Appendix J

Reprint of DTS-RPT-078, *Central Plateau Terrestrial Ecological Sampling Report—Phase II*, Published December 2005

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Central Plateau Terrestrial Ecological Sampling Report—Phase II

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Prepared for

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Richland, Washington

by

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Technical Services
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ACKNOWLEDGEMENTS

We would like to extend our appreciation to the Fluor Hanford, Inc., Radiological Control Technicians and to the Duratek Sampling Services and Integrated Pest Management groups for their efforts and support during this project. Brett Tiller, Chief Executive Officer of Environmental Assessment Services, conducted biological field surveys and contributed data and text for the vegetation surveys.

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TERMS

DTS	Duratek Technical Services
RCT	Radiological Control Technician

CENTRAL PLATEAU TERRESTRIAL ECOLOGICAL SAMPLING REPORT—PHASE II

1.0 INTRODUCTION

This report has been prepared by Duratek Technical Services (DTS) to document the activities associated with the terrestrial ecological sampling efforts in support of the Phase II Central Plateau ecological risk assessment. This document provides a description of the site preparation and sampling tasks performed and implemented under Contract 24601–Release 6, Central Plateau Ecological Data Quality Objectives/Sampling and Analysis Plan and field sampling.

In particular, this report summarizes the field activities associated with the establishment of 1-hectare study plots at the following sites within the BC Control Area:

- BC Control Area (low)
- BC Control Area (medium)
- BC Control Area (high)
- Phase II Reference Site

In accordance with DOE/RL-2005-30, *Central Plateau Terrestrial Ecological Sampling and Analysis Plan – Phase II*, these 1-hectare sites were emplaced, staked and marked utilizing a Global Positioning System. Radiation surveys were then conducted for soils, plants, ant mounds and rodent burrows. Soils, invertebrates, mice and lizards were also collected for determination of contaminant concentrations by laboratory analyses.

2.0 SCOPE

The sampling and field data collections were conducted in a phased approach in order to systematically identify and conduct field activities to characterize the ecological risks associated with the Central Plateau on the Hanford Site. The sampling efforts described in this document will provide data for soil and biota to evaluate the possible mechanisms for uptake and transfer of contaminants of potential ecological concern (COPECS). This information will also be used to evaluate the health or condition of the ecosystem across habitats and thereby assist in informed waste site decision-making.

Characterization activities described herein were outlined in the Phase II SAP (DOE/RL-2005-30) and are based on the implementation of the Data Quality Objectives process, as documented in WMP-20570, *Central Plateau Terrestrial Ecological Risk Assessment Data Quality Objectives Summary Report*.

Phase II activities were focused on waste sites located in the Central Plateau in the location designated as the BC Control Area of the 200 Areas Plateau, as previously mentioned.

3.0 FIELD ACTIVITIES

Sampling activities were conducted in accordance with the guidance provided in Section 3.0, "Field Sampling Plan," of the phase II sampling and analysis plan (DOE/RL-2005-30).

3.1 SITE SAFETY

An Activity Hazard Analysis (AHA-05-002-EM, Rev. 2, see Appendix A) was developed for implementation by all individuals providing field support or site visitors to the project, prior to any field work being initiated.

3.2 SITE SELECTION

The sites selected for this study included three locations within the BC Control Area, which is located south of the 200 East Area. The specific locations were chosen based on the recommendations of the Fluor Groundwater radiological control technicians (RCT) who were familiar with the area. The sites were designated as low, medium and high based on aerial gamma surveys and their proximity to surface radiological contamination emanating from the BC cribs and trenches (Figure 1).

For comparative purposes, a reference site located approximately three-quarters of a mile northwest of the 200 West Area (see Figure 2) and upwind of the 200 Areas was also selected to undergo the same field surveys and sample collections.

The sites located in the BC Control Area and the reference site exhibit variable effects of site disturbance. These sites, while dominated by a native shrub-steppe community of big sagebrush (Artemsia tridentata) do contain areas exhibiting shrub mortality and man-made encroachment.

Prior to any sample collections a site walk-down was conducted to determine the priority locations for the collection points on the waste sites and to determine an acceptable location for the reference site.

3.3 SAMPLE PLOTS

A 1-hectare (100 m x 100 m) grid was established as the selected study location within or on each of the waste sites. The sites were marked with surveyors' stakes and engineering tape and labeled. Marked locations were surveyed using a Trimble Pro XRS Global Positioning System

receiver and reduced Washington State Plane (south zone) North American Datum of 1983; 1991 adjustments in meters. A total of 121 locations were established in each hectare plot (see Figure 3). This also resulted in the formation of 100 individual 10 m^2 x 10 m^2 plots as shown in Figure 4. Table 1 provides a summary of the activities and dates for the Phase II study site preparation and set up.

Figure 1. Map Showing Location of Phase II BC Control Area Study Sites.

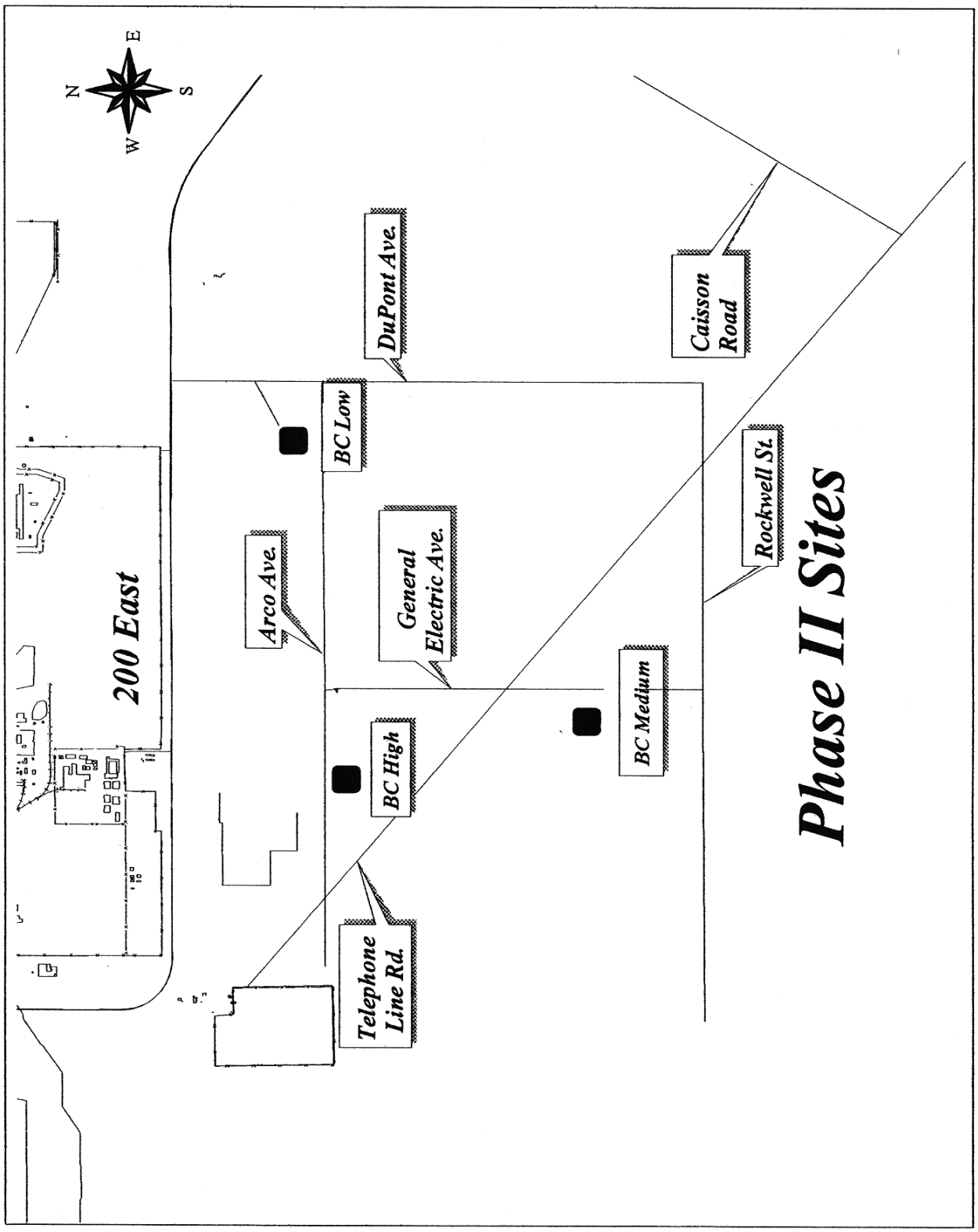


Figure 2. Map Showing Location of Phase II Reference Site.

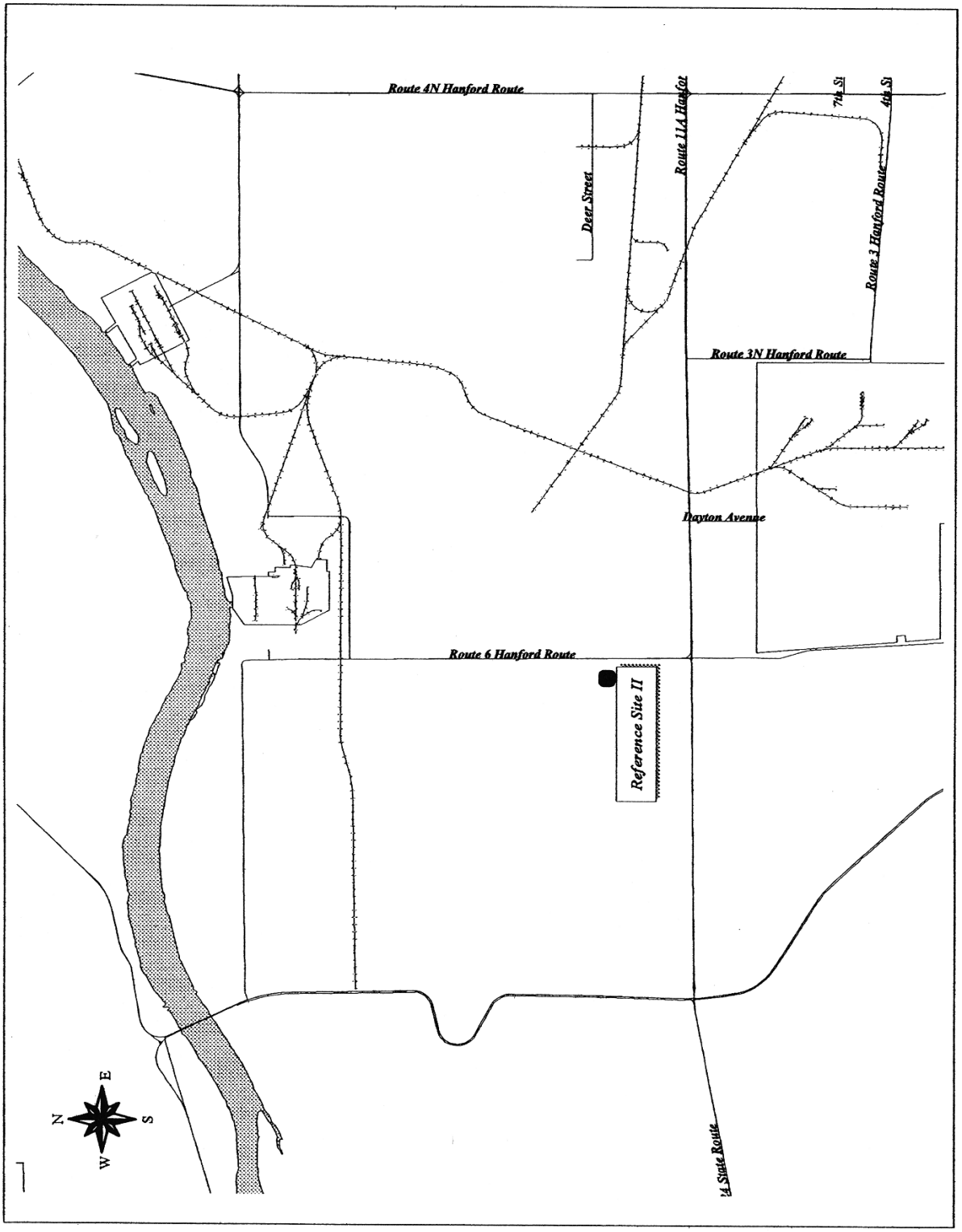


Figure 3. One-hectare Grid Map Showing Node (Stake) Locations and Identification Numbers.

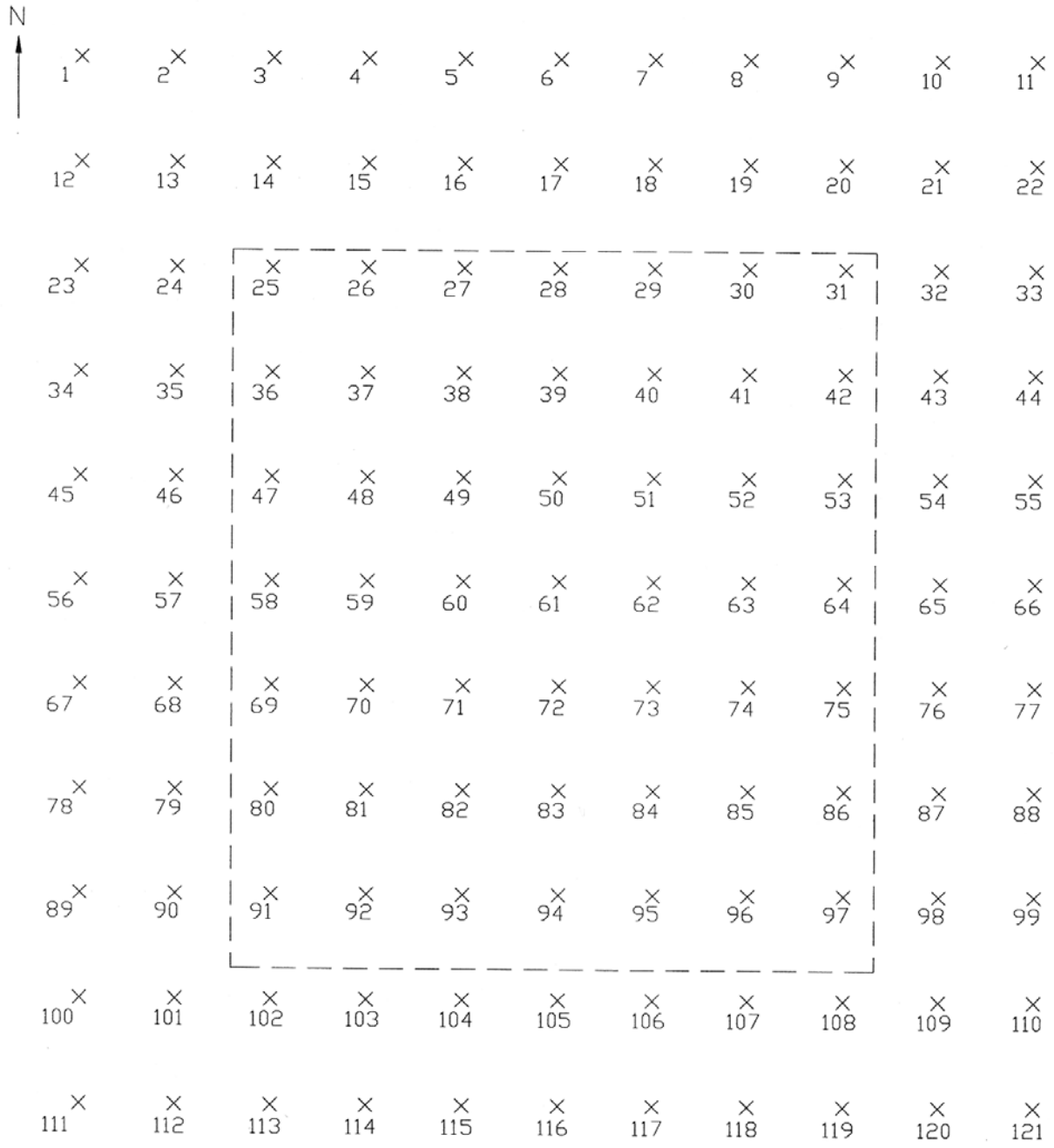


Figure 4. One-hectare Grid Showing Individual 10 m x 10 m Study Plots.

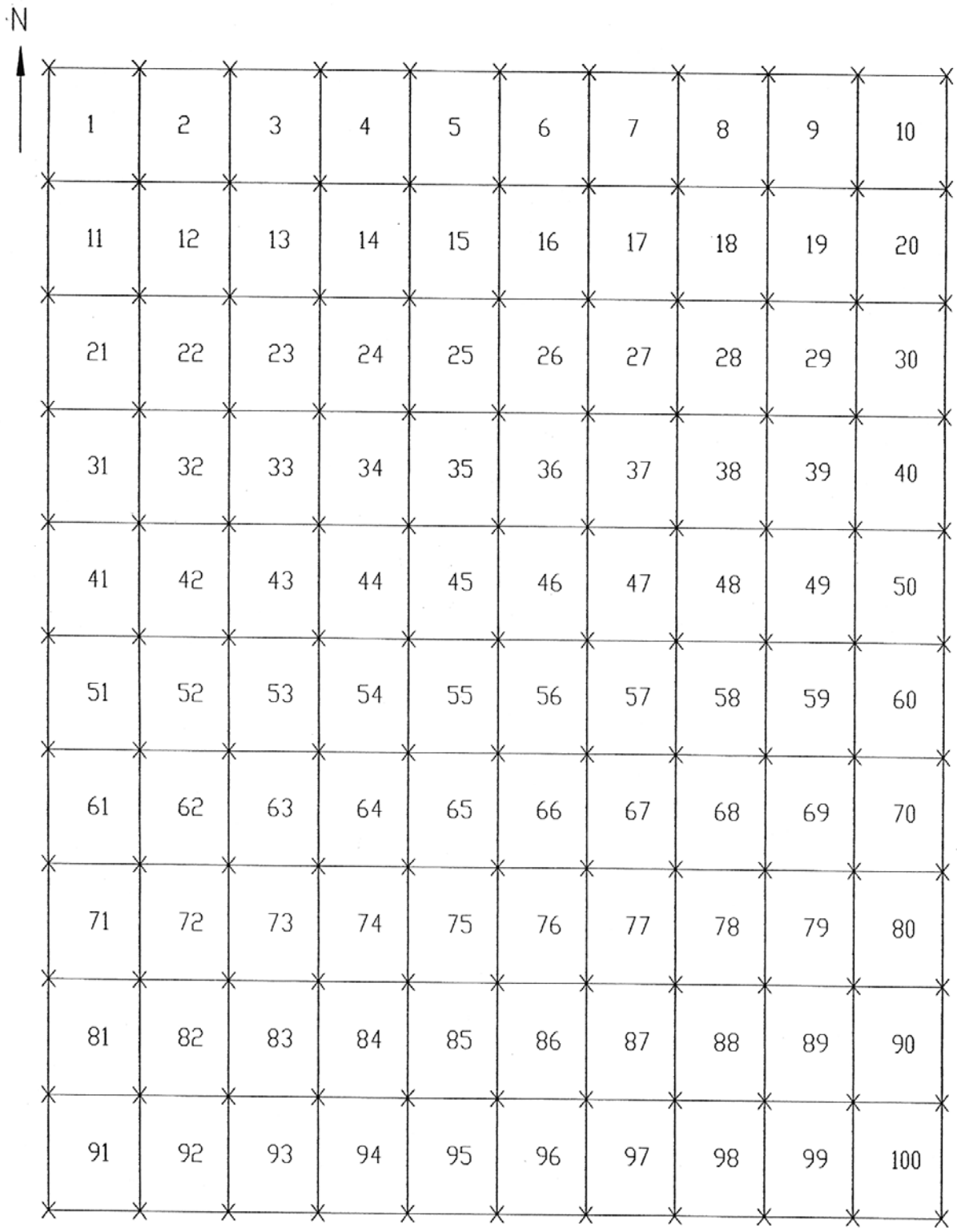


Table 1. Summary of Phase II Site Set-up and Radiation Survey Dates.

Site	Global Positioning System	Staking	Plant Surveys	Soil Surveys	Vegetation Surveys
BC-Low	2/24/2005	2/24/2005	4/12/2005	4/12/2005	4/13/2005
BC-Medium	3/8/2005	3/8/2005	4/19/2005	4/19/2005	4/13/2005
BC-High	3/7/2005	3/7/2005	4/27/2005	4/27/2005	4/13/2005
Ref. Site #2	1/26/2005	1/26/2005	3/10/2005	3/10/2005	4/13/2005

Appendix B contains summary tables of site coordinates for each of the study plots.

3.4 RADIATION SURVEYS

Once each 1-hectare investigation area was identified, radiological surveys were conducted at the 121 nodes (see Figure 3) that were staked with flags or wood posts that were marked with the location number. An Environmental Radiological Survey Task Instruction was developed to provide guidance for the specialized surveys that were performed by the RCT. These instructions and other guidance are provided in Appendix C.

3.4.1 Soil Radiation Surveys

Surface soil radiological readings were measured in a 1 m^2 area surrounding each stake located within the 1-hectare study site. The results were documented on a radiological survey record, as per the survey task instructions. Both beta and gamma measurements were taken on the surface soil. Soil survey results are provided in Appendix D.

3.4.2 Plant Surveys

Plant radiological readings were measured in a 1 m^2 area surrounding each stake and located within the 1-hectare study site. The results were documented on a radiological survey record, as per the survey task instructions. The plant nearest to the field radiological data location was selected. If more than one plant was equidistant from the location, the tallest specimen was selected for the plant radiological field data collection. The species and dimensions (height and width) of the plant were noted. Both beta and gamma measurements were recorded for the plant material. Plant survey results are provided in Appendix D.

3.4.3 Vegetation Surveys

Vegetation cover was assessed to examine possible relationships between plant composition and cover with other measures of environmental quality identified in the SAP; e.g., attributes of invertebrates, lizards, small mammals, and birds. The same observer estimated plant cover on all investigation areas to minimize observer-based variability. Photographs of each grid were taken to document the overall vegetative characteristics found at these sites during sampling.

Vegetative cover found in each of five grids identified in Phase II was estimated using a modified Daubenmire (Daubenmire 1959) technique consisting of a series of ocular estimates of the percent coverage by species found within 20 cm x 50 cm plots that were gridded into 10 cm squares. Canopy cover was estimated using finite values for all plant species with more than 2% aerial coverage. Plant species encountered in each plot with ≤2% aerial cover were listed. The percent of ground covered with cryptogamic crust was also visually estimated after spraying the ground surface with a mist of water to assure accurate estimates.

Plot points were established using a systematic approach by collecting sample results at every-other flag point located in the core area of each grid. As such, a total of 25 plant cover samples were taken within each investigation area. The bottom-left corner of the plot frame was placed at the base of the flag point with the plot frame always positioned in the true North direction.

In addition to the grasses and forbs vegetative cover encountered in the Phase II plots, the Phase II plots also consisted of shrubs. In addition to the techniques described above, the line intercept method was used during Phase II to estimate canopy cover of the shrubs found in each sample grid. This technique was chosen for the shrubs because they are typically less homogeneously distributed than grasses and forbs. Therefore, shrub canopy cover intercepting a line can be rapidly measured (Bauer 1943).

Canopy cover for the shrubs was estimated by determining the amount of area covered along a metric tape meter placed systematically along four of the eight flag lines found within each core area of each investigation area, for a total of 240 meters of line transect. Shrub species were determined and two-dimensional canopy cover estimates were determined for each shrub species encountered. The portion of each shrub measured along the line intercept was further classified as either dead or alive to help represent overall health of the shrub community within each investigation area. Maximum heights of all shrubs found intercepting the line were also recorded. A listing of all shrub species observed within each investigation area was also completed. Vegetative survey information is provided in Appendix J.

3.4.4 Ant/Mammal Spoil Surveys

The study sites were surveyed for animal activity by observing mammal (usually mice) burrows and ant mounds. A walk-down of the entire surface of the study site was conducted and the mammal burrows and ant mounds were identified and marked using two different colors of pin flags. The nearest stake was also identified on the survey form for permanent identification. In a

number of cases there was a paucity of burrows and mounds located on the study sites. Copies of the survey forms are included in Appendix E.

3.4.5 Ant Mound/Mammal Burrow Radiation Surveys

Following identification and marking of the ant mounds and mammal burrows, the RCT was provided a map showing the location of the marked sites. Each mound/burrow was identified by proximity to the nearest numbered stake. Surveys were then conducted to record the ambient radiological background levels and the radiation measurements for both ant mounds and burrow spoils were recorded as per the Environmental Radiological Survey Task Instruction (Appendix C). Copies of the radiation survey forms are included in Appendix F.

4.0 SAMPLE COLLECTION

In addition to the various surveys, samples of soils, invertebrates, mice and lizards were collected for laboratory analyses. In order to minimize the effects of animals moving in and out of the study site, collections and trapping were conducted in the central portion of the study site as denoted by the square outlined with a dashed line in Figure 3. Since each study site contained the same number of pit can traps for invertebrates and lizards and live traps for small mammals, the term, ”trap nights” refers to the total number of days it took at each site to collect the listed mass or number of animals indicated.

Table 2 provides a summary of the sampling and biological survey dates for the Phase II collections.

Table 2. Summary of Phase II Sampling and Survey Dates.

Site	Invertebrate Sampling	Lizard Sampling	Mammal Sampling	Mark Burrows/Mounds	Survey Burrows/Mounds	Soil Sampling
BC-Low	6/2-8/30	6/2-9/12	6/8-6/14	6/7/2005	6/16/2005	9/20/2005
BC-Medium	6/2-8/30	6/2-9/12	6/8-6/9	6/7/2005	6/21/2005	9/15/2005
BC-High	6/2-8/30	6/2-9/3	6/10-6/21	6/7/2005	6/22/2005	9/14/2005
Ref. Site #2	6/2-9/5	6/2-9/12	6/16-6/29	6/7/2005	6/15/2005	9/13/2005

4.1 INVERTEBRATES

Drift fences were established at each site to facilitate the collection of invertebrate species. Each drift fence was 9.1 m long, consisting of a 30.5 cm high masonite-type board. The fence was held in place with 61.0 cm wooden stakes and had located along its perimeter two sets of 3.8 L cans; two at each end (4 total); which were all placed at grade. Terrestrial invertebrates

encountering the fence were directed along its edge until they fell into one of the pit cans located along its periphery.

An additional capture method consisted of 4 individual pit can traps consisting of individual 3.8 L cans, topped with metal "runners." The runners consisted of 7 cm x 0.6 m long pieces of sheet metal cut to place in an X configuration over the pit can traps, thereby increasing their effective capture area. A 0.3 m x 0.3 m piece of sheet metal was placed on top of the runner to provide shade as an attraction and protection for the trapped animals. The total number of pit can traps was eight.

Amber glass 500 m or 1,000 ml, wide-mouth bottles were labeled for each study site and all invertebrates collected from that site were placed in bottles labeled, "Collection."

Following each collection period, the invertebrates were taken to the Radiological Control office, where the contents were surveyed and released by an RCT. They were then transported to a controlled freezer and transferred into a second set of amber glass bottles having the same site identifier, but labeled as "Identification" bottles.

Dr. Richard Zack, professor of entomology at Washington State University (WSU) was provided access to the bottles labeled "Identification" for each site and identified the invertebrate orders and/or families represented. He then divided these into the two primary groups represented by mass and a third group consisting of all other invertebrates. These three groups were weighed and then equally divided by mass into three subsamples in bottles labeled "Lab" for submittal to the Waste Sampling and Characterization Facility laboratory.

Table 3 provides a summary of the total trap nights and invertebrate mass collected at each of the study sites.

Table 3. Invertebrate Sampling Summary.

Site	Trap Nights	Total Volume (g)
BC-Low	90	232
BC-Medium	90	577
BC-High	90	219
Ref. Site #2	96	164

Appendix H provides a summary of the types of invertebrates collected at each study site. The invertebrate samples were submitted to the Waste Sampling and Characterization Facility laboratory.

4.2 MICE

Mice were captured utilizing Sherman live traps laid out in two transects consisting of at least 14 traps at each of the study sites. Since the deer mouse (*Peromyscus maniculatus*) and the Great Basin pocket mouse (*Perognathus parvus)* were trapped in equal numbers, all of the mice captured were maintained for laboratory submittal.

Table 5 provides a summary of the total trap nights for each study site.

Table 5. Mammal Sampling Summary.

Site	Trap Nights	Total Number
BC-Low	7	6
BC-Medium	2	6
BC-High	12	6
Ref. Site #2	14	6

Other than one mouse indicating possible evidence of predation (nipped ear the only other anomaly noted was a female with an infected uterus, which could be due to a variety of causes. Information summaries for the captured mice are included in Appendix K and documentation of field activities in Appendix M.

The mice samples were submitted to Environmental Assessment Services personnel for laboratory preparation and subsequently submitted to the appropriate analytical lab.

4.3 LIZARDS

Side-blotched lizards (*Uta stansburiana*) collected in the pit can traps associated with the invertebrate collections on the study sites were also sampled. Lizards were uncommon in three of the four study sites and a number of juveniles were encountered.

The information recorded on the field data checklist could include the following: date collected; site where collected; male or female; total length from snout to tail; length from snout to vent; the individual was weighed and notes made of any abnormalities such as scarring, wounds, growths, tumors, etc. Following a radiation survey and release, the animals were stored in a controlled freezer until they were submitted to a laboratory for contaminant analyses.

Table 4 provides a summary of the total trap nights for each study site.

Table 4. Lizard Sampling Summary.

Site	Trap Nights	Total Number
BC-Low	103	2
BC-Medium	103	2
BC-High	94	7
Ref. Site #2	103	2

There were no anomalies in the Phase II lizards. Information summaries for the lizards collected are included in Appendix L and documentation of field activities in Appendix M.

The lizard samples were submitted to Environmental Assessment Services personnel for laboratory preparation and subsequently submitted to the appropriate analytical lab.

4.4 SOIL

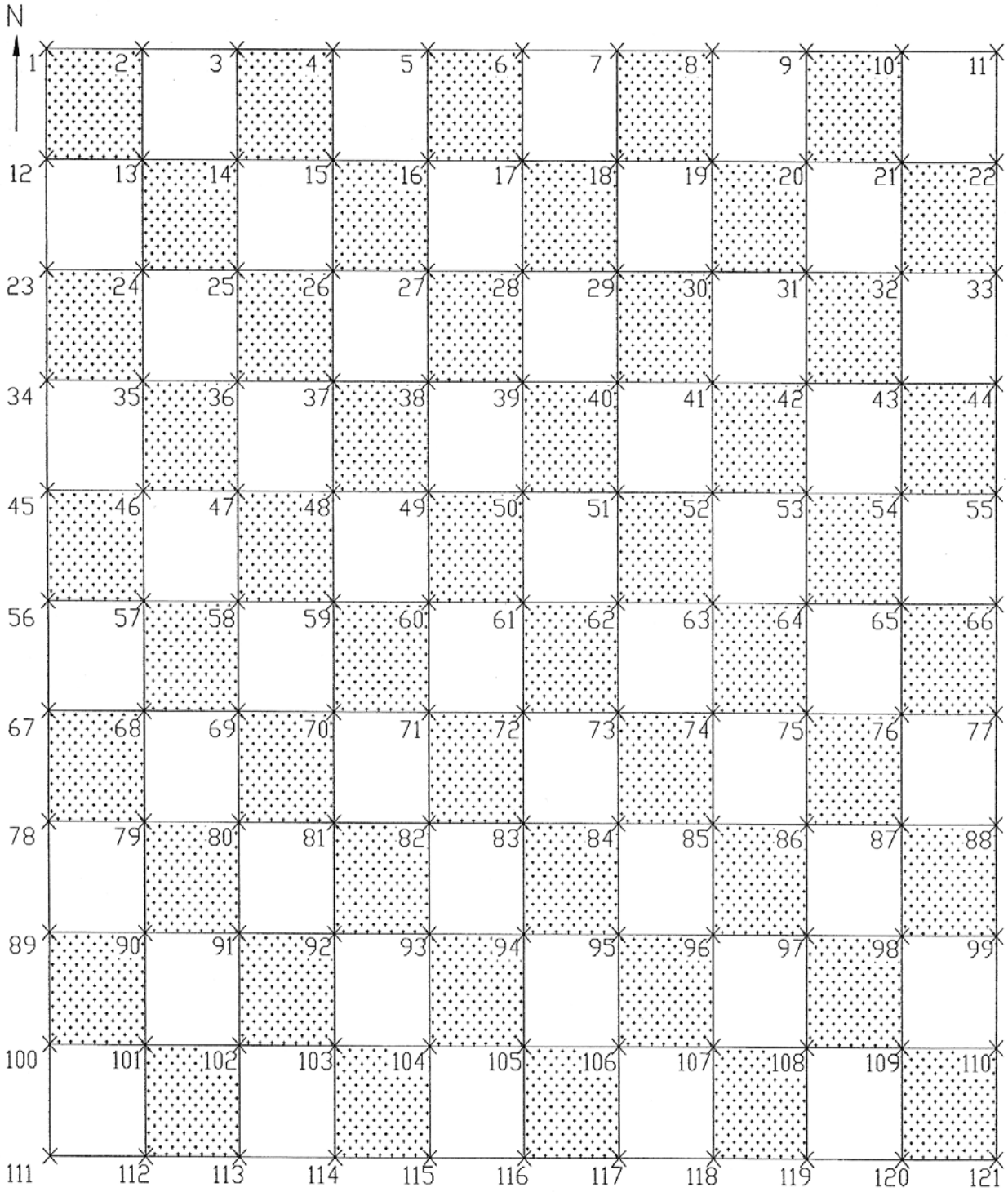
Phase II soil samples were collected using the multi-increment sampling method. This method is designed to control the fundamental error, as well as the grouping and segregation error. The resulting value reports an average and is based on collecting an adequate sample mass (Ramsey et al. 1989, Pitard 1993, Gy 1998, Gerlach and Nocerino 2000, Gerlach et al. 2002, Ramsey 2004, Smith 2004, Ramsey 2005). The multi-increment soil sampling method used for this project is included in Appendix I.

To meet the requirement to sample to a depth of 15 cm, specialized equipment was needed to collect and process the samples. Sampling equipment was designed and/or modified. In order to accomplish the mass reduction of the collected soil (56 kg plus to approximately 2 kg), specialized sample splitters were obtained and utilized.

The multi-increment soil samples were collected using a systematic random design from 50 locations based on a checkerboard pattern as shown by the shaded squares in Figure 5. A sampling location within each of the designated 10 m x 10 m plots was determined randomly and marked with pin flags. The soils were also surveyed by an RCT for beta and gamma radiation. The survey results will be provided separately in Appendix G.

Samples were collected, labeled, stored and shipped to the receiving facility/laboratory in accordance with the instructions outlined in DTS-SSPM-001, *Sampling Services Procedures Manual*, and complied with requirements found in DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Document*. A record of field activities (Chain of Custody forms, Sample Authorization Forms, photographs of sample locations, etc.) is provided in Appendix M.

Figure 5. One-hectare Grid Showing Shaded Plots Selected for Soil Sampling.



5.0 REFERENCES

Bauer, H. L., 1943, "The Statistical Analysis of Chaparral and Other Plant Communities by Means of Transect Samples," *Ecology* 24: 45-60.

Daubenmire, R., 1959, "A Canopy-Coverage Method of Vegetational Analyses," *Northwest Science*, 33: 43-64.

DOE/RL-96-68, 1998, *Hanford Analytical Services Quality Assurance Requirements Document*, Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2005-30, 2005, *Central Plateau Terrestrial Ecological Sampling and Analysis Plan – Phase II*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DTS-SSPM-001, *Sampling Services Procedures Manual*, Duratek Technical Services, Richland, Washington.

Gerlach, R. W. and J. M. Nocerino, 2000, *Guidance for Obtaining Representative Laboratory Analytical Subsamples from Particulate Laboratory Samples*, EPA/600/R-03/027, U.S. Environmental Protection Agency, Washington, D.C.

Gerlach, R. W., D. E. Dobb, G. A. Rabb and J. N. Nocerino, 2002, "Gy Sampling Theory in Environmental Studies I: Assessing Soil Splitting Protocols," *Journal of Chemometrics*, 16 (7): 871-878.

Gy, P., 1998, *Sampling for Analytical Purposes*, John Wiley and Sons, New York, New York.

Pitard, F. F., 1993, *Pierre Gy's Sampling Theory and Sampling Practice: Heterogeneity, Sampling Correctness, and Statistical Process Control*, 2nd ed., CRC Press, Inc., Boca Raton, Florida.

Ramsey, C. A., M. E. Ketterer and J. H. Lowry, 1989, *Application of Gy's Sampling Theory to the Sampling of Solid Waste Materials*, in *Proceedings of the EPA Fifth Annual Waste Testing and Quality Assurance Symposium*.

Ramsey, C., 2004, *Sampling for Environmental Activities*, DQO Training Course, Envirostat, Fort Collins, Colorado

Ramsey, C., 2005, Envirostat, Personal communication, Fort Collins, Colorado

Smith, P. L., 2004, "Principles and Practices for Correct Sampling and the Impact on Statistical Data Quality," EPA 23rd Annual National Conference on Managing Environmental Quality Systems, Tampa. Florida.

WMP-20570, 2004, *Central Plateau Terrestrial Ecological Risk Assessment Data Quality Objectives Summary Report*, Rev, 0, Fluor Hanford, Inc., Richland, Washington.

APPENDIX A

ACTIVITY HAZARD ANALYSIS

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Duratek Federal Services	ACTIVITY HAZARD ANALYSIS [ENVIRONMENTAL MONITORING SAMPLING]	AHA-05-002-EM REV. ~~1~~2 Page 1 of 4

Prepared by:	Ron Mitchell	Signature:	Ron Mitchell	Date:	9/8/05
Supervisor:	Ron Mitchell	Signature:	Ron Mitchell	Date:	9/8/05
Reviewed by:	Betty L. Mitchell	Signature:	Betty L. Mitchell	Date:	9-7-2005

EVERY WORKER MUST UNDERSTAND THE HAZARDS ASSOCIATED WITH THIS ACTIVITY AND THE CORRECTIVE MEASURES. IF YOU DO NOT UNDERSTAND ANY PORTION OF THIS AHA OR HAVE ENCOUNTERED CONDITIONS THAT HAVE NOT BEEN ADEQUATELY IDENTIFIED STOP AND DO NOT PROCEDE UNTIL YOU HAVE CONTACTED YOUR SUPERVISION!

Scope/Description: Environmental monitoring personnel, with the assistance of radiological control personnel, will collect air, soil, and small animal (such as lizards and mice) and insect samples at the Hanford 200 East area BC controlled area. Sampling methods are defined in the site sampling plant to determine the number of samples to be collected and the location where samples are collected based on the designated quadrant. The samples have the potential to have chemical, radiological, and physical property hazards that are discussed within the sampling plan and this activity hazard analysis. Personnel will collect samples; complete field log book, checklists, and sample custody forms; and transport samples to a designated laboratory.

Specific Work Location(s): BC Controlled Area.

Activity Tasks: Employees will enter the 200E BC controlled area to collect air, soil, and resident animal samples around the identified waste sites. Samples will be collected using small hand tools (such as shovel, tweezers, scoop, etc.), soil separator, traps, and other similar type field equipment. The samples will be placed into sample containers and then into shipping containers. The employee will transport shipping containers to an onsite laboratory or other designated laboratory for analysis.

HAZARD ASSESSMENT

Hazard	Yes	No	Conditions/Mitigation
1. Radiological	X		The clients radiological control programs and personnel will provide radiological controls and surveys. All radiological areas will be posted defining the hazardous area and requirements for entry. DO NOT ENTER any radiological area until you have read and understand the postings and can comply with the entry requirements. If there are any questions regarding any radiological issues, they shall be directed to the Duratek Technical Services Project Lead or appropriate site radiological personnel prior to entry. Some areas identified in the sampling plan have been identified as radiologically contaminated, where radiological PPE, such as booties, ~~and~~ gloves, SWPs and respirators, may be required. Personal radiological sampling may be completed as required by the client controls. Check to ensure employees have current respiratory training.
2. Biological	X		Watch for poisonous reptiles, rodents, and insects, particularly beneath equipment that has rested on the ground over night and in shaded areas beneath shrubs. Employees gathering insects, rodents, plants, etc., for sampling analysis shall wear as a minimum the following PPE during sample collection: leather gloves or equivalent gloves, safety glasses, sturdy leather shoes. Employees will wash their hands and faces with soap and water prior to eating, drinking, smoking, or applying cosmetics to prevent hand to mouth spread of animal bacteria/viruses. Employees who may be allergic to insect bites or stings should inform their supervisor to ensure prompt notification to the medical department.

Hazard	Yes	No	Conditions/Mitigation
3. Chemical	X		Soils may contain volatile organic compounds (VOC) which may cause unusual odors. Report all unusual odors and odors to the Field Supervisor and the Safety Representative immediately. Any employee feeling ill shall be evaluated by medical personnel.
4. Non-ionizing Radiation		X	
5. Ergonomic/ Manual Lifting	X		Use proper lifting techniques (bend at the knees, straight back, and firm grip, hold load as close as possible to the body). Use buddy system for heavy/bulky/awkward loads and when the load is greater than 50 pounds. Loads greater than 100 pounds require mechanical means for movement (see your safety representative). If excessive shoveling is necessary, take breaks as needed. When kneeling on the ground use a kneepad to prevent injuries from uneven surfaces, rocks, or other debris (goat thorns). During use of the RaKo sample splitters exercise caution in loading the feed tray so that there is no tipping and be aware of possible "pinch points". Maintain a firm grip on the handle during sample feeding.
6. Noise		X	
7. Physical Stressors	X		Heat and Cold Stress. Wear appropriate clothing for prevailing weather conditions. Observe fellow workers for symptoms of heat/cold stress. Consume sufficient quantities of water. Self monitor and take breaks as needed. Call 373-2875 for the current temperature when working for extended periods of time outdoors. For additional concerns on heat/cold stress contact your safety representative.
8. Thermal Stress	X		Employees shall wear the appropriate clothing for the weather conditions. Taking breaks as necessary to prevent heat or cold stress to the body. Temperatures below 40 degrees F with wind speeds greater than 5 miles per hour should use gloves to protect the hands from cold stress, especially when using metal tools. Protect the skin from sun exposure during the summer months by covering with a lightweight type cloth, such as cotton, that allows for breathing and reduces direct UV light.
9. Respiratory Protection	X	~~X~~	~~If radiological or safety require additional respiratory protection controls, this activity hazard analysis must be modified.~~ Ensure employees are current in their respiratory training and medical exam prior to working in an area where respirators are required. Employees shall check respiratory equipment prior to use. Employees shall use the client's respirator control/use procedures and be clean shaven (if applicable).
10. Confined Spaces		X	
11. Dry Grass - Fire	X		Fires may be possible when driving off the normal road way (trails) from the heat of the engine or exhaust system contacting grass, sagebrush, or when it gathers on the top of the brush guard. Keep the brush guard clean of debris. Carry a shovel and fire extinguisher in the vehicle at all times when driving off paved roads. Carry a cell phone or radio to report a fire, even if it has been extinguished. Plan an evacuation route prior to the start of the job whenever possible.
12. Hand Tools	X		Use the correct tool for the task. Inspect each tool before use and replace when defective/worn. Do not attempt to modify tools.
13. Falls /Scaffolds		X	

Hazard	Yes	No	Conditions/Mitigation
14. Cranes / Rigging		X	
15. Drilling / Excavation		X	
16. Heavy Equipment		X	
17. Explosives / Cryogenics		X	
18. Other Activity Specific			
Notes and special instructions:			

MONITORING REQUIREMENTS – Radiological control personnel will be conduct area and personnel surveys in posted areas. Employees shall comply with the requirements contained within the radiological work permits. Industrial hygiene monitoring may be required if unusual odors are detected. Radiological control personnel may conduct radiological sampling on employees to help determine employee exposures.

MEDICAL SURVEILLANCE REQUIREMENTS – ~~None identified for this scope of work~~Respiratory medical evaluation.

TRAINING REQUIREMENTS – Use of fire extinguishers, certified first aid/CPR, handling of samples, radiological worker if entering a radiologically controlled area, respirator training and fit test, and job related tasks.

ACCESS CONTROL – Posted radiological entry requirements in designated areas.

EMERGENCIES PREPAREDNESS – The Environmental Monitoring Group shall have at least one employee that is certified in first aid and CPR. The certified employee should be available for response to a first aid injury should one occur. A first aid kit will be available at the job location. Employee(s) assigned to work in remote locations shall have a means of communication, by either a cellular phone or radio. Employees shall understand the emergency routes. If an accident occurs the employee will contact the Supervisor, and if necessary emergency response center at 373-3800. When possible meet the Fire Department at the main road and lead them to the injured employee.

EXPOSURE ASSESSMENT

- Hazard Characterization: The work conducted under this scope has a low hazard potential. The primary concerns are the hazards from over exertion in inclement weather, animal/insect bites/stings, radiological contamination, and encountering areas that have not been previously identified to contain hazards.
- Vehicles: Vehicles may cause brush fires when traversing off road driving. Be aware of tall grass and sagebrush. Call the emergency numbers (911 or for cell phone 373-3800) immediately if a fire occurs. Use the fire extinguisher if possible. Do not attempt to fight the fire unless you can do so without endangering yourself or others. Park vehicles where the underside will not come in contact with the vegetation whenever possible.
- Biological: When collecting reptiles, such as lizards or salamanders, there is a potential for salmonella to be present in their saliva. Wear leather or equivalent gloves when collecting the samples. Wash the hands and face prior to eating, drinking, smoking or applying cosmetics. When collecting mice there is a potential for coming in contact with hantavirus. The hantavirus may be contained in the deer mice drippings, urine, or nesting materials. Do not disturb nesting materials or dust. Wear leather or equivalent gloves and safety glasses when collecting samples. Wash the hands and face prior to eating,

drinking, smoking or applying cosmetics.

- Physical stressors – heat/cold, lifting, awkward posture. Wear the appropriate clothing for the weather conditions. When lifting keep the back straight, maintain a firm grip, and hold the load as close to the body as possible, do not make sudden turns that twist the upper torso of the body, turn using the whole body. Use a buddy when the load is awkward or greater than 50 pounds. Use a kneeling pad or kneepads when kneeling outside in the brush to prevent punctures to the knees from rocks, sticks or weed thorns.

PERSONAL PROTECTIVE EQUIPMENT

The following minimum PPE shall be worn during sampling and monitoring activities:

- Sleeved shirt at least 4 inches below the shoulder
- Long pants
- Substantial footwear – footwear that is constructed to provide adequate protection for the work environment. Shoes shall be closed toe, firm material with rigid sole (referred to as sturdy leather construction)
- Leather gloves or equivalent (during sampling activities)
- Additional PPE may be required by radiological or industrial/safety personnel.

EMERGENCY CONTACT PHONE NUMBERS

Patrol Operations Center emergency contact number from any type of phone **373-3800**

Hanford landline only **911**

EMERGENCY MEDICAL SERVICES

Site Emp. Health Care - 200W area	2719WB	373-2714
Advanced Med (Richland)	1979 Snyder	376-6981
Kadlec Medical Center	888 Swift Blvd	946-4611

DFSNW MANAGEMENT

	Office	Cellular
Field Team Leader (Ron Mitchell)	376-5122	
Manger (John Dorian)	372-2604	
Operations Manager (Don Moak)	372-8031	308-0099
Safety Representative (Betty Mitchell)	372-3483	308-6404

APPENDIX B

GPS COORDINATES

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Name	BC Low Northing	Easting	Elevation	Code
1	134122.9	575490.17	201	1
2	134122.9	575500.17	201	2
3	134122.9	575510.17	201	3
4	134122.9	575520.17	201	4
5	134122.9	575530.17	201	5
6	134122.9	575540.17	201	6
7	134122.9	575550.17	201	7
8	134122.9	575560.17	201	8
9	134122.9	575570.17	201	9
10	134122.9	575580.17	201	10
11	134122.9	575590.17	201	11
12	134112.9	575490.17	201	12
13	134112.9	575500.17	201	13
14	134112.9	575510.17	201	14
15	134112.9	575520.17	201	15
16	134112.9	575530.17	201	16
17	134112.9	575540.17	201	17
18	134112.9	575550.17	201	18
19	134112.9	575560.17	201	19
20	134112.9	575570.17	201	20
21	134112.9	575580.17	201	21
22	134112.9	575590.17	201	22
23	134102.9	575490.17	201	23
24	134102.9	575500.17	201	24
25	134102.9	575510.17	201	25
26	134102.9	575520.17	201	26
27	134102.9	575530.17	201	27
28	134102.9	575540.17	201	28
29	134102.9	575550.17	201	29
30	134102.9	575560.17	201	30
31	134102.9	575570.17	201	31
32	134102.9	575580.17	201	32
33	134102.9	575590.17	201	33
34	134092.9	575490.17	201	34
35	134092.9	575500.17	201	35
36	134092.9	575510.17	201	36
37	134092.9	575520.17	201	37
38	134092.9	575530.17	201	38
39	134092.9	575540.17	201	39
40	134092.9	575550.17	201	40
41	134092.9	575560.17	201	41
42	134092.9	575570.17	201	42
43	134092.9	575580.17	201	43
44	134092.9	575590.17	201	44
45	134082.9	575490.17	201	45
46	134082.9	575500.17	201	46
47	134082.9	575510.17	201	47
48	134082.9	575520.17	201	48
49	134082.9	575530.17	201	49
50	134082.9	575540.17	201	50

51	134082.9	575550.17	201	51
52	134082.9	575560.17	201	52
53	134082.9	575570.17	201	53
54	134082.9	575580.17	201	54
55	134082.9	575590.17	201	55
56	134072.9	575490.17	201	56
57	134072.9	575500.17	201	57
58	134072.9	575510.17	201	58
59	134072.9	575520.17	201	59
60	134072.9	575530.17	201	60
61	134072.9	575540.17	201	61
62	134072.9	575550.17	201	62
63	134072.9	575560.17	201	63
64	134072.9	575570.17	201	64
65	134072.9	575580.17	201	65
66	134072.9	575590.17	201	66
67	134062.9	575490.17	201	67
68	134062.9	575500.17	201	68
69	134062.9	575510.17	201	69
70	134062.9	575520.17	201	70
71	134062.9	575530.17	201	71
72	134062.9	575540.17	201	72
73	134062.9	575550.17	201	73
74	134062.9	575560.17	201	74
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79	134052.9	575500.17	201	79
80	134052.9	575510.17	201	80
81	134052.9	575520.17	201	81
82	134052.9	575530.17	201	82
83	134052.9	575540.17	201	83
84	134052.9	575550.17	201	84
85	134052.9	575560.17	201	85
86	134052.9	575570.17	201	86
87	134052.9	575580.17	201	87
88	134052.9	575590.17	201	88
89	134042.9	575490.17	201	89
90	134042.9	575500.17	201	90
91	134042.9	575510.17	201	91
92	134042.9	575520.17	201	92
93	134042.9	575530.17	201	93
94	134042.9	575540.17	201	94
95	134042.9	575550.17	201	95
96	134042.9	575560.17	201	96
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98	134042.9	575580.17	201	98
99	134042.9	575590.17	201	99
100	134032.9	575490.17	201	100
101	134032.9	575500.17	201	101
102	134032.9	575510.17	201	102

103	134032.9	575520.17	201	103
104	134032.9	575530.17	201	104
105	134032.9	575540.17	201	105
106	134032.9	575550.17	201	106
107	134032.9	575560.17	201	107
108	134032.9	575570.17	201	108
109	134032.9	575580.17	201	109
110	134032.9	575590.17	201	110
111	134022.9	575490.17	201	111
112	134022.9	575500.17	201	112
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114	134022.9	575520.17	201	114
115	134022.9	575530.17	201	115
116	134022.9	575540.17	201	116
117	134022.9	575550.17	201	117
118	134022.9	575560.17	201	118
119	134022.9	575570.17	201	119
120	134022.9	575580.17	201	120
121	134022.9	575590.17	201	121

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115	132339.2	573917.1	212	115
116	132339.2	573927.1	212	116
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70	132379.2	573907.1	212	70
71	132379.2	573917.1	212	71
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87	132369.2	573967.1	212	87
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91	132359.2	573897.1	212	91
92	132359.2	573907.1	212	92
93	132359.2	573917.1	212	93
94	132359.2	573927.1	212	94
95	132359.2	573937.1	212	95
96	132359.2	573947.1	212	96
97	132359.2	573957.1	212	97
98	132359.2	573967.1	212	98
99	132359.2	573977.1	212	99
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103	132349.2	573907.1	212	103
104	132349.2	573917.1	212	104
105	132349.2	573927.1	212	105
106	132349.2	573937.1	212	106
107	132349.2	573947.1	212	107
108	132349.2	573957.1	212	108
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120	132339.2	573967.1	212	120
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Name	BC High Risk Northing	Easting	Elevation	Code
1	133824	573544.3	222	1
2	133824	573554.3	222	2
3	133824	573564.3	222	3
4	133824	573574.3	222	4
5	133824	573584.3	222	5
6	133824	573594.3	222	6
7	133824	573604.3	222	7
8	133824	573614.3	222	8
9	133824	573624.3	222	9
10	133824	573634.3	222	10
11	133824	573644.3	222	11
12	133814	573544.3	222	12
13	133814	573554.3	222	13
14	133814	573564.3	222	14
15	133814	573574.3	222	15
16	133814	573584.3	222	16
17	133814	573594.3	222	17
18	133814	573604.3	222	18
19	133814	573614.3	222	19
20	133814	573624.3	222	20
21	133814	573634.3	222	21
22	133814	573644.3	222	22
23	133804	573544.3	222	23
24	133804	573554.3	222	24
25	133804	573564.3	222	25
26	133804	573574.3	222	26
27	133804	573584.3	222	27
28	133804	573594.3	222	28
29	133804	573604.3	222	29
30	133804	573614.3	222	30
31	133804	573624.3	222	31
32	133804	573634.3	222	32
33	133804	573644.3	222	33
34	133794	573544.3	222	34
35	133794	573554.3	222	35
36	133794	573564.3	222	36
37	133794	573574.3	222	37
38	133794	573584.3	222	38
39	133794	573594.3	222	39
40	133794	573604.3	222	40
41	133794	573614.3	222	41
42	133794	573624.3	222	42
43	133794	573634.3	222	43
44	133794	573644.3	222	44
45	133784	573544.3	222	45
46	133784	573554.3	222	46
47	133784	573564.3	222	47
48	133784	573574.3	222	48
49	133784	573584.3	222	49
50	133784	573594.3	222	50

51	133784	573604.3	222	51
52	133784	573614.3	222	52
53	133784	573624.3	222	53
54	133784	573634.3	222	54
55	133784	573644.3	222	55
56	133774	573544.3	222	56
57	133774	573554.3	222	57
58	133774	573564.3	222	58
59	133774	573574.3	222	59
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61	133774	573594.3	222	61
62	133774	573604.3	222	62
63	133774	573614.3	222	63
64	133774	573624.3	222	64
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66	133774	573644.3	222	66
67	133764	573544.3	222	67
68	133764	573554.3	222	68
69	133764	573564.3	222	69
70	133764	573574.3	222	70
71	133764	573584.3	222	71
72	133764	573594.3	222	72
73	133764	573604.3	222	73
74	133764	573614.3	222	74
75	133764	573624.3	222	75
76	133764	573634.3	222	76
77	133764	573644.3	222	77
78	133754	573544.3	222	78
79	133754	573554.3	222	79
80	133754	573564.3	222	80
81	133754	573574.3	222	81
82	133754	573584.3	222	82
83	133754	573594.3	222	83
84	133754	573604.3	222	84
85	133754	573614.3	222	85
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87	133754	573634.3	222	87
88	133754	573644.3	222	88
89	133744	573544.3	222	89
90	133744	573554.3	222	90
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92	133744	573574.3	222	92
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94	133744	573594.3	222	94
95	133744	573604.3	222	95
96	133744	573614.3	222	96
97	133744	573624.3	222	97
98	133744	573634.3	222	98
99	133744	573644.3	222	99
100	133734	573544.3	222	100
101	133734	573554.3	222	101
102	133734	573564.3	222	102

103	133734	573574.3	222	103
104	133734	573584.3	222	104
105	133734	573594.3	222	105
106	133734	573604.3	222	106
107	133734	573614.3	222	107
108	133734	573624.3	222	108
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111	133724	573544.3	222	111
112	133724	573554.3	222	112
113	133724	573564.3	222	113
114	133724	573574.3	222	114
115	133724	573584.3	222	115
116	133724	573594.3	222	116
117	133724	573604.3	222	117
118	133724	573614.3	222	118
119	133724	573624.3	222	119
120	133724	573634.3	222	120
121	133724	573644.3	222	121

Reference Site II

Name	Northing	Easting	Elevation	Code
1	139872.2	563732.9	192	1
2	139872.2	563742.9	192	2
3	139872.2	563752.9	192	3
4	139872.2	563762.9	192	4
5	139872.2	563772.9	192	5
6	139872.2	563782.9	192	6
7	139872.2	563792.9	192	7
8	139872.2	563802.9	192	8
9	139872.2	563812.9	192	9
10	139872.2	563822.9	192	10
11	139872.2	563832.9	192	11
12	139862.2	563732.9	192	12
13	139862.2	563742.9	192	13
14	139862.2	563752.9	192	14
15	139862.2	563762.9	192	15
16	139862.2	563772.9	192	16
17	139862.2	563782.9	192	17
18	139862.2	563792.9	192	18
19	139862.2	563802.9	192	19
20	139862.2	563812.9	192	20
21	139862.2	563822.9	192	21
22	139862.2	563832.9	192	22
23	139852.2	563732.9	192	23
24	139852.2	563742.9	192	24
25	139852.2	563752.9	192	25
26	139852.2	563762.9	192	26
27	139852.2	563772.9	192	27
28	139852.2	563782.9	192	28
29	139852.2	563792.9	192	29
30	139852.2	563802.9	192	30
31	139852.2	563812.9	192	31
32	139852.2	563822.9	192	32
33	139852.2	563832.9	192	33
34	139842.2	563732.9	192	34
35	139842.2	563742.9	192	35
36	139842.2	563752.9	192	36
37	139842.2	563762.9	192	37
38	139842.2	563772.9	192	38
39	139842.2	563782.9	192	39
40	139842.2	563792.9	192	40
41	139842.2	563802.9	192	41
42	139842.2	563812.9	192	42
43	139842.2	563822.9	192	43
44	139842.2	563832.9	192	44
45	139832.2	563732.9	192	45
46	139832.2	563742.9	192	46
47	139832.2	563752.9	192	47
48	139832.2	563762.9	192	48
49	139832.2	563772.9	192	49

50	139832.2	563782.9	192	50
51	139832.2	563792.9	192	51
52	139832.2	563802.9	192	52
53	139832.2	563812.9	192	53
54	139832.2	563822.9	192	54
55	139832.2	563832.9	192	55
56	139822.2	563732.9	192	56
57	139822.2	563742.9	192	57
58	139822.2	563752.9	192	58
59	139822.2	563762.9	192	59
60	139822.2	563772.9	192	60
61	139822.2	563782.9	192	61
62	139822.2	563792.9	192	62
63	139822.2	563802.9	192	63
64	139822.2	563812.9	192	64
65	139822.2	563822.9	192	65
66	139822.2	563832.9	192	66
67	139812.2	563732.9	192	67
68	139812.2	563742.9	192	68
69	139812.2	563752.9	192	69
70	139812.2	563762.9	192	70
71	139812.2	563772.9	192	71
72	139812.2	563782.9	192	72
73	139812.2	563792.9	192	73
74	139812.2	563802.9	192	74
75	139812.2	563812.9	192	75
76	139812.2	563822.9	192	76
77	139812.2	563832.9	192	77
78	139802.2	563732.9	192	78
79	139802.2	563742.9	192	79
80	139802.2	563752.9	192	80
81	139802.2	563762.9	192	81
82	139802.2	563772.9	192	82
83	139802.2	563782.9	192	83
84	139802.2	563792.9	192	84
85	139802.2	563802.9	192	85
86	139802.2	563812.9	192	86
87	139802.2	563822.9	192	87
88	139802.2	563832.9	192	88
89	139792.2	563732.9	192	89
90	139792.2	563742.9	192	90
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92	139792.2	563762.9	192	92
93	139792.2	563772.9	192	93
94	139792.2	563782.9	192	94
95	139792.2	563792.9	192	95
96	139792.2	563802.9	192	96
97	139792.2	563812.9	192	97
98	139792.2	563822.9	192	98
99	139792.2	563832.9	192	99
100	139782.2	563732.9	192	100
101	139782.2	563742.9	192	101

102	139782.2	563752.9	192	102
103	139782.2	563762.9	192	103
104	139782.2	563772.9	192	104
105	139782.2	563782.9	192	105
106	139782.2	563792.9	192	106
107	139782.2	563802.9	192	107
108	139782.2	563812.9	192	108
109	139782.2	563822.9	192	109
110	139782.2	563832.9	192	110
111	139772.2	563732.9	192	111
112	139772.2	563742.9	192	112
113	139772.2	563752.9	192	113
114	139772.2	563762.9	192	114
115	139772.2	563772.9	192	115
116	139772.2	563782.9	192	116
117	139772.2	563792.9	192	117
118	139772.2	563802.9	192	118
119	139772.2	563812.9	192	119
120	139772.2	563822.9	192	120
121	139772.2	563832.9	192	121

APPENDIX C

RADCON WORK DOCUMENTS

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ENVIRONMENTAL RADIOLOGICAL SURVEY TASK INSTRUCTION		Page 1 of 1
Instruction Number/Revision **GW-ERSTI-05-007Rev. 0**	Risk Assessment ACRA-05-020	Effective Date 02/24/2005

Survey Location: Ecological surveys/Sampling 200 East BC Controlled Area

Supporting Document Number(s) GRP-TA-003&007-T , GRP-TA-25 , & GRP-ERSTI-003/Rev.0

HNF-12494 Environmental Radiological Measurement Plan for Central Plateau Project; RCP 4.5.1 Portable Environmental Survey Instrument Operation, RCP 4.5.2, Performance of Environmental Radiological Measurements

General Information

Ecological surveys/sampling may encounter radiologically contaminated layers of soil. Surveys of soil samples removed from the data points located on the survey documents need to be performed to ensure control of volumetric contamination that may have been transferred. Surveys need to be performed continuously with the survey plan documents. This instruction is applicable to all locations listed on the FH Radiological Risk Screening Forms associated with the Ecological survey activities. Surveys will include: Soil Samples, Plants, Animal Burrows, Ant Mounds and grub direct surveys of soil on a grid system. All locations are in a posted Contaminated Area. Entries to the area will be made using the appropriate RWP. Action levels on the RWP should be followed to ensure worker safety.

