09; 8/09-8/17; 8/17-8/24; 8/24-8/31; 8/31-9/6; 9/6-9/14; 9/14-9/21; 9/21-9/28; 9/28-10/05; 10/05-10/12; 10/12-10/19; 10/19-10/26; 10/26-11/01; 11/01-11/09; 11/09-11/16; 11/16-11/23; 11/23-11/29; 11/29-12/06; 12/06-12/14; 12/14-12/20; 12/20-12/27.

RMC

TABLE XIX

ANALYTICAL DATA FOR MILK SAMPLES

I-131 (PC/L OF MILK)

COLLECTION DATE	STATION A	STATION B	STATION C	STATION D	STATION E	STATION G	STATION J
80 01/28	< .06	< .05	< .04	< .06	< .05	< .07	< .04
02/11	< .04	< .04	< .04	< .04		< .04	< .04
03/10	< .06	< .06	< .04	< .05		< .06	< .05
03/31	< .08	< .08	< .09	< .08	< .05	< .05	< .05
04/07	< .06	< .05	< .04	< .05		< .07	< .05
04/14	< .06	< .06	< .06	< .07		< .05	< .05
04/21	< .05	< .05	< .06	< .07		< .06	< .05
04/28	< .05	< .04	< .05	< .06		< .05	< .05
05/05	< .06	< .06	< .07	< .06		< .04	< .05
05/12	< .05	< .05	< .07	< .06		< .04	< .05
05/19	< .05	< .05	< .05	< .07		< .06	< .05
05/26	< .07	< .05	< .07	< .06	< .08	< .05	< .07
06/02	< .06	< .06	< .08	< .07		< .08	< .08
06/09	< .05	< .05	< .06	< .06		< .05	< .05
06/16	< .06	< .05	< .06	< .06		< .05	< .05
06/23	< .05	< .05	< .06	< .06		< .05	< .05
06/30	< .05	< .05	< .05	< .08		< .05	< .05
07/07	< .04	< .05	< .05	< .08		< .05	< .05
07/14	< .05	< .05	< .05	< .06		< .06	< .05
07/21	< .05	< .05	< .04	< .06		< .04	< .05
07/28	< .05	< .04	< .05	< .06		< .05	< .05
08/04	< .07	< .05	< .05	< .06		< .05	< .06
08/11	< .04	< .04	< .04	< .06		< .05	< .05
08/18	< .03	< .04	< .04	< .05		< .04	< .04
08/25	< .04	< .04	< .04	< .05		< .04	< .04
09/01	< .06	< .05	< .05	< .07		< .05	< .05
09/08	< .05	< .05	< .04	< .05		< .06	< .05
09/15	< .04	< .04	< .04	< .05		< .04	< .04
09/22	< .05	< .05	< .04	< .05		< .05	< .05
09/29	< .04	< .04	< .04	< .06		< .05	< .05
10/06	< .05	< .04	< .05	< .05		< .05	< .05
10/13	< .05	< .05	< .05	< .05		< .05	< .05
10/20	< .05	< .07	< .05	< .05	< .04	< .09	< .05
10/27	.20 ; .07	.19 ; .06	< .05	< .07		.07 ; .04	.15 ; .04
11/03	.20 ; .09	< .07	< .06	.13 ; .06		.18 ; .07	< .05
11/10	.09 ; .05	.16 ; .05	< .05	.14 ; .06		< .07	< .08
11/17	< .05	< .06	< .05	< .07	< .06	< .06	.09 ; .04
11/24	.33 ; .06	.07 ; .04	< .04	< .06		.22 ; .06	.19 ; .05
12/16	.07 ; .06	.12 ; .06	< .06	< .08		< .08	< .06
ANNUAL MEANS	.07 ; .11	.060 ; .062	< .052	.065 ; .039	< .056	.062 ; .070	.059 ; .057

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

RMC
TABLE XIX (CONTINUED)
ANALYTICAL DATA FOR MILK SAMPLES
I-131 (PC/L OF MILK)

COLLECTION DATE	STATION L	STATION M	STATION N	STATION O
80 01/28	< .06	< .05	< .05	< .06
02/11			< .04	< .04
03/10			< .06	< .05
03/31	< .07	< .07	< .05	< .05
04/07			< .05	< .05
04/14			< .05	< .05
04/21			< .05	< .05
04/28			< .04	< .04
05/05			< .05	< .05
05/12			< .05	< .04
05/19			< .05	< .05
05/26	< .07	< .05	< .05	< .08
06/02			< .07	< .06
06/09			< .05	< .05
06/16			< .05	< .05
06/23			< .05	< .05
06/30			< .06	< .05
07/07			< .05	< .05
07/14			< .05	< .05
07/21			< .04	< .05
07/28			< .05	< .05
08/04			< .05	< .05
08/11			< .05	< .04
08/18			< .04	< .04
08/25			< .04	< .04
09/01			< .05	< .05
09/08			< .05	< .05
09/15			< .04	< .05
09/22			< .05	< .05
09/29			< .05	< .05
10/06			< .05	< .04
10/13			< .05	< .05
10/20	< .05	< .05	< .05	< .06
10/27			.07 ; .04	.19 ; .04
11/03			.14 ; .06	< .05
11/10			.40 ; .08	< .08
11/17	.07 ; .05	.26 ; .06	.29 ; .06	< .05
11/24			.18 ; .06	< .05
12/16			< .05	< .05
ANNUAL MEANS	.064 ; .018	.10 ; .18	.07 ; .14	.054 ; .048

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

RMC

TABLE XIX (CONTINUED)

ANALYTICAL DATA FOR MILK SAMPLES

STATION CODE		COLLECTION DATE	A.H3 (PC/L OF MILK)	A.H3 (PC/L OF WATER)	SR - 89 (PC/L OF MILK)	SR - 90 (PC/L OF MILK)
A	80	01/28	60 ; 50	90 ; 70		
		05/26	100 ; 60	130 ; 70		
		10/20	80 ; 60	90 ; 70		
		11/17	90 ; 50	110 ; 60		
ANNUAL MEAN...			83 ; 34	105 ; 38		
C	80	01/28	< 50	< 70		
		05/26	50 ; 50	70 ; 70		
		10/20	110 ; 60	130 ; 70		
		11/17	70 ; 40	110 ; 60		
ANNUAL MEAN...			70 ; 57	95 ; 60		
G		01/28	60 ; 60	80 ; 70		
		05/26	60 ; 50	80 ; 70		
		10/20	< 50	< 60		
		11/17	< 50	< 60		
ANNUAL MEAN...			55 ; 12	70 ; 23		
J		;01/28	70 ; 70	80 ; 70	< 5	4 ; 1
		;05/26	50 ; 40	80 ; 70	< 10	7 ; 2
		10/20	< 60	< 60	3 ; 2	2.8 ; .9
		11/17	60 ; 40	100 ; 60	< 2	2.2 ; .7
ANNUAL MEAN...			60 ; 16	80 ; 32	5.0 ; 7.1	4.0 ; 4.3

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

TABLE XX

1980 MEAN CONCENTRATION OF IODINE-131 IN MILK BY WEEK

RESULTS IN UNITS OF pCi/l ± 2 SIGMA

Collection Date	Near Farms (G,J,O)	Intermediate Farms (D,L,M,N)	Distant Farms (A,B, C E)	All Farms
1/28	<.057	<.055	<.050	<.054
2/11	<.040	<.040	<.040	<.040
3/10	<.053	<.055	<.053	<.054
3/31	<.050	<.068	<.083	<.068
4/7	<.057	<.050	<.050	<.053
4/14	<.050	<.060	<.060	<.056
4/21	<.053	<.060	<.053	<.055
4/28	<.047	<.050	<.047	<.048
5/5	<.047	<.055	<.063	<.055
5/12	<.043	<.055	<.057	<.051
5/19	<.053	<.060	<.050	<.054
5/26	<.067	<.058	<.060	<.061
6/2	<.073	<.070	<.067	<.070
6/9	<.050	<.055	<.053	<.053
6/16	<.050	<.055	<.057	<.054
6/23	<.050	<.055	<.053	<.053
6/30	<.050	<.070	<.050	<.055
7/7	<.050	<.065	<.047	<.053
7/14	<.053	<.055	<.050	<.053
7/21	<.047	<.050	<.047	<.048
7/28	<.050	<.055	<.047	<.050
8/4	<.053	<.055	<.057	<.055
8/11	<.047	<.055	<.040	<.046
8/18	<.040	<.045	<.037	<.040
8/25	<.040	<.045	<.040	<.041

TABLE XX (CONT.)

1980 MEAN CONCENTRATION OF IODINE-131 IN MILK BY WEEK

RESULTS IN UNITS OF pCi/l ± 2 SIGMA

Collection Date	Near Farms (G,J,O)	Intermediate Farms (D,L,M,N)	Distant Farms (A,B, C E)	All Farms
9/1	< .050	< .060	< .053	< .054
9/8	< .053	< .050	< .047	< .050
9/15	< .043	< .045	< .040	< .043
9/22	< .050	< 050	< .047	< .049
9/29	< .050	< .055	< .040	< .048
10/6	< .047	< .050	< .047	< .048
10/13	< .050	< .050	< .050	< .050
10/20	< .067	< .050	< .053	< .056
10/27	.137;.122	.070	.147;.168	.124;.130
11/03	.093;.150	.135;.014	.110;.156	.110;.121
11/10	< .077	.270;.368	.100;.111	.134;.227
11/17	.067;.042	.173;.238	< .055	.101;.174
11/24	.153;.181	.120;.170	.147;.319	.143;.208
12/16	< .063	< .065	.083;.064	.071;.046

TABLE XXI

CONCENTRATIONS OF GAMMA EMITTERS* IN MILK

Results in Units of pCi/l ± 2 sigma

Env. Station No.	Sampling Date	Nuclides Found K-40	Cs-137
J	1-28-80	1300±130	<0.9
	5-26-80	1400±140	3±1
	10-20-80	1500±150	<0.8
	11-17-80	1600±160	<0.9

* For typical minimum detectable levels of nuclides searched for and not found, see Table XXVII.

RMC
TABLE XXII
ANALYTICAL DATA FOR SOIL SAMPLES
CONCENTRATION (PC/G DRY)

STATION CODE	COLLECTION DATE	SR-89 BOTTOM	SR-89 TOP	SR-90 BOTTOM	SR-90 TOP
2	80 05/31	< .06	< .08	.37 ; .05	.66 ; .07
	11/01	.2 ; .1	.1 ; .1	.45 ; .08	.66 ; .08
ANNUAL MEAN....		.13 ; .20	.09 ; .03	.41 ; .11	.66
3A	80 05/31	< .05	.08 ; .06	.20 ; .04	.19 ; .04
	11/01	< .05	.11 ; .07	.15 ; .04	.18 ; .05
ANNUAL MEAN....		< .05	.095 ; .04	.18 ; .07	.19 ; .01
5	80 05/31	< .04	< .03	.04 ; .03	.03 ; .02
	11/01	< .06	.13 ; .06	.15 ; .04	.15 ; .04
ANNUAL MEAN....		< .05	.08 ; .14	.10 ; .16	.09 ; .17

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

TABLE XXIII

CONCENTRATIONS OF GAMMA EMITTERS IN SOIL

Results in Units of pCi/g(dry)

Env. Station No.		STATION 2		Average Site Location	STATION 3A		STATION 5		Average of Distant Locations
Date		5-31-80	11-01-80		5-31-80	11-01-80	5-31-80	11-01-80	
Nuclides Found									
Be-7	top 1"	0.5±0.3	<1.2	0.9±1.0	<0.3	<0.5	<0.1	<0.6	<0.3
	bottom	<0.23	<0.6	<0.4	<0.3	<0.5	<0.1	<0.5	<0.35
K-40	top 1"	18±2	12±1	15±8	17±1	18±2	22±2	23±2	20±5.9
	bottom	19±2	12±1	16±9.9	19±2	21±2	20±2	22±2	21±2.6
Cs-137	top 1"	1.8±0.2	9.3±0.9	5.6±10.6	1.1±0.1	1.0±0.1	0.25±0.03	1.0±0.1	0.84±0.79
	bottom	1.0±0.1	2.2±0.2	1.6±1.7	0.91±0.09	0.45±0.05	0.11±0.02	0.39±0.04	0.47±0.66
Ra-226	top 1"	1.4±0.1	1.1±0.1	1.3±0.4	1.0±0.1	1.1±0.1	1.0±0.1	1.1±0.1	1.1±0.1
	bottom	1.9±0.2	1.4±0.1	1.7±0.7	1.1±0.1	1.1±0.1	1.0±0.1	1.1±0.1	1.1±0.1
Th-232	top 1"	1.3±0.1	1.5±0.2	1.4±0.3	1.0±0.1	1.1±0.1	1.2±0.1	1.5±0.2	1.2±0.4
	bottom	1.4±0.1	1.4±0.1	1.4±0	1.1±0.1	1.2±0.1	1.0±0.1	1.4±0.1	1.2±0.3
Others*	top 1"	<MDL	<MDL	-	<MDL	<MDL	<MDL	<MDL	-
	bottom	<MDL	<MDL	-	<MDL	<MDL	<MDL	<MDL	

* For typical minimum detectable levels of nuclides searched for and not found, see Table XXVII.

