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**CONTAMINATED SOILS ADJACENT TO THE
SEWAGE TREATMENT PLANT INCINERATOR
REMOVAL ACTION 14 WORK PLAN ADDENDUM
REVISION 2 JULY 1993**

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**DOE-FN/EPA
ADDENDUM
OU3**

**CONTAMINATED SOILS
ADJACENT TO THE SEWAGE
TREATMENT PLANT
INCINERATOR**

**Removal Action 14
Work Plan Addendum**

Revision 2

July 1993

**U. S. DEPARTMENT OF ENERGY
FERNALD FIELD OFFICE**

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**Contaminated Soils Adjacent to the Sewage
Treatment Plant Incinerator**

Removal Action 14 Work Plan Addendum

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1.0 INTRODUCTION

The purpose of this final revision of the Removal Action Work Plan Addendum (RAWPA) for the contaminated soils adjacent to the sewage treatment plant incinerator (STPI) is to present the detailed strategy proposed in the response to comments (RTC) document. The RTC document proposed and outlined an alternate course for completing the removal action than what was presented in the draft work plan addendum. The RTC document was submitted to the U.S. EPA on June 10, 1993. Based on the approval of the RTC document, the additional purpose of this revised RAWPA, or RAWPA(2), is to provide a status update on the completion of the activities outlined in the RTC document.

The strategy outlined in the RTC document included additional surveying and sampling to delineate the extent of both off-property and on-property contamination resulting from the STPI. Subsequent to the additional surveying and sampling, the strategy described included excavation of on and off-property soils to their appropriate action levels, and the additional excavation of on-property soils contaminated with elevated levels of radium and thorium.

The completion of this removal action is defined as the remediation of the off-property soils to the removal action goal, the completion of on-property excavations outside the STPI fenced area, and the completion of excavation activities for the radium and thorium contaminated areas within the STPI. The timely completion of these activities is dependent upon: 1) completing the additional field sampling activities on and off-property, 2) the extent of soil contamination off-property, and 3) the vertical and horizontal extent of the radium and thorium contamination within the STPI area.

1.1 Background

The STP is located on the eastern edge of the Fernald Environmental Management Project (FEMP). The FEMP STP became operational in 1952 for the treatment of FEMP sanitary wastewater. The system was later transitioned to receive both sanitary and process related wastewaters. The practice of employing the STP to treat process-related wastewaters was

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discontinued recently with the installation and start-up of the biodenitrification effluent treatment system. Also located at the STP is an abandoned-in-place solid waste incinerator. The incinerator operated from 1954 until 1979, burning contaminated and uncontaminated combustible trash. The STP, associated facilities and the abandoned incinerator are contained within a six foot chain link fence.

A Removal Site Evaluation (RSE) examined the conditions present in the soil at the STP to determine if a removal action was warranted (the RSE was included as an appendix to the July, 1992 submittal of the RAWP). The RSE evaluated the source term associated with the contaminated soils adjacent to the STP Incinerator based on the routine Environmental Monitoring Program (EMP) data and the RI/FS data which were available at the time. The EMP data discussed in the RSE consisted of both soil sampling data and air sampling data; while, the RI/FS data discussed consisted of surface soil and soil boring data. Although the EMP data reviewed showed above background concentrations of uranium in the soil and at the nearest air monitoring station, the levels were not as significant as the subsequent RI/FS soil characterization data.

The RI/FS surface soil samples and the soil borings collected in the vicinity of the incinerator showed considerably higher concentrations than previously observed under the EMP. Twelve of the 24 samples were above background and six of these 12 exceeded the guidance for unrestricted use (this guidance was used as a point of comparison in the development and evaluation of the RSE). The two highest samples, closest to the incinerator, showed 25,670 pCi/g and 2,376 pCi/g of uranium-238. Although the highest concentrations for uranium were shown by the RI/FS data to be in the immediate vicinity of the incinerator, the 12 above background samples also showed a range of variability, from a low of 13.6 pCi/g uranium-238 to the high of 25,670 pCi/g. Data from the limited number of soil borings showed uranium contamination in places to be at 20 feet, suggesting that contaminant particle sizes were small enough (or soluble enough) to penetrate deeply into the soil, and other places to be at or near background uranium concentrations. Therefore, the RSE concluded, relative to potential excavations, no soil removal would be required in some areas, while other areas may require that a foot or more of soil be removed, depending on the action level used. The RSE, as a point of comparison, used the NRC Branch Technical Position guidance (see reference in RSE) of 35 pCi/g for depleted uranium to determine whether a Removal Action was warranted. Based on the RSE, DOE determined that a Removal Action was warranted and an Action Memorandum was signed directing the development of the RAWP.

In the RAWP, DOE presented an approach, which was subsequently approved by the USEPA and OEPA, to selectively excavate and containerize the most highly contaminated soils and leave the residual contamination associated with the incinerator for remediation under Operable Unit 5 (OU5). Based on the EMP data and the RI/FS data the contamination was believed to be primarily uranium-238 localized in discrete "hot spots" in the immediate vicinity of the incinerator. As a result, DOE proposed a focused approach for addressing these contaminated soils by recommending an action level of 100 pCi/g total uranium for all the on-property excavations and 35 pCi/g total uranium for all off-property excavations. The 100 pCi/g level was chosen as the action level because it facilitated the use of the correlated field survey instrument and was sufficient to mitigate any potential threats to the public health and the environment from the contamination in the interim to final remediation under OU5.

The radiological walkover survey indicated that the contamination exceeding the on-property action level was much broader than originally anticipated. Due to the potentially large quantities of soil which would be generated by excavating contaminated soil to the total uranium concentration action level of 100 pCi/g, DOE presented a revised approach to the EPAs on August 19, 1992. This revised approach was documented to the USEPA and OEPA in letter addendum dated August 28, 1992. to include completion of the initial off-property soil sampling and the radiological walkover survey outlining the 100 pCi/g total uranium boundary; Phase II was redefined to include the completion of additional on- and off-property soil sampling and on-property excavation activities primarily in areas exhibiting a total uranium concentration in soil greater than 300 pCi/g, defined as an interim action level. The completion of the initial off-property soil sampling showed areas with total uranium contamination exceeding the 35 pCi/g action limit.

1.2 SCOPE OF REVISED REMOVAL ACTION WORK PLAN ADDENDUM

This RAWPA(2) details all field activities accomplished to date, all radiological walkover and analytical data, and provides an evaluation of these activities. The RAWPA(2) provides the rationale and approach to additional surveying and sampling of on and off-property soils, obtaining access agreements for the off-property areas, and detailing the approach for remediating the on and off-property contaminated areas to their appropriate action levels.

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2.0 RADIOLOGICAL WALKOVER SURVEY, INITIAL OFF-PROPERTY SOIL SAMPLING, PRELIMINARY EXCAVATIONS, AND ADDITIONAL SOIL SAMPLING

Initially a radiological walkover survey was performed in the vicinity of the Incinerator at the STP. The goal of this survey was to highlight the localized areas in which the soil exhibited a total uranium concentration greater than 100 pCi/g. The Removal Action Work Plan initiated the characterization of potential off-property contamination through the collection of soil samples from 8 locations between the FEMP property line and the off-property study area boundary. Section 2.2 briefly outlines these initial off-property soil characterization results. Once the radiological walk-over survey was completed, it was apparent that a considerable amount of soil would have to be removed to achieve the on-property action level. However, what was unknown was the relative quantity of soil which would have to be removed to achieve the action level, specifically the vertical extent of uranium contamination was not known. As a result, DOE and EPA agreed the most prudent course of action in the interim to collecting additional data to determine the vertical extent of contamination would be to excavate the areas exhibiting the highest levels of contamination. Therefore, along with the preliminary excavations, additional on and off-property soil samples were taken. Section 2.3 briefly summarizes these preliminary excavations and additional on and off-property sampling activities.

2.1 Radiological Walkover Survey

Using a low-energy scintillation detector (FIDLER) radiation measurements were obtained at twenty-one selected sample locations. After taking three two-minute readings with the FIDLER at grade, the average was converted to cpm. Once the surface readings were taken at each of the twenty-one locations, one liter composited soil samples were taken from each location at a depth of four inches and a diameter of approximately fourteen inches. The results of the radiation detection measurements are listed in Appendix I, Table 1. Appendix I, Figures 2-9 show the correlation plots for the SPA-3 and the FIDLER. The best correlation occurred with the shielded SPA-3.

The radiological walkover survey was performed by establishing a 25 feet x 100 feet grid over the entire study area. Once the locations were selected, surface radiation measurements were

made using a SPA-3 detector suspended five inches from grade and shielded with 3/8 inch of lead. After three two-minute readings were recorded and averaged, the result was then converted to counts per minute (cpm) and recorded as the gross reading. In order to determine the radiation detected by the shielded SPA-3 from sources other than the soil, a delta-gamma technique was used by placing seventy pounds of steel shot directly beneath the shielded SPA-3. Three two-minute readings were recorded and averaged, and the result was subtracted from the gross reading to calculate the net reading of radiation detected from the soil by the shielded SPA-3. From the two-minute readings, cpm were determined and are shown on the map included as Appendix II, Figures 1 and 2. Appendix II, Table 1 provides all the data collected during this radiological walkover survey. Appendix II, Enclosure I shows that 5000 cpm corresponds to a total uranium concentration of 100 pCi/g. This enclosure also shows the large areal extent of soil contamination with a total uranium concentration exceeding 100 pCi/g. The distribution of uranium contamination in the soil was found to have a higher, more uniform concentration than originally thought. Based on these progressive findings, the DOE presented an alternative preliminary course of action in the letter addendum referenced above.

2.2 Initial Off-Property Soil Sampling Results

In order to characterize potential off-property contamination, the RAWP outlined 8 initial off-property sampling locations chosen between the FEMP property line and the off-property study area boundary. Location points, STP 30-37, are illustrated on Appendix III, Figure 1. Two of the eight locations, STP 34 & 35, were sampled for HSLs, dioxin, and radionuclides, as listed in Table 2, while the other six locations were sampled only for the radionuclides in Table 2 and total uranium. All analytical results are included in Appendix III, Tables 1A and 1B. Only the northern-most sample location had a total uranium concentration which exceeded the off-property action level of 35 pCi/g. All HSL results were found to be below either the required quantitation limits or the upper 95% tolerance limits for normal background soil. No dioxin was found in the soils.

As a result of the data-point greater than 35 pCi/g uranium and EPA comments on the letter addendum, additional off-property samples in the area surrounding this point were incorporated into the sampling methodology.

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2.3 Preliminary excavations and additional soil sampling

After the submittal of the letter addendum, discussing alternative options for excavating the 100 pCi/g boundary, DOE and EPA agreed that the most prudent course of action, in the interim to collecting the additional data, would be to excavate the areas exhibiting the highest levels of contamination. Primarily these were the areas which exhibited total uranium concentrations greater than 300 pCi/g. There were a few other isolated areas with total uranium concentrations less than 300 pCi/g, but greater than 100 pCi/g, which were also excavated due to their isolated location or their proximity to the FEMP property line.

Based on the data collected during the original radiological walkover survey, performed to highlight the 100 pCi/g boundary, the boundaries for these preliminary excavations were established. They are shown on Appendix IV, Figure 1. In addition, controls were put in place around the 100 pCi/g boundary to limit access/exposure.

In concert with these preliminary excavations, the additional soil samples, both on- and off-property, were taken. The depth of these samples ranged from six to forty-eight inches. The samples taken from twenty-four to forty-eight inches were archived for possible future analysis, based on the results from the sample retrieved from eighteen to twenty-four inches.

2.3.1 On-property Preliminary Excavations

Appendix IV, Figure 1 shows the preliminary excavation boundaries. These boundaries were established employing the shielded SPA-3, just as the 100 pCi/g boundary was established. Once the initial boundary was established, the top six inches were excavated and placed into white metal boxes (WMBs). After the top six inches had been removed, additional readings were taken with the shielded SPA-3 within each excavation at the six-inch depth. Any reading which exceeded the field action level was marked, and a boundary provided for the next six-inch excavation. This excavation activity proceeded in six-inch lifts until the surface soil exhibited a total uranium concentration less than the preliminary field action level (300 pCi/g in most cases). Appendix IV, Table 1 provides detail on the quantities of soil excavated from each of the areas (A-J), the maximum excavation depth per area, and the field action level utilized for each area. Each WMB was filled to its fullest capacity - three cubic

yards/WMB. These boxes were placed in storage pending a RCRA determination. In order to adequately characterize the excavated surface soil to reflect potential airborne contaminants, one sample was collected from ten percent (10%) of the WMBs containing excavated soil and each sample was analyzed for Table 1A (RAWP) and TCLP metals as outlined in the Data Quality Objectives, Table 2A of the RAWP. Emphasis was placed on sampling WMBs containing surface soils (0-6").

Currently, the WMBs filled with soil excavated from within the STP fence have been sampled for TCLP metals for the purpose of determining waste disposition. The soil has been determined to be RCRA non-hazardous (a.k.a. non-RCRA). These WMBs will be sampled for HSLs at a later date when laboratory capacity becomes available.

It has been estimated that there is an additional 400 cubic yards of soil to be excavated from on-property for this removal action. The material evaluation form (MEF) has been completed and the soil is determined to be non-RCRA, therefore, the soil will be stockpiled per RA#17 Procedures and Controls. The controlled stockpile to be utilized per RA#17 is located in the northeast corner of the production area of the FEMP. The remaining soil will be excavated and transported to the controlled stockpile per FEMP site procedures.

Once the preliminary excavation activities were complete, several related field activities were performed. Post-excavation verification samples were taken within each area, Section 4.1 provides details and results from this activity. All excavated areas (A-J) were bermed using soil immediately adjacent to each area. This berming was performed to limit run-off from other areas entering the excavated areas thereby creating a ponding problem. These areas are also being de-watered routinely, with the resulting water being treated via the general sump, and seeded to prevent wind or water erosion. In addition to work performed within the excavations, two hydrants within the study area, and one within an excavated area (area F), were repaired to eliminate their contribution to contaminant migration due to leakage onto the ground.

2.3.2 Additional Soil Sampling

The radiological walkover survey provided the boundary defining the horizontal extent of contamination; however, limited data existed to aid in determining vertical extent. Due to the

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potential for a large horizontal extent of contamination across the survey boundary, additional data was needed to provide a more accurate depth and quantity estimate. In order to more accurately define the vertical extent of soil exhibiting a total uranium concentration greater than 100 pCi/g, additional sampling was performed, both on- and off-property. Since the primary objective of this sampling was to quickly and accurately define the vertical extent of uranium contamination, grab samples were taken from all locations and sent directly to the on-site lab for total uranium analysis. Duplicate grab samples were also taken and sent to an off-site laboratory for analysis based on the protocols in the RAWP.

On-property, selection of the locations for the additional soil samples was biased, due to field logistics. They were chosen within the original 100 pCi/g boundary, and the depths were chosen based on the premise that the vertical extent of contamination would be greater within the STP fence adjacent to the Incinerator and other associated structures. In addition, within the fence, the locations had to be field located to avoid the many structures and underground utilities in the area. The area inside the STP fence was divided into four quadrants, and at least one sample per quadrant was analyzed for the HSL, Table 2, consistent with the approved RAWP. Appendix III, Figure 1 shows the locations of all additional on-property soil samples, ASI-1 to ASI-32. Appendix III, Tables 2A, 2B, and 2C, provide all data from the additional on-property sampling activities. Review of the radiological data shows elevated (greater than 5pCi/g) Ra-226 and Th-230 results in locations ASI-14, ASI-15, ASI-16, and ASI-17. Review of the HSL data shows only one sample, ASI-8 from 4-6" depth, having any organic, semi-volatile, results greater than the Required Quantitation Limits, and most inorganic results were below the Upper 95% Tolerance Limits based on the FEMP Background Study Report, except for ASI-8 and ASI-13 which had lead results greater than 100 mg/kg. It is important to note that as of the printing of this report, the data has not undergone data validation. This is estimated to be completed at the end of July, 1993.

Selection of off-property sample locations was also biased. The additional off-property samples were focused on two areas. The first area was the wooded section northeast of the incinerator surrounding the sample point STP30 (see Appendix III, Figure 1), which exhibited a total uranium concentration exceeding 35 pCi/g. The purpose of the sampling surrounding this point was to more clearly define both the horizontal and vertical extent of contamination in this area. A 250 ft. by 250 ft. grid was established with the northern-most initial sample point, STP 30, as the center. Along this grid, 10 sample locations, C1-C10, were chosen via a random number generator and analyzed for the radionuclide list in Table 2 as well as total

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uranium. The other off-property area requiring additional soil sampling was an area immediately adjacent to the FEMP property line. When the 100 pCi/g boundary was marked, there was an area immediately adjacent to the FEMP property line, on-property, which exceeded 100 pCi/g. Due to the proximity of this 100 pCi/g area, it was deemed necessary to initiate additional sampling off-property, immediately adjacent to this area. A 50 ft. (E-W) by 200 ft. (N-S) section was gridded into 25 ft. increments. Ten sample locations, D1-D10, were chosen along this grid and analyzed for the radionuclide list in Table 2 as well as total uranium. The selection of these ten points was also biased. Appendix III, Figure 1 shows the locations of all additional off-property soil samples. Appendix III, Table 3 provides all data from the additional off-property sampling activities. Review of the radiological data for both the C and D samples show several samples within the wooded area, C locations, to have uranium concentrations greater than the 35 pCi/g action level, while only one location in the D area, D-2, has a uranium concentration greater than 35 pCi/g. Also, locations D-2 and D-3 were found to have elevated (greater than 5 pCi/g) Ra-226 and Th-230 results. It is important to note that these results have not yet undergone data validation and are considered preliminary results. This data is estimated to be validated by the end of July, 1993.

Table 1 details the sampling activities which were outlined in the Removal Action Work Plan and the letter addendum. Also, Table 1 details the additional sampling which was developed subsequent to the letter addendum to better define the vertical extent of uranium contamination. After the progressive finding from the radiological walkover survey, the original sampling scheme detailed in the RAWP was revised. This table facilitates an easy comparison between the initial sampling scheme and the subsequent revisions. Additional information is still needed in determining the areal extent of off-property contamination. Additional surveying to address these data gaps are discussed in Section 5.2.

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TABLE 1 - OVERVIEW OF SOIL SAMPLING

Description	Removal Action Work Plan	Letter Addendum	Work Plan Addendum
Correlation Samples	21 soil samples analyzed for total uranium and radiological (Table 1B of RAWP) see Appendix I in WPA2	unchanged	unchanged
Initial Off-Property Samples	8 off-property soil samples at 0"-6" - 6 radiological (Table 2 of WPA2) - 2 radiological/HSL see Appendix III, Figure 1, Tables 1A and 1B in WPA2	unchanged	unchanged
Post-Excavation Samples along Established Grid	20 soil samples at 0"-6" (see Table 2 of the WPA2) 8 soil samples at 0"-6" for radiological and HSL from Table 2 of the WPA2 4 soil samples at 0"-6" for Table 2 of the WPA2 (Table 1A of RAWP) (see Table 2 of the WPA2)	7 soil samples from on-property outside STP fence (sample numbers ASI 1-7) at 0"-18" - 5 for just radiological portion of Table 2 - 2 for Table 2 of the WPA2 12 soil borings from on-property within STP fence (sample numbers ASI 8-19) at 0"-48" - 4 per quadrant (1 for rad and HSL, 3 for rad only) 20 soil samples from off-property (C-1 through C-10 and D-1 through D-10) at 0"-6", analyzed for radiological and total uranium see Appendix III, Fig. 1, Tables 2&3 in WPA2	13 additional soil samples from on-property (sample numbers ASI 20-32) for total uranium only sample numbers ASI 20-26 from inside STP fence - surface to 48" sample numbers ASI 27-32 from outside STP fence at 0"-18" see Appendix III, Table 2A in WPA2
Post-Excavation Verification Samples from Center of Excavations	1 sample per excavation at 0"-6" - Total uranium analysis (RAWP)	unchanged	- Based on size of excavation; ranged from 1 to 7 samples per excavation (sample numbers ASI 33-58 - WPA2) - 0"-6" for total uranium see Appendix IV, Figure 1 in WPA2
Containerized Soil	All containers - constituents in Table 2 (WPA2) + TCLP metals	unchanged	sample 10% of containers per excavated area (A-J) Table 1A (RAWP) + TCLP metals (concentrating on surface soils)
Additional Off-Property Samples	N/A	N/A	approximately 11 samples for just radiological portion of Table 2 see Appendix V in WPA2

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3.0 EVALUATION OF PRELIMINARY EXCAVATIONS AND ADDITIONAL SOIL SAMPLING RESULTS

The evaluation of the effectiveness of the preliminary on-property excavations for achieving the preliminary action level of 300pCi/g of soil for total uranium was performed by taking and analyzing post-excavation samples from within each of the excavated areas. The additional soil sampling was taken along with preliminary excavations in order to determine the vertical extent of uranium contamination within walk-over survey boundary. The evaluation of these additional soil sampling results estimated the quantity of soil which would have to be removed to achieve the action level on-property. Section 3.1 summarizes the post excavation sampling results: while, Section 3.2 provides the quantity estimate for achieving the on-property action level.

3.1 Post-Excavations Soil Sampling Results

Once the on-property preliminary excavations and additional soil sampling activities were complete, post-excavation samples were taken within each of the excavated areas. The selection of these sample locations was biased based on representativeness, and locating at least one sample at the maximum depth. Appendix III, Figure 1 shows the post-excavation verification sample locations, ASI-33 to ASI-58. These samples were taken from 0 - 6 inches and sent only to the on-site lab for total uranium analysis. The results are shown in Appendix III, Table 4.

When comparing the post-excavation verification results with the field action level of 300 pCi/g for each area within the STP (Appendix III, Table 4), it is evident that the preliminary action level was met in all areas and greatly exceeded in many. As a result of these sampling results, no additional excavations are required for these areas (A through J) under this removal action.

3.2 Quantity Estimate

To evaluate the vertical extent of uranium contamination across the walk-over survey boundary, additional segmented soil borings were taken across the survey boundary and analyzed for total uranium. The evaluation of these data revealed that approximately 1400

additional c.y. of soil would have to be removed from the study area to achieve the removal action goal of 100 pCi/g. These additional 1400 c.y. of soil from the walk-over survey area are composed of approximately 1000 c.y. from within the STP fenced area and approximately 400 c.y. from outside the STP compound. These estimates were determined by dividing the 100pCi/g survey boundary area up into six sectors and calculating the representative depth for 100 pCi/g total uranium using the depth-based characterization data. The area of each sector was then multiplied by this representative depth to yield the volume of soil which would need to be excavated to achieve the 100 pCi/g total uranium level called out in the RAWP.

4.0 ACHIEVING ACTION LEVELS ON AND OFF-PROPERTY

As detailed in Section 3.2, the additional sampling data indicated that approximately 1400 cubic yards of additional soil would have to be removed in order to achieve the on-property action level. Approximately 1,000 cubic yards were determined to be within the STP compound; while, approximately 400 cubic yards were determined to be outside the STP fenced area. Section 4.1 below outlines both the status and future activities associated with attaining the on-property action level.

Additional soil surveying and sampling was required in order to determine the extent of contamination off-property. Section 4.2 below and Appendix V outline the approach to collecting the additional off-property sampling data. Also included in Section 4.2 is a status update on these sampling activities.

4.1 Achieving Action Levels On-Property

DOE has removed nearly all of the 400 c.y. outside the fenced area of the STP, on-property, in order to attain the removal action goal of 100 pCi/g total uranium outside the STP controlled area. These soils will be managed based on the procedures and protocols of Removal Action 17 - Improved Storage of Soil and Debris.

However, DOE recommends the contaminated soils greater than 100 pCi/g total uranium within the controlled area of the STP Incinerator compound be remediated either under future

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actions, such as a removal action addressing the facilities, or under the final remediation for OU3 and OU5. To attain the removal action goal of 100 pCi/g within the STP compound would require the closure of the HWMU within the STP fence and the structural integrity of many structures within the STP fence would be threatened. The excavation of the additional contaminated soils outside the STP compound satisfies the goal of the removal action for the uncontrolled areas on-property. Furthermore, the level of contamination within the STP compound, a controlled area, has been reduced considerably, from a maximum uranium-238 concentration of 25,000 pCi/g to a total uranium concentration of less than 300 pCi/g. In fact, the additional soil sampling results from within the STP compound indicates the highest concentration of total uranium is now 228 pCi/g. Additional sampling and hot spot excavations will be performed in the areas of sample locations ASI-14 to ASI-17 due to elevated radium and thorium results. Also, in order to further mitigate the potential for contaminant migration, DOE has established soil berms inside the controlled area to limit the potential for contaminant migration into the excavations residing outside the STP fence along the fence line.

The general drainage direction is to the west from the STP compound. After the rest of the on-property areas have been excavated and additional verification samples have been taken in these areas and evaluated, minor regrading of the areas outside the STP compound will be performed to allow storm water runoff to remain on-property. The small trench adjacent to the STP incinerator has been backfilled with soils from onsite, specifically excess soils from the South Plume Project nearby. The area between the STP fence and the property line has been dewatered and re-surveyed with the SPA-3 with results below the action level of 100pCi/g. The area was then backfilled to enable OU5 to install two monitoring wells.

4.2 Achieving Action Level Off-Property

Sampling results (series C & D) have indicated levels of off-property soil contamination exceeding the action level of 35 pCi/g. The first area is adjacent to the former cattle path, along the property line. The second area is the dense wooded area northeast of the STP compound. Preliminary discussions with the property owner have revealed his intention for converting the wooded area into farmland in the near future. As a result of the sampling and discussions with the property owner, DOE will remediate the wooded area and the area

adjacent to the former cattle path to the removal action goal of 35 pCi/g for off-property soils. A Lease Agreement has been signed by the property owner which enables the remediation work to be completed.

As per the sampling and analysis plan developed for the off-property soils characterization, radiological walk-over surveys were performed and are detailed in Appendix V. These preliminary results indicate that the off-property contamination is confined to the wooded area as previously suspected. However, soil borings have not yet been taken at the boundaries of the wooded area. Therefore, there is a potential that the off-property contamination could still extend beyond the wooded area and as a result affect the other adjacent property. Discussions were initiated regarding access to the second property. The second property owner was shown the results from the sampling of the first property and was explained the need to further sample on their property. The owner agreed and signed a Right-of-Entry permit to allow temporary access to the property for surveying and sampling. A lease agreement will be established if the intrusive samples at the boundary of the wooded area indicate the contamination extends beyond the wooded area. Also, any areas off-property found to have radium and/or thorium contamination above the action level, based on the soil borings, will also be excavated. Post-excavation surveys will be performed to verify that acceptable levels have been achieved. Additional excavations will be performed in six-inch lifts until post-excavation surveys indicate that residual contamination levels are below 35 pCi/g. Samples will be taken after the excavations to verify that action levels have been met. During the performance of the excavation activities, construction fencing will be installed to restrict access into the area.