Instrument use: SPA-3 with a 2X2 detector, and a E600 with grub probe SH380 or equivalent for all surveys. Both instruments are to be documented per the survey plan.

Survey Instructions

1. Establish baseline background with the instrument used prior to performing surveys. Contact RadCon Supervisor for direction if beta-gamma background exceeds 2,500 cpm (with NaI detectors such as the SPA-3) or 400 cpm (with detectors such as the SHP-380 or equivalent). A staked area will be provided.
2. Perform verification surveys on all equipment that comes in contact with soil spoils using large area wipes (LAW) and direct measurements.
3. Perform a direct scan survey of the soil per the grid locations documented in the survey plan. Scan speed is 6 inches per second with a NaI detector and 2 inches per second with other beta-gamma instruments. Locate the area of highest response, and perform at least a 15-second static count with the instrument.
4. If the static count indicates readings greater than (2X) the established background, then perform an adequate number of measurements of tape presses of the soil surface to determine if the top 6 inches of soil is contaminated.
5. Perform measurements of tape presses/LAW's with the appropriate instrument(s). If readings are greater than (1.5X) the established background, perform technical smears to establish if the surveyed surfaces meets or exceeds "table 2-2" criteria.
6. When counting technical smears, please refer to GRP-TA-25 for static count times.

Special Instructions

1. Action levels for technical smears are 1,000 dpm/100cm^2 beta-gamma and 20 dpm/100cm^2 alpha. If technical smears exceed these levels, document readings, and contact the RadCon Supervisor.
2. If direct survey readings greater than **(2X)** the established background are found, perform the following action:
   a) Document readings and contact the RadCon Supervisor.

Approvals

Health Physics Analyst (print and sign) RL DeMarah RL DeMarah	Date 02/24/2005
RadCon Supervisor (print and sign) SD Landsman or Tom Bradfield	Date 02/24/2005
Project Technical Staff Member/Project Engineer (print and sign) Roy Bauer Roy Bauer	Date 2/24/05

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RHO-HS-SR-82-13 P

INFORMATION

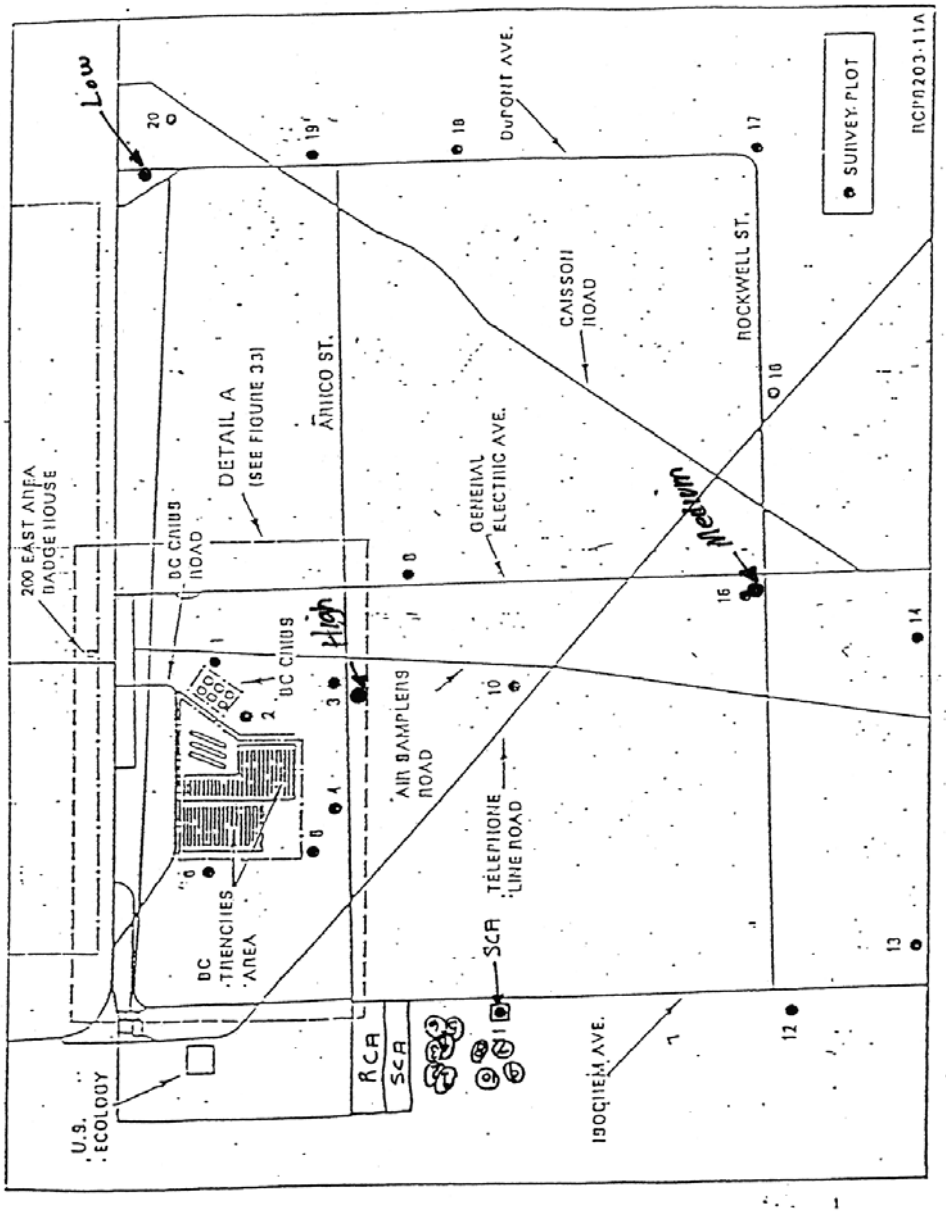

FIGURE 32. The DC Cribs Controlled Area.

#17-9 - Taken Out ECO Risk STUDY SITES

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HANFORD RADIOLOGICAL WORK PERMIT

Contractor: Fluor Hanford

General [X] Job Specific [ ]	Tech. Document No. GRP-TA-003-T, GRP-TA-007-T	Location Code GW	RWP Number **GW-05-005**
Start Date 01/20/2005	End Date 01/20/2006	Responsible Organization Ground Water Protection Project	

Job Location
B/C Control Area

Job Description and Type of Area: To include grub surveys, surveillance and tours in posted CA or SCA areas.

Primary Isotope(s): [X] MFP [ ] MAP [X] Cs [X] Sr [ ] H-3 [X] U [ ] Pu [ ] Th, Am

Radiation Emitted	Estimated Dose Rates	Contamination Levels	Radiological Worker Training Req.
[ ] Alpha [x] Beta [x] Photons [ ] Neutrons	General Area: 0 mrem/h Maximum Contact: 0.5 mrem/h	Beta-gamma: 1,000 dpm/100cm^2 Alpha: 20 dpm/100cm^2	I [ ] II [SI5]

Internal Dosimetry Requirements (for routine work under this RWP, except those entering for observation only)
[SI6] Annual Whole Body Count [ ] Lung Count [ ] Urinalysis Isotopes to Test for (if any):

MINIMUM RADIOLOGICAL PROTECTION REQUIREMENTS

	HPT Coverage		Dosimetry
	Continuous	SI4	HSD - TLD
X	Intermittent		HCND - TLD
	Start of Job		Pocket Dosimeter
	End of Job		Electronic Dosimeter
	Self Survey (if qualified)		Finger Rings
SI2	HPT Survey Required		Time Keeping
	Auto. Survey Device	X	Entry Control System
	Work Area Instructions		PNAD

MINIMUM PROTECTIVE EQUIPMENT

	Coveralls		Traction Shoe Covers
	Lab Coat		Canvas Boots
	Waterproof Suit	SI3	Rubber Overshoes
	Gortex Suit		Rubber Boots
	Cap		Full Face Respirator
	Hood		PAPR
SI3	Surgeon's Gloves		Supplied Air Respirator
SI3	Leather Gloves		SCBA
SI3	Canvas & Surgeon's Gloves		Undressing Assistance
SI3	Waterproof Gloves		Air Sampling Required
	No Personal Outer		ARM Required
	Modesty Clothing		

SPECIAL INSTRUCTIONS (SI)

1. **WORK AREA VOID LIMITS:**
   (General Area Contamination: ≥10,000 dpm/100 cm^2 βγ
   with tech smear(s)) ≥200 dpm/100 cm^2 α
   or
   (Any single tech smear): ≥30,000 dpm/100cm^2 βγ
   ≥600dpm/100 cm^{2}α

   IF VOID LIMITS ARE EXCEEDED:
   a. Stop work and place work area into a safe condition.
   b. Notify Radiological Control Supervisor

2. RCT survey required of personnel and equipment when exiting a CA / SCA (RWP required). Refer to GRP-TA-007-T for survey requirements specific to the BC controlled area. Survey requirements do not apply to visitors who stay inside vehicles during a tour.
   See GRP-TA-003-T for vehicle (pre and post job) survey requirements.

3. PPE to include: ***1 pr gloves*** and ***shoe covers***. Glove and shoe cover selection should be based on hazards associated with the work. Personnel inside enclosed vehicles are excluded from this requirement.

4. A Hanford Site TLD and RW2 training and a 10-min whole body count is required to perform work or to escort visitors/tour groups while inside the BC Crib area. **Use roles "TLDS," "WC", and "RW2".** For tour personnel under continuous supervision while inside the BC Crib area and inside enclosed vehicles, no TLD, RW2 or whole body count are required. **Use role "NONE".**

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ALARA Review: YES [ ] NO [X] | Pre-Job Briefing: YES [] NO [x] | Post-Job ALARA Review Required: YES [ ] NO [X]

RWP Prepared By: Traci Rued	Phone: 373-4049	HPT Phone: 373-4049
Line Mgt. Print: Terence Lukes Sign:	Phone: 373-5317	Date 01-19-05
RC Mgt. Print: THOMAS BRADFIELD Sign:	Phone 430-2939	Date 01-19-05
RWP Peer Review: RG		Date: 01-19-05

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FLUOR HANFORD RADIOLOGICAL RISK SCREENING FORM

Work Document No.: GRP-RRSF-027 | **AJHA No.:** N/A

Title:
Ecological Survey's/Sampling BC Controlled Area

Job Description:
Perform surveys on soil, plants, animal burrows, and Ant mounds. Survey's of soil samples if needed.

Job Location:
BC Controlled Area. See locations on Map's included in package.

Part A -- High Risk Radiological Work Screening	Yes	No
1. Will the estimated collective dose exceed 2,500 person-mrem?	○	◉
2. Will predicted airborne radioactivity concentrations exceed 10 DAC or result in an integrated exposure of over 200 DAC-hours?	○	◉
3. Will work area[1] removable contamination be greater than 1,000 times HNF-5173 Table 2-2 values?	○	◉
4. Will there be entry into areas where whole body dose rates are >1 rem/hr?	○	◉

If any of the above questions were answered "YES," then the work is designated as HIGH RISK radiological work. Do not continue with Part B. An ALARA review is required based on the final determination of radiological risk.

If all the answers to the above questions are "NO," then the work is not HIGH RISK radiological work. Continue with Part B.

Part B -- Medium Risk Radiological Work Screening	Yes	No
1. Will the estimated collective dose exceed 500 person-mrem but be less than or equal to 2,500 person-mrem?	○	◉
2. Will a respirator be worn for radiological purposes?	○	◉
3. Will work area[1] removable contamination be greater than 100 times Table 2-2 values but less than or equal to 1,000 times Table 2-2 values?	○	◉
4. Will there be entry into areas where whole body dose rates are >100 mrem/hr but be less than or equal to 1,000 mrem/hr?	○	◉
5. Is there a potential for an unplanned release of radioactive material to the environment that meet or exceed HNF-PRO-060 reporting requirements?	○	◉

If any of the answers to the above Part B questions are "YES," then the work is designated as MEDIUM RISK radiological work. An AJHA may be required based on the final determination of radiological risk.

If all of the above Part B questions were answered "NO," then the work is designated as LOW RISK radiological work. Conduct an informal ALARA review of the work activity before preparing or assigning the RWP.

PART C -- RADIOLOGICAL RISK DESIGNATION

◉ LOW RISK Radiological Work ○ MEDIUM RISK Radiological Work ○ HIGH RISK Radiological Work

Justification / Comments:
Research data indicates possible potential of low level contamination could be encountered on soil, plants, animal burrows, ant mounds and soil samples. Radiation levels to be less than 5mrem/hr. Airborne activity is expected to be less than 0.3DAC. If table 2-2 limits are exceeded contact RadCon Supervisor.

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PART D -- ADMINISTRATION

Preparer (Signature)	Printed	Date
RLDeMarah	RL DeMarah	2-23-05

[1] The work area is described in the job hazard analysis, and is typically the area transited and occupied to perform the work activity.

NOTE: This form is a radiological record when complete.
Reference: HNF-5173, Article 311.

A-6003-838 (04/04)

Fluor Hanford - Central Plateau Remediation Project
AREA CLASSIFICATION/RISK ASSESSMENT CHECKLIST

Page 1 of 2
No. ACRA-05-020

Excavation Permit Number	Sample Document Number	Date
N/A	119138	02/23/2005

Location
BC Controlled Area. See locations in package

	Yes	No
1. The site is a location where leaks or spills are known to have occurred.	☒	☐
2. The site was controlled at some time as a Contamination Area due to surface contamination or transferable volumetric material that exceeds the removable contamination limits in Table 2-2.	☒	☐
3. A buried crib, pond, ditch or other liquid effluent system is likely to be encountered.	☐	☒
4. This is or was a solid waste burial site.	☐	☒
5. The area is or was a radioactive waste storage site.	☐	☒
If any of the items above (1-5) are checked "Yes", then the work site will be considered a Class I Area. If all items are checked "No", then continue with the assessment below.		
6. The site is within 50 feet of a contaminated pond, crib, ditch, or solid waste burial site.	☐	☐
7. The site is within 300 feet of a leaking waste storage tank.	☐	☐
8. The site includes an area where radioactive material in unsealed form was present at one time, or an area that is downwind and within 500 feet from documented stack releases.	☐	☐
9. The site is an environmentally stabilized area, or is within an RBA established for contamination control.	☐	☐
If any item above (6-9) are checked "Yes", then the work site will be considered a Class II Area. If all items are checked "No", then continue with the assessment below.		
10. The site is downwind and further than 500 feet of a solid waste burial site, tank farm, contaminated pond, crib, ditch, other liquid effluent system, or facility stack.	☐	☐
11. The site is within 50 feet of a railroad track or a road used to transport radioactive material to or from a process facility.	☐	☐
12. Survey data indicates measurable direct readings above background and/or analytical data indicates the presence of man-made radionuclides.	☐	☐
13. There is historical data that indicates the site may have been associated with a radioactive process at some time in the past.	☐	☐
If any item above (10-13) are checked "Yes", then the work site will be considered a Class III Area. If all items are checked "No", then the site will be considered Unimpacted.		

Description of the Site/Area:
All areas are located inside a posted Contaminated Area. Research Data indicates possible contamination could be encountered during surveying. All areas have locations marked in package and have been GPS surveyed.

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Survey Unit	Survey Unit Size (Approximate)	Survey Unit Designation			
		Non-impacted	Class 1	Class 2	Class 3
Soil, plants, samples	12" X 12"	☐	☒	☐	☐

A-6003-537 (11/02)

Fluor Hanford - Central Plateau Remediation Project **AREA CLASSIFICATION/RISK ASSESSMENT CHECKLIST (continued)**	Page 2 of 2 No. ACRA-05-020

Sources of Information for Class Designation (e.g., WIDS, RSR Numbers, Log Book Numbers, etc.):

Data used to evaluate the radiological hazards associated with this work was obtained from the HWIS, WIDS, and HEIS data bases. In addition, Recent RadCon Survey's have been reviewed. Area Walkdowns were performed by: Ron Mitchill, RL DEMarah, and Steven Landsman.

Comments (List attachments if any):

Information from the above listed sources, indicates work is considered to be of low radiological risk. However, some contamination may be encountered during the surveys of soil, plants, and animal areas. RCT coverage is continuous in regards to the survey plan. RWP # GW-05-005 will be used for entry and exit. GRP-ERSTI-003/REV. 0 and TA # GRP-TA -003&007-T should be reviewed prior to work activities.

Preparer's Name/Signature	Date
RL DeMarah RLDeMarah	02/23/2005
Reviewer's Name/Signature	**Date**
Joseph Bashore Joseph H Bashore	02/23/2005

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A-6003-537 (11/02)

ENVIRONMENTAL RADIOLOGICAL SURVEY TASK INSTRUCTION

Instruction Number/Revision	Risk Assessment	Effective Date
GRP-ERSTI-003/ Rev. 0	ACRA-	6/14/04

Survey Location: 200 BC Cribs/Trenches

Supporting Document Number(s)
HNF-IP-0718, Procedure 7.1, BHI-01319

General Information

The purpose of this plan is to determine, with 95% statistical certainty, the transferable contamination status of an established egress route and specific work locations within the 200 BC Crib/Trench area. A total of 33 borehole locations are scattered throughout the 200 BC Crib/Trench area. This plan does not release the area from radiological controls, but instead provides survey data to identify radiological conditions in the area. The results will be evaluated to determine the feasibility of downposting specific locations in the 200BC Controlled area to support gamma-logging of the boreholes (see attached map). An egress route will be selected and surveyed, then survey areas containing a number of boreholes will be identified and surveyed. For ease of control and to minimize subsequent surveillance, the sections may be surveyed as discrete units rather than surveying the entire area at once.

Historical Information

The 200 BC Cribs and trenches received waste from the Uranium Recovery Process in the late 1940s and early 1950s. In addition, several trenches received laboratory and PRTR waste from 300 Area. The 216-B-14 through 19 Cribs and a total of 20 unlined trenches (216-B-20 through 216-B-34, 216-B-52, 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58) were surface stabilized in 1981 and 1982 due to reported incidents of high levels of contamination found in these areas (see WIDS report UPR-200-E-83). The cribs and trenches are currently posted as Underground Radioactive Material Areas (URMA), but are contained within a larger area that is controlled as a Contamination Area. Additional history summaries detailing waste streams and contamination conditions prior to stabilization may be found in the corresponding waste site WIDS reports.

Radiological Survey Data

Routine inactive waste site surveillances have not been completed in this area for the last two years. Surveillance reports for FY2000 indicate no detectable contamination in or on the roads or the URMA areas of the site. In addition, job coverage survey records for entries to the area made during the latter portion of FY2002 and the first quarter of FY2003 indicate no detectable contamination found either on personnel or vehicles accessing the controlled area.

Analytical samples from hot spots were collected in 1999. Data indicates that the predominant isotopes are 90-Sr and 137-Cs, with small amounts of 239/240-Pu also present in some samples (see table below). Other isotopes are not present in statistically significant amounts (BHI-01319 Decisional Draft Document).

Based on the observed beta-gamma to alpha ratios, alpha surveys are not required to be performed.

Isotope	Median Concentration (pCi/g)	Maximum Concentration (pCi/g)
90-Sr	41.3	2,290
137-Cs	88.8	3,420
239/240-Pu	0.056	1.85

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Instrumentation

Due to the 90-Sr content of hot spots, use a 100 cm^2 detector such as an SHP-380 or DP6BD in conjunction with an appropriate survey rate meter to perform the measurements. This will ensure adequate detection capability below the control limits.

Statistical Method for Evaluating Transferable Contamination Conditions

The statistical method used for this plan is based on methods established for areas known or believed to have been contaminated (see HNF-IP-0718, Section 7.1, step 4.2 and Figure 3). As outlined in that document, a minimum of one measurement is required per 25 m^2 of area. For this survey plan, discrete sample points are chosen by moving 7 paces (5m) from a predetermined starting point (or the last sample location), then performing measurements as detailed in HNF-IP-0718, Section 7.1, step 4.2. This will continue until measurements have been collected in the entire section or egress route slated for survey as determined by the RadCon Supervisor.

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Survey Instructions

Page 2 of 2

1. At the beginning of each survey effort, note the background at the Rte 4 entrance to the BC Crib area. This will be used as the reference background for subsequent survey measurements.
   NOTE: The intent of a survey as described in Figure 3 of HNF-IP-0718 Procedure 7.1 is to perform at least one static measurement per 25m^2 area.
2. The roads in the BC Crib area are approximately 5 meters wide. To survey the roads, perform a walking stick scan survey of the road.
3. If measurements >twice background are noted, perform a static scan of that spot as directed in HNF-IP-0718, Procedure 7.1, section 4.2.
4. If no elevated measurements are noted during the walking stick survey, at approximately each seven paces (5 m) of road length, perform static measurements as directed in HNF-IP-0718, Procedure 7.1, section 4.2.
5. To survey areas off of the road, divide the area lengthwise into linear swaths that are approximately 5 meters wide.
6. Survey each swath in the same manner as described in steps 2-4 above.

Special Instructions

1. Identify any locations that exceed transferable contamination levels of 1,000 dpm/100 cm^2 beta-gamma with flags or paint so that they may be stabilized.
2. Assist operations staff in stabilization of identified areas.
3. After evaluation of survey results by the RadCon Analyst are completed, assist operations staff in properly posting the surveyed area.

Approvals

Health Physics Analyst (print and sign) SD Landsman	Date
RadCon Supervisor (print and sign) SD Landsman	Date
Project Technical Staff Member/Project Engineer (print and sign)	Date

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A-6003-529 (05/04)

CENTRAL PLATEAU ECOLOGICAL RISK ASSESSMENT

PHASE I

Sites (Designation)
2607-E6 Septic Tank (E6)
Reference Site (RS)
B-63 Ditch (BD)
S-10 Ditch and Pond (S10)
B-Pond (BP)
Gable Mountain Pond (GMP)
U-Pond (UP)

Soil Surveys
Within 1 meter2 of each node
Gamma survey = 2x2 NaI Detector
Beta survey = DP6-B 100 cm2 detector, or equivalent

Plant Surveys
Within 1 meter2 of each node
Nearest plant or, if two, the tallest
Record species, height and width
Gamma survey = 2x2 NaI Detector
Beta survey = DP6-B 100 cm2 detector, or equivalent

Animal Burrows
Survey 50 animal burrows in quadrants 1-2-3-4
Determine background
Record location (nearest node) when above background and flag

Ant Mounds
Survey 20 ant mounds in quadrants 1-2-3-4
Determine background
Record location (nearest node) when above background and flag

PHASE II

Sites
B-C Cribs (Hot)
B-C Cribs (Moderate)
B-C Cribs (Low)
U. S. Ecology

PHASE II Work Requirements : "Contamination Area"
Rad Worker Trained
ACED into 200 Areas
Ground Water Protection Review 2 hrs
10 minute whole body count
TLD
Work to RWP & entry requirements
Vehicles, equipment, samples surveyed out
Full-time RCT support

Soil Surveys
Within 1 meter2 of each node
Gamma survey = 2x2 NaI Detector
Beta survey = DP6-B 100 cm2 detector, or equivalent

Plant Surveys
Within 1 meter2 of each node
Nearest plant or, if two, the tallest
Record species, height and width
Gamma survey = 2x2 NaI Detector
Beta survey = DP6-B 100 cm2 detector, or equivalent

Animal Burrows
Survey 50 animal burrows in quadrants 1-2-3-4
Determine background
Record location (nearest node) when above background and flag

Ant Mounds
Survey 20 ant mounds in quadrants 1-2-3-4
Determine background
Record location (nearest node) when above background and flag

BC CRIBS PLANT RAD SURVEYS – FIELD DATA SHEET

Bunchgrass = B
Tumbleweed = T
Rabbit brush = R
Sage brush = S
Other = O

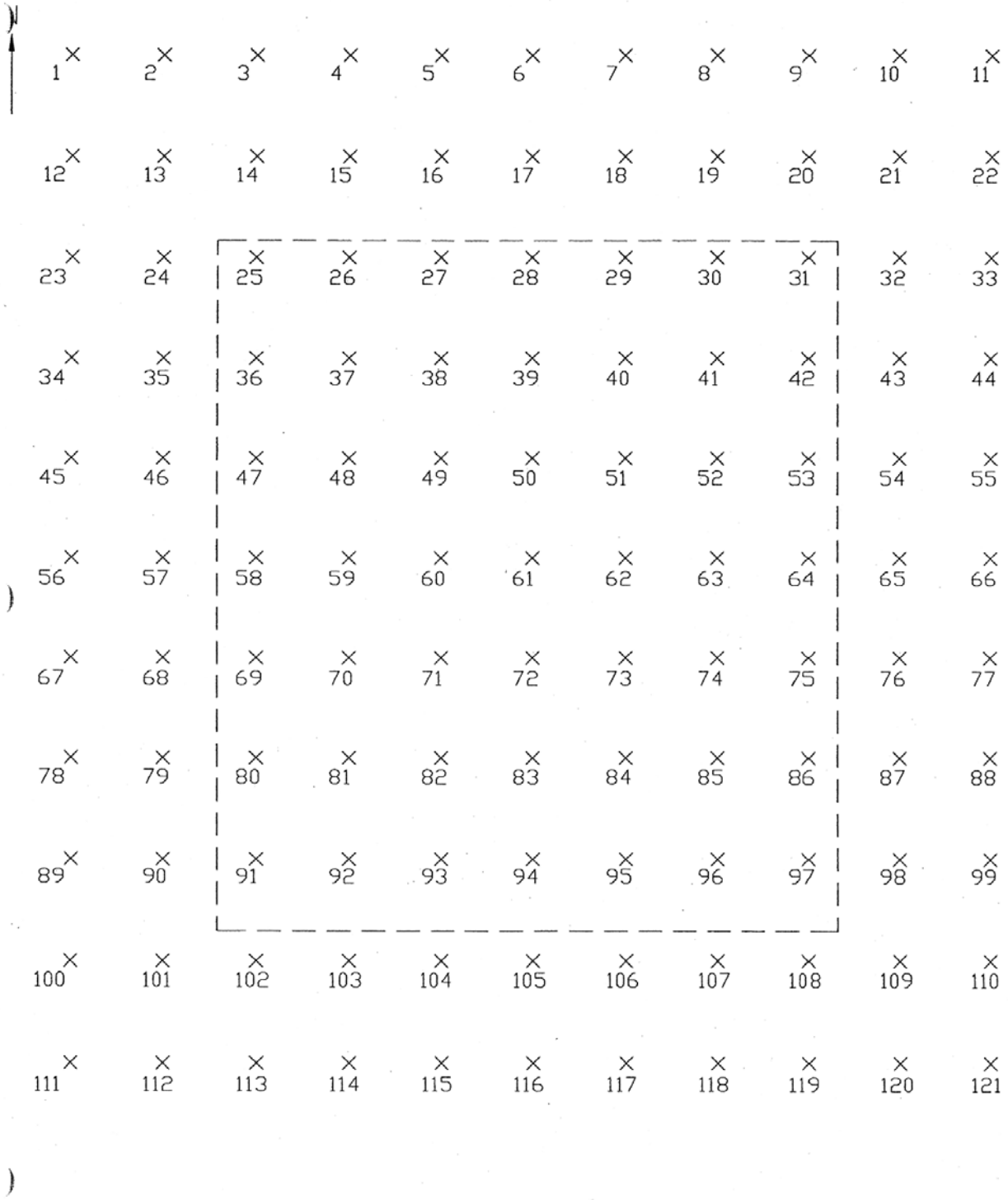
SITE	Stake #	SPECIES	HEIGHT	WIDTH	GAMMA	BETA

BC CRIBS PLANT RAD SURVEYS – FIELD DATA SHEET

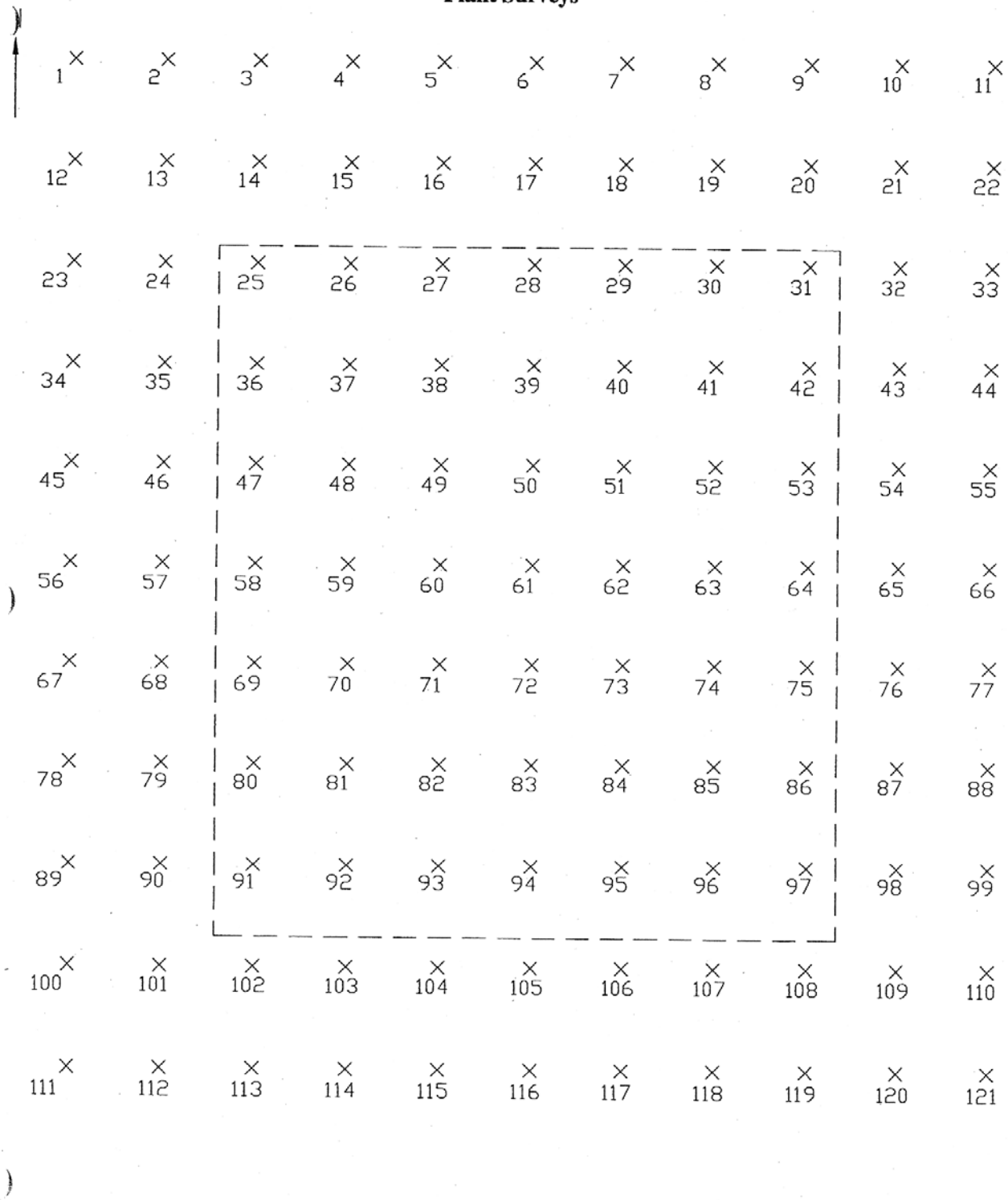
Bunchgrass = B
Tumbleweed = T
Rabbit brush = R
Sage brush = S
Other = O

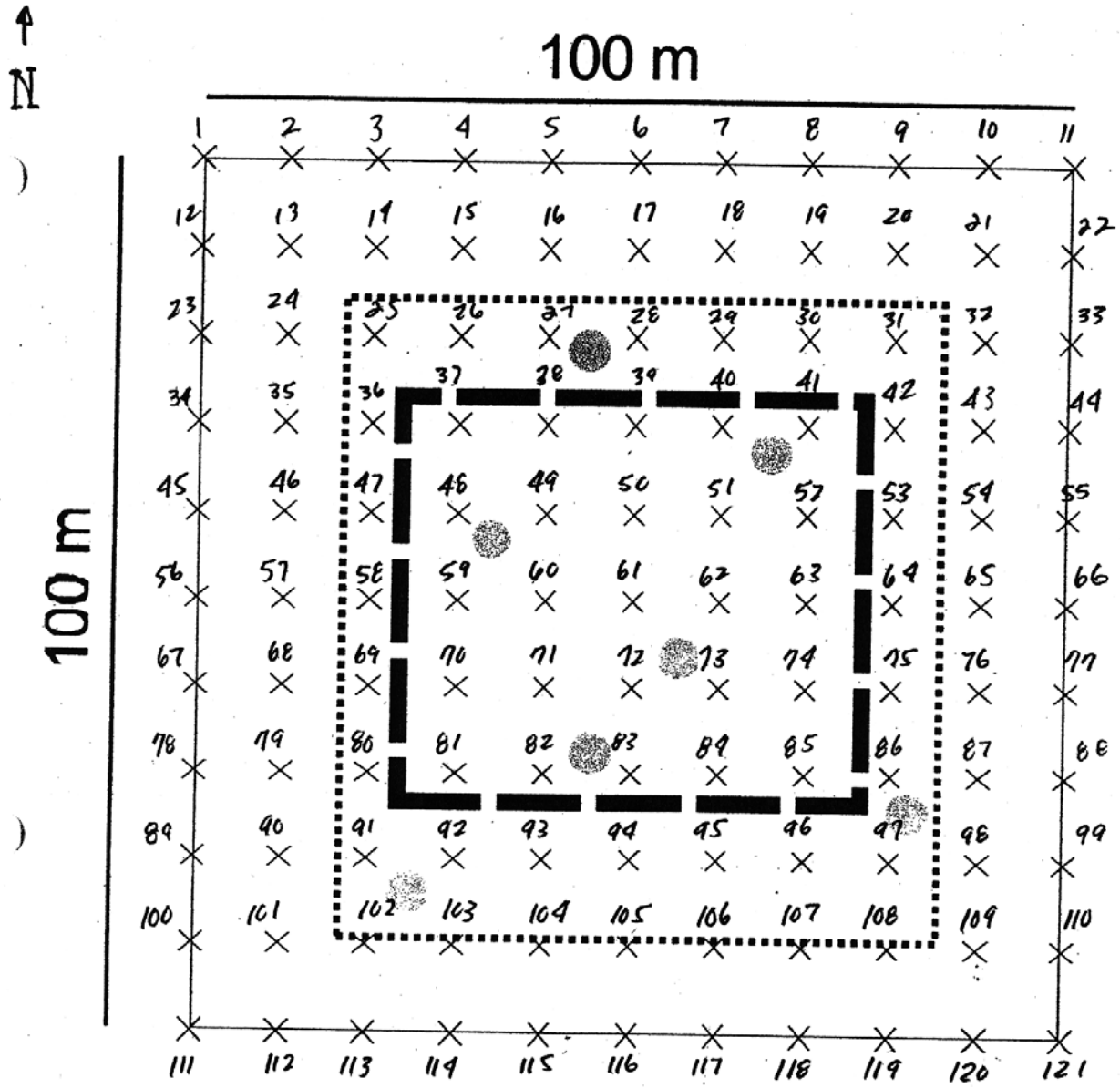
SITE	Stake #	SPECIES	HEIGHT	WIDTH	GAMMA	BETA

Soil Surveys



Plant Surveys

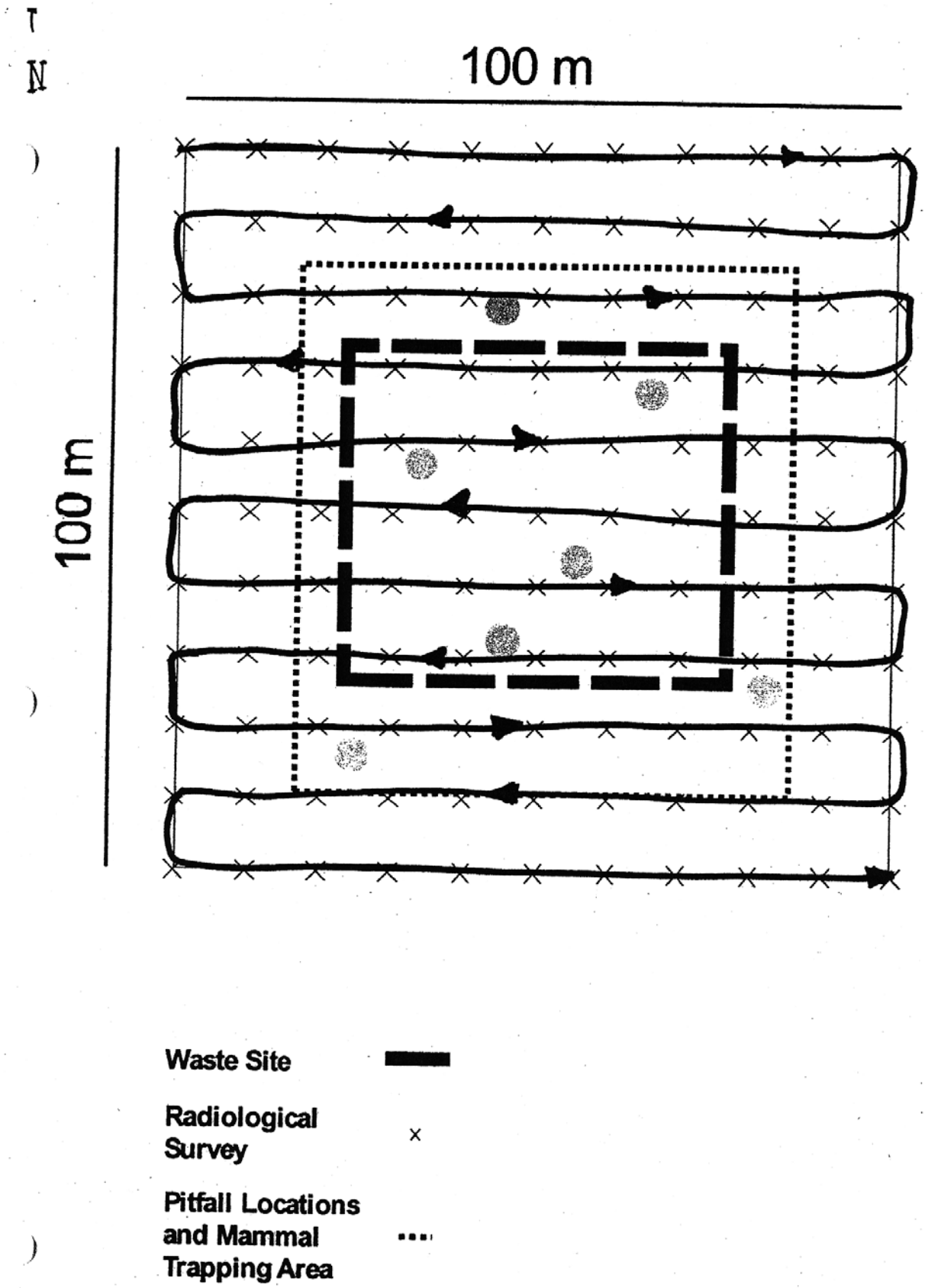


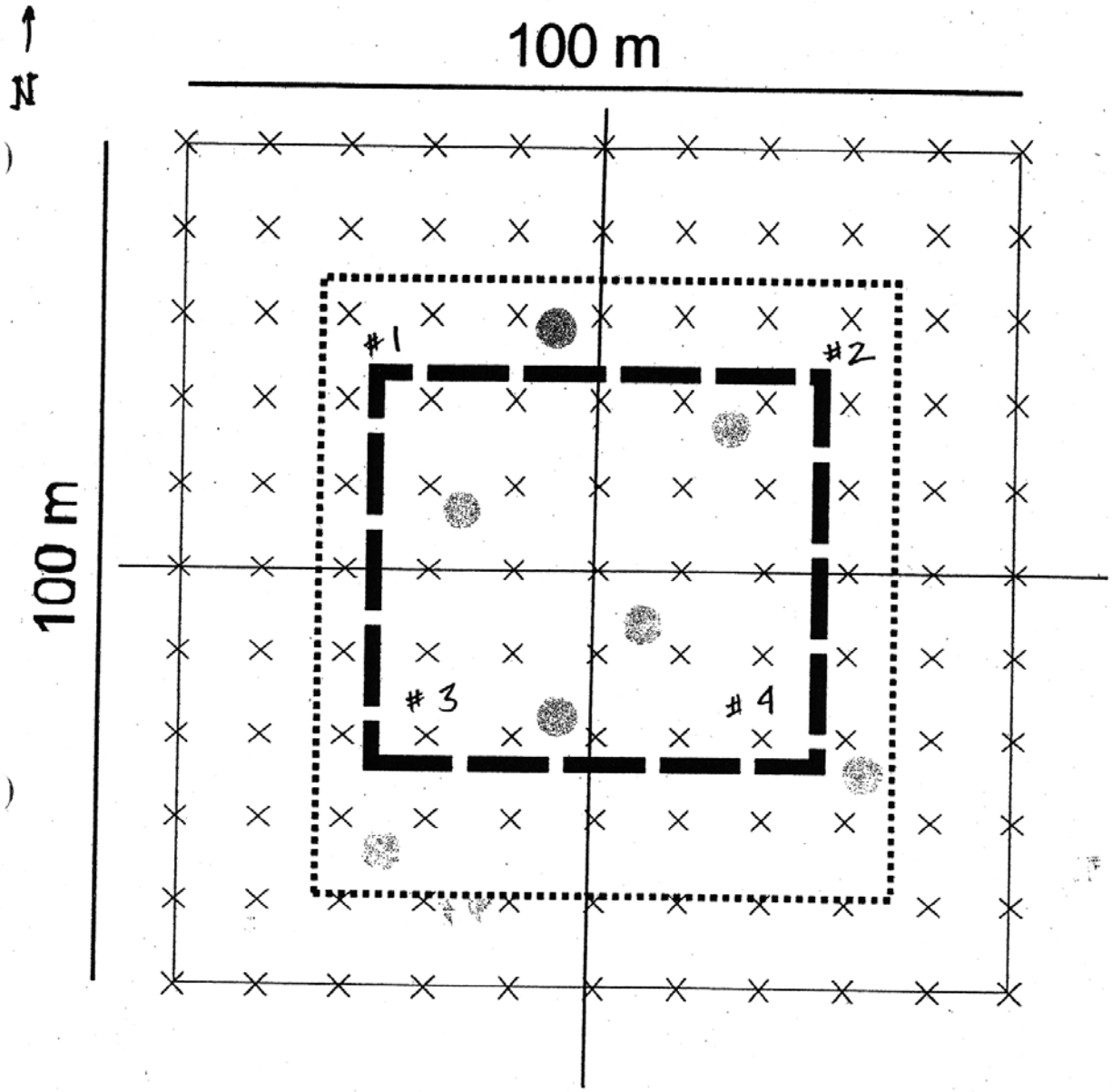


Waste Site

Radiological Survey x

Pitfall Locations and Mammal Trapping Area


N
100 m
100 m
Waste Site
Radiological Survey
Pitfall Locations and Mammal Trapping Area



Waste Site

Radiological Survey x

Pitfall Locations and Mammal Trapping Area

Pitfall Trap Locations

BC Controlled Area Locations
Ecological Survey's/Sampling

High Risk Location:

¼ mile west of intersection of Air Sampler Road and ARHCO Street.

Medium Risk Location:

Northwest Corner of Rockwell Street and General Electric Ave.

Low Risk Location:

West of Dupont Ave. about ¼ mile South of Route 4.

BC Cribs GPS Coordinates

BC High
N: 133824.040
E:573544.343

BC Low
N: 134122.931
E: 575490.167

BC Medium
N: 132439.192
E: 573877.082

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RADIOLOGICAL CONTROL TECHNICAL ASSESSMENT

Title/Project or Activity:	Use of Ruggedized SHP-380 Probes to Detect 1000 dpm/100 Square Centimeters	GRP-TA-~~04-42-0~~ 026 SJ 11/10/04
Prepared By: (type/sign)	Brian Baumann BJB	Date: 11/08/04
Peer Reviewed By: (type/sign)	Joe Bashore Joseph A Bashore	Date: 11/08/04

TA Type:
- ☒ Survey Requirements/Material Release
- ☐ Internal/External Dosimetry
- ☐ Workplace Air Monitoring Methods

Approval: (type/sign) Steven Landsman — Radiological Control Manager — Date: 11/9/04

Location/Description of Area:
GRP Project Activities

Description of Work:
Static Survey Protocol to Detect 1000 dpm/100 square centimeters using the E-600 and Ruggedized SHP-380 Probe.

Historical/Technical Basis:
This survey protocol is based on GRP-TA-10-T MDA and "Scan Speed Determination for Environmental Radiological Surveys," Stationary Contamination Monitors, 95% Confidence Level, MDA when the background and static count time are not equal.

Level and Type of Contamination:
Used to screen for Cs-137 beta contamination at 1000 dpm/100 square centimeters either directly on a surface or indirectly on a 100 square centimeter tape press.

Survey Requirements and Limits:
See attachments for counting protocols to detect 1000 dpm/100 square centimeters.

1. MDA for 30 Second Static Count and 300 Second Background Count.
2. MDA for 25 Second Static Count and 250 Second Background Count.
3. MDA for 20 Second Static Count and 200 Second Background Count.
4. MDA for 15 Second Static Count and 150 Second Background Count.
5. MDA for 30 Second Static Count and 150 Second Background Count.
6. MDA for 25 Second Static Count and 125 Second Background Count.
7. MDA for 20 Second Static Count and 100 Second Background Count.
8. MDA for 15 Second Static Count and 75 Second Background Count.

Guidance for using the E-600 with ruggedized SHP-380 probes:

Unless otherwise instructed, all three channels are calibrated for beta activity only, but have different static counting times.
Channel 1 = 1 minute
Channel 2 = 30 seconds
Channel 3 = 15 seconds.

The best way to determine which channel and therefore which static count time is active is to put the switch to either "ratemeter" or "scaler" mode and press the "*" button. A number in the lower right position in the display will count down from 1.0 minute, 30 seconds, 15 seconds.

At the end of the count period the display will show the average count rate in CPM on the display.

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1. Select a background count time and static count time using the attachments 1-8 based on the instrument efficiency for Cs-137 from the calibration sticker.

2. If the selected static count time is 15 seconds or 30 seconds continue. If the selected static count time is 20 or 25 seconds notify management.

2. Turn the instrument switch to "Backgd" position. Note the time the instrument was switched on using a watch or stop watch.

3. At a minimum allow the instrument to count the background for the time period in the attached selected table.

4. Then press the "*" button to store the current reading as the instrument background.

5. To review the count rate assigned as background;

a. Turn the switch on the E-600 to "Check" and then press the "Chnl" button on the instrument handle. Then press the "Gross Net" button on the instrument body and the current background on channel 1 will display.

b. Press the "Chnl" and then "Gross Net" button to display the background on channel 2.

c. Press the "Chnl" and then "Gross Net" button again to display the background on channel 3.

6. To begin a static count to detect 1000 dpm/100 square centimeters at the 95% confidence level;

a. Switch the E-600 display to either "ratemeter" or "scaler" mode and press the "*" button.
b. A number in the lower right position in the display will count down from 1.0 minute, 30 seconds, 15 seconds. Repeatedly press channel until the selected static count time period is displayed.
c. Press the "Gross Net" button until the display shows the output in the Net counts per minute.
d. Position the detector for the count and push the "*" button. A beep will be heard at the end of the count interval.
e. At the end of the count interval the display will show the average count rate in CPM on the display.
f. If this value is less than the decision level value given in the table, the activity is less than 1000 dpm/100 square centimeters at the 95% confidence level.
g. If this value is greater than the decision level perform a tape press of the soil and count using the same counting protocol.
h. If this value is less than the decision level the transferable activity is less than 1000 dpm/100 sqaure centimeter at the 95% confidence level.
i. If this value is greater than the decision level, notify management.

Workplace Air Sampling Practices, Limits, and Action Levels:
NA

Concurrence: (type/sign) _____ Date: _____
FTA for Release/Contamination Control/Workplace Air Sampling ☒ N/A

Required Internal or External Dosimetry:
NA

Signed: (type/sign) NA Date: _____

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FTA for External Dosimetry		☒ N/A	
Signed: (type/sign)	NA		**Date:**
FTA for Internal Dosimetry		☒ N/A	
Concurrence: (type/sign)	NA		**Date:**
FH STA for Internal Dosimetry		☒ N/A	

Attachment 1. MDA for 30 Second Static Count and 300 Second Background Count
As a function of Background and Instrument Cs-137 Efficiency

Bkgd Count Time= 300 seconds = 5 minutes
Survey Count Time= 30 seconds = 0.5 minutes
95% Confidence Level
Based on HNF-IP-1277 4.53 and GRP-TA-010-T
MDA AND SCAN SPEED DETERMINATION FOR ENVIRONMENTAL RADIOLOGICAL SURVEYS

BG Count Rate cpm	MDA dpm for Eff 10%	MDA dpm for Eff 11%	MDA dpm for Eff 12%	MDA dpm for Eff 13%	MDA dpm for Eff 14%	MDA dpm for Eff 15%	MDA dpm for Eff 16%	MDA dpm for Eff 17%	DL Net CPM
150	652	593	543	501	466	435	407	383	30
200	744	677	620	573	532	496	465	438	35
250	826	751	688	635	590	551	516	486	39
300	899	818	750	692	642	600	562	529	42
350	967	879	806	744	691	645	604	569	46
400	1030	937	858	792	736	687	644	606	49
450	1089	990	908	838	778	726	681	641	52
500	1145	1041	954	881	818	764	716	674	55
550	1199	1090	999	922	856	799	749	705	57
600	1250	1136	1041	961	893	833	781	735	60
650	1298	1180	1082	999	927	866	811	764	62
700	1345	1223	1121	1035	961	897	841	791	65
750	1391	1264	1159	1070	993	927	869	818	67
800	1434	1304	1195	1103	1025	956	897	844	69
850	1477	1343	1231	1136	1055	985	923	869	71
900	1518	1380	1265	1168	1084	1012	949	893	73
Efficiency	10%	11%	12%	13%	14%	15%	16%	17%	

Attachment 2. MDA for 25 Second Static Count and 250 Second Background Count
As a function of Background and Instrument Cs-137 Efficiency
Bkgd Count Time= 250 seconds = 4.166667 minutes
Survey Count Time= 25 seconds = 0.416667 minutes
95% Confidence Level
Based on HNF-IP-1277 4.53 and GRP-TA-010-T
MDA AND SCAN SPEED DETERMINATION FOR
ENVIRONMENTAL RADIOLOGICAL SURVEYS

BG Count Rate cpm	MDA dpm for Eff 10%	MDA dpm for Eff 11%	MDA dpm for Eff 12%	MDA dpm for Eff 13%	MDA dpm for Eff 14%	MDA dpm for Eff 15%	MDA dpm for Eff 16%	MDA dpm for Eff 17%	DL Net CPM
150	720	654	600	554	514	480	450	423	33
200	821	746	684	632	586	547	513	483	38
250	910	828	759	700	650	607	569	535	42
300	991	901	826	762	708	661	619	583	46
350	1065	968	888	819	761	710	666	627	50
400	1134	1031	945	872	810	756	709	667	53
450	1199	1090	999	922	856	799	749	705	57
500	1260	1146	1050	970	900	840	788	741	60
550	1319	1199	1099	1014	942	879	824	776	63
600	1374	1249	1145	1057	982	916	859	808	65
650	1428	1298	1190	1098	1020	952	892	840	68
700	1479	1345	1233	1138	1057	986	925	870	71
750	1529	1390	1274	1176	1092	1019	956	899	73
800	1577	1434	1314	1213	1126	1051	986	928	76
850	1624	1476	1353	1249	1160	1082	1015	955	78
900	1669	1517	1391	1284	1192	1112	1043	982	80
Efficiency	10%	11%	12%	13%	14%	15%	16%	17%	

Attachment 3. MDA for 20 Second Static Count and 200 Second Background Count
As a function of Background and Instrument Cs-137 Efficiency
Bkgd Count Time= 200 seconds = 3.333333 minutes
Survey Count Time= 20 seconds = 0.333333 minutes
95% Confidence Level
Based on HNF-IP-1277 4.53 and GRP-TA-010-T
MDA AND SCAN SPEED DETERMINATION FOR
ENVIRONMENTAL RADIOLOGICAL SURVEYS

BG Count Rate cpm	MDA dpm for Eff 10%	MDA dpm for Eff 11%	MDA dpm for Eff 12%	MDA dpm for Eff 13%	MDA dpm for Eff 14%	MDA dpm for Eff 15%	MDA dpm for Eff 16%	MDA dpm for Eff 17%	DL Net CPM
150	813	739	678	626	581	542	508	478	37
200	927	842	772	713	662	618	579	545	42
250	1026	933	855	789	733	684	641	604	47
300	1116	1015	930	859	797	744	698	657	52
350	1199	1090	1000	923	857	800	750	706	56
400	1277	1161	1064	982	912	851	798	751	60
450	1349	1226	1124	1038	964	899	843	794	63
500	1418	1289	1181	1091	1013	945	886	834	67
550	1483	1348	1236	1141	1059	989	927	872	70
600	1545	1405	1288	1189	1104	1030	966	909	73
650	1605	1459	1338	1235	1146	1070	1003	944	76
700	1663	1511	1385	1279	1188	1108	1039	978	79
750	1718	1562	1432	1322	1227	1145	1074	1011	82
800	1772	1611	1476	1363	1266	1181	1107	1042	85
850	1824	1658	1520	1403	1303	1216	1140	1073	87
900	1874	1704	1562	1442	1339	1250	1171	1103	90
Efficiency	10%	11%	12%	13%	14%	15%	16%	17%	

Attachment 4. MDA for 150 Second Static Count and 150 Second Background Count
As a function of Background and Instrument Cs-137 Efficiency
Bkgd Count Time= 150 seconds = 2.5 minutes
Survey Count Time= 15 seconds = 0.25 minutes
95% Confidence Level
Based on HNF-IP-1277 4.53 and GRP-TA-010-T
MDA AND SCAN SPEED DETERMINATION FOR
ENVIRONMENTAL RADIOLOGICAL SURVEYS

BG Count Rate cpm	MDA dpm for Eff 10%	MDA dpm for Eff 11%	MDA dpm for Eff 12%	MDA dpm for Eff 13%	MDA dpm for Eff 14%	MDA dpm for Eff 15%	MDA dpm for Eff 16%	MDA dpm for Eff 17%	DL Net CPM
150	954	867	795	734	681	636	596	561	42
200	1084	986	904	834	775	723	678	638	49
250	1200	1091	1000	923	857	800	750	706	55
300	1304	1185	1086	1003	931	869	815	767	60
350	1399	1272	1166	1077	1000	933	875	823	65
400	1489	1353	1241	1145	1063	992	930	876	69
450	1572	1429	1310	1210	1123	1048	983	925	73
500	1652	1501	1376	1270	1180	1101	1032	971	77
550	1727	1570	1439	1328	1233	1151	1079	1016	81
600	1799	1635	1499	1384	1285	1199	1124	1058	85
650	1868	1698	1557	1437	1334	1245	1167	1099	88
700	1934	1758	1612	1488	1382	1290	1209	1138	91
750	1998	1817	1665	1537	1427	1332	1249	1176	94
800	2060	1873	1717	1585	1472	1374	1288	1212	98
850	2120	1928	1767	1631	1515	1414	1325	1247	101
900	2179	1981	1816	1676	1556	1452	1362	1282	104
Efficiency	10%	11%	12%	13%	14%	15%	16%	17%	

Attachment 5. MDA for 30 Second Static Count and 150 Second Background Count
As a function of Background and Instrument Cs-137 Efficiency

Bkgd Count Time= 150 seconds = 2.5 minutes
Survey Count Time= 30 seconds = 0.5 minutes
95% Confidence Level
Based on HNF-IP-1277 4.53 and GRP-TA-010-T
MDA AND SCAN SPEED DETERMINATION FOR
ENVIRONMENTAL RADIOLOGICAL SURVEYS

BG Count Rate cpm	MDA dpm for Eff 10%	MDA dpm for Eff 11%	MDA dpm for Eff 12%	MDA dpm for Eff 13%	MDA dpm for Eff 14%	MDA dpm for Eff 15%	MDA dpm for Eff 16%	MDA dpm for Eff 17%	DL Net CPM
150	678	617	565	522	485	452	424	399	31
200	775	705	646	596	554	517	484	456	36
250	860	782	717	662	614	573	538	506	40
300	937	852	781	721	669	625	586	551	44
350	1008	916	840	775	720	672	630	593	48
400	1074	976	895	826	767	716	671	632	51
450	1135	1032	946	873	811	757	710	668	54
500	1194	1085	995	918	853	796	746	702	57
550	1250	1136	1041	961	893	833	781	735	60
600	1303	1184	1086	1002	930	868	814	766	62
650	1354	1231	1128	1041	967	902	846	796	65
700	1403	1275	1169	1079	1002	935	877	825	67
750	1450	1318	1208	1115	1036	967	906	853	70
800	1496	1360	1247	1151	1068	997	935	880	72
850	1540	1400	1283	1185	1100	1027	963	906	74
900	1583	1439	1319	1218	1131	1056	990	931	76
Efficiency	10%	11%	12%	13%	14%	15%	16%	17%	

Attachment 6. MDA for 25 Second Static Count and 125 Second Background Count
As a function of Background and Instrument Cs-137 Efficiency

Bkgd Count Time= 125 seconds = 2.083333 minutes
Survey Count Time= 25 seconds = 0.416667 minutes
95% Confidence Level
Based on HNF-IP-1277 4.53 and GRP-TA-010-T
MDA AND SCAN SPEED DETERMINATION FOR
ENVIRONMENTAL RADIOLOGICAL SURVEYS

BG Count Rate cpm	MDA dpm for Eff 10%	MDA dpm for Eff 11%	MDA dpm for Eff 12%	MDA dpm for Eff 13%	MDA dpm for Eff 14%	MDA dpm for Eff 15%	MDA dpm for Eff 16%	MDA dpm for Eff 17%	DL Net CPM
150	749	681	624	576	535	499	468	441	34
200	855	777	712	657	610	570	534	503	39
250	948	862	790	729	677	632	592	558	44
300	1032	938	860	794	737	688	645	607	48
350	1110	1009	925	854	793	740	693	653	52
400	1182	1074	985	909	844	788	739	695	56
450	1249	1136	1041	961	892	833	781	735	59
500	1314	1194	1095	1010	938	876	821	773	62
550	1374	1249	1145	1057	982	916	859	808	65
600	1433	1302	1194	1102	1023	955	895	843	68
650	1489	1353	1240	1145	1063	992	930	876	71
700	1542	1402	1285	1186	1102	1028	964	907	74
750	1594	1449	1328	1226	1139	1063	996	938	76
800	1644	1495	1370	1265	1174	1096	1028	967	79
850	1693	1539	1411	1302	1209	1129	1058	996	81
900	1740	1582	1450	1338	1243	1160	1088	1024	84
Efficiency	10%	11%	12%	13%	14%	15%	16%	17%	

Attachment 7. MDA for 20 Second Static Count and 100 Second Background Count
As a function of Background and Instrument Cs-137 Efficiency
Bkgd Count Time= 100 seconds = 1.666667 minutes
Survey Count Time= 20 seconds = 0.333333 minutes
95% Confidence Level
Based on HNF-IP-1277 4.53 and GRP-TA-010-T
MDA AND SCAN SPEED DETERMINATION FOR
ENVIRONMENTAL RADIOLOGICAL SURVEYS

BG Count Rate cpm	MDA dpm for Eff 10%	MDA dpm for Eff 11%	MDA dpm for Eff 12%	MDA dpm for Eff 13%	MDA dpm for Eff 14%	MDA dpm for Eff 15%	MDA dpm for Eff 16%	MDA dpm for Eff 17%	DL Net CPM
150	846	769	705	651	604	564	529	498	38
200	964	876	803	742	689	643	603	567	44
250	1068	971	890	822	763	712	668	628	49
300	1163	1057	969	894	830	775	727	684	54
350	1249	1136	1041	961	892	833	781	735	58
400	1330	1209	1108	1023	950	887	831	782	62
450	1405	1278	1171	1081	1004	937	878	827	66
500	1477	1343	1231	1136	1055	985	923	869	70
550	1545	1405	1288	1189	1104	1030	966	909	73
600	1610	1464	1342	1239	1150	1074	1006	947	76
650	1673	1521	1394	1287	1195	1115	1045	984	80
700	1733	1575	1444	1333	1238	1155	1083	1019	83
750	1791	1628	1492	1378	1279	1194	1119	1053	85
800	1847	1679	1539	1421	1319	1231	1154	1086	88
850	1901	1728	1584	1462	1358	1267	1188	1118	91
900	1954	1776	1628	1503	1396	1303	1221	1149	94
Efficiency	10%	11%	12%	13%	14%	15%	16%	17%	

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RADIOLOGICAL CONTROL TECHNICAL ASSESSMENT

Title/Project or Activity:	**Site Specific Requirements for Surveys in the 200 BC Controlled Area**	**GRP-TA-007-T**
Prepared By: (type/sign)	**SD Landsman**	Date:
Peer Reviewed By: (type/sign)	**S Juntunen**	Date:

TA Type:
- ☒ Survey Requirements/Material Release
- ☐ Internal/External Dosimetry
- ☐ Workplace Air Monitoring Methods

Approval: (type/sign) **SD Landsman** Date:
Radiological Control Manager

Location/Description of Area:

The 200 BC Cribs and Trenches controlled area (unplanned Release UPR-200-E-83 and Operable Unit BP-2) including Liquid waste discharge sites 216-B-14 through 216-B-19, 216-B-21 through 216-B34, 216-B-52, 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58. This applies to the contaminated areas and soil contamination areas located in the BC Controlled Area

Description of Work:

Entry to the 200 BC Controlled Area to perform work, including but not limited to well sampling, well maintenance, waste site surveillance, gamma logging of existing boreholes, and related activities.