RMC
TABLE XXIV
MONTHLY TLD RESULTS
RESULTS IN UNITS OF MRADS/STD. MONTH

STATION CODE	EQV.MO.AVG.	80 01/06-02/03	80 02/03-03/01	80 03/01-04/05	80 04/05-05/04	80 05/04-05/31	80 05/31-07/12	80 07/12-08/09	80 08/09-09/06	80 09/06-10/12	80 10/12-11/01	80 11/01-12/06	81 12/06-01/10
1A	7.42 ; 1.01	8.33;0.32	8.11;1.06	7.54;0.94	7.45;0.59	6.99;1.04	6.46;0.69	7.16;0.24	7.44;0.61	7.61;0.79	7.90;0.30	7.46;0.27	7.14;0.50
1B	5.96 ; 0.74	6.57;1.12	6.03;0.55	6.46;0.51	5.84;0.37	6.14;1.23	5.22;0.49	6.18;0.89	5.82;0.29	5.81;0.59	6.37;0.51	5.76;0.51	5.84;0.31
1C	6.96 ; 1.85	8.14;1.26	7.66;0.80	7.61;0.79	5.65;0.61	6.96;0.[illegible]	6.64;0.57	7.95;0.89	7.16;0.40	7.35;0.57	6.06;0.13	5.16;0.41	7.24;0.75
1D	6.85 ; 0.65	7.32;0.30	7.15;0.71	7.12;0.68	6.63;0.71	6.70;1.01	6.44;0.47	7.14;0.49	6.56;0.79	6.67;0.16	7.42;0.68	6.74;0.62	6.68;0.22
1E	6.76 ; 1.12	7.66;0.99	7.62;0.70	7.34;0.75	6.47;1.04	6.45;0.63	5.90;0.34	6.84;0.31	6.55;0.37	6.40;0.55	7.37;0.46	6.81;0.99	6.42;0.87
1F	8.05 ; 1.44	9.12;0.76	8.35;0.67	8.79;0.51	8.20;0.78	7.15;1.39	6.82;0.43	8.46;1.33	7.48;0.48	8.30;0.33	8.97;0.75	7.57;0.53	8.05;0.31
1G	5.20 ; 0.88	6.04;0.54	5.79;0.42	5.66;0.51	5.06;0.53	5.06;0.41	4.66;0.3[illegible]	4.73;0.55	5.06;0.17	4.86;0.34	5.59;0.46	5.29;0.39	5.01;0.36
1H	6.53 ; 0.83	7.32;0.54	7.02;0.42	6.38;0.76	6.57;0.71	6.54;0.53	5.91;0.64	6.70;0.73	6.48;0.56	6.62;0.74	7.17;0.23	6.14;0.26	6.22;0.52
1I	6.02 ; 1.99	6.10;0.13	6.44;0.37	6.39;0.50	7.57;0.64	5.56;0.52	5.02;0.55	5.04;0.81	5.37;0.47	5.04;0.32	7.78;0.88	7.22;0.18	5.67;0.46
1J	8.01 ; 1.11	8.22;0.19	8.65;0.50	8.75;1.04	7.89;0.31	7.53;0.76	7.45;1.01	8.54;0.58	8.28;0.54	7.76;0.48	8.80;0.30	7.81;0.37	7.11;0.74
1L	5.51 ; 1.04	5.80;0.76	6.14;0.85	5.45;0.65	5.62;0.28	4.46;0.3[illegible]	4.92;0.26	5.08;0.46	5.49;0.22	5.78;0.64	6.05;0.28	6.18;0.57	5.39;0.43
1M	3.89 ; 0.67	4.48;0.47	4.23;0.34	4.12;0.73	4.24;0.22	3.91;0.1[illegible]	3.60;0.53	3.79;0.21	3.58;0.34	3.49;0.3[illegible]	4.32;0.69	3.68;0.22	3.65;0.55
2	6.57 ; 1.06	7.36;0.32	7.36;0.44	7.30;0.51	6.33;0.56	6.41;0.62	6.36;0.13	6.63;1.23	6.50;1.08	6.16;0.37	6.72;0.41	6.48;0.81	5.58;0.27
3A	5.41 ; 1.23	5.82;0.45	6.08;0.60	5.96;1.10	5.70;0.40	5.05;0.47	6.30;3.58	5.01;0.63	4.92;0.56	4.92;0.45	6.03;0.33	4.54;0.26	4.75;0.44
4K	4.45 ; 0.94	5.08;0.22	5.01;0.29	5.13;0.61	4.91;0.35	4.48;0.97	4.01;0.51	4.46;0.12	4.02;0.08	3.75;0.38	4.68;0.51	4.18;0.47	4.20;0.41
5	6.50 ; 0.82	7.04;0.58	6.59;1.43	6.77;0.96	6.67;0.46	7.00;1.78	5.85;0.25	6.80;0.22	6.06;0.42	6.13;0.68	7.05;0.55	6.39;0.71	6.24;0.61
6B	5.66 ; 1.51	6.77;0.66	6.70;0.50	6.30;0.25	6.34;1.21	6.46;0.71	5.25;0.21	5.32;0.36	4.71;0.8[illegible]	4.97;0.42	5.67;0.79	5.06;0.25	4.99;0.94
14	6.87 ; 1.02	6.65;0.38	7.28;0.42	7.83;1.26	7.32;1.00	6.85;0.61	6.51;0.34	7.31;0.36	6.56;0.2[illegible]	7.12;0.35	6.24;0.66	6.15;0.59	6.53;0.65
15	7.16 ; 0.89	7.69;0.46	7.03;0.87	7.85;0.24	7.89;0.97	7.00;0.18	6.89;1.10	7.33;0.58	6.83;0.78	7.11;0.9[illegible]	6.67;0.29	7.04;0.65	6.53;0.44
16	7.11 ; 0.95	7.41;0.80	7.54;1.70	7.30;0.45	6.95;0.60	7.56;0.65	7.33;1.01	7.89;0.41	6.40;0.20	6.91;2.09	6.98;0.60	6.98;0.96	6.27;0.59
17	7.85 ; 0.97	8.57;1.47	8.26;1.45	8.51;1.37	7.67;0.61	8.16;1.00	7.57;0.81	8.32;1.23	7.46;0.41	7.73;0.82	7.52;0.42	7.51;0.44	7.10;0.33
18	7.33 ; 0.93	8.49;0.55	7.60;0.83	7.14;1.22	7.18;0.37	6.97;0.54	7.20;0.66	7.51;0.71	7.41;0.94	6.98;0.84	7.00;0.12	7.78;0.70	6.79;0.79
19	6.96 ; 0.60	7.37;0.66	7.02;0.57	7.16;0.61	7.04;1.22	7.54;0.19	6.63;1.17	7.08;0.19	6.65;0.76	7.05;0.23	7.01;0.85	6.66;0.39	6.61;0.53
20	8.19 ; 1.32	8.35;0.25	8.54;0.28	8.74;0.77	8.25;0.86	9.33;1.38	8.69;2.22	7.44;0.73	7.70;0.47	7.38;0.61	7.23;0.26	7.67;0.40	7.61;0.39

NOTE: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.

RMC

TABLE XXIV (CONTINUED)
MONTHLY TLD RESULTS
RESULTS IN UNITS OF MRAD/STD. MONTH

STATION CODE	EQV.MO.AVG.	80 01/06-02/03	80 02/03-03/01	80 03/01-04/05	80 04/05-05/04	80 05/04-05/31	80 05/31-07/12	80 07/12-08/09	80 08/09-09/06	80 09/06-10/12	80 10/12-11/01	80 11/01-12/06	81 12/06-01/10
21B	6.99 ; 1.42	8.04;0.23	7.12;0.84	7.42;0.91	7.09;0.59	8.69;1.12	6.67;0.89	6.61;0.47	6.53;0.26	6.43;0.36	6.69;1.10	6.31;0.25	6.74;0.28
22	7.09 ; 1.24	8.18;0.74	7.50;0.55	7.05;1.11	6.89;0.95	8.48;1.29	6.93;0.88	7.04;0.66	6.97;0.37	6.42;0.52	6.82;0.73	6.75;0.49	6.56;0.55
23	7.42 ; 1.01	7.59;0.92	7.55;1.03	7.52;0.55	8.10;0.96	8.30;0.40	7.71;0.60	7.11;1.00	6.91;0.99	6.55;1.16	7.81;0.30	7.05;0.35	7.20;0.70
24	5.68 ; 0.83	5.85;0.43	5.98;0.86	5.35;0.37	5.64;0.36	5.95;0.91	6.70;3.44	5.45;0.81	5.31;0.66	5.61;0.19	5.55;0.54	5.50;0.37	5.10;0.43
26	8.08 ; 0.94	8.32;0.44	7.98;1.49	8.56;0.55	7.90;0.30	8.88;0.48	8.62;1.47	7.92;0.33	7.72;0.48	7.90;0.36	8.09;1.20	7.99;0.50	7.10;0.92
27	7.63 ; 1.17	8.28;0.62	7.47;0.49	8.30;0.29	7.99;0.47	8.27;0.79	8.12;1.56	7.60;0.79	7.32;0.38	7.47;0.48	7.57;1.11	6.80;0.56	6.50;0.28
31	6.99 ; 0.94	7.56;1.27	7.54;0.35	6.87;0.64	7.38;0.64	7.48;1.08	6.69;0.32	6.86;0.87	6.52;0.68	7.00;0.28	7.55;0.47	6.85;0.60	6.13;0.27
32	7.64 ; 1.52	8.69;0.68	7.99;0.85	7.98;0.48	7.76;0.30	9.51;1.41	7.28;0.84	7.58;0.45	7.06;1.33	7.01;0.88	7.55;1.13	7.18;0.67	6.96;0.24
33A	5.38 ; 1.29	5.82;0.82	5.65;0.29	6.25;1.24	5.66;0.37	6.64;1.18	5.47;0.80	4.73;0.74	4.81;0.33	4.92;0.30	4.80;0.70	4.62;0.98	5.18;0.40
38	7.59 ; 1.04	8.21;0.88	7.42;0.63	7.71;0.69	8.32;0.52	8.57;0.75	7.71;2.13	7.26;0.27	7.34;0.26	7.21;0.42	7.56;0.45	7.21;0.56	6.82;0.71
40	8.04 ; 1.00	(A)						8.65;0.35	8.16;0.20	7.90;0.64	8.16;0.32	8.39;1.18	7.20;0.31
42	8.45 ; 1.20							8.64;0.64	8.18;0.87	8.00;1.02	9.13;2.55	9.25;0.58	7.81;0.83
43	8.29 ; 1.30							8.49;0.42	8.05;0.45	8.29;0.43	9.56;1.20	8.27;0.59	7.61;0.79
44	6.56 ; 0.74							6.54;0.32	6.40;0.56	6.84;0.19	7.15;0.94	6.54;0.33	6.08;0.45
45	7.61 ; 0.33							7.65;0.87	7.46;0.66	7.43;0.68	7.89;0.82	7.72;1.27	7.63;0.85
46	6.71 ; 0.76							6.77;0.74	6.74;0.50	6.95;0.35	7.17;0.90	6.78;0.83	6.04;0.24
47	7.90 ; 1.13							7.92;0.58	7.38;1.97	8.16;0.21	8.81;1.36	8.13;0.43	7.29;0.82
48	6.98 ; 0.51							6.89;1.38	7.08;0.49	6.81;0.62	7.45;0.59	7.21;0.44	6.76;0.46
49	7.48 ; 0.95							7.74;1.15	7.42;0.73	7.44;0.56	8.35;0.67	6.92;0.37	7.40;0.65
50	8.46 ; 0.76							8.96;0.62	8.20;0.41	8.41;0.24	9.00;0.77	8.14;0.70	8.33;0.56
51	7.24 ; 1.07							7.58;0.69	7.34;1.09	7.04;0.78	8.21;0.73	7.17;0.30	6.63;0.64
1NN	7.49 ; 1.03							7.32;0.71	7.26;0.55	7.54;0.46	8.45;1.30	7.75;0.46	6.96;0.52

STATION CODE	EQV.MO.AVG.	80 01/03-02/04	80 01/31-03/03	80 02/28-04/07	80 04/02-05/05	80 04/30-06/02	80 05/30-07/14	80 07/09-08/11	80 08/06-09/09	80 09/06-10/12	80 10/09-11/04	80 10/30-12/08	81 12/05-01/13
12B	5.55 ; 0.92	6.58;0.68	5.17;0.63	6.14;0.77	5.55;0.31	5.31;0.57	5.33;0.53	5.55;0.33	5.22;0.53	5.88;0.63	4.93;0.51	5.29;0.47	5.49;0.29

NOTES: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.
(A) NO DATA AVAILABLE,NEW STATIONS PUT IN SERVICE ON 07/12/80.