In the wooded area, it is proposed that the trees be cut above the soil line with the tree trunks removed to a clean staging area. The trees will be checked externally for any residual contamination from the surface soils. If no contamination is detected with the survey instrument, the trees will be released to the property owner for his use or disposal. Due to the concentrations of uranium observed in the soil, measurable uptake levels of radionuclides in the trees is not expected. The remaining material would be remediated to the off-property action level of 35 pCi/g total uranium. After verification samples have been taken and evaluated, the land would then be returned to the property owner.

4594**5.0 SCHEDULE**

The proposed schedule for complete and future activities is as follows:

PHASE	SCHEDULE	STATUS
Phase I - Completion of off-property surface soil sampling and initial radiological walkover survey.	8/18/92	Complete 8/4/92
Phase II - Completion of initial excavation (on-property) and additional sampling (on- and off-property).	10/30/92	Complete 10/15/92
Phase III - Completion of additional sampling off-property and container sampling.	10/26/93 *	Started 5/28/93
Phase IV - Estimated completion of off-property and additional on-property excavation.	2/25/94 *	Excavation to start after sampling
Phase V - Submittal of Final Report	9/26/94 *	

* TENTATIVE DATES. Final dates to be determined by boundary definition and sampling results.

Note: The transect walk-over survey for off-property soils was completed on June 30, 1993.

On-property excavations are approximately 60% complete.

APPENDIX I
INSTRUMENT CORRELATION

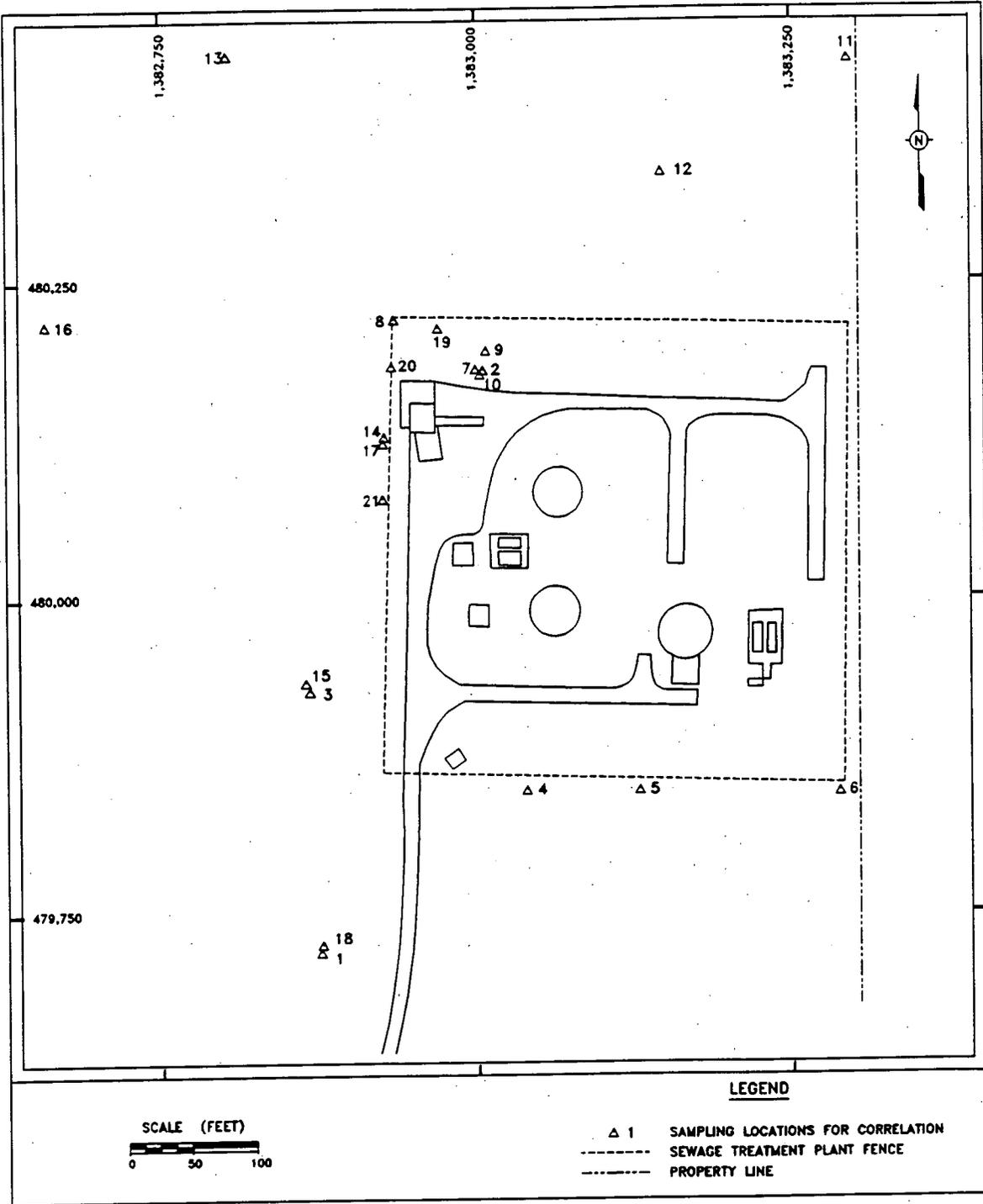


FIGURE 1, INSTRUMENT CORRELATION MAP

TABLE 1 - INSTRUMENT CORRELATION DATA

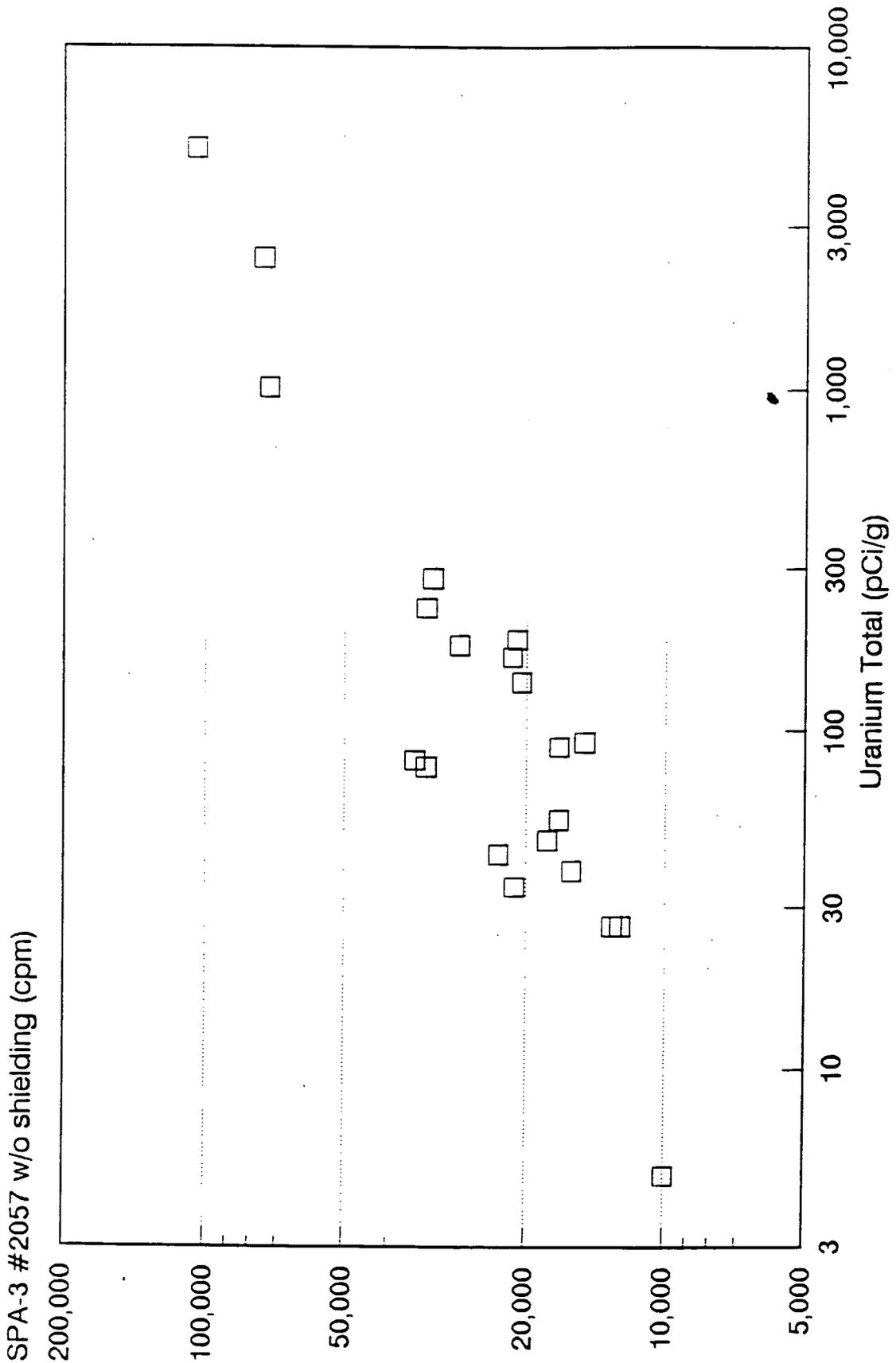
Soil Sample Location	ASI Sample I.D. No.	North Coord.	East Coord.	SPA-3 #2057 (note 1) (cpm)	SPA-3 #1793 (note 2) (cpm)	SPA-3 #1793 (note 3) (cpm)	FIDLER (cpm)	Ru-106 (pCi/g)	Cs-137 (pCi/g)	Ac-227 (pCi/g)	Pa-231 (pCi/g)	Ra-224 (pCi/g)	Ra-226 (pCi/g)	Ra-228 (pCi/g)	Th-230 (pCi/g)	Th-234 (pCi/g)	U-235 (pCi/g)	Total U (ug/g)	Total U (pCi/g)
1	102415	479720	1382874	23,000	9,567	7,900	22,000	<0.9	0.55	1.2	<3.6	1.34	10.3	1.05	48.9	17.8	1.55	64.3	43.08
2	102410	480179	1383003	105,000	49,250	46,200	154,910	<3.1	0.71	<1.6	<9.0	5.36	4.45	5.13	<64	2289	145	7572	5073
3	102403	479927	1382866	35,000	15,433	13,000	38,716	<1.3	0.55	3.95	5.04	1.27	27.6	1.36	108	35.6	3.20	122	81.74
4	102401	479848	1383040	13,000	3,763	2,840	9,188	<0.3	0.63	<0.2	<1.2	1.03	0.96	1.22	<6.9	10.6	0.56	39.5	26.47
5	102402	479848	1383130	12,500	3,450	2,540	8,423	<0.3	0.65	<0.2	<1.3	1.01	1.00	1.12	<8.7	10.8	0.78	39.5	26.47
6	102413	479846	1383288	10,000	2,410	1,670	5,490	<0.1	0.05	0.76	<0.7	0.31	0.73	0.33	<3.8	2.05	<0.1	7.26	4.86
7	102411	480180	1383001	73,000	24,267	21,700	69,335	<1.5	0.39	<0.8	<4.5	2.99	1.92	3.11	<36	456	27.9	1515	1015
8	102409	480221	1382934	16,000	4,250	3,140	10,632	<0.7	0.29	<0.4	<2.4	1.21	0.94	1.26	<10	15.3	1.05	57.5	38.53
9	102420	480196	1383008	21,000	5,683	4,430	16,093	<1.0	0.71	<0.6	<3.4	2.10	1.11	1.98	<17	86.2	4.74	278	186.3
10	102412	480180	1383004	75,000	29,067	26,400	93,139	<2.2	0.56	<1.2	<6.6	3.87	2.91	3.82	<53	1234	67.9	3623	2427
11	102421	480347	1383323	15,000	4,680	3,710	11,988	<0.3	1.20	<0.2	<1.4	1.37	1.11	1.47	<9.6	36.9	2.27	138	92.46
12	102419	480337	1383148	17,000	5,052	3,950	12,993	<0.8	0.80	<0.5	<2.9	1.58	1.05	1.68	<13	33.4	2.65	134	89.78
13	102417	480429	1382803	18,000	4,608	3,490	11,536	<0.4	0.78	<0.2	<1.5	1.19	1.00	1.35	<10	20.9	1.08	70.9	47.50
14	102407	480128	1382926	33,000	10,083	8,000	25,452	<1.0	0.68	<0.6	<3.7	3.83	1.57	5.05	<19	109	5.73	344	230.5
15	102404	479934	1382863	33,000	13,717	11,600	31,751	<0.9	0.68	2.8	<3.9	1.22	18.5	1.37	67.6	29.4	3.00	117	78.39
16	102416	480218	1382657	17,000	4,227	3,200	11,276	<0.3	0.74	<0.2	<1.3	1.21	0.92	1.40	<9.3	21.3	1.44	81.4	54.54
17	102406	480123	1382925	32,000	10,333	8,460	27,105	<1.1	0.57	<0.6	<4.0	5.02	2.00	6.43	<20	111	7.41	420	281.4
18	102414	479726	1382875	21,200	6,933	5,330	15,395	<0.9	0.75	0.65	<2.8	1.01	5.61	1.15	28	13.6	1.07	51.5	34.51
19	102418	480214	1382969	21,500	5,767	4,530	15,295	<0.3	0.76	<0.2	<1.5	1.46	1.23	1.73	<12	73.5	4.04	247	165.5
20	102408	480184	1382932	20,500	5,633	4,430	15,204	<0.9	0.66	<0.5	<3.5	1.65	1.17	1.73	<16	62.5	3.60	208	139.4
21	102405	480079	1382925	28,000	8,517	7,020	24,540	<1.0	0.08	<0.5	<3.1	1.45	1.13	1.53	<15	83.5	4.35	267	178.9

- Notes: (1) SPA-3, #2057, without shielding
 (2) SPA-3, #1793, with shielding
 (3) SPA-3, #1793, with shielding, with steel shot shielding gamma from soil

All samples taken from 0-4 inches in depth

FIGURE 2

Correlation of Total Uranium To Bare SPA-3 At FEMP Sewage Treatment Plant



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- 4594

FIGURE 4

Correlation of Total Uranium To Shielded SPA-3

At FEMP Sewage Treatment Plant

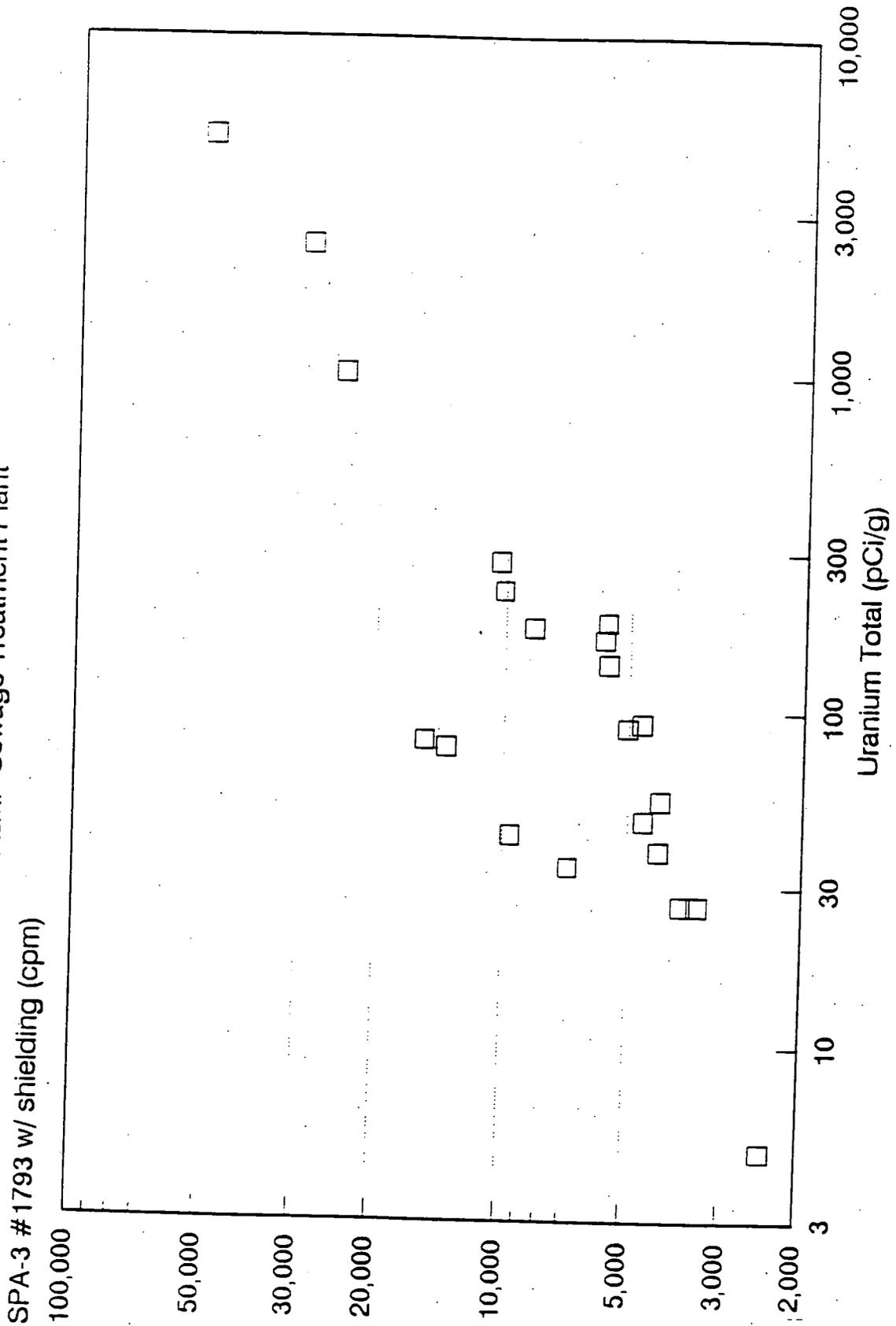
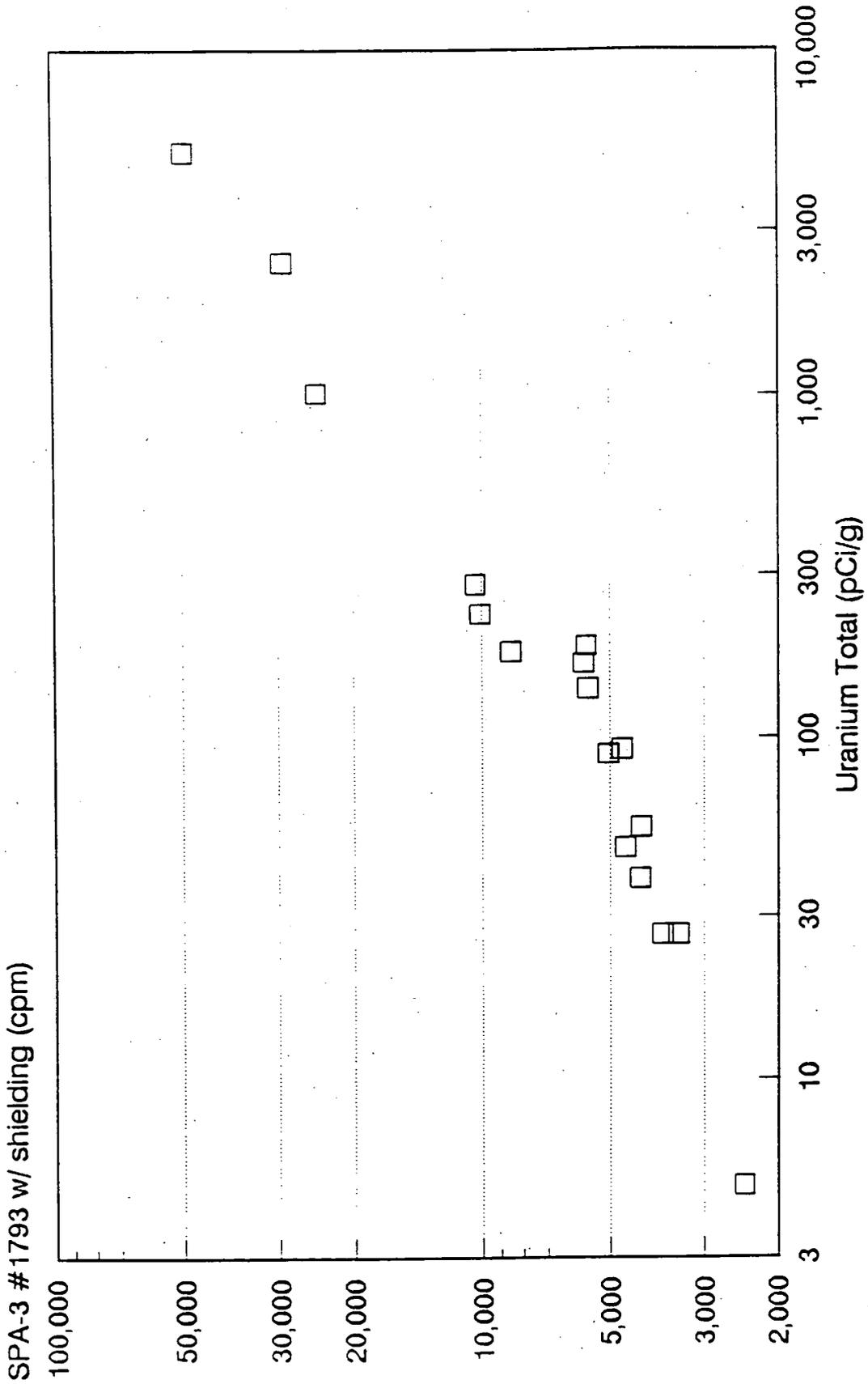


FIGURE 5

Correlation of Total Uranium To Shielded SPA-3 At FEMP Sewage Treatment Plant



Excluding Point #1, 3, 15, 18

4594

Correlation of Total Uranium To Shielded SPA-3

Delta-Gamma Reading
At FEMP Sewage Treatment Plant

Delta-Gamma Reading of SPA-3 #1793 (cpm)