Historical/Technical Basis:

During the late 1940's and early 1950's, a limited supply of uranium was available to fabricate new fuel rods for the 100 Area reactors. It was also noted that the available tank space for the existing process facilities was being filled faster than new tank farms could be built. In an effort to solve both problems, the unused 221-U Canyon Building was retrofitted to accommodate the Uranium Recovery Process (URP). This process removed the uranium metal from the BiPO4's process waste that had been stored in the tank farms. Also, more waste tank space was expected to become available as a result of this process. Shortly after the URP operation began (1951), it was discovered that the process actually generated more waste than it removed from the tank farms. The waste stream was recognized as being high in fission products such as cesium-137 and strontium-90 and not suitable for disposal to the ground. A ferrocyanide-based cesium-137 and strontium-90 precipitation, or scavenging, process sequence was developed as a late-stage step of the URP and implemented at 221-U in October 1953. The fission product-depleted waste was then regarded as meeting standards allowing disposal to the ground. Scavenging was also conducted at the 244-CR Vault, inside the 241-C Tank Farms.

Both waste streams were disposed to the ground at two crib systems, the 216-B-43 through 216-B-50 Cribs (BY Cribs) and at the 216-B-14 to 216-B-19 Cribs (BC Cribs) located south of the 200 East Area. A series of specific retention trenches (216-B-20 to 216-B-34) was also built in the BC area and were designed to receive only a fraction of the liquid capable of being stored in the soil column pore space. The BC cribs/trenches were active from January 1956 to January 1958. The 216-B-51 French Drain, located north of the 241-B Tank Farm, was used to dispose of a small quantity of pipeline flush water from the BC Cribs.

The BC Cribs were constructed of concrete blocks capped with two concrete form walls fabricated of steel. The BC Trenches were excavations 3 m (10 ft) wide by 152 m (500 ft) long by approximately 1.8 m (6 ft) deep. Several small dams were added to segment the bottom, ensuring more even distribution of the contaminated waste that was admitted to each segment by a series of pipes and hoses. The trenches were backfilled after discharges met the calculated specific retention volume. Information regarding sites that received cesium and strontium scavenged waste is available in the B Plant AAMS report (DOE-RL 1993e), the T Plant AAMS report (DOE-RL 1992b), the 200 East AAMS report (DOE-RL 1993a), the 200 West AAMS report (DOE-RL 1993c), the E-RL 1992b), the 200 East AAMS report (DOE-RL 1993a), the 200 West AAMS report (DOE-RL 1993c), the 200-BP-5 Operable Unit Treatability Test Report 200-BP-5 Operable Unit Treatability Test Report (DOE-RL 1996b), and the Feasibility Study Report for the 200-BP-1 Operable Unit (DOE-RL 1994).

The BC Cribs and Trenches area is the site of one of the most significant unplanned releases in the 200 Areas. Approximately 10 km (4 mi) has been designated as a Soil Contamination Area. In 1958, radioactively contaminated rabbit and coyote feces were found scattered on the ground up to 4 km (2.5 mi) south, east, and west of the BC area. One theory suggests that an animal burrowed into the 216-B-23 Trench, thereby exposing a radioactive salt layer that was ingested by rabbits. Defecation by the rabbits and coyotes spread the contamination over an area of approximately

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10 km (4 mi). Monthly and quarterly surface surveillances indicate the contamination is currently fixed beneath a good growth of vegetation. Recent surveillance activity has shown that the contamination was originally spread over a 39-km (15-mi) area (McKinney and Markes 1997), and the enlarged area has been posted. Groundwater contamination has not been detected in monitoring wells associated with the BC area.

Level and Type of Contamination:

Primary Contaminates of Concern (COCs) are uranium (4,000 kg total), cesium-137 (2570 Ci total) and strontium-90 (2300 Ci total). Secondary COCs are plutonium (15 Ci total [200g]) and cobalt-60 (500 Ci total). (NOTE: Inventory amounts are from DOE/RL-96-81 Table A-1 and are not corrected for decay.)

Contamination concentrations associated with the unplanned release can be as high as 250,000 pCi/gm beta-gamma and 1,000 pCi/gm alpha in isolated "hot spots" (weathered animal wastes present on the soil surface). The principle isotopes of concern in the hot spots are Cs-137 and Sr-90. There is no record of removable alpha activity in contamination surveys performed in the area during the last seven years.

The ratio of alpha to beta-gamma radionuclides in the BC Controlled area source term is 15/5300 = 0.2%. As established in **CDGH-9607-RLS-0055,** alpha surveys may be eliminated for material and equipment release if the percentage of alpha emitters in the source term is 2% or less. In addition, alpha survey for personnel release may be eliminated if the percentage of alpha emitters in the source term is less than 10%. Based on this criteria, alpha surveys can be eliminated for all work performed in the 200 BC Controlled area.

Spectral gamma geophysical logging in existing boreholes does not indicate significant lateral spreading of contamination in the vadose zone. Contamination of the uppermost soil horizons is widespread in and around the BC Cribs area due to the unplanned release documented above. Geophysical logging at the BC trenches indicates contamination in the upper 9 to 12 m (30 to 40 ft) of the soil column with no evidence of groundwater contamination. Geophysical logging indicates that the soil column beneath the BC Cribs (216-B-14 through 216-B-19) is contaminated in the uppermost 30 m (100 ft). The logging suggests that groundwater contamination may have occurred at the 216-B-14 and 216-B-16 Cribs.

Survey Requirements and Limits:

Beta-gamma survey only is required for surveys performed in the 200 BC Controlled Area.

Grub surveys may be performed in a defined work area including an entry/egress route to determine the transferability potential of the soils in the area. It is permissible to use a combination of HSO tractor surveys and HPT walkdown surveys of the work area to perform the grub survey. Assess the transferability potential of surface soils in the work area using tape presses (for granular surfaces) or large area wipes (for large cobbles or other smooth surfaces). Entry to the surveyed area may then be controlled administratively as follows (based on guidance in TED-0602-0445 Technical Equivalency for Posting Contamination Area at BC Controlled Area After 07/01/02):

- The Contamination Area posting at the entrance to the fire road that will be used as the entry/egress route to the work area must be moved down the road to the far boundary of the cleared work area.
- Post the boundary of the work area as a Soil Contamination Area (SCA) requiring an RWP for access at a maximum of every 30 meters around the perimeter. Postings will delineate the boundary of the cleared work area.
- Radiological Work Permits (RWP) required for accessing the CA/SCA must explain the postings, existing and potential hazards, CA/SCA boundaries, and prohibit access to the CA from any other means than the fire roads unless accompanied by an HPT.
- Verification surveys of the work area must be performed on a weekly basis or upon entry if entries are less frequent. This will ensure that the area postings are satisfactory.

Action limit for transferability assessment is 1,000 dpm. If action limit is exceeded, suspend work and contact the RadCon supervisor for further direction.

Workplace Air Sampling Practices, Limits, and Action Levels:

No workplace air sampling is required for entry into the BC controlled area. Air sampling will be determined for specific projects within the BC controlled area as they arise.

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Concurrence: (type/sign) _____ Date: _____

FLUOR HANFORD
RADIOLOGICAL CONTROL TECHNICAL ASSESSMENT

FTA for Release/Contamination Control/Workplace Air Sampling	☐ N/A	
Required Internal or External Dosimetry:		
Signed: (type/sign)		Date:
FTA for External Dosimetry	☐ N/A	
Signed: (type/sign)		Date:
FTA for Internal Dosimetry	☐ N/A	
Concurrence: (type/sign)		Date:
FH STA for Internal Dosimetry	☐ N/A	

information only

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RADIOLOGICAL CONTROL TECHNICAL ASSESSMENT

Title/Project or Activity:	**Survey Requirements for Non Radiologically-Controlled Vehicles in the Groundwater Protection Project**	**GRP-TA-003-T**
Prepared By: (type/sign)	**S Juntunen**	Date:
Peer Reviewed By: (type/sign)		Date:

TA Type:
- ☒ Survey Requirements/Material Release
- ☐ Internal/External Dosimetry
- ☐ Workplace Air Monitoring Methods

Approval: (type/sign) **SD Landsman** Date: _____
Radiological Control Manager

Location/Description of Area:
This assessment addresses survey methods for non-radiologically controlled vehicles used in the following areas: Soil Contamination Areas (SCAs), Contamination Areas (CAs), High Contamination Areas (HCAs), and Airborne Radioactivity Areas (ARAs) - referred to as contaminated areas hereafter.

Description of Work:
Survey Plan for non-radiologically controlled vehicles and equipment that enter areas controlled for removable or transferable contamination in the course of work.

Historical/Technical Basis:
On occasion vehicles or equipment such as air compressors, purgewater trucks, portable generators, etc. must be taken into areas controlled for removable contamination.

There are common areas and locations on vehicles/equipment that are most likely to be of radiological concern, e.g., brake pedals, steering wheels or controls, tires, treads, undercarriages, etc. By focusing on these common survey points, the HPT will be able to conduct consistent and appropriate surveys. In addition, a qualified HPT has the knowledge, skill and responsibility to base additional surveys on the specific conditions at each work site.

The vehicle must be free of soil and caked-on oil or grease in quantities that could hamper the detection of contamination prior to entry into a contaminated area and/or prior to survey for release. The RCT should apply a graded approach to determine the likelihood of masking. If this cannot be reasonably achieved, contact the RadCon Supervisor for direction.

Level and Type of Contamination:
The GRP group accesses sites throughout the Hanford area. In general, work sites in most operable units are contaminated with mixed fission products, although some operable units such as 300 Area FF-1 (uranium waste sites) and CW-5 (PFP waste sites) are contaminated with specific radionuclides. Consult technical assessments, RWPs, or ERSTIs generated for the work area to determine the expected isotopes associated with the specific work site.

Survey Requirements and Limits:

Prior to entry into an area controlled for contamination, as well as during use of the vehicle/equipment in a contaminated area, perform surveys as follows:

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At a minimum, perform a direct survey of the following areas:
- Operating pedals
- Steering mechanism/gear shift or other levers
- Tires and wheels or treads
- Any portion of the vehicle in contact with ground (e.g., blade, bucket, etc.)

When surveying a vehicle out of a contaminated area, perform the following:
- Ensure the vehicle is turned off.
- Determine if the vehicle operator got out of the vehicle while in the area.
  NOTE: If the operator did not exit the vehicle, surveys inside the cab do not need to be performed. If the operator did exit the vehicle, survey all applicable areas below that have the potential to be contaminated, and perform a survey of the operator.
- Perform a direct survey and removable contamination survey of the applicable areas below. Release limits for the survey are HNF-5173 Table 2-2 contamination limits appropriate to the isotopes of concern present in the area.

FLUOR HANFORD
RADIOLOGICAL CONTROL TECHNICAL ASSESSMENT

- Tires and wheels or treads
- Fenders and wheel wells
- Front bumper and grill
- Accessible areas of engine compartment
- Accessible areas of vehicle undercarriage
- Any portion of the vehicle in contact with ground (e.g., blade, bucket, etc.)
- Floor of cab
- Operating pedals
- Seats, under seats, seatbelts
- Steering mechanism
- Arm rests, door/window handles

Note: If the direct survey indicates no activity above HNF-5173 Table 2-2 removable contamination limits, a removable contamination survey does not need to be performed.

If only part of a vehicle (e.g., forklift forks, crane hook) crosses into the contaminated area, perform an exit survey only on the portion of the unit in contact with any surface or touched by workers in the area.

If contamination levels exceed applicable release limits when performing an exit survey of a vehicle, control the area and notify the RadCon Supervisor and the Field Supervisor in charge of the work. Assist with determining the source of contamination as requested.

If contamination levels are less than the applicable release limits, release the vehicle from radiological control.

Workplace Air Sampling Practices, Limits, and Action Levels:
N/A

Concurrence: (type/sign) _____ **Date:** _____
FTA for Release/Contamination Control/Workplace Air Sampling ☐ **N/A**

Required Internal or External Dosimetry:
N/A

Signed: (type/sign) _____ **Date:** _____
FTA for External Dosimetry ☐ **N/A**

Signed: (type/sign) _____ **Date:** _____
FTA for Internal Dosimetry ☐ **N/A**

Concurrence: (type/sign) _____ **Date:** _____
FH STA for Internal Dosimetry ☐ **N/A**

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ENVIRONMENTAL RADIOLOGICAL SURVEY TASK INSTRUCTION

Page 1 of 1

Instruction Number/Revision	Risk Assessment	Effective Date
GW-ERSTI-05-046/Rev. 0	ACRA-05-097	09/13/2005

Survey Location: Ecological surveys/sampling in the BC Controlled Area

Supporting Document Number(s) GRP-TA-003&007-T , GRP-TA-025
HNF-12494 Environmental Radiological Measurement Plan for Central Plateau Project; RCP 4.5.1 Portable Environmental Survey Instrument Operation

General Information

Ecological surveys/sampling may encounter radiologically contaminated soil. Surveys of soil samples removed from the locations specified on the survey plan documents need to be performed to ensure control of volumetric contamination that may have been transferred to the surface. This instruction is applicable to all specified grid locations listed in the ecological survey plan. Surveys will include: Soil Samples, Plants, Animal Burrows, Ant Mounds and direct grub surveys of the soil. All soil samples will be field screened by the RCT at the point of collection for both gamma and beta contributors. Values will be recorded on the appropriate data sheet provided by the task lead (Duratek personnel). For gamma emitters, use a sodium-iodide detector. For beta emitters, use a DP6 (SHP 380 may be substituted if a DP6 is not available). Refer to Table 1 for guidance on instrument selection.

Contamination surveys on tools and equipment will be performed using standard contamination survey techniques such as technical smears, large area wipes, or other suitable methods. Entries into the area will be made using the appropriate RWP. Action levels on the RWP should be followed to ensure worker safety. Respiratory protection is specified on the RWP.

Table-1

Survey Type	Radiation	Probe	Max Allowed Background
Volumetric	Gamma	SPA-3	2500 cpm
	Beta	DP6 or SHP 380	400 cpm (350 DP6)
Technical Smear	Beta /gamma	SHP-380 or DP-6	400 cpm (350 DP6)

Survey Instructions

1. Establish baseline background for each grid location with each instrument used prior to performing surveys. Document background reading on the data sheet provided. Contact RadCon Supervisor for direction if beta-gamma background exceeds the values stated in Table 1 above.
2. Prior to collecting the sample, perform a direct scan survey of the selected grid location with the DP6.
3. Survey each sample (static count) at the time of collection for both beta and gamma contributors. Each sample should be counted for at least 15 seconds with each instrument.

Special Instructions

1. Document survey results on the data sheet provided. When all samples have been collected and surveyed, forward the results to Ron Mitchell (H1-11).

Approvals

Health Physics Analyst (print and sign) Joseph Bashore Joseph A Bashore	Date 09/08/2005
RadCon Supervisor (print and sign) PL SD Landsman SD Landsman	Date 9/12/05
Project Technical Staff Member/Project Engineer (print and sign) R.M. Mitchell Ron Mitchell	Date 9/12/05

A-6003-529 (05/04)

Fluor Hanford - Central Plateau Remediation Project
AREA CLASSIFICATION/RISK ASSESSMENT CHECKLIST

Page 1 of 2
No. ACRA- 05-097

Excavation Permit Number	Sample Document Number	Date
N/A	121527	09/08/2005

Location
BC Controlled Area

	Yes	No
1. The site is a location where leaks or spills are known to have occurred.	☐	☒
2. The site was controlled at some time as a Contamination Area due to surface contamination or transferable volumetric material that exceeds the removable contamination limits in Table 2-2.	☒	☐
3. A buried crib, pond, ditch or other liquid effluent system is likely to be encountered.	☐	☒
4. This is or was a solid waste burial site.	☐	☒
5. The area is or was a radioactive waste storage site.	☐	☒
If any of the items above (1-5) are checked "Yes", then the work site will be considered a Class I Area. If all items are checked "No", then continue with the assessment below.		
6. The site is within 50 feet of a contaminated pond, crib, ditch, or solid waste burial site.	☐	☐
7. The site is within 300 feet of a leaking waste storage tank.	☐	☐
8. The site includes an area where radioactive material in unsealed form was present at one time, or an area that is downwind and within 500 feet from documented stack releases.	☐	☐
9. The site is an environmentally stabilized area, or is within an RBA established for contamination control.	☐	☐
If any item above (6-9) are checked "Yes", then the work site will be considered a Class II Area. If all items are checked "No", then continue with the assessment below.		
10. The site is downwind and further than 500 feet of a solid waste burial site, tank farm, contaminated pond, crib, ditch, other liquid effluent system, or facility stack.	☐	☐
11. The site is within 50 feet of a railroad track or a road used to transport radioactive material to or from a process facility.	☐	☐
12. Survey data indicates measurable direct readings above background and/or analytical data indicates the presence of man-made radionuclides.	☐	☐
13. There is historical data that indicates the site may have been associated with a radioactive process at some time in the past.	☐	☐
If any item above (10-13) are checked "Yes", then the work site will be considered a Class III Area. If all items are checked "No", then the site will be considered Unimpacted.		

Description of the Site/Area:
The work involves collecting samples (soil, plants, etc) from locations specified in a ecological survey plan. All sample locations are inside a posted Contaminated Area. A Soil Contamination Area borders the CA.

Survey Unit	Survey Unit Size (Approximate)	Survey Unit Designation			
		Non-impacted	Class 1	Class 2	Class 3
Soil, plants, samples	N/A	☐	☒	☐	☐

A-6003-537 (11/02)

Fluor Hanford - Central Plateau Remediation Project **AREA CLASSIFICATION/RISK ASSESSMENT CHECKLIST (continued)**	Page 2 of 2 No. ACRA-05-097

Sources of Information for Class Designation (e.g., WIDS, RSR Numbers, Log Book Numbers, etc.):

Data used to evaluate the radiological hazards associated with this work was obtained from the HWIS, WIDS, and HEIS data bases. In addition, Recent RadCon Survey's have been reviewed. Area walkdowns were also performed.

Comments (List attachments if any):

Information from the above listed sources indicates that this work is considered to be low radiological risk. However, some contamination may be encountered during the surveys of soil, plants, and animal areas. The BC Cribs and Trenches received waste from the Uranium Recovery Process. In addition, several trenches received laboratory waste from the 300 Area. Animal intrusion over the course of time has resulted in some contamination being brought to the surface and spread beyond the orginal crib perimeters. Consequently, a large area has been posted as a contamination area. The primary contaminants of concern are uranium, Cs-137, Sr-90, and plutonium isotopes. Continous RCT coverage is called for in the survey plan. An RWP will be used for entry and exit into the posted CA. Soil samples will be surveyed as directed by the appropriate ERSTI. Appropriate Technical Assessments (Technical Evaluations) govern instrument use (MDA, scan speed), survey requirements and methodology, and vehicle survey requirements.

Preparer's Name/Signature	Date
Joseph Bashore	09/08/2005
Reviewer's Name/Signature	**Date**
Dave Ottley	09/08/2005

A-6003-537 (11/02)

FLUOR HANFORD RADIOLOGICAL RISK SCREENING FORM

Work Document No.: GRP-RRSF-05-115	**AJHA No.:** N/A

Title:
Ecological Survey's/Sampling BC Controlled Area

Job Description:
Perform surveys on soil, plants, animal burrows, and ant mounds.

Job Location:
BC Controlled Area.

Part A -- High Risk Radiological Work Screening	Yes	No
1. Will the estimated collective dose exceed 2,500 person-mrem?	○	◉
2. Will predicted airborne radioactivity concentrations exceed 10 DAC or result in an integrated exposure of over 200 DAC-hours?	○	◉
3. Will work area[1] removable contamination be greater than 1,000 times HNF-5173 Table 2-2 values?	○	◉
4. Will there be entry into areas where whole body dose rates are >1 rem/hr?	○	◉

If any of the above questions were answered "YES," then the work is designated as HIGH RISK radiological work. Do not continue with Part B. An ALARA review is required based on the final determination of radiological risk.

If all the answers to the above questions are "NO," then the work is not HIGH RISK radiological work. Continue with Part B.

Part B -- Medium Risk Radiological Work Screening	Yes	No
1. Will the estimated collective dose exceed 500 person-mrem but be less than or equal to 2,500 person-mrem?	○	◉
2. Will a respirator be worn for radiological purposes?	◉	○
3. Will work area[1] removable contamination be greater than 100 times Table 2-2 values but less than or equal to 1,000 times Table 2-2 values?	○	◉
4. Will there be entry into areas where whole body dose rates are >100 mrem/hr but be less than or equal to 1,000 mrem/hr?	○	◉
5. Is there a potential for an unplanned release of radioactive material to the environment that meet or exceed HNF-PRO-060 reporting requirements?	○	◉

If any of the answers to the above Part B questions are "YES," then the work is designated as MEDIUM RISK radiological work. An AJHA may be required based on the final determination of radiological risk.

If all of the above Part B questions were answered "NO," then the work is designated as LOW RISK radiological work. Conduct an informal ALARA review of the work activity before preparing or assigning the RWP.

PART C -- RADIOLOGICAL RISK DESIGNATION

◉ LOW RISK Radiological Work ○ MEDIUM RISK Radiological Work ○ HIGH RISK Radiological Work

Justification / Comments:
There is a potential to encounter low levels of contamination in soil samples. Although airborne activity is expected to be less than the levels that would require respiratory protection, respirators are specified in the RWP. Respirators were mutually agreed upon by GW Radcon and test personnel as an added precaution for contaminated dust until analysis of lapels and/or grab air samples confirms that they are unnecessary. Although respirators will initially be worn, this work is still considered to be low radiological risk.

PART D -- ADMINISTRATION

Preparer (Signature)	Printed	Date
Joseph H Bashore	JH Bashore	9-12-05

[1] The work area is described in the job hazard analysis, and is typically the area transited and occupied to perform the work activity.

NOTE: This form is a radiological record when complete.
Reference: HNF-5173, Article 311.

A-6003-838 (04/04)

HANFORD RADIOLOGICAL WORK PERMIT			Contractor: **Fluor Hanford**
General [] Job Specific [X]	Tech. Document No. GRP-TA-003-T, GRP-TA-007-T RAP-05-080	Location Code GW	RWP Number **GW-05-019**
Start Date 09/14/2005	End Date 09/30/2005	Responsible Organization Ground Water Protection Project	

Job Location
B/C Control Area

Job Description and Type of Area: Soil sampling in posted CA or SCA areas.

Primary Isotope(s): [X] MFP [ ] MAP [X] Cs [X] Sr [ ] H-3 [X] U [ ] Pu [ ] Th, Am

Radiation Emitted	Estimated Dose Rates	Contamination Levels	Radiological Worker Training Req.
[ ] Alpha [x] Beta [x] Photons [ ] Neutrons	General Area: 0 mrem/h Maximum Contact: 0.5 mrem/h	Beta-gamma: 10,000 dpm/100cm^2 Alpha: 20 dpm/100cm^2	I [ ] II [X]

Internal Dosimetry Requirements (for routine work under this RWP, except those entering for observation only)
[X] Annual Whole Body Count [ ] Lung Count [ ] Urinalysis Isotopes to Test for (if any):

MINIMUM RADIOLOGICAL PROTECTION REQUIREMENTS

HPT Coverage		Dosimetry	
X	Continuous	X	HSD - TLD
	Intermittent		HCND - TLD
	Start of Job		Pocket Dosimeter
	End of Job		Electronic Dosimeter
	Self Survey (if qualified)		Finger Rings
SI2	HPT Survey Required		Time Keeping
	Auto. Survey Device	X	Entry Control System
	Work Area Instructions		PNAD

MINIMUM PROTECTIVE EQUIPMENT

SI3	Coveralls		Traction Shoe Covers
	Lab Coat	SI3	Canvas Boots
	Waterproof Suit	SI3	Rubber Overshoes
	Gortex Suit		Rubber Boots
	Cap	SI4	Full Face Respirator
X	Hood	SI4	PAPR
SI3	Surgeon's Gloves		Supplied Air Respirator
SI3	Leather Gloves		SCBA
SI3	Canvas & Surgeon's Gloves		Undressing Assistance
SI3	Waterproof Gloves	SI5	Air Sampling Required
	No Personal Outer		ARM Required
	Modesty Clothing		

SPECIAL INSTRUCTIONS (SI)

1. **WORK AREA VOID LIMITS:**
   General Area Contamination: ≥100,000 dpm/100cm^2 $\beta\gamma$
   ≥600dpm/100 cm^2 α
   Lapel Air sample ≥ 1 DAC-hr
   IF VOID LIMITS ARE EXCEEDED:
   a. Stop work and place work area into a safe condition.
   b. Notify Radiological Control Supervisor
2. RCT survey required of personnel and equipment when exiting a CA / SCA (RWP required). Refer to GRP-TA-007-T for survey requirements specific to the BC controlled area. See GRP-TA-003-T for vehicle (pre and post job) survey requirements.
3. CA Work:
   - Work in posted CA's will require one full set of Anti-C's. PPE may be downgraded for heat stress considerations (per RCSI-09).

   SCA Work:
   - Work in SCA does require 1 ***pr gloves*** and ***shoe covers.***

   Glove and shoe cover selection should be based on hazards associated with the work.
4. Respiratory protection is required during High Risk Soil Sampling and only required for those directly exposed to airborne dust. If air sample indicates less than 1 DAC-hr, respiratory protection may be omitted for medium and low risk soil sampling. PAPRs may be worn for comfort rather than APRs.
5. Lapel air samples are to be worn by all workers during soil sampling.

ALARA Review: YES [ ] NO [X]	Pre-Job Briefing: YES [] NO [x]	Post-Job ALARA Review Required: YES [ ] NO [X]
RWP Prepared By: Traci Rued	Phone: 430-5546	HPT Phone: 373-4049
Line Mgt. Print/ Sign:	Phone:	Date
RC Mgt. Print/ Sign:	Phone	Date
RWP Peer Review:		Date:

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APPENDIX D

SOIL/PLANT RADIOLOCIAL SURVEYS

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ENVIRONMENTAL MEASUREMENT RECORD

Page 1 of 11

ERSTI	Date	Time	Location	Survey Number
GW-ERS-TI-002	04/12/2005		Ecological Surveys/Sampling 200E/W/Gable Mountain Locations	EMR-05-0083

Job Description
Survey of BC Crib Low Risk Reference Area

Map/Sketch
See attached maps

COPY

N

A

Legend

○ = Tech Smear	# = Direct Survey	M = Large Area Wipe	Radiological Boundary x----x----x

Instrument(s)

Model No.	Serial No.	Calibration Due Date	Source Check (CPM)		Post-Job Pass/Fail	Source Serial No.	Isotope	α		β-γ	
			PRE-Job	POST-Job				Eff.	BKD	Eff.	BKD
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RCT Name/Signature/Date
CA Hyrkas/K Volkman 4/12/05 / 4-12-05

RCT Supervisor Name/Signature/Date
R Crandall 04-13-05

A-6003-531 (12/02)

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ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0083
Page 2 of 11

Radiological Survey Data

No.	Description of Item Or Location	Removable		Total			
		α	β-γ	α		β-γ	
		cpm/P.A.	cpm/P.A.	cpm/P.A.	BKGD	cpm/P.A.	BKGD
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

A-6003-531 (12/02)

Soil Surveys

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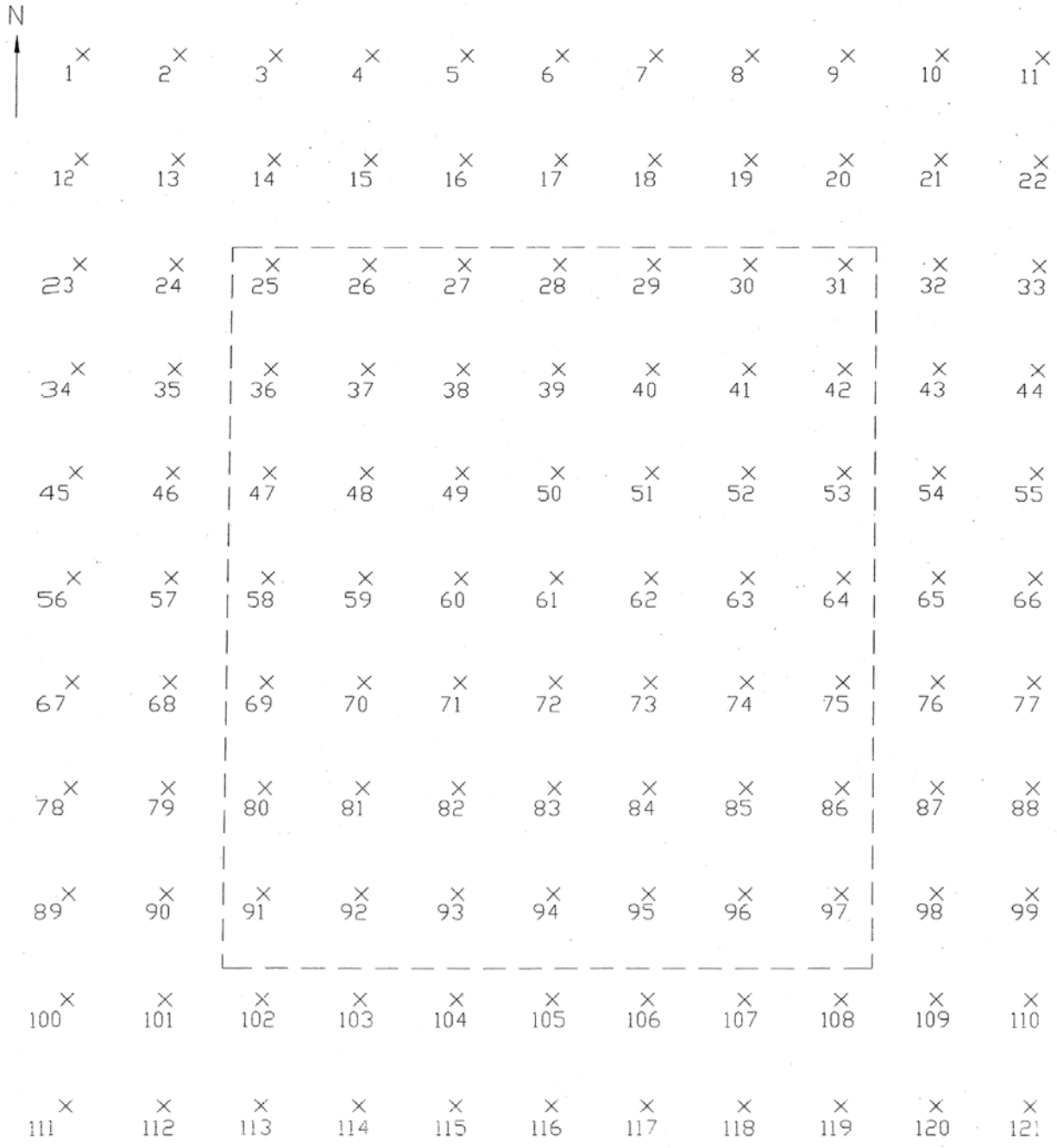
RSR # EMR-05-0083
3 of 11



Plant Surveys

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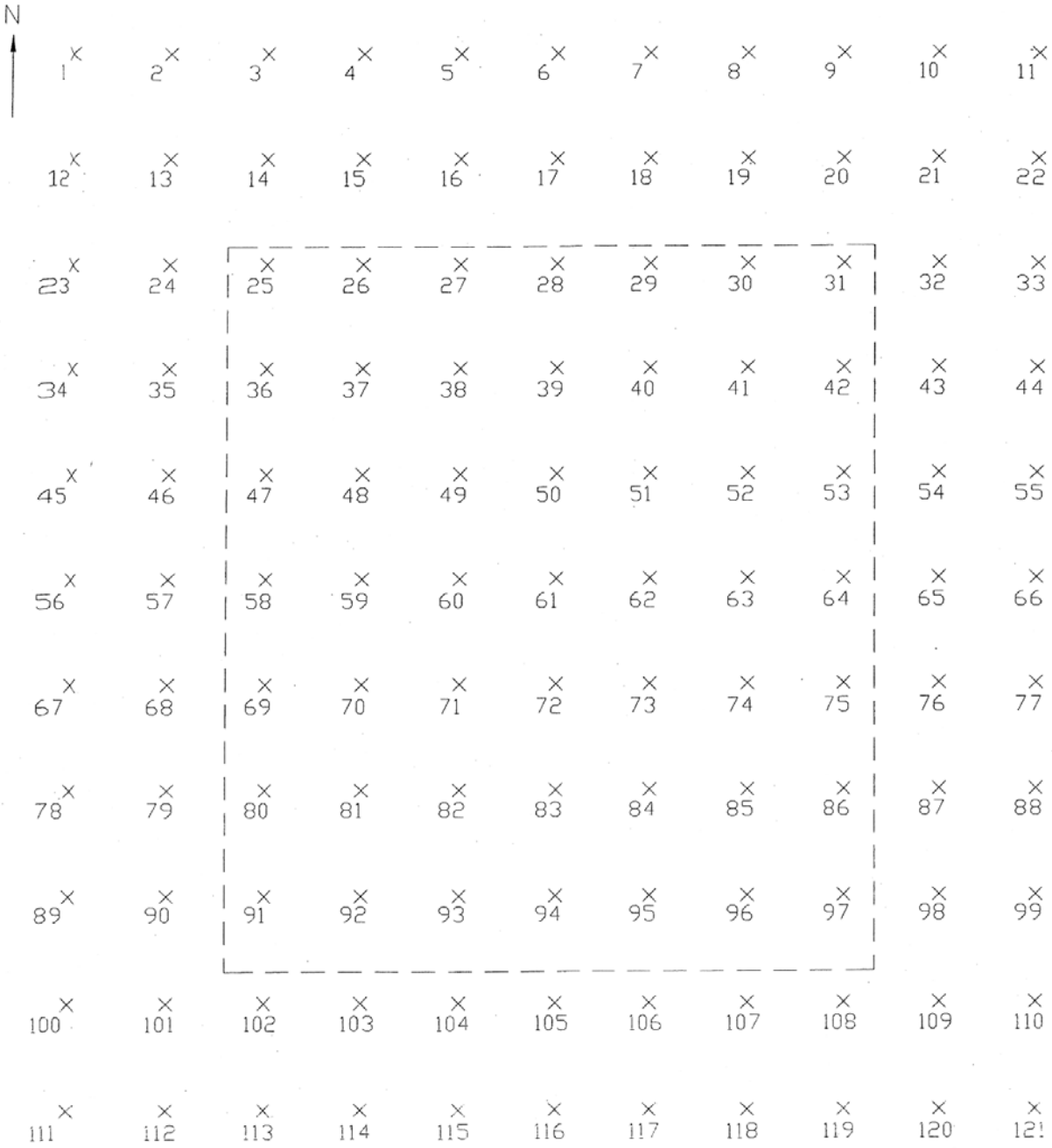
RSR # EMR-05-0083
4 of 11



RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0083 p 5 of 11

Survey Date 04/06/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3820 / 4000 P/F BG 1401 Eff 8%
SITE BG 2700 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0033 /CMEBD-1620 Cal Due 03-01-06 / 11-24-05 Source Check Pre/Post (cpm) 4080 / N/A* P/F BG 190 Eff 14%
SITE BG 350 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCLL	1	S	48	84	0	2610	42	2500
BCLL	2	S	60	60	0	2620	490	3080
BCLL	3	S	60	96	0	2870	0	2960
BCLL	4	S	84	120	0	2540	14	3410
BCLL	5	S	60	96	0	2740	0	2820
BCLL	6	S	60	48	0	2640	462	2610
BCLL	7	S	48	60	0	2650	266	2530
BCLL	8	S	36	60	42	2800	378	2860
BCLL	9	0	12	24	42	2460	0	2780
BCLL	10	S	72	120	0	2540	0	3020
BCLL	11	T	12	12	266	2650	98	2490
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Popped probe – could not perform ending survey

RAD SURVEYS – DAILY FIELD DATA SHEET EMR05-0083 p 6 of 11

Survey Date 04/06/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3820 / 4000 P/F BG 1401 Eff 8%
SITE BG 2700 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0032 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4470 / 4450 P/F BG 219 Eff 16%
SITE BG 378 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCLL	12	S	60	72	0	2790	156	
BCLL	13	S	36	60	0	3010	0	
BCLL	14	S	48	72	0	2610	0	
BCLL	15	S	66	144	0	2670	0	
BCLL	16	S	66	121	0	2750	36	
BCLL	17	S	48	84	0	3080	0	
BCLL	18	S	72	72	0	2860	36	
BCLL	19	S	72	84	0	2420	0	
BCLL	20	T	36	36	0	2760	324	
BCLL	21	B	8	10	0	2770	0	
BCLL	22	S	48	120	0	2630	204	
BCLL	23	R	48	48	0	3010	0	
BCLL	24	S	36	120	0	2810	0	
BCLL	25	S	48	60	0	2340	132	
BCLL	26	S	84	144	0	2680	372	
BCLL	27	S	60	60	0	2840	0	
BCLL	28	S	50	120	0	2380	0	
BCLL	29	S	60	144	0	2500	0	
BCLL	30	S	36	60	0	2790	0	
BCLL	31	S	48	120	0	2830	0	
BCLL	32	S	36	120	0	2710	0	
BCLL	33	S	48	84	0	2750	0	

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0083

Survey Date 04/06/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3820 / 4000 P/F BG 1401 Eff 8%
SITE BG 2700 cpm
Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0032 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4470 / 4450 P/F BG 219 Eff 16%
SITE BG 378 cpm
Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCLL	34	O	12	12	0	2650	0	2900
BCLL	35	R	36	48	0	2740	0	2600
BCLL	36	S	84	120	0	2390	0	2640
BCLL	37	S	60	111	0	2750	0	2710
BCLL	38	S	60	96	0	2660	0	2690
BCLL	39	S	72	120	0	2620	12	2730
BCLL	40	S	36	60	0	2590	0	2610
BCLL	41	S	72	120	0	2590	0	2800
BCLL	42	S	70	96	0	2620	0	2610
BCLL	43	S	96	120	0	2790	276	2700
BCLL	44	S	48	84	0	2570	12	2920
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0083 p 8 of 4

Survey Date 04/07/05

COPY

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3810 / 4030 P/F BG 1357 Eff 8%
SITE BG 2670 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0032 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4370 / 4250 P/F BG 209 Eff 16%
SITE BG 390 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCLL	45	S	36	72	0	2800	0	3130
BCLL	46	T	12	24	0	2970	0	2690
BCLL	47	S	48	84	0	2190	0	3210
BCLL	48	S	36	60	0	2240	0	2580
BCLL	49	S	60	108	0	2900	0	3160
BCLL	50	S	60	120	0	2600	0	2740
BCLL	51	S	48	72	0	2930	0	2680
BCLL	52	S	72	108	0	2020	108	3170
BCLL	53	S	48	60	0	2370	84	3400
BCLL	54	S	60	60	0	3010	0	3340
BCLL	55	S	84	120	0	2100	0	2730
BCLL	56	S	36	60	0	2780	0	2320
BCLL	57	O	36	36	0	2850	0	3090
BCLL	58	T	24	24	0	3140	132	2540
BCLL	59	S	70	108	0	2700	12	3070
BCLL	60	S	48	36	0	2170	132	2850
BCLL	61	S	60	108	0	2240	252	2900
BCLL	62	S	36	96	0	2760	348	2400
BCLL	63	S	48	84	0	2610	12	3620
BCLL	64	S	60	96	0	2590	0	2830
BCLL	65	S	96	108	0	3060	156	2770
BCLL	66	S	36	96	0	2680	414	3010

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0083

Survey Date 04/07/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3810 / 4030 P/F BG 1357 Eff 8%
SITE BG 2670 cpm
Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0032 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4370 / 4250 P/F BG 209 Eff 16%
SITE BG 390 cpm
Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCLL	67	S	48	60	0	2570	0	3150
BCLL	68	R	48	48	0	3040	0	3100
BCLL	69	S	60	108	0	2620	60	3220
BCLL	70	B	12	8	0	2450	0	2720
BCLL	71	S	60	96	0	2480	0	3210
BCLL	72	S	60	72	0	3120	0	3080
BCLL	73	S	36	120	0	3070	228	2670
BCLL	74	S	60	120	0	3010	252	2730
BCLL	75	S	48	144	0	2290	0	2890
BCLL	76	O	36	24	0	3000	0	2310
BCLL	77	S	84	120	0	2960	0	2470
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0083 p 10 of 11

Survey Date 04/12/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3780 / 4130 P/F BG 1390 Eff 8%
SITE BG 2520 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0032 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4240 / 4390 P/F BG 198 Eff 16%
SITE BG 396 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCLL	78	S	48	60	0	2620	0	2720
BCLL	79	S	36	72	0	2680	0	2510
BCLL	80	B	12	10	0	2080	0	2550
BCLL	81	S	48	144	0	2650	0	2620
BCLL	82	S	60	60	0	2020	0	2470
BCLL	83	B	12	18	0	2430	0	2970
BCLL	84	S	12	18	0	2840	360	2930
BCLL	85	S	60	84	0	2320	216	2310
BCLL	86	S	48	60	0	2530	48	2370
BCLL	87	S	48	72	0	2920	0	3340
BCLL	88	S	12	12	0	2080	48	3360
BCLL	89	B	48	72	24	2740	0	3030
BCLL	90	S	60	96	0	2390	0	290
BCLL	91	O	6	8	0	3070	168	2940
BCLL	92	S	24	48	0	3230	0	2810
BCLL	93	S	60	120	0	2530	192	2560
BCLL	94	B	18	18	0	2740	96	2480
BCLL	95	S	60	120	0	2620	0	2650
BCLL	96	B	18	12	288	2610	0	2660
BCLL	97	R	36	48	0	2820	72	2470
BCLL	98	S	48	60	0	2630	48	2640
BCLL	99	S	48	72	0	3150	0	2530

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0083 p 11 of 11

Survey Date 04/12/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3780 / 4130 P/F BG 1390 Eff 8%
SITE BG 2520 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0032 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4240 / 4390 P/F BG 198 Eff 16%
SITE BG 396 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCLL	100	S	48	72	0	2680	0	2690
BCLL	101	B	8	12	168	1926	48	2640
BCLL	102	S	48	72	0	2550	0	3070
BCLL	103	S	24	48	0	2730	0	2500
BCLL	104	S	48	60	0	2580	0	3290
BCLL	105	S	60	96	0	1660	192	2500
BCLL	106	S	48	72	0	2540	0	3020
BCLL	107	S	36	48	0	2010	0	2800
BCLL	108	S	48	60	0	2350	192	2530
BCLL	109	S	24	36	0	2920	0	2520
BCLL	110	T	24	12	0	2680	0	3040
BCLL	111	R	24	24	0	2300	0	2610
BCLL	112	S	36	72	0	2580	0	2630
BCLL	113	S	60	84	0	2120	0	2220
BCLL	114	R	36	36	0	2560	0	2320
BCLL	115	O	12	8	0	2890	72	2440
BCLL	116	B	12	6	96	2290	0	3030
BCLL	117	R	24	24	0	2390	0	2300
BCLL	118	R	36	48	0	2400	0	2420
BCLL	119	O	8	12	0	1928	96	2230
BCLL	120	S	60	96	0	2290	72	2650
BCLL	121	S	24	18	0	2420	0	2590

ENVIRONMENTAL MEASUREMENT RECORD

Page 1 of 10

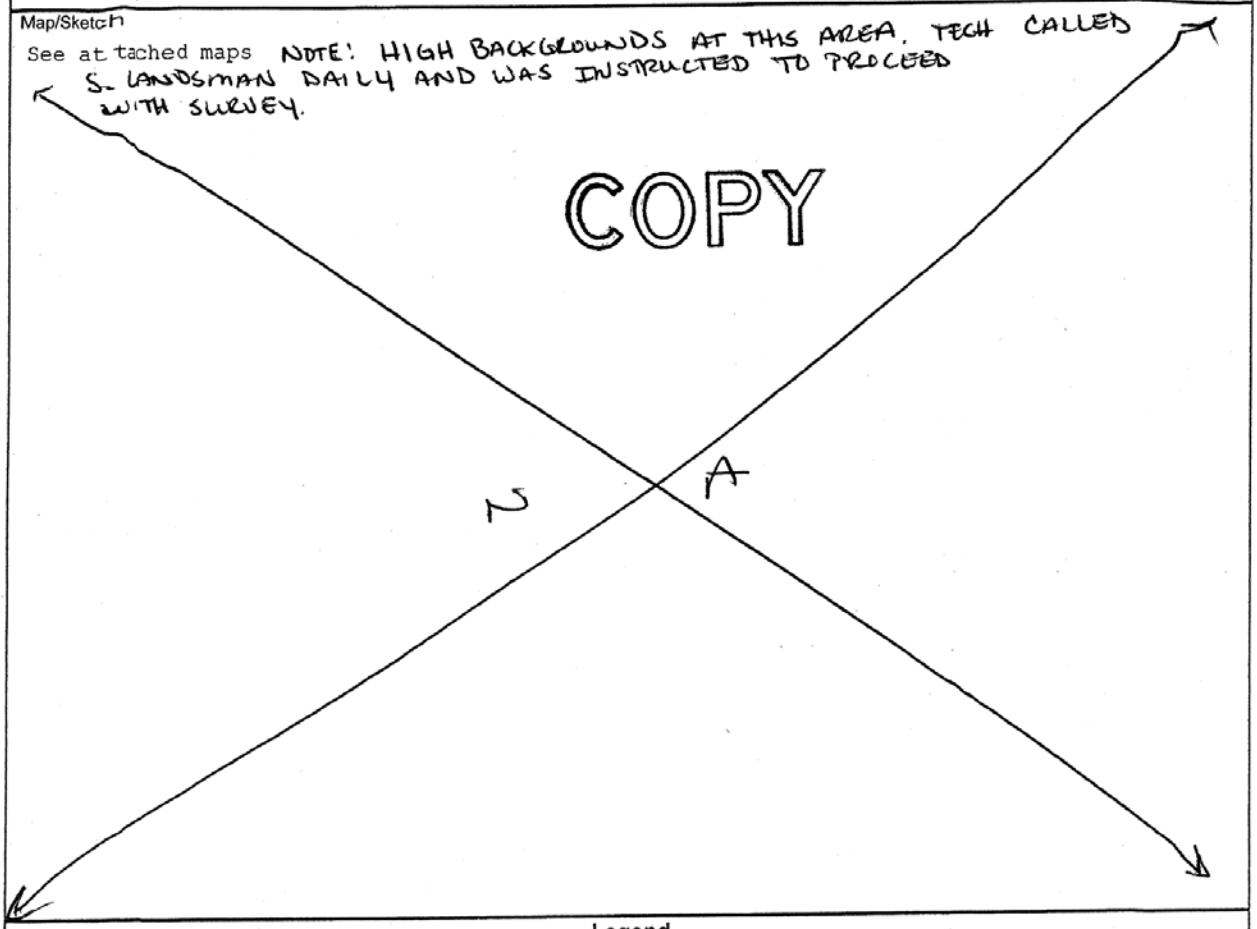
ERSTI	Date	Time	Location	Survey Number
GW-ERS TI-002	04/19/2005	1500	Ecological Surveys/Sampling 200E/W/Gable Mountain Locations	EMR-05-0094

Job Description

Survey of BC Crib Medium Risk Reference Area

Map/Sketch

See attached maps NOTE: HIGH BACKGROUNDS AT THIS AREA. TECH CALLED S. LANDSMAN DAILY AND WAS INSTRUCTED TO PROCEED WITH SURVEY.