RMC

TABLE XXV

QUARTERLY TLD RESULTS

RESULTS IN UNITS OF MRADS/STD. MONTH

STATION CODE	EQV.MO.AVG.	80 01/06-04/05	80 04/05-07/12	80 07/12-10/12	81 10/12-01/10
1A	7.01 ; 1.59	7.57;0.69	5.97;0.68	6.90;0.53	7.71;0.37
1B	5.76 ; 1.22	6.50;0.77	5.10;0.27	5.49;0.23	6.01;0.22
1C	6.08 ; 1.97	6.91;0.66	4.67;0.30	6.50;0.47	6.35;0.67
1D	6.36 ; 1.22	7.05;0.48	5.73;0.74	5.92;1.25	6.73;0.59
1E	6.44 ; 1.19	7.13;0.98	5.91;0.41	6.00;0.57	6.77;0.27
1F	7.65 ; 1.33	8.22;0.25	6.94;0.23	7.27;1.01	8.25;0.88
1G	4.88 ; 0.68	5.18;0.40	4.42;0.20	4.87;1.09	5.09;0.34
1H	6.59 ; 1.21	7.38;0.37	6.01;0.17	6.26;0.60	6.78;0.10
1I	5.80 ; 1.54	5.47;0.20	6.42;0.42	4.85;0.64	6.43;0.18
1J	7.56 ; 0.78	7.79;0.85	7.00;0.68	7.87;0.31	7.62;0.30
1L	5.30 ; 1.26	5.36;0.93	4.58;0.25	5.20;0.20	6.11;0.71
1M	3.59 ; 0.57	3.58;0.32	3.31;0.17	3.52;0.13	3.98;0.28
2	6.16 ; 0.81	6.57;0.95	5.81;0.26	5.83;0.56	6.46;0.54
3A	5.06 ; 0.97	5.55;0.22	4.49;0.54	4.87;0.62	5.38;0.31
4K	4.41 ; 1.19	5.23;0.65	4.07;0.19	3.88;0.22	4.50;0.24
5	6.44 ; 0.85	6.87;0.79	5.87;0.49	6.48;1.37	6.60;0.47
6B	5.56 ; 1.23	6.25;0.72	5.55;0.48	4.76;0.09	5.71;0.25
14	6.64 ; 0.97	7.20;0.59	6.09;0.85	6.46;0.39	6.87;0.27
15	6.88 ; 1.26	7.51;0.64	6.13;0.29	6.67;0.36	7.30;0.81
16	6.63 ; 0.73	6.70;0.50	6.12;0.93	6.76;0.37	6.97;0.42
17	7.42 ; 0.86	7.66;1.31	6.94;0.31	7.22;0.64	7.89;0.82
18	7.15 ; 0.97	7.65;0.36	6.68;0.64	6.82;0.47	7.51;1.04
19	6.76 ; 0.79	6.94;0.45	6.35;0.38	6.56;0.44	7.24;0.43
20	7.68 ; 1.30	8.54;0.85	7.05;0.70	7.35;0.26	7.83;1.21
21B	6.78 ; 1.11	7.31;0.34	6.04;0.31	6.73;0.37	7.10;0.80
22	6.74 ; 0.30	6.94;0.68	6.55;0.68	6.74;0.15	6.73;0.24
23	7.20 ; 0.96	7.66;1.12	6.85;0.23	6.84;0.25	7.29;0.28
24	5.38 ; 0.37	5.58;0.41	5.28;0.53	5.19;0.41	5.47;0.61
26	7.55 ; 0.87	7.97;0.31	6.95;0.64	7.67;0.61	7.66;0.20
27	7.16 ; 1.07	7.73;0.65	6.50;0.48	7.16;0.22	7.32;0.81
31	6.88 ; 0.96	7.60;0.29	6.55;0.55	6.75;0.45	6.66;0.38
32	7.42 ; 0.86	7.84;0.89	6.87;0.59	7.35;0.47	7.67;0.51
33A	5.17 ; 0.67	5.49;0.45	5.22;0.52	4.70;0.63	5.29;0.36
38	7.31 ; 0.95	7.77;0.37	7.49;0.57	6.66;0.22	7.31;0.33
40	7.98 ; 1.40	(A)		7.49;1.02	8.48;0.29
42	8.22 ; 0.58			8.01;0.24	8.43;0.65
43	7.94 ; 0.30			7.83;0.47	8.05;0.26
44	6.49 ; 0.28			6.59;0.51	6.38;0.24
45	7.25 ; 0.97			6.91;0.35	7.59;0.56
46	6.45 ; 0.32			6.33;0.55	6.57;0.78
47	7.70 ; 0.72			7.44;0.84	7.96;0.48
48	6.82 ; 0.68			6.58;0.24	7.06;0.25
49	7.17 ; 0.73			6.91;0.54	7.43;0.35
50	8.25 ; 0.51			8.08;0.20	8.42;0.34
51	7.06 ; 0.61			6.85;0.71	7.28;0.42
1NN	7.71 ; 0.08			7.68;0.27	7.74;0.27

STATION CODE	EQV.MO.AVG.	80 01/03-04/07	80 04/02-07/14	80 07/12-10/12	81 10/09-01/13
12B	5.28 ; 0.81	5.86;0.38	5.13;0.34	4.92;0.43	5.21;0.36

NOTES: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.
(A) NO DATA AVAILABLE, NEW STATIONS PUT IN TO SERVICE ON 07/12/80.

RMC

TABLE XXVI

MEAN MONTHLY AND QUARTERLY TLD RESULTS
FOR THE SITE BOUNDARY, MIDDLE, AND OUTER RINGS

RESULTS IN UNITS OF MRAD/STD. MONTH ; 2 SIGMA DEVIATION OF THE DATA

SAMPLE TYPE	EXPOSURE PERIOD	SITE BOUNDARY	MIDDLE RING	OUTER RING
MONTHLY	JANUARY 80	7.09 ; 2.60	7.35 ; 2.24	7.44 ; 1.93
	FEBRUARY 80	6.91 ; 2.55	7.08 ; 1.84	7.00 ; 2.22
	MARCH 80	6.82 ; 2.80	7.24 ; 2.03	7.04 ; 2.13
	APRIL 80	6.23 ; 2.30	7.10 ; 2.07	6.81 ; 1.88
	MAY 80	5.87 ; 2.35	6.96 ; 2.72	7.34 ; 2.84
	JUNE 80	6.06 ; 2.20	7.18 ; 2.70	6.94 ; 1.02
	JULY 80	6.55 ; 3.05	6.71 ; 2.44	6.79 ; 1.93
	AUGUST 80	6.27 ; 2.54	6.35 ; 2.34	6.46 ; 1.89
	SEPTEMBER 80	6.29 ; 2.68	6.41 ; 2.46	6.61 ; 1.31
	OCTOBER 80	6.80 ; 2.72	6.77 ; 2.15	6.48 ; 1.77
	NOVEMBER 80	6.15 ; 2.34	6.35 ; 2.37	6.60 ; 1.95
	DECEMBER 80	6.11 ; 2.42	6.19 ; 1.90	6.37 ; 1.69
QUARTERLY	JAN/80-APR/80	6.52 ; 2.67	7.03 ; 1.90	6.94 ; 2.05
	APR/80-JUL/80	5.41 ; 2.24	6.14 ; 1.92	6.09 ; 1.39
	JUL/80-OCT/80	5.88 ; 2.34	6.28 ; 2.29	6.33 ; 1.82
	OCT/80-JAN/81	6.38 ; 2.29	6.68 ; 2.02	6.76 ; 2.03

SITE BOUNDARY RING STATIONS - 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1J, 1L, 1M, 2.

MIDDLE RING STATIONS - 3A, 4K, 5, 6B, 14, 15, 17, 22, 23, 26, 27, 31, 32, 33A, 38.

OUTER RING STATIONS - 12B, 16, 18, 19, 20, 21B, 24.

NOTES: ALL SEMICOLONS INDICATE A PLUS OR MINUS SIGN.
(1) EXPOSURE PERIOD DATES ARE INDICATED ON TABLES XXIV AND XXV.

TABLE XXVII

GAMMA SPECTROMETRY OF ALL MEDIA

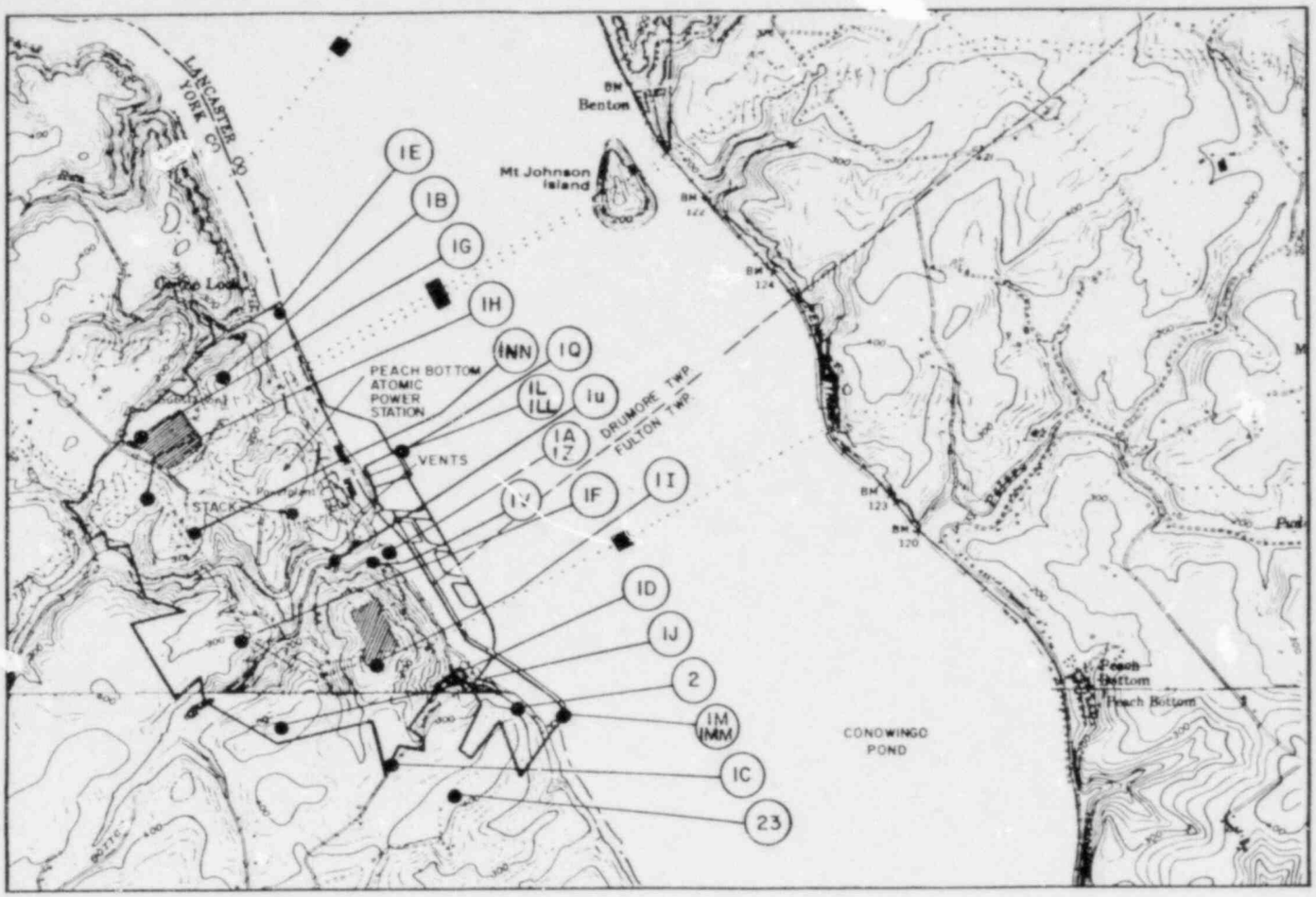
TYPICAL MINIMUM DETECTABLE LEVELS OF NUCLIDES SEARCHED FOR BUT NOT FOUND

NUCLIDE	SURFACE WATER (pCi/l)	DISCHARGE WATER (pCi/l)	RAIN WATER (pCi/l)	AIR PARTICULATES (10^{-3} pCi/m^3)	MILK (pCi/l)	SOIL (pCi/g-dry)
Be-7	*	*	*	-	*	0.5
Na-22	0.5	0.5	1.0	1.0	1.0	0.02
K-40	6.0	6.0	20.0	20	-	-
Cr-51	9.0	5.0	25.0	7.6	8.0	1.0
Mn-54	0.4	0.4	1.0	0.8	0.8	0.02
Co-57	*	*	*	1.0	*	0.02
Co-58	0.6	0.6	2.0	0.8	1.0	0.02
Fe-59	2.0	1.0	4.0	2.0	3.0	0.04
Co-60	0.5	0.5	1.0	10	0.8	0.04
Zn-65	1.0	1.0	1.0	2.1	2.0	0.04
Zr-95	*	*	*	1.3	*	.09
Nb-95	*	*	*	1.1	*	.1
ZrNb-95	0.4	0.4	2.0	*	0.8	*
Mo-99	3.0	3.0	20.0	820	340	2.0
Ru-103	*	*	*	1.0	*	0.03
Ru-106	4.0	4.0	20.0	6.3	7.0	0.2
Cd-109	*	*	*	22	*	0.5
Ag-110m	0.5	0.5	2.0	2.1	0.9	0.05
Sb-125	*	*	*	2.0	*	0.05
Te-129m	9.0	11.0	26.0	14	14	3.0
I-131	2.0	3.0	3.0	0.8	3.0	0.09
Te-132	0.3	0.3	2.0	38	18	0.3
I-133	0.5	0.5	3.0	0.7	*	0.01
Cs-134	0.4	0.5	2.0	1.0	0.8	0.04
Cs-136	2.0	2.0	2.0	16	3.0	0.05
Cs-137	0.5	0.5	1.0	1.0	0.9	-
Ba-140	*	*	*	130	*	4.0
La-140	*	*	*	55	*	2.0
BaLa-140	2.0	2.0	5.0	4.3	2.0	0.08
Ce-141	*	*	*	1.0	*	0.03
Ce-144	2.0	2.0	8.0	6.0	2.0	0.1
Ra-226	0.8	0.8	2.0	2.0	1.0	-
Th-232	2.0	2.0	2.0	4.0	3.0	-

* Minimum detectable levels of these nuclides were not calculated for these media.

Dash (-) indicates a positive concentration was measured in all samples analyzed.