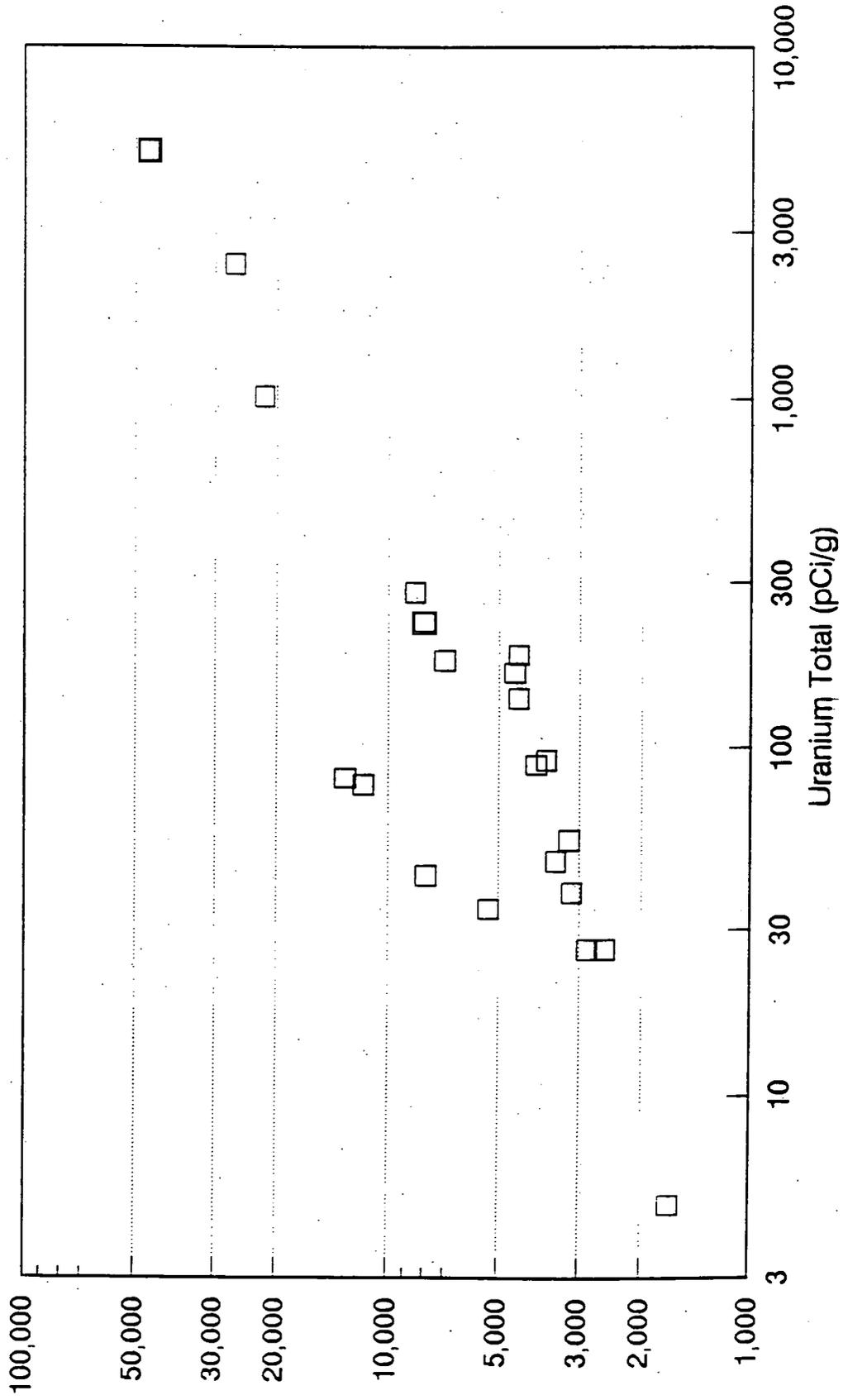


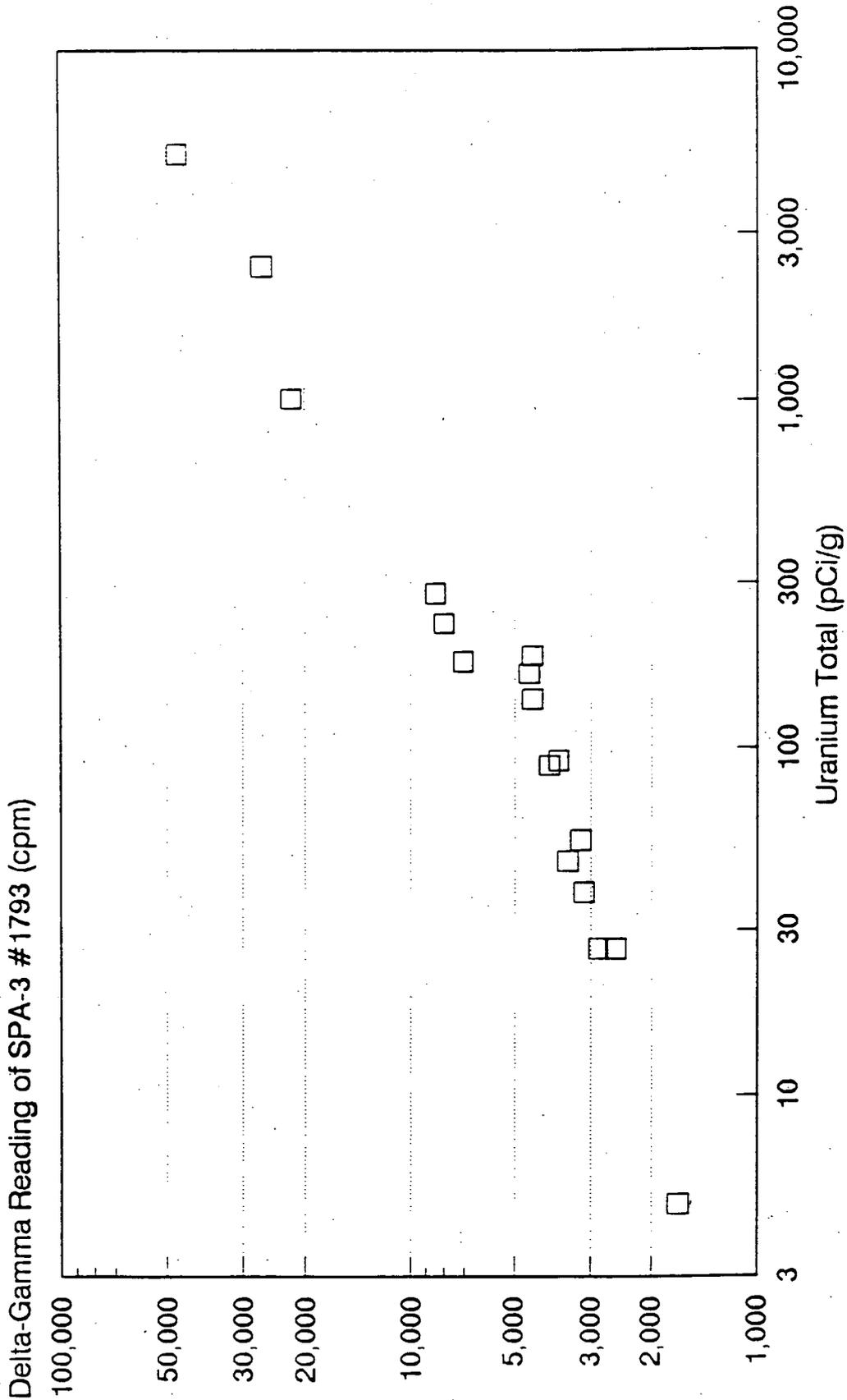
FIGURE 6

028

FIGURE 7

Correlation of Total Uranium To Shielded SPA-3

Delta-Gamma Reading
At FEMP Sewage Treatment Plant



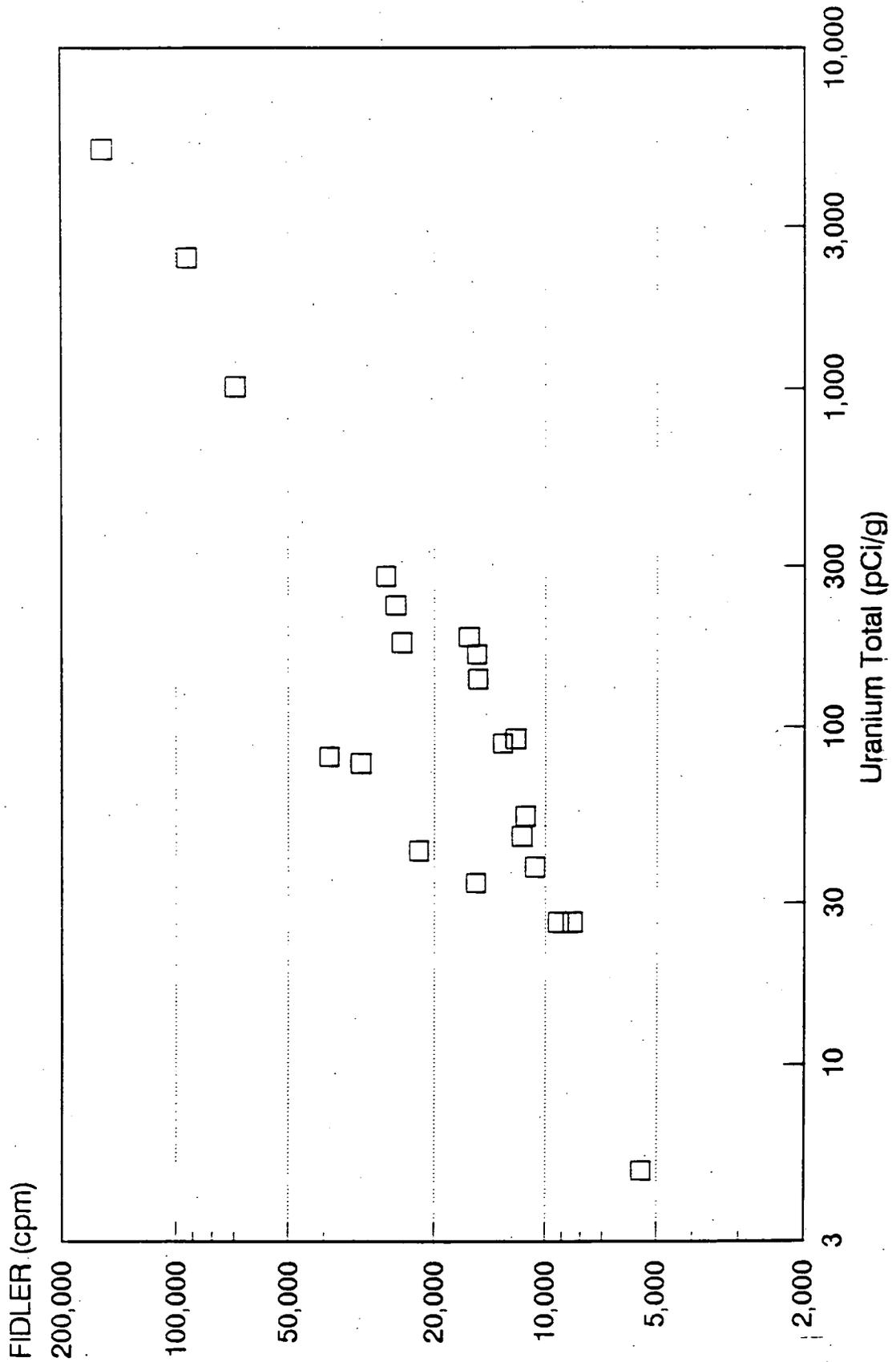
Excluding Points #1, 3, 15, 18

45

FIGURE 8

Correlation of Total Uranium To FIDLER

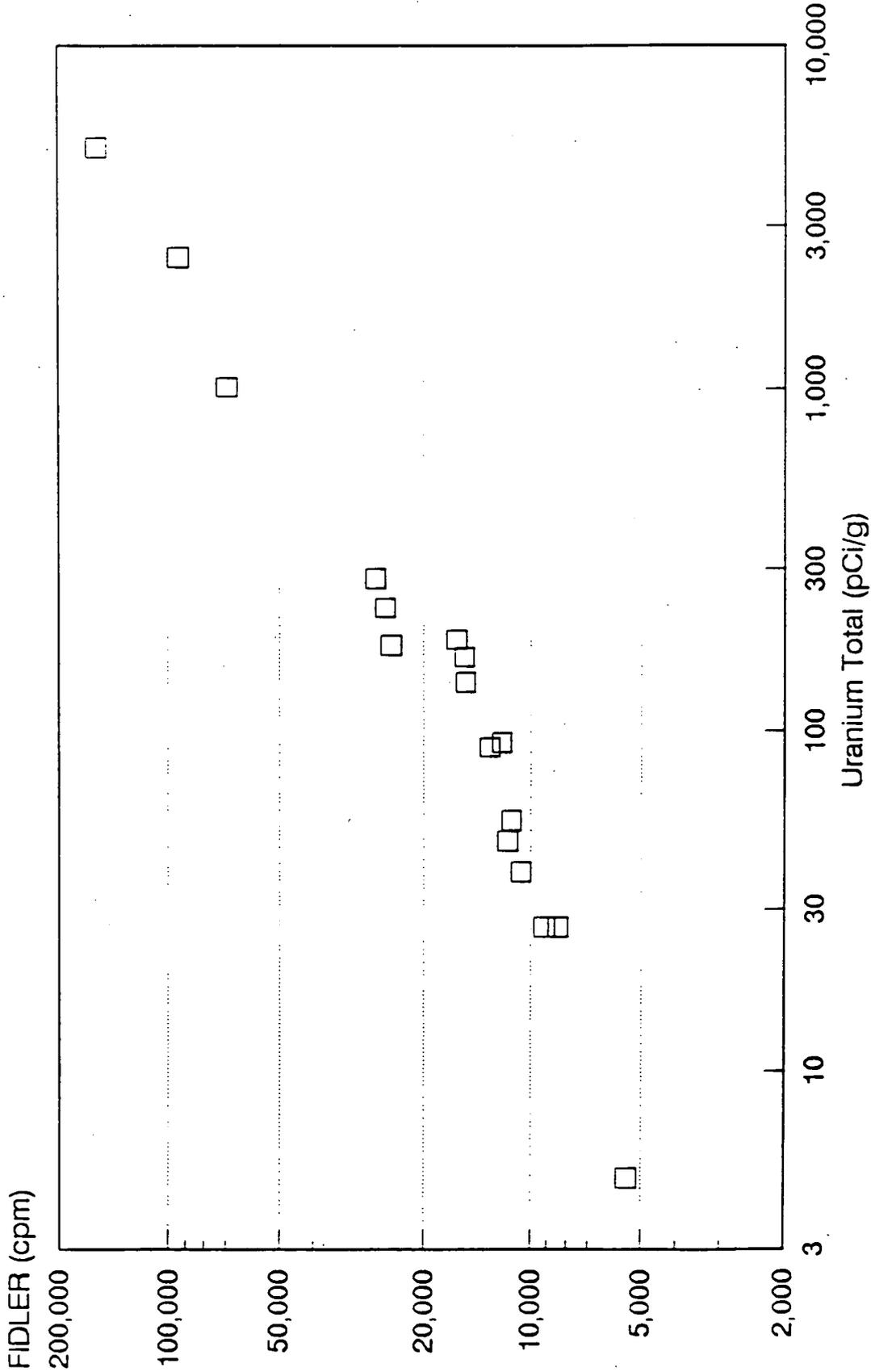
At FEMP Sewage Treatment Plant



030

FIGURE 9

Correlation of Total Uranium To FIDLER At FEMP Sewage Treatment Plant

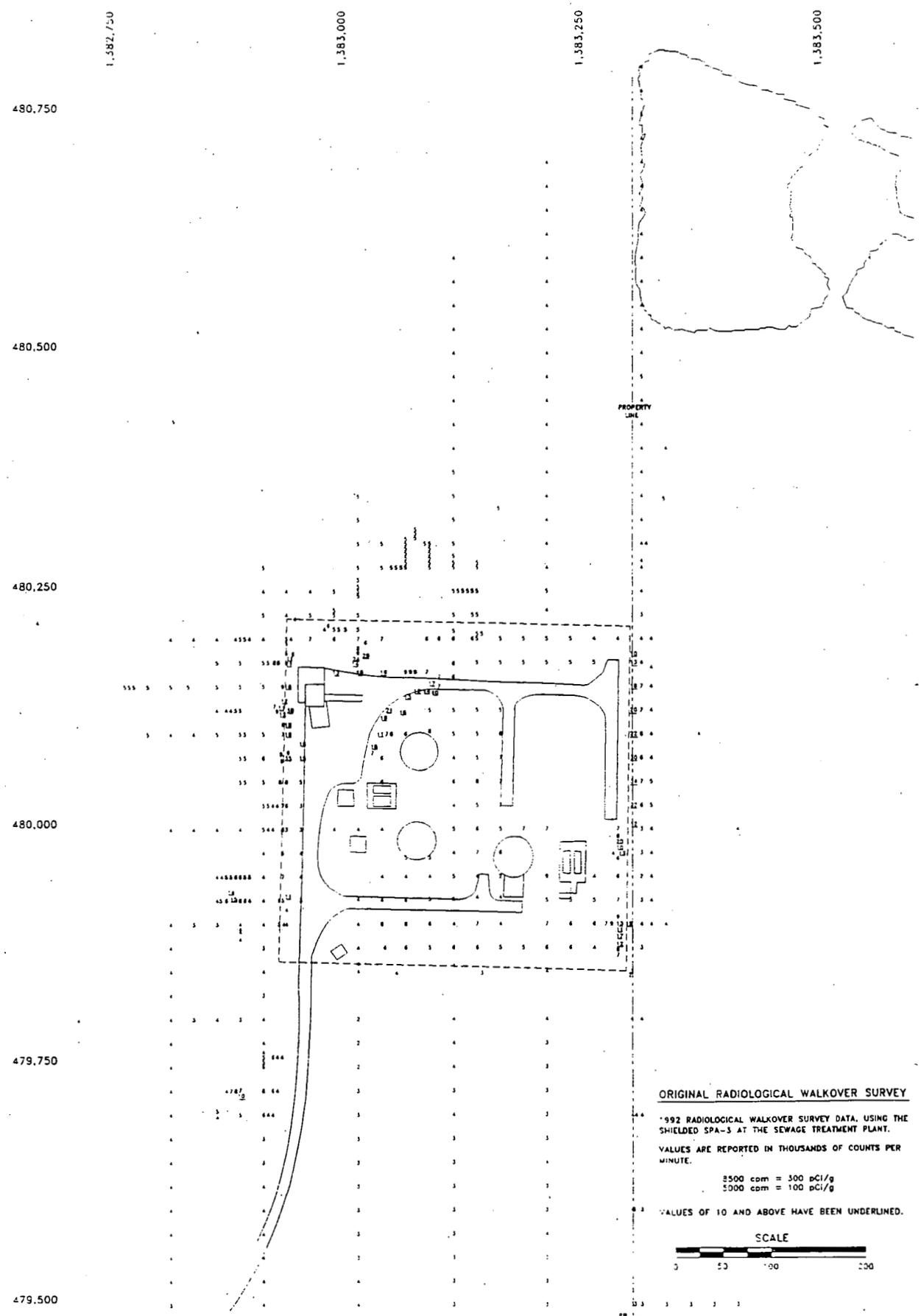


Excluding Points #1, 3, 15, 18

131

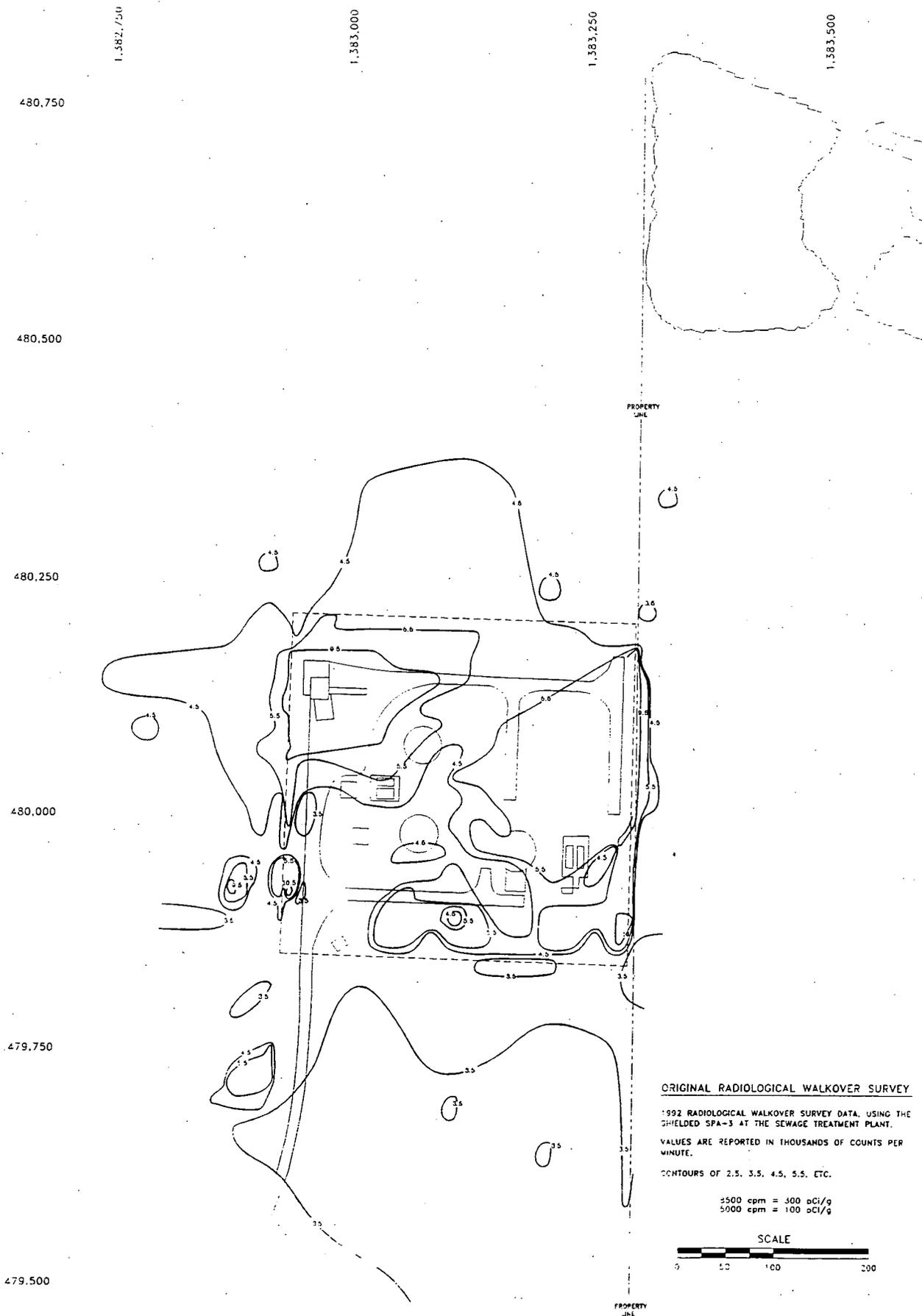
- 4594

APPENDIX II
RADIOLOGICAL WALKOVER SURVEYS



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FIGURE 2, RADIOLOGICAL WALKOVER SURVEY CONTOUR MAP



SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY IN SOILS
AROUND THE SEWAGE TREATMENT PLANT

TABLE 1

E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
1383150	479950	AUG-03-92	4.12E+03	2.06E+03	
1383000	479750	JUL-31-92	4.46E+03	2.23E+03	Near gravel
1383000	479800	JUL-31-92	4.87E+03	2.44E+03	
1383000	479775	JUL-31-92	4.89E+03	2.45E+03	Near gravel
1383300	479950	AUG-03-92	4.98E+03	2.49E+03	Cow path
1383300	479975	AUG-03-92	5.21E+03	2.61E+03	Cow path
1383290	479850	AUG-03-92	5.25E+03	2.63E+03	50' S of where next stake should be - south of STP (SE)
1383100	479500	JUL-31-92	5.28E+03	2.64E+03	
1383000	479725	JUL-31-92	5.35E+03	2.68E+03	Gravel
1383290	479500	AUG-03-92	5.43E+03	2.72E+03	10' from stake off property
1383200	479500	JUL-31-92	6.07E+03	3.04E+03	
1383300	480225	AUG-04-92	6.10E+03	3.05E+03	NE property line at high voltage tower
1383300	479925	AUG-03-92	6.14E+03	3.07E+03	Cow path
1383100	479550	JUL-31-92	6.23E+03	3.12E+03	
1382900	479650	JUL-31-92	6.26E+03	3.13E+03	Pipes
1383000	479575	JUL-31-92	6.31E+03	3.16E+03	
1383300	479875	AUG-03-92	6.34E+03	3.17E+03	Cow path
1383100	479525	JUL-31-92	6.36E+03	3.18E+03	
1383000	479650	JUL-31-92	6.40E+03	3.20E+03	
1383200	479725	JUL-31-92	6.41E+03	3.21E+03	
1383300	480000	AUG-03-92	6.41E+03	3.21E+03	Cow path
1382800	479500	AUG-03-92	6.43E+03	3.22E+03	
1383000	479600	JUL-31-92	6.46E+03	3.23E+03	
1383200	479525	JUL-31-92	6.47E+03	3.24E+03	
1383200	479675	JUL-31-92	6.51E+03	3.26E+03	
1383300	479500	AUG-04-92	6.52E+03	3.26E+03	East off-property in weeds
1383400	479500	AUG-04-92	6.58E+03	3.29E+03	East off-property in weeds
1383100	479600	JUL-31-92	6.63E+03	3.32E+03	
1383200	479700	JUL-31-92	6.64E+03	3.32E+03	
1383000	479550	JUL-31-92	6.65E+03	3.33E+03	
1383200	479750	JUL-31-92	6.65E+03	3.33E+03	
1382900	479675	JUL-31-92	6.67E+03	3.34E+03	Pipes
1383200	479600	JUL-31-92	6.69E+03	3.35E+03	
1383325	479500	AUG-04-92	6.70E+03	3.35E+03	East off-property in weeds
1383325	479600	AUG-04-92	6.70E+03	3.35E+03	East off-property in weeds
1382850	479900	JUL-31-92	6.73E+03	3.37E+03	
1383100	479575	JUL-31-92	6.73E+03	3.37E+03	
1383293	479500	AUG-04-92	6.74E+03	3.37E+03	East off-property in weeds
1382825	479900	JUL-28-92	6.77E+03	3.39E+03	
1383000	479700	JUL-31-92	6.77E+03	3.39E+03	
1383200	479550	JUL-31-92	6.77E+03	3.39E+03	
1383200	479625	JUL-31-92	6.78E+03	3.39E+03	
1382850	479900	JUL-28-92	6.79E+03	3.40E+03	
1383375	479500	AUG-04-92	6.79E+03	3.40E+03	East off-property in weeds
1382800	479900	JUL-28-92	6.80E+03	3.40E+03	
1383350	479500	AUG-04-92	6.80E+03	3.40E+03	East off-property in weeds
1383300	479600	AUG-04-92	6.83E+03	3.42E+03	East off-property in weeds
1383000	479625	JUL-31-92	6.85E+03	3.43E+03	
1383292	479600	AUG-04-92	6.85E+03	3.43E+03	East off-property in weeds
1382900	479675	JUL-31-92	6.86E+03	3.43E+03	
1383100	479650	JUL-31-92	6.86E+03	3.43E+03	
1382825	479800	JUL-28-92	6.89E+03	3.45E+03	
1383000	479675	JUL-31-92	6.90E+03	3.45E+03	
1383100	479675	JUL-31-92	6.90E+03	3.45E+03	Mud
1382900	479875	JUL-31-92	6.92E+03	3.46E+03	
1383100	479725	JUL-31-92	6.93E+03	3.47E+03	
1383200	479853	JUL-31-92	6.93E+03	3.47E+03	Last row outside fence at STP
1382875	479800	JUL-28-92	6.94E+03	3.47E+03	

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY IN SOILS
AROUND THE SEWAGE TREATMENT PLANT

E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
1383100	479625	JUL-31-92	6.95E+03	3.48E+03	
1383200	479775	JUL-31-92	6.96E+03	3.48E+03	
1382900	479825	JUL-31-92	6.97E+03	3.49E+03	
1382920	479760	JUL-31-92	7.00E+03	3.50E+03	
1382900	479600	JUL-31-92	7.01E+03	3.51E+03	
1383200	479575	JUL-31-92	7.01E+03	3.51E+03	
1382900	479625	JUL-31-92	7.04E+03	3.52E+03	
1383000	480000	AUG-04-92	7.04E+03	3.52E+03	
1383100	479750	JUL-31-92	7.07E+03	3.54E+03	
1383294	479700	AUG-04-92	7.08E+03	3.54E+03	East off-property in weeds
1383200	479800	JUL-31-92	7.09E+03	3.55E+03	
1383290	479600	AUG-03-92	7.09E+03	3.55E+03	
1383200	479650	JUL-31-92	7.10E+03	3.55E+03	
1382800	479550	AUG-03-92	7.12E+03	3.56E+03	
1382900	479550	JUL-31-92	7.12E+03	3.56E+03	
1383125	479928	AUG-03-92	7.13E+03	3.57E+03	At driveway in STP
1382900	479800	JUL-31-92	7.14E+03	3.57E+03	
1383000	480000	AUG-03-92	7.15E+03	3.58E+03	
1382900	479850	JUL-31-92	7.18E+03	3.59E+03	
1382850	479700	JUL-31-92	7.19E+03	3.60E+03	
1383100	479775	JUL-31-92	7.19E+03	3.60E+03	
1382800	479575	AUG-03-92	7.20E+03	3.60E+03	
1382875	479900	JUL-28-92	7.21E+03	3.61E+03	
1383025	479925	AUG-03-92	7.21E+03	3.61E+03	
1383100	479700	JUL-31-92	7.21E+03	3.61E+03	
1383290	479700	AUG-03-92	7.21E+03	3.61E+03	
1382850	479800	JUL-28-92	7.22E+03	3.61E+03	
1382800	479600	AUG-03-92	7.23E+03	3.62E+03	
1383300	479700	AUG-04-92	7.23E+03	3.62E+03	East off-property in weeds
1382800	479675	AUG-03-92	7.25E+03	3.63E+03	
1383000	479500	JUL-31-92	7.26E+03	3.63E+03	
1383200	479850	AUG-03-92	7.26E+03	3.63E+03	
1382800	479725	AUG-03-92	7.27E+03	3.64E+03	
1382800	479650	AUG-03-92	7.28E+03	3.64E+03	
1382825	480000	JUL-28-92	7.28E+03	3.64E+03	
1382910	479700	JUL-31-92	7.29E+03	3.65E+03	
1383100	479856	JUL-31-92	7.30E+03	3.65E+03	
1382800	479750	AUG-03-92	7.31E+03	3.66E+03	
1382915	479725	JUL-31-92	7.31E+03	3.66E+03	
1383300	479800	AUG-04-92	7.31E+03	3.66E+03	
1383300	480200	AUG-03-92	7.31E+03	3.66E+03	Cow path
1382800	479625	AUG-03-92	7.34E+03	3.67E+03	
1383359	480100	AUG-04-92	7.35E+03	3.68E+03	Swamp area
1382800	479525	AUG-03-92	7.37E+03	3.69E+03	
1382800	479775	AUG-03-92	7.37E+03	3.69E+03	
1382900	479775	JUL-31-92	7.38E+03	3.69E+03	
1382800	479700	AUG-03-92	7.39E+03	3.70E+03	
1382860	479725	JUL-31-92	7.39E+03	3.70E+03	
1383025	480000	AUG-04-92	7.40E+03	3.70E+03	
1383310	479900	AUG-04-92	7.40E+03	3.70E+03	
1383250	479875	AUG-03-92	7.42E+03	3.71E+03	
1383290	479800	AUG-03-92	7.43E+03	3.72E+03	
1382900	479525	JUL-31-92	7.44E+03	3.72E+03	
1382900	479500	JUL-31-92	7.44E+03	3.72E+03	
1382700	479800	JUL-28-92	7.45E+03	3.73E+03	
1383000	479858	JUL-31-92	7.47E+03	3.74E+03	
1382875	479884	JUL-31-92	7.48E+03	3.74E+03	
1382910	480000	JUL-28-92	7.48E+03	3.74E+03	On bank of ditch with running water