Legend

○ = Tech Smear	# = Direct Survey	M = Large Area Wipe	Radiological Boundary x----x----x

Instrument(s)

Model No.	Serial No.	Calibration Due Date	Source Check (CPM)		Post-Job Pass/Fail	Source Serial No.	Isotope	α		β-γ	
			PRE-Job	POST-Job				Eff.	BKD	Eff.	BKD
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

RCT Name/Signature/Date	RCT Supervisor Name/Signature/Date
CA Hyrkas/K Volkman 4/19/05	R Crandall / 04-29-05

A-6003-531 (12/02)

ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0094
Page of

Radiological Survey Data

No.	Description of Item Or Location	Removable		Total			
		α	β-γ	α		β-γ	
		cpm/P.A.	cpm/P.A.	cpm/P.A.	BKGD	cpm/P.A.	BKGD
1	Stake 77 Soil (Beta Only)	N/A	391	N/A	N/A	3080	376
2	Stake 77 Soil (Gamma Only)		2670			18050	3020
3	Stake 100 Soil (Beta Only)		317			8490	376
4	Stake 100 Soil (Gamma Only)		2810			40000	3020
NA	N/A		N/A			N/A	N/A

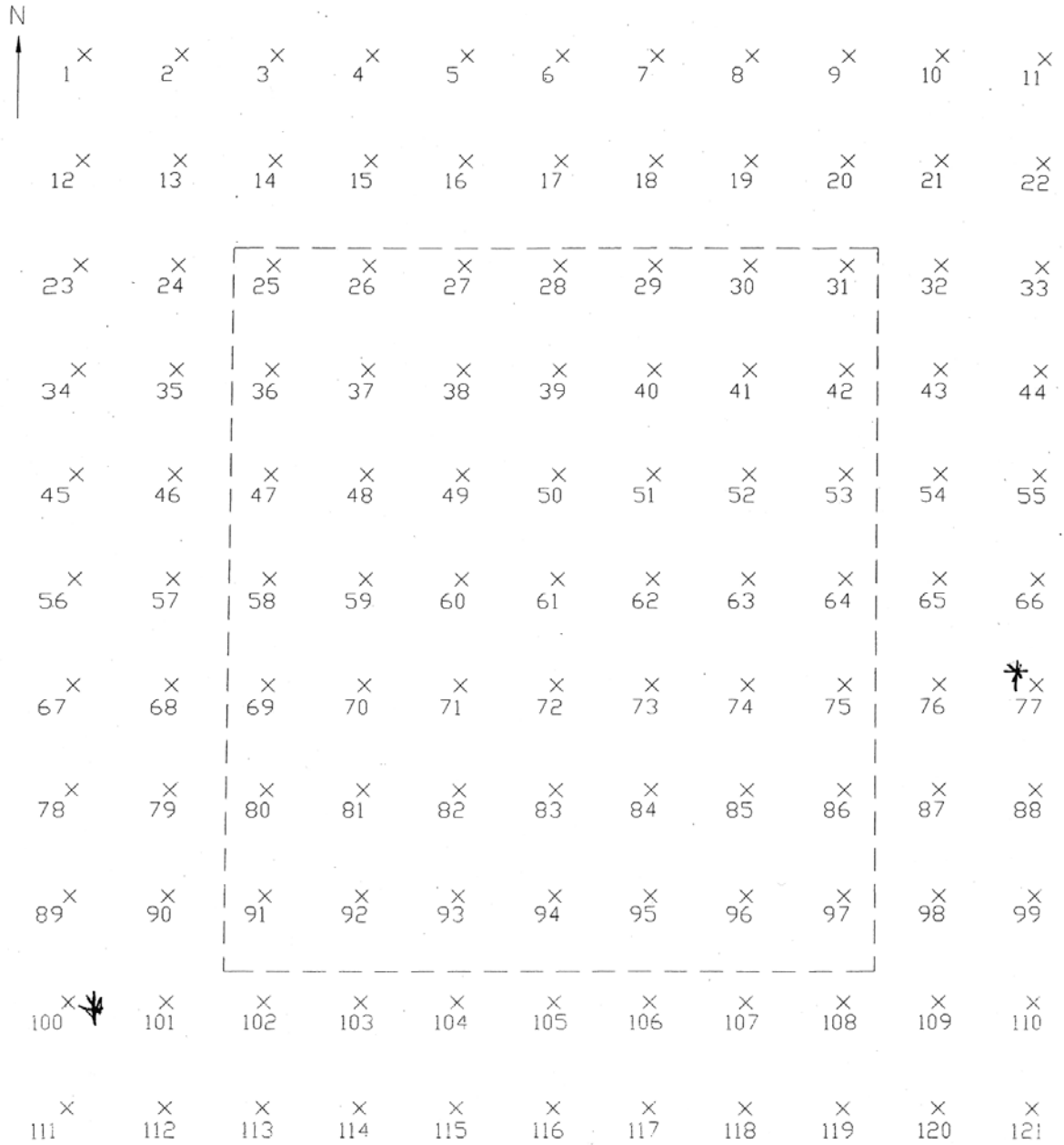
COPY

A-6003-531 (12/02)

Soil Surveys

COPY

RSR # EMR-05-0094
3 of 10

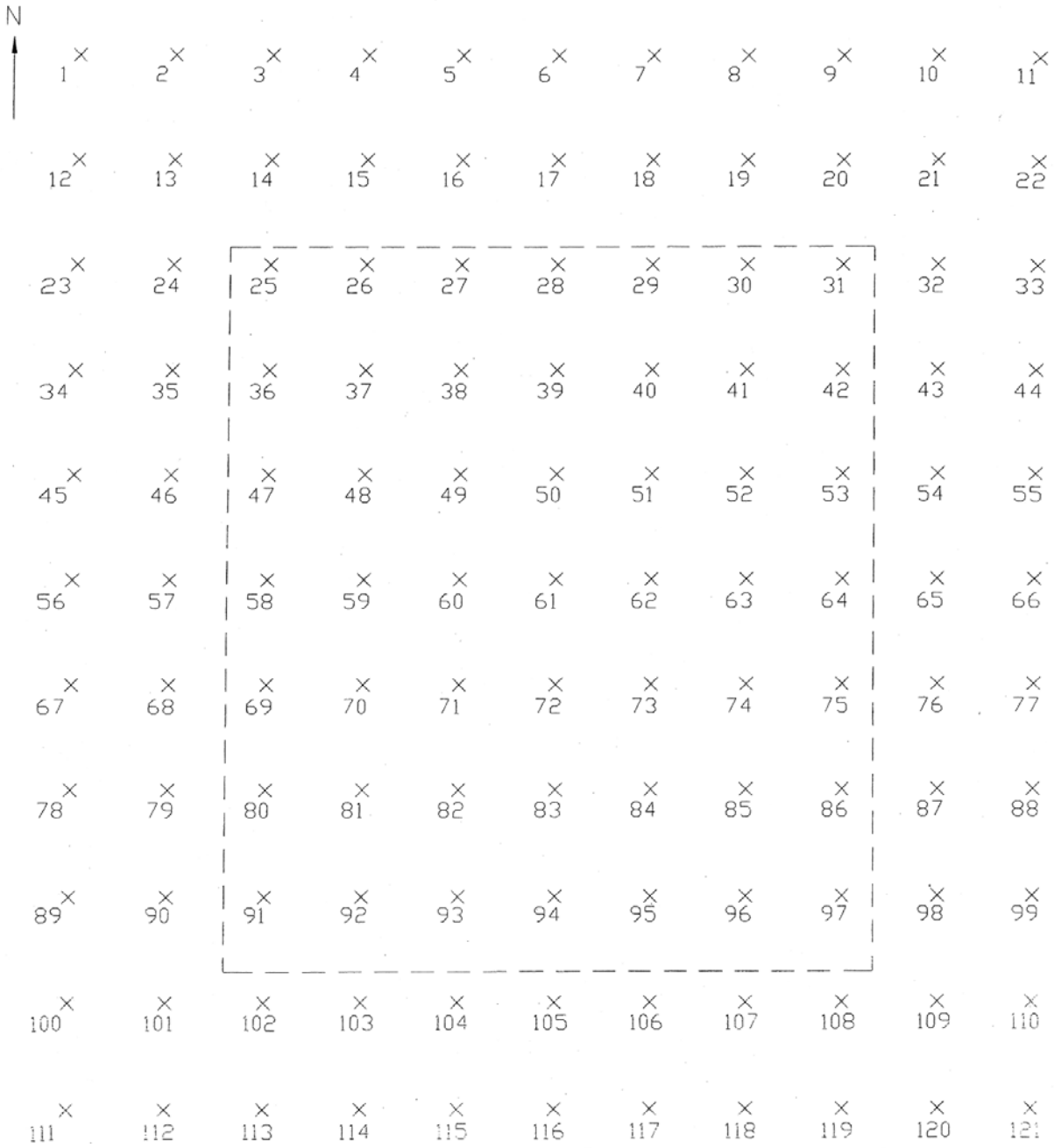


* tape press

Plant Surveys

COPY

RSR # EMR-05-0094
4 of 10



RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0094 p 5 of 10

Survey Date 04/18/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3940 / 3980 (P)/F BG 1450 Eff 8%
SITE BG 3020 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4510 / 4500 (P)/F BG 213 Eff 15%
SITE BG 342 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCMR	23	O	8	18	98	2410	210	2520
BCMR	24	S	60	84	0	2370	0	2480
BCMR	25	S	60	120	0	2430	0	2530
BCMR	26	S	60	84	0	2380	0	2440
BCMR	27	B	24	24	0	2350	0	2340
BCMR	28	S	36	48	0	2320	0	2450
BCMR	29	B	12	10	0	2480	0	2570
BCMR	30	S	60	144	0	2530	0	2780
BCMR	31	S	72	108	0	2590	70	2670
BCMR	32	S	60	120	0	2540	0	2530
BCMR	33	S	60	96	0	2320	42	2830
BCMR	34	B	12	12	0	2430	294	2520
BCMR	35	B	24	24	0	2660	0	2710
BCMR	36	S	60	96	0	2520	0	2410
BCMR	37	S	24	36	0	2320	462	2370
BCMR	38	R	24	36	0	2280	0	2390
BCMR	39	S	60	120	0	2510	0	2350
BCMR	40	B	24	36	0	2280	0	2350
BCMR	41	S	84	144	0	2450	42	2670
BCMR	42	O	8	36	0	2870	266	2870
BCMR	43	O	8	12	0	2630	98	2610
BCMR	44	S	60	144	0	2520	0	2570

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0094 p 6 of 10

Survey Date 04/18/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 **Cal Due** 1-10-06 / 1-10-06 **Source Check Pre/Post (cpm)** 3940 / 3980 P/F **BG** 1450 **Eff** 8%
SITE BG 3020 **cpm** **Source Serial #/Isotope** GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 **Cal Due** 12-14-05 / 11-24-05 **Source Check Pre/Post (cpm)** 4510 / 4500 P/F **BG** 213 **Eff** 15%
SITE BG 342 **cpm** **Source Serial #/Isotope** 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCMR	1	B	18	12	574	3500	518	3800
BCMR	2	S	48	72	00	2490	0	2770
BCMR	3	S	48	86	0	2720	0	2760
BCMR	4	S	24	48	0	2660	182	2760
BCMR	5	B	18	12	0	2590	322	2570
BCMR	6	O	12	18	0	2600	42	2590
BCMR	7	O	18	18	0	2520	42	2510
BCMR	8	S	36	48	0	2640	182	2850
BCMR	9	S	60	72	0	2680	126	2560
BCMR	10	S	36	48	0	2670	98	2570
BCMR	11	O	8	6	98	2740	154	2720
BCMR	12	S	36	36	0	2630	0	2770
BCMR	13	O	18	24	0	2610	0	2700
BCMR	14	O	8	6	70	2430	0	2670
BCMR	15	S	48	72	0	2410	0	2520
BCMR	16	S	24	24	0	2450	0	2550
BCMR	17	S	48	120	0	2370	0	2480
BCMR	18	O	18	24	70	2330	322	2630
BCMR	19	B	24	24	0	2220	0	2480
BCMR	20	O	12	24	0	2720	182	2630
BCMR	21	B	18	12	0	2760	0	2650
BCMR	22	S	60	60	0	2550	0	2730

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0094

Survey Date 04/18/05

COPY

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 4170 / 4530 P/F BG 1302 Eff 8%
SITE BG 3020 cpm
Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4340 / 4430 P/F BG 199 Eff 15%
SITE BG 376 cpm
Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCMR	45	B	24	18	0	2570	0	3170
BCMR	46	B	18	24	0	2260	0	2800
BCMR	47	B	24	36	0	2760	0	2320
BCMR	48	S	36	60	0	2110	0	2260
BCMR	49	B	24	36	0	2610	0	2370
BCMR	50	B	24	36	0	2380	0	2110
BCMR	51	S	60	120	0	2750	28	2770
BCMR	52	S	48	72	0	2510	0	2760
BCMR	53	O	8	12	0	3050	0	2260
BCMR	54	B	18	12	0	2550	0	3040
BCMR	55	R	36	48	0	3120	0	2760
BCMR	56	R	36	60	0	2890	0	2210
BCMR	57	B	12	6	0	2330	0	2830
BCMR	58	R	36	36	0	2750	196	2210
BCMR	59	R	36	36	0	2710	0	2930
BCMR	60	S	36	48	0	2230	0	2710
BCMR	61	B	18	12	0	2820	112	2710
BCMR	62	S	60	144	0	2290	0	2310
BCMR	63	S	60	60	0	2610	0	2740
BCMR	64	S	60	108	0	2910	224	2390
BCMR	65	O	10	12	0	2120	0	2900
BCMR	66	S	60	120	0	2890	280	2630

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0094 p 8 of 10

Survey Date 04/18/05

COPY

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 4170 / 4530 P/F BG 1302 Eff 8%
SITE BG 3020 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4340 / 4430 P/F BG 199 Eff 15%
SITE BG 376 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCMR	67	S	48	84	0	2250	84	2430
BCMR	68	B	12	12	0	2290	0	2320
BCMR	69	R	48	72	0	2070	0	2520
BCMR	70	R	48	48	0	3230	0	2260
BCMR	71	R	48	48	0	2320	0	2650
BCMR	72	O	18	6	0	2490	0	2760
BCMR	73	S	48	60	0	2350	0	1731
BCMR	74	R	36	48	0	2320	0	2960
BCMR	75	S	48	60	0	2540	0	2670
BCMR	76	S	60	108	0	3920	0	2550
BCMR	77	R	36	36	224	4420	21560	18050
BCMR	78	S	12	24	0	2780	0	2400
BCMR	79	B	12	12	0	2570	308	3030
BCMR	80	B	12	8	0	3320	0	2260
BCMR	81	S	60	96	0	2760	0	2240
BCMR	82	R	36	48	0	2880	0	3270
BCMR	83	R	24	36	0	2020	0	2430
BCMR	84	R	36	36	0	2760	0	2420
BCMR	85	R	48	60	0	2980	616	2570
BCMR	86	O	18	12	0	2810	0	2690
BCMR	87	S	36	36	0	2590	0	2300
BCMR	88	O	12	6	0	2610	0	3510

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0094 p 9 of 10

Survey Date 04/19/05

COPY

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 4170 / 4530 P/F BG 1302 Eff 8%
SITE BG 3020 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4340 / 4430 P/F BG 199 Eff 15%
SITE BG 376 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCMR	89	R	24	24	0	2360	0	3220
BCMR	90	B	12	12	0	2590	84	2720
BCMR	91	S	36	60	0	3170	0	2650
BCMR	92	R	24	48	0	2110	0	2220
BCMR	93	R	24	36	0	2770	0	2970
BCMR	94	R	24	24	0	2410	0	2890
BCMR	95	O	12	12	0	2670	0	2580
BCMR	96	S	36	48	0	2930	476	3090
BCMR	97	B	12	18	0	2690	0	2320
BCMR	98	B	18	12	0	2210	0	2810
BCMR	99	O	18	24	0	2360	0	2390
BCMR	100	B	8	12	700	5760	59430	40000
BCMR	101	B	18	12	0	2920	140	3060
BCMR	102	S	48	108	0	2340	0	2050
BCMR	103	S	36	72	0	3000	112	2420
BCMR	104	S	60	96	0	2570	0	2790
BCMR	105	B	18	12	0	2530	140	2750
BCMR	106	O	18	12	0	2390	0	2740
BCMR	107	S	48	48	0	3030	0	2350
BCMR	108	B	18	12	0	2460	0	3260
BCMR	109	O	18	24	0	2520	0	2510
BCMR	110	O	18	24	0	2800	0	2560

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0094

Survey Date 04/19/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 4170 / 4530 P/F BG 1302 Eff 8%
SITE BG 3020 cpm
Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4340 / 4430 P/F BG 199 Eff 15%
SITE BG 376 cpm
Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCMR	111	S	48	108	0	2460	0	2360
BCMR	112	T	24	24	0	2170	0	1857
BCMR	113	S	48	84	0	2380	0	2990
BCMR	114	S	24	24	0	2310	0	2850
BCMR	115	S	48	84	0	2970	0	3410
BCMR	116	S	36	48	0	3060	0	3060
BCMR	117	B	12	12	0	2890	0	3050
BCMR	118	O	12	12	0	3710	0	2600
BCMR	119	S	36	60	0	2610	0	2410
BCMR	120	S	36	108	0	2170	0	2640
BCMR	121	S	60	108	0	2910	0	2240
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ENVIRONMENTAL MEASUREMENT RECORD

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ERSTI	Date	Time	Location	Survey Number
GW-ERSTI-002	04/27/2005	1500	Ecological Surveys/Sampling 200E/W/Gable Mountain Locations	EMR-05-0100

Job Description

Survey of BC Crib High Risk Reference Area

Map/Sketch

Comments: Per manager instruction, the background for this area was taken north of this site to obtain an acceptable level due to high readings at the background stake.

Per management direction, tape presses were taken when direct readings reached 2 times the background. If there were no readings above background on the tape, tape presses were again taken 6 inches below the surface. This was for informational purposes only since this site is known to be contaminated. The highest reading of the two is depicted on this survey.

The instrument source checks noted on this survey were for 4/27/05 tape presses only. See attached sheets for individual daily checks.

Alpha surveys were not performed per GRP-TA-007-T.

COPY

Legend

○ = Tech Smear	# = Direct Survey	M = Large Area Wipe	Radiological Boundary x----x----x

Instrument(s)

Model No.	Serial No.	Calibration Due Date	Source Check (CPM)		Post-Job Pass/Fail	Source Serial No.	Isotope	α		β-γ	
			PRE-Job	POST-Job				Eff.	BKD	Eff.	BKD
4410	DTLL3-0037	1-10-06	3840	2920	P	GM-031	NAT-U	N/A	N/A	.08	1576
SHP380AB	DTEC8-0042	12-14-05	4820	4220	P	762-97	SrY90	N/A	N/A	.15	256
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RCT Name/Signature/Date

5-2-05 Laura Bumgarner / G Tolle

CA Hyrkas/K Volkman/L Bumgarner/G Tolle

RCT Supervisor Name/Signature/Date

R Crandall / R. C. Crandall / 05-10-05

ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

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Radiological Survey Data

No.	Description of Item Or Location	Removable α cpm/P.A.	Removable β-γ cpm/P.A.	Total α cpm/P.A.	Total α BKGD	Total β-γ cpm/P.A.	Total β-γ BKGD
1	Stake 1 (Beta) Tape Press	N/A	356	N/A	N/A	719	353
2	Stake 1 (Gamma) Tape Press		2530			6560	2930
3	Stake 3 (Beta) Tape Press		707			4903	353
4	Stake 3 (Gamma) Tape Press		2540			43700	2930
5	Stake 6 (Beta) Tape Press		372			567	353
6	Stake 6 (Gamma) Tape Press		2480			7430	2930
7	Stake 7 (Beta) Tape Press		1800			2663	353
8	Stake 7 (Gamma) Tape Press		2580			15070	2930
9	Stake 8 (Beta) Tape Press		464			3983	353
10	Stake 8 (Gamma) Tape Press		2420			25800	2930
11	Stake 9 (Beta) Tape Press		353			6433	353
12	Stake 9 (Gamma) Tape Press		2410			7960	2930
13	Stake 10 (Beta) Tape Press		1140			3073	353
14	Stake 10 (Gamma) Tape Press		2530			64100	2930
15	Stake 11 (Beta) Tape Press		3233			5993	353
16	Stake 11 (Gamma) Tape Press		2730			131700	2930
17	Stake 13 (Beta) Tape Press		836			4613	353
18	Stake 13 (Gamma) Tape Press		2400			31100	2930
19	Stake 14 (Beta) Tape Press		366			1348	353
20	Stake 14 (Gamma) Tape Press		2430			13940	2930
21	Stake 17 (Beta) Tape Press		353			579	353
22	Stake 17 (Gamma) Tape Press		2390			5650	2930
23	Stake 18 (Beta) Tape Press		2813			5703	353
24	Stake 18 (Gamma) Tape Press		2440			45200	2930
25	Stake 19 (Beta) Tape Press		472			5753	353
26	Stake 19 (Gamma) Tape Press		2230			112200	2930
27	Stake 23 (Beta) Tape Press		427			739	340
28	Stake 23 (Gamma) Tape Press		2240			7330	2710

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A-6003-531 (12/02)

ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0100
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Radiological Survey Data

No.	Description of Item Or Location	Removable α cpm/P.A.	Removable β-γ cpm/P.A.	Total α cpm/P.A.	Total α BKGD	Total β-γ cpm/P.A.	Total β-γ BKGD
29	Stake 24 (Beta) Tape Press	N/A	891	N/A	N/A	3820	340
30	Stake 24 (Gamma) Tape Press		2370			21500	2710
31	Stake 25 (Beta) Tape Press		563			3820	340
32	Stake 25 (Gamma) Tape Press		2580			13433	2710
33	Stake 27 (Beta) Tape Press		1183			15740	340
34	Stake 27 (Gamma) Tape Press		2350			14110	2710
35	Stake 28 (Beta) Tape Press		403			535	340
36	Stake 28 (Gamma) Tape Press		2390			4180	2710
37	Stake 29 (Beta) Tape Press		999			9760	340
38	Stake 29 (Gamma) Tape Press		2410			50100	2710
39	Stake 30 (Beta) Tape Press		1075			8620	340
40	Stake 30 (Gamma) Tape Press		2270			53800	2710
41	Stake 34 (Beta) Tape Press		2051			10630	340
42	Stake 34 (Gamma) Tape Press		2400			44000	2710
43	Stake 35 (Beta) Tape Press		1695			15228	340
44	Stake 35 (Gamma) Tape Press		2470			165900	2710
45	Stake 36 (Beta) Tape Press		679			1711	340
46	Stake 36 (Gamma) Tape Press		2610			17310	2710
47	Stake 37 (Beta) Tape Press		431			403	340
48	Stake 37 (Gamma) Tape Press		2350			6030	2710
49	Stake 45 (Beta) Tape Press		447			1079	340
50	Stake 45 (Gamma) Tape Press		2310			9220	2710
51	Stake 46 (Beta) Tape Press		435			619	340
52	Stake 46 (Gamma) Tape Press		2290			8110	2710
53	Stake 47 (Beta) Tape Press		371			639	340
54	Stake 47 (Gamma) Tape Press		2640			5310	2710
55	Stake 48 (Beta) Tape Press		431			879	340
56	Stake 48 (Gamma) Tape Press		2290			7000	2710

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ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0100
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Radiological Survey Data

No.	Description of Item Or Location	Removable α cpm/P.A.	Removable β-γ cpm/P.A.	Total α cpm/P.A.	Total α BKGD	Total β-γ cpm/P.A.	Total β-γ BKGD
57	Stake 49 (Beta) Tape Press	N/A	3210	N/A	N/A	22340	340
58	Stake 49 (Gamma) Tape Press		2580			72110	2710
59	Stake 50 (Beta) Tape Press		735			8910	340
60	Stake 50 (Gamma) Tape Press		2170			70500	2710
61	Stake 51 (Beta) Tape Press		427			17230	340
62	Stake 51 (Gamma) Tape Press		2230			27100	2710
63	Stake 52 (Beta) Tape Press		415			1399	340
64	Stake 52 (Gamma) Tape Press		2500			12290	2710
65	Stake 53 (Beta) Tape Press		543			2540	340
66	Stake 53 (Gamma) Tape Press		2300			3230	2710
67	Stake 54 (Beta) Tape Press		340			340	340
68	Stake 54 (Gamma) Tape Press		2290			15170	2710
69	Stake 55 (Beta) Tape Press		463			2430	340
70	Stake 55 (Gamma) Tape Press		2360			7540	2710
71	Stake 56 (Beta) Tape Press		983			6620	340
72	Stake 56 (Gamma) Tape Press		2450			45100	2710
73	Stake 57 (Beta) Tape Press		363			801	340
74	Stake 57 (Gamma) Tape Press		2570			7680	2710
75	Stake 58 (Beta) Tape Press		3160			14750	340
76	Stake 58 (Gamma) Tape Press		2600			93400	2710
77	Stake 59 (Beta) Tape Press		375			656	340
78	Stake 59 (Gamma) Tape Press		2510			5320	2710
79	Stake 60 (Beta) Tape Press		567			4720	340
80	Stake 60 (Gamma) Tape Press		2350			22500	2710
81	Stake 62 (Beta) Tape Press		430			1423	340
82	Stake 62 (Gamma) Tape Press		2520			11080	2710
83	Stake 63 (Beta) Tape Press		1443			7400	340
84	Stake 63 (Gamma) Tape Press		2310			30000	2710

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ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0100
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Radiological Survey Data

No.	Description of Item Or Location	Removable α cpm/P.A.	Removable β-γ cpm/P.A.	Total α cpm/P.A.	Total α BKGD	Total β-γ cpm/P.A.	Total β-γ BKGD
85	Stake 64 (Beta) Tape Press	N/A	527	N/A	N/A	943	340
86	Stake 64 (Gamma) Tape Press		2390			9990	2710
87	Stake 66 (Beta) Tape Press		803			3780	340
88	Stake 66 (Gamma) Tape Press		2410			15220	2710
89	Stake 67 (Beta) Tape Press		452			500	326
90	Stake 67 (Gamma) Tape Press		2650			6220	3000
91	Stake 68 (Beta) Tape Press		827			1315	326
92	Stake 68 (Gamma) Tape Press		2640			9350	3000
93	Stake 69 (Beta) Tape Press		1419			2656	326
94	Stake 69 (Gamma) Tape Press		2370			14750	3000
95	Stake 70 (Beta) Tape Press		468			1115	326
96	Stake 70 (Gamma) Tape Press		2560			5080	3000
97	Stake 72 (Beta) Tape Press		750			2024	326
98	Stake 72 (Gamma) Tape Press		2290			17980	3000
99	Stake 73 (Beta) Tape Press		855			2160	326
100	Stake 73 (Gamma) Tape Press		2440			11270	3000
101	Stake 74 (Beta) Tape Press		448			639	326
102	Stake 74 (Gamma) Tape Press		2390			8150	3000
103	Stake 75 (Beta) Tape Press		771			4806	326
104	Stake 75 (Gamma) Tape Press		2590			43300	3000
105	Stake 76 (Beta) Tape Press		332			1227	326
106	Stake 76 (Gamma) Tape Press		2640			25100	3000
107	Stake 77 (Beta) Tape Press		1872			5446	326
108	Stake 77 (Gamma) Tape Press		2740			15870	3000
109	Stake 78 (Beta) Tape Press		2511			5781	341
110	Stake 78 (Gamma) Tape Press		2400			34600	3030
111	Stake 79 (Beta) Tape Press		1292			2701	341
112	Stake 79 (Gamma) Tape Press		2360			30300	3030

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ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

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Radiological Survey Data

No.	Description of Item Or Location	Removable α cpm/P.A.	Removable β-γ cpm/P.A.	Total α cpm/P.A.	Total α BKGD	Total β-γ cpm/P.A.	Total β-γ BKGD
113	Stake 81 (Beta) Tape Press	N/A	855	N/A	N/A	1530	341
114	Stake 81 (Gamma) Tape Press		2610			13850	3030
115	Stake 82 (Beta) Tape Press		1280			1662	341
116	Stake 82 (Gamma) Tape Press		2620			14560	3030
117	Stake 83 (Beta) Tape Press		799			794	341
118	Stake 83 (Gamma) Tape Press		2670			6230	3030
119	Stake 86 (Beta) Tape Press		823			6131	341
120	Stake 86 (Gamma) Tape Press		2350			57200	3030
121	Stake 87 (Beta) Tape Press		2441			16701	341
122	Stake 87 (Gamma) Tape Press		2670			7190	3030
123	Stake 88 (Beta) Tape Press		2268			20741	341
124	Stake 88 (Gamma) Tape Press		2440			80900	3030
125	Stake 89 (Beta) Tape Press		3071			1955	341
126	Stake 89 (Gamma) Tape Press		3120			18180	3030
127	Stake 90 (Beta) Tape Press		1676			17741	341
128	Stake 90 (Gamma) Tape Press		2500			150600	3030
129	Stake 91 (Beta) Tape Press		667			10141	341
130	Stake 91 (Gamma) Tape Press		2570			137500	3030
131	Stake 92 (Beta) Tape Press		404			1414	341
132	Stake 92 (Gamma) Tape Press		2480			8430	3030
133	Stake 93 (Beta) Tape Press		991			3771	341
134	Stake 93 (Gamma) Tape Press		2530			23400	3030
135	Stake 94 (Beta) Tape Press		1240			4731	341
136	Stake 94 (Gamma) Tape Press		2460			36700	3030
137	Stake 95 (Beta) Tape Press		1728			3511	341
138	Stake 95 (Gamma) Tape Press		2790			23300	3030
139	Stake 96 (Beta) Tape Press		9171			11841	341
140	Stake 96 (Gamma) Tape Press		3900			213000	3030

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ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR05-0100
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Radiological Survey Data

No.	Description of Item Or Location	Removable α cpm/P.A.	Removable β-γ cpm/P.A.	Total α cpm/P.A.	Total α BKGD	Total β-γ cpm/P.A.	Total β-γ BKGD
141	Stake 98 (Beta) Tape Press	N/A	1726	N/A	N/A	7221	341
142	Stake 98 (Gamma) Tape Press		2610			20300	3030
143	Stake 99 (Beta) Tape Press		775			986	341
144	Stake 99 (Gamma) Tape Press		2480			10150	3030
145	Stake 100 (Beta) Tape Press		1468			6251	341
146	Stake 100 (Gamma) Tape Press		2580			111900	3030
147	Stake 102 (Beta) Tape Press		811			3471	341
148	Stake 102 (Gamma) Tape Press		2240			22800	3030
149	Stake 104 (Beta) Tape Press		380			1358	341
150	Stake 104 (Gamma) Tape Press		2510			26200	3030
151	Stake 106 (Beta) Tape Press		1344			7351	341
152	Stake 106 (Gamma) Tape Press		2380			76600	3030
153	Stake 108 (Beta) Tape Press		1392			9231	341
154	Stake 108 (Gamma) Tape Press		2340			103800	3030
155	Stake 109 (Beta) Tape Press		356			3731	341
156	Stake 109 (Gamma) Tape Press		2520			41300	3030
157	Stake 110 (Beta) Tape Press		631			578	341
158	Stake 110 (Gamma) Tape Press		2450			4090	3030
159	Stake 111 (Beta) Tape Press		586			1115	356
160	Stake 111 (Gamma) Tape Press		2530			8940	2870
161	Stake 112 (Beta) Tape Press		594			1216	356
162	Stake 112 (Gamma) Tape Press		2390			10530	2870
163	Stake 113 (Beta) Tape Press		602			2696	356
164	Stake 113 (Gamma) Tape Press		2300			9210	2870
165	Stake 114 (Beta) Tape Press		710			3186	356
166	Stake 114 (Gamma) Tape Press		2500			19720	2870
167	Stake 115 (Beta) Tape Press		447			1796	356
168	Stake 115 (Gamma) Tape Press		2830			8450	2870

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ENVIRONMENTAL MEASUREMENT RECORD
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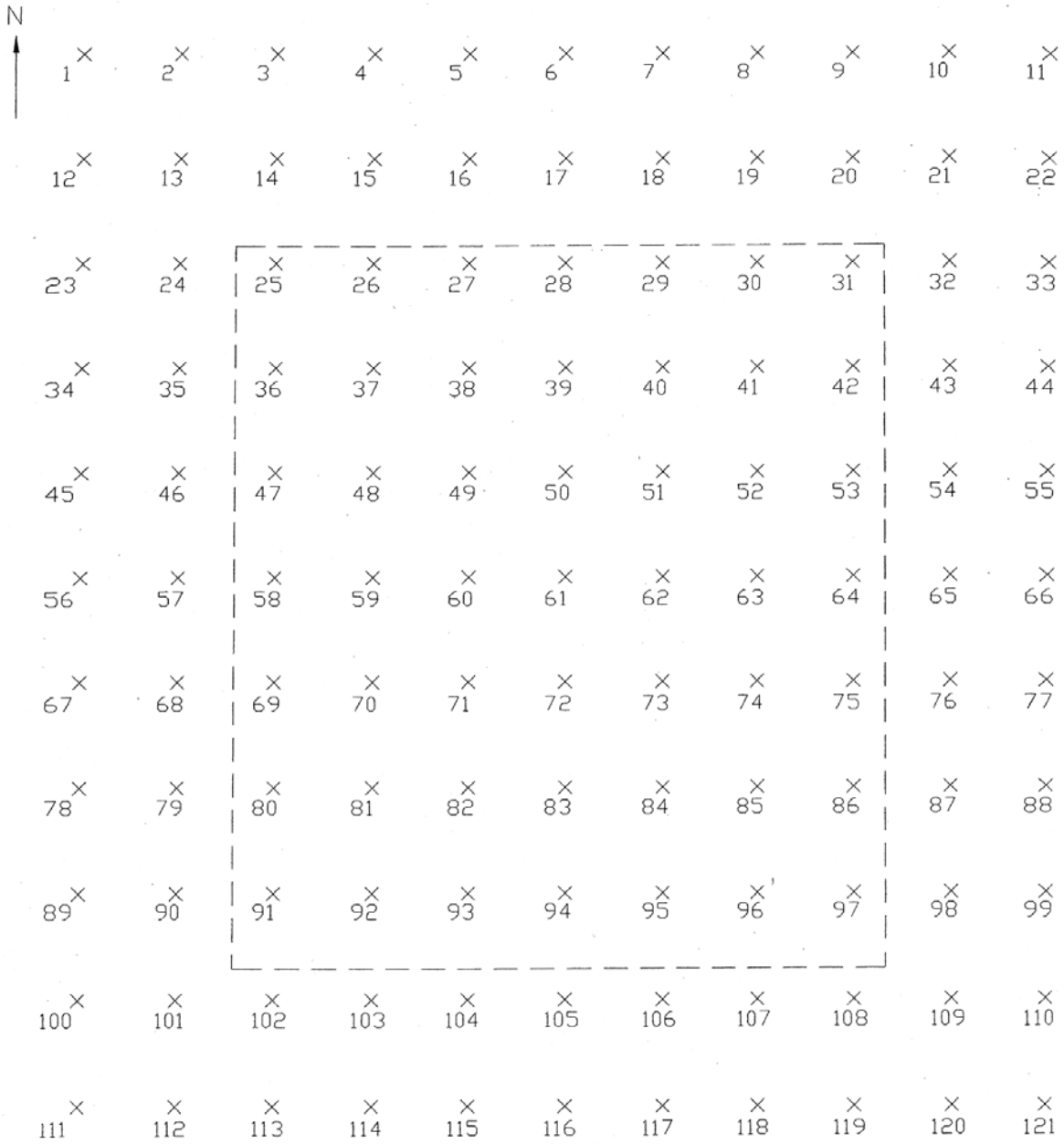
Radiological Survey Data

No.	Description of Item Or Location	Removable α cpm/P.A.	Removable β-γ cpm/P.A.	Total α cpm/P.A.	Total α BKGD	Total β-γ cpm/P.A.	Total β-γ BKGD
169	Stake 116 (Beta) Tape Press	N/A	1683	N/A	N/A	2436	356
170	Stake 116 (Gamma) Tape Press		2500			17780	2870
171	Stake 118 (Beta) Tape Press		826			2666	356
172	Stake 118 (Gamma) Tape Press		2520			48500	2870
173	Stake 120 (Beta) Tape Press		558			2088	356
174	Stake 120 (Gamma) Tape Press		2530			13320	2870
175	Stake 121 (Beta) Tape Press		926			2120	356
176	Stake 121 (Gamma) Tape Press		2240			16940	2870
NA	N/A		N/A			N/A	N/A

COPY

A-6003-531 (12/02)

Soil Surveys COPY **RSR #** EMR-05-0100
9 of 16



All items were direct surveyed. Most areas were tested pressed. See attachments for results.

Plant Surveys

RSR # EMR-05-0100
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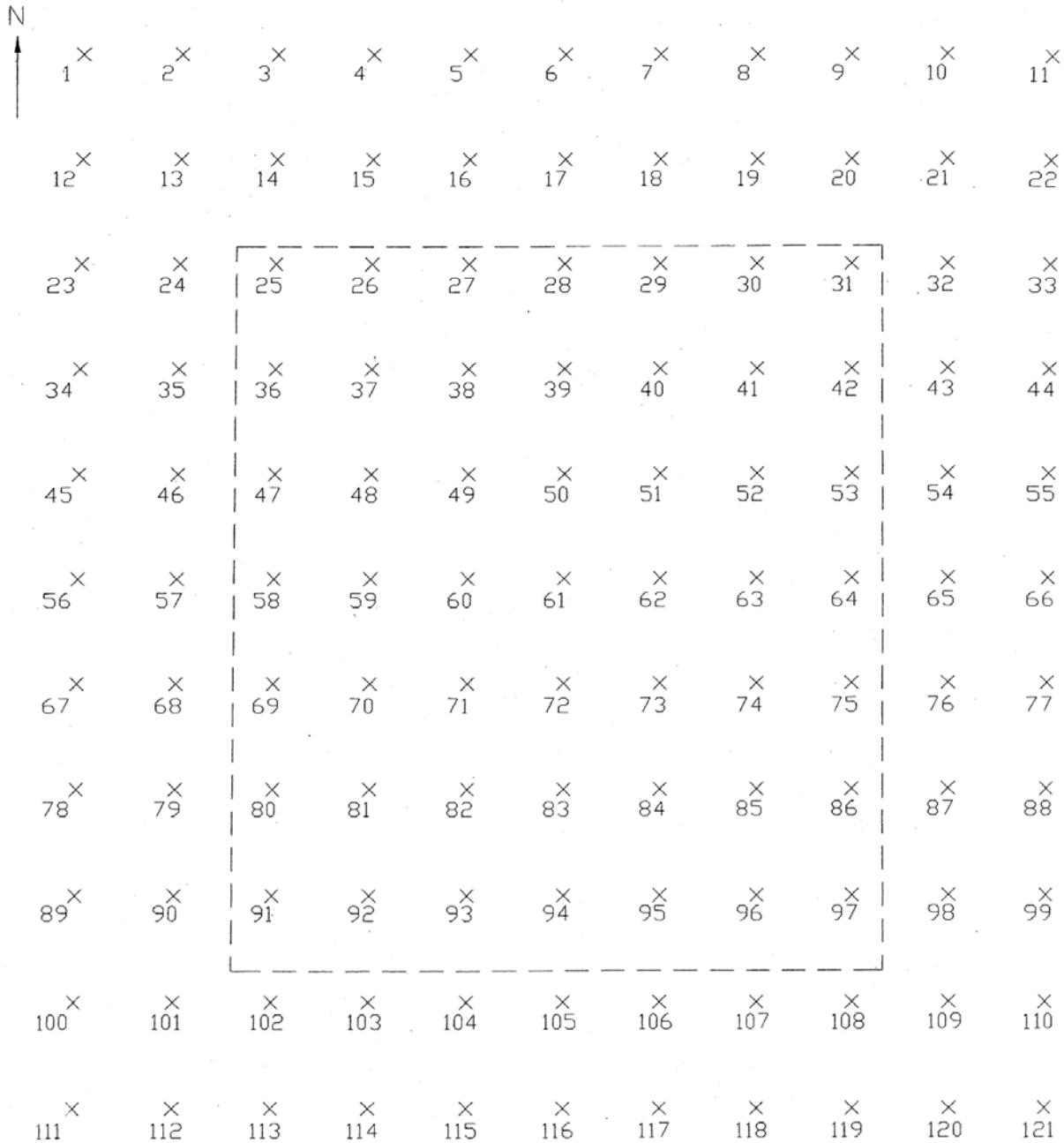

All plant surveys were direct surveys. See attached for results.

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0100

Survey Date 04/20/05

COPY

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 4020 / 3970 (P)/F BG 1380 Eff 8%
SITE BG 2930 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4460 / 4490 (P)/F BG 188 Eff 15%
SITE BG 353 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCHR	1	B	12	8	2086	6870	2562	6560
BCHR	2	S	36	120	301	5370	1666	5130
BCHR	3	S	36	360	2840	6290	31850	43700
BCHR	4	S	36	48	861	5660	637	3320
BCHR	5	S	60	108	973	5710	2142	5830
BCHR	6	O	4	8	1722	5840	1498	7430
BCHR	7	O	8	10	2857	8680	16170	15070
BCHR	8	B	3	8	5285	10140	25410	25800
BCHR	9	B	18	12	1862	366	42500	7960
BCHR	10	S	60	144	1169	6160	50890	64100
BCHR	11	S	36	60	973	5040	39480	131700
BCHR	12	B	8	8	861	4970	1281	4390
BCHR	13	S	36	48	805	5920	29820	31100
BCHR	14	S	48	84	973	6170	6965	13940
BCHR	15	T	18	12	1309	5770	1057	5130
BCHR	16	O	12	18	945	5430	1582	5280
BCHR	17	B	12	12	2989	6360	1638	5650
BCHR	18	B	18	12	6181	12840	37450	45200
BCHR	19	T	24	18	4137	8330	37800	112200
BCHR	20	O	18	8	413	4880	609	42200
BCHR	21	S	72	144	889	4090	1057	4020
BCHR	22	S	48	60	0	3470	721	3410

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0100

Survey Date 04/21/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3950 / 3960 (P)/F BG 1574 Eff 8%
SITE BG 2710 cpm
Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4220 / 4180 (P)/F BG 180 Eff 15%
SITE BG 340 cpm
Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCHR	23	S	36	60	2037	8130	2793	7330
BCHR	24	B	18	12	1673	11030	24360	21500
BCHR	25	O	24	34	6741	10060	13433	20600
BCHR	26	T	18	24	441	4840	1169	4650
BCHR	27	S	36	60	2597	8580	15400	14110
BCHR	28	S	36	48	2009	6830	1365	4180
BCHR	29	S	36	60	9009	4100	65940	50100
BCHR	30	O	24	24	2933	8650	57960	53800
BCHR	31	S	60	72	77	4760	637	3920
BCHR	32	S	72	144	21	3790	1533	4660
BCHR	33	S	60	120	21	4420	945	4010
BCHR	34	S	36	36	5425	12500	72030	44000
BCHR	35	S	36	60	4473	15190	104160	165900
BCHR	36	S	36	60	749	7570	9597	17310
BCHR	37	S	36	48	1169	5940	441	6030
BCHR	38	S	48	60	1085	5860	843	4090
BCHR	39	O	24	24	1253	5870	1897	5310
BCHR	40	S	36	48	1589	5790	2037	4890
BCHR	41	S	60	72	301	4760	693	4120
BCHR	42	R	24	36	1365	5330	1729	5410
BCHR	43	S	72	120	0	4500	497	3460
BCHR	44	S	48	48	413	5150	2401	5210

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR405-0100

Survey Date 04/21/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3950 / 3960 P/F BG 1574 Eff 8%
SITE BG 2710 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4220 / 4180 P/F BG 180 Eff 15%
SITE BG 340 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCHR	45	S	36	48	4137	1387	5173	9220
BCHR	46	B	6	8	1897	5550	1953	8110
BCHR	47	S	36	48	1981	9020	2093	5310
BCHR	48	S	60	84	1253	7120	3773	7000
BCHR	49	S	60	72	1533	8490	154000	72101
BCHR	50	S	72	144	1449	12530	59990	70500
BCHR	51	B	8	10	7609	17900	118230	27100
BCHR	52	S	24	24	2709	8650	7413	12290
BCHR	53	B	12	12	1841	7640	15400	323
BCHR	54	B	12	8	2009	5790	14840	15170
BCHR	55	T	18	24	6965	6410	14630	7540
BCHR	56	S	48	60	9065	21060	43960	45100
BCHR	57	S	48	60	2037	10440	3227	7680
BCHR	58	O	18	24	2177	16560	100870	93400
BCHR	59	S	36	60	2065	7340	2212	5320
BCHR	60	S	60	60	2513	8740	30660	22500
BCHR	61	S	36	48	861	5000	1757	3966
BCHR	62	O	18	24	525	3800	7581	11080
BCHR	63	S	36	48	2093	7710	48420	30000
BCHR	64	O	3	6	945	6090	4221	9990
BCHR	65	B	2	12	1421	4770	1197	5420
BCHR	66	S	60	84	609	6020	24080	15220

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0100

Survey Date 04/25/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3940 / 4050 P/F BG 1566 Eff 8%
SITE BG 3000 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4520 / 4330 P/F BG 211 Eff 15%
SITE BG 326 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCHR	67	S	36	60	2611	10590	1218	6220
BCHR	68	S	36	36	2611	11650	6923	9350
BCHR	69	S	48	60	910	6820	16310	14750
BCHR	70	S	36	36	966	7630	5523	5080
BCHR	71	S	36	84	1939	7850	1463	4880
BCHR	72	B	18	12	3199	7550	11886	17980
BCHR	73	O	24	8	4963	8120	12838	11270
BCHR	74	O	24	24	770	5840	2191	8150
BCHR	75	B	24	18	1575	7470	31360	43300
BCHR	76	O	8	6	3283	10040	6307	25100
BCHR	77	O	8	6	2723	6480	35840	15870
BCHR	78	O	6	6	4767	13160	142800	80900
BCHR	79	B	12	8	4459	7130	114520	7190
BCHR	80	B	12	12	7343	14410	40530	57200
BCHR	81	T	24	24	294	4450	1071	4870
BCHR	82	S	48	84	798	6950	798	4730
BCHR	83	S	36	96	2527	10460	3171	6230
BCHR	84	O	8	10	2807	6920	9247	14560
BCHR	85	S	48	0	406	4810	8323	13850
BCHR	86	T	12	36	4767	9050	1659	5040
BCHR	87	S	60	108	2471	13370	16520	30300
BCHR	88	B	18	12	5243	10010	38080	34600

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0100

Survey Date 04/25/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 Cal Due 1-10-06 / 1-10-06 Source Check Pre/Post (cpm) 3940 / 4050 P/F BG 1566 Eff 8%
SITE BG 3000 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 Cal Due 12-14-05 / 11-24-05 Source Check Pre/Post (cpm) 4520 / 4330 P/F BG 211 Eff 15%
SITE BG 326 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCHR	89	B	18	12	3423	7590	11298	18180
BCHR	90	S	48	60	2807	12250	121800	150600
BCHR	91	S	36	144	3591	13310	686	137850
BCHR	92	B	18	18	2107	6550	7511	8430
BCHR	93	S	48	108	1246	8120	24010	23400
BCHR	94	S	36	84	1358	7290	30730	36700
BCHR	95	O	18	6	6027	11370	22190	23300
BCHR	96	S	36	48	3283	11330	80500	213000
BCHR	97	O	6	6	882	4360	910	3710
BCHR	98	S	36	48	4179	11110	48160	20300
BCHR	99	T	12	12	1687	5680	4515	10150
BCHR	100	S	36	48	4011	14460	41370	111900
BCHR	101	S	48	72	714	6620	1491	4970
BCHR	102	S	72	144	1603	7770	21910	22800
BCHR	103	B	12	18	1463	4620	1246	4870
BCHR	104	S	36	36	742	5530	7119	26200
BCHR	105	S	60	108	238	5970	1771	5270
BCHR	106	S	36	72	3675	8820	49070	76600
BCHR	107	S	48	60	574	5560	743	4690
BCHR	108	B	18	12	2163	4740	62230	103800
BCHR	109	S	36	48	3985	10120	23730	41300
BCHR	110	O	8	6	1302	4360	1659	4090

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0100 p 16 of 16

Survey Date 04/26/05

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

4410/E600 DTLL3-0037 / CMEBD-1118 **Cal Due** 1-10-06 / 1-10-06 **Source Check Pre/Post (cpm)** 4030 / 3990 (P)/F **BG** 1576 **Eff** 8%
SITE BG 2870 **cpm** **Source Serial #/Isotope** GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1620 **Cal Due** 12-14-05 / 11-24-05 **Source Check Pre/Post (cpm)** 4820 / 4280 (P)/F **BG** 256 **Eff** 15%
SITE BG 356 **cpm** **Source Serial #/Isotope** 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
BCHR	111	S	36	24	2317	9070	5313	8940
BCHR	112	S	36	60	1561	7180	6020	10530
BCHR	113	O	18	24	1589	6770	16380	9210
BCHR	114	S	24	36	924	5400	19810	19720
BCHR	115	B	18	18	1316	5740	10080	8450
BCHR	116	B	18	12	1701	7750	14560	17780
BCHR	117	S	24	36	1015	6290	1281	4710
BCHR	118	S	36	60	3269	11200	16170	48500
BCHR	119	B	18	18	252	3900	1841	4320
BCHR	120	O	6	8	756	4770	12124	13320
BCHR	121	B	12	18	3801	6890	12348	16940
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ENVIRONMENTAL MEASUREMENT RECORD

Page 1 of 10

ERSTI	Date	Time	Location	Survey Number
GW-ERSTI-002	03/10/05		Ecological Surveys/Sampling 600area Sagebrush Reference site	EMR-05-0059

Job Description
Survey of Sagebrush Reference Site

Map/Sketch
See attached maps

COPY

N/A

Legend

○ = Tech Smear	# = Direct Survey	M = Large Area Wipe	Radiological Boundary x----x----x

Instrument(s)

Model No.	Serial No.	Calibration Due Date	Source Check (CPM)		Post-Job Pass/Fail	Source Serial No.	Isotope	α		β-γ	
			PRE-Job	POST-Job				Eff.	BKD	Eff.	BKD
N	A	N	A			N	A		N	A	

RCT Name/Signature/Date
K. VOLKMAN 3-10-05
L. Bumgarner Laura Bumgarner 3-10-05

RCT Supervisor Name/Signature/Date
R.S. Crandall
R. Crandall 03-10-05

A-6003-531 (12/02)

ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0059
Page 2 of 10

Radiological Survey Data

No.	Description of Item Or Location	Removable		Total			
		α	β-γ	α		β-γ	
		cpm/P.A.	cpm/P.A.	cpm/P.A.	BKGD	cpm/P.A.	BKGD

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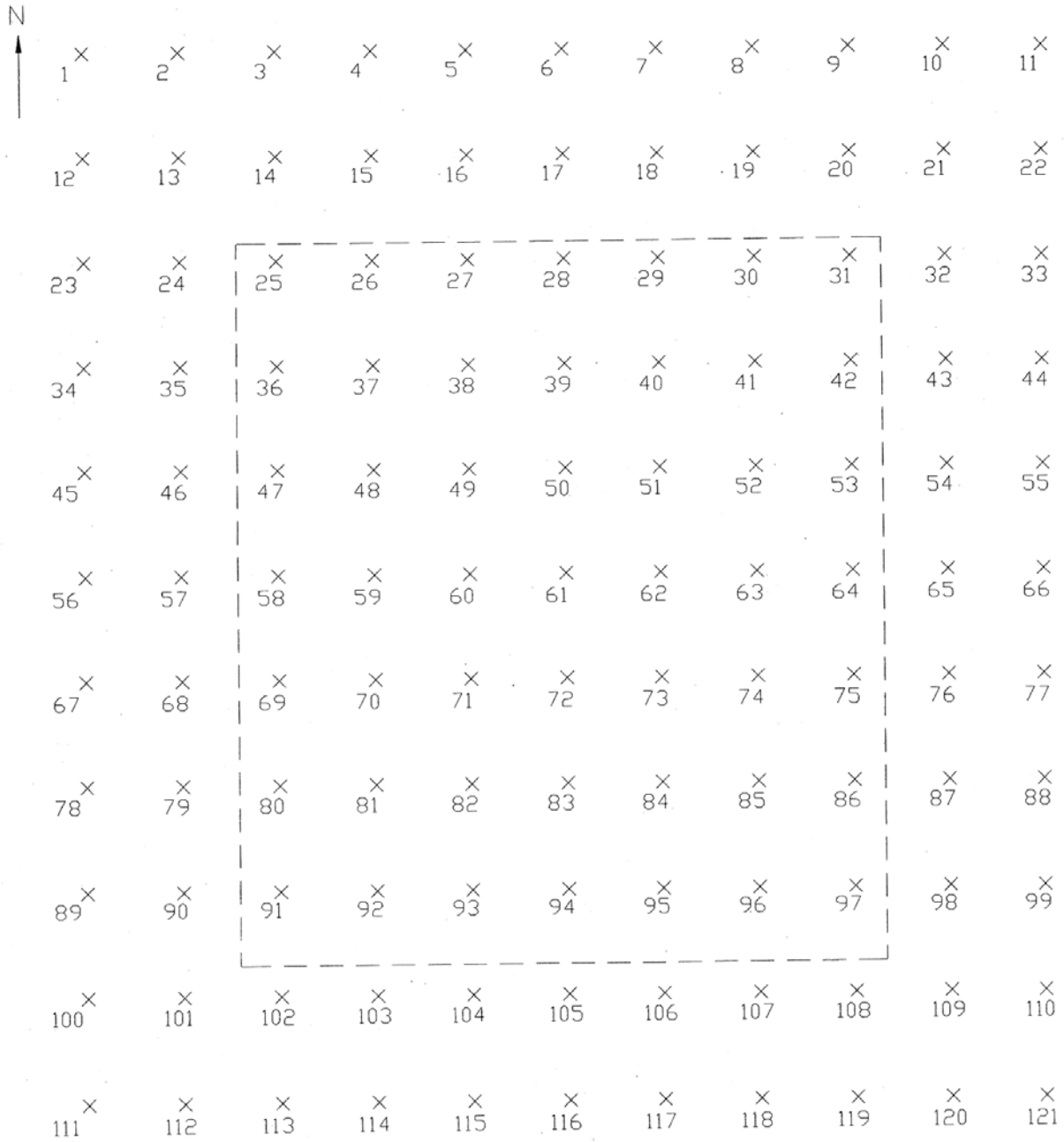
A-6003-531 (12/02)

Soil Surveys

COPY

RSR # EMR-05-0059
3 of 10

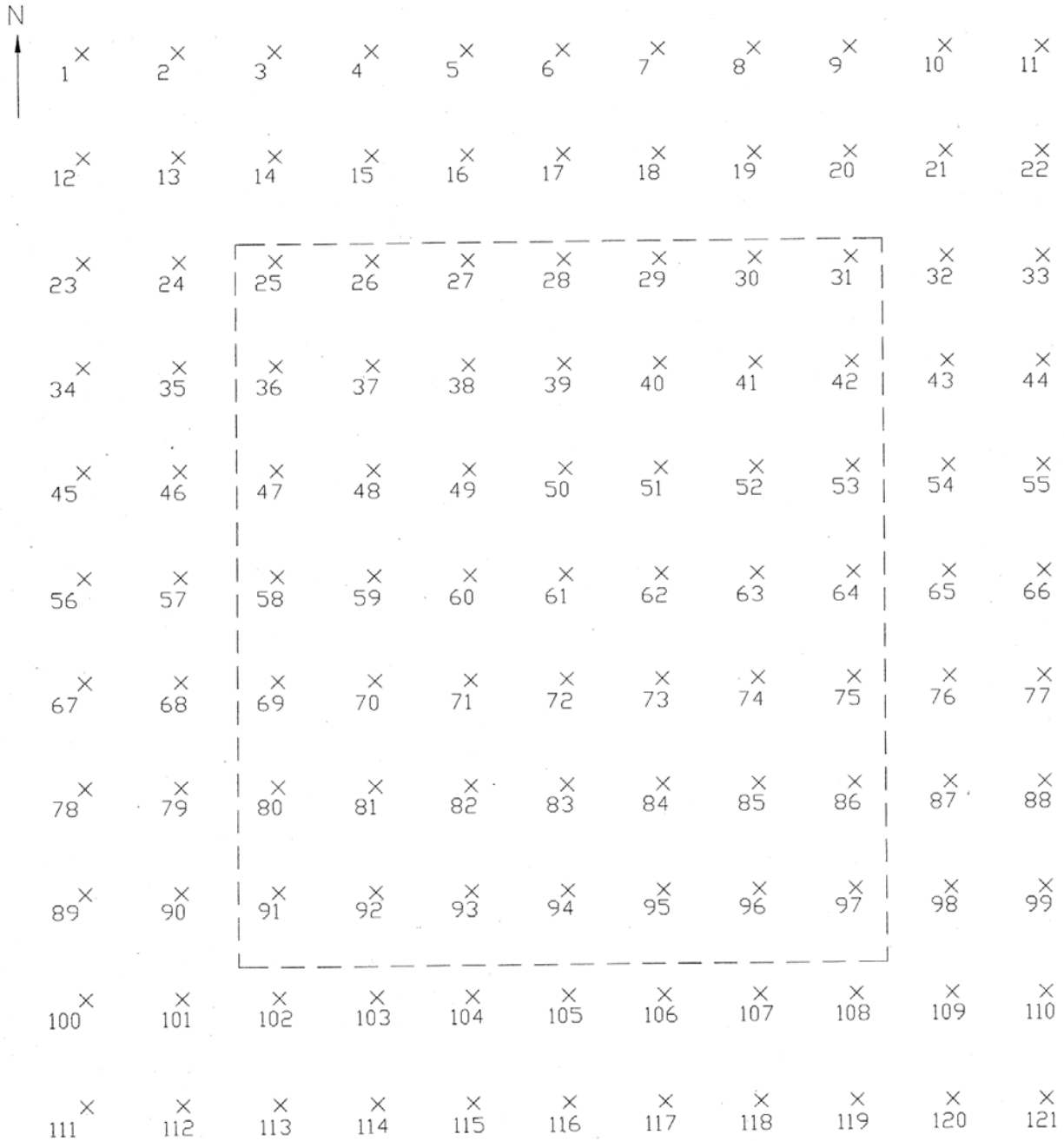


No readings found above limits

Plant Surveys

COPY

RSR # EMR-05-0059
4 of 10



No readings found above limits

EMR-05-0059

RAD SURVEYS – DAILY FIELD DATA SHEET

Survey Date 03/08/05

COPY

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

Instruments used:

SPA-3/E600 DTLL3-0037 / CMEBD-1118 Cal Due 01/10/06 / 01/10/06 Source Check Pre/Post (cpm) 3.93K / 3.98K P/F BG 1.333K Eff 8 %
SITE BG 2430 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0030 / CMEBD-1620 Cal Due 01/06/06 / 11/24/05 Source Check Pre/Post (cpm) 4600 / 4530 P/F BG 200 Eff 16 %
SITE BG 353 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
RS2	1	O	12	6	42	2590	570	2620
RS2	2	S	42	60	0	2480	762	2650
RS2	3	B	2	6	642	2810	252	2950
RS2	4	S	48	72	210	2410	0	2720
RS2	5	S	36	84	114	2480	234	2510
RS2	6	S	65	72	66	2450	402	2890
RS2	7	B	3	6	0	2750	0	2820
RS2	8	B	2	6	138	2790	138	2890
RS2	9	B	2	6	66	2890	42	2680
RS2	10	B	2	7	258	2880	690	2750
RS2	11	O	2	6	0	2790	0	2800
RS2	12	B	2	6	498	2740	210	2690
RS2	13	B	4	8	426	2980	0	2820
RS2	14	S	48	96	0	2490	162	2760
RS2	15	B	2	6	90	2830	0	2680
RS2	16	B	2	6	0	2580	378	2720
RS2	17	B	2	6	66	2720	18	2810
RS2	18	S	30	52	234	2760	0	2940
RS2	19	S	60	96	0	2580	546	2870
RS2	20	B	2	6	258	2950	0	2690
RS2	21	B	2	6	0	2590	546	2630
RS2	22	B	2	6	42	2620	402	2990

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0059

Survey Date__03/08/05_

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

SPA-3/E600 _DTLL3-0037__/_CMEBD-1118_ Cal Due_01/10/06_/__01/10/06__ Source Check Pre/Post (cpm) _3.93K_/_3.98K_(P)F BG_1.333K__ Eff_8_%
SITE BG_2430_ cpm Source Serial #/Isotope __GM-031 /__Nat-U__

SHP380AB/E600 _DTEC8-0030_/_CMEBD-1620__ Cal Due_01/06/06_/__11/24/05_ Source Check Pre/Post (cpm) 4600_/_4530_(P)F BG_200__ Eff_16_%
SITE BG_353_ cpm Source Serial #/Isotope __762-97 /____SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
RS2	23	S	48	30	0	2490	282	2480
RS2	24	B	2	6	210	2560	162	2540
RS2	25	B	2	6	0	2680	18	2480
RS2	26	S	24	72	0	2540	114	2450
RS2	27	B	2	6	66	2720	42	2620
RS2	28	B	2	8	234	2640	162	2610
RS2	29	S	24	80	0	2630	90	2720
RS2	30	S	30	36	0	2310	0	2610
RS2	31	S	72	96	0	2320	0	2590
RS2	32	S	36	48	0	2540	0	2640
RS2	33	B	2	4	306	2720	0	2480
RS2	34	B	2	4	66	2390	282	2610
RS2	35	S	54	96	0	2330	0	2530
RS2	36	B	2	6	90	2660	0	2620
RS2	37	S	48	96	0	2590	780	2560
RS2	38	S	18	48	0	2420	96	2760
RS2	39	B	2	4	186	2590	0	2530
RS2	40	S	54	36	0	2430	426	2790
RS2	41	B	2	4	0	2530	354	2570
RS2	42	S	48	48	0	2520	186	2650
RS2	43	S	36	36	0	2540	0	2680
RS2	44	S	36	36	0	2560	18	2620

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0059

Survey Date_03/09/05___

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

SPA-3/E600 _DTLL3-0037_/_CMEBD-1118__ Cal Due_01/10/06 _/_01/10/06_____ Source Check Pre/Post (cpm) _2224____/__2323__(P)/F BG_1636__ Eff_8__%
SITE BG _ 2360___ cpm Source Serial #/Isotope __GM-031 /__Nat-U__

SHP380AB/E600 _DTEC8-0030_/_CMEBD-1620_ Cal Due_01/06/06_/_11/24/05____ Source Check Pre/Post (cpm) _4550____/__439___(P)/F BG_199___ Eff_16_%
SITE BG_ 325____ cpm Source Serial #/Isotope __762-97__/__SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
RS2	45	S	72	30	0	2610	786	2730
RS2	46	S	36	36	0	2410	546	3090
RS2	47	S	36	96	0	2670	618	2780
RS2	48	B	4	6	66	2660	378	2880
RS2	49	B	2	6	210	2730	618	2720
RS2	50	B	4	6	186	2790	0	2890
RS2	51	B	2	6	738	2530	594	2810
RS2	52	B	2	6	594	2830	714	2760
RS2	53	B	2	6	618	2810	426	2830
RS2	54	S	72	96	354	2520	762	2740
RS2	55	S	30	36	210	2550	858	2520
RS2	56	S	36	96	0	2570	642	2970
RS2	57	B	2	6	330	2680	402	2850
RS2	58	B	2	6	666	2710	546	2940
RS2	59	O	30	6	402	2650	642	3040
RS2	60	S	24	72	0	2540	474	2810
RS2	61	S	84	120	0	2610	618	2660
RS2	62	S	48	36	42	2630	522	2680
RS2	63	B	2	6	186	2810	810	2820
RS2	64	B	2	6	0	2910	90	2840
RS2	65	S	48	48	0	2710	402	2870
RS2	66	S	30	120	0	2690	186	2710

RAD SURVEYS – DAILY FIELD DATA SHEET EMR-05-0059 p 8 of 10

Survey Date__03/09/05____

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

SPA-3/E600 _DTLL3-0037_/__CMEBD-1118_ Cal Due_01/10/06__/__01/10/06____ Source Check Pre/Post (cpm) __2224__/__2323__(P)F BG_1636__ Eff_8_%
SITE BG__2360___ cpm Source Serial #/Isotope __GM-031 / __Nat-U__

SHP380AB/E600 _DTEC8-0030_/__CMEBD-1620_ Cal Due_01/06/06_/__11/24/05___ Source Check Pre/Post (cpm) __4550__/__439__(P)F BG__199__ Eff_16%
SITE BG__325____ cpm Source Serial #/Isotope __762-97 / __SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
RS2	67	S	36	30	66	2530	570	2960
RS2	68	S	36	60	0	2390	666	2610
RS2	69	O	12	6	450	2680	306	2780
RS2	70	B	2	6	426	2920	666	2890
RS2	71	S	36	60	66	2650	354	2780
RS2	72	S	72	60	402	2640	282	2760
RS2	73	S	30	36	186	2800	354	2610
RS2	74	O	6	8	234	2680	282	2730
RS2	75	S	48	72	258	2670	570	2910
RS2	76	S	30	48	42	2370	402	2880
RS2	77	S	56	30	18	2490	642	2760
RS2	78	B	2	6	354	2490	186	2510
RS2	79	S	24	24	90	2430	450	2530
RS2	80	B	2	6	138	2590	42	2540
RS2	81	S	24	24	0	2390	138	2360
RS2	82	S	60	72	0	2480	450	2640
RS2	83	B	2	6	234	2760	42	2930
RS2	84	S	42	60	0	2480	186	2780
RS2	85	S	78	60	0	2560	354	2590
RS2	86	S	24	60	138	2390	522	2490
RS2	87	S	48	72	0	2530	306	2650
RS2	88	B	2	6	162	2520	642	2620

RAD SURVEYS – DAILY FIELD DATA SHEET

EMR-05-0059

Survey Date__03/10/05___

COPY

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

Instruments used:

SPA-3/E600 __DTLL3-0037__/__CMEBD-1118_ Cal Due__01/10/06_/__01/10/06___ Source Check Pre/Post (cpm) _3.99K___/__3.85K_(P)F BG_1.58K__ Eff_8_%
SITE BG__2480__ cpm Source Serial #/Isotope __GM-031 /__Nat-U__

SHP380AB/E600 __DTEC8-0030_/__CMEBD-1620 Cal Due_01/06/06_/__11/24/05____ Source Check Pre/Post (cpm) _4540___/__4350___(P)F BG_183___ Eff_16%
SITE BG__280____ cpm Source Serial #/Isotope __762-97 /____SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT		SOIL	
					Beta (NET dpm/100cm2)	Gamma (gross cpm)	Beta (NET dpm/100cm2)	Gamma (gross cpm)
RS2	89	B	2	6	570	2610	546	2730
RS2	90	B	2	6	570	2510	618	2430
RS2	91	S	60	72	282	2310	402	2620
RS2	92	S	48	60	0	2610	618	2720
RS2	93	S	84	120	330	2630	210	2880
RS2	94	O	6	6	570	2690	762	2830
RS2	95	S	36	96	186	2840	594	2840
RS2	96	B	2	6	282	2480	642	2730
RS2	97	B	6	6	714	2770	522	2720
RS2	98	S	84	84	138	2570	402	2830
RS2	99	B	2	6	714	2670	378	2990
RS2	100	S	12	36	18	2660	402	2620
RS2	101	S	36	96	330	2420	282	2730
RS2	102	S	48	60	0	2570	378	2980
RS2	103	B	2	6	570	2530	762	2710
RS2	104	S	60	120	162	2480	738	2640
RS2	105	S	84	96	0	2940	810	2940
RS2	106	B	2	6	210	2730	306	2570
RS2	107	O	10	12	450	2860	762	2880
RS2	108	S	30	72	258	2580	0	2610
RS2	109	O	6	6	306	2640	714	2740
RS2	110	B	2	6	546	2540	570	2580