VI. FIGURES



ENVIRONMENTAL SAMPLING STATION ON OR NEAR PEACH BOTTOM SITE
FIGURE 1

LEGEND

● ENVIRONMENTAL SAMPLING STATIONS

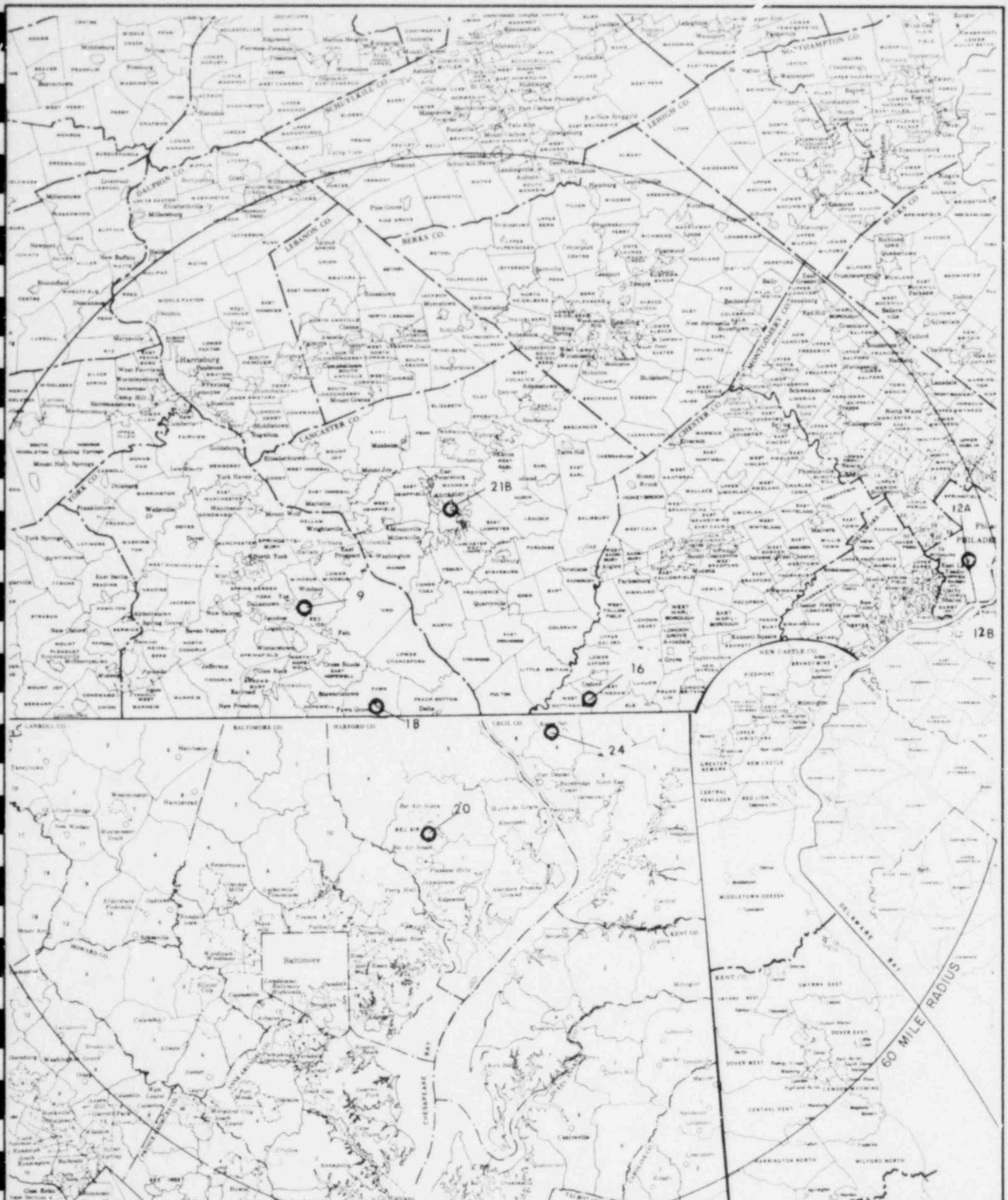
1A	PEACH BOTTOM WEATHER STATION #1
1B	PEACH BOTTOM WEATHER STATION #2
1C	PEACH BOTTOM SOUTH SUBSTATION RD.
1D	PEACH BOTTOM 140° SECTOR SITE BOUNDARY
1E	PEACH BOTTOM 350° SECTOR SITE BOUNDARY
1F	PEACH BOTTOM SITE - 200° SECTOR HILL
1G	PEACH BOTTOM NORTH SUBSTATION
1H	PEACH BOTTOM SITE - 270° SECTOR HILL
1I	PEACH BOTTOM SOUTH SUBSTATION
1J	PEACH BOTTOM SITE - 180° SECTOR HILL
1L	PEACH BOTTOM UNITS 2 & 3 INTAKE
1LL	PEACH BOTTOM UNITS 2 & 3 INTAKE-COMPOSITE
1M	PEACH BOTTOM CANAL DISCHARGE
1MM	PEACH BOTTOM CANAL DISCHARGE-COMPOSITE
1NN	PEACH BOTTOM SITE - 260° SECTOR
1Q	PEACH BOTTOM UNIT 2 INTAKE
1U	PEACH BOTTOM SITE-UTILITY BUILDING
1V	PEACH BOTTOM SITE-INFORMATION CENTER
1Z	PEACH BOTTOM WEATHER STATION #1
2	PEACH BOTTOM 130° SECTOR HILL
23	PEACH BOTTOM 150° SECTOR HILL OFF SITE

LEGEND

● ENVIRONMENTAL SAMPLING STATIONS

3A	DELTA, PA.-SUBSTATION
4A	CONOWINGO DAM-POWERHOUSE ROOF
4F	CONOWINGO DAM-EL. 33' MSL GRAB
4G	CONOWINGO DAM-SURFACE
4L	CONOWINGO DAM-EL. 33' MSL COMPOSITE
5	WAKEFIELD, PA.
6A	HOLTWOOD DAM-HYDROELECTRIC STATION-GRAB
6B	HOLTWOOD DAM-HYDROELECTRIC STATION
6I	HOLTWOOD DAM-HYDROELECTRIC STATION -COMPOSITE
7	DARLINGTON, MD. AREA
8	COLORA, MD.
13A	CHESTER WATER INTAKE-POND
13B	CHESTER WATER INTAKE-PUMP DISCHARGE
14	PETERS CREEK
15	SILVER SPRING ROAD
17	RIVERVIEW ROAD
22	EAGLE ROAD
23	PEACH BOTTOM-150° SECTOR OFF SITE
26	SLAB ROAD
27	NORTH COOPER ROAD
31	PILOTOWN ROAD
32	SLATE HILL ROAD
33A	FULTON WEATHER STATION
38	PEACH BOTTOM ROAD
40	PEACH BOTTOM SITE AREA
42	MUDDY RUN ECOLOGICAL LAB
43	DRUMORE TOWNSHIP SCHOOL
44	GOSHENMILL ROAD
45	PB-KEENEY LINE
46	BROADCREEK
47	BROADCREEK SCOUT CAMP
48	MACTON SUBSTATION
49	PB-CONASTONE LINE
50	TRANSCO PIPELINE SITE
51	FIN SUBSTATION

ENVIRONMENTAL SAMPLING STATIONS
AT INTERMEDIATE DISTANCES FROM PEACH BOTTOM SITE
FIGURE 2



ENVIRONMENTAL SAMPLING STATIONS
AT REMOTE DISTANCES FROM PEACH BOTTOM SITE
FIGURE 3

A COMPARISON OF AQUEOUS TRITIUM CONCENTRATION IN SURFACE WATER

AT CONOWINGO AND HOLTWOOD DAMS (TOTAL SAMPLE - COMPOSITE)

Station 6I (PB-SW-33F4) - Holtwood Dam

Station 4L (PB-SW-14F5) - Conowingo Dam - EL 33' MSL (Composite)

If More Than One Value The Same

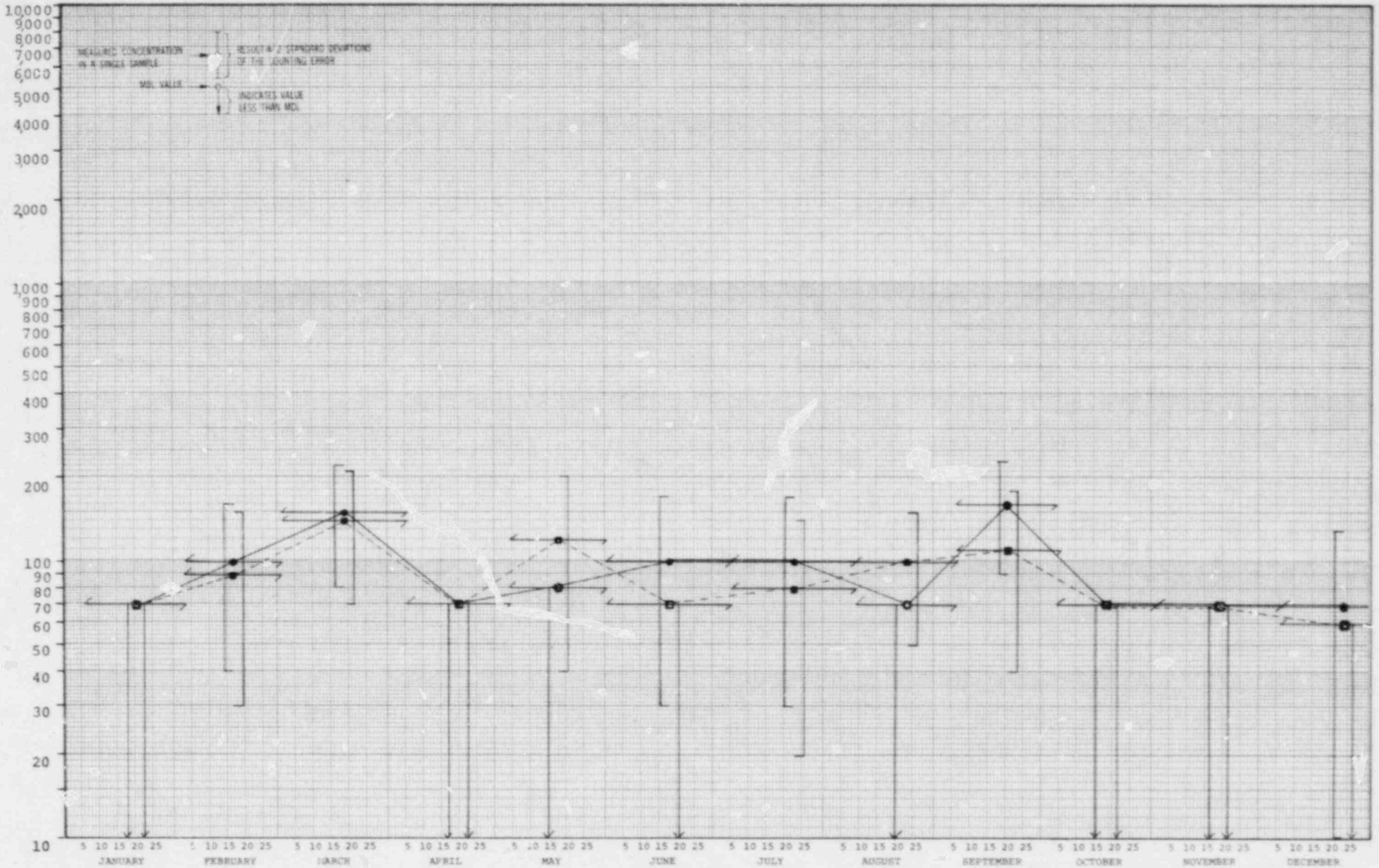


FIGURE 4

A COMPARISON OF AQUEOUS TRITIUM CONCENTRATIONS IN SURFACE WATER

AT CONOWINGO AND HOLTWOOD DAM (TOTAL SAMPLE - COMPOSITE)

Station 6A (PB-SW-33F1) - Holtwood Dam
Station 4 F (PB-SW-14F2) - Conowingo Dam
Both Values The Same

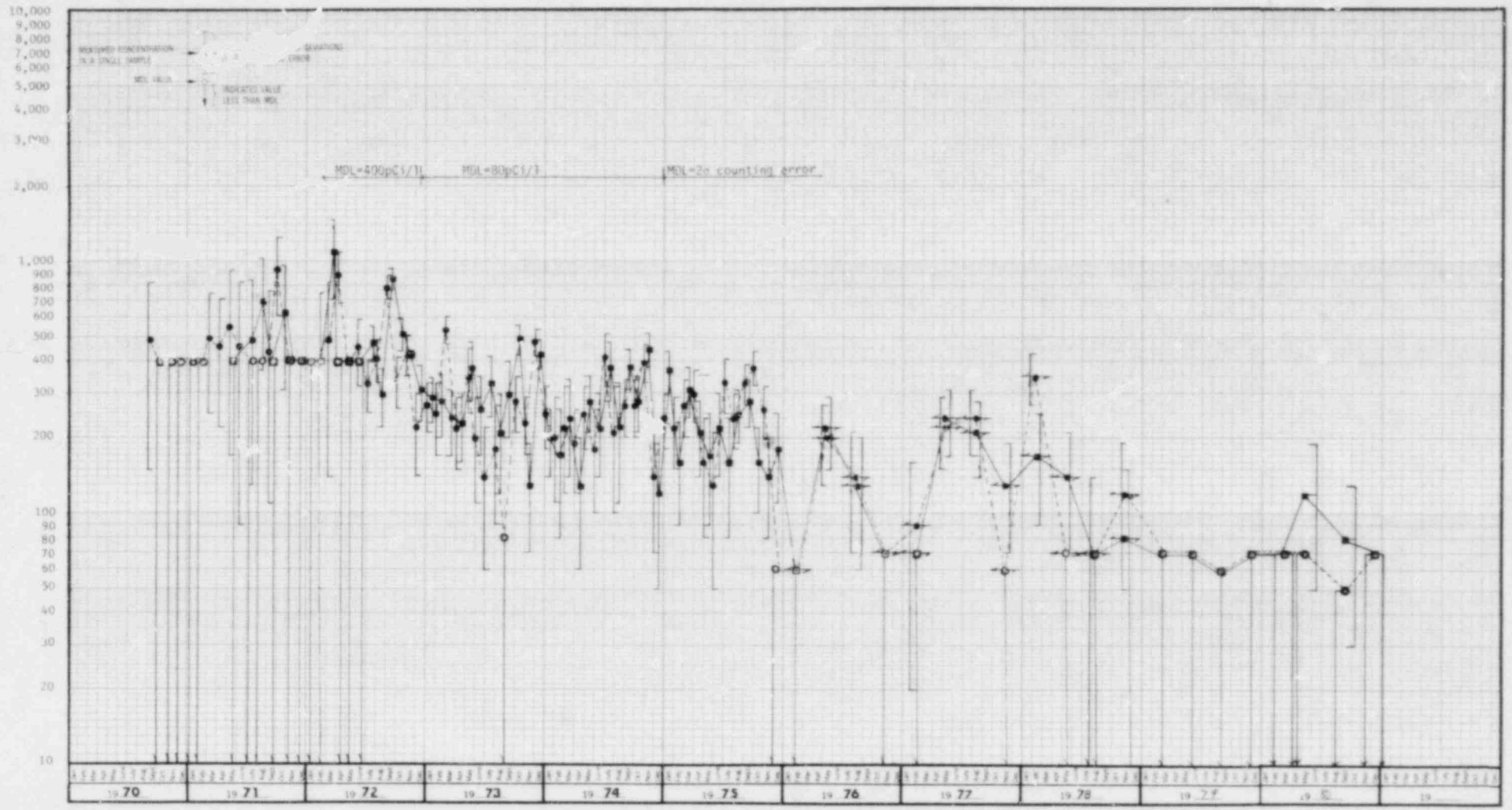


FIGURE 5

A COMPARISON OF GROSS BETA CONCENTRATIONS IN SURFACE WATER

AT CONOWINGO AND HOLTWOOD DAMS (SOLUBLE FRACTION - GRAB)