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY TO DETERMINE EXCAVATION BOUNDARY IN SOILS AROUND THE SEWAGE TREATMENT PLANT

E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
1383100	479800	JUL-31-92	7.48E+03	3.74E+03	
1382900	479575	JUL-31-92	7.49E+03	3.75E+03	
1382875	479900	JUL-31-92	7.50E+03	3.75E+03	
1382800	479900	AUG-03-92	7.51E+03	3.76E+03	
1382800	479825	AUG-03-92	7.51E+03	3.76E+03	
1383000	479900	AUG-03-92	7.51E+03	3.76E+03	
1383000	479525	JUL-31-92	7.56E+03	3.78E+03	
1383325	480400	AUG-04-92	7.56E+03	3.78E+03	Swamp area
1383300	480175	AUG-03-92	7.62E+03	3.81E+03	Cow path
1382800	479875	AUG-03-92	7.63E+03	3.82E+03	
1383310	480200	AUG-04-92	7.63E+03	3.82E+03	Swamp area
1383250	479950	AUG-03-92	7.65E+03	3.83E+03	
1382975	480000	AUG-04-92	7.66E+03	3.83E+03	
1383300	480550	JUL-27-92	7.67E+03	3.84E+03	
1383300	480800	JUL-27-92	7.67E+03	3.84E+03	100' past last grid point
1383300	480600	JUL-27-92	7.68E+03	3.84E+03	
1383300	480275	AUG-04-92	7.69E+03	3.85E+03	NE property line at high voltage tower
1382900	479900	JUL-28-92	7.73E+03	3.87E+03	
1383300	479900	AUG-03-92	7.79E+03	3.90E+03	Cow path
1383400	480000	AUG-04-92	7.79E+03	3.90E+03	Swamp area
1382850	480000	JUL-28-92	7.80E+03	3.90E+03	
1382800	479800	JUL-28-92	7.83E+03	3.92E+03	
1383000	479850	AUG-03-92	7.83E+03	3.92E+03	
1383300	480525	JUL-27-92	7.84E+03	3.92E+03	
1383200	480325	JUL-27-92	7.86E+03	3.93E+03	
1383300	480282	JUL-27-92	7.90E+03	3.95E+03	Unable to survey to next grid point due to high grass
1382800	479800	AUG-03-92	7.92E+03	3.96E+03	
1383275	480200	AUG-04-92	7.92E+03	3.96E+03	Along fence in northeast corner inside STP
1382800	480000	JUL-28-92	7.93E+03	3.97E+03	
1383000	479926	AUG-03-92	7.93E+03	3.97E+03	Near drive in STP
1382930	480200	JUL-28-92	7.94E+03	3.97E+03	
1382850	480125	JUL-30-92	7.96E+03	3.98E+03	
1383300	480775	JUL-27-92	7.99E+03	4.00E+03	
1382905	479700	JUL-31-92	8.01E+03	4.01E+03	
1383200	480300	JUL-27-92	8.02E+03	4.01E+03	
1383300	480500	JUL-27-92	8.07E+03	4.04E+03	
1383300	480250	AUG-04-92	8.07E+03	4.04E+03	NE property line at high voltage tower
1382860	480125	JUL-30-92	8.08E+03	4.04E+03	
1383200	480350	JUL-27-92	8.09E+03	4.05E+03	
1383200	480650	JUL-27-92	8.10E+03	4.05E+03	Highest of 3 readings
1383200	480600	JUL-27-92	8.11E+03	4.06E+03	
1382800	479850	AUG-03-92	8.12E+03	4.06E+03	
1383305	480300	AUG-04-92	8.12E+03	4.06E+03	Swamp area
1383200	480375	JUL-27-92	8.18E+03	4.09E+03	
1383300	480750	JUL-27-92	8.20E+03	4.10E+03	
1383100	480600	JUL-27-92	8.21E+03	4.11E+03	
1382875	479895	JUL-31-92	8.22E+03	4.11E+03	
1382922	479900	JUL-28-92	8.24E+03	4.12E+03	
1383200	480575	JUL-27-92	8.24E+03	4.12E+03	
1382950	480250	AUG-04-92	8.25E+03	4.13E+03	
1383300	480575	JUL-27-92	8.25E+03	4.13E+03	
1383100	480500	JUL-27-92	8.26E+03	4.13E+03	
1383200	480700	JUL-27-92	8.26E+03	4.13E+03	Highest of 3 readings
1383200	480675	JUL-27-92	8.26E+03	4.13E+03	Highest of 3 readings
1382850	479950	JUL-31-92	8.29E+03	4.15E+03	
1383100	480525	JUL-27-92	8.29E+03	4.15E+03	
1383300	480400	JUL-27-92	8.29E+03	4.15E+03	
1383200	480475	JUL-27-92	8.30E+03	4.15E+03	

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY IN SOILS
AROUND THE SEWAGE TREATMENT PLANT

E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
1383300	480650	JUL-27-92	8.33E+03	4.17E+03	
1382930	480200	JUL-30-92	8.34E+03	4.17E+03	
1383100	480575	JUL-27-92	8.34E+03	4.17E+03	
1382865	480125	JUL-30-92	8.36E+03	4.18E+03	
1382825	480200	JUL-28-92	8.37E+03	4.19E+03	
1382905	480000	JUL-28-92	8.38E+03	4.19E+03	
1383150	479928	AUG-03-92	8.38E+03	4.19E+03	At driveway in STP
1383200	480625	JUL-27-92	8.38E+03	4.19E+03	Highest of 3 readings
1383300	480700	JUL-27-92	8.38E+03	4.19E+03	
1383200	480450	JUL-27-92	8.39E+03	4.20E+03	
1383300	480725	JUL-27-92	8.39E+03	4.20E+03	
1382855	479950	JUL-31-92	8.40E+03	4.20E+03	
1383300	480625	JUL-27-92	8.40E+03	4.20E+03	
1382900	480200	JUL-28-92	8.41E+03	4.21E+03	
1382800	480200	JUL-28-92	8.42E+03	4.21E+03	
1383100	480475	JUL-27-92	8.42E+03	4.21E+03	
1383200	479875	AUG-03-92	8.42E+03	4.21E+03	
1383025	479926	AUG-03-92	8.43E+03	4.22E+03	
1382875	480000	JUL-28-92	8.44E+03	4.22E+03	
1383075	479950	AUG-03-92	8.44E+03	4.22E+03	
1382900	479925	JUL-30-92	8.45E+03	4.23E+03	
1382900	480250	AUG-04-92	8.46E+03	4.23E+03	
1383300	480350	JUL-27-92	8.47E+03	4.24E+03	
1383200	480550	JUL-27-92	8.48E+03	4.24E+03	
1382915	479760	JUL-31-92	8.50E+03	4.25E+03	
1383000	479800	AUG-03-92	8.51E+03	4.26E+03	
1383125	479950	AUG-03-92	8.51E+03	4.26E+03	
1383200	480425	JUL-27-92	8.51E+03	4.26E+03	
1382850	480125	JUL-30-92	8.52E+03	4.26E+03	
1382875	479892	JUL-31-92	8.52E+03	4.26E+03	
1382965	480210	JUL-30-92	8.52E+03	4.26E+03	Along the fence
1383000	479875	AUG-03-92	8.52E+03	4.26E+03	
1383300	480675	JUL-27-92	8.52E+03	4.26E+03	
1382915	480025	JUL-30-92	8.53E+03	4.27E+03	In ditch
1383100	480450	JUL-27-92	8.53E+03	4.27E+03	
1383100	480400	JUL-27-92	8.55E+03	4.28E+03	
1383100	479975	AUG-03-92	8.56E+03	4.28E+03	
1383300	480325	JUL-27-92	8.56E+03	4.28E+03	
1383300	480300	JUL-27-92	8.57E+03	4.29E+03	
1383300	480425	JUL-27-92	8.59E+03	4.30E+03	
1382825	480100	JUL-28-92	8.61E+03	4.31E+03	
1383100	479900	AUG-03-92	8.61E+03	4.31E+03	
1382900	479765	JUL-31-92	8.62E+03	4.31E+03	
1382900	479950	JUL-30-92	8.65E+03	4.33E+03	
1383050	479950	AUG-03-92	8.65E+03	4.33E+03	
1383200	480230	JUL-27-92	8.65E+03	4.33E+03	Approx. 5' from next grid point stake inside STP fence
1383200	480275	JUL-27-92	8.65E+03	4.33E+03	
1383200	480500	JUL-27-92	8.66E+03	4.33E+03	
1383250	480200	AUG-04-92	8.67E+03	4.34E+03	Along fence in northeast corner inside STP
1382900	479975	JUL-30-92	8.69E+03	4.35E+03	
1382975	480250	JUL-30-92	8.69E+03	4.35E+03	
1383200	480400	JUL-27-92	8.70E+03	4.35E+03	
1383150	479900	AUG-03-92	8.73E+03	4.37E+03	
1383300	480375	JUL-27-92	8.73E+03	4.37E+03	
1382850	479925	JUL-31-92	8.76E+03	4.38E+03	
1382925	480250	AUG-04-92	8.76E+03	4.38E+03	
1382925	480225	AUG-04-92	8.76E+03	4.38E+03	NW corner outside STP (wet)
1383100	480550	JUL-27-92	8.76E+03	4.38E+03	

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY IN SOILS
AROUND THE SEWAGE TREATMENT PLANT

E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
1382800	480100	JUL-28-92	8.78E+03	4.39E+03	
1383200	480525	JUL-27-92	8.78E+03	4.39E+03	
1383200	480250	JUL-27-92	8.80E+03	4.40E+03	
1382870	480200	JUL-28-92	8.82E+03	4.41E+03	
1382918	480025	JUL-30-92	8.82E+03	4.41E+03	In ditch
1383100	480425	JUL-27-92	8.84E+03	4.42E+03	
1383100	480075	AUG-04-92	8.84E+03	4.42E+03	
1382885	480200	JUL-28-92	8.88E+03	4.44E+03	
1382910	480025	JUL-30-92	8.88E+03	4.44E+03	In ditch
1382850	480200	JUL-28-92	8.93E+03	4.47E+03	
1383300	480450	JUL-27-92	8.93E+03	4.47E+03	
1383300	480300	AUG-04-92	8.95E+03	4.48E+03	NE property line at high voltage tower
1382885	479925	JUL-30-92	8.96E+03	4.48E+03	
1383025	479950	AUG-03-92	8.97E+03	4.49E+03	
1383100	480025	AUG-04-92	8.98E+03	4.49E+03	
1383175	479875	AUG-03-92	8.99E+03	4.50E+03	
1382975	480210	JUL-30-92	9.00E+03	4.50E+03	Along the fence
1383150	480200	AUG-04-92	9.03E+03	4.52E+03	Along fence in northeast corner inside STP
1382860	479950	JUL-31-92	9.04E+03	4.52E+03	
1383000	480325	JUL-28-92	9.06E+03	4.53E+03	
1383100	479950	AUG-03-92	9.06E+03	4.53E+03	
1383125	480100	AUG-04-92	9.07E+03	4.54E+03	
1382905	480025	JUL-30-92	9.08E+03	4.54E+03	
1382885	479950	JUL-30-92	9.13E+03	4.57E+03	
1382980	480210	JUL-30-92	9.14E+03	4.57E+03	Along the fence
1383175	480175	AUG-04-92	9.14E+03	4.57E+03	Along fence in northeast corner inside STP
1383200	480200	AUG-04-92	9.14E+03	4.57E+03	Along fence in northeast corner inside STP
1382875	480175	JUL-30-92	9.17E+03	4.59E+03	
1383225	480200	AUG-04-92	9.18E+03	4.59E+03	Along fence in northeast corner inside STP
1382850	480175	JUL-30-92	9.19E+03	4.60E+03	
1383200	480175	AUG-04-92	9.20E+03	4.60E+03	Along fence in northeast corner inside STP
1383200	480250	JUL-27-92	9.20E+03	4.60E+03	
1382880	480200	JUL-28-92	9.21E+03	4.61E+03	
1382950	480225	AUG-04-92	9.21E+03	4.61E+03	
1382900	480000	JUL-28-92	9.22E+03	4.61E+03	
1383100	480000	AUG-03-92	9.22E+03	4.61E+03	
1383175	480200	AUG-04-92	9.23E+03	4.62E+03	Along fence in northeast corner inside STP
1383120	480250	JUL-29-92	9.24E+03	4.62E+03	
1382853	479925	JUL-31-92	9.25E+03	4.63E+03	
1382921	480000	JUL-28-92	9.25E+03	4.63E+03	
1382900	480275	AUG-04-92	9.28E+03	4.64E+03	
1383000	480300	JUL-28-92	9.30E+03	4.65E+03	
1383100	480325	JUL-27-92	9.30E+03	4.65E+03	
1382905	480175	JUL-30-92	9.33E+03	4.67E+03	
1382854	479925	JUL-31-92	9.34E+03	4.67E+03	
1383125	480075	AUG-04-92	9.34E+03	4.67E+03	
1383100	480350	JUL-27-92	9.35E+03	4.68E+03	
1383075	479970	AUG-03-92	9.36E+03	4.68E+03	Edge of water filter
1382975	480250	AUG-04-92	9.37E+03	4.69E+03	
1382975	480230	JUL-30-92	9.39E+03	4.70E+03	
1383300	480475	JUL-27-92	9.39E+03	4.70E+03	
1382912	479725	JUL-31-92	9.40E+03	4.70E+03	
1383100	480375	JUL-27-92	9.40E+03	4.70E+03	
1383150	480175	AUG-04-92	9.40E+03	4.70E+03	Along fence in northeast corner inside STP
1383075	480300	JUL-29-92	9.41E+03	4.71E+03	2nd time taking this reading
1383115	480250	JUL-29-92	9.42E+03	4.71E+03	
1382875	480150	JUL-30-92	9.43E+03	4.72E+03	
1382900	480000	JUL-28-92	9.43E+03	4.72E+03	

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY IN SOILS
AROUND THE SEWAGE TREATMENT PLANT

E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
1382925	480195	JUL-30-92	9.43E+03	4.72E+03	
1382750	480150	JUL-30-92	9.45E+03	4.73E+03	
1383000	480350	JUL-28-92	9.45E+03	4.73E+03	
1383125	480280	JUL-29-92	9.46E+03	4.73E+03	
1383000	480272	JUL-28-92	9.47E+03	4.74E+03	
1383075	479926	AUG-03-92	9.47E+03	4.74E+03	
1383105	480250	JUL-29-92	9.47E+03	4.74E+03	
1382850	480100	JUL-28-92	9.48E+03	4.74E+03	
1383225	480175	AUG-04-92	9.49E+03	4.75E+03	Along fence in northeast corner inside STP
1382982	480210	JUL-30-92	9.53E+03	4.77E+03	Highest of 3 readings; along the fence
1383100	480250	JUL-27-92	9.53E+03	4.77E+03	
1382775	480100	JUL-28-92	9.54E+03	4.77E+03	Highest of 3 readings
1383060	480311	JUL-29-92	9.57E+03	4.79E+03	
1382900	480175	JUL-30-92	9.61E+03	4.81E+03	
1382900	480225	AUG-04-92	9.61E+03	4.81E+03	Highest of 3 readings - NW corner outside STP (wet)
1383025	480300	JUL-29-92	9.61E+03	4.81E+03	
1383060	480311	JUL-29-92	9.62E+03	4.81E+03	
1383060	480311	JUL-29-92	9.62E+03	4.81E+03	
1383123	480225	JUL-29-92	9.63E+03	4.82E+03	Highest of 3 readings
1383075	480300	JUL-29-92	9.64E+03	4.82E+03	
1383075	480300	JUL-29-92	9.65E+03	4.83E+03	
1382975	480228	JUL-30-92	9.66E+03	4.83E+03	Highest of 3 readings
1383060	480311	JUL-29-92	9.67E+03	4.84E+03	
1382900	479760	JUL-31-92	9.68E+03	4.84E+03	
1383025	479900	AUG-03-92	9.69E+03	4.85E+03	Highest of 3 readings
1383025	480300	JUL-29-92	9.71E+03	4.86E+03	
1382875	480100	JUL-28-92	9.72E+03	4.86E+03	Highest of 3 readings
1382884	479950	JUL-30-92	9.72E+03	4.86E+03	Highest of 3 readings
1383075	480300	JUL-29-92	9.72E+03	4.86E+03	
1383100	480287	JUL-27-92	9.72E+03	4.86E+03	Actual N coordinate is 480287.5
1383250	479925	AUG-03-92	9.72E+03	4.86E+03	Highest of 3 readings
1383050	479970	AUG-03-92	9.73E+03	4.87E+03	Highest of 3 readings; Edge of water filter
1383025	480300	JUL-29-92	9.74E+03	4.87E+03	
1383200	479925	AUG-03-92	9.74E+03	4.87E+03	Highest of 3 readings
1383100	480250	JUL-29-92	9.75E+03	4.88E+03	Highest of 3 readings
1382900	480025	JUL-30-92	9.76E+03	4.88E+03	Highest of 3 readings
1382922	480000	JUL-28-92	9.76E+03	4.88E+03	Highest of 3 readings
1383000	480252	JUL-28-92	9.76E+03	4.88E+03	
1383060	480315	JUL-29-92	9.77E+03	4.89E+03	
1383110	480250	JUL-29-92	9.77E+03	4.89E+03	Highest of 3 readings
1382877	480100	JUL-28-92	9.78E+03	4.89E+03	Highest of 3 readings
1383025	480300	JUL-29-92	9.78E+03	4.89E+03	
1383125	480275	JUL-29-92	9.78E+03	4.89E+03	Highest of 3 readings
1383130	480205	JUL-29-92	9.78E+03	4.89E+03	Highest of 3 readings
1383000	480275	JUL-28-92	9.79E+03	4.90E+03	Highest of 3 readings
1383125	480225	JUL-29-92	9.80E+03	4.90E+03	Highest of 3 readings
1382875	480200	JUL-28-92	9.81E+03	4.91E+03	Highest of 3 readings
1382975	480227	JUL-30-92	9.81E+03	4.91E+03	Highest of 3 readings
1383125	480250	JUL-29-92	9.81E+03	4.91E+03	Highest of 3 readings
1382862	479725	JUL-31-92	9.82E+03	4.91E+03	Highest of 3 readings
1383060	480315	JUL-29-92	9.82E+03	4.91E+03	
1383122	480225	JUL-29-92	9.82E+03	4.91E+03	Highest of 3 readings
1383125	480125	AUG-04-92	9.82E+03	4.91E+03	Highest of 3 readings
1382975	480226	JUL-30-92	9.83E+03	4.92E+03	Highest of 3 readings
1383060	480315	JUL-29-92	9.83E+03	4.92E+03	
1382919	480025	JUL-30-92	9.84E+03	4.92E+03	Highest of 3 readings
1383075	480299	JUL-29-92	9.84E+03	4.92E+03	Highest of 3 readings
0401383060	480315	JUL-29-92	9.85E+03	4.93E+03	

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY TO DETERMINE EXCAVATION BOUNDARY IN SOILS AROUND THE SEWAGE TREATMENT PLANT

	E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
	1383050	480303	JUL-29-92	9.86E+03	4.93E+03	Highest of 3 readings
	1383100	480300	JUL-27-92	9.86E+03	4.93E+03	Highest of 3 readings
	1383128	480205	JUL-29-92	9.86E+03	4.93E+03	Highest of 3 readings
	1382875	480050	JUL-30-92	9.87E+03	4.94E+03	Highest of 3 readings
	1383075	480300	JUL-29-92	9.87E+03	4.94E+03	
	1383100	479926	AUG-03-92	9.88E+03	4.94E+03	Highest of 3 readings
	1383000	480262	JUL-28-92	9.89E+03	4.95E+03	
	1383100	480208	JUL-27-92	9.89E+03	4.95E+03	
	1383050	480300	JUL-29-92	9.91E+03	4.96E+03	
	1383250	480175	AUG-04-92	9.92E+03	4.96E+03	Highest of 3 readings - Along fence in northeast cor:
	1383025	480275	JUL-29-92	9.93E+03	4.97E+03	
	1383025	480275	JUL-29-92	9.93E+03	4.97E+03	
	1383025	480275	JUL-29-92	9.94E+03	4.97E+03	
	1383050	480304	JUL-29-92	9.94E+03	4.97E+03	Highest of 3 readings
	1382755	480150	JUL-30-92	9.95E+03	4.98E+03	Highest of 3 readings; Wet stream
	1382865	479950	JUL-31-92	9.95E+03	4.98E+03	Highest of 3 readings
B	1382875	479700	JUL-31-92	9.95E+03	4.98E+03	Highest of 3 readings
	1382875	480075	JUL-30-92	9.95E+03	4.98E+03	Highest of 3 readings
	1383000	480255	JUL-28-92	9.95E+03	4.98E+03	
	1383050	480300	JUL-29-92	9.95E+03	4.98E+03	
	1383025	480275	JUL-29-92	9.96E+03	4.98E+03	
	1383035	480275	JUL-29-92	9.96E+03	4.98E+03	
	1382902	479700	JUL-31-92	9.97E+03	4.99E+03	Highest of 3 readings
	1383035	480275	JUL-29-92	9.97E+03	4.99E+03	
	1383035	480275	JUL-29-92	9.97E+03	4.99E+03	
	1383035	480275	JUL-29-92	9.97E+03	4.99E+03	
	1383050	480300	JUL-29-92	9.97E+03	4.99E+03	
	1383050	480300	JUL-29-92	9.97E+03	4.99E+03	
	1383050	480302	JUL-29-92	9.98E+03	4.99E+03	Highest of 3 readings
	1383075	480298	JUL-29-92	9.98E+03	4.99E+03	Highest of 3 readings
	1383000	480247	JUL-28-92	9.99E+03	5.00E+03	Highest of 3 readings
	1383000	480250	JUL-28-92	9.99E+03	5.00E+03	Highest of 3 readings
	1383050	480305	JUL-29-92	9.99E+03	5.00E+03	Highest of 3 readings
	1382775	480150	JUL-30-92	1.00E+04	5.00E+03	Highest of 3 readings; muddy and slushy
B	1382870	480125	JUL-30-92	1.00E+04	5.00E+03	Highest of 2 readings
B	1382910	480175	JUL-30-92	1.00E+04	5.00E+03	
	1383050	480290	JUL-29-92	1.00E+04	5.00E+03	
	1383075	479875	AUG-03-92	1.00E+04	5.00E+03	
	1383075	480290	JUL-29-92	1.00E+04	5.00E+03	Highest of 2 readings
	1383125	480205	JUL-29-92	1.00E+04	5.00E+03	Highest of 3 readings
	1383126	480205	JUL-29-92	1.00E+04	5.00E+03	
B	1383127	480205	JUL-29-92	1.00E+04	5.00E+03	
	1382819	480150	JUL-30-92	1.01E+04	5.05E+03	Highest of 3 readings; muddy and slushy
B	1382883	479950	JUL-30-92	1.01E+04	5.05E+03	
	1382975	480225	JUL-30-92	1.01E+04	5.05E+03	
	1383000	480245	JUL-28-92	1.01E+04	5.05E+03	
B	1383000	480246	JUL-28-92	1.01E+04	5.05E+03	
B	1383040	480275	JUL-29-92	1.01E+04	5.05E+03	
B	1383050	480301	JUL-29-92	1.01E+04	5.05E+03	
	1383050	480297	JUL-29-92	1.01E+04	5.05E+03	
	1383050	480300	JUL-29-92	1.01E+04	5.05E+03	Highest of 3 readings - 2nd time taking this reading
	1383050	480296	JUL-29-92	1.01E+04	5.05E+03	
B	1383060	480306	JUL-29-92	1.01E+04	5.05E+03	Highest of 3 readings
	1383060	480306	JUL-29-92	1.01E+04	5.05E+03	
B	1383075	480297	JUL-29-92	1.01E+04	5.05E+03	Highest of 2 readings
	1383075	480125	AUG-04-92	1.01E+04	5.05E+03	
B	1383121	480225	JUL-29-92	1.01E+04	5.05E+03	
B	1382760	480150	JUL-30-92	1.02E+04	5.10E+03	Highest of 3 readings