EMR-05-0059

RAD SURVEYS – DAILY FIELD DATA SHEET

Survey Date__03/10/05___

SPECIES GLOSSARY: B = Bunchgrass
T = Tumbleweed
R = Rabbit Brush
O = Other
S = Sagebrush

COPY

Instruments used:

SPA-3/E600 __DTLL3-0037_/__CMEBD-1118_ Cal Due_01/10/06__/__01/10/06___ Source Check Pre/Post (cpm) _3.99K__/_3.85K___(P)/F BG_1.58K_ Eff_8_%
SITE BG__2480___ cpm Source Serial #/Isotope __GM-031 /__Nat-U__

SHP380AB/E600 _DTEC8-0030_/__CMEBD-1620_ Cal Due_01/06/06 /__11/24/05____ Source Check Pre/Post (cpm) __4550_/_4350____(P)/F BG_183___ Eff_16%
SITE BG__280____ cpm Source Serial #/Isotope __762-97 /____SrY90

SITE	STAKE #	SPECIES	HEIGHT (inches)	WIDTH (inches)	PLANT Beta (NET dpm/100cm2)	PLANT Gamma (gross cpm)	SOIL Beta (NET dpm/100cm2)	SOIL Gamma (gross cpm)
RS2	111	O	8	6	90	2920	474	2690
RS2	112	S	72	96	330	2520	714	2570
RS2	113	S	42	36	402	2580	282	2720
RS2	114	O	16	16	546	2790	810	2890
RS2	115	S	30	84	282	2930	714	2670
RS2	116	O	12	6	234	2740	378	2910
RS2	117	S	60	60	0	2650	642	2830
RS2	118	O	16	10	18	2780	666	2760
RS2	119	B	2	6	666	2510	450	2860
RS2	120	B	2	6	570	2750	594	2840
RS2	121	S	72	96	186	2290	618	2780
RS2								
RS2								
RS2								
RS2								
RS2		N				N		
RS2								
RS2			A				A	
RS2								
RS2								
RS2								
RS2								

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APPENDIX E

ANT/MAMMAL SPOIL SURVEYS

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Initial Date Flagged: 06/07/05
Flagger: B Tiller

Central Plateau - Eco Risk Assessment 2005
Mammal Spoil Survey

GRID ID: BCCA LOW

Pink Flags										
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials		Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	121					26	37			
2	120					27	4			
3	109					28	23			
4	107					29	46			
Coyote dig → 5	107					30	36			
6	96					31	100			
7	96					32	61			
8	95					33	73			
9	106					34	73			
10	84					35	70			
11	84					36	69			
12	85					37	69			
13	88					38	69			
14	66					39	80			
15	52					40	97			
16	51					41	97			
17	39					42	100			
18	29					43	112			
19	30					44	112			
20	30					45	103			
21	31					46				
22	32					47				
23	22					48				
24	21					49				
25	8					50				

← Coyote Dig - Coyote dig

Mammal Spoil Survey Form Rev 1 BLT 04-14-05

Initial Date Flagged: 06/07/05

Flagger: B Tiller

GRID ID: BCCA LOW

Central Plateau - Eco Risk Assessment 2005
Ant Spoil Survey

Camponotis →

Yellow Flags				
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	93			
2	65			
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Ant Spoil Survey Form Rev 1 BLT 04-14-05

Initial Date Flagged: 06/07/05
Flagger: B Tiller

Central Plateau - Eco Risk Assessment 2005
Mammal Spoil Survey

GRID ID: BCCA MEDIUM

Pink Flags										
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials		Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	121					26	54			
2	120					27	55			
3	119					28	55			
4	107					29	43			
5	117					30	42			
6	116					31	113			
7	105					32	103			
8	94					33	103			
9	95					34	102			
10	96					35	90			
11	96					36	68			
12	97					37	68			
13	97					38	70			
14	98					39	70			
15	98					40	71			
16	99					41	60			
17	99					42	49			
18	86					43	47			
19	85					44	47			
20	63					45	23			
21	61					46	34			
22	51					47	45			
23	53					48	89			
24	53					49	100			
25	54					50	112			

Mammal Spoil Survey Form Rev 1 BLT 04-14-05

Initial Date Flagged: 06/07/05

Flagger: BITILLER

GRID ID: BCCA MEDIUM

Central Plateau - Eco Risk Assessment 2005
Ant Spoil Survey

Yellow Flags				
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	119			
2	98			
3	42			
4	47			
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Ant Spoil Survey Form Rev 1 BLT 04-14-05

Initial Date Flagged: 06/07/05
Flagger: B Tiller

Central Plateau - Eco Risk Assessment 2005
Mammal Spoil Survey

GRID ID: BCCA HIGH

Pink Flags										
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials		Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	109					26	5			
2	109					27	36			
3	96					28	35			
4	97					29	35			
5	73					30	23			
6	75					31	57			
7	65					32	69			
8	66					33	68			
9	53					34	78			
10	53					35	89			
11	29					36	90			
12	29					37	91			
13	8					38	82			
14	10					39	71			
15	10					40	71			
16	32					41	48			
17	33					42	48			
18	8					43	38			
19	7					44	39			
20	16					45	62			
21	5					46	103			← coyote dig
22	5					47	15			
23	4					48				
24	25					49				
25	25					50				

Mammal Spoil Survey Form Rev 1 BLT 04-14-05

Initial Date Flagged: 06/07/05

Flagger: B Tiller

GRID ID: BCCA HIGH

Central Plateau - Eco Risk Assessment 2005
Ant Spoil Survey

Yellow Flags				
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

NO ANT SPOILS FOUND

Ant Spoil Survey Form Rev 1 BLT 04-14-05

Initial Date Flagged: 06-07-05
Flagger: BLTiller

Central Plateau - Eco Risk Assessment 2005
Mammal Spoil Survey

GRID ID: REF2

Pink Flags

Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials		Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	9					26	82			
2	21					27	59			
3	21					28	59			
4	43					29	37			
5	43					30	30			
coyote dig → 6	43					31	28			
7	41					32	29			— coyote dig
8	41					33	19			
9	52					34	20			
10	64					35	19			
11	75					36	7			
12	81					37	6			
13	85					38	6			
14	96					39	6			
15	110					40	5			
16	120					41	16			
17	119					42	16			
18	119					43	15			
19	107					44	3			
20	93					45				
21	104					46				
22	102					47				
23	91					48				
24	82					49				
25	82					50				

Mammal Spoil Survey Form Rev 1 BLT 04-14-05

Initial Date Flagged: 06/07/05

Flagger: BLTiller

GRID ID: REF 2

Central Plateau - Eco Risk Assessment 2005
Ant Spoil Survey

NO ANT SPOILS FOUND

Yellow Flags				
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Ant Spoil Survey Form Rev 1 BLT 04-14-05

APPENDIX F

ANT MOUND/MAMMAL BURROW RADIOLOGICAL SURVEYS

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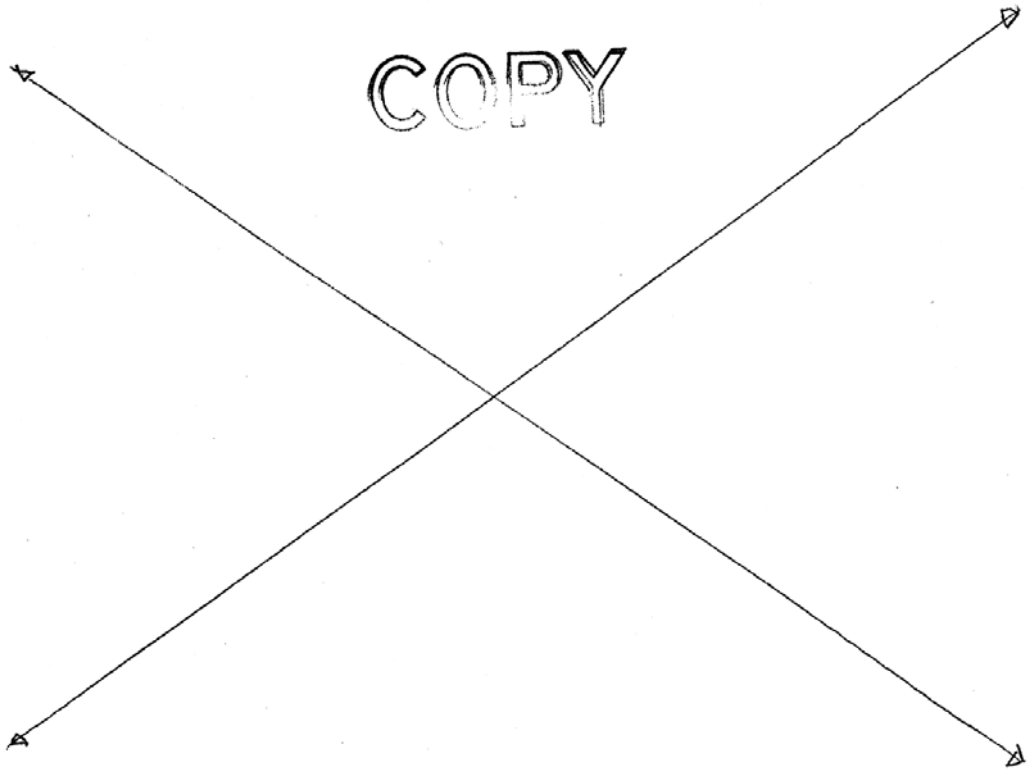
ENVIRONMENTAL MEASUREMENT RECORD

Page 1 of 8

ERSTI	Date	Time	Location	Survey Number
GW-ERSTI-002	06/16/05	1600	BCCA LOW RISK SITE	EMR-05-0153

Job Description
Ecological Surveys - BCCA LOW Mammal and Ant Mound Surveys

Map/Sketch
SEE ATTACHED



Legend

○ = Tech Smear	# = Direct Survey	M = Large Area Wipe	Radiological Boundary x----x----x

Instrument(s)

Model No.	Serial No.	Calibration Due Date	Source Check (CPM)		Post-Job Pass/Fail	Source Serial No.	Isotope	α		β-γ	
			PRE-Job	POST-Job				Eff.	BKD	Eff.	BKD
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RCT Name/Signature/Date	RCT Supervisor Name/Signature/Date
K. Volkman 6/20/05 K. Volk	R. Crandall / R. Crandall / 06-20-05

A-6003-531 (12/02)

ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0153
Page 2 of 8

Radiological Survey Data

No.	Description of Item Or Location	Removable		Total			
		α	β-γ	α		β-γ	
		cpm/P.A.	cpm/P.A.	cpm/P.A.	BKGD	cpm/P.A.	BKGD
NA	SEE ATTACHED TABLES	N/A	N/A	N/A	N/A	N/A	N/A
	N/A						

COPY

A-6003-531 (12/02)

Survey Date 06/16/05

COPY

MAMMAL SPOILS SURVEY EMR-05-0153

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3170 / 3220 P/F BG 1233 Eff 8%
SITE BG 2460 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1114 Cal Due 03-01-06 / 04-15-06 Source Check Pre/Post (cpm) 4180 / 4230 P/F BG 181 Eff 15%
SITE BG 261 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	PINK FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA LOW	1	121	300	2610
BCCA LOW	2	120	324	2270
BCCA LOW	3	109	300	2710
BCCA LOW	4	107	300	2260
BCCA LOW	5	107	423	2560
BCCA LOW	6	96	120	2700
BCCA LOW	7	96	72	2590
BCCA LOW	8	95	120	2410
BCCA LOW	9	106	192	2460
BCCA LOW	10	84	360	2470
BCCA LOW	11	84	0	2610
BCCA LOW	12	85	264	2490
BCCA LOW	13	88	48	2789
BCCA LOW	14	66	72	2620
BCCA LOW	15	52	120	2580
BCCA LOW	16	51	72	2640
BCCA LOW	17	39	120	2770
BCCA LOW	18	29	72	2630
BCCA LOW	19	30	144	2510
BCCA LOW	20	30	72	2650
BCCA LOW	21	31	0	2630
BCCA LOW	22	32	0	2350
BCCA LOW	23	22	0	2340
BCCA LOW	24	21	0	2680
BCCA LOW	25	8	72	2490

MAMMAL SPOILS SURVEY
DAILY FIELD DATA SHEET

EMR-05-0153

Survey Date 06/16/05

COPY

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3170 / 3220 P/F BG 1233 Eff 8%
SITE BG 2460 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1114 Cal Due 03-01-06 / 04-15-06 Source Check Pre/Post (cpm) 4180 / 4230 P/F BG 181 Eff 15%
SITE BG 261 cpm Source Serial #/Isotope 762-97 / SrY900

SITE	PINK FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA LOW	26	37	48	2630
BCCA LOW	27	4	0	2430
BCCA LOW	28	23	324	2660
BCCA LOW	29	46	72	2470
BCCA LOW	30	36	240	2420
BCCA LOW	31	60	144	2630
BCCA LOW	32	61	0	2770
BCCA LOW	33	72	24	2570
BCCA LOW	34	72	294	2410
BCCA LOW	35	70	48	2510
BCCA LOW	36	69	48	2660
BCCA LOW	37	69	312	2540
BCCA LOW	38	69	72	2740
BCCA LOW	39	80	24	2480
BCCA LOW	40	91	0	2610
BCCA LOW	41	91	0	2430
BCCA LOW	42	100	504	2550
BCCA LOW	43	112	24	2370
BCCA LOW	44	112	264	2260
BCCA LOW	45	103	0	2760
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

ANT MOUND SPOILS SURVEY
DAILY FIELD DATA SHEET

EMR-05-0153

COPY

Survey Date 06/16/05

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06
SITE BG 2460 cpm
Source Check Pre/Post (cpm) 3170 / 3220 P/F BG 1233 Eff 8%
Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1114 Cal Due 03-01-06 / 04-15-06
SITE BG 261 cpm
Source Check Pre/Post (cpm) 4180 / 4230 P/F BG 181 Eff 15%
Source Serial #/Isotope 762-97 / SrY90

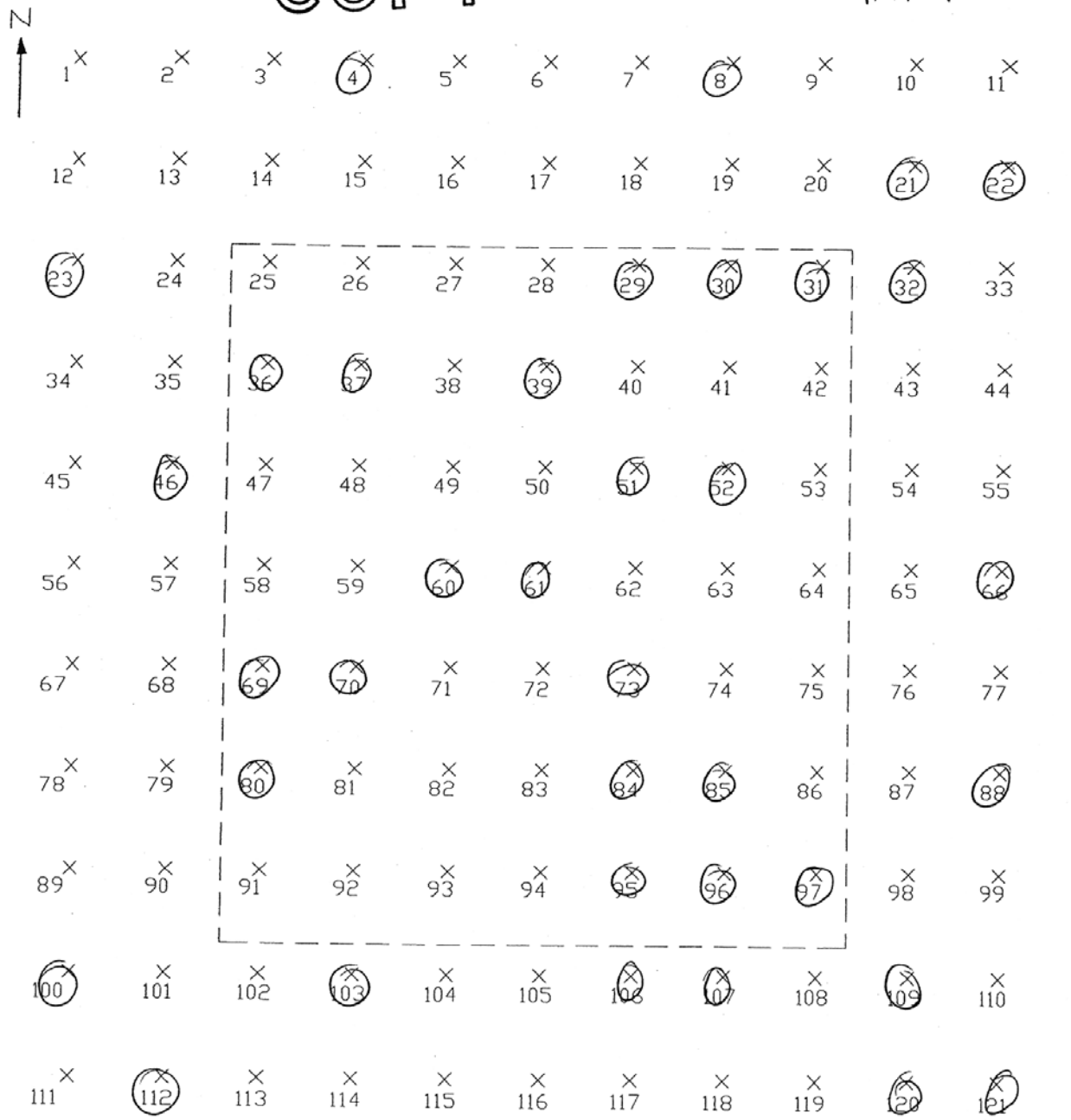
SITE	YELLOW FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA LOW	1	93	0	2460
BCCA LOW	2	65	324	2320
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

RCCZ LOW

COPY

EMR-05-0153
PG 6 of 8

■ Mammal Burrow
Ant Mound



Initial Date Flagged: 06/07/05

Flagger: B Tiller

GRID ID: BCCA LOW

COPY

Central Plateau - Eco Risk Assessment 2005
Mammal Spoil Survey

Pink Flags

Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials		Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	121					26	37			
2	120					27	4			
3	109					28	23			
4	107					29	46			
5	107					30	36			
6	96					31	100			
7	96					32	101			
8	95					33	73			
9	106					34	73			
10	84					35	70			
11	84					36	69			
12	85					37	69			
13	88					38	69			
14	66					39	80			
15	52					40	97			
16	51					41	97			
17	39					42	100			
18	29					43	112			
19	30					44	112			
20	30					45	103			
21	31					46				
22	32					47				
23	22					48				
24	21					49				
25	8					50				

Coyote dig

Coyote Dig - Coyote dig

Mammal Spoil Survey Form Rev 1 BLT 04-14-05

EMR-03-0153
~~PG 6~~ KW 6/20/05
PG 7 of 8

Initial Date Flagged: 06/04/05

Flagger: B Tiller

GRID ID: BCCA LOW

Central Plateau - Eco Risk Assessment 2005
Ant Spoil Survey

Camponotis →

Yellow Flags				
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	93			
2	65			
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

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EMR-05-0153
Pg 8 of 8

Ant Spoil Survey Form Rev 1 BLT 04-14-05

ENVIRONMENTAL MEASUREMENT RECORD

Page 1 of 8

ERSTI	Date	Time	Location	Survey Number
GW-ERST I-002	06/21/05	1600	BCCA MEDIUM RISK SITE	EMR-05-0155

Job Description
Ecological Surveys - BCCA MEDIUM Mammal and Ant Mound Surveys

Map/Sketch
SEE ATTACHED

COPY

Legend

○ = Tech Smear	# = Direct Survey	M = Large Area Wipe	Radiological Boundary x----x----x

Instrument(s)

Model No.	Serial No.	Calibration Due Date	Source Check (CPM)		Post-Job Pass/Fail	Source Serial No.	Isotope	α		β-γ	
			PRE-Job	POST-Job				Eff.	BKD	Eff.	BKD
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RCT Name/Signature/Date	RCT Supervisor Name/Signature/Date
K. Volkman 6/21/05	R. Crandall / 06-22-05

A-6003-531 (12/02)

ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0155
Page 2 of 4

Radiological Survey Data

No.	Description of Item Or Location	Removable α cpm/P.A.	Removable β-γ cpm/P.A.	Total α cpm/P.A.	Total α BKGD	Total β-γ cpm/P.A.	Total β-γ BKGD
NA	SEE ATTACHED TABLES	N/A	N/A	N/A	N/A	N/A	N/A
	N/A						
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

COPY

A-6003-531 (12/02)

Survey Date 06/21/05

COPY

MAMMAL SPOILS SURVEY

EMR-05-0155

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3289 / 3220 P/F BG 1365 Eff 8%
SITE BG 2340 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0028 /CMEBD-1114 Cal Due 05-04-06 / 04-15-06 Source Check Pre/Post (cpm) 4460 / 4390 P/F BG 261 Eff 14%
SITE BG 331 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	PINK FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA MED	1	121	294	2440
BCCA MED	2	120	0	2590
BCCA MED	3	119	84	2720
BCCA MED	4	107	644	2510
BCCA MED	5	117	112	2400
BCCA MED	6	116	644	2740
BCCA MED	7	105	644	2380
BCCA MED	8	94	560	2530
BCCA MED	9	95	28	2370
BCCA MED	10	96	812	2470
BCCA MED	11	96	588	2530
BCCA MED	12	97	0	2360
BCCA MED	13	97	252	2250
BCCA MED	14	98	168	2710
BCCA MED	15	98	504	2140
BCCA MED	16	99	112	2340
BCCA MED	17	99	28	2860
BCCA MED	18	86	616	2680
BCCA MED	19	85	826	2460
BCCA MED	20	63	231	2410
BCCA MED	21	61	203	2370
BCCA MED	22	51	0	2320
BCCA MED	23	53	63	2540
BCCA MED	24	53	0	2580
BCCA MED	25	54	151	2550

MAMMAL SPOILS SURVEY
DAILY FIELD DATA SHEET

EMR-05-0155

Survey Date 06/16/05

COPY

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3289 / 3220 P/F BG 1365 Eff 8%
SITE BG 2340 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0028 /CMEBD-1114 Cal Due 05-04-06 / 04-15-06 Source Check Pre/Post (cpm) 4460 / 4390 P/F BG 261 Eff 14%
SITE BG 331 cpm Source Serial #/Isotope 762-97 / SrY900

SITE	PINK FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA MED	26	54	497	2640
BCCA MED	27	55	567	2530
BCCA MED	28	55	441	2420
BCCA MED	29	43	0	2530
BCCA MED	30	42	91	2750
BCCA MED	31	113	0	2670
BCCA MED	32	103	532	2720
BCCA MED	33	103	133	2330
BCCA MED	34	102	0	2340
BCCA MED	35	90	0	2460
BCCA MED	36	68	182	2230
BCCA MED	37	68	308	2360
BCCA MED	38	70	483	2370
BCCA MED	39	70	343	2580
BCCA MED	40	71	0	2460
BCCA MED	41	60	7	2380
BCCA MED	42	49	7	2280
BCCA MED	43	47	203	2140
BCCA MED	44	47	343	2450
BCCA MED	45	23	686	2380
BCCA MED	46	34	616	2320
BCCA MED	47	45	252	2240
BCCA MED	48	89	560	2190
BCCA MED	49	100	280	2350
BCCA MED	50	112	700	2440

ANT MOUND SPOILS SURVEY
DAILY FIELD DATA SHEET

EMR-05-0155

Survey Date 06/21/05

COPY

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3289 / 3220 P/F BG 1365 Eff 8%
SITE BG 2340 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0028 /CMEBD-1114 Cal Due 05-04-06 / 04-15-06 Source Check Pre/Post (cpm) 4460 / 4390 P/F BG 261 Eff 14%
SITE BG 331 cpm Source Serial #/Isotope 762-97 / SrY90

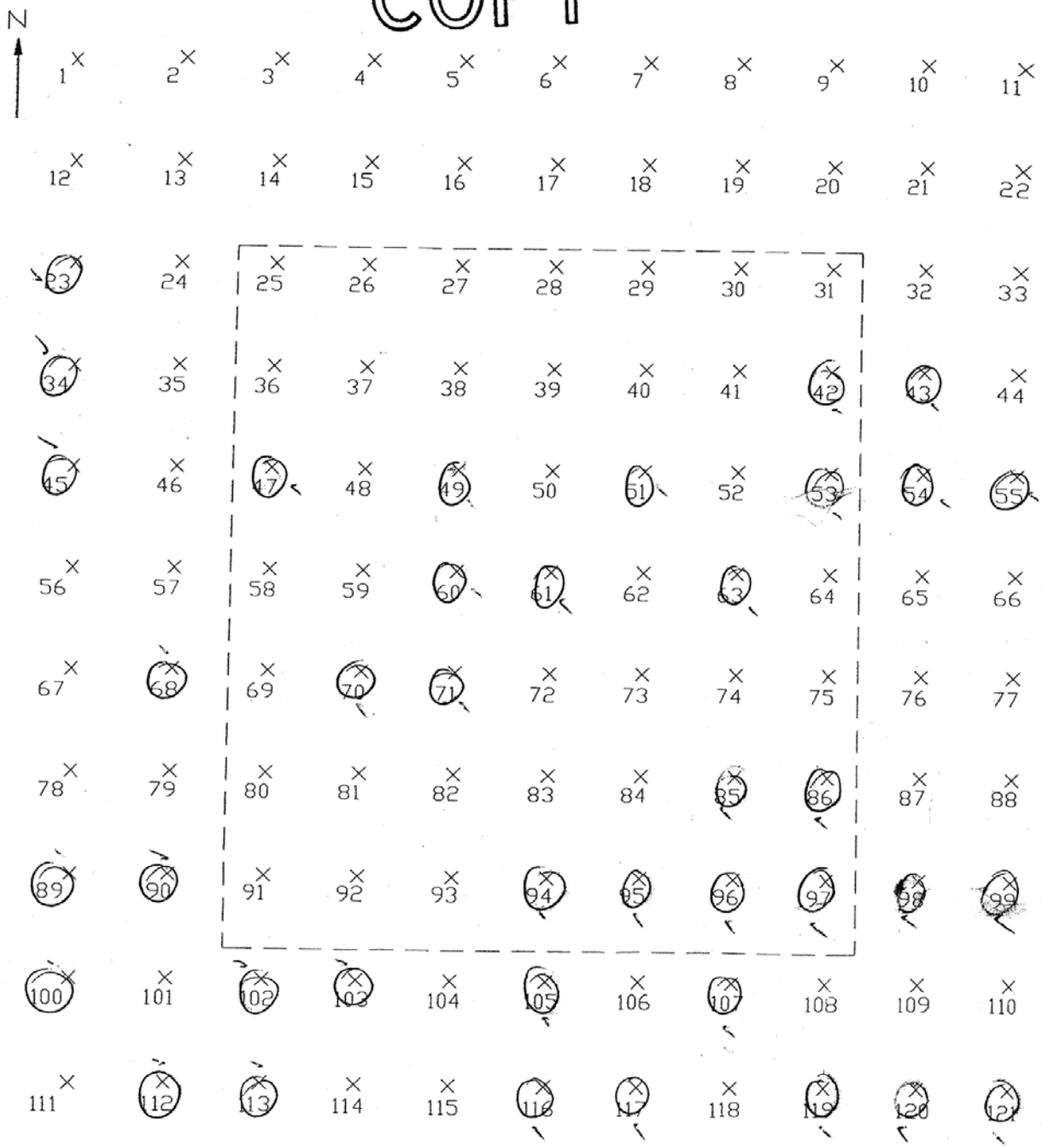
SITE	YELLOW FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA MED	1	119	364	2410
BCCA MED	2	98	0	2830
BCCA MED	3	42	0	2240
BCCA MED	4	47	343	2380
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

BCC2 — MEDIUM

EMR-05-0155 Mound Burrow
PG 6 of 8

Ant Mound

COPY



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EMR-05-0155
PG 7 of 8

Initial Date Flagged: 06/04/05
Flagger: B Tiller

Central Plateau - Eco Risk Assessment 2005
Mammal Spoil Survey

GRID ID: BCLA MEDIUM

Pink Flags									
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials	Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	121	N/A	N/A	N/A	26	54	N/A	N/A	N/A
2	120				27	55			
3	119				28	55			
4	107				29	43			
5	117				30	42			
6	116				31	113			
7	105				32	103			
8	94				33	103			
9	95				34	102			
10	96				35	90			
11	96				36	68			
12	97				37	68			
13	97				38	70			
14	98				39	70			
15	98				40	71			
16	99				41	60			
17	99				42	49			
18	86				43	47			
19	85				44	47			
20	63				45	23			
21	61				46	34			
22	51				47	45			
23	53				48	89			
24	53				49	100			
25	54				50	112			

Mammal Spoil Survey Form Rev 1 BLT 04-14-05

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COPY

Initial Date Flagged: 08/04/05

Flagger: BITILLER

GRID ID: BCCA MEDIUM

Central Plateau - Eco Risk Assessment 2005
Ant Spoil Survey

Yellow Flags				
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	119	N/A	N/A	N/A
2	98			
3	42			
4	47			
5	N/A			
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Ant Spoil Survey Form Rev 1 BLT 04-14-05

ENVIRONMENTAL MEASUREMENT RECORD

Page 1 of 8

ERSTI	Date	Time	Location	Survey Number
GW-ERSTI-002	06/22/05	1600	BCCA HIGH RISK SITE	EMR-05-0156

Job Description
Ecological Surveys - BCCA HIGH Mammal and Ant Mound Surveys

Map/Sketch
SEE ATTACHED

COPY

Legend

○ = Tech Smear	# = Direct Survey	M = Large Area Wipe	Radiological Boundary x----x----x

Instrument(s)

Model No.	Serial No.	Calibration Due Date	Source Check (CPM)		Post-Job Pass/Fail	Source Serial No.	Isotope	α		β-γ	
			PRE-Job	POST-Job				Eff.	BKD	Eff.	BKD
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RCT Name/Signature/Date	RCT Supervisor Name/Signature/Date
K. Volkman 6/23/05	R. Crandall / 06-23-05

A-6003-531 (12/02)

ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0156
Page 2 of 8

Radiological Survey Data

No.	Description of Item Or Location	Removable		Total			
		α	β-γ	α		β-γ	
		cpm/P.A.	cpm/P.A.	cpm/P.A.	BKGD	cpm/P.A.	BKGD
NA	SEE ATTACHED TABLES	N/A	N/A	N/A	N/A	N/A	N/A
	N/A						

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A-6003-531 (12/02)

MAMMAL SPOILS SURVEY

Survey Date 06/22/05

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EMR-05-0156

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3020 / 2970 P/F BG 1278 Eff 8%
SITE BG 2380 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0028 /CMEBD-1114 Cal Due 05-04-06 / 04-15-06 Source Check Pre/Post (cpm) 4440 / 4370 P/F BG 295 Eff 14%
SITE BG 304 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	PINK FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA HIGH	1	109	2,471	4,820
BCCA HIGH	2	109	6,160	3,750
BCCA HIGH	3	96	1,708	3,130
BCCA HIGH	4	97	728	1,860
BCCA HIGH	5	73	1,820	2,920
BCCA HIGH	6	75	8,512	13,970
BCCA HIGH	7	65	1,722	3,090
BCCA HIGH	8	66	1,036	2,120
BCCA HIGH	9	53	4,956	12,390
BCCA HIGH	10	53	2,772	3,480
BCCA HIGH	11	29	6,048	17,970
BCCA HIGH	12	29	4,452	21,800
BCCA HIGH	13	8	5,222	6,660
BCCA HIGH	14	10	2,212	3,050
BCCA HIGH	15	10	2,464	3,240
BCCA HIGH	16	32	812	2,070
BCCA HIGH	17	33	1,736	2,500
BCCA HIGH	18	8	6,440	4,400
BCCA HIGH	19	7	3,976	5,750
BCCA HIGH	20	16	1,736	4,730
BCCA HIGH	21	5	2,492	4,130
BCCA HIGH	22	5	3,248	3,870
BCCA HIGH	23	4	2,828	4,560
BCCA HIGH	24	25	1,288	1,930
BCCA HIGH	25	25	2,436	3,980

COPY

MAMMAL SPOILS SURVEY
DAILY FIELD DATA SHEET

EMR-05-0156

Survey Date 06/22/05

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3020 / 2970 P/F BG 1278 Eff 8%
SITE BG 2380 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0028 /CMEBD-1114 Cal Due 05-04-06 / 04-15-06 Source Check Pre/Post (cpm) 4440 / 4370 P/F BG 295 Eff 14%
SITE BG 304 cpm Source Serial #/Isotope 762-97 / SrY900

SITE	PINK FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA HIGH	26	25	3,248	5,560
BCCA HIGH	27	36	7,868	4,690
BCCA HIGH	28	35	10,472	25,100
BCCA HIGH	29	35	12,712	11,630
BCCA HIGH	30	23	1,904	4,370
BCCA HIGH	31	57	2,184	5,040
BCCA HIGH	32	69	2,156	2,750
BCCA HIGH	33	68	2,548	5,410
BCCA HIGH	34	78	8,064	14,390
BCCA HIGH	35	89	8,820	7,040
BCCA HIGH	36	90	2,212	5,310
BCCA HIGH	37	91	4,844	5,220
BCCA HIGH	38	82	2,828	2,760
BCCA HIGH	39	71	15,050	16,040
BCCA HIGH	40	71	5,460	9,480
BCCA HIGH	41	48	3,668	4,030
BCCA HIGH	42	48	3,864	5,850
BCCA HIGH	43	38	2,625	10,720
BCCA HIGH	44	39	1,792	2,970
BCCA HIGH	45	62	1,344	1,770
BCCA HIGH	46	103	2,212	4,340
BCCA HIGH	47	15	2,044	2,830
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

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ANT MOUND SPOILS SURVEY
DAILY FIELD DATA SHEET

EMR-05-0156

Survey Date 06/22/05

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3020 / 2970 P/F BG 1278 Eff 8%
SITE BG 2380 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0028 /CMEBD-1114 Cal Due 05-04-06 / 04-15-06 Source Check Pre/Post (cpm) 4440 / 4370 P/F BG 295 Eff 14%
SITE BG 304 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	YELLOW FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
BCCA HIGH	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

BCC2. HIGH

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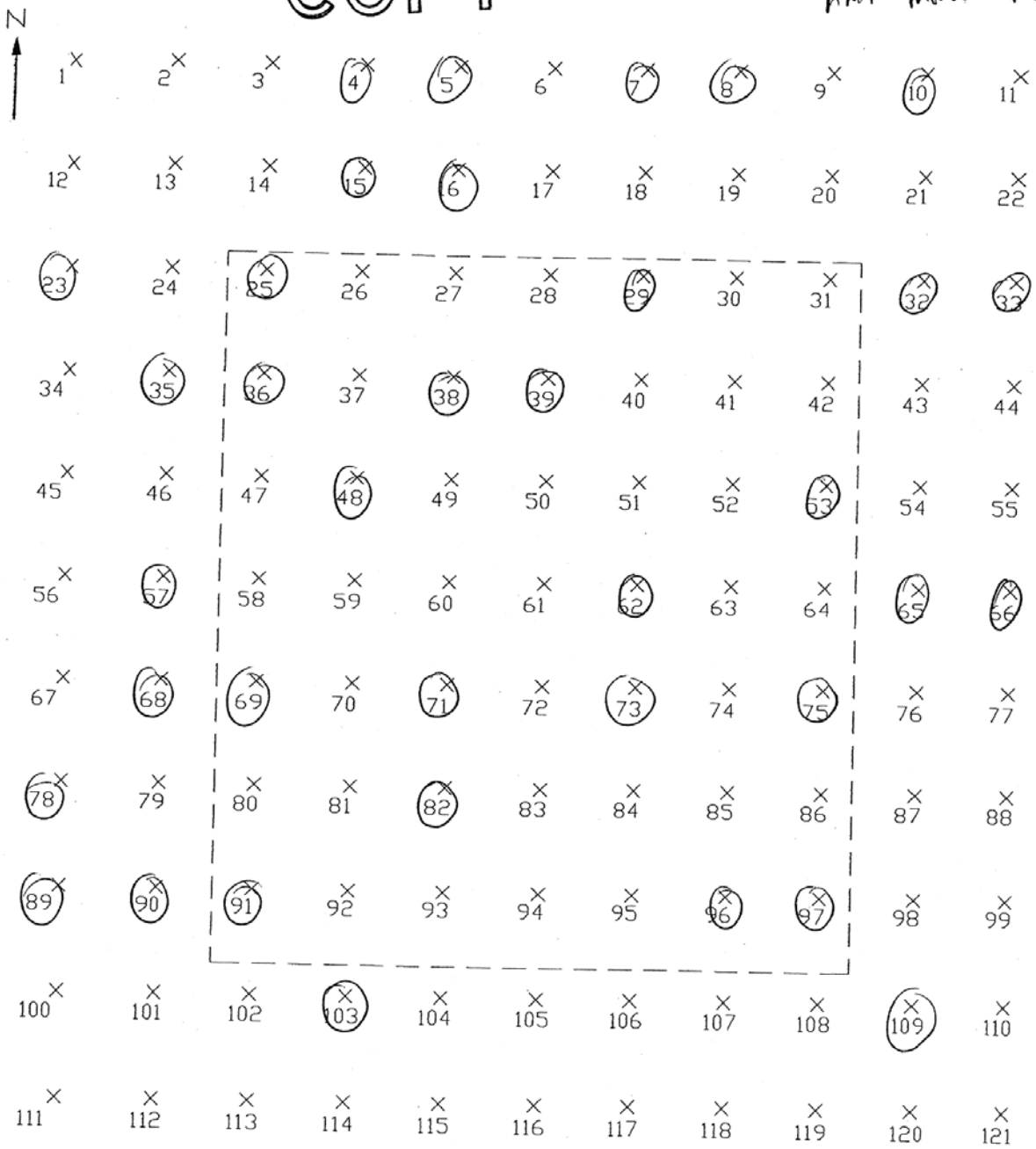
EMR-05-0106

COPY

Mammal Burrow

Ant Mound - NONE!



Flagger: B Tiller

Central Plateau - Eco Risk Assessment 2005
Mammal Spoil Survey

GRID ID: BCCA HIGH

Pink Flags

Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials	Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	109	N/A	N/A	N/A	26	5	N/A	N/A	N/A
2	109				27	36			
3	96				28	35			
4	97				29	35			
5	73				30	23			
6	75				31	57			
7	65				32	69			
8	66				33	68			
9	53				34	78			
10	53				35	89			
11	29				36	90			
12	29				37	91			
13	8				38	82			
14	10				39	71			
15	10				40	71			
16	32				41	48			
17	33				42	48			
18	8				43	38			
19	7				44	39			
20	16				45	62			
21	5				46	103			
22	5				47	15			
23	4				48	N/A			
24	25				49	N/A			
25	25	N/A	N/A	N/A	50	N/A	N/A	N/A	N/A

Mammal Spoil Survey Form Rev 1 BLT 04-14-05

coyote dig

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PG 7 of 8
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Flagger: B Tiller

GRID ID: BLCA HIGH

Central Plateau - Eco Risk Assessment 2005
Ant Spoil Survey

NO ANT SPOILS FOUND

Yellow Flags				
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11		N/A		
12				
13				
14				
15				
16				
17				
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19				
20				

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PG 8 of 8
EMR-05-0156

Ant Spoil Survey Form Rev 1 BLT 04-14-05

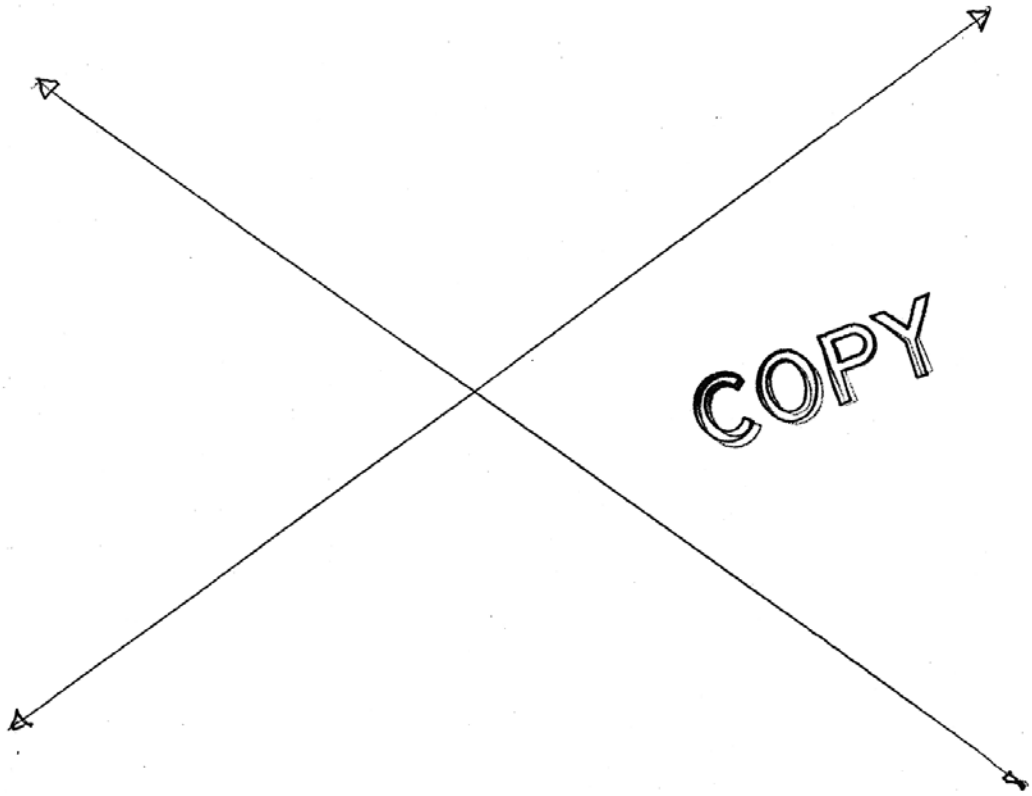
ENVIRONMENTAL MEASUREMENT RECORD

Page 1 of 8

ERSTI	Date	Time	Location	Survey Number
GW-ERS T1-002	06/15/05	1600	Ref2/600	EMR-05-0152

Job Description
Ecological Surveys - Ref2 Mammal and Ant Mound Surveys

Map/Sketch
SEE ATTACHED



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○ = Tech Smear	# = Direct Survey	M = Large Area Wipe	Radiological Boundary x----x----x

Instrument(s)

Model No.	Serial No.	Calibration Due Date	Source Check (CPM)		Post-Job Pass/Fail	Source Serial No.	Isotope	α		β-γ	
			PRE-Job	POST-Job				Eff.	BKD	Eff.	BKD
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RCT Name/Signature/Date	RCT Supervisor Name/Signature/Date
K. Volkman 6/20/05	R. Crandall / R. Crandall / 06-20-05

A-6003-531 (12/02)

ENVIRONMENTAL MEASUREMENT RECORD
(Continuation)

Survey No. EMR-05-0152
Page 2 of 8

Radiological Survey Data

No.	Description of Item Or Location	Removable		Total			
		α	β-γ	α		β-γ	
		cpm/P.A.	cpm/P.A.	cpm/P.A.	BKGD	cpm/P.A.	BKGD
NA	SEE ATTACHED TABLES	N/A	N/A	N/A	N/A	N/A	N/A
	N/A						

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A-6003-531 (12/02)

Survey Date 06/15/05

MAMMAL SPOILS SURVEY

EMR-05-0152

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3120 / 3180 β/F BG 1116 Eff 8%
SITE BG 2340 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1114 Cal Due 03-01-06 / 04-15-06 Source Check Pre/Post (cpm) 4310 / 4280 β/F BG 157 Eff 15%
SITE BG 326 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	PINK FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
Ref 2	1	9	0	2330
Ref 2	2	21	0	2260
Ref 2	3	21	0	2350
Ref 2	4	43	0	2480
Ref 2	5	43	0	2260
Ref 2	6	43	0	2490
Ref 2	7	41	36	2540
Ref 2	8	41	0	2360
Ref 2	9	52	0	2580
Ref 2	10	54	354	2760
Ref 2	11	75	60	2410
Ref 2	12	81	0	2430
Ref 2	13	85	0	2290
Ref 2	14	96	396	2440
Ref 2	15	110	0	2370
Ref 2	16	120	156	2480
Ref 2	17	119	0	2520
Ref 2	18	119	0	2360
Ref 2	19	107	0	2380
Ref 2	20	93	234	2420
Ref 2	21	104	36	2510
Ref 2	22	102	0	2290
Ref 2	23	91	0	2510
Ref 2	24	82	0	2660
Ref 2	25	82	Could not find	Could not find

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MAMMAL SPOILS SURVEY
DAILY FIELD DATA SHEET

EMR-05-0152

Survey Date 06/15/05

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3120 / 3180 P/F BG 1116 Eff 8%
SITE BG 2340 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1114 Cal Due 03-01-06 / 04-15-06 Source Check Pre/Post (cpm) 4310 / 4280 P/F BG 157 Eff 15%
SITE BG 326 cpm Source Serial #/Isotope 762-97 / SrY900

SITE	PINK FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
Ref 2	26	82	180	2530
Ref 2	27	59	0	2550
Ref 2	28	37	0	2460
Ref 2	29	37	354	2380
Ref 2	30	38	132	2390
Ref 2	31	28	60	2370
Ref 2	32	29	0	2410
Ref 2	33	19	234	2360
Ref 2	34	20	630	2520
Ref 2	35	19	0	2460
Ref 2	36	7	0	2350
Ref 2	37	6	132	2410
Ref 2	38	6	12	2610
Ref 2	39	6	180	2490
Ref 2	40	5	300	2230
Ref 2	41	16	0	2550
Ref 2	42	110	204	2330
Ref 2	43	15	0	2370
Ref 2	44	3	96	2350
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

ANT MOUND SPOILS SURVEY
DAILY FIELD DATA SHEET

EMR-05-0152

Survey Date 06/15/05

Instruments used:

4410/E600 DTEBQ-0232 /CMEBD-1146 Cal Due 01-30-06 / 01-30-06 Source Check Pre/Post (cpm) 3120 / 3180 P/F BG 1116 Eff 8%
SITE BG 2340 cpm Source Serial #/Isotope GM-031 / Nat-U

SHP380AB/E600 DTEC8-0042 /CMEBD-1114 Cal Due 03-01-06 / 04-15-06 Source Check Pre/Post (cpm) 4310 / 4280 P/F BG 157 Eff 15%
SITE BG 326 cpm Source Serial #/Isotope 762-97 / SrY90

SITE	YELLOW FLAG #	NEAREST STAKE #	BETA (Net dpm/100cm2)	Gamma (gross cpm)
Ref 2	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

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REFERENCE AREA #2

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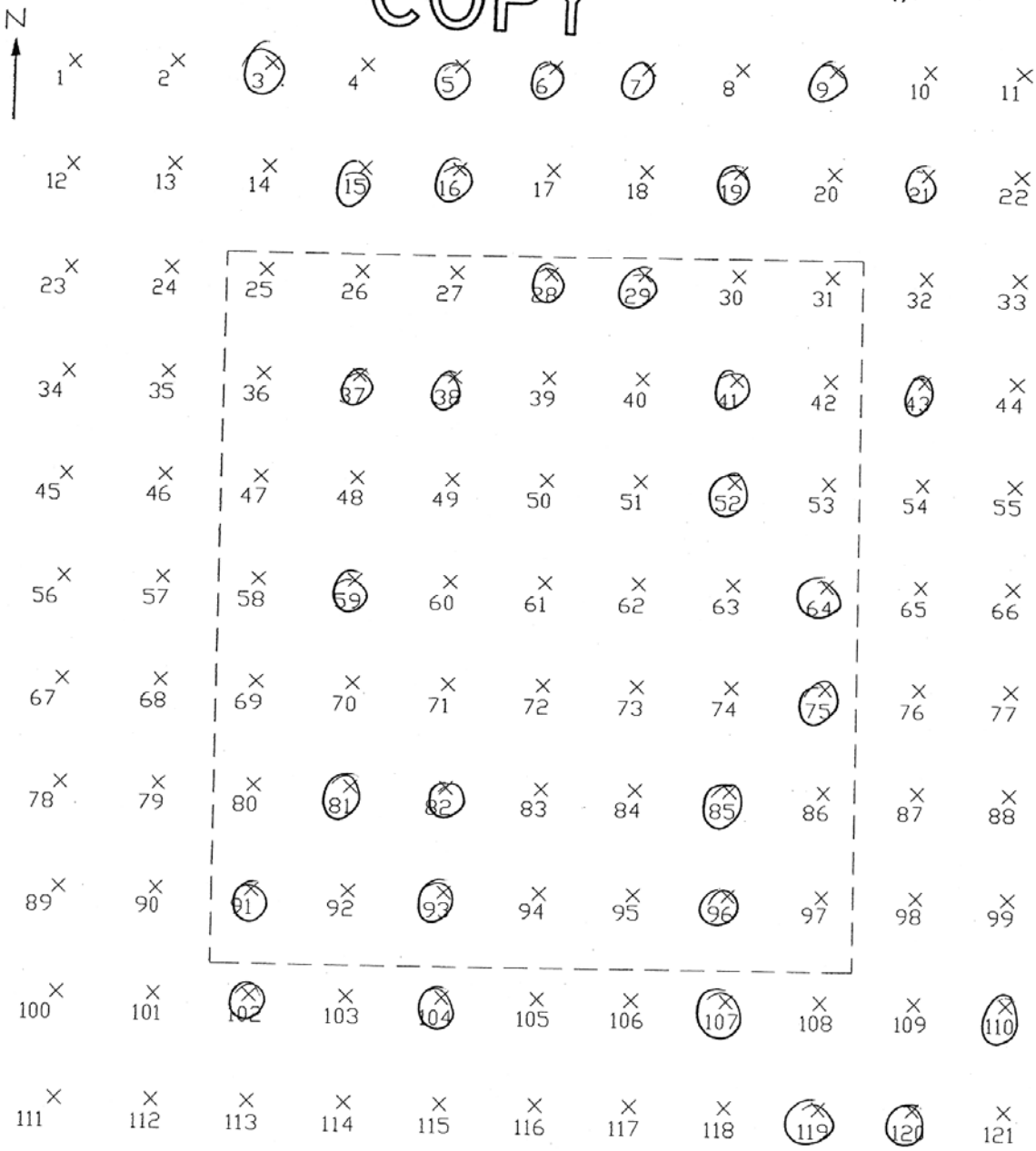
■ Mammal Burrow
Ant Mound - none



Initial Date Flagged: [illegible]
Flagger: BLTiller

GRID ID: REF2

Central Plateau - Eco Risk Assessment 2005
Mammal Spoil Survey

Pink Flags

Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials	Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1	9				26	82			
2	21				27	59			
3	21				28	59			
4	43				29	37			
5	43				30	38			
6 (coyote dig)	43				31	28			
7	41				32	29			
8	41				33	19			
9	52				34	20			
10	64				35	19			
11	75		✓		36	7		✓	
12	81				37	6			
13	85				38	6		✗	
14	96		✗		39	6			
15	110				40	5			
16	120				41	16			
17	119				42	16			
18	119				43	15			
19	107				44	3			
20	93				45				
21	104				46				
22	102				47	✓			
23	91				48				
24	82				49	✗			
25	82				50				

coyote dig

Mammal Spoil Survey Form Rev 1 BLT 04-14-05

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Initial Date Flagged: [illegible]

Flagger: BLTiller

GRID ID: REF 2

Central Plateau - Eco Risk Assessment 2005
Ant Spoil Survey

NO ANT SPOILS FOUND

Yellow Flags				
Flag #	Nearest Grid Stake #	Gamma/Beta Survey Result (CPM)	Rad Survey Date	Surveyor Initials
1				
2				
3				
4				
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Ant Spoil Survey Form Rev 1 BLT 04-14-05

APPENDIX G

MULTI-INCREMENT SOIL SAMPLING RADIOLOGICAL SURVEYS

(To be provided under separate cover.)

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APPENDIX H

INVERTEBRATE SUMMARY

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Appendix H. Phase II Invertebrates

Site	Order	Family	common name	weight
BC Hi	Coleoptera	Carabidae	ground beetles	3g
		Curculionidae	weevils	
		Scarabaeidae	scarab beetles	
		Silphidae	carrion beeetles	
		Tenebrionidae	darlking beetles	200g
	Hymenoptera	Formicidae	ants	
		Mutilidae	velvet ants	
	Orthoptera	Acrididae	grasshoppers	
		Rhaphidophoridae	camel crickets	
	Lepidoptera	Arctiidae (larvae)	arctiid caterpillars	
		Noctuidae	noctuid caterpillars	
	Mantodea	Mantidae	praying mantids	
	Other	scorpions		2g
		solifugae		
		spiders		
	total all others			7g
	total weight			212g
Reference II	Coleoptera	Carabidae	ground beetles	
		Curculionidae	weevils	
		Scarabaeidae	scarab beetles	
		Tenebrionidae	darlking beetles	128g
	Hymenoptera	Mutilidae	velvet ants	
		Sphecidae	spider hunting wasps	
	Orthoptera	Stenopelmatidae	Jerusalem cricket	7g
		Rhaphidophoridae	camel crickets	
	Other	scorpions		32g
		spiders		
		solifugae		
	total all others			7g
	total weight			174g
BC Low	Coleoptera	Carabidae	ground beetles	2g
		Scarabaeidae	scarab beetles	
		Silphidae	carrion beeetles	6g
		Tenebrionidae	darlking beetles	198g
	Hymenoptera	Mutilidae	velvet ants	
	Hemiptera	Pentatomidae	stink bugs	
	Orthoptera	Acrididae	grasshoppers	
		Rhaphidophoridae	camel crickets	
		Tettigoniidae	Mormon crickets	
	Lepidoptera	Noctuidae	noctuid caterpillars	
	Other	solifugae	sun spiders	
		scorpions		7g
		spiders		
	total all others			8g
	total weight			221g
BC Med 1	Coleoptera	Carabidae	ground beetles	6g
		Curculionidae	weevils	
		Scarabaeidae	scarab beetles	
		Tenebrionidae	darlking beetles	313g
	Hymenoptera	Mutilidae	velvet ants	
	Lepidoptera	Noctuidae	noctuid caterpillars	
	Orthoptera	Tettigoniidae	Mormon crickets	
	Other	scorpions		1g
		spiders		
	total all others			4g
	total weight			324g

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APPENDIX I

MULTI-INCREMENT SOIL SAMPLING METHOD

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DTS-OEM-PLN-004, Draft 8-17-05

MULTI-INCREMENT SOIL SAMPLING METHOD

1.0 Applicability

The sampling method described here is for the collection of surface soil samples at the study sites designated in the Phase I terrestrial ecological sampling and analysis plan (SAP) for the Central Plateau on the Hanford Site (DOE/RL-2004-42-Rev. 0).

2.0 Sampling Design

The soil sampling plan (Section 3.3.4) designated in the SAP is based on a multi-increment method designed to control the fundamental error (FE), as well as the grouping and segregation error (GSE) for an average, based on collecting an adequate sample mass (Ramsey et al. 1989, Pitard 1993, Gy 1998, Gerlach and Nocerino 2000, Gerlach et al. 2002, Ramsey 2004, Smith 2004, Ramsey 2005).

The top 0 and 6 in (0 to 15 cm) of soil will be sampled to determine concentrations of potential contaminants within this interval. The study area for ecological risk investigations will be a 1 ha area, or 100 x 100 m divided into 10 m grid nodes. Of the 100 locations in the grid, 50 of the grids will be randomly stratified for surface sampling [0-6 in.] (0-15 cm). The 50 soil sample increments will be randomly selected within each grid and collected to provide a single multi-increment sample for laboratory analyses representing the 0-6-in. (0-15 cm) depth.

3.0 Sampling Equipment

Sampling equipment for this task will consist of the following: trenching shovels with a "scored' line, #4 and #10 12-inch sieves, bristle brushes, collection buckets, soil-leveling table, bubble levels, soil-leveling tools, RaKo sampling splitter and splitter sample-trays.

The RaKo sample splitters and other associated tools and equipment will be cleaned in accordance with procedure 2.5, *Laboratory Cleaning of Sampling Equipment* (DTS-SSPM-001) before use at the individual study sites.

4.0 Sampling Methods

Locate the sampling sites designated at the 50 grid locations within the study area. The specific area to be sampled should be undisturbed and largely free of vegetation.

4.1 Soil Sampling

1) Using the trenching shovel, work through the soil until the scored line is just covered.

2) Carefully lift the shovel so that the mounded soil collected is as intact as possible.

3) Allow Radiological Control Technician to conduct rad surveys as required.

4) Keeping the shovel level, use the appropriate soil-leveling tool to remove the excess soil.

5) Place the remaining soil into the #4 sieve located on the top of the collection-bucket and agitate as necessary to remove large cobbles and plant material. Remove the #4 sieve for access to the #10 sieve located directly beneath and reduce the selected soil material to the <2 mm size limit. Discard the remaining oversize material and use the bristle brush to remove any remaining soil and plant material.

6) Move to the next marked location and repeat the above process.

7) Following the collection of soil at 10 locations, designated a "sample run", transfer the collection bucket to the "sample splitting" location. Pick up a new collection-bucket and repeat the process for the next sample run. There will be a total of 5 sample runs per study site.

4.2 Sample Splitting

1) In preparation for sample splitting, locate as level an area as possible and set up the leveling table.

2) Using the adjustable legs and bubble levels, ensure that the leveling-table is steady and level in all dimensions. If necessary, use the 2 x 6 in planks to compensate for uneven terrain.

3) Place the RaKo sample splitter on the leveling-table. Place two of the sample collection trays in the proper position beneath the splitter.

4) Take the soils collected in run #1 and them introduce into the sample splitter feed-hopper tray, so that the soil is distributed evenly in the tray.

5) Grasp the handle of the feed hopper and carefully tip it on end so that it introduces the feed material into the splitter in a smooth, even fashion.

6) The introduction of soil into the splitter will result in two evenly divided samples. One of which will be retained for additional splitting and one, which will be discarded at the site. To eliminate bias in the tray selection, flip a coin to determine which of the two trays will be discarded.

7) After randomly selecting one of the trays of soil collected in run #1, reintroduce the tray into the feed hopper so that the bottom of the tray is covered evenly with soil. Repeat Step #5.

8) Weigh this sample to ensure that approximately 4 to 5 lbs of soil remains in the last collection tray. Place this final split from run #1 in an appropriate container (e.g. covered stainless steel bowl) until all of the sample runs have been completed.

9) When all five of the sample runs have been completed at a study site, the combined soils will be re-introduced to the splitter for final split(s) following the above Steps #4 through #7. Depending on the volume of material remaining, one or two final splits will be conducted in order to retain approximately 4 to 5 lbs of soil for submittal to the assigned laboratory for analyses. The designated Sample Authorization Form and/or sample management matrix will provide specific instructions on required bottles, holding times and special instructions for the laboratory analytical requirements.

5.0 References

DOE, 2005, *Central Plateau Terrestrial Ecological Sampling and Analysis Plan - Phase I*, DOE/RL-2004-42 Rev.0, Richland, WA.

DTS-SSPM-001, 2005, *Sampling Services Procedure Manual*, Duratek Technical Services, Richland, WA.

Gerlach, R. W. and J. M. Nocerino, 2000, *Guidance for Obtaining Representative Laboratory Analytical Subsamples from Particulate Laboratory Samples*, EPA/600/R-03/027, U.S. Environmental Protection Agency.

Gerlach, R. W., D. E. Dobb, G. A. Rabb and J. N. Nocerino, 2002, Gy Sampling Theory in Environmental Studies I: Assessing Soil Splitting Protocols, *Journal of Chemometrics*, 16 (7): 871-878.

Gy, P., 1998, *Sampling for Analytical Purposes*, John Wiley and Sons, New York, NY.

Pitard, F. F., 1993, *Pierre Gy's Sampling Theory and Sampling Practice: Heterogeneity, Sampling Correctness, and Statistical Process Control*, 2nd ed, CRC Press, Inc., Boca Raton, Florida.