Station 4F - (PB-SW-33F1) - Conowingo Dam - EL 33' MSL (Grab)
Station 6A (PB-SW-33F1) - Holtwood Dam
Station 4G (PB-SW-14F3) Conowingo Dam-Surface
If More Than One Value The Same

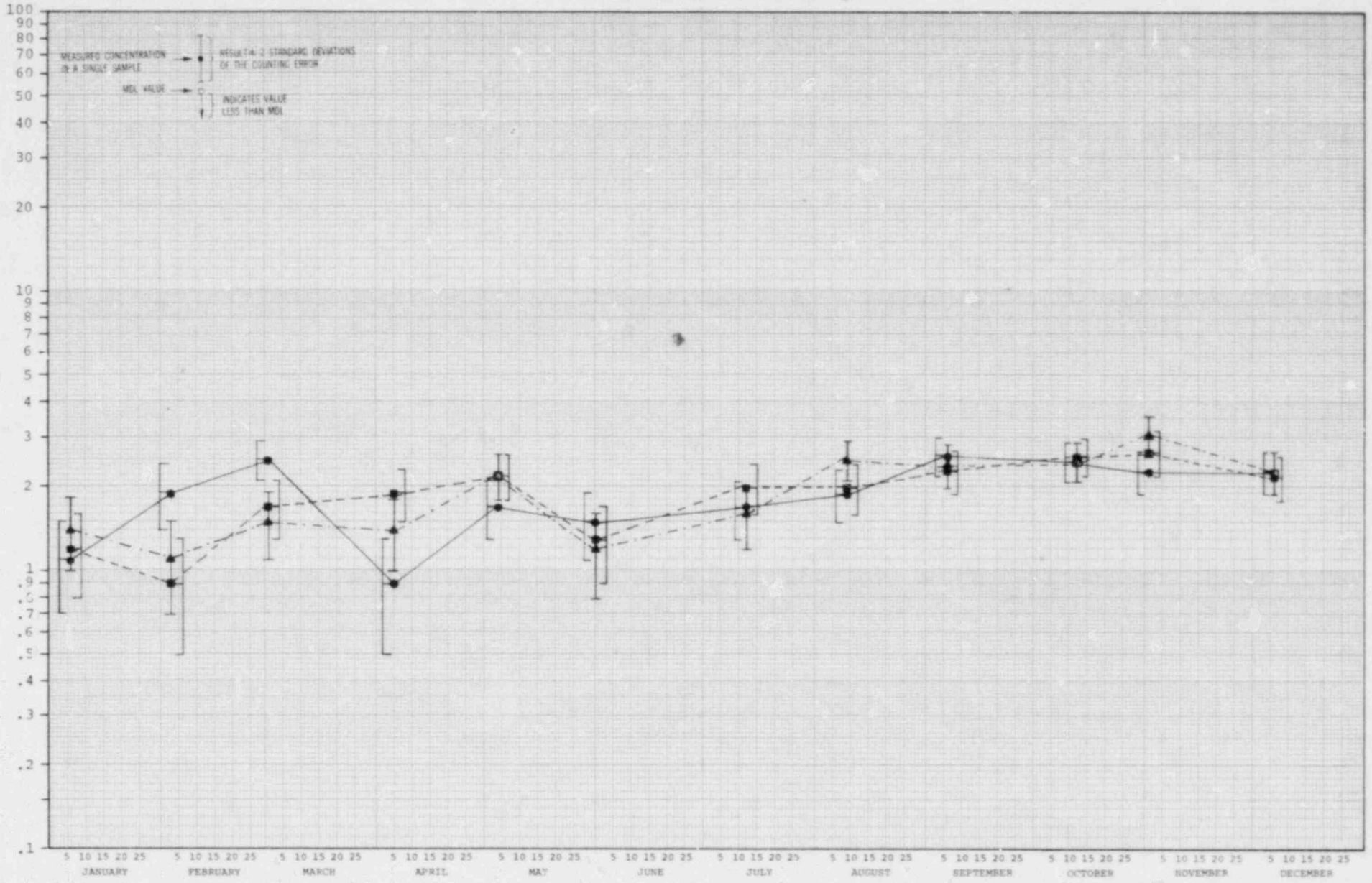


FIGURE 6

A COMPARISON OF GROSS BETA CONCENTRATIONS IN SURFACE WATER

AT CONOWINGO AND HOLTWOOD DAMS (INSOLUBLE FRACTION - GRAB)

Station 4F (PB-SW-33F1) - Conowingo Dam - EL 33' MSL (Grab)
Station 4G (PB-SW-14F3) Conowingo Dam-Surface
Station 6A (PB-SW-33F1) - Holtwood Dam
If More Than One Value The Same

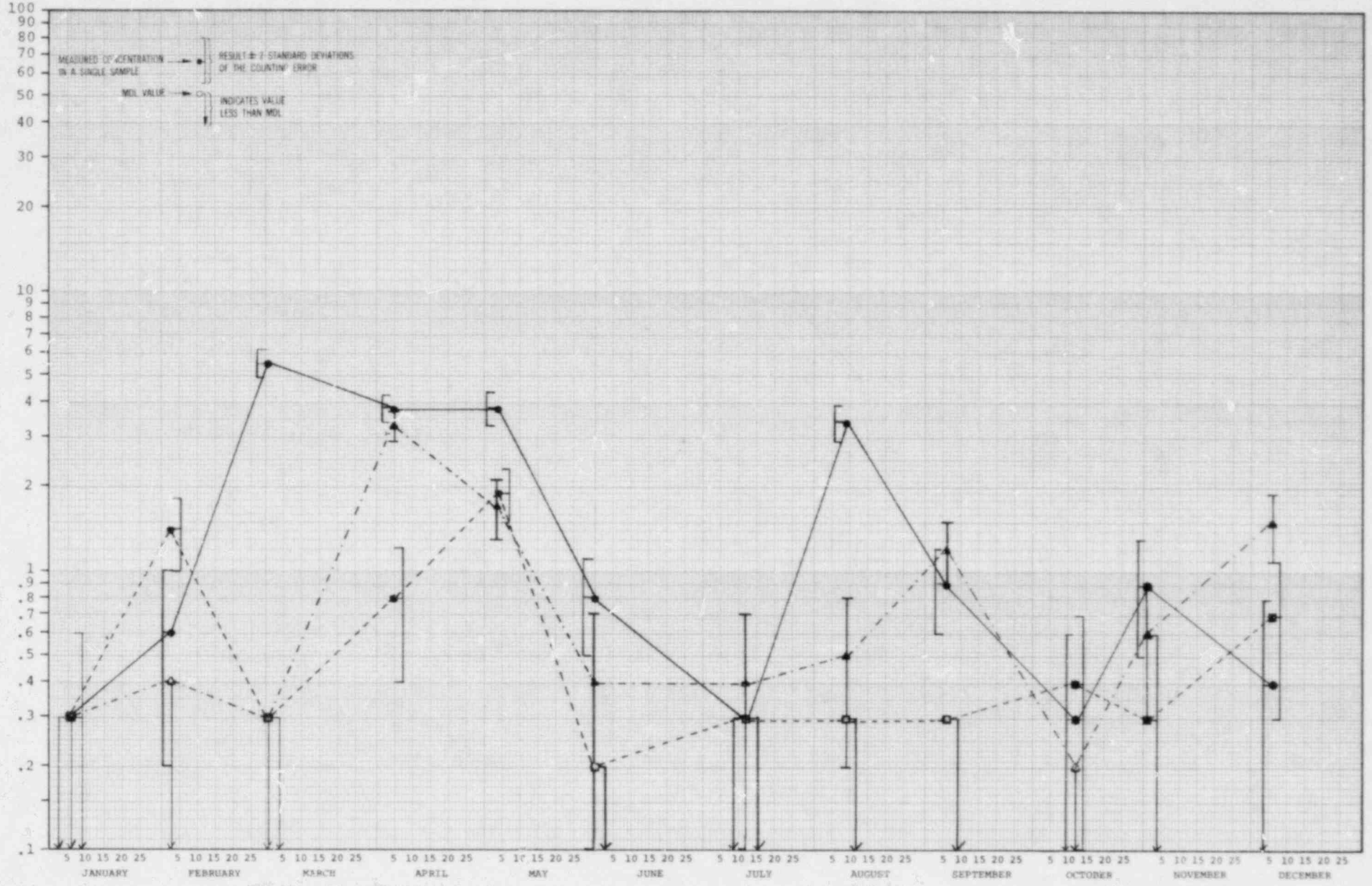


FIGURE 7

A COMPARISON OF AQUEOUS TRITIUM CONCENTRATIONS IN WATER

AT PEACH BOTTOM UNITS #2 AND #3 INTAKE AND DISCHARGE (TOTAL SAMPLE - COMPOSITE)

Station 1LL (PB-SW-6S3) - PB Units 2 and 3 Intake
Station 1MM (PB-DW-13S2) - PB Canal Discharge
If More Than One Value The Same

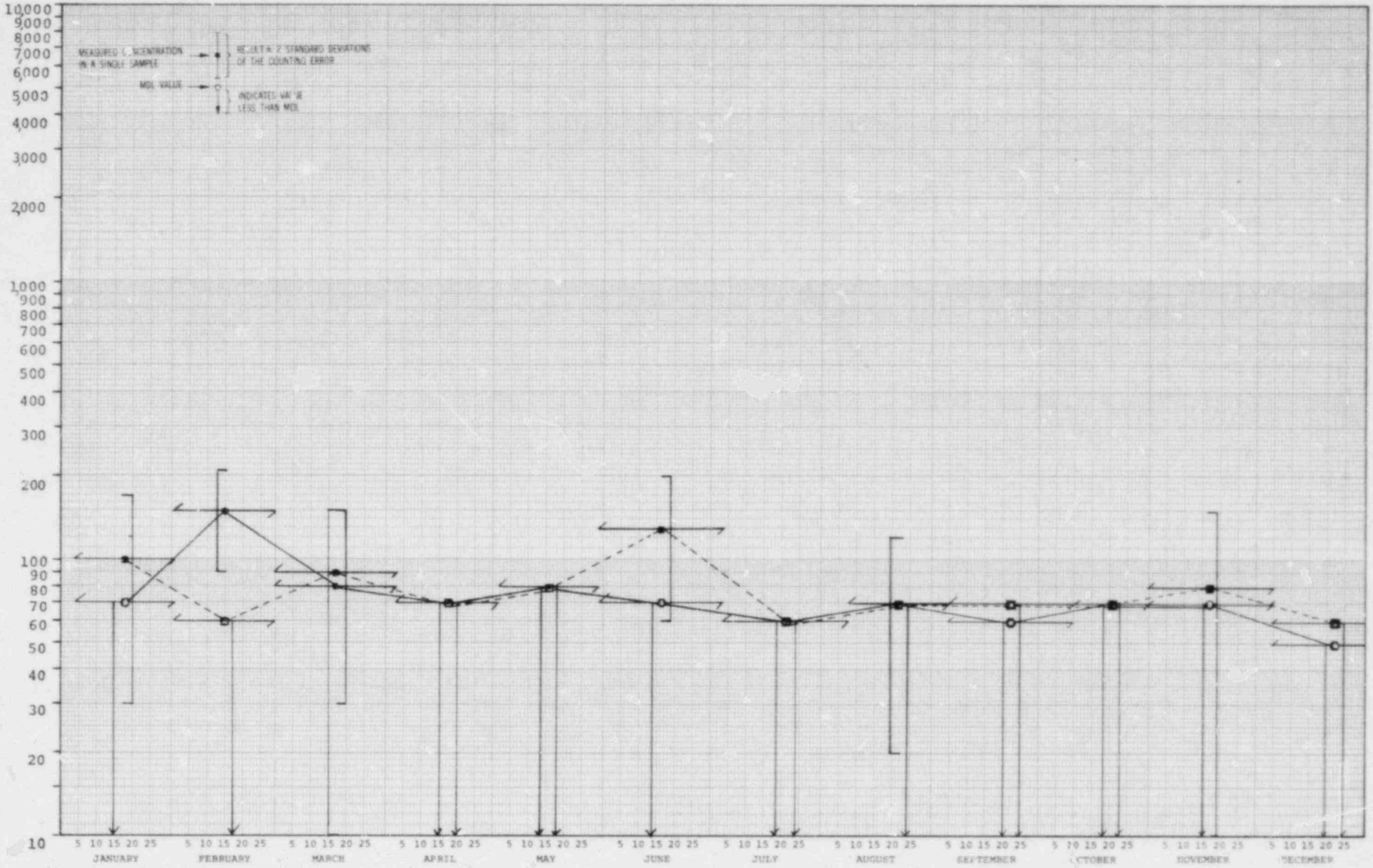


FIGURE 8

A COMPARISON OF GROSS BETA CONCENTRATIONS IN WATER

IN PEACH BOTTOM UNITS #2 AND #3 INTAKE AND DISCHARGE (SOLUBLE FRACTION - COMPOSITE)