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY IN SOILS
AROUND THE SEWAGE TREATMENT PLANT

	E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
B	1382855	479925	JUL-31-92	1.02E+04	5.10E+03	
	1382878	480100	JUL-28-92	1.02E+04	5.10E+03	Highest of 3 readings
	1383050	480295	JUL-29-92	1.02E+04	5.10E+03	
	1383050	480298	JUL-29-92	1.02E+04	5.10E+03	
	1383050	480299	JUL-29-92	1.02E+04	5.10E+03	
	1383070	480300	JUL-29-92	1.02E+04	5.10E+03	
	1383125	480200	AUG-04-92	1.02E+04	5.10E+03	Highest of 3 readings
	1383150	479875	AUG-03-92	1.02E+04	5.10E+03	
	1383150	480125	AUG-04-92	1.02E+04	5.10E+03	
B	1382880	480050	JUL-30-92	1.03E+04	5.15E+03	
	1383050	480285	JUL-29-92	1.03E+04	5.15E+03	
	1383050	480280	JUL-29-92	1.03E+04	5.15E+03	
	1383100	480225	JUL-27-92	1.03E+04	5.15E+03	
B	1383100	480280	JUL-27-92	1.03E+04	5.15E+03	
	1383125	480025	AUG-04-92	1.03E+04	5.15E+03	
	1383125	480175	AUG-04-92	1.03E+04	5.15E+03	
	1382800	480150	JUL-30-92	1.04E+04	5.20E+03	Muddy and slushy
	1382850	480150	JUL-30-92	1.04E+04	5.20E+03	
	1382875	480125	JUL-30-92	1.04E+04	5.20E+03	
	1382880	479950	JUL-30-92	1.04E+04	5.20E+03	
	1382925	480185	JUL-30-92	1.04E+04	5.20E+03	
	1383075	480280	JUL-29-92	1.04E+04	5.20E+03	
	1383075	480295	JUL-29-92	1.04E+04	5.20E+03	
	1383075	480285	JUL-29-92	1.04E+04	5.20E+03	
	1383100	480125	AUG-04-92	1.04E+04	5.20E+03	
	1382850	479702	JUL-31-92	1.05E+04	5.25E+03	
	1382879	480100	JUL-28-92	1.05E+04	5.25E+03	
B	1382880	480075	JUL-30-92	1.05E+04	5.25E+03	
	1382900	480150	JUL-30-92	1.05E+04	5.25E+03	
	1382900	480100	JUL-28-92	1.05E+04	5.25E+03	
	1382924	480000	JUL-28-92	1.05E+04	5.25E+03	
B	1382987	480210	JUL-30-92	1.05E+04	5.25E+03	Along the fence
	1383100	480275	JUL-27-92	1.05E+04	5.25E+03	Highest of 3 readings
	1383120	480225	JUL-29-92	1.05E+04	5.25E+03	
	1382880	480100	JUL-28-92	1.06E+04	5.30E+03	
B	1382912	479760	JUL-31-92	1.06E+04	5.30E+03	
B	1382923	480000	JUL-28-92	1.06E+04	5.30E+03	
	1383000	480210	JUL-27-92	1.07E+04	5.35E+03	
	1383045	480275	JUL-29-92	1.07E+04	5.35E+03	
	1383050	480275	JUL-29-92	1.07E+04	5.35E+03	
	1383150	480000	AUG-03-92	1.07E+04	5.35E+03	
	1382900	480050	JUL-30-92	1.08E+04	5.40E+03	
	1383000	480225	JUL-28-92	1.08E+04	5.40E+03	
	1383075	480275	JUL-29-92	1.08E+04	5.40E+03	
	1383100	480100	AUG-04-92	1.08E+04	5.40E+03	
	1382850	479704	JUL-31-92	1.09E+04	5.45E+03	
B	1382900	479755	JUL-31-92	1.09E+04	5.45E+03	
	1383225	479925	AUG-03-92	1.09E+04	5.45E+03	
	1382882	479950	JUL-30-92	1.10E+04	5.50E+03	
B	1382883	479925	JUL-30-92	1.10E+04	5.50E+03	
B	1382911	479725	JUL-31-92	1.10E+04	5.50E+03	
	1383028	479875	AUG-03-92	1.10E+04	5.50E+03	
	1383300	480075	AUG-03-92	1.10E+04	5.50E+03	Cow path
	1383025	480075	AUG-04-92	1.11E+04	5.55E+03	
042	1383150	480100	AUG-04-92	1.12E+04	5.60E+03	
	1382900	480075	JUL-30-92	1.13E+04	5.65E+03	
	1382925	480025	JUL-30-92	1.13E+04	5.65E+03	
	1383250	479900	AUG-03-92	1.13E+04	5.65E+03	

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY OF 300 pCi/g TOTAL URANIUM
IN SOILS AROUND THE SEWAGE TREATMENT PLANT

E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
1382940	480000	8-26-92	5.13E+03	2.57E+03	Along west rad rope inside STP
1382940	479925	8-26-92	6.46E+03	3.23E+03	Along west rad rope inside STP
1382925	480000	8-26-92	6.58E+03	3.29E+03	Gravel
1382940	480025	8-26-92	6.67E+03	3.34E+03	Along west rad rope inside STP
1382925	479915	8-26-92	7.16E+03	3.58E+03	Gravel
1382925	479975	8-26-92	7.52E+03	3.76E+03	Gravel
1383310	480075	8-25-92	7.57E+03	3.79E+03	Approximately 5 feet east of property fence
1382940	479950	8-26-92	7.67E+03	3.84E+03	Along west rad rope inside STP
1383325	479900	8-25-92	7.68E+03	3.84E+03	Approximately 5 feet east of property fence
1383310	480100	8-25-92	7.90E+03	3.95E+03	Approximately 5 feet east of property fence
1382940	479975	8-26-92	7.92E+03	3.96E+03	Along west rad rope inside STP
1383310	479975	8-25-92	8.05E+03	4.03E+03	Approximately 5 feet east of property fence
1383310	479925	8-25-92	8.12E+03	4.06E+03	Approximately 5 feet east of property fence
1383310	480125	8-25-92	8.35E+03	4.18E+03	Approximately 5 feet east of property fence
1383310	480170	8-25-92	8.45E+03	4.23E+03	Approximately 5 feet east of property fence
1383270	479975	8-25-92	8.52E+03	4.26E+03	
1382925	479900	8-26-92	8.59E+03	4.30E+03	Gravel
1383310	480150	8-25-92	8.68E+03	4.34E+03	Approximately 5 feet east of property fence
1383310	479950	8-25-92	8.77E+03	4.39E+03	Approximately 5 feet east of property fence
1383310	480000	8-25-92	8.84E+03	4.42E+03	Approximately 5 feet east of property fence
1382917	479900	8-27-92	9.03E+03	4.52E+03	Along Fence West of STP
1382940	480050	8-26-92	9.19E+03	4.60E+03	Along west rad rope inside STP
1382920	480000	8-27-92	9.68E+03	4.84E+03	Along Fence West of STP
1383310	480025	8-25-92	9.80E+03	4.90E+03	Approximately 5 feet east of property fence
1383310	480050	8-25-92	1.01E+04	5.05E+03	Approximately 5 feet east of property fence
1383273	479975	8-25-92	1.01E+04	5.05E+03	
1382921	479975	8-27-92	1.04E+04	5.20E+03	Along Fence West of STP
1382925	480200	8-26-92	1.06E+04	5.30E+03	North of Incinerator (inside STP)
1382921	479925	8-27-92	1.07E+04	5.35E+03	Along Fence West of STP
1382917	479925	8-27-92	1.10E+04	5.50E+03	Along Fence West of STP
1383120	480200	8-26-92	1.12E+04	5.60E+03	Regulated Area Northeast of Incinerator
1383275	479950	8-25-92	1.15E+04	5.75E+03	
1382975	480200	8-26-92	1.16E+04	5.80E+03	North of Incinerator (inside STP)
1383275	479970	8-25-92	1.17E+04	5.85E+03	
1383100	480200	8-26-92	1.18E+04	5.90E+03	Regulated Area Northeast of Incinerator
1383275	479925	8-25-92	1.20E+04	6.00E+03	
1383035	480100	8-26-92	1.21E+04	6.05E+03	Across Driveway from Incinerator
1382921	480110	8-27-92	1.21E+04	6.05E+03	Along Fence West of STP
1383100	480174	8-26-92	1.22E+04	6.10E+03	Regulated Area Northeast of Incinerator
1382925	480025	8-26-92	1.22E+04	6.10E+03	Gravel
1383100	480160	8-26-92	1.23E+04	6.15E+03	Regulated Area Northeast of Incinerator
1382923	480110	8-27-92	1.23E+04	6.15E+03	Along Fence West of STP
1382923	480100	8-27-92	1.24E+04	6.20E+03	Along Fence West of STP
1383072	480200	8-26-92	1.25E+04	6.25E+03	North of Incinerator (inside STP)
1383275	479975	8-25-92	1.26E+04	6.30E+03	
1383085	480200	8-26-92	1.27E+04	6.35E+03	Regulated Area Northeast of Incinerator
1383085	480160	8-26-92	1.30E+04	6.50E+03	Regulated Area Northeast of Incinerator
1382921	480025	8-27-92	1.30E+04	6.50E+03	Along Fence West of STP
1382925	479950	8-26-92	1.31E+04	6.55E+03	Gravel
1383085	480150	8-26-92	1.32E+04	6.60E+03	Across Driveway from Incinerator
1383072	480165	8-26-92	1.34E+04	6.70E+03	North of Incinerator (inside STP)
1382921	479950	8-27-92	1.35E+04	6.75E+03	Along Fence West of STP
1383000	480200	8-26-92	1.36E+04	6.80E+03	North of Incinerator (inside STP)
1383050	480200	8-26-92	1.36E+04	6.80E+03	North of Incinerator (inside STP)
1382950	480200	8-26-92	1.38E+04	6.90E+03	North of Incinerator (inside STP)
1383030	480100	8-26-92	1.38E+04	6.90E+03	Across Driveway from Incinerator
1382921	480100	8-27-92	1.38E+04	6.90E+03	Along Fence West of STP
1383275	479973	8-25-92	1.39E+04	6.95E+03	

SHIELDED-SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY OF 300 pCi/g TOTAL URANIUM
IN SOILS AROUND THE SEWAGE TREATMENT PLANT

E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
1383025	+80200	8-26-92	1.42E+04	7.10E+03	North of Incinerator (inside STP)
1383015	+80080	8-26-92	1.43E+04	7.15E+03	Across Driveway from Incinerator
1383275	+79870	8-25-92	1.43E+04	7.15E+03	
1383280	+79975	8-25-92	1.46E+04	7.30E+03	
1383029	+80100	8-26-92	1.47E+04	7.35E+03	Across Driveway from Incinerator
1382925	+80182	8-26-92	1.47E+04	7.35E+03	North of Incinerator (inside STP)
1382912	+80129	8-27-92	1.47E+04	7.35E+03	Along Fence West of STP
1383265	+79900	8-25-92	1.49E+04	7.45E+03	
1382925	+80050	8-26-92	1.53E+04	7.65E+03	Gravel
1382922	+80079	8-27-92	1.53E+04	7.65E+03	Along Fence West of STP
1382921	+80072	8-27-92	1.54E+04	7.70E+03	Along Fence West of STP
1382921	+80050	8-27-92	1.54E+04	7.70E+03	Along Fence West of STP
1383084	+80150	8-26-92	1.54E+04	7.70E+03	Across Driveway from Incinerator
1383000	+80190	8-26-92	1.55E+04	7.75E+03	North of Incinerator (inside STP)
1383275	+79871	8-25-92	1.55E+04	7.75E+03	
1383028	+80100	8-26-92	1.56E+04	7.80E+03	Across Driveway from Incinerator
1383050	+80125	8-26-92	1.56E+04	7.80E+03	Across Driveway from Incinerator
1383275	+79988	8-25-92	1.57E+04	7.85E+03	
1382912	+80124	8-27-92	1.57E+04	7.85E+03	Along Fence West of STP
1383275	+79990	8-25-92	1.58E+04	7.90E+03	
1382921	+80000	8-27-92	1.58E+04	7.90E+03	Along Fence West of STP
1383015	+80082	8-26-92	1.58E+04	7.90E+03	Across Driveway from Incinerator
1383000	+80188	8-26-92	1.59E+04	7.95E+03	
1383275	+79910	8-25-92	1.60E+04	8.00E+03	
1383278	+79975	8-25-92	1.62E+04	8.10E+03	
1383271	+79900	8-25-92	1.65E+04	8.25E+03	
1383923	+80077	8-27-92	1.65E+04	8.25E+03	Along Fence West of STP
1383274	+79975	8-25-92	1.66E+04	8.30E+03	
1382912	+80175	8-27-92	1.66E+04	8.30E+03	Along Fence West of STP
1382925	+80181	8-26-92	1.68E+04	8.40E+03	North of Incinerator (inside STP)
B 1383275	+79872	8-25-92	1.71E+04	8.55E+03	South Boundary #2
B 1382921	+80150	8-27-92	1.71E+04	8.55E+03	Along Fence West of STP
B 1383060	+80165	8-26-92	1.72E+04	8.60E+03	East Incinerator Boundary
B 1383275	+79974	8-25-92	1.73E+04	8.65E+03	South Boundary #1
1383275	+79873	8-25-92	1.75E+04	8.75E+03	
B 1383270	+79900	8-25-92	1.75E+04	8.75E+03	West Boundary #2
B 1383275	+79909	8-25-92	1.76E+04	8.80E+03	North Boundary #2
B 1383027	+80100	8-26-92	1.78E+04	8.90E+03	Across Driveway from Incinerator - Boundary for #3
1383275	+79907	8-25-92	1.79E+04	8.95E+03	
1383275	+79874	8-25-92	1.80E+04	9.00E+03	
1383275	+79908	8-25-92	1.82E+04	9.10E+03	
B 1383000	+80185	8-26-92	1.83E+04	9.15E+03	North Incinerator Boundary
1383275	+79906	8-25-92	1.84E+04	9.20E+03	
1383275	+79900	8-25-92	1.84E+04	9.20E+03	Point #2 (SE)
1383050	+80165	8-26-92	1.85E+04	9.25E+03	North of Incinerator (inside STP)
1383275	+79900	8-25-92	1.85E+04	9.25E+03	
B 1383277	+79975	8-25-92	1.85E+04	9.25E+03	East Boundary #1
1383055	+80165	8-26-92	1.88E+04	9.40E+03	
B 1383275	+79987	8-25-92	1.88E+04	9.40E+03	North Boundary #1
B 1383083	+80150	8-26-92	1.89E+04	9.45E+03	Across Driveway from Incinerator - Boundary for #3
B 1383049	+80125	8-26-92	1.89E+04	9.45E+03	Across Driveway from Incinerator - Boundary for #3
B 1382915	+80124	8-27-92	1.89E+04	9.45E+03	Along Fence West of STP
1383275	+79905	8-25-92	1.91E+04	9.55E+03	
1383275	+79875	8-25-92	1.93E+04	9.65E+03	
1383075	+80145	8-26-92	1.94E+04	9.70E+03	Across Driveway from Incinerator
B 1382923	+80075	8-27-92	1.94E+04	9.70E+03	Along Fence West of STP - Hot Spot
B 1382921	+80179	8-27-92	1.95E+04	9.75E+03	Along Fence West of STP
B 044 1382923	+80076	8-27-92	1.96E+04	9.80E+03	Along Fence West of STP - Hot Spot

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY OF 300 pCi/g TOTAL URANIUM
IN SOILS AROUND THE SEWAGE TREATMENT PLANT

	E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
B	1382923	480072	8-27-92	1.98E+04	9.90E+03	Along Fence West of STP - Hot Spot
	1383275	479980	8-25-92	2.01E+04	1.01E+04	
	1383290	480184	8-26-92	2.05E+04	1.03E+04	In Contaminated Area along East STP Fence
	1383025	480100	8-26-92	2.09E+04	1.05E+04	Across Driveway from Incinerator - Point #3
	1383000	480180	8-26-92	2.10E+04	1.05E+04	North of Incinerator (inside STP)
	1382925	480175	8-26-92	2.14E+04	1.07E+04	North of Incinerator (inside STP)
	1383275	479895	8-25-92	2.16E+04	1.08E+04	
	1382925	479925	8-26-92	2.19E+04	1.10E+04	Gravel - Flagged location, but not part of boundary
B	1383275	479975	8-25-92	2.23E+04	1.12E+04	Point #1 (SE) - West Boundary #1
B	1382921	480125	8-27-92	2.27E+04	1.14E+04	Along Fence West of STP
-B	1382925	480180	8-26-92	2.28E+04	1.14E+04	West Incinerator Boundary
	1383290	480005	8-26-92	2.31E+04	1.16E+04	In Contaminated Area along East STP Fence
B	1382919	480125	8-27-92	2.36E+04	1.18E+04	Along Fence West of STP
B	1382921	480130	8-27-92	2.39E+04	1.20E+04	Along Fence West of STP
	1383060	480145	8-26-92	2.43E+04	1.22E+04	Across Driveway from Incinerator
	1383275	479880	8-25-92	2.47E+04	1.24E+04	
	1383280	479900	8-25-92	2.53E+04	1.27E+04	
B	1383015	480084	8-26-92	2.53E+04	1.27E+04	Across Driveway from Incinerator - Boundary for #3
	1382975	480165	8-26-92	2.56E+04	1.28E+04	North of Incinerator (inside STP)
	1383275	479885	8-25-92	2.63E+04	1.32E+04	
	1383290	480175	8-26-92	2.65E+04	1.33E+04	In Contaminated Area along East STP Fence
	1383050	480139	8-26-92	2.68E+04	1.34E+04	Across Driveway from Incinerator
	1383070	480145	8-26-92	2.75E+04	1.38E+04	Across Driveway from Incinerator
	1383000	480175	8-26-92	2.87E+04	1.44E+04	North of Incinerator (inside STP)
	1382940	480075	8-26-92	2.99E+04	1.50E+04	Along west rad rope inside STP
	1382925	480150	8-26-92	3.11E+04	1.56E+04	West of Incinerator (inside STP)
	1383025	480165	8-26-92	3.17E+04	1.59E+04	North of Incinerator (inside STP)
	1383045	480125	8-26-92	3.18E+04	1.59E+04	Across Driveway from Incinerator
	1383080	480150	8-26-92	3.31E+04	1.66E+04	Across Driveway from Incinerator
	1383275	479890	8-25-92	3.36E+04	1.68E+04	
	1383015	480085	8-26-92	3.49E+04	1.75E+04	Across Driveway from Incinerator
	1383290	480150	8-26-92	3.57E+04	1.79E+04	In Contaminated Area along East STP Fence
	1383025	480117	8-26-92	3.62E+04	1.81E+04	Across Driveway from Incinerator
	1382925	480100	8-26-92	3.63E+04	1.82E+04	Gravel
	1382925	480110	8-26-92	3.63E+04	1.82E+04	West of Incinerator (inside STP)
	1382940	480090	8-26-92	3.68E+04	1.84E+04	Along west rad rope inside STP
	1383000	480165	8-26-92	3.80E+04	1.90E+04	North of Incinerator (inside STP)
B	1383285	479900	8-25-92	3.85E+04	1.93E+04	East Boundary #2
	1383290	480125	8-26-92	3.92E+04	1.96E+04	In Contaminated Area along East STP Fence
	1383275	479985	8-25-92	4.06E+04	2.03E+04	
	1383031	480125	8-26-92	4.12E+04	2.06E+04	Across Driveway from Incinerator
	1383290	480025	8-26-92	4.30E+04	2.15E+04	In Contaminated Area along East STP Fence
	1383290	480100	8-26-92	4.46E+04	2.23E+04	In Contaminated Area along East STP Fence
	1383290	480075	8-26-92	5.92E+04	2.96E+04	In Contaminated Area along East STP Fence
	1383290	480050	8-26-92	6.78E+04	3.39E+04	In Contaminated Area along East STP Fence
B	1382925	480075	8-26-92	7.08E+04	3.54E+04	Gravel - Concrete Slabs - South Incinerator Boundary
	1382925	480125	8-26-92	7.64E+04	3.82E+04	West of Incinerator (inside STP)

B = Boundary point for soil excavation at 300 pCi/g total uranium

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY IN SOILS
AROUND THE SEWAGE TREATMENT PLANT

	E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
B	1382870	479950	JUL-31-92	1.14E+04	5.70E+03	
	1383100	480050	AUG-04-92	1.14E+04	5.70E+03	
B	1383300	480025	AUG-03-92	1.14E+04	5.70E+03	Cow path
	1382882	479925	JUL-30-92	1.15E+04	5.75E+03	
B	1382900	479700	JUL-31-92	1.15E+04	5.75E+03	
	1382880	479925	JUL-30-92	1.20E+04	6.00E+03	
	1382915	480175	JUL-30-92	1.20E+04	6.00E+03	
	1383225	479875	AUG-03-92	1.20E+04	6.00E+03	
	1383200	479875	AUG-03-92	1.21E+04	6.05E+03	
	1382860	479925	JUL-31-92	1.22E+04	6.10E+03	
	1382900	479750	JUL-31-92	1.22E+04	6.10E+03	
	1383025	480050	AUG-04-92	1.23E+04	6.15E+03	
	1383075	479900	AUG-03-92	1.23E+04	6.15E+03	
	1383275	479950	AUG-03-92	1.24E+04	6.20E+03	
	1382910	479760	JUL-31-92	1.25E+04	6.25E+03	
	1382910	479725	JUL-31-92	1.26E+04	6.30E+03	
	1383050	480100	AUG-04-92	1.26E+04	6.30E+03	On top of water filter inside STP
	1383100	479875	AUG-03-92	1.26E+04	6.30E+03	
	1383125	479875	AUG-03-92	1.26E+04	6.30E+03	
	1383125	480000	AUG-03-92	1.26E+04	6.30E+03	
	1383150	479975	AUG-03-92	1.26E+04	6.30E+03	Next to white bldg.
	1383050	479925	AUG-03-92	1.27E+04	6.35E+03	
	1383050	479875	AUG-03-92	1.27E+04	6.35E+03	
	1382875	479950	JUL-30-92	1.28E+04	6.40E+03	
B	1382920	480025	JUL-30-92	1.29E+04	6.45E+03	
	1383225	479900	AUG-03-92	1.29E+04	6.45E+03	
	1382926	480100	JUL-28-92	1.30E+04	6.50E+03	
	1383150	480075	AUG-04-92	1.30E+04	6.50E+03	
	1383175	480000	AUG-03-92	1.32E+04	6.60E+03	
B	1382865	479725	JUL-31-92	1.35E+04	6.75E+03	
	1383275	480000	AUG-03-92	1.37E+04	6.85E+03	
	1383125	479900	AUG-03-92	1.38E+04	6.90E+03	
	1383050	480125	AUG-04-92	1.40E+04	7.00E+03	
	1383200	479900	AUG-03-92	1.41E+04	7.05E+03	
	1383150	480025	AUG-04-92	1.42E+04	7.10E+03	
B	1383300	480150	AUG-03-92	1.42E+04	7.10E+03	Cow path
	1383200	480000	AUG-03-92	1.43E+04	7.15E+03	
	1383275	479925	AUG-03-92	1.43E+04	7.15E+03	
	1383300	480050	AUG-03-92	1.43E+04	7.15E+03	Cow path
	1383150	480050	AUG-04-92	1.47E+04	7.35E+03	
	1383125	479975	AUG-03-92	1.48E+04	7.40E+03	
	1383300	480125	AUG-03-92	1.49E+04	7.45E+03	Cow path
	1382870	479725	JUL-31-92	1.50E+04	7.50E+03	
	1383275	479875	AUG-03-92	1.52E+04	7.60E+03	
	1383125	480050	AUG-04-92	1.53E+04	7.65E+03	
	1383050	479900	AUG-03-92	1.54E+04	7.70E+03	
	1383075	480103	AUG-04-92	1.55E+04	7.75E+03	On top of water filter inside STP
	1382925	480175	JUL-30-92	1.56E+04	7.80E+03	Wet over near corner
	1383300	480100	AUG-03-92	1.62E+04	8.10E+03	Cow path
	1383025	479900	AUG-03-92	1.64E+04	8.20E+03	
	1382900	479725	JUL-31-92	1.67E+04	8.35E+03	
	1382875	479925	JUL-30-92	1.68E+04	8.40E+03	
	1383200	479950	AUG-03-92	1.73E+04	8.65E+03	
	1383025	480100	AUG-04-92	2.12E+04	1.06E+04	Near insinerator inside STP
	1383275	479900	AUG-03-92	2.53E+04	1.27E+04	
	1383275	479975	AUG-03-92	2.52E+04	1.31E+04	

TABLE 1, RADIOLOGICAL WALKOVER SURVEY DATA

SHIELDED SPA-3 (#1793) READINGS FOR RADIATION SURVEY
TO DETERMINE EXCAVATION BOUNDARY OF 300 pCi/g TOTAL URANIUM
IN SOILS AROUND THE SEWAGE TREATMENT PLANT

	E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
B	1383275	+79872	8-25-92	1.71E+04	8.55E+03	South Boundary #2
B	1383270	+79900	8-25-92	1.75E+04	8.75E+03	West Boundary #2
B	1383285	+79900	8-25-92	3.85E+04	1.93E+04	East Boundary #2
B	1383275	+79909	8-25-92	1.76E+04	8.80E+03	North Boundary #2
B	1383275	+79974	8-25-92	1.73E+04	8.65E+03	South Boundary #1
B	1383275	+79975	8-25-92	2.23E+04	1.12E+04	Point #1 (SE) - West Boundary #1
B	1383277	+79975	8-25-92	1.85E+04	9.25E+03	East Boundary #1
B	1383275	+79987	8-25-92	1.88E+04	9.40E+03	North Boundary #1
B	1382923	+80072	8-27-92	1.98E+04	9.90E+03	Along Fence West of STP - Hot Spot
B	1382923	+80075	8-27-92	1.94E+04	9.70E+03	Along Fence West of STP - Hot Spot
B	1382925	+80075	8-26-92	7.08E+04	3.54E+04	Gravel - Concrete Slabs - South Incinerator Bou
B	1382923	+80076	8-27-92	1.96E+04	9.80E+03	Along Fence West of STP - Hot Spot
B	1383015	+80084	8-26-92	2.53E+04	1.27E+04	Across Driveway from Incinerator - Boundary for
B	1383027	+80100	8-26-92	1.78E+04	8.90E+03	Across Driveway from Incinerator - Boundary for
B	1382915	+80124	8-27-92	1.89E+04	9.45E+03	Along Fence West of STP
B	1382919	+80125	8-27-92	2.36E+04	1.18E+04	Along Fence West of STP
B	1382921	+80125	8-27-92	2.27E+04	1.14E+04	Along Fence West of STP
B	1383049	+80125	8-26-92	1.89E+04	9.45E+03	Across Driveway from Incinerator - Boundary for
B	1382921	+80130	8-27-92	2.39E+04	1.20E+04	Along Fence West of STP
B	1382921	+80150	8-27-92	1.71E+04	8.55E+03	Along Fence West of STP
B	1383083	+80150	8-26-92	1.89E+04	9.45E+03	Across Driveway from Incinerator - Boundary for
B	1383060	+80165	8-26-92	1.72E+04	8.60E+03	East Incinerator Boundary
B	1382921	+80179	8-27-92	1.95E+04	9.75E+03	Along Fence West of STP
B	1382925	+80180	8-26-92	2.28E+04	1.14E+04	West Incinerator Boundary
B	1383000	+80185	8-26-92	1.83E+04	9.15E+03	North Incinerator Boundary