Ramsey, C. A., M. E. Ketterer and J. H. Lowry, 1989, *Application of Gy's Sampling Theory to the Sampling of Solid Waste Materials*, In: Proceedings of the EPA Fifth Annual Waste Testing and Quality Assurance Symposium.

Ramsey, C., 2004, *Sampling for Environmental Activities*, DQO Training Course, Envirostat, Fort Collins, Colorado

Smith, P. L., 2004, *Principles and Practices for Correct Sampling and the Impact on Statistical Data Quality*, EPA 23rd Annual National Conference on Managing Environmental Quality Systems, Tampa. Florida.

APPENDIX K

SUMMARY OF MAMMAL CAPTURE INFORMATION

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Appendix K. Summary of Phase II Mammal Capture Information (Weight in g/length in mm)

HEIS Number	Sample Site	Date Collected	Species	Weight	Body length	Tail length	Ear length	Hind Foot Length	Sex	Reproductive Status	Age
B1D9C2	BC Low	6/8/2005	Peromyscus maniculatus	17.14	80	67	14	17	Male	Non-scrotal	Adult
B1D9C3	BC Medium	6/8/2005	Peromyscus maniculatus	14.07	70	57	14	18	Male	Scrotal	Adult
D1D9C4	BC Medium	6/8/2005	Perognathus parvus	12.77	74	85	8	22	Male	Scrotal	Adult
B1D9C5	BC Medium	6/8/2005	Peromyscus maniculatus	14.46	78	75	13	20	Female	Non-lactating	Adult
B1D9C6	BC Medium	6/9/2005	Peromyscus maniculatus	12.26	70	61	14	18	Male	Non-scrotal	Juv
B1D9C7	BC Medium	6/9/2005	Perognathus parvus	7.51	55	55	5	19	Male	Non-scrotal	Juv
B1D9C8	BC Medium	6/9/2005	Peromyscus maniculatus	ns	72	60	13	16	Male	Non-scrotal	Juv
B1D9C9	BC Low	6/10/2005	Peromyscus maniculatus	12.1	ns	54	12	18	Male	Non-scrotal	Juv
B1D9D0	BC Low	6/10/2005	Perognathus parvus	17.71	73	75	6	23	Male	Scrotal	Adult
B1D9D1	BC Low	6/10/2005	Perognathus parvus	15.79	72	85	6	22	Female	Non-lactating	Adult
B1D9D2	BC High	6/10/2005	Peromyscus maniculatus	12.9	75	65	13	17	Male	Non-scrotal	Juv
B1D9D3	BC Low	6/14/2005	Peromyscus maniculatus	12.04	76	68	15	19	Male	Non-scrotal	Juv
B1D9D4	BC Low	6/14/2005	Peromyscus maniculatus	10.66	77	63	15	19	Male	Non-scrotal	Juv
B1D9D5	BC High	6/14/2005	Peromyscus maniculatus	15.03	80	63	15	19	Male	Non-scrotal	Adult
B1D9D6	BC High	6/16/2005	Perognathus parvus	19.06	75	90	7	24	Male	Scrotal	Adult
B1D9D7	Reference Site II	6/16/2005	Peromyscus maniculatus	12.04	74	62	14	17	Male	Scrotal	Adult
B1D9D8	BC High	6/21/2005	Perognathus parvus	10.62	65	70	5	21	Female	Non-lactating	Juv
B1D9D9	BC High	6/21/2005	Perognathus parvus	19.08	80	88	7	21	Male	Scrotal	Adult
B1D9F0	BC High	6/21/2005	Perognathus parvus	15.88	70	90	7	21	Male	Scrotal	Adult
B1D9F1	Reference Site II	6/24/2005	Perognathus parvus	21.68	75	95	6	24	Male	Scrotal	Adult
B1D9F2	Reference Site II	6/28/2005	Peromyscus maniculatus	11.43	70	67	15	17	Male	Non-scrotal	unk
B1D9F3	Reference Site II	6/29/2005	Perognathus parvus	20.6	78	95	6	22	Male	Scrotal	Adult
B1D9F4	Reference Site II	6/29/2005	Perognathus parvus	20.77	78	90	7	23	Male	Scrotal	Adult
B1D9F5	Reference Site II	6/29/2005	Perognathus parvus	13.06	74	78	6	19	Male	Scrotal	Adult

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APPENDIX L

SUMMARY OF LIZARD CAPTURE INFORMATION

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Appendix L. Summary of Phase II Lizard Capture Information

HEIS Number	Sample Site	Stake Number	Date Collected	Species	Weight	Total Length	Snout/Vent Length	Sex	Condition
B1D9F6	BC High	81	6/21/2005	Uta stansburiana	3.2 g	4 3/8”	1 ¾”	M	Black dot on back.
B1D9F7	BC High	85	6/28/2005	Uta stansburiana	3.1 g	4 ½”	1 7/8”	M	None
B1D9F8	RS II	61	8/8/2005	Unknown juvenile	0.2 g	2 ¼”	15/16”	J	None
B1D9F9	RS II	85	8/8/2005	Unknown juvenile	0.4 g	2 ½”	1 1/8”	J	None
B1D9H0	BC High	61	8/8/2005	Unknown juvenile	0.3 g	2”	15/16”	J	None
B1D9H1	BC Low	37	8/18/2005	Unknown juvenile	0.5 g	2 ½”	1 1/16”	J	None
B1D9H2	BC Med	81	8/18/2005	Unknown juvenile	0.7 g	2 5/8”	1 1/8”	J	Molting
B1D9H3	BC High	6	8/18/2005	Uta stansburiana	0.7 g	3”	1 ¼”	J	Dead
B1D9H4	BC High	37	8/22/2005	Unknown juvenile	0.7 g	2 ½”	1”	J	None
B1D9H5	BC High	81	8/30/2005	Unknown juvenile	0.7 g	2 3/8”	1”	J	None
B1D9H6	BC High	37	8/30/2005	Uta stansburiana	0.6 g	2 7/8”	1 1/8”	J	None
B1D9H7	BC Low	37	9/8/2005	Uta stansburiana	1.1 g	3”	1 3/16”	J	None
B1D9H8	BC Med	110	9/8/2005	Unknown juvenile	0.6 g	2 ¾”	1 1/8”	J	Lost tail during capture

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APPENDIX M

FIELD LOGBOOK

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Project 200 AREA ECOLOGICAL STUDY PHASE I + II Notebook No. DTS-SAWS-H94 1
Continues from Page NONE

SAF# 505-045/F05-018 4-11-05 – 10-20-05 CHARGE CODE: 119138
WORK DONE TO RCRA PROTOCOL

LOCATION: CENTRAL PLATEAU, 200 AREA

PERSONNEL:
JG HOGAN NCO/SAMPLER
KB HULSE
RT SICKLE
LD WALL
KJ YOUNG
DE PARCHEN
DP CONNOLLY
DR BREWINGTON
FM HALL
RR FOX
BW KIRBY BIOLOGICAL CONTROL
TE CULVERWELL HPT
RM MITCHELL CUSTOMER 376-5122/H1-11

PURPOSE: TO OBTAIN ECOLOGICAL DATA FOR SOIL, PLANTS AND ANIMALS FROM WASTE SITES LOCATED ON THE CENTRAL PLATEAU (200 AREA) FOR DEVELOPING AN ECOLOGICAL ASSESSMENT FOR REGULATORS, TRUSTEE COUNCIL AND DEFENSIBLE CLEANUP DECISIONS.

AHA # AHA-03-006-REV 3 PROCEDURES: DTS-SSPM-001, SP 4-1, SP 4-2, SP 2-5

SAP # DOE/RL-2004-42

SAMPLE EVENT: THE CENTRAL PLATEAU ECOLOGICAL RISK ASSESSMENT IS SPLIT INTO TWO PHASES, PHASE I CONSISTS OF SAMPLE COLLECTION OF INSECTS, LIZARDS, MICE, PLANTS AND SOIL FROM SEVEN SITES AROUND THE 200 AREAS IN CENTRAL HANFORD. SEE MAPS ON PAGE 3+4 OF THIS LOGBOOK FOR SITE LOCATIONS. PHASE II CONSISTS OF THE SAME COLLECTION OF SAMPLE TYPES BUT FROM THREE AREAS LOCATED WITHIN THE BC CRIBS AND A REFERENCE SITE ON THE NORTHWEST END OF THE HANFORD RESERVATION.

Continued on Page 2

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Project 200 AREA ECOLOGICAL STUDY PHASE I + II

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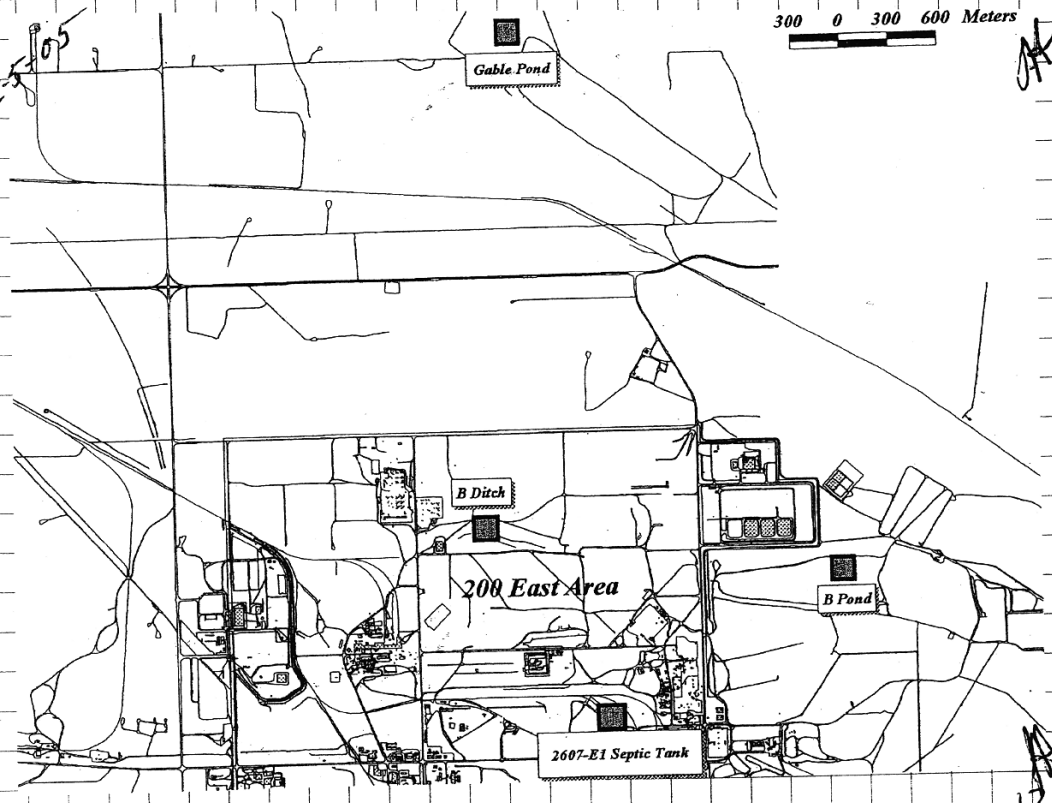
SAMPLE EVENT: (CONT.) ONE HECTARE GRIDS WERE STAKED AT EACH OF THE SITES WHERE DRIFT FENCES AND PIT TRAPS WERE INSTALLED TO AID IN THE COLLECTION OF INSECTS AND LIZARDS. THE COLLECTION OF MICE WILL BE DONE BY THE BIOLOGICAL CONTROL GROUP AND HELD IN THEIR CUSTODY UNTIL SHIPMENT TO THE DESIGNATED LAB. PER CUSTOMERS DIRECTION, INSECTS AND LIZARDS WILL BE COLLECTED ONCE EACH WEEK UNTIL ENOUGH SAMPLE VOLUME IS COLLECTED TO SATISFY ANALYTICAL REQUESTS. ALL SAMPLES WILL BE SURVEYED AND FREE ~~REALE~~ RELEASED BY THE HPT'S FROM LANDLORD RADIATION PROTECTION. ALL LIZARDS AND INSECTS WILL BE PLACED IN A LOCKED FREEZER IN THE 6269 BUILDING UNTIL SHIPMENT TO THE DESIGNATED LAB. SOIL AND PLANT SAMPLES WILL BE COLLECTED WHEN THE FINAL SAP IS RELEASED. DUE TO THE ONGOING PROCESS OF THIS SAMPLE EVENT, ALL ENTRIES IN THIS LOGBOOK WILL BE MADE CHRONOLOGICALLY.



NOTE: ONE MAP ATTACHED THIS PAGE

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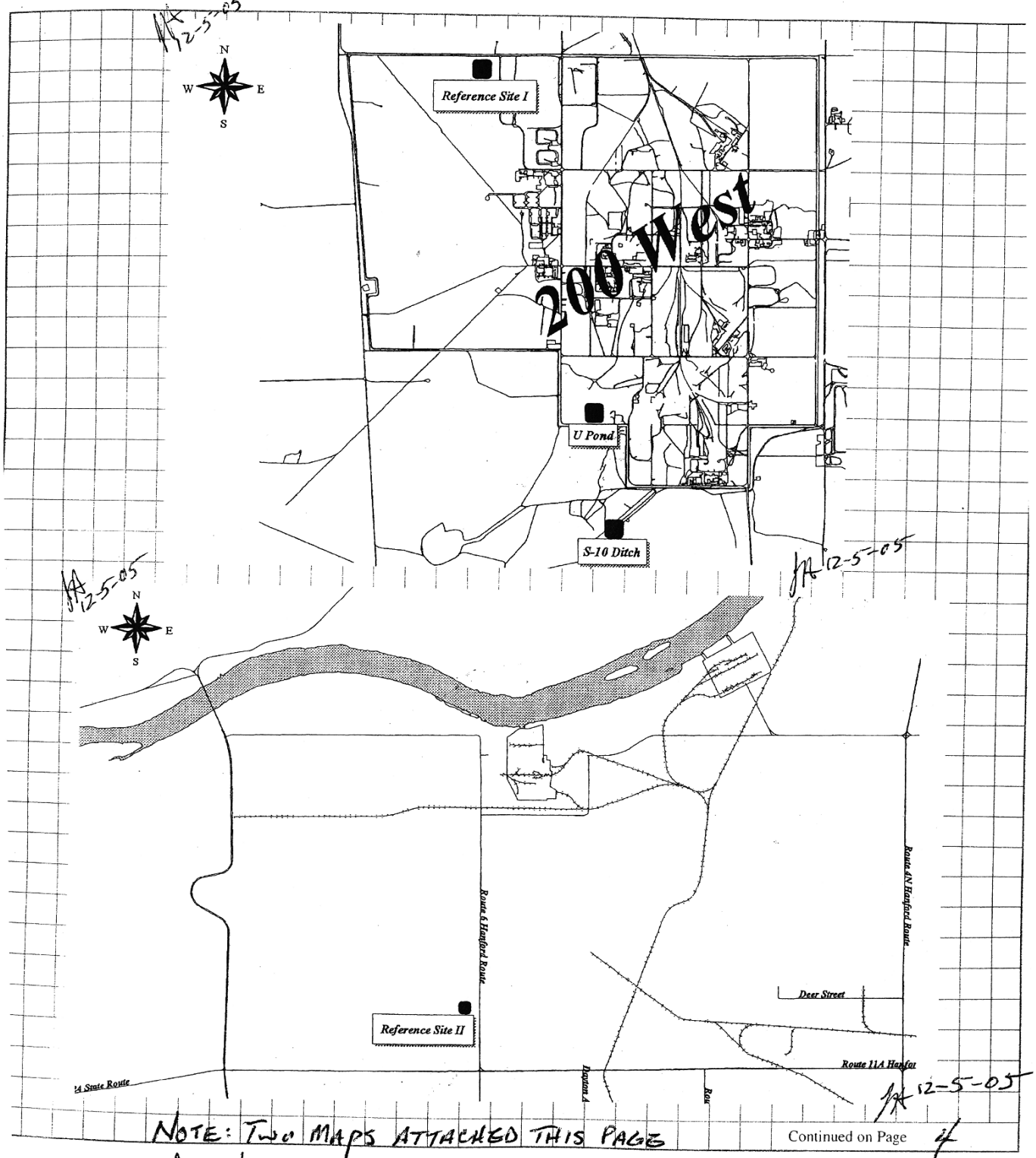

NOTE: TWO MAPS ATTACHED THIS PAGE

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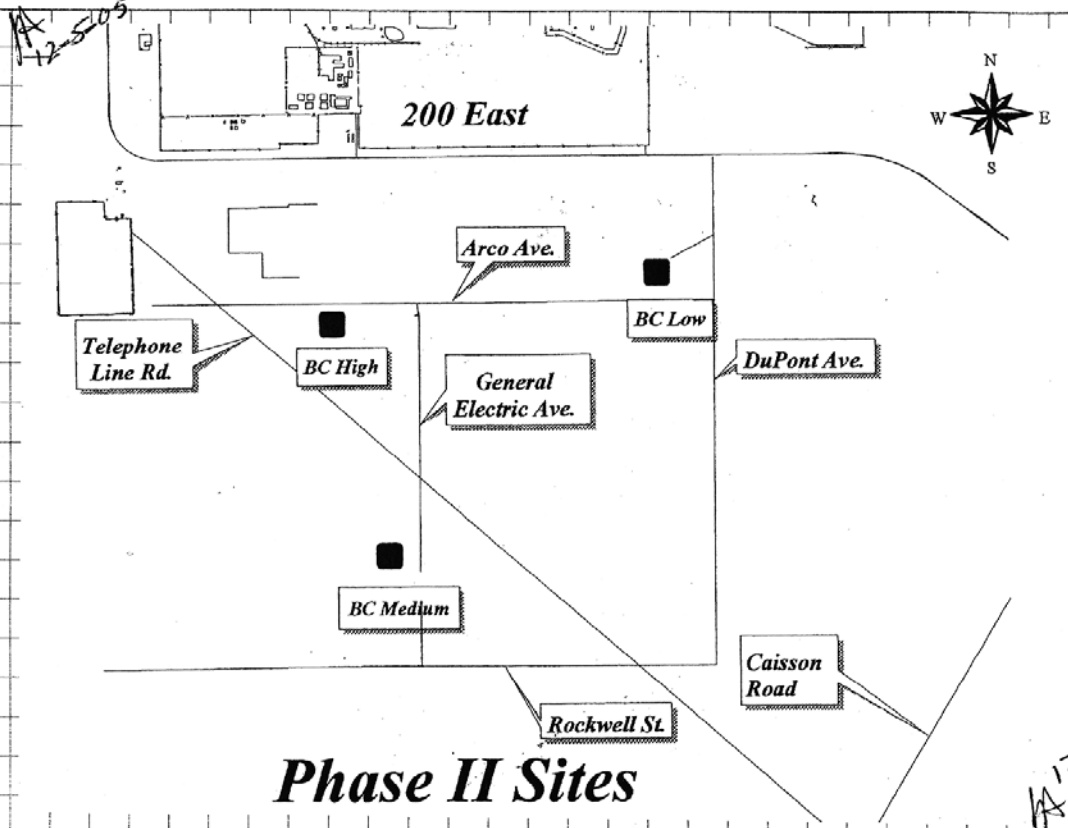
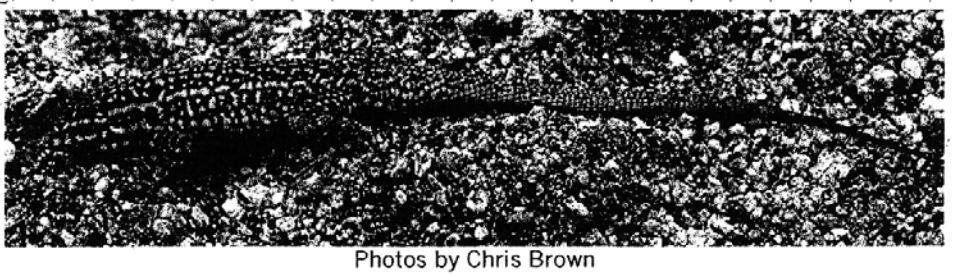
A 12-5-05



Phase II Sites

A 12-5-05

A 12-5-05



Photos by Chris Brown

Scientific name: *Uta stansburiana*

Common name: Side-Blotched Lizard

A 12-5-05

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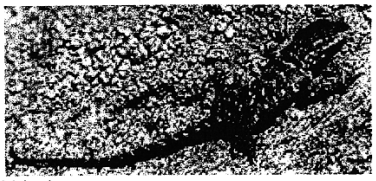
12-5-05

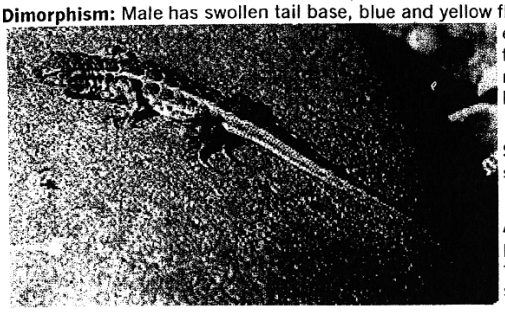
Size: 1.57-2.36 in (4.0-6.0 cm)

Distinguishing characters: A small species; a conspicuous bluish-black blotch on each side behind the forelimbs; dorsum blotched or spotted with blue, orange, yellow, brown and/or black; whitish to grey on venter; orange or light blue patch on throat, and no blue belly patches.



Juveniles: Similar to adult female in pattern; lacks blue-black spots on sides.

Dimorphism: Male has swollen tail base, blue and yellow flecks on mid-dorsal side, and enlarged postanal scales; female lacks blue and yellow mid-dorsal flecks and is blotched dorsally in brown and black.



Similar species: *Sceloporus occidentalis:* Have keeled, pointed dorsal scales; lack bluish-black spots on side behind forelimb.

Additional notes: A common species throughout the study area, but prefers open habitats with rock or sand.. This lizard is very common on the back dunes and south of the river along the mesa tops and steep slopes.

12-5-0

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4-12-05

BEGAN COLLECTION OF INSECTS AND LIZARDS FROM PHASE I SITES.

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12-5-05

COC's - 102782/102800

DATE: 4-12-05 **SAMPLER:** HOGAN

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: 0940 LEAVE: 0956	BEETLES: +20 SPIDERS: 10 ANTS: Ø MISC: CRICKETS (3)	WEATHER: OVERCAST, PARTLY SUNNY 48° CALM
B-Pond	ARRIVE: 1011 LEAVE: 1034	BEETLES: +20 SPIDERS: 3 ANTS: Ø MISC: CATERPILLAR (1) LIZARD (1)	
B-63 Ditch	ARRIVE: 0913 LEAVE: 0928	BEETLES: +20 SPIDERS: +20 ANTS: Ø MISC: CRICKETS (2) CATERPILLARS (5)	
2607-E6 Septic Tank	ARRIVE: 1043 LEAVE: 1101	BEETLES: 11 SPIDERS: 10 ANTS: Ø MISC: GRUBS (+20) CRICKET (1) CATERPILLAR (3)	
S-10 Ditch	ARRIVE: 1222 LEAVE: 1253	BEETLES: +20 SPIDERS: 5 ANTS: Ø MISC: CRICKET (1) GRASSHOPPER (1) LIZARDS (2)	DRIFT FENCE IN BAD SHAPE, SHIFTING SANDS UNDERCUT FENCE + FILLED BUCKETS WITH SAND. EMPTIED BUCKETS, UNABLE TO TOTALLY FIX FENCE. PITCANS OK.
U-Pond	ARRIVE: 1152 LEAVE: 1215	BEETLES: +20 SPIDERS: 1 ANTS: 3 MISC: GRASSHOPPER (1)	(2) PIT CANS HAD THE X BLOWN OFF. REPLACED + ADDED MORE ROCKS
Reference Site 1	ARRIVE: 1119 LEAVE: 1139	BEETLES: +20 SPIDERS: Ø ANTS: 2 MISC: CRICKETS (2) CATERPILLAR (1)	

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COC's 102789/102801

DATE: 4-19-05 SAMPLER: KB Hulse

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: 1217 LEAVE: 1246	BEETLES: 50+ SPIDERS: 20+ ANTS: 0 MISC: 1 cricket, 1 Lizard	
B-Pond	ARRIVE: 1135 LEAVE: 1200	BEETLES: 18 SPIDERS: 4 ANTS: 1 MISC: 2 catipillars, 1 cutworm	
B-63 Ditch	ARRIVE: 1055 LEAVE: 1125	BEETLES: 20+ SPIDERS: 20+ ANTS: 2 MISC: 1 CRICKET, 2 MAYFLIES	
2607-E6 Septic Tank	ARRIVE: 1020 LEAVE: 1045	BEETLES: 6 SPIDERS: 4 ANTS: 8 MISC: 2 centipeds, 30+ cutworms?	
S-10 Ditch	ARRIVE: 1358 LEAVE: 1410	BEETLES: 39 SPIDERS: 2 ANTS: 0 MISC: 2 catipillars, 1 CRICKET	1 Live mouse release Trap at #37 Filled Full of SAND
U-Pond	ARRIVE: 1336 LEAVE: 1350	BEETLES: 20+ SPIDERS: 2 ANTS: 1 MISC:	
Reference Site 1	ARRIVE: 1303 LEAVE: 1330	BEETLES: 20+ SPIDERS: 0 ANTS: 0 MISC: LIZARDS 3	1 Dead eaten mouse

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12-5-05

COC's 102788/102802

DATE: 4/25/05

SAMPLER: Hogan, Wall, Connolly

SITE	TIME	TYPE	COMMENTS
Cable Mountain Pond	ARRIVE: 1105 LEAVE: 1130	BEETLES: >20 SPIDERS: III = 3 ANTS: Ø MISC: Cricket: IIII = 4 Grub: 1 Lizard: 1	
B-Pond	ARRIVE: 1140 LEAVE: 1159	BEETLES: >20 SPIDERS: IIII = 4 ANTS: II = 2 MISC: Catapillar: 1 Cricket: 1 Mosquito Eater: 1 Potato Bug: 1 Lizard: 1	
B-63 Ditch	ARRIVE: 1209 LEAVE: 1227	BEETLES: >20 SPIDERS: ~~IIII~~ ~~IIII~~ II = 12 ANTS: Ø MISC: Cricket: 1 Potato Bug: 1 Catapillar: 1 Flying Insect: 1	
2607-E6 Septic Tank	ARRIVE: 1232 LEAVE: 1242	BEETLES: 15 SPIDERS: III = 3 ANTS: Ø MISC: Worm: ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ III = 23 Cricket: 1	
S-10 Ditch	ARRIVE: 1350 LEAVE: 1407	BEETLES: >20 SPIDERS: Ø ANTS: 1 MISC: Lizard: III = 3 Cricket: IIII = 4	1-Lizard Dead - looks like Beetles got to it.
U-Pond	ARRIVE: 1329 LEAVE: 1343	BEETLES: >20 SPIDERS: II = 2 ANTS: 1 MISC: Lizard: 1 Cricket: 1	
Reference Site 1	ARRIVE: 1259 LEAVE: 1321	BEETLES: >20 SPIDERS: 1 ANTS: Ø MISC: Lizard: II = 2 Scorpion: 1	

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12-5-05

COC's 102790/102805

DATE: 5-2-05 **SAMPLER:** HOGAN

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: 0845 LEAVE: 0910	BEETLES: +20 SPIDERS: 5 ANTS: (1) ~~0~~ MISC: ~~GR~~ CATERPILLAR (1) CRICKET	WEATHER: OVERCAST CALM, LIGHT RAIN 60° (2) LIZARDS
B-Pond	ARRIVE: 0922 LEAVE: 0941	BEETLES: +20 SPIDERS: 2 ANTS: ~~0~~ 3 MISC: MOSQUITO KILLER (2) GRUBS (3)	(1) LIZARD
B-63 Ditch	ARRIVE: 0951 LEAVE: 1008	BEETLES: +20 SPIDERS: 5 ANTS: ~~0~~ MISC: CRICKET (1) CATERPILLAR (1) GRUB (1)	(1) BLACK WIDOW
2607-E6 Septic Tank	ARRIVE: 1015 LEAVE: 1031	BEETLES: 13 SPIDERS: 5 ANTS: 3 MISC: GRUBS +20	
S-10 Ditch	ARRIVE: 1156 LEAVE: 1220	BEETLES: +20 SPIDERS: 2 ANTS: ~~0~~ MISC: CATAPILLAR (1) GRUBS (10) CENTIPEDE (1)	RELEASED 6 LIZARDS 5 MALES 1 FEMALE NO ABNORMALITIES NOTED
U-Pond	ARRIVE: 1128 LEAVE: 1149	BEETLES: +20 SPIDERS: 2 ANTS: 2 MISC: GRUB (1)	
Reference Site 1	ARRIVE: 1051 LEAVE: 1117	BEETLES: +20 SPIDERS: 5 ANTS: 1 MISC: GRASSHOPPER (1) CENTIPEDE (3)	(1) LIZARD

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12-5-05

COC's 102791

DATE: 5-9-05 SAMPLER: KJ Young

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	
B-Pond	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	
B-63 Ditch	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	
2 607-E6 Septic Tank	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	
S-10 Ditch (No lizard)	ARRIVE: ~~0910~~ KY 1046 LEAVE: 1117	BEETLES: 111 +9 = 39 SPIDERS: ANTS: MISC: worms = 2, cricket = 2, catapillar - 1	Overcast 61° F All Traps in good shape
U-Pond	ARRIVE: 1006 LEAVE: 1031	BEETLES: 11 + 7 = 27 SPIDERS: ANTS: MISC: cricket = 1	
Reference Site 1 (No lizard)	ARRIVE: 0910 LEAVE: 0948	BEETLES: 1111 + 3 = 43 SPIDERS: ANTS: MISC:	

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12-5-05

COC's 102792/102806

DATE: 5-9-05 SAMPLER: HOGAN

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: 0921 LEAVE: 0945	BEETLES: +20 SPIDERS: 10 ANTS: 1 MISC: 2 SCORPIANS 2 CRICKETS	OVERCAST, LIGHT RAIN 60° DRIFT FENCE CANS HAD WATER IN THEM (1) LIZARD
B-Pond	ARRIVE: 0958 LEAVE: 1020	BEETLES: +20 SPIDERS: 5 ANTS: 4 MISC: 2 CRICKETS 1 GRASSHOPPER	REMOVED DEAD MOUSE FROM CAN ON DRIFT FENCE. MOUSE WAS BEING EATEN BY BEETLES WITH ORANGE SPOTS
B-63 Ditch	ARRIVE: 1029 LEAVE: 1049	BEETLES: +20 SPIDERS: 10 ANTS: 2 MISC: 2 CRICKETS 1 GRASSHOPPER	
2607-E6 Septic Tank	ARRIVE: 1055 LEAVE: 1112	BEETLES: 15 SPIDERS: 10 ANTS: 4 MISC: GRUBS 10 CRICKET 1	REMOVED DEAD MOUSE FROM PIT CAN AT STAKE 41. MOUSE WAS BEING EATEN BY THE SAME TYPE OF BEETLES AS ABOVE.
S-10 Ditch	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	
U-Pond	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	
Reference Site 1	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	

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12-5-05

COC 102793

DATE: 5-16-05 SAMPLER: K. YOUNG & R. FOX

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: 1215 LEAVE: 1240	BEETLES: 50 SPIDERS: 3 ANTS: MISC: CRICKETS - 5 LADY BUGS - 1	OVERCAST 60-65°F Cloudy Lots of WATER IN Collection CANS
B-Pond	ARRIVE: 1135 LEAVE: 1155	BEETLES: 33 SPIDERS: 3 ANTS: MISC: CRICKETS - 4 GREEN BEETLE - 1	LOOKS LIKE IT MAY STORM 60-65°F Lots of WATER IN Collection CANS
B-63 Ditch	ARRIVE: 1040 LEAVE: 1100	BEETLES: 38 SPIDERS: 2 ANTS: MISC: CRICKETS - 5 LADY BUG - 1	OVERCAST 60-65°F
2607-E6 Septic Tank	ARRIVE: 1115 LEAVE: 1125	BEETLES: 8 SPIDERS: 3 ANTS: MISC: WORMS - 9	OVERCAST 60-65°F VERY FEW BUGS
S-10 Ditch	ARRIVE: 1000 LEAVE: 1025	BEETLES: 49 SPIDERS: 1 ANTS: 1 MISC: CRICKETS - 8 WORMS - 4	OVERCAST 60-65°F released one lizard
U-Pond	ARRIVE: 0926 LEAVE: 0947	BEETLES: 28 SPIDERS: 1 ANTS: 1 MISC: CRICKETS - 8 WORMS - 4	OVERCAST 60-65°F
Reference Site 1	ARRIVE: 0840 LEAVE: 0909	BEETLES: 83 SPIDERS: ANTS: MISC: CRICKETS - 4	OVERCAST 55-60°F

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JA 12-5-05

COC 102794

DATE: 5-23-05 **SAMPLER:** HOGAN

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: 0720 LEAVE: 0740	BEETLES: +20 SPIDERS: 3 ANTS: ~~0~~ MISC: (5) CRICKES (1) GRASSHOPPER	CLEAR, SW WIND 5-10 75° (1) LIZARD - MALE ~~REL~~
B-Pond	ARRIVE: 0755 LEAVE: 0809	BEETLES: +20 SPIDERS: ~~0~~ ANTS: 2 MISC: (2) CRICKETS	
B-63 Ditch	ARRIVE: 0814 LEAVE: 0833	BEETLES: +20 SPIDERS: 3 ANTS: 5 MISC: (1) CRICKET (1) GRASSHOPPER	
2607-E6 Septic Tank	ARRIVE: 0838 LEAVE: 0857	BEETLES: 3 SPIDERS: 3 ANTS: +20 MISC:	
S-10 Ditch	ARRIVE: 1026 LEAVE: 1045	BEETLES: +20 SPIDERS: 1 ANTS: 4 MISC: (10) CRICKETS (2) GRASSHOPPERS (10) GRUBS	PIT CAN AT POST 37 WAS FULL OF SAND.
U-Pond	ARRIVE: 0945 LEAVE: 1019	BEETLES: +20 SPIDERS: 5 ANTS: 5 MISC: (4) CRICKETS (1) CENTIPEDE (3) GRUBS	
Reference Site 1	ARRIVE: 0910 LEAVE: 0938	BEETLES: +20 SPIDERS: 5 ANTS: 5 MISC: (5) CRICKETS (1) GRASSHOPPER (2) GRUBS	(4) LIZARDS 1 DEAD 2 M 1 F RELEASED ALL

JA 12-5-05

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12-5-05

COC's 102795/102818

DATE: 5-31-05 **SAMPLER:** HOGAN

SITE	*TIME*	*TYPE*	*COMMENTS*
Gable Mountain Pond	ARRIVE: 0752 LEAVE: 0807	BEETLES: +20 SPIDERS: 6 ANTS: 0 MISC: CRICKET (3) SUNSPIDER (2)	OVERCAST SW 5-10 60°
B-Pond	ARRIVE: 0818 LEAVE: 0840	BEETLES: +20 SPIDERS: 4 ANTS: 0 MISC: CRICKET (1) GRUB (1)	(2) LIZARDS CAUGHT
B-63 Ditch	ARRIVE: 0846 LEAVE: 0908	BEETLES: +20 SPIDERS: 5 ANTS: 5 MISC: SUNSPIDER (1) CRICKET (3) GRUB (2)	(2) LIZARDS CAUGHT ONE WITH DEFORMED TAIL
2607-E6 Septic Tank	ARRIVE: 0915 LEAVE: 0940	BEETLES: 15 SPIDERS: 5 ANTS: 17 MISC: GRUBS (10) CENTIPEDES? (4)	
S-10 Ditch	ARRIVE: 1150 LEAVE: 1221	BEETLES: +20 SPIDERS: 5 ANTS: +20 MISC: CRICKETS (5) GRUB (2) MORMON CRICKET (1)	TOSSED (3) DEAD LIZARDS, RELEASED ONE LIVE LIZARD NO DEFORMITIES
U-Pond	ARRIVE: 1101 LEAVE: 1144	BEETLES: +20 SPIDERS: 10 ANTS: +20 MISC: CRICKETS (4) MORMON CRICKET (2)	
Reference Site 1	ARRIVE: 1022 LEAVE: 1049	BEETLES: +20 SPIDERS: 0 ANTS: 7 MISC: CRICKETS (4) MORMON CRICKETS (5) SUN SPIDER (1)	TOSSED (2) DEAD LIZARDS

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12-5-05

COC 102796

DATE: 6-6-05 **SAMPLER:** HOGAN

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	SITE CLOSED
B-Pond	ARRIVE: 1000 LEAVE: 1019	BEETLES: +20 SPIDERS: 3 ANTS: 8 MISC: MORMON CRICKET (1)	OVERCAST, 50° LIGHT RAIN
B-63 Ditch	ARRIVE: 1026 LEAVE: 1045	BEETLES: 15 SPIDERS: 7 ANTS: 17 MISC: CRICKET (1) GRUBS (2)	
2607-E6 Septic Tank	ARRIVE: 1051 LEAVE: 1110	BEETLES: 15 SPIDERS: 7 ANTS: 10 MISC: GRUBS (4)	
S-10 Ditch	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	SITE CLOSED
U-Pond	ARRIVE: 1123 LEAVE: 1143	BEETLES: +20 SPIDERS: 3 ANTS: 5 MISC: CENTIPEDE (1) CRICKET (1)	TOSSED (1) DEAD MOUSE FROM CAN ON DRIFT FENCE
Reference Site 1	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	SITE CLOSED

12-5-05

NOTE: PER CUSTOMERS DIRECTION SITES B-63 DITCH, S-10 DITCH AND REF SITE 1 CLOSED. ALL LIZARDS AND INSECTS COLLECTED. ONE FORM ATTACHED THIS PAGE

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Project 200 AREA ECOLOGICAL STUDY PHASE I + II

Notebook No. DTS-SAWS-H94

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6-9-05
BEGAN COLLECTION OF INSECTS AND LIZARDS FOR PHASE II, SAF# F05-027
12-5-05

DATE: 6-9-05 **SAMPLER:** HOGAN **COC's:** 102825

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0945 LEAVE: 1005	BEETLES: +20 SPIDERS: 2 ANTS: 3 MISC: (2) CRICKETS	CLEAR, CALM 70° REMOVED ONE DEAD MOUSE – LOTS OF ORANGE STRIPED BEETLES
BC CRIB MED RISK	ARRIVE: 1013 LEAVE: 1040	BEETLES: +20 SPIDERS: 1 ANTS: 0 MISC: (1) PRAYING MANTIS (1) CRICKET (1) GRASSHOPPER	
BC CRIB HIGH RISK	ARRIVE: 1044 LEAVE: 1102	BEETLES: +20 SPIDERS: 5 ANTS: 7 MISC: (3) GRASSHOPPERS (2) CRICKETS (1) SCORPIAN	REMOVED ONE DEAD LIZARD.
REF. SITE II	ARRIVE: 1125 LEAVE: 1158	BEETLES: +100 SPIDERS: 4 ANTS: 0 MISC: CRICKETS	TRAPS HAD BEEN OPENED WEEK EARLIER. CALLED R. MITCHELL LEFT MESSAGE. FILLED A 500 ML JAR. 90% OF INSECTS DEAD. REMOVED THREE DEAD MICE. CLEANED ALL TRAPS OUT.
	ARRIVE: LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	NOTE: PER CUSTOMERS DIRECTION, ALL BUGS COLLECTED FROM REF. SITE II ON 6-9-05 WERE DISPOSED OF ON 6-13-05 Hogan 12-5-05
	ARRIVE:	BEETLES: SPIDERS: ANTS:	

NOTE: ONE FORM ATTACHED THIS PAGE

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G. HOGAN

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COC'S 102797/102836

DATE: 6-13-05 **SAMPLER:** HOGAN

SITE	TIME	TYPE	COMMENTS
Gable Mountain Pond	ARRIVE: ~~0943~~ LEAVE:	BEETLES: SPIDERS: ANTS: MISC:	CLEAR SW WIND 60° 0-5 SITE CLOSED
B-Pond	ARRIVE: 1027 LEAVE: 1047	BEETLES: 15 SPIDERS: 6 ANTS: 4 MISC: GRUB (1)	COLLECTED (1) LIZARD RELEASED (2) MALE LIZARDS. ALL LIZARDS COLLECTED AT THIS SITE
B-63 Ditch	ARRIVE: 1006 LEAVE: 1019	BEETLES: 12 SPIDERS: 5 ANTS: 10 MISC: CRICKETS (2) GRUBS (3)	
2607-E6 Septic Tank	ARRIVE: 0943 LEAVE: 0959	BEETLES: 15 SPIDERS: 3 ANTS: 5 MISC: (1) GRUB (1) CRICKET	
U-Pond	ARRIVE: 1135 LEAVE: 1155	BEETLES: +20 SPIDERS: 3 ANTS: 10 MISC: (1) CRICKET	

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Signed Date Signed Date

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12-5-05

DATE: 6-13-05 SAMPLER: HOGAN COC's: 102826
HPT: VOLKMAN

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0812 LEAVE: 0835	BEETLES: +20 SPIDERS: 2 ANTS: 3 MISC: CRICKETS (2) SUN SPIDER (1) SCORPIAN (1)	CLEAR, CALM 60° REMOVED (2) DEAD MICE
BC CRIB MED RISK	ARRIVE: 0842 LEAVE: 0910	BEETLES: +20 SPIDERS: 5 ANTS: 7 MISC: CRICKETS (3) GRASSHOPPER (3)	REMOVED (1) LIVE MOUSE
BC CRIB HIGH RISK	ARRIVE: 0914 LEAVE: 0932	BEETLES: 15 SPIDERS: 3 ANTS: 7 MISC: GRASSHOPPER (1) CRICKET (1)	REMOVED (1) LIVE MOUSE, (1) DEAD MOUSE
REF. SITE II	ARRIVE: 1106 LEAVE: 1125	BEETLES: 10 SPIDERS: 5 ANTS: 15 MISC: (1) SCORPIAN (1) CRICKET	RELEASED (1) LIVE MOUSE

12-5-05

12-5-05

6-15-05

Invertebrate Collection and Identification Instructions

The samplers will keep track in the logbook of the numbers and general types of invertebrates captured at each site for each collection date.

Amber glass 500 m or 1000ml, wide-mouth bottles will be labeled for each study site and all invertebrates collected from that site will be placed in a single bottle labeled, "Collection".

Following each collection period, the invertebrates will be taken to the Radiological Control office, where the contents will then surveyed and released by a Health Physics Technician (HPT). They will then be transported to a controlled freezer and transferred into a second set of amber glass bottles having the same site identifier, but labeled as "Identification" bottles. Dr. Richard Zack, professor of entomology at Washington State University (WSU) for species identification, will then have access to these bottles for identification purposes. Following identification, the contents will then transferred to a third set of bottles in the freezer labeled "Laboratory".

Dr. Richard Zack will access the bottles labeled "Identification" for each site and will identify the invertebrate orders and/or families represented. He will then divide these into the two primary groups represented by mass and a third group consisting of all other invertebrates. These three groups will be weighed and then placed into separate labeled plastic bags and placed inside a third set of amber glass bottles labeled "Laboratory". When sufficient mass has been obtained for analyses, the samples for each location will be equally divided by mass into three subsamples for submittal to the WSCF laboratory.

12-5-05

DR ZACK ONSITE TO ID INSECTS FROM B-POND, GMP, S-10 DITCH AND REFERENCE SITE I.
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Continues from Page 18 PHASE I + II

12-5-05

DATE: 6-21-05 SAMPLER: JG Hogan KB Huge COC's: 102827 102843

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 1000 LEAVE: 1030	BEETLES: 20+ SPIDERS: 5 ANTS: 2 MISC: silver fish Grass hopper Jersalem Cricket	Trap by #37 was Knocked over Sunny Hot
BC CRIB MED RISK	ARRIVE: 1037 LEAVE: 1055	BEETLES: 20+ SPIDERS: 0 ANTS: 0 MISC: Velvet ants 6	1
BC CRIB HIGH RISK	ARRIVE: 1100 LEAVE: 1125	BEETLES: 20+ SPIDERS: 10 ANTS: 1 MISC: Sun spider Dead Cricket Velvet ant	2 Dead mouse 1 Lizard male #81 Black dot on Back 4 3/8" 1 3/4 3.2g
REF. SITE II	ARRIVE: 1225 LEAVE: 1245	BEETLES: 20+ SPIDERS: 5 ANTS: 1 MISC: Jersalem cricket SCORPION 2 SUN SPIDER	Hot Sunny 90+F NO WIND

12-5-05 12-5-05

COC 102798

DATE: 6-21-05 SAMPLER: JG Hogan/Huge

SITE	TIME	TYPE	COMMENTS
~~B-63 Ditch~~ 2607-E6 Septic Tank	ARRIVE: 1140 LEAVE: 1155	BEETLES: 20 SPIDERS: 4 ANTS: 2 MISC: Grubs 2 Cricket	Sunny Hot 90+F Light wind
~~2607-E6 Septic Tank~~ B-63 Ditch	ARRIVE: 1200 LEAVE: 1215	BEETLES: 2 SPIDERS: 10 ANTS: 10 MISC: Velvet ant 2	Sunny Hot Light wind
U-Pond	ARRIVE: 1255 LEAVE: 1310	BEETLES: 20+ SPIDERS: 6 ANTS: 2 MISC: 0	Dead Lizard #60 Sunny Hot No wind

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12-5-05

DATE: 6/28/05 SAMPLER: D.R. Brewington KB Hulse COC's: 102828 102847

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0920 LEAVE: 0945	BEETLES: 20+ SPIDERS: 5 ANTS: 4 MISC: Velvet ANT Lady Bug silver fish Grub ~~Grasshopper~~	Post #37 Trap Flattened Partly Cloudy Light Breeze 75°F
BC CRIB MED RISK	ARRIVE: 0955 LEAVE: 1030	BEETLES: 20+ SPIDERS: 4 ANTS: 2 MISC: Cricket Velvet ANT	Dead mouse Partly Cloudy, 75°F Light Breeze
BC CRIB HIGH RISK	ARRIVE: 1036 LEAVE: 1100	BEETLES: 15 SPIDERS: 8 ANTS: 3 MISC: silver fish Jerusalem cricket (2) Crickets	Lizard #85 Partly Cloudy, 75°F Light Breeze
REF. SITE II	ARRIVE: 1240 LEAVE: 1255	BEETLES: 20+ SPIDERS: 4 ANTS: 2 MISC: Scorpion silver fish	Partly Cloudy no wind 75°F

12-5-05

12-5-05

COC#s 102799 102846

DATE: 6-28-05 SAMPLER: DR. Brewington KB Hulse

SITE	TIME	TYPE	COMMENTS
B-63 Ditch	ARRIVE: 1138 LEAVE: 1155	BEETLES: 15 SPIDERS: 6 ANTS: 4 MISC: Cricket	Lizard Post #81
2607-E6 Septic Tank	ARRIVE: 1115 LEAVE: 1130	BEETLES: 10 SPIDERS: 1 ANTS: 2 MISC: Grubs (3)	Partly Cloudy 75°F, Light Breeze
U-Pond	ARRIVE: 1210 LEAVE: 1230	BEETLES: 20+ SPIDERS: 2 ANTS: 4 MISC: Grasshopper	#85 1/3 full of Dirt Dead Mouse

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12-5-05

DATE: 7/6/05 **SAMPLER:** KB Hulse **COC's:** 102840

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0845 LEAVE: 0920	BEETLES: 20+ SPIDERS: 5 ANTS: 3 MISC: Scorpions (3) Crickets (3) Grass Hopper (1)	78°F Sunny WIND 10-15 mph #85 pot Trap Knocked down
BC CRIB MED RISK	ARRIVE: 0930 LEAVE: 1010	BEETLES: 20++ SPIDERS: 3 ANTS: 8 MISC: Scorpions (3) Grasshopper 1 Grub	WINDY 80 Sunny
BC CRIB HIGH RISK	ARRIVE: 1015 LEAVE: 1045	BEETLES: 20+ SPIDERS: 2 ANTS: 8 Velvet MISC:	WINDY Hot Sunny
REF. SITE II	ARRIVE: 1310 LEAVE: 1330	BEETLES: 20 SPIDERS: 3 ANTS: MISC: (2) Scorpions	Hot Sunny 85°F WINDY

12-5-05

12-5-05

DATE: 7/6/05 COC #5 102823 102852 **SAMPLER:** KB Hulse

SITE	TIME	TYPE	COMMENTS
B-63 Ditch	ARRIVE: 1120 LEAVE: 1150	BEETLES: 15 SPIDERS: 5 ANTS: 15 velvete MISC: worm	Lizard #81 WINDY
2607-E6 Septic Tank	ARRIVE: 1055 LEAVE: 1110	BEETLES: 10 SPIDERS: 2 ANTS: 3 Velvet MISC: Grasshopper	Hot Wind 15-20 mph Sunny
U-Pond	ARRIVE: 1215 LEAVE: 1245	BEETLES: 12 SPIDERS: 3 ANTS: 2 MISC:	HOT WINDY 15-25 mph #85 1/3 full of Sand #81 Knocked down

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12-5-05

DATE: 7-11-05 SAMPLER: KB Hulse COC's: 102829

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0923 LEAVE: 0950	BEETLES: 20 SPIDERS: 3 ANTS: 2 MISC: Grasshoppers (2) Walking stick (1) Crickets (2)	Mostly Sunny 75°F 2 Dead mice at fence 1 live mouse at #81
BC CRIB MED RISK	ARRIVE: 1000 LEAVE: 1035	BEETLES: 20++ SPIDERS: 4 ANTS: 4 velvet MISC: Scorpion Silver Fish (2) Cricket	
BC CRIB HIGH RISK	ARRIVE: 1040 LEAVE: 1100	BEETLES: 20 SPIDERS: 4 ANTS: 4 MISC: cricket silverfish scorpion ~~Grub~~ worm	1 live mouse at fence
REF. SITE II	ARRIVE: 0840 LEAVE: 0900	BEETLES: 17 SPIDERS: 3 ANTS: MISC: (2) crickets (1) Scorpion	Partly cloudy 70°F

12-5-05

12-5-05

COC# 102824

DATE: 7-11-05 SAMPLER: KB Hulse

SITE	TIME	TYPE	COMMENTS
B-63 Ditch	ARRIVE: 1135 LEAVE: 1152	BEETLES: 12 SPIDERS: 6 ANTS: 9 velvet MISC: walking stick cricket (2)	Sunny 80°F
2607-E6 Septic Tank	ARRIVE: 1112 LEAVE: 1125	BEETLES: 5 SPIDERS: 5 ANTS: 1 MISC: worm	Sunny 80°F
U-Pond	ARRIVE: 1225 LEAVE: 1245	BEETLES: 7 SPIDERS: 1 ANTS: 3 MISC: cricket (1)	#81 Trap Blown Flat

12-5-05

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7-12-05 DELIVERED INSECTS FROM SITES GMP,

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7-12-05 (CONT.) S-10 DITCH, B-POND AND REF. SITE I TO WSCF LAB, CHAIN OF CUSTODY F05-018-001

JA 12-5-05

DATE: JUL 20 2005 **SAMPLER:** J.G. HOGAN **COC's:** 102837

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0846 LEAVE: 0909	BEETLES: +20 SPIDERS: 5 ANTS: 4 MISC: SCORPIAN (1)	HOT, CALM 80°
BC CRIB MED RISK	ARRIVE: 0916 LEAVE: 0955	BEETLES: +100 SPIDERS: 0 ANTS: 5 MISC: SCORPIANS (2)	
BC CRIB HIGH RISK	ARRIVE: 1000 LEAVE: 1025	BEETLES: +20 SPIDERS: 5 ANTS: 7 MISC: SCORPIAN (1) CATERPILLAR (2) CRICKET (4)	
REF. SITE II	ARRIVE: 1100 LEAVE: 1125	BEETLES: +20 SPIDERS: 5 ANTS: 7 MISC: SCORPIANS (2)	

JA 12-5-05

JA 12-5-05

COC#s 102857/102861

DATE: 7-19-05 **SAMPLER:** HOGAN

SITE	TIME	TYPE	COMMENTS
B-63 Ditch	ARRIVE: 1000 LEAVE: 1018	BEETLES: +20 SPIDERS: 2 ANTS: 10 MISC: SUNSPIDER (1) CATERPILLAR (1)	(1) LIZARD
2607-E6 Septic Tank	ARRIVE: 0938 LEAVE: 0951	BEETLES: +20 SPIDERS: 2 ANTS: 7 MISC: SUNSPIDER (1)	DRIFT FENCE STARTING TO FALL DOWN
U-Pond	ARRIVE: 1037 LEAVE: 1103	BEETLES: +20 SPIDERS: 4 ANTS: +20 MISC: SCORPIAN (1)	2 PITCANS HAD LIDS BLOWN OFF. ADDED MORE WEIGHT TO LIDS.

JA 12-5-05

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12-5-05

DATE: 7-25-05 **SAMPLER:** HOGAN **COC's:** 102838

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0840 LEAVE: 0900	BEETLES: +20 SPIDERS: 2 ANTS: 5 MISC: (1) SUN SPIDER (3) SCORPIANS	WEATHER: HOT 80+ CALM
BC CRIB MED RISK	ARRIVE: 0900 LEAVE: 0927	BEETLES: +20 SPIDERS: 1 ANTS: 5 MISC: (4) SCORPIANS	
BC CRIB HIGH RISK	ARRIVE: 0931 LEAVE: 0946	BEETLES: +20 SPIDERS: 1 ANTS: 10 MISC: (2) SCORPIANS	
REF. SITE II	ARRIVE: 1004 LEAVE: 1020	BEETLES: +20 SPIDERS: 2 ANTS: 1 MISC: (9) SCORPIANS	

12-5-05

12-5-05

COC#s 102858/102875

DATE: 7-25-05 **SAMPLER:** HOGAN

SITE	TIME	TYPE	COMMENTS
B-63 Ditch	ARRIVE: 1153 LEAVE: 1208	BEETLES: 12 SPIDERS: 5 ANTS: 10 MISC: (1) CRICKET	WEATHER: HOT 90+ CALM
2 607-E6 Septic Tank	ARRIVE: 1130 LEAVE: 1147	BEETLES: 15 SPIDERS: 5 ANTS: 2 MISC: (1) CATERPILLAR	
U-Pond	ARRIVE: 1232 LEAVE: 1251	BEETLES: 15 SPIDERS: 4 ANTS: 15 MISC: 0	(1) LIZARD

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8-1-05
BEGAN PHASE I SOIL SAMPLING, SAF # F05-029.
12-5-05

MULTI-INCREMENT SOIL SAMPLING METHOD

1.0 Applicability

The sampling method described here is for the collection of surface soil samples at the study sites designated in the Phase I terrestrial ecological sampling and analysis plan (SAP) for the Central Plateau on the Hanford Site (DOE/RL-2004-42-Rev. 0).

2.0 Sampling Design

The soil sampling plan (Section 3.3.4) designated in the SAP is based on a multi-increment method designed to control the fundamental error (FE), as well as the grouping and segregation error (GSE) for an average, based on collecting an adequate sample mass (Ramsey et al. 1989, Pitard 1993, Gy 1998, Gerlach and Nocerino 2000, Gerlach et al. 2002, Ramsey 2004, Smith 2004, Ramsey 2005).

The top 0 and 6 in (0 to 15 cm) of soil will be sampled to determine concentrations of potential contaminants within this interval. The study area for ecological risk investigations will be a 1 ha area, or 100 x 100 m divided into 10 m grid nodes. Of the 100 locations in the grid, 50 of the grids will be randomly stratified for surface sampling [0-6 in.] (0-15 cm). The 50 soil sample increments will be randomly selected within each grid and collected to provide a single multi-increment sample for laboratory analyses representing the 0-6-in. (0-15 cm) depth.

3.0 Sampling Equipment

Sampling equipment for this task will consist of the following: trenching shovels with a "scored' line, #4 and #10 12-inch sieves, bristle brushes, collection buckets, soil-leveling table, bubble levels, soil-leveling tools, RaKo sampling splitter and splitter sample-trays.

The RaKo sample splitters and other associated tools and equipment will be cleaned in accordance with procedure 2.5, *Laboratory Cleaning of Sampling Equipment* (DTS-SSPM-001) before use at the individual study sites.

4.0 Sampling Methods

Locate the sampling sites designated at the 50 grid locations within the study area. The specific area to be sampled should be undisturbed and largely free of vegetation.

4.1 Soil Sampling

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DTS-OEM-PLN-004, Rev. 0

1) Using the trenching shovel, work through the soil until the scored line is just covered.

2) Carefully lift the shovel so that the mounded soil collected is as intact as possible.

3) Allow Radiological Control Technician to conduct rad surveys as required.

4) Keeping the shovel level, use the appropriate soil-leveling tool to remove the excess soil.

5) Place the remaining soil into the #4 sieve located on the top of the collection-bucket and agitate as necessary to remove large cobbles and plant material. Remove the #4 sieve for access to the #10 sieve located directly beneath and reduce the selected soil material to the <2 mm size limit. Discard the remaining oversize material and use the bristle brush to remove any remaining soil and plant material.

6) Move to the next marked location and repeat the above process.

7) Following the collection of soil at 10 locations, designated a "sample run", transfer the collection bucket to the "sample splitting" location. Pick up a new collection-bucket and repeat the process for the next sample run. There will be a total of 5 sample runs per study site.

4.2 Sample Splitting

1) In preparation for sample splitting, locate as level an area as possible and set up the leveling table.

2) Using the adjustable legs and bubble levels, ensure that the leveling-table is steady and level in all dimensions. If necessary, use the 2 x 6 in planks to compensate for uneven terrain.

3) Place the RaKo sample splitter on the leveling-table. Place two of the sample collection trays in the proper position beneath the splitter.

4) Take the soils collected in run #1 and them introduce into the sample splitter feed-hopper tray, so that the soil is distributed evenly in the tray.

5) Grasp the handle of the feed hopper and carefully tip it on end so that it introduces the feed material into the splitter in a smooth, even fashion.

6) The introduction of soil into the splitter will result in two evenly divided samples. One of which will be retained for additional splitting and one, which will be discarded at the site. To eliminate bias in the tray selection, flip a coin to determine which of the two trays will be discarded.

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DTS-OEM-PLN-004, Rev. 0

7) After randomly selecting one of the trays of soil collected in run #1, reintroduce the tray into the feed hopper so that the bottom of the tray is covered evenly with soil. Repeat Step #5.

8) Weigh this sample to ensure that approximately 4 to 5 lbs of soil remains in the last collection tray. Place this final split from run #1 in an appropriate container (e.g. covered stainless steel bowl) until all of the sample runs have been completed.

9) When all five of the sample runs have been completed at a study site, the combined soils will be re-introduced to the splitter for final split(s) following the above Steps #4 through #7. Depending on the volume of material remaining, one or two final splits will be conducted in order to retain approximately 4 to 5 lbs of soil for submittal to the assigned laboratory for analyses. The designated Sample Authorization Form and/or sample management matrix will provide specific instructions on required bottles, holding times and special instructions for the laboratory analytical requirements.

PA 12-5-05

8-1-05 (CONT.)

0750 ON SITE GABLE MOUNTAIN POND. WEATHER IS CLEAR, N.W WIND 10-15 MPH 78°

PERSONNEL:	JG HOGAN	NCO/SAMPLER
	RT SICKLE	NCO/SAMPLER
	KJ YOUNG	NCO/SAMPLER
	KB HULSE	NCO/SAMPLER
	CR NELSON	HPT
	TW MILHAM	HPT SUPV.
	BL MITCHELL	DTS SAFETY
	TL REINING	NCO SUPV
	MC DORSEY	NEAR FIELD MONITORING TECH
	MG GARDNER	NCO MGR.
	RM MITCHELL	N.F.M./PIC

0800 R.M. MITCHELL HELD TAILGATE PRE-JOB. WENT OVER AHA-05-002 WITH B.L. MITCHELL

0825 BEGAN SOIL COLLECTION AT N.W. CORNER OF STAGGERED DESIGN. RANDOM NUMBER SELECTED BY PIC WAS 39- BLUE FLAGS WERE THEN PLACED WITHIN EACH SQUARE METER AT LOCATION 39.