Station 1LL (PB-SW-6S3) - PB Units 2 and 3 Intake

Station 1MM (PB-DW-13S2) - PB Canal Discharge

If More Than One Value The Same

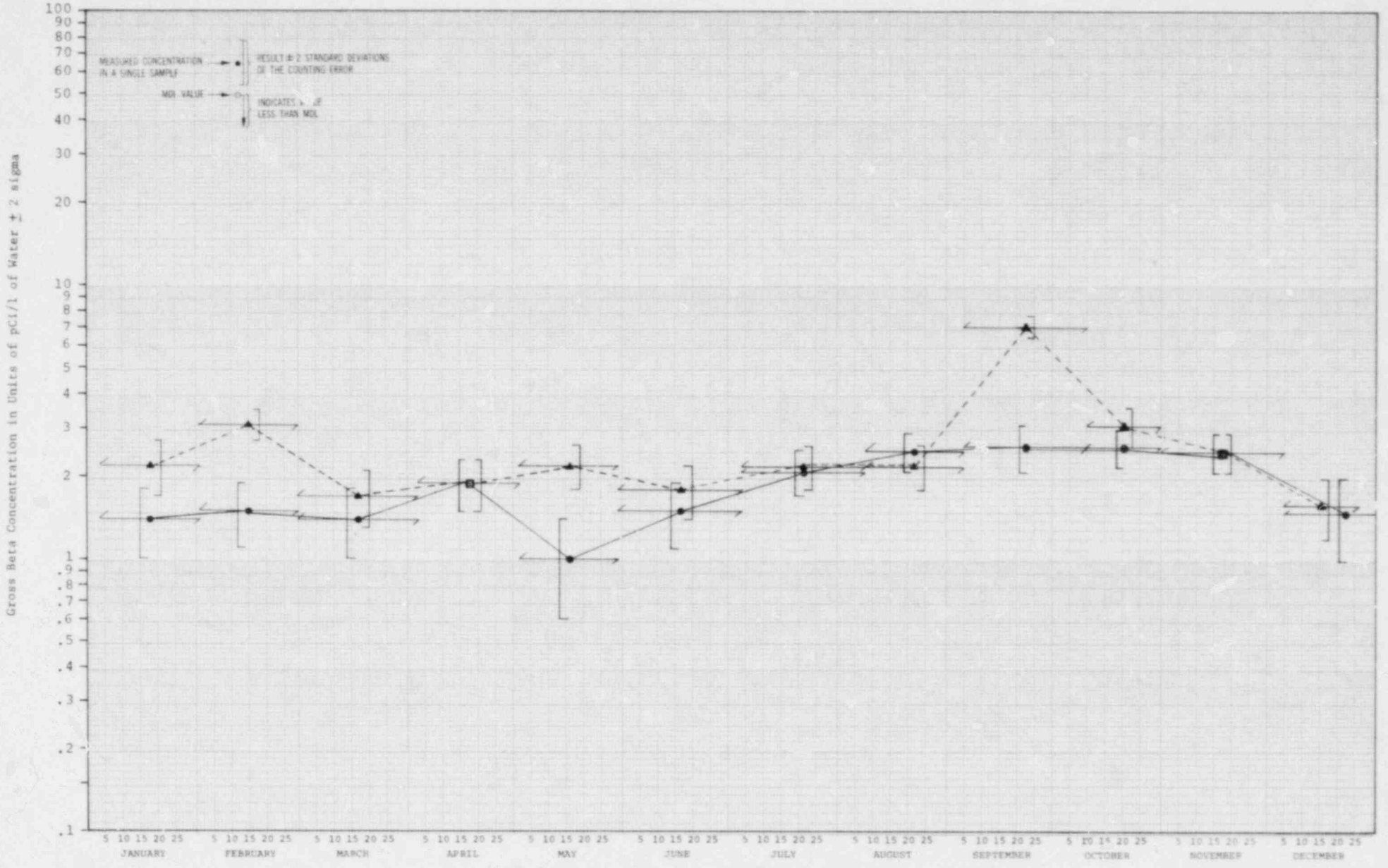
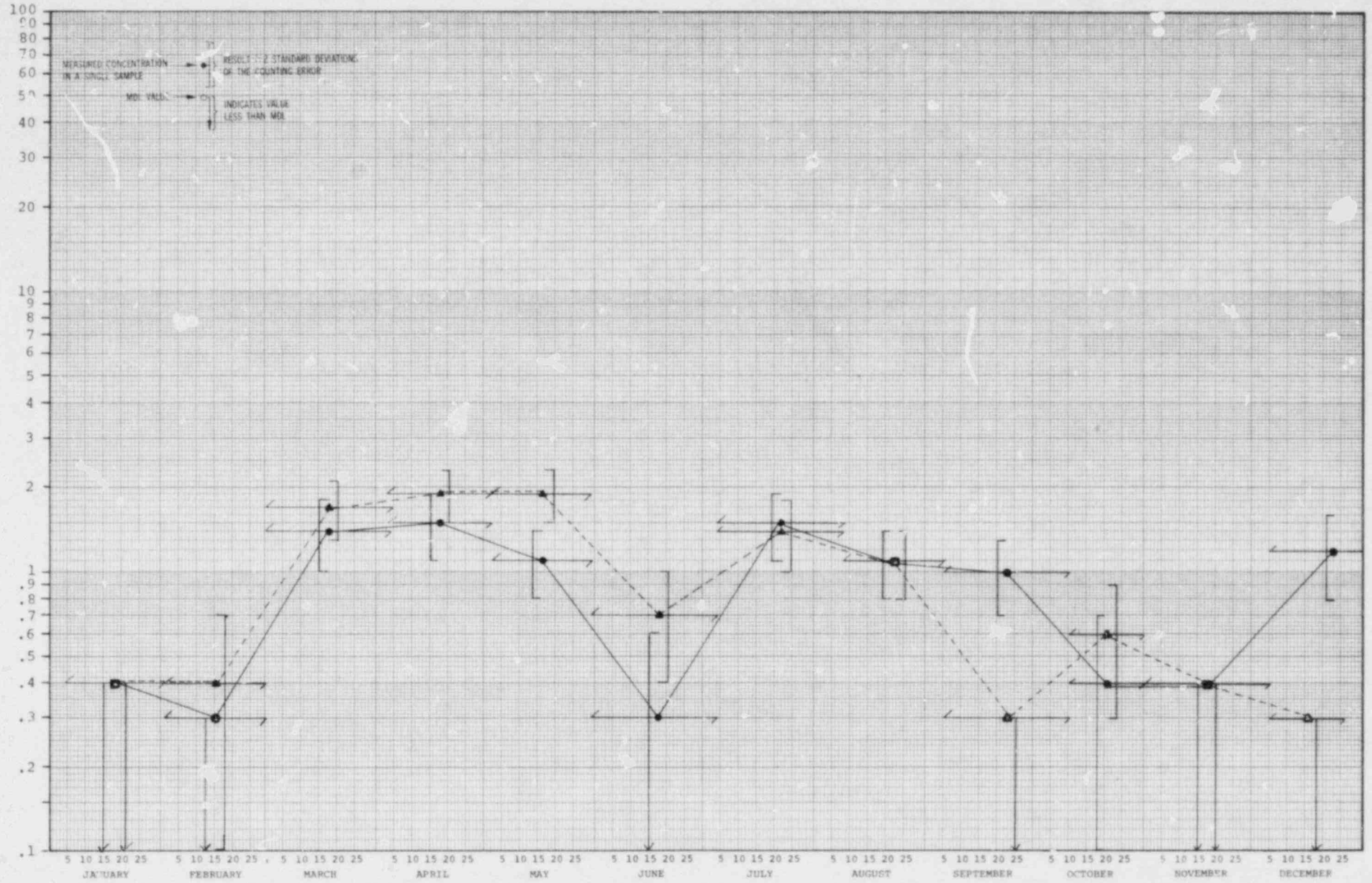


FIGURE 9

A COMPARISON OF GROSS BETA CONCENTRATIONS IN WATER

AT PEACH BOTTOM UNITS #2 AND #3 INTAKE AND DISCHARGE (INSOLUBLE FRACTION - COMPOSITE)

Station 1LL (PB-SW-6S3) - PB Units 2 and 3 Intake
Station 1MM (PB-DW-13S2) - PB Canal Discharge
If More Than One Value The Same



Gross Beta Concentration in Units of pCi/l of Water ± 2 sigma

FIGURE 10

A COMPARISON OF AVERAGE AQUEOUS TRITIUM CONCENTRATIONS IN WELL WATER

AT ON-SITE WELLS, SITE AREA WELLS, AND DISTANT WELLS (TOTAL SAMPLE-GRAB)

Station 1U (PB-WW-15S2) - PB Site - Utility Bldg.
Station 1V (PB-WW-12S2) - PB Site - Info. Center
Station 40 (PB-WW-21B2) - PB Site Area
Station 7 (PB-WW-16F1) - Darlington, Md. Area
Station 8 (PB-WW-12F1) - Colora, Md.

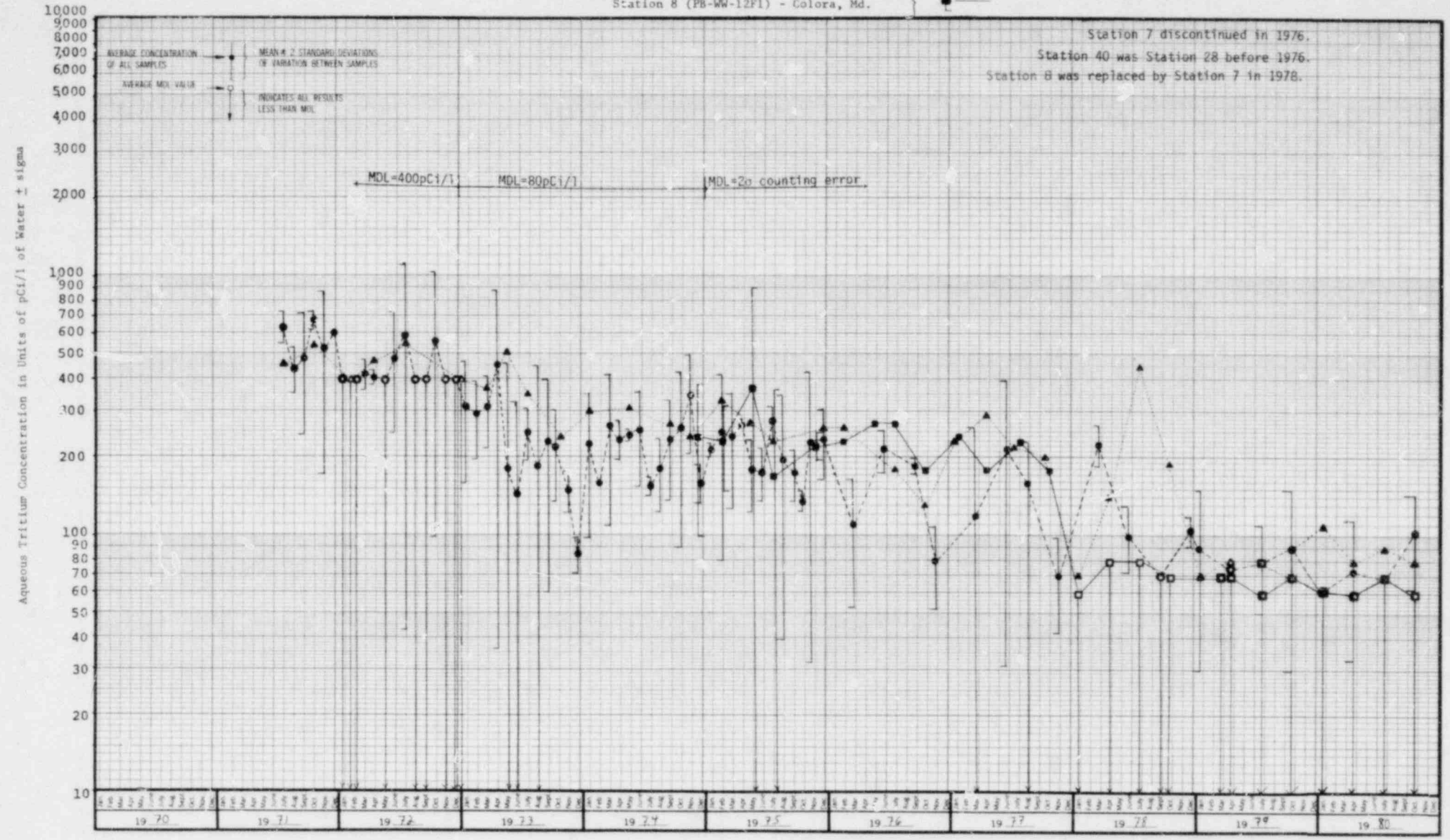


FIGURE 11

A COMPARISON OF AVERAGE IODINE-131 CONCENTRATIONS IN MILK

AT NEAR, INTERMEDIATE AND DISTANT FARMS (TOTAL SAMPLE)

Near Farms (G, J, C)
Intermediate Farms (D, L, M, N)
Distant Farms (A, B, C, E)
If More Than One Value The Same