SHIELDED SPA-3 (#1793) BOUNDARY READINGS
FOR THE SOIL EXCAVATION PROJECT
AROUND THE SEWAGE TREATMENT PLANT

	E Coord	N Coord	Date	SPA-3 Reading (cp2m)	SPA-3 Reading (cpm)	Comments
B	1382875	479700	JUL-31-92	9.95E+03	4.98E+03	Highest of 3 readings - Southern most radium spot
B	1382900	479700	JUL-31-92	1.15E+04	5.75E+03	Southern most radium spot
B	1382865	479725	JUL-31-92	1.35E+04	6.75E+03	Southern most radium spot
B	1382911	479725	JUL-31-92	1.10E+04	5.50E+03	Southern most radium spot
B	1382900	479755	JUL-31-92	1.09E+04	5.45E+03	Southern most radium spot
B	1382912	479760	JUL-31-92	1.06E+04	5.30E+03	Southern most radium spot
B	1382855	479925	JUL-31-92	1.02E+04	5.10E+03	Radium spot adjacent to Sewage Treatment Plant drive
B	1382883	479925	JUL-30-92	1.10E+04	5.50E+03	Radium spot adjacent to Sewage Treatment Plant drive
B	1382870	479950	JUL-31-92	1.14E+04	5.70E+03	Radium spot adjacent to Sewage Treatment Plant drive
B	1382883	479950	JUL-30-92	1.01E+04	5.05E+03	Radium spot adjacent to Sewage Treatment Plant drive
B	1382923	480000	JUL-28-92	1.06E+04	5.30E+03	West of Sewage Treatment Plant
B	1382920	480025	JUL-30-92	1.29E+04	6.45E+03	West of Sewage Treatment Plant
B	1383300	480025	AUG-03-92	1.14E+04	5.70E+03	Cow path
B	1382880	480050	JUL-30-92	1.03E+04	5.15E+03	West of Sewage Treatment Plant
B	1382880	480075	JUL-30-92	1.05E+04	5.25E+03	West of Sewage Treatment Plant
B	1382870	480125	JUL-30-92	1.00E+04	5.00E+03	Highest of 2 readings - West of Sewage Treatment Plant
B	1382760	480150	JUL-30-92	1.02E+04	5.10E+03	Highest of 3 readings - West of Sewage Treatment Plant
B	1383300	480150	AUG-03-92	1.42E+04	7.10E+03	Cow path
B	1382910	480175	JUL-30-92	1.00E+04	5.00E+03	West of Sewage Treatment Plant
B	1383127	480205	JUL-29-92	1.00E+04	5.00E+03	North of Sewage Treatment Plant
B	1382987	480210	JUL-30-92	1.05E+04	5.25E+03	Along the fence - North of Sewage Treatment Plant
B	1383121	480225	JUL-29-92	1.01E+04	5.05E+03	North of Sewage Treatment Plant
B	1383000	480246	JUL-28-92	1.01E+04	5.05E+03	North of Sewage Treatment Plant
B	1383040	480275	JUL-29-92	1.01E+04	5.05E+03	North of Sewage Treatment Plant
B	1383100	480280	JUL-27-92	1.03E+04	5.15E+03	North of Sewage Treatment Plant
B	1383075	480297	JUL-29-92	1.01E+04	5.05E+03	Highest of 2 readings - North of Sewage Treatment Plant
B	1383050	480301	JUL-29-92	1.01E+04	5.05E+03	North of Sewage Treatment Plant
B	1383060	480306	JUL-29-92	1.01E+04	5.05E+03	Highest of 3 readings - North of Sewage Treatment Plant

B = Boundary Point for Soil Excavation

APPENDIX III
SOIL SAMPLING DATA

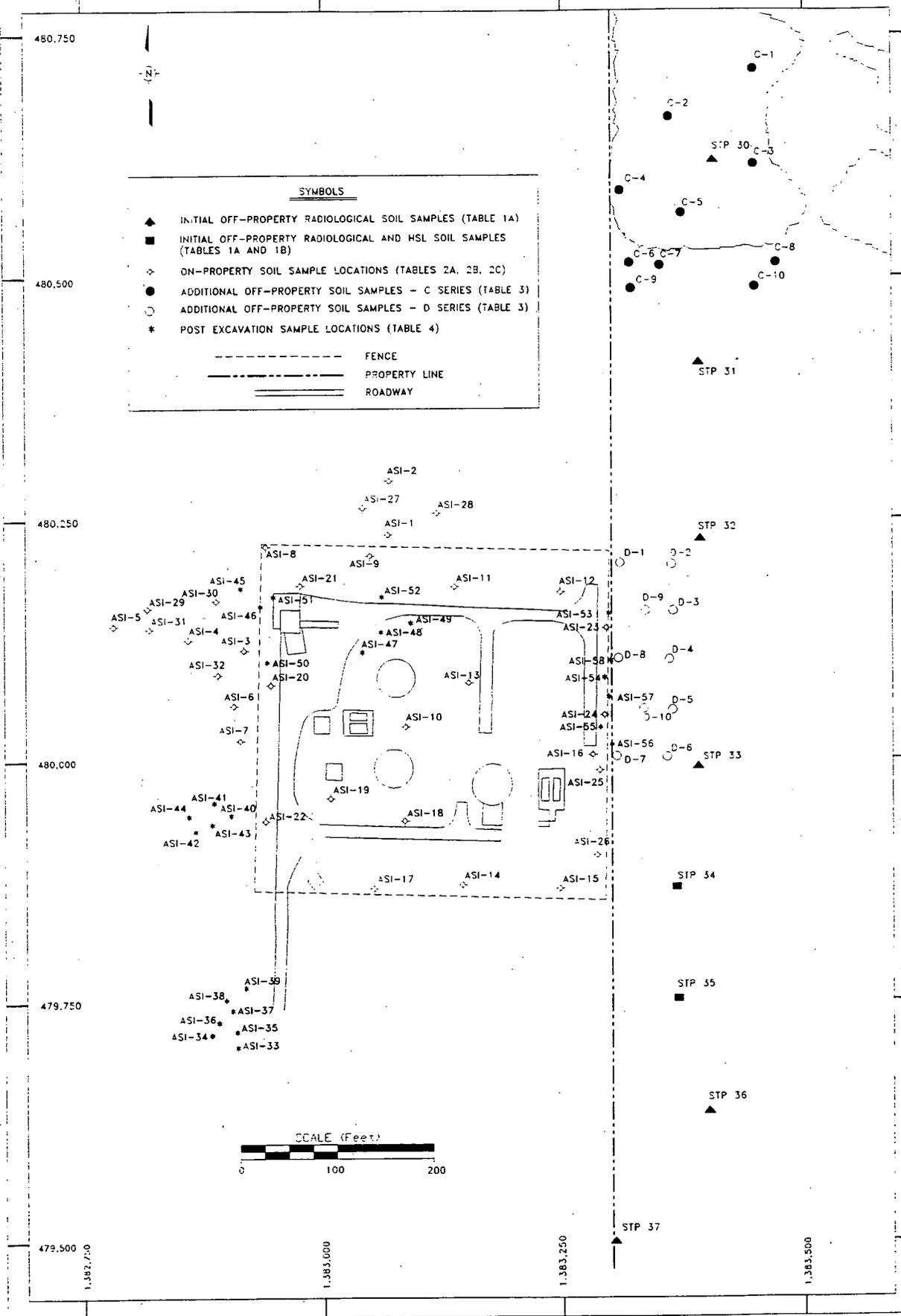


FIGURE 1, SOIL SAMPLE LOCATION MAP

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TABLE 1A - INITIAL OFF - PROPERTY SOIL SAMPLING DATA - RADIOLOGICAL RESULTS

Soil Sample Location	Depth (in.)	ASI ID #	U235/											Total U (pCi/g)
			Ru-106 (pCi/g)	Cs-137 (pCi/g)	Ra-226 (pCi/g)	Ra-228 (pCi/g)	Th-228 (pCi/g)	Th-230 (pCi/g)	Th-232 (pCi/g)	U-234 (pCi/g)	U-236 (pCi/g)	U-238 (pCi/g)	Total U (ug/g)	
STP 30	Surface	102422	<1.0	0.67	1.29	1.33	1.49	2.03	1.26	23.80	1.56	26.00	86.50	58.47
STP 31	Surface	102423	<1.0	0.17	1.42	1.10	1.44	1.55	1.06	6.99	<0.6	6.53	26.70	18.05
STP 32	Surface	102424	<1.0	0.22	1.12	1.40	1.30	1.46	1.00	7.41	0.61	7.22	25.20	17.04
STP 33	Surface	102425	<1.0	0.34	1.31	1.51	1.43	1.36	1.16	5.77	<0.6	6.12	15.90	10.75
STP 34	Surface	102430	<1.0	0.22	1.37	1.29	1.37	1.81	1.04	5.65	<0.6	5.48	20.70	13.99
STP 35	Surface	102431	<1.0	0.31	1.39	1.28	1.29	1.65	1.13	7.77	<0.6	7.77	30.70	20.75
STP 36	Surface	102426	<1.0	0.47	1.15	1.17	1.20	1.47	1.05	6.20	<0.6	6.27	23.00	15.55
STP 37	Surface	102427	<1.0	0.29	1.18	1.19	1.41	1.89	1.23	6.14	<0.6	6.02	24.80	16.76

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TABLE 1B - INITIAL OFF-PROPERTY SOIL SAMPLING DATA - HSL RESULTS

Soil		Volatile Organic Results, ug/kg				Semi-volatile Organic Results, ug/kg			
Sample Location	Depth (in.)	ID #	(RQLs)**	Acetone	Toluene	Methylene Chloride	Benzoic Acid		
STP 34	Surface	102430		50	10	10	2400		
				9BJ	2BJ	26B	130 J		
STP 35	Surface	102431		6BJ	2BJ	21B	170 J		

The full HSL list was analyzed, only analytes for which one sample had a result above the detection limit is listed.

All Dioxin Results were below the laboratory's detection limit.

* = Results were below the laboratory's detection limit.

** Required Quantitation Limit per SCQ, Table 2--4.

ORGANIC DATA QUALIFIERS:

B = The analyte was also found in the associated blank.

J = Result is an estimated value.

TABLE 1B - INITIAL OFF-PROPERTY SOIL SAMPLING DATA - HSL RESULTS

Inorganic Results, mg/kg

Soil Sample Location	Depth (in.)	ID #	(UTL)**	Aluminum	13724	Arsenic	10.2	Barium	161.6	Calcium	5791	Chromium	17.8	Cobalt	17.8	Copper	16.4	Iron	25979	Lead	25.6
STP 34	Surface	102430		10200		7.9 N		68.4		1320		13.4		9 B		11.9		14400		27.1 *	
STP 35	Surface	102431		12900		7.3 + N		74.5		2590		17		11 B		10.5		18500		18.1 *	

Soil Sample Location	Depth (in.)	ID #	(UTL)**	Magnesium	3334	Manganese	2516	Nickel	27.3	Potassium	1402	Selenium	0.72	Silicon	1984	Sodium	60	Vanadium	35.3	Zinc	68.5
STP 34	Surface	102430		1620		628 *		11.1		680 B		--		1980 EN*		64 B		26.9		46.3	
STP 35	Surface	102431		2450		610 *		15.4		1420		0.54 BW		2010 EN*		45.7 B		29.7		76.2	

Soil Sample Location	Depth (in.)	ID #	(UTL)**	Cyanide	0.34	pH	N/A
STP 34	Surface	102430		0.14 B		5.26	
STP 35	Surface	102431		0.29 B		6.36	

The full HSL list was analyzed, only analytes for which at least one sample had a result above the detection limit is listed.

--* = Results were below the laboratory's detection limit.
 ** Upper 95% Tolerance Limit, Background Study Report: FEMP-05BG-2, March 19, 1993.

INORGANIC DATA QUALIFIERS:
 B = Reported value was less than the Contract Required Detection Limit (CRQL), but greater than the Instrument Detection Limit (IDL).
 * = Duplicate analysis not within control limits.
 N = Spiked sample results were not within control limits.
 E = Result is an estimated value due to the presence of interference.
 W = Post-digestion spike is not out of control limits, but sample absorbance is less than 50% of spike absorbance.
 + = Correlation coefficient for the MSA is less than 0.955.

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TABLE 2A - ON-PROPERTY SOIL SAMPLING DATA - TOTAL URANIUM RESULTS

Sample Location	Total Uranium (pCi) Results at Various Depths										
	0-2"	2-4"	4-6"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"	
ASI-1	166.9	165.5	49.3	< 7.4	< 7.4						
ASI-2	152.0	136.5	52.7	< 7.4	< 7.4						
ASI-3	79.7	57.4	56.8	18.9	23.0						
ASI-4	31.1	20.3	12.2	< 7.4	< 7.4						
ASI-5	164.9	152.7	115.5	23.0	< 7.4						
ASI-6	158.8	110.8	41.2	13.5	< 7.4						
ASI-7	97.3	92.6	60.8	13.5	9.5						
ASI-8	207.4	141.9	30.4	< 7.4	< 7.4	172.3					
ASI-9	153.4	114.2	120.3	33.8	< 7.4	< 7.4					
ASI-10	113.5	77.0	36.5	16.2	9.5	< 7.4					
ASI-11	133.1	93.2	54.1	18.9	< 7.4	< 7.4					
ASI-12	108.1	52.0	< 7.4	91.2	< 7.4	< 7.4					
ASI-13	56.8	50.7	32.4	11.5	< 7.4	< 7.4					
ASI-14	67.6	58.1	41.9	15.5	< 7.4	< 7.4					
ASI-15	75.7	70.3	37.8	14.2	< 7.4	< 7.4					
ASI-16	66.2	70.3	68.2	28.4	12.2	< 7.4					
ASI-17	74.3	73.7	9.5	56.8	< 7.4	< 7.4					
ASI-18	51.4	42.6	42.6	12.8	< 7.4	< 7.4					
ASI-19	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4					
ASI-20						206.1	209.5	67.6	39.2	33.1	
ASI-21					83.8	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	
ASI-22		228.4		104.1	74.3	< 7.4	< 7.4	< 7.4	< 7.4	19.6	
ASI-23				37.8	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	
ASI-24				64.9	46.6	14.2	< 7.4	< 7.4	< 7.4	< 7.4	
ASI-25					< 7.4	< 7.4	14.9				
ASI-26				< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	
ASI-27		60.1		< 7.4	< 7.4						
ASI-28		80.4		< 7.4	< 7.4						
ASI-29		< 7.4		140.5	< 7.4						
ASI-30		69.6		< 7.4	< 7.4						
ASI-31		68.9		< 7.4	< 7.4						
ASI-32		100		< 7.4	< 7.4						

TABLE 2B - ON-PROPERTY SOIL SAMPLING DATA - RADIOLOGICAL RESULTS

Soil Sample Location	Depth (in.)	Datachem ID #	FERMCO ID #	Ra-226 (pCi/g)	Ra-228 (pCi/g)	Th-228 (pCi/g)	Th-230 (pCi/g)	Th-232 (pCi/g)	U-234 (pCi/g)	U-235/U-236 (pCi/g)	U-238 (pCi/g)	Total U (Datachem) (ug/g)	Total U (Datachem) (pCi/g)	Total U (FERMCO) (ug/g)	Total U (FERMCO) (pCi/g)
ASI-1	0-2	103501	103503	1.57	1.79	1.6	2.7	1.5	71.3	2.7	69.9	132.0	89.2	247	167.0
ASI-1	2-4	103504	103506	1.64	1.77	1.9	8.6	1.7	75.2	3.1	75.8	119.0	80.4	245	165.6
ASI-1	4-6	103507	103509	1.55	1.58	0.8	1.5	0.9	35.9	1.9	34.6	57.4	38.8	73	49.3
ASI-1	6-12	103510	103512	1.49	1.32	1.3	1.3	1.5	1.6	1.7	1.6	6.5	4.4	<11	<7.4
ASI-1	12-18	103513	103515	1.88	1.48	1.3	1.5	1.0	1.1	<0.01	1.5	2.7	1.8	<11	<7.4
ASI-2	0-2	103517	103516	1.52	1.64	1.0	1.9	1.2	60.4	2.6	62.1	115.0	77.7	225	152.1
ASI-2	2-4	103518	103519	1.45	1.69	0.8	1.6	1.0	50.1	2.4	49.4	100.0	67.6	202	136.6
ASI-2	4-6	103520	103521	1.43	1.38	1.3	1.6	1.4	19.3	1.3	18.3	37.9	25.6	78	52.7
ASI-2	6-12	103522	103523	1.38	1.31	0.8	0.9	1.2	2.3	0.2	2.3	39.7	26.8	<11	<7.4
ASI-2	12-18	103524	103525	1.64	1.46	1.0	1.6	1.0	1.5	0.1	1.4	28.8	19.5	<11	<7.4
ASI-3	0-2	103532	103535	1.24	1.27	0.7	1.6	0.7	35.9	2.0	36.7	83.5	56.4	118	79.8
ASI-3	2-4	103536	103538	1.85	1.63	0.7	1.5	0.6	27.4	1.1	28.1	65.6	44.3	85	57.5
ASI-3	4-6	103539	103541	1.72	1.64	0.4	1.5	1.1	21.9	1.4	25.0	49.4	33.4	84	56.8
ASI-3	6-12	103542	103544	1.55	1.37	0.3	0.9	0.5	17.4	0.9	18.4	38.7	26.2	28	18.9
ASI-3	12-18	103545	103547	1.51	1.30	0.5	1.0	0.8	12.8	0.8	12.7	25.2	17.0	34	23.0
ASI-4	0-2	103548	103549	1.43	1.32	1.2	1.7	1.3	13.4	0.7	14.1	16.6	11.2	46	31.1
ASI-4	2-4	103550	103551	1.43	1.23	0.9	1.5	1.0	9.1	0.3	9.4	17.5	11.8	30	20.3
ASI-4	4-6	103552	103553	1.55	1.17	0.9	1.5	1.1	5.7	0.2	5.6	7.8	5.3	18	12.2
ASI-4	6-12	103554	103555	1.57	1.34	1.1	1.1	1.5	2.1	0.1	2.4	4.1	2.8	<11	<7.4
ASI-4	12-18	103556	103557	1.54	1.38	1.2	1.5	1.3	2.3	0.1	2.7	4.2	2.8	<11	<7.4
ASI-5	0-2	103558	103559	1.57	1.66	1.3	3.4	1.7	74.0	5.0	82.5	158.0	106.8	244	164.9
ASI-5	2-4	103560	103561	1.69	1.70	1.0	2.8	1.4	73.5	4.3	76.4	147.6	99.8	226	152.8
ASI-5	4-6	103562	103563	1.50	1.49	1.8	3.0	1.8	67.2	3.6	67.6	135.6	91.7	171	115.6
ASI-5	6-12	103564	103565	1.49	1.31	1.3	1.3	1.0	9.7	0.5	9.8	22.5	15.2	34	23.0
ASI-5	12-18	103566	103567	1.37	1.30	0.8	1.5	1.1	2.5	3.8	2.4	3.8	2.6	<11	<7.4
ASI-6	0-2	103569	103570	0.96	1.25	1.0	3.4	1.9	80.7	3.8	78.7	182.0	123.0	235	158.9
ASI-6	2-4	103571	103572	0.84	1.32	1.2	1.7	1.4	53.4	2.2	54.5	129.0	87.2	164	110.9
ASI-6	4-6	103573	103574	0.91	1.17	1.1	1.5	1.1	23.4	0.9	24.0	47.1	31.8	61	41.2
ASI-6	6-12	103575	103576	0.81	0.97	1.1	1.5	1.2	3.4	0.1	3.1	6.5	4.4	20	13.5
ASI-6	12-18	103577	103578	0.81	1.10	1.0	1.4	1.0	1.3	<0.01	1.4	3.6	2.4	<11	<7.4
ASI-7	0-2	103579	103580	0.85	1.32	1.4	2.4	1.6	50.0	1.9	49.1	102.0	69.0	144	97.3
ASI-7	2-4	103581	103582	0.92	1.38	1.3	2.6	1.4	45.9	2.9	46.7	97.6	66.0	137	92.6
ASI-7	4-6	103583	103584	0.88	1.34	1.3	2.6	1.4	37.6	2.0	38.1	74.4	50.3	90	60.8
ASI-7	6-12	103585	103586	0.95	1.08	1.3	1.7	1.5	6.2	0.2	5.6	14.0	9.5	20	13.5
ASI-7	12-18	103587	103588	0.80	1.03	1.2	1.8	1.8	2.4	0.2	2.5	5.3	3.6	14	9.5
ASI-8	0-2	103677	103679	1.39	1.39	3.1	4.5	1.2	92.0	5.1	93.9	247.0	167.0	307	207.5
ASI-8	2-4	103680	103682	1.65	1.33	3.1	4.5	1.1	70.4	3.6	70.2	194.0	131.1	210	142.0
ASI-8	4-6	103683	103685	1.82	1.29	3.5	4.1	1.2	40.1	2.6	71.7	120.0	81.1	45	30.4
ASI-8	6-12	103686	103688	1.14	0.96	2.4	2.2	0.6	17.4	0.9	17.3	50.1	33.9	<11	<7.4
ASI-8	12-18	103689	103691	1.10	1.11	3.4	1.3	1.3	2.4	0.1	2.3	5.9	4.0	<11	<7.4
ASI-8	18-24	103692	103694	1.17	1.13	3.3	1.7	1.0	1.1	0.1	1.2	2.7	1.8	255	172.4
ASI-9	0-2	103715	103716	1.24	1.52	2.8	2.6	1.5	77.8	4.5	76.6	226.4	153.0	227	153.5
ASI-9	2-4	103717	103718	1.32	1.63	2.7	2.5	1.5	64.6	4.5	64.8	211.6	143.0	169	114.2
ASI-9	4-6	103719	103720	1.20	1.42	2.1	2.4	1.3	63.1	3.9	62.0	192.0	129.8	178	120.3
ASI-9	6-12	103721	103722	1.23	1.19	3.3	1.9	1.3	11.4	0.6	11.6	34.4	23.3	50	33.8
ASI-9	12-18	103723	103724	1.33	1.17	3.0	1.2	1.0	3.5	0.1	3.2	8.6	5.8	<11	<7.4
ASI-9	18-24	103725	103726	1.28	1.10	3.9	1.9	1.1	2.8	0.2	2.5	6.5	4.4	<11	<7.4
ASI-10	0-2	103701	103702	2.05	1.54	2.6	4.2	3.2	46.6	4.5	46.6	142.0	96.0	168	113.6
ASI-10	2-4	103703	103704	1.89	1.41	3.1	4.7	1.5	41.6	2.5	41.7	109.2	73.8	114	77.1
ASI-10	4-6	103705	103706	1.77	1.18	1.9	2.3	1.0	19.8	1.0	20.3	33.3	49.3	54	36.5
ASI-10	6-12	103707	103708	1.69	1.00	2.9	2.5	1.0	10.3	0.5	10.5	27.8	18.8	24	16.2
ASI-10	12-18	103709	103710	4.39	0.77	3.4	6.6	0.6	7.8	0.4	7.0	18.1	12.2	14	9.5
ASI-10	18-24	103711	103712	0.92	0.58	2.2	1.1	0.6	3.2	0.2	3.2	7.6	5.1	<11	<7.4
ASI-11	0-2	103770	103771	1.65	1.66	1.7	3.2	1.7	71.9	4.2	68.2	179.4	116.5	117	133.2