0855 FINISHED FIRST RUN, 17.9 LBS COLLECTED OF VERY FINE POWDERY SOIL

0900 STARTED SECOND RUN

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Signed: J G Hogan Date: DEC 0 5 2005

Signed Date

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8-1-05 (CONT.)
0905 FINISHED FIRST MASS REDUCTION. TWO SPLITS PRODUCED 4.4 LBS
0919 FINISHED SECOND RUN. 18.4 LBS TOTAL SAME MATERIAL. HPT LEFT SITE FOR MORNING BREAK
0931 FINISHED SECOND MASS REDUCTION. TWO SPLITS PRODUCED 4.8 LBS
0937 HPT RETURNS
0940 STARTING THIRD RUN
1005 FINISHED THIRD RUN. 19.6 LBS TOTAL SAME MATERIAL
1010 STARTING FOURTH RUN
1015 FINISHED THIRD MASS REDUCTION. TWO SPLITS PRODUCED 4.8 LBS
1040 FINISHED FOURTH RUN. 19.4 LBS TOTAL SAME MATERIAL
1045 STARTING FIFTH RUN
1050 FINISHED FOURTH MASS REDUCTION TWO SPLITS PRODUCED 5.0 LBS
1110 FINISHED FIFTH RUN. 19.4 LBS TOTAL SAME MATERIAL
1116 FINISHED FIFTH MASS REDUCTION TWO SPLITS PRODUCED 5.0 LBS
1119 ADDING PREVIOUS SPLITS DIRECTLY INTO HOPPER DUE TO TOTAL VOLUME
1126 FINISHED FINAL MASS REDUCTION TWO SPLITS PRODUCED 5.8 LBS
1127 COLLECTING SAMPLE. SAMPLE B1DFR5 2.4 LBS, ~~SAMPLE~~ TO ENW, 1.6 LBS TO WSCF, 1.8 TO ARCHIVE BOTTLE
1145 LEFT SITE

12-5-05

Sample Point: **Gable Mountain Pond**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFR5	8/1/3897 / 1127	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF / F05029-001
B1DFR5	8/1/2005 / 1127	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. / F05029-002

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1410 DELIVERED SAMPLES TO WSCF LAB.
1520 DELIVERED SAMPLES TO ENW. ARCHIVE BOTTLE PLACED IN CUSTODY FRIDGE IN 6269 BLDG.
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JA 12-5-05

DATE: 8-1-05 **SAMPLER:** YOUNG **COC's:** 102839

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 1050 LEAVE: 1111	BEETLES: - 109 SPIDERS: - 1 ANTS: - 1 MISC: Scorpion - 3	
BC CRIB MED RISK	ARRIVE: 1117 LEAVE: 1149	BEETLES: - 266 SPIDERS: - 2 ANTS: - 0 MISC: - Scorpion - 3 Grasshopper - 2	
BC CRIB HIGH RISK	ARRIVE: 1152 LEAVE: 1220	BEETLES: - 88 SPIDERS: - 2 ANTS: - 0 MISC: Scorpion - 2 Grasshopper - 2	
REF. SITE II	ARRIVE: 1235 LEAVE: 1300	BEETLES: - 61 SPIDERS: - 1 ANTS: - 0 MISC: Scorpion - 6	

JA 12-5-05

JA 12-5-05

COC# 102859

DATE: 8-1-05 **SAMPLER:** KJ YOUNG

SITE	TIME	TYPE	COMMENTS
B-63 Ditch	ARRIVE: 1349 LEAVE: 1406	BEETLES: - 10 SPIDERS: - 1 ANTS: MISC: Grasshopper - 1	
2607-E6 Septic Tank	ARRIVE: 1320 LEAVE: 1335	BEETLES: - 9 SPIDERS: ANTS: MISC:	Flags are Falling down.
U-Pond	ARRIVE: 1416 LEAVE: 1429	BEETLES: 3 SPIDERS: ANTS: MISC: MOTH - 1	

JA 12-5-05

NOTE: TWO FORMS ATTACHED THIS PAGE

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8-2-05
0810 ON SITE AT B-POND, WEATHER CLEAR AND CALM 70°
PERSONNEL ON SITE: JG HOGAN NCO/SAMPLER
RT SICKLE NCO/SAMPLER
KJ YOUNG NCO/SAMPLER
DP CONNOLLY NCO/SAMPLER
CR NELSON HPT
MC DORSEY NFM
RM MITCHELL NFM/PIC
0830 R.M. MITCHELL HELD TAILGATE PRE-JOB. HPT'S ADDING ALPHA SURVEY FOR SOILS
0835 RUNNING EQUIPMENT BLANK USING CLEAN SILICA SAND. SAND POURED OVER CLEAN SHOVEL, SIEVES, BLOCK AND INTO BUCKET, BUCKET THEN POURED THROUGH THE CLEAN SPLITTER INTO THE TRAYS. SAND THEN SPOONED INTO VENDOR CLEANED SAMPLE BOTTLES. SAMPLE # B1DFR7
0842 BEGAN SOIL COLLECTION AT N.W CORNER OF STAGGERED DESIGN, RANDOM NUMBER SELECTED BY PIC WAS #19, BLUE FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #19.
0919 FINISHED FIRST RUN, 21.2 LBS OF DRY SOIL COLLECTED
0925 FINISHED FIRST MASS REDUCTION, TWO SPLITS PRODUCED ~~21.2 LBS~~ 5.4 LBS
0930 BEGAN 2ND RUN
1005 FINISHED 2ND RUN, 19.8 LBS OF SAME MATERIAL
1010 BEGAN 3RD RUN
1014 FINISHED 2ND MASS REDUCTION, TWO SPLITS PRODUCED 5.0 LBS
1040 FINISHED 3RD RUN, 22 LBS OF SAME MATERIAL
1043 BEGAN 4TH RUN
1047 FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 5.6 LBS
1119 FINISHED 4TH RUN, 21.2 LBS OF SAME MATERIAL
1125 FINISHED 4TH MASS REDUCTION, TWO SPLITS PRODUCED 5.2 LBS
1140 BEGAN 5TH RUN
1212 FINISHED 5TH RUN, 22 LBS OF SAME MATERIAL
1222 FINISHED 5TH MASS REDUCTION, TWO SPLITS PRODUCED 5.6
1230 ADDED ALL PREVIOUS SPLITS DIRECTLY INTO HOPPER DUE TO TOTAL VOLUME, FINISHED FINAL MASS REDUCTION, TWO SPLITS PRODUCED 6.6 LBS, COLLECTED

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8-2-05 (CONT)
SAMPLE B1DFR6, 2.8 LBS TO ENW, 2.0 LBS TO WSCF, 1.8 TO ARCHIVE BOTTLE
1250 LEFT SITE

12-5-05

Sample Point: **B-Pond**
Lead Sampler: **HOGAN, J.G.** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFR6	8/2/2005 / 1230	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF / F05029-005
B1DFR6	8/2/2005 / 1230	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. / F05029-004

12-5-05 12-5-05

Sample Point: **Equipment Blank**
Lead Sampler: **HOGAN, J.G.** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFR7	8/2/2005 / 0835	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF / F05029-005
B1DFR7	8/2/2005 / 0835	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. / F05029-004

12-5-05

NOTE: TWO FORMS ATTACHED THIS PAGE
1435 DELIVERED SAMPLE TO WSCF LAB. ARCHIVE BOTTLE STORED IN CUSTODY FRIDGE AT 6269 BLDG.
1515 DELIVERED SAMPLE TO ENW.
8-3-05
0645 DP CONNOLLY ON SITE AT B-63 DITCH, WEATHER CLEAR + CALM 72°
0700 PERSONNEL ON SITE:

JG HOGAN	NCO/SAMPLER
DP CONNOLLY	NCO/SAMPLER
CR NELSON	HPT
MC DORSEY	NFM
RM MITCHELL	NFM/PIC

0720 BEGAN SOIL COLLECTION AT N.W CORNER OF STAGGERED DESIGN, RANDOM NUMBER SELECTED BY PIC WAS #47, BLUE FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #47.
0750 FINISHED 1ST RUN, 19.8 LBS OF DRY SOIL COLLECTED Continued on Page 32

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8-3-05 (CONT.)
0800 BEGAN 2ND RUN
0822 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 5 LBS, K.B. HULSE, L.D. WALL AND F.M. HALL ONSITE, NCO'S/SAMPLERS
0824 FINISHED 2ND RUN, 19.0 LBS OF SAME MATERIAL
0835 FINISHED 2ND MASS REDUCTION, TWO SPLITS PRODUCED 5 LBS.
0852 FINISHED 3RD RUN, 19.0 LBS OF SAME MATERIAL
0858 FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 4.6 LBS.
0919 FINISHED 4TH RUN, 19.6 LBS OF MATERIAL
0924 FINISHED 4TH MASS REDUCTION, TWO SPLITS PRODUCED 4.8 LBS
0943 FINISHED 5TH RUN, 19.6 LBS OF MATERIAL
0952 FINISHED 5TH MASS REDUCTION, TWO SPLITS PRODUCED 4.8 LBS
0955 ADDED ALL PREVIOUS SPLITS INTO SPLITTER, FINISHED FINAL MASS REDUCTION, TWO SPLITS PRODUCED 5.6 LBS, COLLECTED SAMPLE B1DFR8, 2.4 LBS TO ENW, 1.6 LBS TO WSCF, 1.6 LBS TO ARCHIVE BOTTLE
1020 LEFT SITE

12-5-05

Sample Point: **B-63 Ditch**

Lead Sampler: **HULSE, K. B.** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFR8	8/3/2005 0955	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF F05029-008
B1DFR8	8/3/2005 0955	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. F05029-007

12-5-1

1315 DELIVERED SAMPLE TO WSCF LAB, STORED ARCHIVE BOTTLE IN CUSTODY FRIDGE AT 6269 BLDG.
1414 DELIVERED SAMPLE TO ENW
8-4-05
0644 ON SITE AT U-POND, WEATHER CLEAR & CALM 72°
PERSONNEL ON SITE: K.B. HULSE NCO/SAMPLER
D.P. CONNOLLY NCO/SAMPLER
DR BRENNINGTON NCO/SAMPLER
RR FOX NCO/SAMPLER
NOTE: ONE FORM ATTACHED THIS PAGE

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8-4-05 (CONT.)

CR NELSON HPT
MC DORSEY NFM/PIC

0715 BEGAN 1ST RUN AT NW CORNER OF STAGGERED DESIGN RANDOM NUMBER SELECTED BY PIC WAS #79, BLUE FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #79
0740 FINISHED 1ST RUN, 20.6 LBS OF DRY SANDY SOIL COLLECTED BEGAN 2ND RUN
0750 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 4.8 LB.
0802 FINISHED 2ND RUN, 22.4 LBS OF SAME MATERIAL
0806 FINISHED 2ND MASS REDUCTION, TWO SPLITS PRODUCED 5.6 LBS
0830 FINISHED 3RD RUN, 22.2 LBS OF MATERIAL, BEGAN 4TH RUN
0835 FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 5.6 LBS
0900 FINISHED 4TH RUN, 22.2 LBS OF MATERIAL, BEGAN 5TH RUN
0904 FINISHED 4TH MASS REDUCTION, TWO SPLITS PRODUCED 5.4 LBS
0937 FINISHED 5TH RUN, 20.8 LBS OF MATERIAL
0940 FINISHED 5TH MASS REDUCTION, TWO SPLITS PRODUCED 5.0 LBS
0947 ADDED ALL PREVIOUS SPLITS INTO SPLITTER, FINISHED FINAL MASS REDUCTION, TWO SPLITS PRODUCED 5.8 LBS, COLLECTE SAMPLE B1DFR9, 2.6 LBS TO ENW, 1.6 LBS TO WSCF, 1.6 LBS TO ARCHIVE BOTTLE.
1020 LEFT SITE

12-5-05

Sample Point: **U-Pond**
Lead Sampler: **HULSE, K. B.** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFR9	8/4/2005 0947	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF F05029-010
B1DFR9	8/4/2005 0947	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. F05029-009

12-05

1409 DELIVERED SAMPLE TO WSCF. STORED ARCHIVE BOTTLE IN CUSTODY FRIDGE AT 6269 BLDG.
1445 DELIVERED SAMPLE TO ENW.
NOTE: ONE FORM ATTACHED THIS PAGE.

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8-5-04
0900 CONTACTED BY B. TILLER OF ENW. HE STATED THAT WHEN SAMPLE BOTTLE BIDFR9 WAS OPENED THE SOIL WAS NOTICEABLY DAMP. JG HOGAN CONTACTED D.R. BRENINGTON, WHO HAD SHIPPED THE SAMPLE AND SHE STATED THAT SHE SINGLE BAGGED THE BOTTLE AND PLACED IT IN A COOLER ON PARTIALLY MELTED WET ICE. APPARENTLY THE DRY SOIL WICKED THE MOISTURE FROM THE MELTED ICE INTO THE BOTTLE. CONTACTED R.M. MITCHELL AND IT WAS DECIDED TO REPLACE THE ORIGINAL SAMPLE BOTTLE WITH THE ARCHIVE BOTTLE.
1015 DELIVERED ARCHIVE BOTTLE TO ENW. MADE FOLLOWING NOTATION ON CHAIN OF CUSTODY F05-029-009 "DUE TO POTENTIAL CONTAMINATION DURING SHIPMENT OF SAMPLE BIDFR9 ON 8-4-05 THE SAMPLE WAS REPLACED WITH THE ARCHIVE SAMPLE THAT HAD BEEN STORED IN THE CUSTODY FRIDGE AT THE 6269 BLDG.
JG HOGAN J Hogan 8-5-04/1015"

8-8-05
0645 ON SITE AT 2607-E6 SEPTIC FIELD, WEATHER CLEAR + CALM
PERSONNEL ON SITE:

KB HULSE	NCO/SAMPLER
RT SICKLE	NCO/SAMPLER
DP CONNOLLY	NCO/SAMPLER
CR NELSON	HPT
MC DORSEY	NFM
RM MITCHELL	NFM/PIC

0655 BEGAN 1ST RUN IN N.W CORNER OF STAGGERED DESIGN, RANDOM NUMBER #88 SELECTED BY PIC, BLUE FLAGS PLACED AT LOCATION #88 WITHIN EACH SQUARE METER.
720 FINISHED 1ST RUN, 18.2 LBS OF GRAVELLY SOIL COLLECTED, BEGAN 2ND RUN
725 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 4.4 LBS
730 MATERIAL BEING COLLECTED DURING 2ND RUN NOTICEABLY MORE ROCKIER, PER R.M. MITCHELL. ENTIRE SHOVELFUL POURED INTO SIEVES, LEVELING BLOCK NOT USED
745 FINISHED 2ND RUN, 13.8 LBS OF MATERIAL, BEGAN 3RD RUN BEGAN MASS REDUCTION OF 2ND RUN, DUE TO SMALLER VOLUME IN BUCKET, THE SPLITTING PROCESS WAS CHANGED AFTER CONSULTING R.M. MITCHELL. AFTER THE INITIAL SPLIT WAS DONE Continued on Page 35

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8-8-05 (CONT)
ONE OF THE TWO TRAYS WAS RE-INTRODUCED TO THE SPLITTER, SO THAT ONLY 1/4 WAS DISCARDED. THE REMAINING SOIL WAS SPLIT AGAIN TO PRODUCE 5.2 LBS.
0815 FINISHED 3RD RUN, 13.0 LBS VERY ROCKY SOIL. DURING SOIL COLLECTION HPT DETECTED ALPHA CONTAMINATION AT ONE LOCATION, SHOVELFUL WAS PLACED IN PLASTIC BAG, SUSPECTED RADON SOIL FROM 3RD RUN PLACED TO THE SIDE AWAITING RECOUNT.
0850 FINISHED 4TH RUN 15.8 LBS OF SOIL. DURING COLLECTION HPT DETECTED ALPHA AT FOUR LOCATIONS. EACH SHOVELFUL WAS PLACED IN A SEPARATE PLASTIC BAG DUE TO SUSPECTED RADON. SOIL FROM 4TH RUN PLACED TO THE SIDE AWAITING RECOUNT.
0912 FINISHED 5TH RUN, 17.2 LBS OF SOIL. DURING COLLECTION HPT DETECTED ALPHA AT THREE LOCATIONS, EACH SHOVELFUL WAS PLACED IN A SEPARATE PLASTIC BAG DUE TO SUSPECTED RADON, SOIL FROM 5TH RUN WAS PLACED TO THE SIDE AWAITING RECOUNT
0916 DECAY TIME FOR 3RD RUN COMPLETE. NO ACTIVITY DETECTED. REPEATED SAME MASS REDUCTION PROCESS AS DONE ON 2ND RUN. 4.8 LBS OF SOIL
0951 DECAY TIME FOR 4TH RUN COMPLETE. NO ACTIVITY DETECTED. REPEATED SAME MASS REDUCTION PROCESS AS BEFORE. 4.0 LBS OF SOIL
1013 DECAY TIME FOR 5TH RUN COMPLETE NO ACTIVITY DETECTED. REPEATED SAME MASS REDUCTION PROCESS AS BEFORE. 4.4 LBS OF SOIL
1020 ADDED ALL PREVIOUS SPLITS INTO SPLITTER, FINISHED FINAL MASS REDUCTION, TWO SPLITS PRODUCED 5.6 LBS. COLLECTED SAMPLE BIDFTO, 2.8 LBS TO ENW, 1.6 TO WSCF. THE ARCHIVE BOTTLE CONTAINED SOIL FROM EACH TRAY OF FINAL SPLIT, ARCHIVE BOTTLE WEIGHED 2.2 LBS.
1045 LEFT SITE.
1320 DELIVERED SAMPLE TO WSCF LAB. STORED ARCHIVE BOTTLE IN CUSTODY FRIDGE AT 6269 BLDG.
1435 DELIVERED SAMPLE TO ENW.

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8-8-2005 (CONT)

12-5-05

Sample Point: **2607 E-6 Septic Field**

Lead Sampler: **HULSE, K. B.** *Sample Matrix:* **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFT0	8/8/2005 0912	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF F05029-014
B1DFT0	8/8/2005 0912	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. F05029-013

12-5-0

12-5-05

DATE: 8-8 **SAMPLER:** HOGAN **COC's:** 102877 102882

SITE	*TIME*	*TYPE*	*COMMENTS*
BC CRIB LOW RISK	ARRIVE: 0843 LEAVE: 0913	BEETLES: +20 SPIDERS: 3 ANTS: 3 MISC: (12) SCORPIANS (2) CRICKETS	CLEAR CALM HOT
BC CRIB MED RISK	ARRIVE: 0920 LEAVE: 0941	BEETLES: +100 SPIDERS: 2 ANTS: 5 MISC: (7) SCORPIANS (2) CRICKETS	
BC CRIB HIGH RISK	ARRIVE: 0948 LEAVE: 1017	BEETLES: +100 SPIDERS: 3 ANTS: 4 MISC: (6) SCORPIANS (2) GRASSHOPPERS (1) PRAYING MANTIS	(1) JUVENILE LIZARD
REF. SITE II	ARRIVE: 1102 LEAVE: 1131	BEETLES: +20 SPIDERS: 2 ANTS: 2 MISC: (+20) SCORPIANS (2) CRICKETS	(2) JUVENILE LIZARDS

12-5-05

NOTE: TWO FORMS ATTACHED THIS PAGE

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8-8-05 (CONT.)
12-5-05

COC#s 102860/102881

DATE: 8/8/05 SAMPLER: HOGAN

SITE	TIME	TYPE	COMMENTS
2607-E6 Septic Tank	ARRIVE: 0800 LEAVE: 0832	BEETLES: +20 SPIDERS: 5 ANTS: 15 MISC: (1) SUNSPIDER (1) CRICKET	CLEAR, CALM 80°
U-Pond	ARRIVE: 1143 LEAVE: 1314	BEETLES: 10 SPIDERS: 3 ANTS: +20 MISC: Ø	CAPTURED ~~(4)~~ (5) LIZARDS BY KICKING THROUGH BRUSH, MOSTLY JUVENILES

12-5-05

NOTE: ONE FORM ATTACHED THIS PAGE

8-9-05

0640 ON SITE AT REFERENCE SITE I, WEATHER CLEAR CALM 74°
PERSONNEL ON SITE: KB HULSE NCO/SAMPLER
DP CONNOLLY NCO/SAMPLER
RT SICKLE NCO/SAMPLER
CR NELSON HPT
MC DORSEY NFM/PIC

0645 BEGAN 1ST RUN IN NW CORNER OF STAGGERED DESIGN, RANDOM NUMBER #90 SELECTED BY PIC, BLUE FLAGS PLACED AT LOCATION #90 WITHIN EACH SQUARE METER.
0730 FINISH 1ST RUN, 19.8 LBS OF VERY SANDY SOIL. BEGAN 2ND RUN.
0735 FINISH 1ST MASS REDUCTION, TWO SPLITS PRODUCED 5.0 LBS
800 FINISH 2ND RUN, 20.8 LBS OF SAME MATERIAL, BEGAN 3RD RUN
806 FINISH 2ND MASS REDUCTION, TWO SPLITS PRODUCED 5.2 LBS
820 FINISH 3RD RUN, 21.4 LBS OF SAME MATERIAL, BEGAN 4TH RUN
826 FINISH 3RD MASS REDUCTION, TWO SPLITS PRODUCED 5.4 LBS.
847 FINISH 4TH RUN, 20.2 LBS OF SAME MATERIAL, BEGAN 5TH RUN
853 FINISH 4TH MASS REDUCTION, TWO SPLITS PRODUCED 5.4 LBS.
910 FINISHED 5TH RUN 21.2 LBS OF SAME MATERIAL
915 FINISHED 5TH MASS REDUCTION, TWO SPLITS PRODUCED 5.6 LBS
920 ADDED ALL PREVIOUS SPLITS DIRECTLY INTO HOPPER DUE TO TOTAL VOLUME, FINISHED FINAL MASS REDUCTION. TWO

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8-9-05 (CONT.)
SPLITS PRODUCED 6.6 LBS. COLLECTED SAMPLE # B1DFT1, 2.8 LBS TO ENW, 1.5 LBS TO WSCF, 2.2 LBS TO ARCHIVE BOTTLE.
0930 LEFT SITE

12-5-05

Sample Point: **Reference Site 1**

Lead Sampler: **HULSE, K. B.** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFT1	8/9/2005 0910	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF F05029-016
B1DFT1	8/9/2005 0910	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. F05029-015

12-5-05

NOTE: ONE FORM ATTACHED THIS PAGE
1120 DELIVER SAMPLE TO WSCF LAB, STORE ARCHIVE BOTTLE IN CUSTODY FRIDGE AT 6269 BLDG.
1440 DELIVER SAMPLE TO ENW
8-11-05
0645 ON SITE AT 5'-10 DITCH, WEATHER CLEAR CALM 70°
PERSONNEL ON SITE:
DP CONNOLLY — NCO/SAMPLER
RR FOX — NCO/SAMPLER
RT SICKLE — NCO/SAMPLER
CR NELSON — HPT
MC DORSEY — NFM
RM MITCHELL — NFM/PIC
0650 BEGAN 1ST RUN IN NW CORNER OF STAGGERED DESIGN, RANDOM #4 PICKED BY PIC, BLUE FLAGS PLACED AT LOCATION #43 IN EACH SQUARE METER.
0720 FINISHED 1ST RUN. 22.2 LBS OF VERY DRY SAND. BEGAN 2ND RUN
0725 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 6.6 LBS
0732 HPT LEAVES SITE TO REPLACE PAM CORD.
0811 FINISHED 2ND RUN, 21.8 LBS OF SAME MATERIAL, BEGAN 3RD RUN
0815 FINISHED 2ND MASS REDUCTION, TWO SPLITS PRODUCED 5.4 LBS.
0843 FINISHED 3RD RUN, 25 LBS OF SAME MATERIAL, HPT DETECTED ALPHA CONTAMINATION ABOVE BACKGROUND AT SOME LOCATIONS, EACH SITE ABOVE BACKGROUND WAS PLACED IN A PLASTIC BAG AND SET ASIDE TO ALLOW POSSIBLE RADON TO DECAY OFF. BEGAN 4TH RUN

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08-11-05 (CONT.)
0912 FINISHED 4TH RUN. 27.6 LBS OF SAME MATERIAL. HPT DETECTE
MORE ALPHA ABOVE BACKGROUND. SITES WITH CONTAMINATION PLACED IN
PLASTIC BAGS TO ALLOW RADON TO DECAY OFF. BEGAN 5TH RUN
0935 FINISHED 5TH RUN, 25.7 LBS OF SAME MATERIAL. ALL SITES ABOV
BACKGROUND AGAIN PLACED IN PLASTIC BAGS TO ALLOW RADON TO DE
0945 DECAY TIME FOR 3RD RUN COMPLETE. HPT DETECTS NO CONTAMINA
FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 6.6 LBS
1015 DECAY TIME FOR 4TH RUN COMPLETE. NO ACTIVITY DETECTED. FINISHED
4TH MASS REDUCTION. TWO SPLITS PRODUCED 7.0 LBS
1037 DECAY TIME FOR 5TH RUN COMPLETE. NO ACTIVITY DETECTED. FINISH
5TH MASS REDUCTION, TWO SPLITS PRODUCED 7.2 LBS.
1045 B.L. FOLEY, DOE REPRESENTATIVE FOR CENTRAL PLATEAU ONS
R.M MITCHELL GOING OVER PROCESS WITH HIM.
1115 FINISHED FINAL MASS REDUCTION. DUE TO TOTAL VOLUME OF
PREVIOUS SPLITS, ALL MATERIAL POURED DIRECTLY INTO HOPPER. T
SPLITS PRODUCED 8 LBS OF MATERIAL. COLLECTED SAMPLE B1DF
NOTE: FINAL VOLUMES NOT RECORDED ON FIELD NOTES.
1130 LEFT SITE

12-5-05

Sample Point: **S-10 Ditch**

Lead Sampler: **CONNOLLY, DAN P** *Sample Matrix:* **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFT2	8/11/2005 1115	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF F05029-020
B1DFT2	8/11/2005 1115	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. F05029-019

12-5

NOTE: ONE FORM ATTACHED THIS PAGE
1245 DELIVERED SAMPLE TO WSCF, STORED ARCHIVE BOTTLE IN CUS
TODY FRIDGE AT 6269 BLDG.
1440 DELIVERED SAMPLE TO ENW.
8-15-05
0730 ON SITE GABLE MOUNTAIN POND, Q.C. REPLICATE SAMPLING,
CLEAR CALM 70°. PERSONNEL ON SITE: KB HULSE NCO/SAMPL
DP CONNOLLY NCO/SAMPLER
KJ YOUNG NCO/SAMPLER
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-15-05 (CONT.)

R.	BUMGARDNER	HPT
D	PHIPPS	HPT LEAD
B L	MITCHELL	DURATEK SAFETY
E	HURST	FLUOR SAFETY
MC	DORSEY	NFM
RM	MITCHELL	NFM/PIC

740 PRE-JOB HELD DUE TO NEW PERSONNEL ON SITE, NO SAFETY CONCERNS WERE RAISED. SAFETY TOPIC, HEAT STRESS
815 BEGAN 1ST RUN AT NW CORNER OF STAGGERED DESIGN. RANDOM NUMBER #62 CHOSEN BY PIC, BLUE FLAGS PLACED AT LOCATION 62 WITHIN EACH SQUARE METER.
846 FINISHED 1ST RUN, 24.4 LBS OF DRY POWDERY SOIL, HPT DETECTED ALPHA CONTAMINATION ABOVE BACKGROUND LEVELS AT SOME LOCATIONS, EACH SITE ABOVE BACKGROUND WAS PLACED IN A PLASTIC BAG AND SET ASIDE TO ALLOW POSSIBLE RADON TO DECAY OFF. BEGAN 2ND RUN.
918 FINISHED 2ND RUN, 20.8 LBS OF SAME MATERIAL. ALPHA CONTAMINATION AGAIN DETECTED. ALL AFFECTED SITES PLACED IN PLASTIC BAGS TO ALLOW FOR DECAY, BEGAN 3RD RUN.
945 FINISHED 3RD RUN, 19.6 LBS OF SAME MATERIAL. ALPHA CONTAMINATION AGAIN DETECTED. ALL AFFECTED SITES PLACED IN PLASTIC BAGS TO ALLOW FOR DECAY, BEGAN 4TH RUN
13 FINISHED 4TH RUN, 22.8 LBS OF SAME MATERIAL. ALPHA CONTAMINATION AGAIN DETECTED. ALL AFFECTED SITES PLACED IN PLASTIC BAGS TO ALLOW FOR DECAY. BEGAN 5TH RUN
35 FINISHED 5TH RUN, 24.2 LBS OF SAME MATERIAL, ALPHA CONTAMINATION AGAIN DETECTED. ALL AFFECTED SITES PLACED IN PLASTIC BAGS TO ALLOW FOR DECAY
50 DECAY TIME FOR 1ST RUN COMPLETE. NO ACTIVITY DETECTED RAN 1ST MASS REDUCTION, TWO SPLITS PRODUCED 6LBS OF MATERIAL
0 DECAY TIME FOR 2ND RUN COMPLETE. NO ACTIVITY DETECTED. RAN 2ND MASS REDUCTION, TWO SPLITS PRODUCED 5LBS OF MATERIAL
0 DECAY TIME FOR 3RD RUN COMPLETE. NO ACTIVITY DETECTED. RAN 3RD MASS REDUCTION, TWO SPLITS PRODUCED 5LBS OF MATERIAL
20 DECAY TIME FOR 4TH RUN COMPLETE. NO ACTIVITY DETECTED. RAN 4TH MASS REDUCTION, TWO SPLITS PRODUCED 5.6 LBS OF MATERIAL.
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8-15-05 (CONT.)
1136 DECAY TIME FOR 5TH RUN COMPLETE. NO ACTIVITY DETECTED. RAN 5T MASS REDUCTION, TWO SPLITS PRODUCED 6.2 LBS OF MATERIAL.
1207 FINISHED FINAL MASS REDUCTION. DUE TO TOTAL VOLUME OF PR VIOUS SPLITS, ALL MATERIAL ADDED DIRECTLY INTO HOPPER, TWO SP PRODUCED 6.8 LBS OF MATERIAL. COLLECTED SAMPLE B1DFT3, 2.6 LBS TO ENW, 1.8 LBS TO WSCF AND 2.2 LBS TO ARCHIVE BOTTLE.
1230 LEFT SITE

12-5-05

Sample Point: **Gable Mountain Pond/ Rep. 1**

Lead Sampler: **CONNOLLY, DAN P** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DFT3	8/15/2005 / 1207	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF / F05029-024
B1DFT3	8/15/2005 / 1207	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. / F05029-023

12-5-05

NOTE: ONE FORM ATTACHED THIS PAGE
1330 DELIVERED SAMPLES TO WSCF LAB. STORED ARCHIVE BOTTLE IN CUSTODY FRIDGE AT 6269 BLDG.
1420 DELIVERED SAMPLE TO ENW.
8-16-05
0630 ON SITE GABLE MOUNTAIN POND. Q.C. REPLICATE SAMPLING
WEATHER PARTLY CLOUDY, CALM, WARM 73°.
PERSONNEL ON SITE: DP CONNOLLY NCO/SAMPLER
DR BREWINGTON NCO/SAMPLER
KI YOUNG NCO/SAMPLER
R BUMGARDNER HPT
0730 JG HOGAN REPLACES D.P. CONNOLLY FOR TRAINING.
0750 M.C. DORSEY, NEAR FIELD MONITORING ON SITE.
0805 BEGAN 1ST RUN AT N.W. CORNER OF STAGGERED DESIGN. RANDOM NUMBER #16 CHOSEN BY PIC, BLUE FLAGS PLACED AT LOCATION 16 WITHIN EACH SQUARE METER.
0843 FINISHED FIRST RUN. DRY POWDERY SOIL. HPT DETECTED ALPHA CONTAMINATION >4 CPM AT POSTS 7, 21, 17, 15 AND 12. SOIL FROM THE SITES PLACED IN PLASTIC BAGS AND SET ASIDE TO ALLOW FOR POS IBLE RADON TO DECAY OFF. BEGAN 2ND RUN

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-16-05 (CONT.)
710 FINISHED 2ND RUN. SAME MATERIAL. HPT DETECTED ALPHA CONTAMINATION >4 CPM AT POSTS 24, 25, 37 AND 35. SOIL FROM THESE SITES PLACED IN PLASTIC BAGS TO ALLOW RADON TO DECAY OFF. BEGAN 3RD RUN
02 FINISHED 3RD RUN. SAME MATERIAL, HPT DETECTED ALPHA CONTAMINATION >4 CPM AT POST 64. SOIL PLACED IN PLASTIC BAG TO ALLOW RADON TO DECAY OFF. BEGAN 4TH RUN.
25 FINISHED 4TH RUN. SAME MATERIAL. HPT DETECTED ALPHA CONTAMINATION >4CPM AT POST 86. SOIL PLACED IN PLASTIC BAG TO ALLOW RADON TO DECAY OFF. BEGAN 5TH RUN.
50 FINISHED 5TH RUN. SAME MATERIAL, HPT DETECTED ALPHA CONTAMINATION >4 CPM AT POSTS 96, 109 AND 101. SOIL PLACED IN PLASTIC BAGS TO ALLOW RADON TO DECAY OFF.
15 DECAY TIME FOR 2ND RUN COMPLETE, NO ACTIVITY DETECTED. BEGAN MASS REDUCTION ON 23.8 LBS. TWO SPLITS PRODUCED 5.6 LBS
25 DECAY TIME FOR 1ST RUN COMPLETE. NO ACTIVITY DETECTED. BEGAN MASS REDUCTION ON 23.4 LBS. TWO SPLITS PRODUCED 5.8 LBS
30 DECAY TIME FOR 3RD RUN COMPLETE. NO ACTIVITY DETECTED. BEGAN MASS REDUCTION ON 23.8 LBS. TWO SPLITS PRODUCED 6.2 LBS.
34 DECAY TIME FOR 4TH RUN COMPLETE. NO ACTIVITY DETECTED. BEGAN MASS REDUCTION ON 24.8 LBS. TWO SPLITS PRODUCED 6.2 LBS
37 DECAY TIME FOR 5TH RUN COMPLETE. NO ACTIVITY DETECTED. BEGAN MASS REDUCTION ON 22.2 LBS. TWO SPLITS PRODUCED 5.6 LBS
45 FINISHED FINAL MASS REDUCTION. DUE TO TOTAL VOLUME OF PREVIOUS SPLITS, ALL MATERIAL ADDED DIRECTLY INTO HOPPER. TWO SPLITS PRODUCED 7.0 LBS. COLLECTED SAMPLE B1DNP7, 2.6 LBS TO ENW, 1.8 LBS TO WSCF AND 2.6 LBS TO ARCHIVE BOTTLE.

12-5-05 *Sample Point:* **Gable Mountain Pond/ Rep. 2**
Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DNP7	8/16/2005 1207	Gamma Spectroscopy (Co-60, Cs-137), Gamma Spec-Add on (Am-241, Ra-226, Ra-228)	NONE	500 m P	539578	WSCF F05029-026
B1DNP7	8/16/2005 1207	MULTI_INCREMENT_SAMPLE_PR	Cool to 4°C	1000 m aG	3114020	Energy NW Env. F05029-025

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Project ~~200 AREA ECOLOGICAL STUDY~~ PHASE I + II
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1220 ~~LEFT~~ JA SITE LEFT SITE
1335 DELIVERED SAMPLE TO WSCF LAB. STORED ARCHIVE BOTTLE IN CUSTODY FRIDGE AT 6269 BLDG
1502 DELIVERED SAMPLE TO ENW. PHASE I SOIL SAMPLING COMPLETE
JA 12-5-05

DATE: 8-18 SAMPLER: HOGAN COC's: 102878 102886

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0905 LEAVE: 0925	BEETLES: SPIDERS: CLOSED ANTS: MISC: FOR BUGS	(1) JUVENILE LIZARD POST 37
BC CRIB MED RISK	ARRIVE: 0930 LEAVE: 0955	BEETLES: SPIDERS: CLOSED ANTS: MISC: FOR BUGS	(1) JUVENILE LIZARD MOLTING POST 81
BC CRIB HIGH RISK	ARRIVE: 1000 LEAVE: 1020	BEETLES: SPIDERS: CLOSED ANTS: MISC: FOR BUGS	(1) DEAD JUVENILE LIZARD POST 6
REF. SITE II	ARRIVE: 1230 LEAVE: 1305	BEETLES: +20 SPIDERS: 1 ANTS: 3 MISC: SCORPIANS +20 LRG CRICKETS 5	

JA 12-5-05
JA 12-5-05

COC# 102885
DATE: 8-18-05 SAMPLER: HOGAN

SITE	TIME	TYPE	COMMENTS
2607-E6 Septic Tank	ARRIVE: 1130 LEAVE: 1210	BEETLES: 18 SPIDERS: 2 ANTS: 10 MISC:	WALKED ENTIRE SITE - 0 LIZARDS SPOTTED

JA 12-5-05

PER CUSTOMERS DIRECTION, PHASE I INSECTS AND LIZARDS COMPLETED. PHASE II INSECT SITES INSIDE BC CRIBS COMPLETED. NOTE: TWO FORMS ATTACHED THIS PAGE
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12-5-05

DATE: 8-22-05 SAMPLER: HOGAN COC's: 102879

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0940 LEAVE: 1000	BEETLES: SPIDERS: CLOSED ANTS: FOR MISC: BUGS	0 LIZARDS
BC CRIB MED RISK	ARRIVE: 1012 LEAVE: 1037	BEETLES: SPIDERS: CLOSED ANTS: FOR MISC: BUGS	0 LIZARDS
BC CRIB HIGH RISK	ARRIVE: 1042 LEAVE: 1110	BEETLES: SPIDERS: CLOSED ANTS: FOR MISC: BUGS	(1) LIZARD JUVENILE
REF. SITE II	ARRIVE: 1130 LEAVE: 1200	BEETLES: SPIDERS: CLOSED ANTS: FOR MISC: BUGS	0 LIZARDS

12-5-05

PER CUSTOMERS DIRECTION, PHASE II INSECTS COMPLETED.

8-24-05

0830 ON SITE AT WEATHER STATION IN THE 600 AREA FOR PRE-JOB ON SAF F05-035, 200 AREA ECOLOGICAL STUDY - ANALYSIS OF ASPHALT MATERIAL. PERSONNEL ON SITE; D.P. CONNOLLY/NCO, JG HOGAN/NCO, M.C. DORSEY/NFM, R.M. MITCHELL/NFM/PIC. SAMPLES TO BE COLLECTED FROM VARIOUS AREAS OF THE OLD ARC ROADS BETWEEN 200 WEST AND EAST AREAS. SAMPLE SITES TO BE SELECTED BY THE PIC AND THEN ENTERED INTO THE GPS SYSTEM. SEE MAP ON PAGE OF THIS LOGBOOK FOR LOCATIONS.

847 BEGINNING SAMPLE COLLECTION FROM ARC ROAD 1, E569240/N137101. LOOSE ASPHALT MATERIAL FROM ROADWAY COLLECTED IN A CLEAN STAINLESS STEEL BOWL, CRUSHED WITH CLEAN MALLET TO PROPER ANALYTICAL SIZE THEN PLACED INTO VENDOR CLEANED SAMPLE BOTTLES, COLLECTED SAMPLE B1DV27 AND DUPLICATE SAMPLE B1DV28.

NOTE: ONE FORM ATTACHED THIS PAGE

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8-24-05 (CONT.)
0905 COLLECTED SAMPLE B1DV29 FROM ARC ROAD 1, E569243/N13692
IN SAME MANNER AS BEFORE.
0915 TRAVEL TO ARC ROAD 2.
0925 COLLECTED SAMPLE B1DV30 FROM ARC ROAD 2, E569777/N13663
IN SAME MANNER.
0935 TRAVEL TO ARC ROAD 3.
0940 COLLECTED SAMPLE B1DV31 FROM ARC ROAD 3, E570493/N13627
IN SAME MANNER.
0950 TRAVEL TO ARC ROAD 4.
1000 COLLECTED SAMPLE B1DV32 FROM ARC ROAD 4, E571929/N135567
IN SAME MANNER
1310 DELIVERED SAMPLES TO WSCF LAB.

12-5-05

Sample Point: **ARC Road 1:E569240/N137101**
Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DV27	8/24/2005 0847	Activity Scan (Lab Specific)	None	60 m G	5129050	WSCF F05035-001
B1DV27	8/24/2005 0847	PCBs 8082	NONE	120 m aG	3310020	WSCF F05035-001
B1DV28	8/24/2005 0847	Activity Scan (Lab Specific)	None	60 m G	5129050	WSCF F05035-001
B1DV28	8/24/2005 0847	PCBs 8082	NONE	120 m aG	3310020	WSCF F05035-001

12-5-05

12-5-05

Sample Point: **ARC Road 1:E569243/N136924**
Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DV29	8/24/2005 0905	Activity Scan (Lab Specific)	None	60 m G	5129050	WSCF F05035-001
B1DV29	8/24/2005 0905	PCBs 8082	NONE	120 m aG	3310020	WSCF F05035-001

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Sample Point: **ARC Road 2:E569777/N136632**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DV30	8/24/2005 / 0925	Activity Scan (Lab Specific)	None	60 m G	5129050	WSCF / F05035-001
B1DV30	8/24/2005 / 0925	PCBs 8082	NONE	120 m aG	3310020	WSCF / F05035-001

12-5-0

12-5-05

Sample Point: **ARC Road 3:E570493/N136277**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DV31	8/24/2005 / 0940	Activity Scan (Lab Specific)	None	60 m G	5129050	WSCF / F05035-001
B1DV31	8/24/2005 / 0940	PCBs 8082	NONE	120 m aG	3310020	WSCF / F05035-001

12-5-0

12-5-05

Sample Point: **ARC Road 4:E571929/N135567**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DV32	8/24/2005 / 1000	Activity Scan (Lab Specific)	None	60 m G	5129050	WSCF / F05035-001
B1DV32	8/24/2005 / 1000	PCBs 8082	NONE	120 m aG	3310020	WSCF / F05035-001

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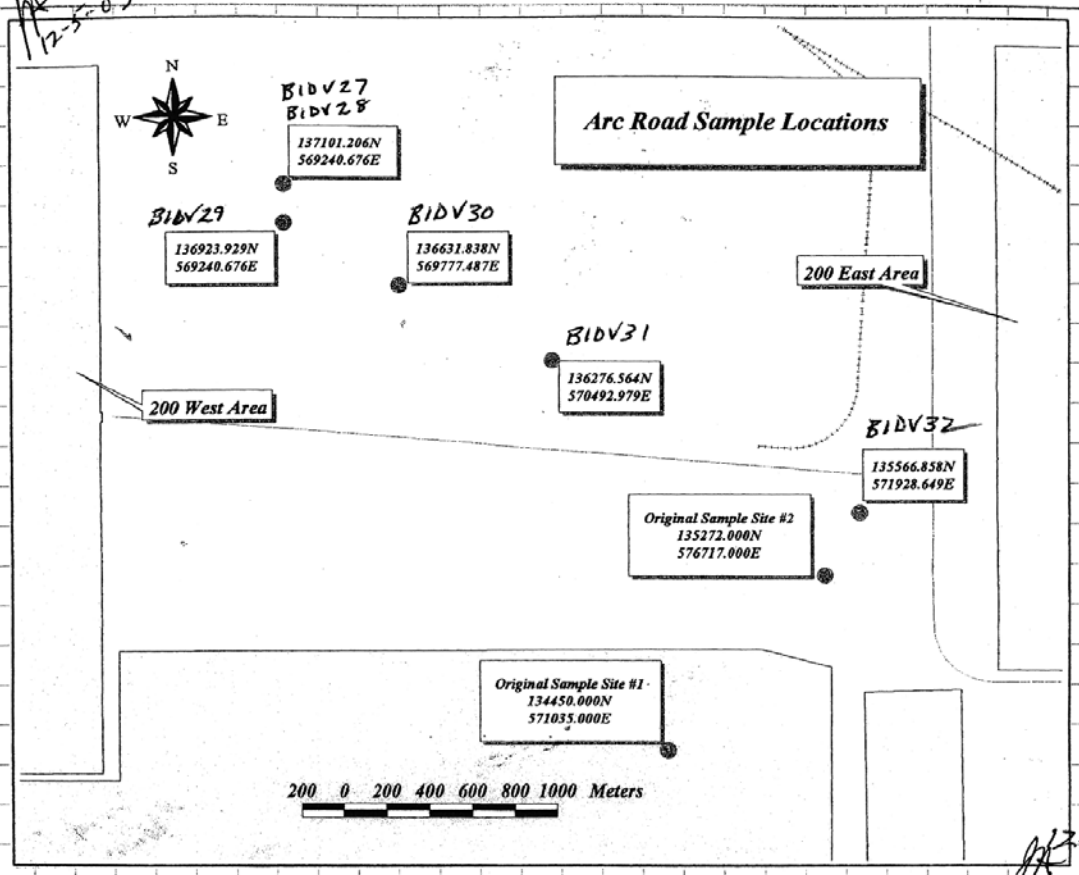

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SAF # F05-035. 200 Area Ecological Study-Asphalt material, Typical sample site.

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SAF # F05-035, 200 Area Ecological Study-Asphalt Material Typical sample material.

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NOTE: TWO PICTURES ATTACHED THIS PAGE.

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8-25-05
1450 DELIVERED PHASE I MICE TO ENW

12-5-05

MOUSE CAPTURE CHECKLIST

Date	Site	Stake #	HEIS #	Species	M/F	Weight	Repro. Status	Abnormalities
4/21/05	2607 E6	92	B1CVB0	DM	M	23G	N/A	N/A
4/25/05	2607 E6	84	B1CVB1	DM	M	18G	N/A	N/A
4/25/05	2607 E6	80	B1CVB2	DM	M	20G	N/A	N/A
4/25/05	2607 E6	91	B1CVB3	DM	F	16G	N/A	N/A
4/25/05	2607 E6	92	B1CVB4	DM	M	16G	N/A	N/A
4/26/05	2607 E6	92	B1CVB5	DM	M	17G	N/A	N/A
4/25/05	2607 E6	85		PM	M	10G	N/A	N/A released
4/25/05	2607 E6	83		PM	F	11G	N/A	N/A released
4/28/05	U-Pond	86	B1CVB6	PM	M	17G	N/A	N/A
4/28/05	U-Pond	95	B1CVB7	DM	M	10G	N/A	N/A
5/2/05	U-Pond	86	B1CVB8	PM	M	13G	N/A	N/A
4/28/05	GMP	85	B1CVB9	PM	M	14G	N/A	N/A
4/28/05	GMP	97	B1CVC0	PM	M	13G	N/A	N/A
4/29/05	GMP	93	BICVC1	PM	M	18G	N/A	N/A
5/2/05	GMP	97	B1CVC2	PM	M	13G	N/A	N/A
5/3/05	GMP	97	B1CVC3	PM	M	17G	N/A	N/A
5/5/05	GMP	85	B1CVC4	DM	M	15G	N/A	N/A
5/3/05	RS-1	92	B1CVC5	DM	M	24G	N/A	N/A Short Tail
5/3/05	RS-1	85	B1CVC6	DM	M	16G	N/A	N/A
5/4/05	RS-1	94	B1CVC7	DM	F	15G	N/A	N/A
5/5/05	RS-1	94	B1CVC8	DM	M	14G	N/A	N/A
5/5/05	RS-1	92	B1CVC9	DM	M	19G	N/A	N/A
5/9/05	RS-1	82	B1CVD0	DM	M	19G	N/A	N/A

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START - B-63 - 5-10-05
END 5-12-05

MOUSE CAPTURE CHECKLIST

	Date	Site	Stake #	HEIS #	Species	M/F	Weight	Repro. Status	Abnormalities
	5/11/05	B-63	95	BICVD1	DM	M	12G	N/A	N/A
	5/11/05	B-63	84	BICVD2	DM	M	19G	N/A	N/A
	5/11/05	B-63	83	BICVD3	DM	M	18G	N/A	N/A
	5/11/05	B-63	82	BICVD4	DM	M	15G	N/A	N/A
	5/11/05	U-POND	97	BICVD5	PM	M	17G	N/A	N/A
	5/11/05	U-POND	84	BICVD6	PM	M	14G	N/A	N/A
	5/12/05	B-63	84	BICVD7	DM	M	18G	N/A	N/A
	5/12/05	B-63	81	BICVD8	DM	M	11G	N/A	N/A 12000 DPM MO-206
REMOVE TRAPS →	5/13/05	U-POND	85	BICVD9	DM	F	21G	N/A	N/A
	5/13/05	B-POND	84	BICVE0	DM	M	20G	N/A	N/A
	5/13/05	B-POND	91	BICVF1	DM	M	11G	N/A	N/A
	5/17/05	B-POND	91	BICVF2	DM	M	19G	N/A	N/A
	5/18/05	B-POND	97	BICVF3	DM	M	18G	N/A	N/A
	5/18/05	B-POND	96	BICVF4	DM	M	12G	N/A	N/A
REMOVE →	5/19/05	B-POND	94	BICVF5	DM	M	10G	N/A	N/A
	5/25/05	S-10	63	BICVF6	PM	M	17G	N/A	N/A
	5/31/05	S-10	63	BICVF7	PM	M	18G	N/A	N/A
	6/1/05	S-10	63	BICVF8	DM	M	19G	N/A	N/A
	6/2/05	S-10	63	BICVF9	PM	M	15G	N/A	N/A
	6/2/05	S-10	96	BICVH0	PM	M	16G	N/A	N/A
REMOVED	6/9/05	S-10	63	BICVH1	PM	M	15G	N/A	N/A

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12-5-05

DATE: 8-30-05 **SAMPLER:** HULSE **COC's:** 102880

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0830 LEAVE: 0900	BEETLES: SPIDERS: ANTS: MISC: CLOSED	CLEAR CALM
BC CRIB MED RISK	ARRIVE: 0905 LEAVE: 0930	BEETLES: SPIDERS: ANTS: MISC: CLOSED	
BC CRIB HIGH RISK	ARRIVE: 0940 LEAVE: 1030	BEETLES: SPIDERS: ANTS: MISC: CLOSED	(2) JUVENILE LIZARDS
REF. SITE II	ARRIVE: 1100 LEAVE: 1140	BEETLES: SPIDERS: ANTS: MISC: CLOSED	

12-5-05

9-7-05
1400 DELIVERED ALL PHASE I LIZARDS TO ENW

12-5-05

LIZARD CAPTURE CHECKLIST PHASE I

Date	Site	Stake #	HEIS #	M/F	Weight	Total Length	Snout-Vent Length	Abnormalities
4/12	B-Pond	85	B1CV58	M	3 g	3 ½"	1 ¾"	None Detected
4/12	S-10	81	B1CV59	M	5 g	5"	2"	None Detected
4/12	S-10	81	B1CV60	M	2 g	4 ¼"	1 ¾"	None Detected
4/19	GMP	61	B1CV61	M	3 g	4 5/8"	1 ¾"	None Detected
4/19	RS1	81	B1CV62	J	1 g	2 ¼"	1 ½"	Withered tail
4/19	RS1	81	B1CV63	M	3 g	4 ¾"	1 ¾"	None Detected
4/19	RS1	85	B1CV64	M	3 g	5 1/8"	2"	None Detected
4/25	GMP	37	B1CV65	M	3.2 g	4 ½"	1 7/8"	None Detected

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LIZARD CAPTURE CHECKLIST PHASE I

Date	Site	Stake #	HEIS #	M/F	Weight	Total Length	Snout-Vent Length	Abnormalities
4/25	B-Pond	37	B1CV66	F	3.4 g	4 ¼"	1 ¾"	None Detected
4/25	RS1	85	B1CV67	F	3.4 g	4 ¼"	1 ¾"	None Detected
4/25	RS1	72	B1CV68	F	2.4 g	4 1/8"	1 ¾"	None Detected
4/25	U-Pond	85	B1CV69	J	2.4 g	3 7/8"	1 7/8"	None Detected
4/25	S-10	41	B1CV70	F	3.4 g	4 ¼"	1 7/8"	Looks fat, could be pregnant
4/25	S-10	84	B1CV71	M	2.4 g	4 ½"	1 7/8"	Dead
4/25	S-10	74	B1CV72	M	3.0 g	4 ½"	1 7/8"	None Detected
4/25	S-10	74	B1CV73	F	1.7 g	3 ¼"	1 ½"	Shedding it's skin
5/2	GMP	41	B1CV74	F	2.4 g	3 7/8"	1 ½"	None Detected
5/2	GMP	37	B1CV75	M	3.3 g	4 5/8"	1 ¾"	None Detected
5/2	B-Pond	41	B1CV76	M	4.3 g	3 3/8"	1 7/8"	Missing end of tail.
5/2	RS1	61	B1CV77	M	2.9 g	4 ½"	1 7/8"	Shedding it's skin.
5/9	GMP	37	B1CV78	M	2.4 g	3 ½"	1 5/8"	Tip of tail discolored
5/23	GMP	37	B1CV79	M	2.1 g	4 ½"	1 ¾"	None
5/31	B-Pond	41	B1CV80	F	2.4 g	4 5/8"	2"	None
5/31	B-Pond	81	B1CV81	M	2.3 g	4 ½"	1 ¾"	None
5/31	B-63	81	B1CV82	M	2.6 g	2 ¾"	1 7/8"	Deformed tail. Has extra lump growing from s side
5/31	B-63	41	B1CV83	F	2.8 g	4 ¼"	1 7/8"	None
6/13	B-Pond	41	BICV84	M	3.8 g	3 ¾"	2 "	Tail appears to have re-grown.
6/28	B-63	81	B1CV85	F	3.4 g	3 1/8"	1 7/8"	Tail wilted on end
7/6	B-63	81	B1CV86	M	2.8 g	4 ¾"	2"	None
7/13	B-63	72	B1CV87	J	0.4 g	2"	7/8"	None

12-5-0

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12-5-05

LIZARD CAPTURE CHECKLIST PHASE I

Date	Site	Stake #	HEIS #	M/F	Weight	Total Length	Snout-Vent Length	Abnormalities
7/25	U-Pond	50	B1CV88	J	0.6 g	2 3/8"	1 1/8"	None
8/8	U-Pond	81	B1CV89	J	0.2 g	1 5/16"	1"	Lost Tail
8/8	U-Pond	64	B1CV90	F	2.3 g	2 ¼"	1 7/8"	Lost Tail
8/8	U-Pond	81	B1CV91	J	0.9 g	3 ¼"	1 ¼"	None
8/8	U-Pond	105	B1CV92	J	0.4 g	2 ½"	1 1/16"	None

12-5-05

12-5-05

DATE: 9-8-05 **SAMPLER:** Hulse **COC's:** 102895

SITE	TIME	TYPE	COMMENTS
BC CRIB LOW RISK	ARRIVE: 0900 LEAVE: 0930	BEETLES: SPIDERS: ANTS: MISC: CLOSED	(1) JUVENILE LIZARD
BC CRIB MED RISK	ARRIVE: 0940 LEAVE: 1010	BEETLES: SPIDERS: ANTS: MISC: CLOSED	(1) JUVENILE LIZARD
BC CRIB HIGH RISK	ARRIVE: 1020 LEAVE: 1100	BEETLES: SPIDERS: ANTS: MISC: CLOSED	
REF. SITE II	ARRIVE: 1130 LEAVE: 1200	BEETLES: SPIDERS: ANTS: MISC: CLOSED	

12-5-05

NOTE: TWO FORMS ATTACHED THIS PAGE.
9-8-05 PER CUSTOMERS DIRECTION PHASE II LIZARDS COMPLETED.
9-13-05
DR RICHARD ZACK, ENTOMOLOGIST FROM WSU, ON SITE TO ID ALL REMAINING INSECTS FROM PHASE I + II.

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Project 200 AREA ECOLOGICAL STUDY PHASE I + II Notebook No. DTS-SAWS-H94

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9-13-05

0800 BEGAN PHASE II SOIL SAMPLING, SAF# F05-030. PRE-IOB CONDUCTED COVERING REVISED AHA. WEATHER CLEAR, WARM 75°

PERSONNEL ON SITE: KT YOUNG NCO/SAMPLER
DP CONNOLLY NCO/SAMPLER
RR FOX NCO/SAMPLER
KG VOLKMAN HPT
MC DORSEY NFM/PIC

0845 BEGAN SOIL COLLECTION AT N.W CORNER OF STAGGERED DESIGN, RANDOM NUMBER SELECTED BY PIC WAS #74, BLUE FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #74

0910 FINISHED 1ST, 26 LBS OF DRY SANDY SOIL. BEGAN 2ND RUN

0918 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 6.8 LBS.

0930 FINISHED 2ND RUN, 25.8 LBS OF SAME MATERIAL. BEGAN 3RD RUN

0935 FINISHED 2ND MASS REDUCTION, TWO SPLITS PRODUCED 7.0 LBS

0945 FINISHED 3RD RUN, 23 LBS OF SAME MATERIAL. BEGAN 4TH RUN

0952 FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 7.1 LBS

1000 FINISHED 4TH RUN, 23 LBS OF SAME MATERIAL, BEGAN 5TH RUN

1007 FINISHED 4TH MASS REDUCTION, TWO SPLITS PRODUCED 8.1 LBS

1016 FINISHED 5TH RUN, 24.6 LBS OF SAME MATERIAL

1020 FINISHED 5TH MASS REDUCTION, TWO SPLITS PRODUCED 7.2 LBS

1030 FINISHED FINAL MASS REDUCTION, DUE TO TOTAL VOLUME OF PREVIOUS SPLITS, ALL MATERIAL ADDED DIRECTLY TO HOPPER. TWO SPLITS PRODUCED 8.6 LBS. COLLECTED SAMPLE B1DY24, 2.8 LBS TO ENW 1.8 LBS TO WSCF, 2.8 LBS TO ARCHIVE BOTTLE.

1100 LEFT SITE

1130 SAMPLE MATERIAL WAS PLACED IN PROPER SAMPLE BOTTLES. SAF F05-030 HAS SAMPLES ONLY GOING TO WSCF. ARCHIVE MATERIAL PLACED IN 500 mL POLY JAR. SAMPLE MATERIAL FROM ENW BOTTLE SPOONED INTO 60 mL aL SAMPLE BOTTLE. LEFTOVER MATERIAL DISCARDED. SAMPLES STORED IN CUSTODY FRIDGE IN 6269 BLDG. PER CUSTOMERS DIRECTION, ALL PHASE II SOIL SAMPLES WILL BE DELIVERED TO WSCF LAB AS A BATCH. DUE TO THE FACT THAT NO CHEMICAL ANALYSIS ARE BEING COLLECTED, CUSTOMER DIRECTED SAMPLERS TO STEAM CLEAN ALL SAMPLE EQUIPMENT ONLY BETWEEN SITES AFTER HPT RELEASE.