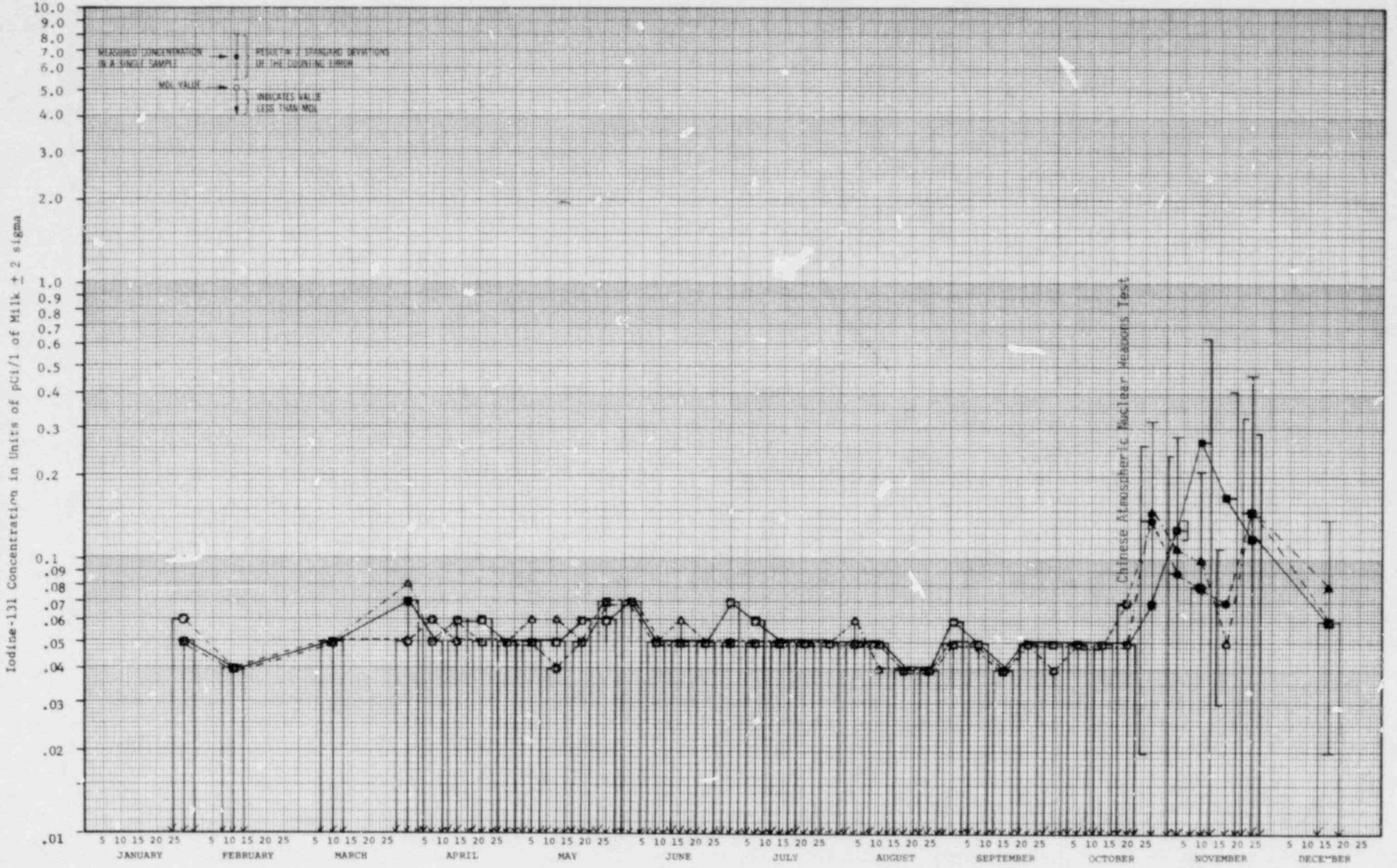


FIGURE 12

A Comparison of Average Strontium-90 Concentrations in Top One Inch
at On-Site Soil and Distant Soil Locations

Station 2 (PB-E-13S1) - PB 130 Sector Hill ● - - - -
Station 3A (PB-E-23D1) - Delta, Pa. Substation
Station 5 (PB-E-8E1) - Wakefield, Pa. } ■ ——

If More Than One Value The Same ◘

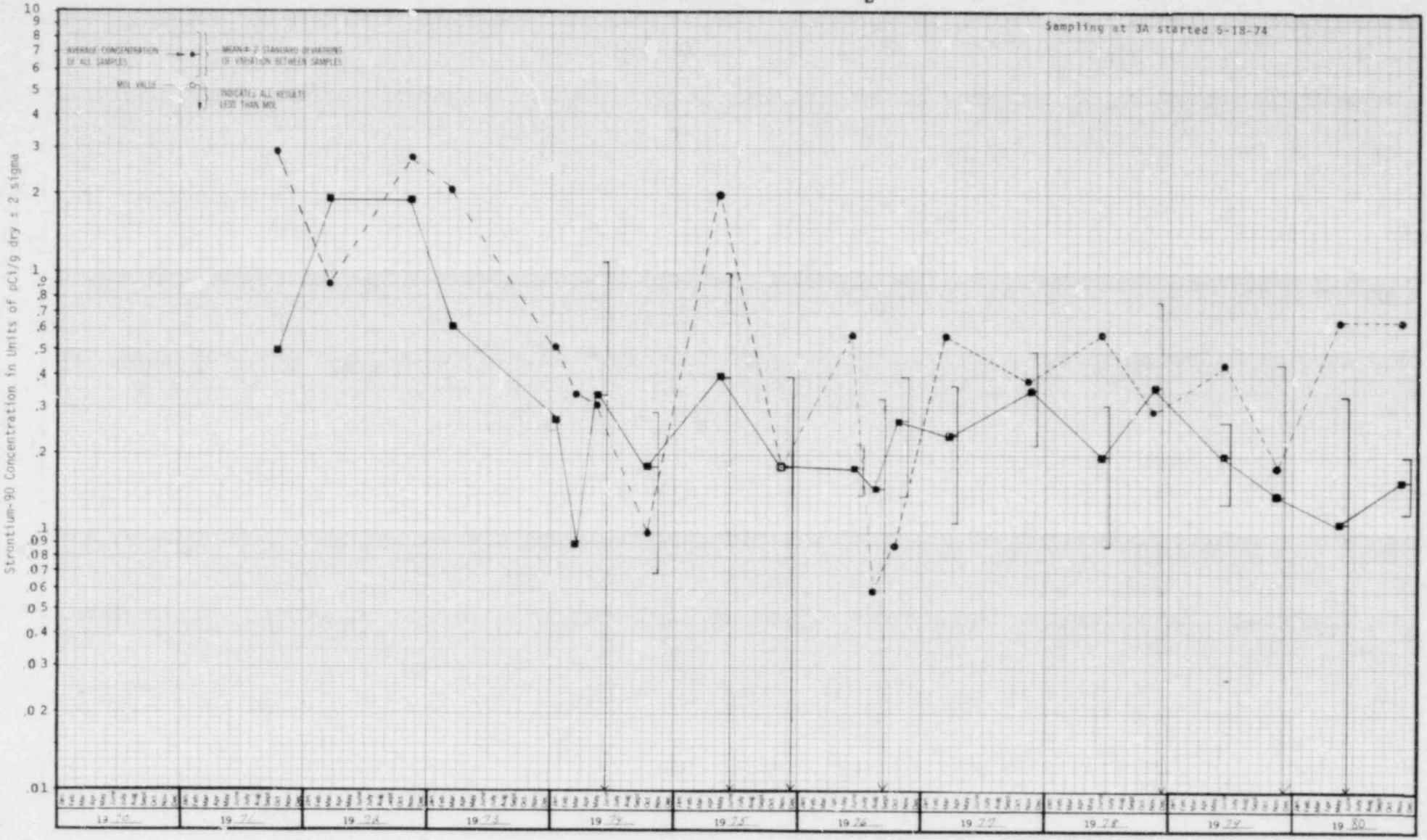


FIGURE 13

A Comparison of Average Strontium-90 Concentrations in Bottom Cut
at On-Site Soil and Distant Soil Locations

Station 2 (PB-E-13S1) - PB 130° Sector Hill ● - - - -

Station 3 A (PB-E-23D1) - Delta, Pa. substation
Station 5 (PB-E-8E1) - Wakefield, Pa. } ——

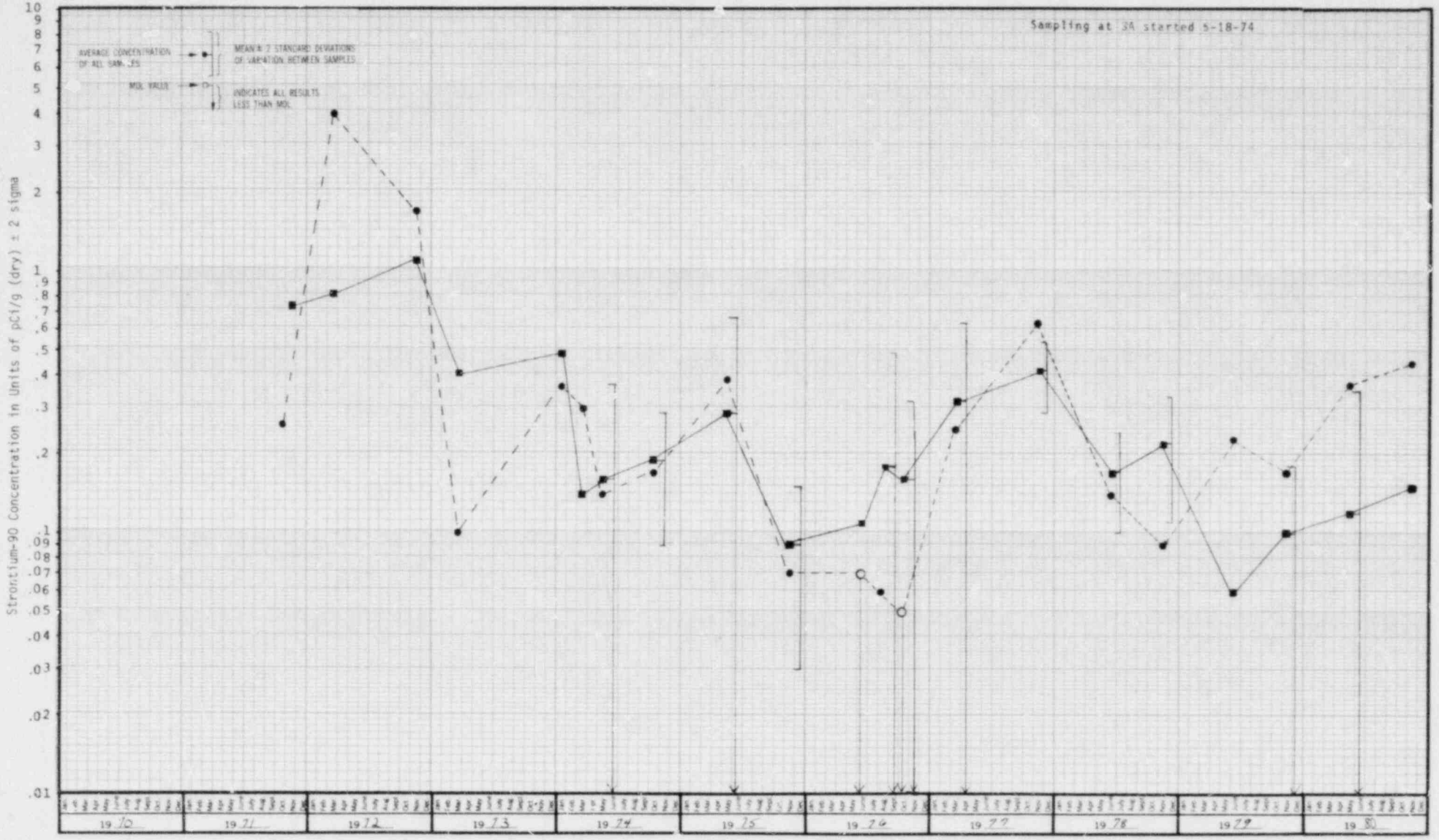


FIGURE 14

A Comparison of Average Cesium-137 Concentrations in Top One Inch
at On-Site Soil Locations and Distant Soil Locations

Station 2 (PB-E-13S1) - PB 130° Sector Hill
Station 3A (PB-E-23D1) - Delta, Pa. Substation
Station 5 (PB-E-8E1) - Wakefield, Pa.
If More Than One Value The Same

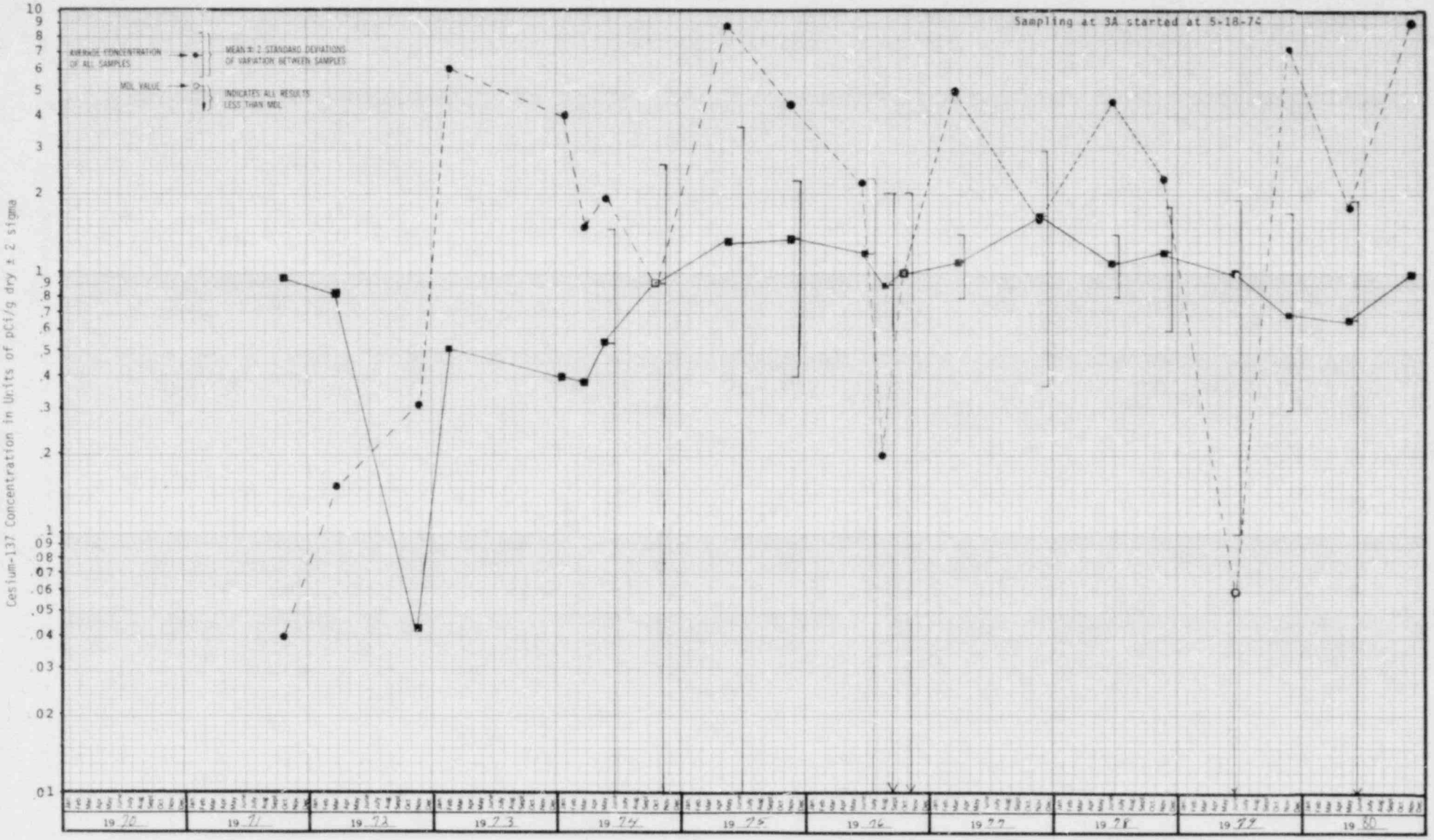


FIGURE 15

A Comparison of Average Cesium-137 Concentrations in Bottom Cut at On-Site Soil Locations and Distant Soil Locations