TABLE 2B -- ON-PROPERTY SOIL SAMPLING DATA -- RADIOLOGICAL RESULTS

Soil Sample Location	Depth (ft.)	Datchem ID #	FERMCO ID #	Total U										Total U (FERMCO) (pCi/g)	Total U (FERMCO) (ug/g)	Total U (FERMCO) (pCi/g)
				Ra-226 (pCi/g)	Ra-228 (pCi/g)	Th-230 (pCi/g)	Th-232 (pCi/g)	U-234 (pCi/g)	U-235/U-236 (pCi/g)	U-238 (pCi/g)	(Datachem) (ug/g)	(Datachem) (pCi/g)	(Datachem) (pCi/g)			
ASI-11	2-4	103772	103773	1.81	1.58	1.7	3.0	1.5	39.4	1.8	38.8	124.8	64.4	130	93.3	
ASI-11	4-6	103774	103775	1.49	1.27	1.1	2.3	1.1	28.4	1.5	27.3	73.2	49.5	80	54.1	
ASI-11	6-12	103776	103777	1.31	1.13	1.3	1.4	1.3	9.5	0.7	9.3	33.8	22.8	28	18.9	
ASI-11	12-18	103778	103779	1.31	1.13	1.1	1.2	1.3	2.1	0.1	2.3	6.4	4.3	<11	<7.4	
ASI-11	18-24	103780	103781	1.38	1.21	1.3	1.4	1.4	1.6	0.1	1.8	5.0	3.4	<11	<7.4	
ASI-12	0-2	103754	103755	1.50	1.44	1.2	2.1	1.1	46.7	2.6	47.3	148.4	100.3	160	108.2	
ASI-12	2-4	103756	103757	1.45	1.28	1.4	2.4	1.2	43.1	2.4	43.4	142.8	96.5	77	52.1	
ASI-12	4-6	103758	103759	1.22	1.16	1.4	1.4	1.1	24.9	1.0	24.6	66.0	44.6	<11	<7.4	
ASI-12	6-12	103760	103761	1.07	1.06	1.0	1.1	0.9	3.5	0.1	3.3	9.8	6.6	135	91.3	
ASI-12	12-18	103762	103763	1.21	1.07	1.1	1.2	1.1	1.2	0.0	1.2	3.6	2.4	<11	<7.4	
ASI-12	18-24	103764	103765	1.29	1.24	1.0	0.9	1.1	29.6	1.6	29.9	72.3	48.9	84	56.8	
ASI-13	0-2	103730	103732	2.53	1.24	1.0	4.3	1.5	29.6	1.1	25.3	61.5	41.6	75	50.7	
ASI-13	2-4	103733	103735	2.78	1.38	1.2	4.0	1.2	27.0	1.1	25.3	61.5	41.6	75	50.7	
ASI-13	4-6	103736	103738	2.68	1.07	0.9	4.0	0.8	18.8	1.2	19.5	40.9	27.6	48	32.4	
ASI-13	6-12	103739	103741	2.49	1.04	0.8	2.8	0.8	9.5	0.5	9.4	26.9	18.2	17	11.5	
ASI-13	12-18	103742	103744	1.02	0.79	0.6	1.1	0.7	3.8	0.2	3.7	9.2	6.2	<11	<7.4	
ASI-13	18-24	103745	103747	0.86	0.74	0.7	1.0	0.6	1.0	0.1	1.2	3.9	2.7	<11	<7.4	
ASI-14	0-2	103637	103638	12.50	1.08	2.1	33.2	1.2	31.0	1.3	31.5	74.7	50.5	100	67.6	
ASI-14	2-4	103639	103640	13.40	1.13	2.2	25.6	0.7	26.0	1.0	26.0	66.0	44.6	86	58.1	
ASI-14	4-6	103641	103642	15.40	0.92	2.5	28.9	1.4	19.9	0.8	22.0	48.9	33.1	62	41.9	
ASI-14	6-12	103643	103644	3.84	0.97	3.7	6.9	1.1	9.7	0.5	10.9	24.8	16.8	23	15.5	
ASI-14	12-18	103645	103646	1.37	0.97	2.8	1.4	0.7	3.8	0.1	4.3	10.0	6.8	<11	<7.4	
ASI-14	18-24	103647	103648	1.22	1.11	3.3	1.8	0.7	1.6	0.0	1.6	3.8	2.6	<11	<7.4	
ASI-15	0-2	103786	103787	16.60	1.15	1.4	31.9	1.0	29.0	1.6	28.8	100.0	67.6	112	75.7	
ASI-15	2-4	103788	103789	17.80	1.21	1.6	30.2	1.2	29.6	1.7	29.4	102.0	69.0	104	70.3	
ASI-15	4-6	103790	103791	11.20	0.89	1.4	26.0	1.2	18.1	0.9	17.0	51.7	34.9	56	37.9	
ASI-15	6-12	103792	103793	4.06	1.14	1.2	5.2	1.2	8.1	0.3	8.2	24.1	16.3	21	14.2	
ASI-15	12-18	103794	103795	1.26	1.10	1.1	1.9	0.9	3.1	0.1	2.8	11.5	7.8	<11	<7.4	
ASI-15	18-24	103796	103797	1.47	1.33	1.2	1.5	1.4	1.7	0.0	1.8	5.0	3.4	<11	<7.4	
ASI-16	0-2	103802	103804	5.43	1.24	1.1	17.1	1.4	30.9	1.7	30.2	94.6	63.9	98	66.2	
ASI-16	2-4	103805	103807	6.29	1.23	1.0	12.8	1.1	34.0	2.1	35.8	87.6	59.2	104	70.3	
ASI-16	4-6	103808	103810	9.31	1.17	1.2	16.4	1.3	31.3	1.9	33.3	99.5	67.3	101	68.3	
ASI-16	6-12	103811	103813	12.40	0.91	1.0	19.7	0.7	15.7	0.7	15.7	47.2	31.9	42	28.4	
ASI-16	12-18	103814	103816	3.10	0.98	1.0	4.0	0.7	8.6	0.6	9.3	27.0	18.3	18	12.2	
ASI-16	18-24	103817	103819	1.65	1.16	1.4	2.8	1.3	3.3	0.2	3.8	11.4	7.7	<11	<7.4	
ASI-17	0-2	103604	103605	15.70	1.04	2.8	47.0	1.0	36.6	1.6	36.8	93.8	63.4	110	74.4	
ASI-17	2-4	103606	103607	15.60	1.00	3.0	46.7	1.0	37.0	1.7	34.1	99.7	67.4	109	73.7	
ASI-17	4-6	103608	103609	14.50	1.21	3.2	8.2	0.8	24.0	1.1	24.1	74.6	50.4	14	9.5	
ASI-17	6-12	103610	103611	4.10	1.09	2.3	6.8	1.1	7.8	0.5	8.4	32.2	21.8	84	56.8	
ASI-17	12-18	103612	103613	1.16	1.02	2.6	1.2	1.2	1.3	0.0	1.5	22.5	15.2	<11	<7.4	
ASI-17	18-24	103614	103615	1.32	1.18	2.6	3.3	0.8	26.0	1.4	28.9	27.3	18.5	<11	<7.4	
ASI-18	0-2	103620	103621	1.59	0.82	2.2	3.4	1.1	19.2	0.9	20.5	80.2	54.2	76	51.4	
ASI-18	2-4	103622	103623	1.83	0.97	2.5	2.9	1.0	19.1	1.1	21.0	71.3	48.2	63	42.6	
ASI-18	4-6	103624	103625	1.71	0.86	2.3	2.7	0.7	19.8	1.3	20.3	78.7	53.2	63	42.6	
ASI-18	6-12	103626	103627	1.51	1.10	2.1	1.6	0.8	8.0	0.4	8.5	50.8	34.3	19	12.8	
ASI-18	12-18	103628	103629	1.10	1.00	2.4	1.5	1.0	1.6	0.1	2.0	49.5	33.5	<11	<7.4	
ASI-18	18-24	103630	103631	1.36	1.39	2.8	1.8	1.0	1.0	0.0	0.9	40.4	27.3	<11	<7.4	
ASI-19	0-2	103654	103656	1.26	1.02	2.4	2.1	1.2	5.4	0.2	5.7	15.3	10.3	<11	<7.4	
ASI-19	2-4	103657	103659	1.39	0.88	1.5	1.7	0.8	4.6	0.2	4.5	14.0	9.5	<11	<7.4	
ASI-19	4-6	103660	103662	0.88	0.83	2.8	1.4	0.8	5.2	0.4	5.9	18.2	12.3	<11	<7.4	
ASI-19	6-12	103663	103665	0.99	1.02	2.4	1.1	1.2	3.3	0.2	3.6	6.6	6.6	<11	<7.4	
ASI-19	12-18	103666	103668	1.10	1.09	2.6	1.4	0.9	1.5	0.2	2.0	3.9	2.6	<11	<7.4	
ASI-19	18-24	103669	103671	1.14	1.13	2.5	1.5	1.4	1.4	0.0	1.5	3.0	2.6	<11	<7.4	

TABLE 2C, ON-PROPERTY SOIL SAMPLING DATA - HSL RESULTS

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TABLE 2C -- ON-PROPERTY SOIL SAMPLING DATA -- HSL RESULTS

Volatle Organic Results, ug/kg

Soil Sample Location	Depth (in.)	HSL ID # / Dioxin ID #	(RQLs)**	Acetone	Toluene	Methylene Chloride
				50	10	10
ASI-1	0-2	103501/103502	---	---	---	---
ASI-1	2-4	103504/103505	---	---	---	---
ASI-1	4-6	103507/103508	---	---	2 J	---
ASI-1	6-12	103510/103511	---	---	2 J	---
ASI-1	12-18	103513/103514	---	---	---	---
ASI-3	0-2	103532/103534	---	---	---	---
ASI-3	2-4	103536/103537	---	---	---	---
ASI-3	4-6	103539/103540	---	---	---	---
ASI-3	6-12	103542/103543	---	---	---	---
ASI-3	12-18	103545/103546	---	---	---	---
ASI-8	0-2	103677/103678	---	---	---	---
ASI-8	2-4	103680/103681	---	17 B/18 B	---	2 J
ASI-8	4-6	103683/103684	---	---	U/7 J	---
ASI-8	6-12	103686/103687	---	11 BJ	---	---
ASI-8	12-18	103689/103690	---	15 B	---	---
ASI-8	18-24	103692/103693	---	11 BJ/12 BJ	---	U/2 BJ
ASI-13	0-2	103730/103731	---	---	2 J/U	1 J/U
ASI-13	2-4	103733/103734	---	11 BJ/U	---	---
ASI-13	4-6	103736/103737	---	---	---	---
ASI-13	6-12	103739/103740	---	10 BJ/8 BJ	---	1 J/2 J
ASI-13	12-18	103742/103743	---	11 BJ	U/3 J	U/3 J
ASI-13	18-24	103745/103746	---	14 B/13 B	---	---
ASI-16	0-2	103802/103803	---	---	---	U/2 J
ASI-16	2-4	103805/103806	---	U/5 BJ	---	---
ASI-16	4-6	103808/103809	---	8 BJ	---	---
ASI-16	6-12	103811/103812	---	---	---	---
ASI-16	12-18	103814/103815	---	7 BJ	---	---
ASI-16	18-24	103817/103818	---	6 BJ	---	---
ASI-19	0-2	103654/103655	---	6 BJ	---	---
ASI-19	2-4	103657/103658	---	5 BJ	---	---
ASI-19	4-6	103660/103661	---	---	3 J	---
ASI-19	6-12	103663/103664	---	---	---	---
ASI-19	12-18	103666/103667	---	5 BJ	---	---
ASI-19	18-24	103669/103670	---	---	---	---

The full HSL list was analyzed, only analytes for which at least one sample had a result above the detection limit is listed.

All Dioxin Results were below the laboratory's detection limit.

--- = Results were below the laboratory's detection limit.

** Required Quantitation Limits per SCCQ, Table 2-4.

ORGANIC DATA QUALIFIERS:

B = The analyte was also found in the associated blank.

J = Result is an estimated value.

U = Result is below laboratory's detection limit.

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TABLE 2C - ON-PROPERTY SOIL SAMPLING DATA -- HSL RESULTS

Semi-volatile Organic Results, ug/kg

Soil Sample Location	2-Methyl		Naphthalene	Acenaphthylene	Diethylphthalate	Fluorene	Phenanthrene	Anthracene	Di-n-Butylphthalate	Fluoranthene	Pyrene
	(RQLs)**	naphthalene									
ASI-1	330	330	330	330	330	330	330	330	330	330	330
ASI-1	---	---	---	---	17 J	---	25 J	---	68 BJ	59 J	59 J
ASI-1	---	---	---	---	---	---	---	---	46 BJ	---	---
ASI-1	---	---	---	---	---	---	---	---	---	---	---
ASI-1	---	---	---	---	---	---	---	---	43 BJ	---	---
ASI-3	---	---	---	---	---	---	---	---	38 BJ	---	---
ASI-3	---	---	---	37 J	58 J	---	27 J	19 J	100 BJ	100 J	110 J
ASI-3	---	---	---	---	---	---	11 J	7 J	100 BJ	42 J	49 J
ASI-3	---	---	---	25 J/26 J	---	---	36 J/34 J	17 J/14 J	86 BJ/110 BJ	91 J/100 J	70 J/74 J
ASI-3	---	---	---	---	---	---	---	---	96 BJ/110 BJ	---	---
ASI-3	---	---	---	---	---	---	---	---	50 BJ	---	---
ASI-8	---	---	---	41 J	---	---	---	---	110 BJ	140 J	140 J
ASI-8	---	---	---	42 J	---	---	---	17 J	62 BJ	85 J	81 J
ASI-8	---	---	---	620	---	17 J	37 J	170 J	47 BJ	210 J	290 J
ASI-8	---	---	---	---	---	---	---	---	35 J	---	---
ASI-8	---	---	---	---	---	---	---	---	32 J	---	---
ASI-8	---	---	---	---	---	---	---	---	48 J	---	---
ASI-13	---	---	---	---	---	---	---	---	42 J	49 J	43 J
ASI-13	---	---	---	---	---	---	---	---	66 J	42 J	36 J
ASI-13	---	---	---	---	---	---	---	---	57 BJ	---	---
ASI-13	---	---	---	---	---	---	---	---	61 BJ	---	---
ASI-13	---	---	---	---	---	---	---	---	44 BJ	---	---
ASI-13	---	---	---	---	---	---	---	---	51 BJ	---	---
ASI-16	---	---	---	---	---	---	---	---	59 BJ	85 J	81 J
ASI-16	---	---	---	---	---	---	---	---	50 J	110 J	86 J
ASI-16	---	---	---	---	---	---	---	---	59 J	120 J	110 J
ASI-16	---	---	---	---	---	---	---	---	30 BJ	53 J	53 J
ASI-16	---	---	---	---	---	---	---	---	40 BJ	---	---
ASI-19	---	---	---	---	---	---	---	---	37 BJ	---	---
ASI-19	---	---	---	---	---	---	49 J	---	36 BJ	73 J	63 J
ASI-19	---	---	---	---	---	---	---	---	25 BJ	---	---
ASI-19	---	---	---	---	---	---	---	---	38 BJ	---	---
ASI-19	---	---	---	---	---	---	---	---	29 BJ	---	---
ASI-19	---	---	---	---	---	---	---	---	27 BJ	---	---
ASI-19	---	---	---	---	---	---	---	---	52 BJ	---	---

The full HSL list was analyzed, only analytes for which at least one sample had a result above the detection limit is listed.

All Dioxin Results were below the laboratory's detection limit.

--- = Results were below the laboratory's detection limit.

** Required Quantitation Limits per SCQ, Table 2-4.

ORGANIC DATA QUALIFIERS:

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TABLE 2C -- ON-PROPERTY SOIL SAMPLING DATA -- HSL RESULTS

Semi-volatile Organic Results, ug/kg

Soil Sample Location	Butylbenzyl phthalate (RQLs)**	Bonzo(a) Anthracene	Chryseno	bi-(2 Ethylhexyl) Phthalate	Bonzo(b) Fluoranthene	Bonzo(k) Fluoranthene	Bonzo(a) Pyrene	Indeno(1,2,3-cd) Pyrene	Dibenz(a,h) Anthracene	Benzo(g,h,i) Perylene
	330	330	330	330	330	330	330	330	330	330
ASI-1	29 J	330	44 J	330	34 J	330	27 J	330	330	330
ASI-1	---	---	---	---	---	---	---	---	---	---
ASI-1	---	---	---	---	---	---	---	---	---	---
ASI-1	---	---	---	---	---	---	---	---	---	---
ASI-3	---	68 J	85 J	---	---	77 J	---	---	---	140 J
ASI-3	---	24 J	34 J	54 J	81 J	31 J	83 J	88 J	---	48 J
ASI-3	U/26 J	56 J/67 J	55 J/66 J	---	51 J/67 J	59 J/61 J	48 J/52 J	69 J/69 J	---	94 J/140 J
ASI-3	---	---	---	---	---	---	---	---	---	---
ASI-8	---	78 J	120 J	---	---	---	---	---	---	---
ASI-8	---	61 J	87 J	39 BJ	110 J	91 J	68 J	---	---	---
ASI-8	---	590	590	---	140 J	150 J	110 J	---	---	---
ASI-8	---	---	---	---	1800	1300	940	1500	400 J	1100
ASI-8	---	---	---	---	---	---	---	---	---	---
ASI-8	---	---	---	---	---	---	---	---	---	---
ASI-13	---	---	---	---	---	---	---	---	---	---
ASI-13	---	---	---	---	---	---	---	---	---	---
ASI-13	---	---	---	---	---	---	---	---	---	---
ASI-13	---	---	---	---	---	---	---	---	---	---
ASI-13	---	---	---	---	---	---	---	---	---	---
ASI-16	---	---	49 J	280 BJ	---	---	---	---	---	---
ASI-16	---	52 J	54 J	---	44 J	64 J	47 J	---	---	---
ASI-16	---	57 J	66 J	---	55 J	56 J	---	---	---	---
ASI-16	---	---	---	---	---	---	---	---	---	---
ASI-16	---	---	---	---	---	---	---	---	---	---
ASI-16	---	---	---	---	---	---	---	---	---	---
ASI-19	---	---	45 J	24 BJ	---	---	---	---	---	---
ASI-19	---	---	---	54 BJ	---	---	---	---	---	---
ASI-19	---	---	---	---	---	---	---	---	---	---
ASI-19	---	---	---	---	---	---	---	---	---	---
ASI-19	---	---	---	---	---	---	---	---	---	---
ASI-19	---	---	---	---	---	---	---	---	---	---
ASI-19	---	---	---	---	---	---	---	---	---	---

The full HSL list was analyzed, only analytes for which at least one sample had a result above the detection limit is listed.

All Dioxin Results were below the laboratory's detection limit.

-- = Results were below the laboratory's detection limit.

** Required Quantitation Limits per SCQ, Table 2-4.

ORGANIC DATA QUALIFIERS:

B = The analyte was also found in the associated blank.

J = Result is an estimated value.

U = Result is below laboratory's detection limit.

TABLE 2C - ON-PROPERTY SOIL SAMPLING DATA - HSL RESULTS

Inorganic Results, mg/kg

Sample Location	Aluminum (UTL)**	Antimony	Arsenic	Barium	Beryllium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese
ASI-1	13724	7.7	10.2	161.6	0.6	5791	17.8	17.8	16.4	25979	25.6	3334	2516
ASI-1	11200*	--	4.6	85.4	0.73B	3650	16.2*	7.2B	17.7	16300	33.3	2210	593
ASI-1	10300*	--	6.2	83.2	0.91B	3410	15.8*	7.9B	15.6	16000	37.4	2130	560
ASI-1	10200*	--	5.4	78.9	0.69B	2340	14.5*	7.6B	11.2	17100	21.3	1860	629
ASI-1	18000*	--	9.5	126	1.2	2920	23.3*	15.3	19	31800	16.7	3260	791
ASI-1	21600*	--	14	150	1.5	3560	25.9*	18.6	24.1	36900	22.6	3980	1290
ASI-3	14800*	--	6.6	114	0.95B	4980	19.9*	8.9B	17.6	24000	24.9	3410	721
ASI-3	14500*	--	8	206	1.1B	4710	19.0*	21.3	19.9	27600	22.3	3450	2170
ASI 3	14800*	--	8	148	1.3B	4380	19.0*	16.9	19.7	30000	40.1	3290	1610
ASI 3	20200*	--	8.7	152	1.3	4370	25.3*	14.2	24.9	34000	15.5	4070	1230
ASI-3	16100*	--	12.5	124	1.1B	5110	22.7*	9.2B	23.2	31800	19.3	4150	551
ASI-8	10900*	--	4.8N*	81.5	--	5430*	16.0*	6.9B	11	19900	22.0*	2510*	701N
ASI-8	15400*	21.5N	6.1N*	116	0.80B	6230*	22.6*	9.3B	20.9	21500	18.3*	3780*	432N
ASI-8	15400*	--	6.8N*	118	0.69B	10300*	23.5*	13.1	21.6	22600	101S*	3980*	558N
ASI-8	13600*	--	6.1N*	87.2	0.66B	3220*	17.7*	9.3B	23.8	25800	137S*	5450*	1060N
ASI-8	22500*	--	13.2N*	108	0.86B	3540*	26.9*	12.5	11	19900	22.0*	2510*	701N
ASI-8	27000*	--	12.1N*	137	1.1B	3480*	31.1*	12.3B	23.8	34700	18.3*	3780*	432N
ASI-13	14900*	--	5.5N*	101	0.72B	16900*	20.0*	8.0B	22.9	34300	14.7*	4690*	570N
ASI-13	18100*	15.8N	6.3N*	106	1.1B	19700*	24.0*	9.4B	17.5	20800	40.9*	7240*	558N
ASI-13	17200*	19.3N	6.6N*	130	0.64B	26400*	21.0*	11.7B	17.9	22200	46.6*	8620*	576N
ASI-13	14900*	--	5.5N*	97.2	0.63B	74500*	17.4*	15.8	16	24700	570*	10100*	913N
ASI-13	18400*	--	6.1N*	97.1	0.63B	73900*	21.9*	9.6B	18.5	22200	17.4S*	21300*	1090N
ASI-13	14300*	--	5.5N*	83.1	--	136000*	16.8*	9.0B	15.2	25500	9.9*	21200*	530N
ASI-16	17400	--	6.1	176	0.76B	7780	22.7	12.0B	15.2	19800	11.6S*	28300*	726N
ASI-16	18800	--	7	166	0.71B	7130	23.3	12.7B	31.9	24700	38.9*	4000	1880E
ASI-16	18100	--	5.7	154	0.89B	8580	23.6	13.7	26.7	24200	45.4*	4070	2010E
ASI-16	13200	--	5.1	94.9	0.68B	21700	17.7	11.2B	25.2	24400	37.0*	5110	1750*
ASI-16	14700	--	6.4	113	0.60B	10700	19.3	10.2B	19.5	18600	26.2S*	9240	840E
ASI-16	23000	--	9.1	150	1.0B	5780	27.6	13.9	18.6	19300	31.4+	4860	871E
ASI-19	12900*	--	13.7N*	79.2	0.52B	30800*	15.9*	8.9B	25.6	32400	21.4S*	4600	904E
ASI-19	17000*	--	28.4N*	78.7	0.65B	14200*	20.5*	9.8B	17.9	21100	15.5*	14000*	435N
ASI-19	13900*	--	6.1N*	75.8	--	42800*	17.8*	7.7B	18.9	25900	16.4*	7150*	343N
ASI-19	13400*	--	6.1N*	106	0.65B	22200*	16.0*	10.0B	15	21200	12.3*	12100*	419N
ASI-19	25700*	--	8.7N*	172	1.3	4630*	29.6*	12.5	10.7	18700	20.9S*	6720*	1030N
ASI-19	22400*	--	8.8N*	167	1.1B	7680*	25.7*	12.5	21.3	31300	17.0*	4580*	685N
ASI-19		--							19.7	28700	14.8*	5760*	885N

The full HSL list was analyzed, only analytes for which at least one sample had a result above the detection limit is listed.

-- = Results were below the laboratory's detection limit.

** Upper 95% Tolerance Limit, Background Study report: FEMP-05BG-2, March 19, 1993.

INORGANIC DATA QUALIFIERS:

S = The result was reported by the Method of Standard Additions.

B = Reported value was less than the Contract Required Detection Limit (CRQL), but greater than the Instrument Detection Limit (IDL).

* = Duplicate analysis not within control limits.

N = Spiked sample results were not within control limits.

E = Result is an estimated value due to the presence of interference.

W = Post-digestion spike is not out of control limits, but sample absorbance is less than 50% of spike absorbance.

+ = Correlation coefficient for the MSA is less than 0.955.

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TABLE 2C -- ON-PROPERTY SOIL SAMPLING DATA -- HSL RESULTS

Inorganic Results, mg/kg

Soil Sample Location	Mercury (UTL)**	Nickel	Potassium	Selenium	Silicon	Silver	Sodium	Thallium	Vanadium	Zinc	Cyanide
ASI-1	0.08 B	10.7 B	1402 B	0.50 BNW	4490	1.2 B	41.9 B	0.58	35.3	68.5	0.34
ASI-1	0.13	9.7 B	908 B	--	4950	1.2 B	43.1 B	--	27.1	87.3	--
ASI-1	--	8.5 B	715 B	0.24 BNW	4480	--	39.9 B	--	28.7	51	--
ASI-1	--	16.4	864 B	--	3540	--	52.3 B	--	39.6	59.3	--
ASI-1	--	30.3	1230 B	--	3630	--	65.9 B	--	43.2	76.9	--
ASI-3	--	13.7	1430 B	--	7630	--	74.7 B	--	34	105	--
ASI-3	--	22.3	1150 B	--	4610	--	64.7 B	--	35.7	89.9	--
ASI-3	--	17.2	1020 B	0.35 BNW	2620	--	64.8 B	--	37	86.8	--
ASI-3	--	30	1230 B	0.45 BNW	1020	--	73.0 B	--	39.9	81.1	--
ASI-3	--	29	1020 B	0.41 BNW	1210	--	71.2 B	--	32.3	74.9	--
ASI-8	0.12 B	13.3	1400 B	0.37 BNW	3840	--	66.1 B	--	23.9	232	--
ASI-8	0.11 B	20.3	1830	--	3470	--	99.4 B	--	33.4	233	--
ASI-8	0.07 B	18.2	1600	--	3230	--	81.9 B	--	36.6	195	--
ASI-8	0.10 B	16	899 B	--	3100	--	54.4 B	--	32.6	56.7	--
ASI-8	0.10 B	23.3	1090 B	--	798	--	85.3 B	--	42.9	69	--
ASI-8	0.13	30.1	1870	--	703	--	109 B	--	49.6	84.1	--
ASI-13	0.11 B	17	2010	--	3960	--	85.0 B	--	30.6	86.6	--
ASI-13	0.08 B	19.2	2490	--	3550	--	88.8 B	0.25 B	38.2	89.7	--
ASI-13	0.06 B	19.8	2080	--	3320	--	88.7 B	--	37.5	82.2	--
ASI-13	--	24.5	2460	--	3300	--	151 B	--	28.9	53.9	--
ASI-13	--	22.6	2840	--	2880	--	163 B	--	35	57	0.58
ASI-13	--	21.6	3020	--	2920	--	208 B	--	26.5	44.8	--
ASI-16	0.13	23.7	1810	0.73 BNW	3550	--	76.3 B	0.82 BW	35	432	--
ASI-16	0.10 B	22.9	2020	0.37 BNW	3670	1.3 B	79.9 B	--	37.6	400	--
ASI-16	0.10 B	23.7	1900	0.41 BNW	3530	1.4 B	94.1 B	--	36.6	368	--
ASI-16	0.18	18.9	1380	0.23 BN	2780	1.8 B	78.2 B	--	29.2	110	--
ASI-16	0.08 B	15.9	1390	0.40 BN	2880	--	79.6 B	--	34.5	79.4	--
ASI-16	0.11 B	24.6	1660	0.29 BNW	1810	--	70.9 B	--	51.3	89.9	--
ASI-19	--	20.1	1240	--	3920	--	78.3 B	0.47 B	25.7	54.7	--
ASI-19	--	22.7	1360	0.29 BNW	3230	--	74.1 B	--	32.7	61.3	--
ASI-19	--	19	1460	--	2770	--	105 B	--	27.2	56.8	0.56
ASI-19	0.08 B	12.5	1020 B	--	2570	--	128 B	--	29.8	50	--
ASI-19	--	28.5	1440	0.32 BNW	1140	--	166 B	--	47.3	75.8	--
ASI-19	0.06 B	29.5	1340	--	1710	--	159 B	--	43.1	67.9	--

The full HSL list was analyzed, only analytes for which at least one sample had a result above the detection limit is listed

--*-- = Results were below the laboratory's detection limit.
 ** Upper 95% Tolerance Limit, Background Study report: FEMP-05BG-2, March 19, 1993.

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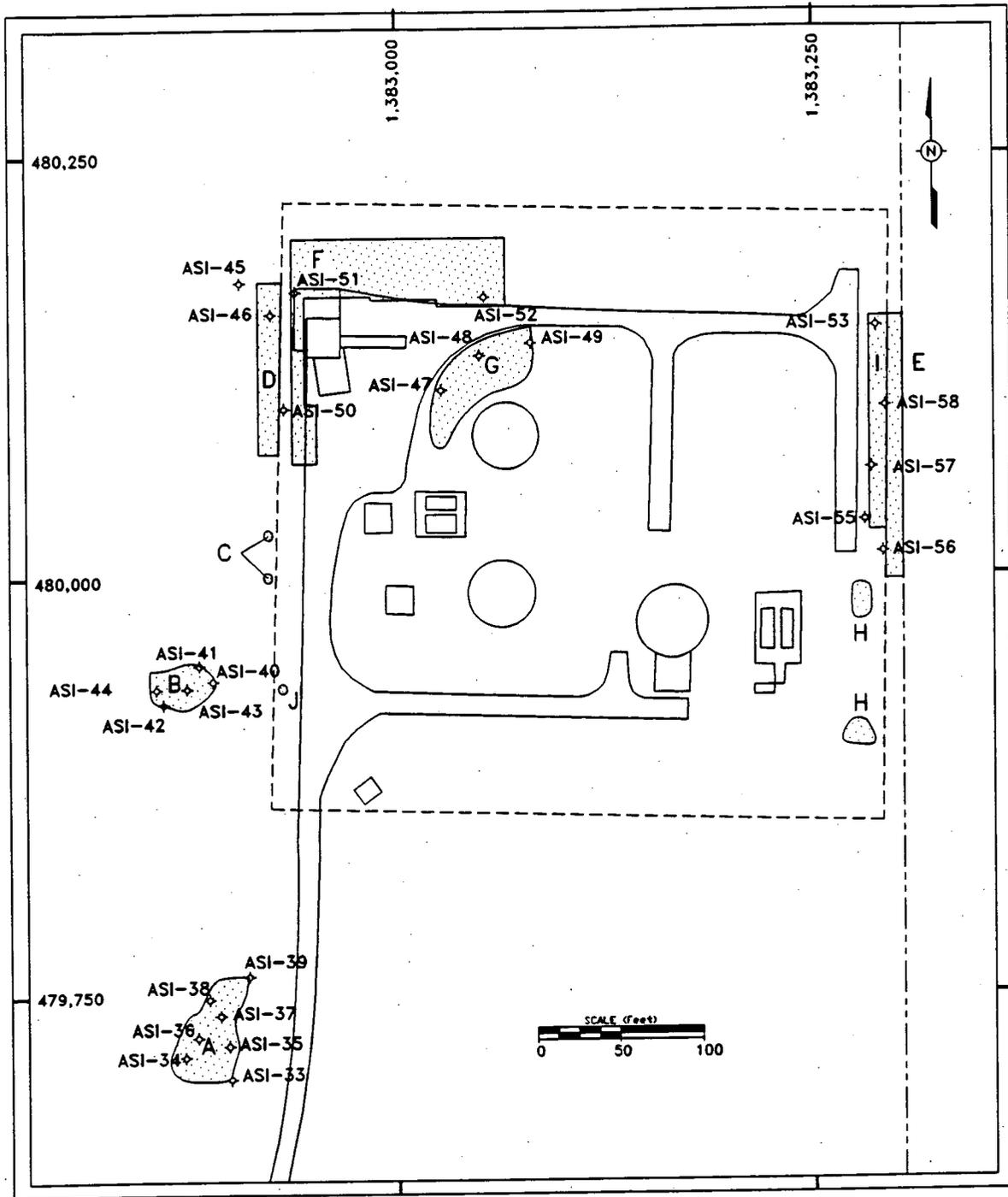
TABLE 3 - ADDITIONAL OFF-PROPERTY SOIL SAMPLING DATA

Soil Sample Location	Depth (in.)	Datchem ID #	FERMCO ID #	Ra-226 (pCi/g)	Ra-228 (pCi/g)	Th-228 (pCi/g)	Th-230 (pCi/g)	Th-232 (pCi/g)	U-234 (pCi/g)	U-235/U-236 (pCi/g)	U-238 (pCi/g)	Total U		Total U (ug/g)	Total U (ug/g)	Total U (pCi/g)
												(Datachem) (ug/g)	(Datachem) (pCi/g)			
C-1	0-2	104001	104002	0.95	1.26	1.2	1.4	1.2	16.0	0.2	20.6	48.5	32.8	70	47.3	
C-1	2-4	104003	104004	0.79	1.17	1.2	2.0	1.3	16.7	0.9	22.2	30.8	20.8	68	46.0	
C-1	4-6	104005	104006	0.88	1.20	1.2	2.2	1.0	17.2	0.9	21.7	63.3	42.8	70	47.3	
C-2	0-2	104007	104008	0.86	1.07	1.4	2.2	1.3	24.1	1.6	36.6	87.2	58.9	118	79.8	
C-2	2-4	104009	104010	0.93	1.31	1.1	2.4	1.2	26.0	1.5	37.5	96.8	65.4	110	74.4	
C-2	4-6	104011	104012	0.90	1.21	1.2	2.2	0.8	11.3	1.4	35.4	80.8	54.6	104	70.3	
C-3	0-2	104013	104014	0.88	1.12	0.9	1.3	0.8	11.9	0.7	12.0	27.2	18.4	38	25.7	
C-3	2-4	104015	104016	0.84	1.09	1.1	1.9	1.2	15.3	0.8	17.0	27.7	18.7	40	27.0	
C-3	4-6	104017	104018	0.89	1.08	1.2	1.4	1.2	11.8	0.7	12.9	26.2	17.7	42	28.4	
C-4	0-2	104019	104020	0.87	1.41	0.6	1.2	0.6	44.6	2.6	44.9	76.3	51.6	145	98.0	
C-4	2-4	104021	104022	1.01	1.23	0.7	1.5	0.9	29.4	1.4	29.2	56.1	37.9	111	75.0	
C-4	4-6	104023	104024	0.88	1.14	1.0	1.7	1.8	13.3	0.7	14.2	28.5	19.3	37	25.0	
C-5	0-2	104025	104026	1.13	1.44	1.0	1.8	1.2	31.2	1.9	31.3	58.1	39.3	100	67.6	
C-5	2-4	104027	104028	0.96	1.17	0.8	1.5	0.5	30.2	1.5	28.4	47	31.8	67	45.3	
C-5	4-6	104029	104030	1.08	1.37	0.9	1.0	0.7	6.5	0.8	16.0	28.3	19.1	51	34.5	
C-6	0-2	104031	104032	1.17	1.17	1.4	2.0	1.2	6.3	0.7	6.6	8.55	5.8	22	14.9	
C-6	2-4	104033	104034	1.01	1.26	1.3	1.8	1.2	6.6	0.4	6.1	14.2	9.6	24	16.2	
C-6	4-6	104035	104036	0.97	1.09	1.1	1.6	1.2	6.2	0.3	6.1	12	8.1	25	16.9	
C-7	0-2	104037	104038	1.19	1.23	2.1	2.6	2.7	7.5	0.4	8.0	15.8	10.7	26	17.6	
C-7	2-4	104039	104040	1.06	1.12	1.0	1.6	1.3	9.3	0.3	9.4	14.4	9.7	30	20.3	
C-7	4-6	104041	104042	1.39	1.22	1.4	1.8	1.4	3.9	0.2	4.7	8.07	5.5	20	13.5	
C-8	0-2	104043	104044	1.18	1.27	0.8	1.3	0.8	5.7	0.3	6.0	15.6	10.5	24	16.2	
C-8	2-4	104045	104046	1.27	1.20	0.4	0.8	0.5	5.9	0.3	6.0	14.5	9.8	32	21.6	
C-8	4-6	104047	104048	1.20	1.22	0.4	0.6	0.4	11.4	0.4	11.6	25.5	17.2	37	25.0	
C-9	0-2	104049	104050	1.26	1.49	1.7	2.2	1.2	24.5	1.3	24.3	62.3	42.1	84	56.8	
C-9	2-4	104051	104052	1.10	1.26	1.1	1.7	1.0	21.6	1.1	22.2	49.6	33.5	80	54.1	
C-9	4-6	104053	104054	1.31	1.36	1.1	1.3	1.6	11.0	0.7	10.8	26.8	18.1	40	27.0	
C-10	0-2	104055	104056	1.10	1.38	1.3	2.3	0.9	27.9	1.5	28.2	71.3	48.2	100	67.6	
C-10	2-4	104057	104058	1.46	1.51	1.3	2.9	1.2	29.0	1.7	30.0	53.1	35.9	39	26.4	
C-10	4-6	104059	104060	1.19	1.23	0.7	1.8	1.2	10.4	0.5	11.4	23.9	16.2	91	61.5	
D-1	0-2	104101	104102	2.83	1.14	0.9	3.8	1.1	15.8	1.0	16.2	41	27.7	49	33.1	
D-1	2-4	104103	104104	2.70	1.09	0.7	3.8	1.1	12.2	0.7	12.2	33.4	22.6	35	23.7	
D-1	4-6	104105	104106	2.08	0.97	1.1	3.2	1.2	9.3	0.4	10.0	25	16.9	28	18.9	
D-2	0-2	104107	104108	13.80	1.14	1.1	24.0	0.8	25.2	1.3	25.6	69.6	47.0	89	60.2	
D-2	2-4	104109	104110	11.90	1.13	1.7	14.0	0.9	26.6	1.6	27.9	64.2	43.4	64	43.3	
D-2	4-6	104111	104112	15.30	1.11	0.9	20.0	0.8	21.9	1.0	22.9	65.4	44.2	84	56.8	
D-3	0-2	104113	104114	4.55	0.89	1.1	7.4	1.2	14.1	0.7	14.8	20.6	13.9	50	33.8	
D-3	2-4	104115	104116	4.74	0.95	0.9	6.7	0.9	9.5	0.4	10.0	30	20.3	36	24.3	
D-3	4-6	104117	104118	4.37	0.99	1.1	6.7	0.9	9.1	0.4	10.1	28.1	19.0	32	21.6	
D-4	0-2	104119	104120	1.33	1.25	0.9	1.4	1.2	7.6	0.5	7.6	20.4	13.8	22	14.9	
D-4	2-4	104121	104122	1.15	1.11	1.1	1.1	1.1	7.6	0.4	7.5	19.1	12.9	20	13.5	
D-4	4-6	104123	104124	1.29	1.25	1.1	0.9	1.3	7.2	0.4	7.0	20.3	13.7	20	13.5	
D-5	0-2	104125	104126	1.13	1.07	0.8	1.8	1.3	7.6	0.5	7.9	18.4	12.4	22	14.9	
D-5	2-4	104127	104128	1.29	1.12	0.8	1.3	0.5	8.5	0.5	8.8	38.8	26.2	21	14.2	
D-5	4-6	104129	104130	1.13	1.11	0.8	1.9	0.8	7.7	0.2	7.4	27.4	18.5	17	11.5	
D-6	0-2	104131	104132	1.24	1.23	1.3	1.3	0.9	12.4	0.7	12.6	33.4	22.6	31	23.7	
D-6	2-4	104133	104134	1.20	1.19	1.3	2.9	1.3	13.0	0.7	13.0	38.1	25.8	35	23.7	
D-6	4-6	104135	104136	1.32	1.17	1.0	1.5	0.8	13.8	0.8	13.9	40.2	27.2	45	30.4	
D-7	0-2	104137	104138	1.19	1.20	1.1	1.8	1.1	7.7	0.4	8.6	30.2	20.4	12	8.1	
D-7	2-4	104139	104140	1.38	1.21	1.1	1.6	1.1	7.1	0.4	7.7	20.8	15.9	11	7.4	
D-7	4-6	104141	104142	1.05	1.05	1.2	1.6	1.2	6.2	0.4	7.3	23.5	17.4	11	7.4	
D-8	0-2	104143	104144	1.51	1.24	2.5	1.9	1.4	9.4	0.4	7.7	29.9	20.2	19	12.8	
D-8	2-4	104145	104146	1.36	1.26	3.3	2.4	1.5	10.3	0.7	11.2	25	16.9	21	14.2	
D-8	4-6	104147	104148	1.52	1.36	2.7	1.9	1.1	12.6	0.6	12.7	22.6	15.5	23	15.5	
D-9	0-2	104149	104150	1.35	1.16	2.2	1.5	1.0	9.1	0.4	8.2	20.1	13.6	11	7.4	
D-9	2-4	104151	104152	1.29	1.21	2.6	1.6	1.2	7.2	0.4	7.0	21.7	14.7	11	7.4	
D-9	4-6	104153	104154	1.51	1.28	3.0	1.7	1.3	9.3	0.5	8.3	19.8	13.4	14	9.5	
D-10	0-2	104155	104156	1.28	1.26	2.9	1.9	1.1	6.8	0.3	6.9	14.8	11.1	11	7.4	
D-10	2-4	104157	104158	1.44	1.33	2.4	1.2	1.0	7.1	0.4	7.4	22.4	15.1	14	9.5	
D-10	4-6	104159	104160	1.30	1.14	3.1	1.3	1.4	6.9	0.3	6.7	28.6	19.3	11	7.4	

TABLE 4 - ON-PROPERTY POST-EXCAVATION VERIFICATION DATA

Sample Location	Total U (pCi/g) at 0-6" Depth
ASI-33	< 7.4
ASI-34	< 7.4
ASI-35	< 7.4
ASI-36	< 7.4
ASI-37	< 7.4
ASI-38	< 7.4
ASI-39	< 7.4
ASI-40	< 7.4
ASI-41	< 7.4
ASI-42	< 7.4
ASI-43	< 7.4
ASI-44	< 7.4
ASI-45	99.3
ASI-46	77.7
ASI-47	53.4
ASI-48	88.5
ASI-49	190.5
ASI-50	248
ASI-51	250
ASI-52	72.3
ASI-53	34.5
ASI-54	52.7
ASI-55	45.9
ASI-56	11.5
ASI-57	< 7.4
ASI-58	< 7.4

APPENDIX IV
PRELIMINARY EXCAVATION



Area A - 18 - inch maximum depth
 Area B - 18 - inch maximum depth
 Area C - 6 - inch maximum depth
 Area D - 12 - inch maximum depth
 Area E - 24 - inch maximum depth

Area F - 24 - inch maximum depth
 Area G - 6 - inch maximum depth
 Area H - 12 - inch maximum depth
 Area I - 12 - inch maximum depth
 Area J - 6 - inch maximum depth

FIGURE 1, PRELIMINARY EXCAVATION BOUNDARIES

**TABLE 1 - ON-PROPERTY EXCAVATION QUANTITIES, DEPTHS,
AND ACTION LEVELS**

Excavated Area	Total Number of Boxes/Area	Action Level	Maximum Depth/Area
A	34	100 pCi/g	18"
B	20	100 pCi/g	18"
C	1	300 pCi/g	6"
D	13	300 pCi/g	12"
E	30	100 pCi/g	24"
F	44	300 pCi/g	24"
G	13	300 pCi/g	6"
H	7	300 pCi/g	12"
I	15	300 pCi/g	12"
J	1	300 pCi/g	6"
Total	178		

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APPENDIX V
OFF-PROPERTY SAMPLING PLAN

Additional Off-Property Walkover Surveying and Intrusive Sampling Plan

Additional walkover (screening) surveying and follow-up intrusive soil sampling will be performed for the off-property contaminated areas north and east of the Sewage Treatment Plant. The purpose of this additional sampling is to identify the extent of radiological contamination above the action level beyond the areas already identified as contaminated. These additional surveys and samples are a result of radiological characterization previously performed in this area.

Walkover Surveying

A preliminary transect survey has been conducted at areas of known and/or suspected contamination. Individual transects were separated by a distance of 100 feet. Since the incinerator at the sewage treatment plant has been identified as the source of contamination, transects proceeded in northward and eastward directions, in areas which were downwind (prevailing winds) from the incinerator (see Figure 1). Transects were not conducted in the western-most grove of trees located just off-property, since radiological contamination has been confirmed in this area and also because of the difficulty of traversing the area due to dense understory vegetation. The transects are used to determine the extent of off-property contamination north and east of the incinerator.

Two minute readings, from 5 inches above-grade, have been taken at 50 foot intervals along the transect, using a shielded SPA-3 detector. It is important to note that the SPA-3 readings were taken in an area that was free of standing water and that was cleared of existing vegetation. Each transect was extended until two consecutive readings, each correlating to less than 35 pCi/g, were recorded (Table 1). The location of the second consecutive reading less than 35 pCi/g will mark the location for the intrusive sampling. This will also mark the greatest extent of the 25 feet by 25 feet sampling grid which follows (Figure 2).

A sampling grid consisting of squares 25 feet by 25 feet will be superimposed on the area delineated by transect surveying (see Figure 2). This grid will correspond to the ones used for previous walkover surveying in adjacent areas. After the grid is established, walkover surveying will be performed at each grid line intersection, using the shielded SPA-3 detector.

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The walkover survey grid will establish the horizontal extent of radiological contamination off-property between the transects.

As discussed above, additional walkover surveying will not be conducted within the off-property tree grove. Two locations within the grove and two locations outside of the grove will be randomly chosen as soil sample points. These samples will be submitted for TCLP analysis, to detect any regulatory levels of hazardous waste constituents for the purpose of waste disposition.

Intrusive Sampling

Intrusive soil sampling will be used to confirm radiological contamination levels at the second (consecutive) below-action-level reading (terminus) as shown in Figure 1. These samples will be analyzed for the radiological specified in Table 2 of the WPA2. Additionally, samples from two randomly selected locations within the western-most tree grove and from two other off-property locations shall be analyzed for TCLP constituents. The sampling methodology is outlined in Section 3 of the WPA2.

Intrusive sampling will be performed as follows:

Using a stainless steel hand auger, the top 6" of soil will be extracted and deposited into a stainless steel pan. A homogenous sample from the pan will then be containerized for submission to the lab for analysis. This process will be repeated, with a clean auger and pan each time, for the 6" to 12" layer, the 12" to 18" layer, the 18" to 24" layer, the 24" to 36" layer, and the 36" to 48" layer, except that the last two layers will be archived for possible future analysis, depending on results from overlying layers.

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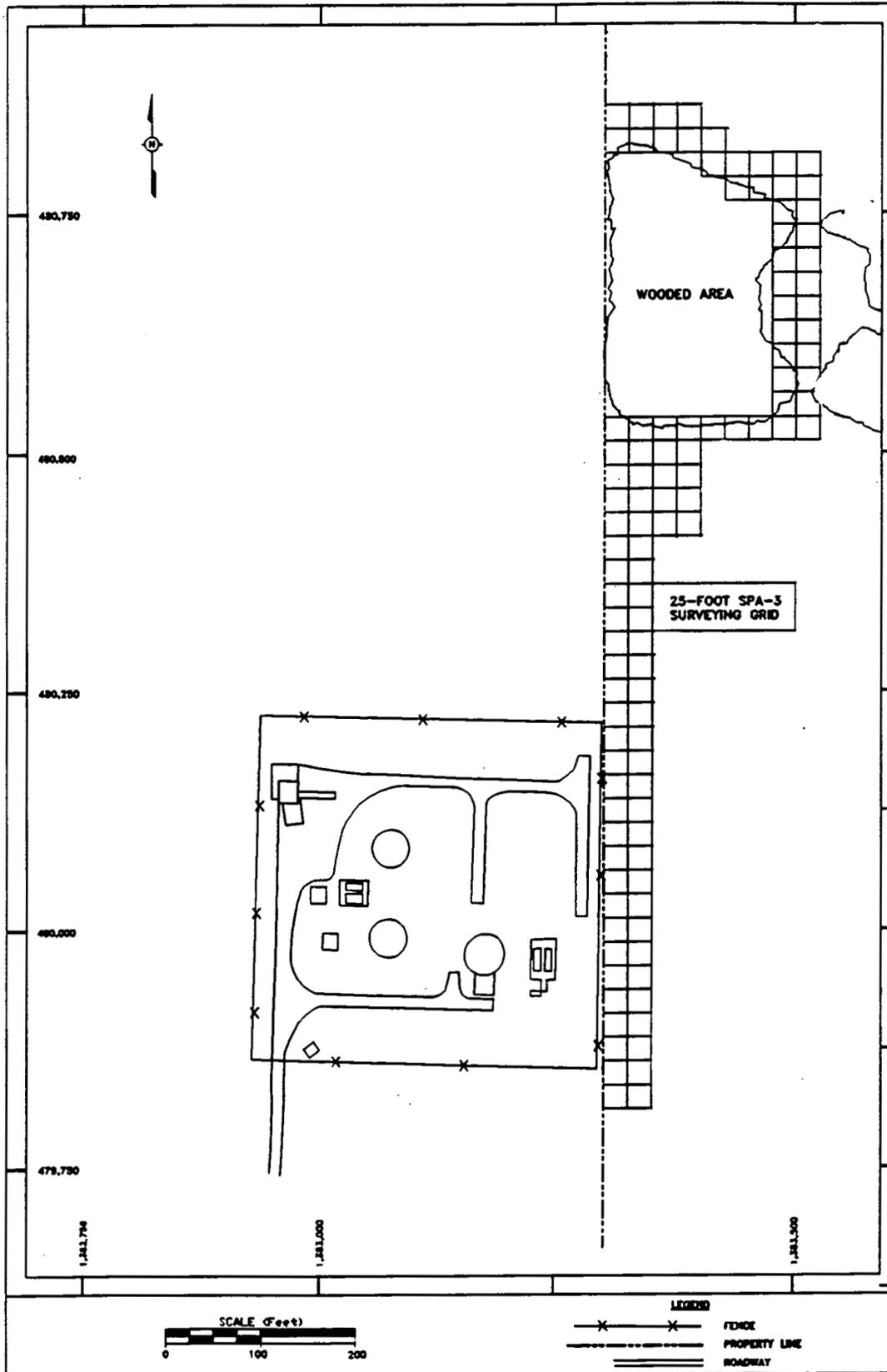


FIGURE 2, OFF-PROPERTY RADIOLOGICAL SURVEY GRID

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TABLE 1

**WALKOVER SURVEY FOR OFF-SITE AREAS EAST AND NORTH
JULY, 1993**

Grid Identification	North/East Coordinate	Counts/Minute
A0	479,800 / 1,383,300	3665
A1	479,800 / 1,383,350	3630
A2	479,800 / 1,383,400	3550
A3	479,800 / 1,383,450	3610
A4	479,800 / 1,383,500	3510
A5	479,800 / 1,383,550	3480
B0	479,900 / 1,383,300	3435
B0.75	479,975 / 1,383,350	3620
B1	479,900 / 1,383,350	3675
B2	479,900 / 1,383,400	3510
B3	479,900 / 1,383,450	3475
B4	479,900 / 1,383,500	3625
B5	479,900 / 1,383,550	3595
C0	480,000 / 1,383,300	3520
C0.25	480,025 / 1,383,300	3430
C0.50	480,050 / 1,383,300	3625
C1	480,000 / 1,383,350	3635
C2	480,000 / 1,383,400	3745
C3	480,000 / 1,383,450	3630
C4	480,000 / 1,383,500	3655
C5	480,000 / 1,383,550	3480
C5.25	479,950 / 1,383,325	3565

Note: Readings of 4000 counts/minute correlate to 35 pCi/g

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Grid Identification	North/East Coordinate	Counts/Minute
D0	480,100 / 1,383,300	3755
D0.25	480,150 / 1,383,325	3830
D1	480,100 / 1,383,350	3780
D1.50	480,150 / 1,383,350	3655
D2	480,100 / 1,383,400	3695
D3	480,100 / 1,383,450	3790
D4	480,100 / 1,383,500	3715
D5	480,100 / 1,383,550	3595
E0	480,200 / 1,383,300	3880
E1	480,200 / 1,383,350	3850
E2	480,200 / 1,383,400	3710
E3	480,200 / 1,383,450	3755
E4	480,200 / 1,383,500	3650
E5	480,200 / 1,383,550	3450
F0	480,300 / 1,383,300	3900
F1	480,300 / 1,383,350	3735
F2	480,300 / 1,383,400	3650
F3	480,300 / 1,383,450	3465
F4	480,300 / 1,383,500	3450
F5	480,300 / 1,383,550	3305
G0	480,400 / 1,383,300	4050
G1	480,400 / 1,383,350	3760
G2	480,400 / 1,383,400	3660
G3	480,400 / 1,383,450	3735
G4	480,400 / 1,383,500	3510
G5	480,400 / 1,383,550	3660

Note: Readings of 4000 counts/minute correlate to 35pCi/g

Grid Identification	North/East Coordinate	Counts/Minute
H0	480,500 / 1,383,300	4375
H1	480,500 / 1,383,350	3750
H2	480,500 / 1,383,400	3745
H3	480,500 / 1,383,450	3705
H4	480,500 / 1,383,500	3585
H5	480,500 / 1,383,550	3635
I3	480,600 / 1,383,450	3665
I4	480,600 / 1,383,500	3565
I5	480,600 / 1,383,550	3620
J3	480,700 / 1,383,450	3460
J4	480,800 / 1,383,500	3485
J5	480,800 / 1,383,550	3510
K0	480,800 / 1,383,300	3700
K1	480,800 / 1,383,350	3730
K2	480,800 / 1,383,400	3630
K3	480,800 / 1,383,450	3770
L0	480,900 / 1,383,300	3690
L1	480,900 / 1,383,350	3635
L2	480,900 / 1,383,400	3790
L3	480,900 / 1,383,450	3685
M0	481,00 / 1,383,300	3960
M1	481,000 / 1,383,350	3730
M2	481,000 / 1,383,400	3845
M3	481,000 / 1,383,450	3800

Note: Readings of 4000 counts/minute correlate to 35 pCi/g