Station 2 (PB-E-13S1) - PB 130 Sector Hill
Station 3A (PB-E-23D1) - Delta, Pa. Substation
Station 5 (PB-E-8E1) - Wakefield, Pa.
If More Than One Value The Same

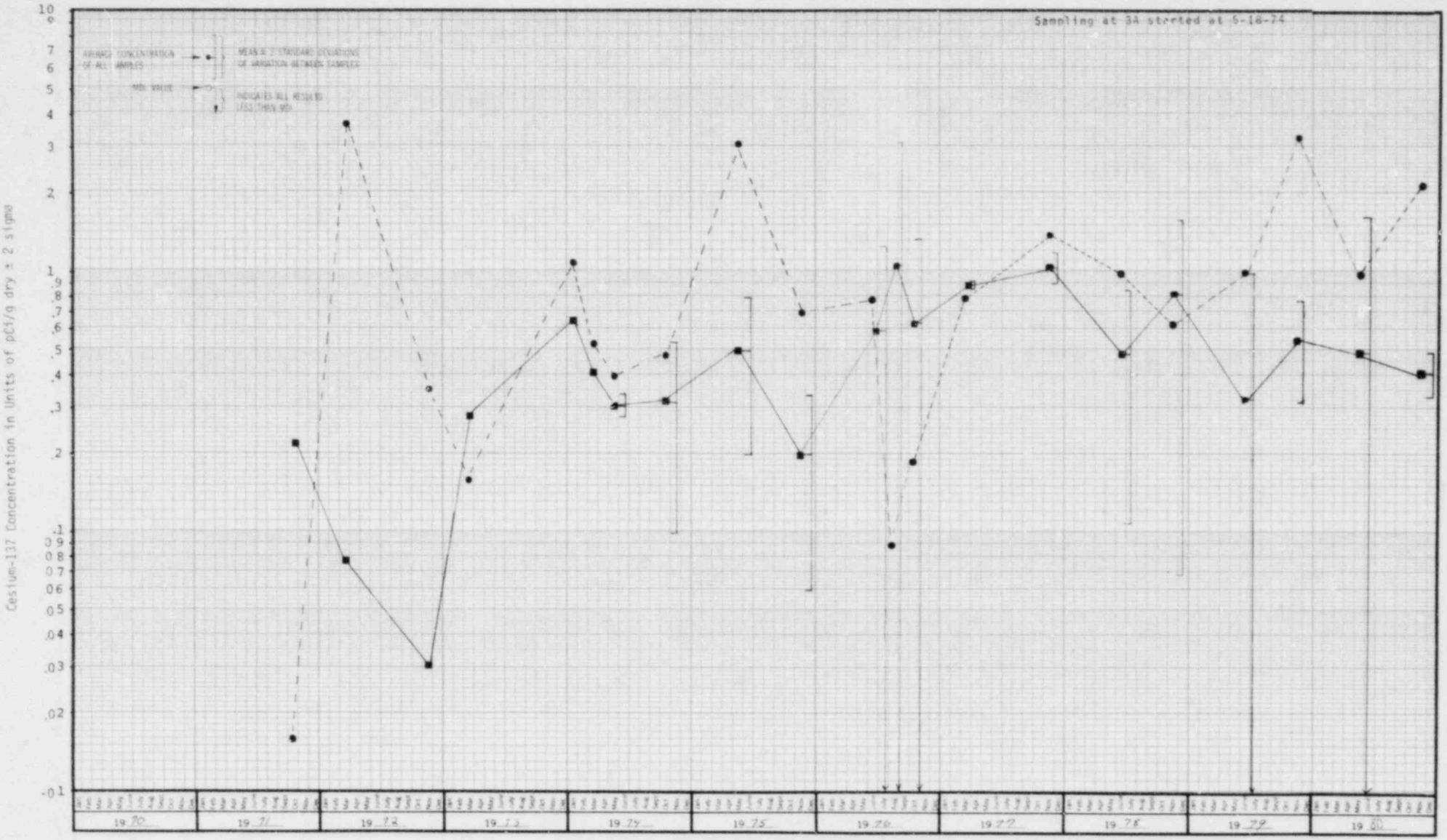


FIGURE 16

A COMPARISON OF AVERAGE MONTHLY TLD RESULTS

AT THE SITE BOUNDARY, MIDDLE, AND OUTER RINGS

Site Boundary Ring (1B, 1C, 1D, 1E, 1F, 1G, 1H, 1J, 1L, 1M, 2)

Middle Ring (3A, 4K, 5, 6B, 14, 15, 17, 22, 23, 26, 27, 31, 32, 33A, 38)

Outer Ring (12B, 16, 18, 19, 20, 21B, 24)

If More Than One Value The Same

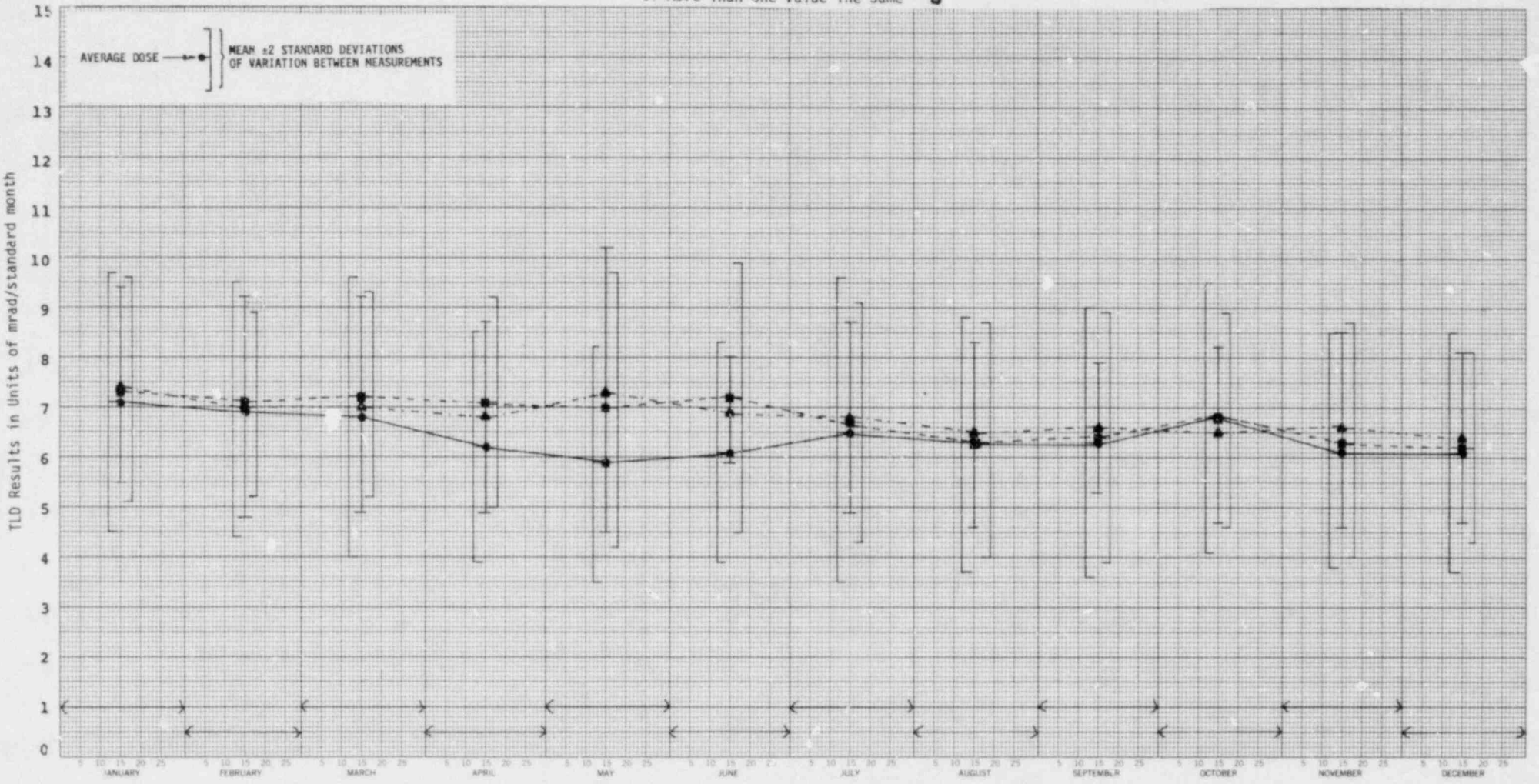


FIGURE 17

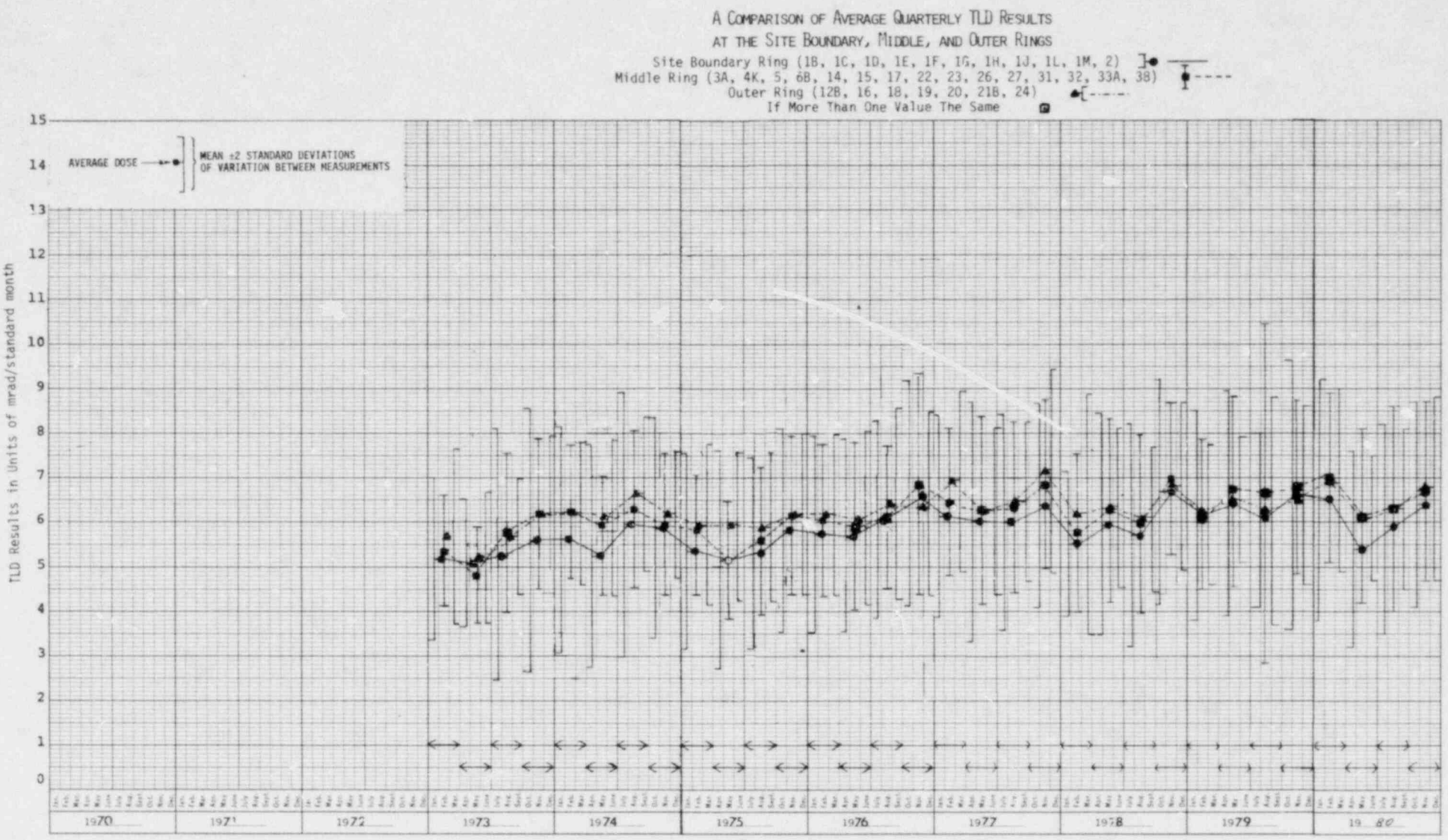

A Comparison of Average Quarterly TLD Results
at the Site Boundary, Middle, and Outer Rings
Site Boundary Ring (1B, 1C, 1D, 1E, 1F, 1G, 1H, 1J, 1L, 1M, 2)
Middle Ring (3A, 4K, 5, 6B, 14, 15, 17, 22, 23, 26, 27, 31, 32, 33A, 38)
Outer Ring (12B, 16, 18, 19, 20, 21B, 24)
If More Than One Value The Same
AVERAGE DOSE
MEAN ±2 STANDARD DEVIATIONS OF VARIATION BETWEEN MEASUREMENTS
TLD Results in Units of mrad/standard month
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
19 80

FIGURE 18