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Project 200 AREA ECOLOGICAL STUDY PHASE I + II Notebook No. DTS-SAMS-H94 55
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9-13-05 (CONT.)
12-5-05

Sample Point: **Reference Site II**
Lead Sampler: **CONNOLLY, DAN P** *Sample Matrix:* **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DY24	9/13/2005 1030	Gamma Spectroscopy (Cs-137)	NONE	500 m P	539578	WSCF F05030-001
B1DY24	9/13/2005 1030	pH-150.1	NONE	60 m aG	7217030	WSCF F05030-001

12-5-05

9-14-05
0800 PRE JOB AT M0407. WENT OVER RWP, GW-05-019, "HIGH RISK SOIL SAMPLING." PPE REQUIREMENTS FOR HIGH LEVEL SITE IN BC CRIB AREA ARE ONE SET OF SWP'S, APR AND LAPEL AIR MONITORS. PER T.J. RUED, LEAD HPT, PPE REQUIREMENTS WILL BE RELAXED AFTER LAPEL MONITORS ARE COUNTED.
0815 ON SITE, BC CRIBS, HIGH SITE. CONTAMINATION AREA. WEATHER IS CLEAR CALM 80°F. PERSONNEL ON-SITE: K.J YOUNG NCO/SAMPLER
KB HULSE NCO/SAMPLER
D P CONNOLLY NCO/SAMPLER
K G VOLKMAN HPT
MC DORSEY NFM/PIC
0830 BEGAN SOIL COLLECTION IN NW CORNER OF STAGGERED DESIGN. RANDOM NUMBER SELECTED BY PIC WAS #40. BLUE FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #40.
0900 FINISHED FIRST RUN. NO CONTAMINATION DETECTED. 25.6 LBS OF VERY DRY SANDY SOIL. BEGAN 2ND RUN.
0908 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 6 LBS
0954 FINISHED 2ND RUN. NO CONTAMINATION DETECTED, 28.0 LBS OF SAME MATERIAL, BEGAN 3RD RUN.
1000 FINISHED 2ND MASS REDUCTION, TWO SPLITS PRODUCED 7.9 LBS
1010 FINISHED 3RD RUN. NO CONTAMINATION DETECTED, 25.1 LBS OF SAME MATERIAL. ON HOLD AWAITING HPT INSTRUMENT REPAIR.
1215 FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 7.7 LBS.
1222 BEGAN 4TH RUN.
NOTE: ONE FORM ATTACHED THIS PAGE

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Project 200 AREA ECOLOGICAL STUDY PHASE I + II

Notebook No. DTS-SAWS-H94

Continues from Page B5

9-14-05 (CONT.)

1042 FINISHED 4TH RUN, NO CONTAMINATION DETECTED, 28.8 LBS OF SAME MATERIAL. STARTED 5TH RUN

1047 FINISHED 4TH MASS REDUCTION, TWO SPLITS PRODUCED 8.0 LBS.

1102 FINISHED 5TH RUN, NO CONTAMINATION DETECTED, 31.6 LBS OF SAME MATERIAL.

1105 FINISHED 5TH MASS REDUCTION, TWO SPLITS PRODUCED 7.8 LBS

1109 FINISHED FINAL MASS REDUCTION, DUE TO TOTAL VOLUME OF PREVIOUS SPLITS, ALL MATERIAL ADDED DIRECTLY TO HOPPER. SPLIT MATERIAL THREE TIMES DUE TO REQUIRED VOLUME CHANGES. COLLECTED SAMPLE B1DY26. WSCF SAMPLE IN 500 ml 1.8, 60 ml 0.4, ARCHIVE BOTTLE 2.2. ALL MATERIAL USED

1130 SHIPPED SAMPLES TO 6269 BLDG ON BLUE CARD "SITE-03-EXCEPTED #116. SAMPLES STORED IN RMA AREA OF CUSTODY FRIDGE. ALL SAMPLE EQUIPMENT TAKEN TO PIPEYARD AND STEAM CLEANED WITH NON-POTABLE WATER.

*LATE ENTRY, AT 0841 AN EQUIPMENT BLANK OF CLEAN SILICA SAND WAS COLLECTED. THE SAND WAS POURED OVER A CLEAN SHOVEL, LEVELER AND BUCKET, THEN WAS POURED INTO THE SPLITTER. SAMPLE # B1DY25.

12-5-05

Sample Point: **Equipment Blank**

Lead Sampler: **CONNOLLY, DAN P** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DY25	9/14/2005 / 0841	Gamma Spectroscopy (Cs-137)	NONE	500 m P	539578	WSCF / F05030-001
B1DY25	9/14/2005 / 0841	pH-150.1	NONE	60 m aG	7217030	WSCF / F05030-001

12-5-05

12-5-05

Sample Point: **BC Crib Soil/ High**

Lead Sampler: **CONNOLLY, DAN P** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DY26	9/14/2005 / 1109	Gamma Spectroscopy (Cs-137)	NONE	500 m P	539578	WSCF / F05030-001
B1DY26	9/14/2005 / 1109	pH-150.1	NONE	60 m aG	7217030	WSCF / F05030-001

12-5-05

NOTE: TWO FORMS ATTACHED THIS PAGE

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Date

Project 200 AREA ECOLOGICAL STUDY PHASE I + II Notebook No. DTS-SAWS-1494 57
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09-15-05
0815 ON SITE BC CRIBS, MEDIUM RISK SITE, CONTAMINATION AREA. PER HPT LEAD, NO APR REQUIRED. ONE SET SWPS AND LAPEL MONITOR.
PERSONNEL ONSITE: KB HULSE NCO/SAMPLER
KJ YOUNG NCO/SAMPLER
DP CONNOLLY NCO/SAMPLER
KG VOLKMAN HPT
MC DORSEY NFM/PIC
0840 BEGAN SOIL COLLECTION AT N.W CORNER OF STAGGERED DESIGN. RANDOM NUMBER GENERATED WAS #47, BLUE FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #47.
0854 FINISHED 1ST RUN, NO CONTAMINATION DETECTED, 28.4 LBS OF DRY SANDY SOIL. BEGAN 2ND RUN.
0857 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 7.6 LBS
0906 FINISHED 2ND RUN. NO CONTAMINATION DETECTED, 26.4 LBS OF SAME MATERIAL. BEGAN 3RD RUN.
0910 FINISHED 2ND MASS REDUCTION, TWO SPLITS PRODUCED 8.4 LBS
0915 HPT LEFT SITE FOR NEW INSTRUMENT
1000 HPT BACK, RESUMED 3RD RUN.
1007 FINISHED 3RD RUN, NO CONTAMINATION DETECTED, 25.8 LBS OF SAME MATERIAL. BEGAN 4TH RUN.
1010 FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 8.2 LBS
1019 FINISHED 4TH RUN, NO CONTAMINATION DETECTED, 27.2 LBS OF SAME MATERIAL, BEGAN 5TH RUN.
1024 FINISHED 4TH MASS REDUCTION, TWO SPLITS PRODUCED 8.4 LBS
1031 FINISHED 5TH RUN, NO CONTAMINATION DETECTED, 28.0 LBS OF SAME MATERIAL.
1034 FINISHED 5TH MASS REDUCTION, TWO SPLITS PRODUCED 7.4 LBS.
1036 FINISHED FINAL MASS REDUCTION, DUE TO TOTAL VOLUME OF PREVIOUS SPLITS, ALL MATERIAL ADDED DIRECTLY TO HOPPER. SPLIT MATERIAL THREE TIMES. COLLECTED SAMPLE B1DY27, WSCF SAMPLE 2.3 LBS, 60 ml 0.5, ARCHIVE BOTTLE 2.2 LBS. ALL MATERIAL USED.
1100 SHIPPED SAMPLES TO 6269 BLDG, ON BLUE CARD "SITE-03 EXCEPTED #116" SAMPLES STORED IN RMA AREA OF CUSTODY FRIDGE. ALL SAMPLE EQUIPMENT STEAM CLEANED WITH NON-POTABLE WATER.

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9-15-05 (CONT.)

12-5-05

Sample Point: **BC Crib Soil/ Medium**

Lead Sampler: **CONNOLLY, DAN P** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DY27	9/15/2005 1036	Gamma Spectroscopy (Cs-137)	NONE	500 m P	539578	WSCF F05030-001
B1DY27	9/15/2005 1036	pH-150.1	NONE	60 m aG	7217030	WSCF F05030-001

NOTE# ONE FORM ATTACHED THIS PAGE

12-5-05

9-16-05

0854 ONSITE BC CRIBS, MEDIUM RISK SITE, 1ST Q.C. REPLICATE SAMPLE. SAME PERSONNEL AS ON 9-15-05. CLEAR AND CALM.

2911 BEGAN SOIL COLLECTION AT NW CORNER OF STAGGERED DESIGN RANDOM NUMBER GENERATED WAS #4, BLUE FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #4

1911 FINISHED 1ST RUN, NO CONTAMINATION DETECTED, 28.0 LBS OF DRY SANDY SOIL. BEGAN 2ND RUN.

1915 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 7.4 LBS

1924 FINISHED 2ND RUN, NO CONTAMINATION DETECTED. 27.2 LBS OF SAME MATERIAL. BEGAN 3RD RUN.

1928 FINISHED 2ND MASS REDUCTION. TWO SPLITS PRODUCED 6.0 LBS

1936 FINISHED 3RD RUN, NO CONTAMINATION DETECTED. 26.6 LBS OF SAME MATERIAL. BEGAN 4TH RUN.

1940 FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 7.6 LBS

1956 FINISHED 4TH RUN, NO CONTAMINATION DETECTED. 27.4 LBS OF SAME MATERIAL. BEGAN 5TH RUN.

2000 FINISHED 4TH MASS REDUCTION. TWO SPLITS PRODUCED 7.4 LBS

2009 FINISHED 5TH RUN, NO CONTAMINATION DETECTED. MATERIAL IS NOTICEABLY DAMP. 29.2 LBS COLLECTED.

2012 FINISHED 5TH MASS REDUCTION. TWO SPLITS PRODUCED 7.4 LBS

2015 FINISHED FINAL MASS REDUCTION. DUE TO TOTAL VOLUME OF PREVIOUS SPLITS, MATERIAL ADDED DIRECTLY TO HOPPER. THREE SPLITS PRODUCED 4.2 LBS. COLLECTED SAMPLE B1DY28, WSCF 500 ml 2.0 LBS, 60 ml 0.4, ARCHIVE 1.8 LBS. ALL MATERIAL USED

0045 SHIPPED SAMPLES TO 6269 BLDG ON BLUE CARD SITE-03-EXCEPTED #116. SAMPLES STORED IN RMA AREA OF

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Continues from Page 58

09-16-05 (CONT.)
CUSTODY FRIDGE. ALL SAMPLE EQUIPMENT STEAM CLEANED WITH NON-POTABLE WATER.

12-5-05

Sample Point: **BC Crib Soil/Medium/Rep. 1**
Lead Sampler: **CONNOLLY, DAN P** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DY28	9/16/2005 / 1015	Gamma Spectroscopy (Cs-137)	NONE	500 m P	539578	WSCF / F05030-001
B1DY28	9/16/2005 / 1015	pH-150.1	NONE	60 m aG	7217030	WSCF / F05030-001

12-5-05

NOTE: ONE FORM ATTACHED THIS PAGE

09-19-05
0830 ON SITE BC CRIBS, MEDIUM RISK SITE 2ND Q.C. REPLICATE SAMPLE. F.M. HALL REPLACED K.B. HULSE, OTHER PERSONNEL SAME AS ON 9-15 AND 9-16. BEGAN SOIL COLLECTION IN NW CORNER OF STAGGERED DESIGN. RANDOM NUMBER GENERATED WAS #87, BLU FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #87.
0904 FINISHED 1ST RUN. NO CONTAMINATION DETECTED. 28.2 LBS OF DRY SANDY SOIL. BEGAN 2ND RUN
0908 FINISHED 1ST MASS REDUCTION. TWO SPLITS PRODUCED 7.8 LBS
0917 FINISHED 2ND RUN. NO CONTAMINATION DETECTED. 29.0 LBS OF SAME MATERIAL. BEGAN 3RD RUN
0921 FINISHED 2ND MASS REDUCTION. TWO SPLITS PRODUCED 7.6 LBS.
0929 FINISHED 3RD RUN. NO CONTAMINATION DETECTED. 28.6 LBS OF SAME MATERIAL. BEGAN 4TH RUN
0933 FINISHED 3RD MASS REDUCTION. TWO SPLITS PRODUCED 7.2 LBS.
0943 FINISHED 4TH RUN. NO CONTAMINATION DETECTED. 29.4 LBS OF SAME MATERIAL. BEGAN 5TH RUN.
0947 FINISHED 4TH MASS REDUCTION, TWO SPLITS PRODUCED 7.2 LBS.
0956 FINISHED 5TH RUN. NO CONTAMINATION DETECTED. 27.8 LBS OF SAME MATERIAL.
000 FINISHED 5TH MASS REDUCTION. TWO SPLITS PRODUCED 7.0 LBS.
003 FINISHED FINAL MASS REDUCTION. DUE TO TOTAL VOLUME OF PREVIOUS SPLITS, ALL MATERIAL ADDED DIRECTLY TO HOPPER. THREE SPLITS PRODUCED 4.2 LBS OF MATERIAL. COLLECTING

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Project 200 AREA ECOLOGICAL STUDY PHASE I + II

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09-19-05 (CONT.)
SAMPLE B1DY29. WSCF 500mL, 2.0LBS, 60mL 0.2, ARCHIVE BOTTLE, 2.0LBS. ALL MATERIAL USED.
1030 SHIPPED SAMPLES TO 6269 BLDG. ON BLUE CARD "SITE-03-EXCEPTED #116." SAMPLES STORED IN RMA AREA OF CUSTODY FRIDGE. ALL SAMPLE EQUIPMENT STEAM CLEANED WITH NON-POTABLE WATER.

12-5-05

Sample Point: **BC Crib Soil/Medium/Rep. 2**

Lead Sampler: **CONNOLLY, DAN P** *Sample Matrix:* **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DY29	9/19/2005 / 1003	Gamma Spectroscopy (Cs-137)	NONE	500 m P	539578	WSCF / F05030-001
B1DY29	9/19/2005 / 1003	pH-150.1	NONE	60 m aG	7217030	WSCF / F05030-001

12-5-05

NOTE: AT 0900 ALL REMAINING INSECTS WERE DELIVERED TO WSCF LAB FOR BOTH PHASE I AND PHASE II.
1540 DELIVERED ALL PHASE II MICE AND LIZARDS TO ENW.

12-5-05

LIZARD CAPTURE CHECKLIST PHASE II

Date	Site	Stake #	HEIS #	M/F	Weight	Total Length	Snout-Vent Length	Abnormalities
6/21/05	BC High	81	B1D9F6	M	3.2 g	4 3/8"	1 ¾"	Black dot on back. 1125
6/28/05	BC High	85	B1D9F7	M	3.1 g	4 ½"	1 7/8"	None 1100
8/8/05	RS II	61	B1D9F8	J	0.2 g	2 ¼"	15/16"	None 1131
8/8/05	RS II	85	B1D9F9	J	0.4 g	2 ½"	1 1/8"	None 1131
8/8/05	BC High	61	B1D9H0	J	0.3 g	2"	15/16"	None 1017
8/18/05	BC Low	37	B1D9H1	J	0.5 g	2 ½"	1 1/16"	None 0925
8/18/05	BC Med	81	B1D9H2	J	0.7 g	2 5/8"	1 1/8"	Molting 0955
8/18/05	BC High	6	B1D9H3	J	0.7 g	3"	1 ¼"	Dead 1020
8/22/05	BC High	37	B1D9H4	J	0.7 g	2 ½"	1"	None 1110
8/30/05	BC High	81	B1D9H5	J	0.7 g	2 3/8"	1"	None 1025
8/30/05	BC High	37	B1D9H6	J	0.6 g	2 7/8"	1 1/8"	None 1030
9/8/05	BC Low	37	B1D9H7	J	1.1 g	3"	1 3/16"	None 0930
9/8/05	BC Med	110	B1D9H8	J	0.6 g	2 ¾"	1 1/8"	Lost tail during capture 1010

12-5-05

NOTE: TWO FORMS ATTACHED THIS PAGE

Continued on Page 61

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09-19-05 (CONT.)

12-5-05 START 6-7-05

MOUSE CAPTURE CHECKLIST / PHASE II

	Date	Site	Stake #	HEIS #	Species	M/F	Weight	Repro. Status	Abnormalities	
	6/8/05	LOW	64	BID9C2	DM	M	18G	N/A	N/A	✓
	6/8/05	MED	64	BID9C3	DM	M	12G	N/A	N/A	✓
	6/8/05	MED	31	BID9C4	PM	M	15G	N/A	N/A	✓
	6/8/05	MED	30	BID9C5	DM	M	12G	N/A	N/A	✓
	6/9/05	MED	64	BID9C6	DM	M	12G	N/A	N/A	✓
	6/9/05	MED	31	BID9C7	PM	M	9G	N/A	N/A	✓
REMOVE —	6/9/05	MED	30	BID9C8	DM	M	13G	N/A	N/A	✓
	6/10/05	LOW	64	BID9C9	DM	M	12G	N/A	N/A	✓
	6/10/05	LOW	85	BID9D0	PM	M	19G	N/A	N/A	✓
	6/10/05	LOW	86	BID9D1	PM	M	14G	N/A	N/A	✓
	6/10/05	HIGH	74	BID9D2	DM	M	15G	N/A	N/A	✓
	6/14/05	LOW	42	BID9D3	DM	M	14G	N/A	N/A	✓
REMOVE —	6/14/05	LOW	52	BID9D4	DM	M	11G	N/A	N/A	✓
	6/14/05	HIGH	63	BID9D5	DM	M	17G	N/A	N/A	✓
	6/14/05	HIGH	42	BID9D6	PM	M	20G	N/A	N/A	✓
	6/16/05	RS-2	31	BID9D7	DM	M	13G	N/A	N/A	✓
	6/21/05	HIGH	97	BID9D8	PM	M	12G	N/A	N/A	✓
	6/21/05	HIGH	75	BID9D9	PM	M	19G	N/A	N/A	✓
REMOVE -	6/21/05	HIGH	52	BID9E0	PM	M	17G	N/A	N/A	✓
	6/24/05	RS-2	31	BID9E1	PM	M	22G	N/A	N/A	✓
	6/28/05	RS-2	64	BID9E2	DM	M	13G	N/A	N/A	✓
	6/29/05	RS-2	30	BID9E3	PM	M	20G	N/A	N/A	✓
	6/29/05	RS 2	86	BID9E4	PM	M	18G	N/A	N/A	✓
	6/29/05	RS-2	31	BID9E5	PM	M	9G	N/A	N/A	✓

12-5-05

NOTE: ONE FORM ATTACHED THIS PAGE

09-20-05

0840 ON SITE BC CRIB AREA, LOW RISK SITE. SAME PERSONNEL AS ON 9-19-05. CLEAR CALM

0855 BEGAN SOIL COLLECTION AT NW CORNER OF STAGGERED DESIGN. RANDOM NUMBER GENERATED WAS #63. BLUE FLAGS PLACED WITHIN EACH SQUARE METER AT LOCATION #63

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09-20-05 (CONT.)
0919 FINISHED 1ST RUN. NO CONTAMINATION DETECTED. 25.6 LBS OF SANDY DRY SOIL. BEGAN 2ND RUN.
0923 FINISHED 1ST MASS REDUCTION, TWO SPLITS PRODUCED 6.0 LBS.
0933 FINISHED 2ND RUN, NO CONTAMINATION DETECTED. 26.0 LBS OF SAME MATERIAL. BEGAN 3RD RUN.
0937 FINISHED 2ND MASS REDUCTION, TWO SPLITS PRODUCED 6.2 LBS.
0946 FINISHED 3RD RUN, NO CONTAMINATION DETECTED. 25.6 LBS OF SAME MATERIAL. BEGAN 4TH RUN.
0950 FINISHED 3RD MASS REDUCTION, TWO SPLITS PRODUCED 6.7 LBS.
1000 FINISHED 4TH RUN, NO CONTAMINATION DETECTED. 28.2 LBS OF SAME MATERIAL. BEGAN 5TH RUN.
1004 FINISHED 4TH MASS REDUCTION. TWO SPLITS PRODUCED 6.8 LBS
1014 FINISHED 5TH RUN, NO CONTAMINATION DETECTED, 26.2 LBS OF SAME MATERIAL.
1018 FINISHED 5TH MASS REDUCTION, TWO SPLITS PRODUCED 6.8 LBS.
1021 FINISHED FINAL MASS REDUCTION. DUE TO TOTAL VOLUME OF PREVIOUS SPLITS, ALL MATERIAL ADDED DIRECTLY TO HOPPER. THREE SPLITS PRODUCED 4.1 LBS. COLLECTED SAMPLE B1DY30, WSCF 500ml 1.8 LBS, 60ml 0.5, ARCHIVE BOTTLE 1.8 LBS.
1040 SHIPPED SAMPLES TO 6269 BLDG. ON BLUE CARD "SITE-03 EXCEPTED #116." SAMPLES STORED IN RMA AREA OF CUSTODY FRIDGE.

12-5-05

Sample Point: **BC Crib Soil/ Low**

Lead Sampler: **CONNOLLY, DAN P** Sample Matrix: **SOIL**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DY30	9/20/2005 / 1021	Gamma Spectroscopy (Cs-137)	NONE	500 m P	539578	WSCF / F05030-001
B1DY30	9/20/2005 / 1021	pH-150.1	NONE	60 m aG	7217030	WSCF / F05030-001

12-5-05

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092405
0800 DELIVERED ALL PHASE II SOILS TO WSCF LAB.
1430 PICKED UP ALL PHASE I AND PHASE II LIZARDS AND MICE SUBSAMPLES FROM ENW
2130 STORED ALL SAMPLES IN FREEZER SAMP-REF-25-NL

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9-21-05 (CONT)
AT THE 6269 BLDG.
9-22-05
0835 PICKED UP FIRST SET OF PHASE I INSECTS FROM WSCF FOR SHIPMENT TO LIONVILLE LAB. PICKED UP SAMPLES B1CVB2, B1CVB4, B1CVC3 AND B1CVC7 (HOT MICE) FROM WSCF FOR SHIPMENT TO SOUTHWEST RESEARCH INST.
1000 SHIPPED SAMPLES FROM STORAGE FREEZER AND WSCF TO THE OFFSITE LABS VIA FED EX
1111 DELIVERED SAMPLES OF MICE + LIZARDS FROM ENW TO WSCF.
10-20-05
0840 PICKED UP REMAINING INSECTS FROM PHASE I + II FROM WSCF.
1300 SHIPPED SAMPLES TO LIONVILLE VIA FED. EX.

12-5-05

Sample Point: **Gable Mtn. Pond (Insects)**
Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CTY5	6/15/2005 / 1030	Per Contract 79 grams	Freeze	250 m aG	5125040	WSCF / F05018-001
B1CTY5	6/15/2005 / 1030	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab / F05018-017
B1CTY6	6/15/2005 / 1030	Per Contract 81 grams	Freeze	250 m aG	5125040	WSCF / F05018-001
B1CTY6	6/15/2005 / 1030	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab / F05018-017
B1CTY7	6/15/2005 / 1030	Per Contract 79 grams	Freeze	250 m aG	5125040	WSCF / F05018-001
B1CTY7	6/15/2005 / 1030	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab / F05018-017

12-5-05

12-5-05

Sample Point: **Gable Mtn. Pond (Mouse)**
Lead Sampler: **KIRBY, BART** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVB9	4/28/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-004
B1CVB9	4/28/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-012
B1CVB9	4/28/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-012
B1CVB9	4/28/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-012
B1CVB9	4/28/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-012

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Sample Point: **Gable Mtn. Pond (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVB9	4/28/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-023
B1CVB9	4/28/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVC0	4/28/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-004
B1CVC0	4/28/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-012
B1CVC0	4/28/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-012
B1CVC0	4/28/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-012
B1CVC0	4/28/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-012
B1CVC0	4/28/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-023
B1CVC0	4/28/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVC1	4/29/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-004
B1CVC1	4/29/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-012
B1CVC1	4/29/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-012
B1CVC1	4/29/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-012
B1CVC1	4/29/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-012
B1CVC1	4/29/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-023
B1CVC1	4/29/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVC2	5/2/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-004
B1CVC2	5/2/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-012
B1CVC2	5/2/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-012
B1CVC2	5/2/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-012
B1CVC2	5/2/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-012
B1CVC2	5/2/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-023
B1CVC2	5/2/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVC3	5/3/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-004
B1CVC3	5/3/2005 / N/A	PCBs(8082), Pest.(8081) Total Cyanide(9010), ICP Metals(6010B)(6020)(Add On)	Freeze	500 m P	539578	SW Research Ins / F05018-041

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Sample Point: **Gable Mtn. Pond (Mouse)**

Lead Sampler: **KIRBY, BART** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVC4	5/5/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-004
B1CVC4	5/5/2005 / N/A	Cyanide (EPA335.2)	NaOH	70 m P	None	WSCF / F05018-012
B1CVC4	5/5/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-012
B1CVC4	5/5/2005 / N/A	ICP/MS(200.8)TAL+ 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-012
B1CVC4	5/5/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-012
B1CVC4	5/5/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-023
B1CVC4	5/5/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042

12-5-05

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Sample Point: **Gable Mtn. Pond Lizards**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV61	4/19/2005 / 1246	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-027
B1CV61	4/19/2005 / 1246	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-038
B1CV61	4/19/2005 / 1246	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-038
B1CV61	4/19/2005 / 1246	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-038
B1CV61	4/19/2005 / 1246	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-038
B1CV65	4/25/2005 / 1130	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-027
B1CV65	4/25/2005 / 1130	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-038
B1CV65	4/25/2005 / 1130	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-038
B1CV65	4/25/2005 / 1130	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-038
B1CV74	5/2/2005 / 0910	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-027
B1CV74	5/2/2005 / 0910	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-038
B1CV74	5/2/2005 / 0910	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-038
B1CV75	5/2/2005 / 0910	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-027
B1CV75	5/2/2005 / 0910	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-038

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Sample Point: **Gable Mtn. Pond Lizards**

Lead Sampler: HOGAN, J.G. Sample Matrix: OTHER

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV75	5/2/2005 0910	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-038
B1CV75	5/2/2005 0910	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-038
B1CV78	5/9/2005 0945	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-027
B1CV78	5/9/2005 0945	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-038
B1CV78	5/9/2005 0945	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-038
B1CV79	5/23/2005 0740	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-027
B1CV79	5/23/2005 0740	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-038
B1CV79	5/23/2005 0740	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-038
B1CV79	5/23/2005 0740	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-038

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Sample Point: **Ref. Site I (Insects)**

Lead Sampler: HOGAN, J.G. Sample Matrix: OTHER

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CTY8	6/15/2005 1130	Per Contract 48 grams	Freeze	250 m aG	5125040	WSCF F05018-001
B1CTY8	6/15/2005 1130	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab F05018-017
B1CV44	6/15/2005 1130	Per Contract 53 grams	Freeze	250 m aG	5125040	WSCF F05018-001
B1CV44	6/15/2005 1130	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab F05018-017
B1CV45	6/15/2005 1130	Per Contract 56 grams	Freeze	250 m aG	5125040	WSCF F05018-001
B1CV45	6/15/2005 1130	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab F05018-017

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Sample Point: **Ref. Site 1 (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVC5	5/3/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-005
B1CVC5	5/3/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-013
B1CVC5	5/3/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-013
B1CVC5	5/3/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-013
B1CVC5	5/3/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-013
B1CVC5	5/3/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-022
B1CVC5	5/3/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVC6	5/3/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-005
B1CVC6	5/3/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-013
B1CVC6	5/3/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-013
B1CVC6	5/3/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-013
B1CVC6	5/3/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-013
B1CVC6	5/3/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-022
B1CVC6	5/3/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVC7	5/4/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-005
B1CVC7	5/4/2005 / N/A	PCBs(8082), Pest.(8081) Total Cyanide(9010), ICP Metals(6010B)(6020)(Add On)	Freeze	500 m P	539578	SW Research Ins / F05018-041
B1CVC8	5/5/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-005
B1CVC8	5/5/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-013
B1CVC8	5/5/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-013
B1CVC8	5/5/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-013
B1CVC8	5/5/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-013
B1CVC8	5/5/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-022
B1CVC8	5/5/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVC9	5/5/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-005
B1CVC9	5/5/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-013

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Sample Point: **Ref. Site 1 (Mouse)**

Lead Sampler: KIRBY, BART Sample Matrix: OTHER

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVC9	5/5/2005 / N/A	Gamma Spec.(Add On) / Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-013
B1CVC9	5/5/2005 / N/A	ICP/MS(200.8)TAL / 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-013
B1CVC9	5/5/2005 / N/A	PCBs / (8082)	Freeze	10 m P	None	WSCF / F05018-013
B1CVC9	5/5/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-022
B1CVC9	5/5/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD0	5/9/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-005
B1CVD0	5/9/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-013
B1CVD0	5/9/2005 / N/A	Gamma Spec.(Add On) / Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-013
B1CVD0	5/9/2005 / N/A	ICP/MS(200.8)TAL / 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-013
B1CVD0	5/9/2005 / N/A	PCBs / (8082)	Freeze	10 m P	None	WSCF / F05018-013
B1CVD0	5/9/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-022
B1CVD0	5/9/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042

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Sample Point: **Ref. Site 1 Lizards**

Lead Sampler: HOGAN, J.G. Sample Matrix: OTHER

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV62	4/19/2005 / 1330	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-028
B1CV62	4/19/2005 / 1330	Gamma Spec.(Add On) / Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-035
B1CV62	4/19/2005 / 1330	PCBs / (8082)	Freeze	10 m P	None	WSCF / F05018-035
B1CV63	4/19/2005 / 1330	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-028
B1CV63	4/19/2005 / 1330	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-035
B1CV63	4/19/2005 / 1330	Gamma Spec.(Add On) / Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-035
B1CV63	4/19/2005 / 1330	ICP/MS(200.8)TAL / 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-035
B1CV63	4/19/2005 / 1330	PCBs / (8082)	Freeze	10 m P	None	WSCF / F05018-035
B1CV64	4/19/2005 / 1330	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-028

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Sample Point: **Ref. Site 1 Lizards**
Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV64	4/19/2005 / 1330	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-035
B1CV64	4/19/2005 / 1330	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-035
B1CV64	4/19/2005 / 1330	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-035
B1CV64	4/19/2005 / 1330	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-035
B1CV67	4/25/2005 / 1321	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-028
B1CV67	4/25/2005 / 1321	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-035
B1CV67	4/25/2005 / 1321	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-035
B1CV67	4/25/2005 / 1321	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-035
B1CV67	4/25/2005 / 1321	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-035
B1CV68	4/25/2005 / 1321	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-028
B1CV68	4/25/2005 / 1321	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-035
B1CV68	4/25/2005 / 1321	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-035
B1CV77	5/2/2005 / 1117	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-028
B1CV77	5/2/2005 / 1117	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-035
B1CV77	5/2/2005 / 1117	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-035

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Sample Point: **2607-E6 Septic Tank (Insects)**
Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV52	9/13/2005 / 0000	Per Contract 20 grams	Freeze	250 m aG	5125040	WSCF / F05018-032
B1CV52	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040
B1CV53	9/13/2005 / 0000	Per Contract 24 grams	Freeze	250 m aG	5125040	WSCF / F05018-032
B1CV53	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040
B1CV54	9/13/2005 / 0000	Per Contract 19 grams	Freeze	250 m aG	5125040	WSCF / F05018-032
B1CV54	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040

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Sample Point: **2607-E6 (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVB0	4/21/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-002
B1CVB0	4/21/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-010
B1CVB0	4/21/2005 / N/A	Gamma Spec. (Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-010
B1CVB0	4/21/2005 / N/A	ICP/MS(200.8)TAL 6010B (Add On)	HNO3	70 m P	None	WSCF / F05018-010
B1CVB0	4/21/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-010
B1CVB0	4/21/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-018
B1CVB0	4/21/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVB1	4/25/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-002
B1CVB1	4/25/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-010
B1CVB1	4/25/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-010
B1CVB1	4/25/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-010
B1CVB1	4/25/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-010
B1CVB1	4/25/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-018
B1CVB1	4/25/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVB2	4/25/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-002
B1CVB2	4/25/2005 / N/A	PCBs(8082),Pest.(8081) Total Cyanide(9010), ICP Metals (6010B)(6020)(Add On)	Freeze	500 m P	539578	SW Research Ins / F05018-041
B1CVB3	4/25/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-002
B1CVB3	4/25/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-010
B1CVB3	4/25/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-010
B1CVB3	4/25/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-010
B1CVB3	4/25/2005 / N/A	PCBs (8082)	Freeze	50 m P	None	WSCF / F05018-010
B1CVB3	4/25/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-018
B1CVB3	4/25/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVB4	4/25/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-002

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Sample Point: **2607-E6 (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVB4	4/25/2005 / N/A	PCBs(8082), Pest.(8081) Total Cyanide(9010), ICP Metals(6010B)(6020)(Add On)	Freeze	500 m P	5072030	SW Research Ins / F05018-041
B1CVB5	4/26/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-002
B1CVB5	4/26/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-010
B1CVB5	4/26/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-010
B1CVB5	4/26/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-010
B1CVB5	4/26/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-010
B1CVB5	4/26/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-018
B1CVB5	4/26/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042

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Sample Point: **U-Pond (Insects)**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV49	9/13/2005 / 0000	Per Contract 37 grams	Freeze	250 m aG	5125040	WSCF / F05018-031
B1CV49	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040
B1CV50	9/13/2005 / 0000	Per Contract 33 grams	Freeze	250 m aG	5125040	WSCF / F05018-031
B1CV50	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040
B1CV51	9/13/2005 / 0000	Per Contract 37 grams	Freeze	250 m aG	5125040	WSCF / F05018-031
B1CV51	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040

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Sample Point: **U-Pond (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVB6	4/28/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-003
B1CVB6	4/28/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-011
B1CVB6	4/28/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-011
B1CVB6	4/28/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-011

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Sample Point: U-Pond (Mouse)

Lead Sampler: KIRBY, BART

Sample Matrix: OTHER

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVB6	4/28/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-011
B1CVB6	4/28/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-024
B1CVB6	4/28/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVB7	4/28/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-003
B1CVB7	4/28/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-011
B1CVB7	4/28/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-011
B1CVB7	4/28/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-011
B1CVB7	4/28/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-011
B1CVB7	4/28/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-024
B1CVB7	4/28/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVB8	5/2/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-003
B1CVB8	5/2/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-011
B1CVB8	5/2/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-011
B1CVB8	5/2/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-011
B1CVB8	5/2/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-011
B1CVB8	5/2/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-024
B1CVB8	5/2/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD5	5/11/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-003
B1CVD5	5/11/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-011
B1CVD5	5/11/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-011
B1CVD5	5/11/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-011
B1CVD5	5/11/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-011
B1CVD5	5/11/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-024
B1CVD5	5/11/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD6	5/11/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-003

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Sample Point: **U-Pond (Mouse)**

Lead Sampler: **KIRBY, BART** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVD6	5/11/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-011
B1CVD6	5/11/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-011
B1CVD6	5/11/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-011
B1CVD6	5/11/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-011
B1CVD6	5/11/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-024
B1CVD6	5/11/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD9	5/13/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-003
B1CVD9	5/13/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-011
B1CVD9	5/13/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-011
B1CVD9	5/13/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-011
B1CVD9	5/13/2005 / N/A	PCBs (8082)	Freeze	10 m T	None	WSCF / F05018-011
B1CVD9	5/13/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-024
B1CVD9	5/13/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042

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Sample Point: **U-Pond Lizards**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV69	4/25/2005 / 1343	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-029
B1CV69	4/25/2005 / 1343	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-036
B1CV69	4/25/2005 / 1343	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-036
B1CV69	4/25/2005 / 1343	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-036
B1CV88	7/25/2005 / 1251	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-029
B1CV88	7/25/2005 / 1251	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-036
B1CV89	8/8/2005 / 1314	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-029

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Sample Point: **U-Pond Lizards**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV89	8/8/2005 / 1314	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-036
B1CV90	8/8/2005 / 1314	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-029
B1CV90	8/8/2005 / 1314	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-036
B1CV90	8/8/2005 / 1314	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-036
B1CV90	8/8/2005 / 1314	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-036
B1CV91	8/8/2005 / 1314	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-029
B1CV91	8/8/2005 / 1314	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-036
B1CV92	8/8/2005 / 1314	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. / F05018-029
B1CV92	8/8/2005 / 1314	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-036

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Sample Point: **B-63 Ditch (Insects)**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV55	9/13/2005 / 0000	Per Contract 58 grams	Freeze	250 m aG	5125040	WSCF / F05018-033
B1CV55	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040
B1CV56	9/13/2005 / 0000	Per Contract 57 grams	Freeze	250 m aG	5125040	WSCF / F05018-033
B1CV56	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040
B1CV57	9/13/2005 / 0000	Per Contract 57 grams	Freeze	250 m aG	5125040	WSCF / F05018-033
B1CV57	9/13/2005 / 0000	Pesticides-8081	Freeze	60 m aG	5072030	Lionville Lab / F05018-040

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Sample Point: **B-63 Ditch (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVD1	5/11/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-006
B1CVD1	5/11/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-014
B1CVD1	5/11/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-014
B1CVD1	5/11/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-014
B1CVD1	5/11/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-014
B1CVD1	5/11/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-021
B1CVD1	5/11/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD2	5/11/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-006
B1CVD2	5/11/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-014
B1CVD2	5/11/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-014
B1CVD2	5/11/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-014
B1CVD2	5/11/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-014
B1CVD2	5/11/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-021
B1CVD2	5/11/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD3	5/11/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-006
B1CVD3	5/11/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-014
B1CVD3	5/11/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-014
B1CVD3	5/11/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-014
B1CVD3	5/11/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-014
B1CVD3	5/11/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-021
B1CVD3	5/11/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD4	5/11/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-006
B1CVD4	5/11/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-014
B1CVD4	5/11/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-014

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Sample Point: **B-63 Ditch (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVD4	5/11/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-014
B1CVD4	5/11/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-014
B1CVD4	5/11/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-021
B1CVD4	5/11/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD7	5/12/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-006
B1CVD7	5/12/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-014
B1CVD7	5/12/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-014
B1CVD7	5/12/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-014
B1CVD7	5/12/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-014
B1CVD7	5/12/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-021
B1CVD7	5/12/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVD8	5/12/2005 / N/A	PCBs(8082), Pest.(8081) Total Cyanide(9010), ICP Metals(6010B)(6020)(Add On)	Freeze	500 m P	539578	SW Research Ins / F05018-041
B1CVH3	5/11/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1F2V6	5/11/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-014
B1F2V6	5/11/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-014
B1F2V6	5/11/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-014
B1F2V6	5/11/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-014
B1F2V7	5/11/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-021

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Sample Point: **B-63 Ditch Lizards**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV82	5/31/2005 / 0908	BIOTA_SAMPLE_PREP	freeze	1 m P	None	Energy NW Env. / F05018-030
B1CV82	5/31/2005 / 0908	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-037
B1CV82	5/31/2005 / 0908	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-037
B1CV82	5/31/2005 / 0908	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-037

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Sample Point: **B-63 Ditch Lizards**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV83	5/31/2005 0908	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-030
B1CV83	5/31/2005 0908	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-037
B1CV83	5/31/2005 0908	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-037
B1CV83	5/31/2005 0908	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-037
B1CV85	6/28/2005 1155	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-030
B1CV85	6/28/2005 1155	Gamma Spec.(Add On) ISo. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-037
B1CV85	6/28/2005 1155	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-037
B1CV86	7/6/2005 1150	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-030
B1CV86	7/6/2005 1150	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-037
B1CV86	7/6/2005 1150	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-037
B1CV86	7/6/2005 1150	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-037
B1CV87	7/19/2005 1018	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-030
B1CV87	7/19/2005 1018	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-037

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Sample Point: **B-Pond (Insects)**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV46	6/15/2005 0930	Per Contract 53 grams	Freeze	250 m aG	5125040	WSCF F05018-001
B1CV46	6/15/2005 0930	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab F05018-017
B1CV47	6/15/2005 0930	Per Contract 54 grams	Freeze	250 m aG	5125040	WSCF F05018-001
B1CV47	6/15/2005 0930	Pesticides-8081	Cool 4C	60 m P	5072030	Lionville Lab F05018-017
B1CV48	6/15/2005 0930	Per Contract 55 grams	Freeze	250 m aG	5125040	WSCF F05018-001
B1CV48	6/15/2005 0930	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab F05018-017

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Sample Point: **B-Pond (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVF0	5/13/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-007
B1CVF0	5/13/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-015
B1CVF0	5/13/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-015
B1CVF0	5/13/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-015
B1CVF0	5/13/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-015
B1CVF0	5/13/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-020
B1CVF0	5/13/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVF1	5/13/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-007
B1CVF1	5/13/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-015
B1CVF1	5/13/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-015
B1CVF1	5/13/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-015
B1CVF1	5/13/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-015
B1CVF1	5/13/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-020
B1CVF1	5/13/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVF2	5/17/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-007
B1CVF2	5/17/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-015
B1CVF2	5/17/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-015
B1CVF2	5/17/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-015
B1CVF2	5/17/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-015
B1CVF2	5/17/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-020
B1CVF2	5/17/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVF3	5/18/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-007
B1CVF3	5/18/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-015
B1CVF3	5/18/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-015
B1CVF3	5/18/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-015

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Sample Point: **B-Pond (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVF3	5/18/2005 N/A	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-015
B1CVF3	5/18/2005 N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins F05018-020
B1CVF3	5/18/2005 N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service F05018-042
B1CVF4	5/18/2005 N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. F05018-007
B1CVF4	5/18/2005 N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF F05018-015
B1CVF4	5/18/2005 N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-015
B1CVF4	5/18/2005 N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-015
B1CVF4	5/18/2005 N/A	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-015
B1CVF4	5/18/2005 N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins F05018-020
B1CVF4	5/18/2005 N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service F05018-042
B1CVF5	5/19/2005 N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. F05018-007
B1CVF5	5/19/2005 N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF F05018-015
B1CVF5	5/19/2005 N/A	Gamma Spec.(Add On) ISO. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-015
B1CVF5	5/19/2005 N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-015
B1CVF5	5/19/2005 N/A	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-015
B1CVF5	5/19/2005 N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins F05018-020
B1CVF5	5/19/2005 N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service F05018-042
B1CVH2	5/13/2005 N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service F05018-042
B1F2V1	5/13/2005 N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF F05018-015
B1F2V1	5/13/2005 N/A	Gamma Spec.(Add On) ISO. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-015
B1F2V1	5/13/2005 N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-015
B1F2V1	5/13/2005 N/A	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-015
B1F2V2	5/13/2005 N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins F05018-020

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Sample Point: **B-Pond Lizards**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV58	4/12/2005 1034	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-025
B1CV58	4/12/2005 1034	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-034
B1CV58	4/12/2005 1034	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-034
B1CV58	4/12/2005 1034	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-034
B1CV66	4/25/2005 1159	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-025
B1CV66	4/25/2005 1159	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-034
B1CV66	4/25/2005 1159	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-034
B1CV66	4/25/2005 1159	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-034
B1CV76	5/2/2005 0941	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-025
B1CV76	5/2/2005 0941	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF F05018-034
B1CV76	5/2/2005 0941	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-034
B1CV76	5/2/2005 0941	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-034
B1CV76	5/2/2005 0941	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-034
B1CV80	5/31/2005 0840	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-025
B1CV80	5/31/2005 0840	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-034
B1CV80	5/31/2005 0840	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-034
B1CV80	5/31/2005 0840	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-034
B1CV81	5/31/2005 0840	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-025
B1CV81	5/31/2005 0840	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-034
B1CV81	5/31/2005 0840	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-034
B1CV84	6/13/2005 1047	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-025
B1CV84	6/13/2005 1047	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF F05018-034
B1CV84	6/13/2005 1047	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-034
B1CV84	6/13/2005 1047	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-034
B1CV84	6/13/2005 1047	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-034

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Sample Point: **S-10 Ditch (Insects)**
Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CTY2	6/15/2005 / 1230	Per Contract / 58 grams	Freeze	250 m aG	5125040	WSCF / F05018-001
B1CTY2	6/15/2005 / 1230	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab / F05018-017
B1CTY3	6/15/2005 / 1230	Per Contract / 62 grams	Freeze	250 m aG	5125040	WSCF / F05018-001
B1CTY3	6/15/2005 / 1230	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab / F05018-017
B1CTY4	6/15/2005 / 1230	Per Contract / 58 grams	Freeze	250 m aG	5125040	WSCF / F05018-001
B1CTY4	6/15/2005 / 1230	Pesticides-8081	Cool 4C	60 m aG	5072030	Lionville Lab / F05018-017

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Sample Point: **S-10 Ditch (Mouse)**
Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVF6	5/25/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-008
B1CVF6	5/25/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-016
B1CVF6	5/25/2005 / N/A	Gamma Spec.(Add On) / Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-016
B1CVF6	5/25/2005 / N/A	ICP/MS(200.8)TAL / 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-016
B1CVF6	5/25/2005 / N/A	PCBs / (8082)	Freeze	10 m P	None	WSCF / F05018-016
B1CVF6	5/25/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-019
B1CVF6	5/25/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVF7	5/31/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-008
B1CVF7	5/31/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-016
B1CVF7	5/31/2005 / N/A	Gamma Spec.(Add On) / Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-016
B1CVF7	5/31/2005 / N/A	ICP/MS(200.8)TAL / 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-016
B1CVF7	5/31/2005 / N/A	PCBs / (8082)	Freeze	10 m P	None	WSCF / F05018-016
B1CVF7	5/31/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-019
B1CVF7	5/31/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVF8	6/1/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-008
B1CVF8	6/1/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-016

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Sample Point: **S-10 Ditch (Mouse)**

Lead Sampler: **KIRBY, BART** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CVF8	6/1/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-016
B1CVF8	6/1/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-016
B1CVF8	6/1/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-016
B1CVF8	6/1/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-019
B1CVF8	6/1/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVF9	6/2/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-008
B1CVF9	6/2/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-016
B1CVF9	6/2/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-016
B1CVF9	6/2/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-016
B1CVF9	6/2/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-016
B1CVF9	6/2/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-019
B1CVF9	6/2/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVH0	6/2/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-008
B1CVH0	6/2/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-016
B1CVH0	6/2/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-016
B1CVH0	6/2/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-016
B1CVH0	6/2/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-016
B1CVH0	6/2/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-019
B1CVH0	6/2/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042
B1CVH1	6/7/2005 / N/A	BIOTA_SAMPLE_PREP	Freeze	1 m BAG	None	Energy NW Env. / F05018-008
B1CVH1	6/7/2005 / N/A	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF / F05018-016
B1CVH1	6/7/2005 / N/A	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF / F05018-016
B1CVH1	6/7/2005 / N/A	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF / F05018-016
B1CVH1	6/7/2005 / N/A	PCBs (8082)	Freeze	10 m P	None	WSCF / F05018-016
B1CVH1	6/7/2005 / N/A	Pesticides (8081)	Freeze	60 m aG	5072030	SW Research Ins / F05018-019
B1CVH1	6/7/2005 / N/A	Radium-226; Radium-228	Freeze	70 m P	None	Eberline Service / F05018-042

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Sample Point: S-10 Ditch Lizards
Lead Sampler: HOGAN, J.G. Sample Matrix: OTHER

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1CV59	4/12/2005 1253	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-026
B1CV59	4/12/2005 1253	Cyanide (EPA335.2)	NaOH	50 m P	None	WSCF F05018-039
B1CV59	4/12/2005 1253	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-039
B1CV59	4/12/2005 1253	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-039
B1CV59	4/12/2005 1253	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-039
B1CV60	4/12/2005 1253	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-026
B1CV60	4/12/2005 1253	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-039
B1CV60	4/12/2005 1253	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-039
B1CV70	4/25/2005 1407	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-026
B1CV70	4/25/2005 1407	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-039
B1CV70	4/25/2005 1407	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-039
B1CV70	4/25/2005 1407	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-039
B1CV71	4/25/2005 1407	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-026
B1CV71	4/25/2005 1407	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-039
B1CV71	4/25/2005 1407	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-039
B1CV72	4/25/2005 1407	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-026
B1CV72	4/25/2005 1407	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-039
B1CV72	4/25/2005 1407	ICP/MS(200.8)TAL 6010B(Add On)	HNO3	70 m P	None	WSCF F05018-039
B1CV72	4/25/2005 1407	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-039
B1CV73	4/25/2005 1407	BIOTA_SAMPLE_PREP	Freeze	1 m P	None	Energy NW Env. F05018-026
B1CV73	4/25/2005 1407	Gamma Spec.(Add On) Iso. Pu, Iso. U, Sr 89/90--Total Sr	HNO3	125 m P	None	WSCF F05018-039
B1CV73	4/25/2005 1407	PCBs (8082)	Freeze	10 m P	None	WSCF F05018-039

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Sample Point: **Ref. Site II/ Insects**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1DYH8	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 58 grams	Freeze	250 m aG	5125040	WSCF F05027-010
B1DYH9	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 59 grams	Freeze	250 m aG	5125040	WSCF F05027-010
B1DYJ0	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 60 grams	Freeze	250 m aG	5125040	WSCF F05027-010

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Sample Point: **Ref. Site II/ Mice**

Lead Sampler: **KIRBY, BART** Sample Matrix: **Other Solid**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9F1	6/24/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-005
B1D9F1	6/24/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-014
B1D9F2	6/28/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-005
B1D9F2	6/28/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-014
B1D9F3	6/29/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-005
B1D9F3	6/29/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-014
B1D9F4	6/29/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-005
B1D9F4	6/29/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-014
B1D9F5	6/29/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-005
B1D9F5	6/29/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-014
BID9D7	6/16/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-005
BID9D7	6/16/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-014

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Sample Point: **Ref. Site II/ Lizard**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **Other Solid**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9F8	8/8/2005 1131	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9F8	8/8/2005 1131	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9F9	8/8/2005 1131	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9F9	8/8/2005 1131	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011

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Sample Point: **BC Crib Low/ Insects**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9J8	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 79 grams	Freeze	500 m aG	010968	WSCF F05027-009
B1D9J9	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 76 grams	Freeze	500 m aG	010968	WSCF F05027-009
B1DYH7	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 76 grams	Freeze	500 m aG	010968	WSCF F05027-009

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Sample Point: **BC Crib Low/ Lizard**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **Other Solid**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9H1	8/18/2005 0925	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H1	8/18/2005 0925	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9H7	9/8/2005 0930	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H7	9/8/2005 0930	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011

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Sample Point: **BC Crib Low/ Mice**

Lead Sampler: **KIRBY, BART** Sample Matrix: **Other Solid**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9C2	6/8/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-002
B1D9C2	6/8/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-012
B1D9C9	6/10/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-002
B1D9C9	6/10/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-012
B1D9D0	6/10/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-002
B1D9D0	6/10/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-012
B1D9D1	6/10/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-002
B1D9D1	6/10/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-012
B1D9D3	6/14/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-002
B1D9D3	6/14/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-012
B1D9D4	6/14/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-002
B1D9D4	6/14/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-012

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Sample Point: **BC Crib Medium/ Insects**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9H9	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 110 grams	Freeze	500 m aG	010968	WSCF F05027-007
B1D9J0	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 106 grams	Freeze	500 m aG	010968	WSCF F05027-007
B1D9J1	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 109 grams	Freeze	500 m aG	010968	WSCF F05027-007
B1D9J2	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 77 grams	Freeze	500 m aG	010968	WSCF F05027-007
B1D9J3	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 79 grams	Freeze	500 m aG	010968	WSCF F05027-007
B1D9J4	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr, 79 grams	Freeze	500 m aG	010968	WSCF F05027-007

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Sample Point: **BC Crib Medium/ Mice**

Lead Sampler: **KIRBY, BART** *Sample Matrix:* **Other Solid**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9C3	6/8/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-003
B1D9C3	6/8/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-015
B1D9C4	6/8/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-003
B1D9C4	6/8/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-015
B1D9C5	6/8/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-003
B1D9C5	6/8/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-015
B1D9C6	6/9/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-003
B1D9C6	6/9/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-015
B1D9C7	6/9/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-003
B1D9C7	6/9/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-015
B1D9C8	6/9/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-003
B1D9C8	6/9/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-015

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Sample Point: **BC Crib Medium/ Lizard**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **Other Solid**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9H2	8/18/2005 0955	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H2	8/18/2005 0955	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9H8	9/8/2005 1010	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H8	9/8/2005 1010	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011

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Sample Point: **BC Crib High/ Insects**

Lead Sampler: **HOGAN, J.G.** *Sample Matrix:* **OTHER**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9J5	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr, 73 grams	Freeze	500 m aG	010968	WSCF F05027-008
B1D9J6	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr, 69 grams	Freeze	500 m aG	010968	WSCF F05027-008
B1D9J7	9/13/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr, 74 grams	Freeze	500 m aG	010968	WSCF F05027-008

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Sample Point: **BC Crib High/ Mice**

Lead Sampler: **KIRBY, BART** *Sample Matrix:* **Other Solid**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9D2	6/10/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-004
B1D9D2	6/10/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-013
B1D9D5	6/14/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-004
B1D9D5	6/14/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-013
B1D9D6	6/16/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-004
B1D9D6	6/16/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-013
B1D9D8	6/21/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-004
B1D9D8	6/21/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-013
B1D9D9	6/21/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-004
B1D9D9	6/21/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-013
B1D9F0	6/21/2005 0000	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-004
B1D9F0	6/21/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-013
B1F2V3	6/16/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-013
B1F2V4	6/21/2005 0000	pH-150.1; Gamma Spectroscopy (C 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-013

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Sample Point: **BC Crib High/ Lizard**

Lead Sampler: **HOGAN, J.G.** Sample Matrix: **Other Solid**

Sample ID	Date Collected / Time Collected	Analysis	Preservative(s)	Container	Lot #	Laboratory / COC#
B1D9F6	6/21/2005 1125	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9F6	6/21/2005 1125	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9F7	6/28/2005 1100	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9F7	6/28/2005 1100	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9H0	8/8/2005 1017	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H0	8/8/2005 1017	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9H3	8/18/2005 1020	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H3	8/18/2005 1020	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9H4	8/22/2005 1110	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H4	8/22/2005 1110	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9H5	8/30/2005 1025	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H5	8/30/2005 1025	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011
B1D9H6	8/30/2005 1030	BIOTA_SAMPLE_PREP;	Freeze	1 m Zip	N/A	Energy NW Env. F05027-006
B1D9H6	8/30/2005 1030	pH-150.1; Gamma Spectroscopy (Cs 137) Strontium-89,90--Total Sr	HNO3	125 m P	N/A	WSCF F05027-011

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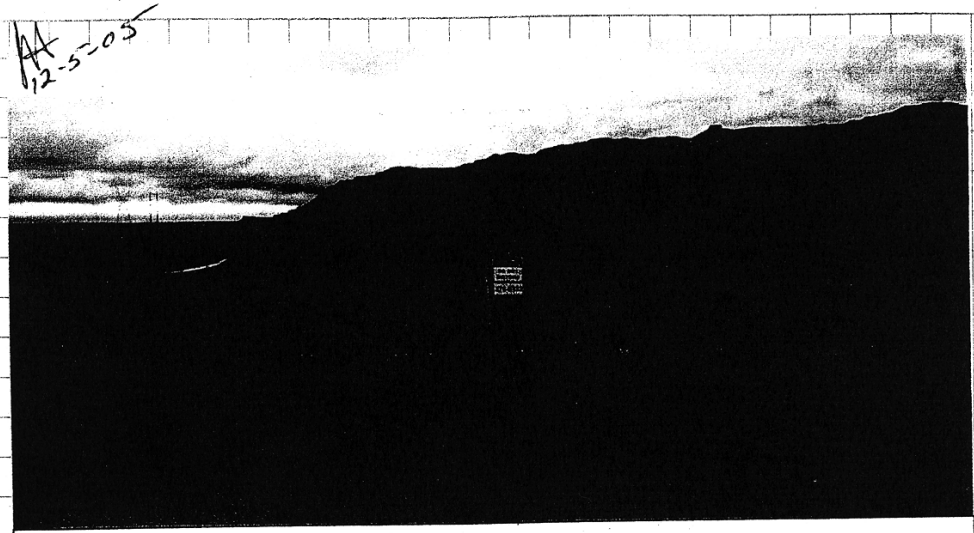
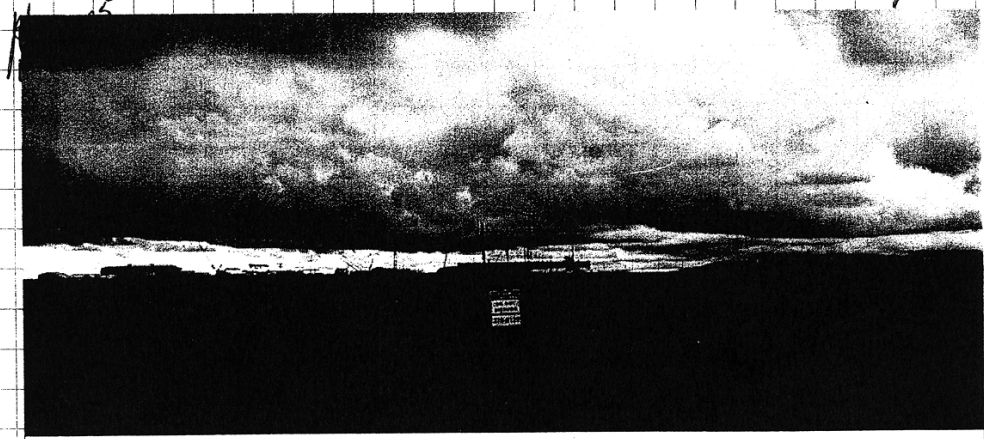


SAF# S05-045, Phase I, Gable Mountain Pond, looking northwest.

12-5-05



SAF# S05-045, Phase I, B-Pond, looking south.

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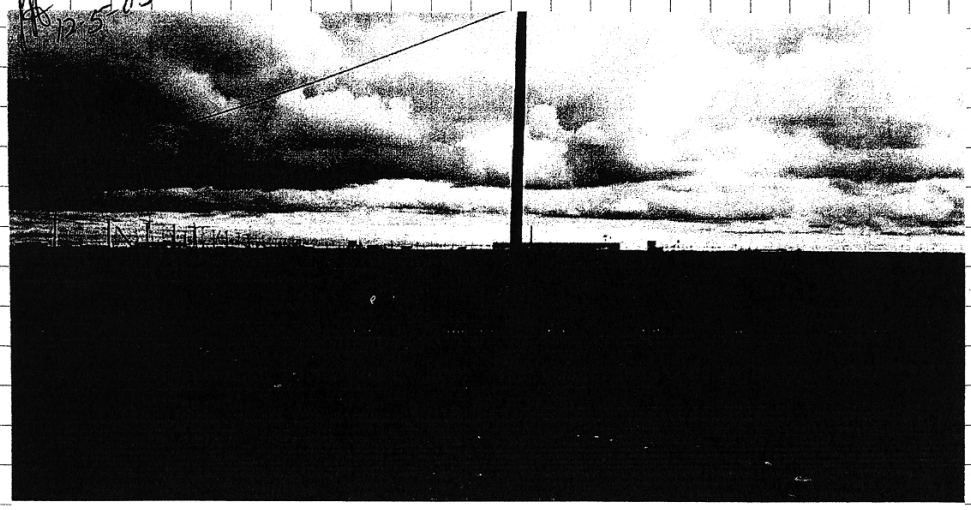
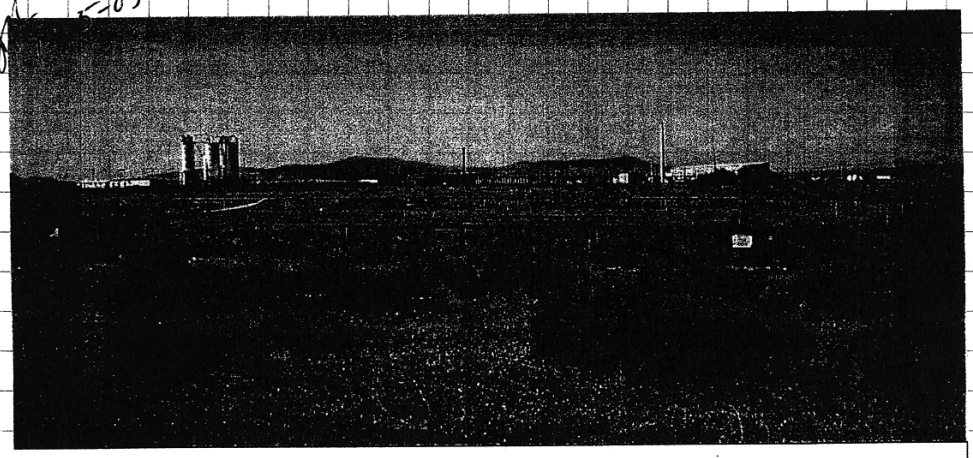


SAF# S05-045, Phase I, B-63 Ditch looking southeast. 12-5-05



SAF# S05-045, Phase I, 2607-E6 Septic Field looking west. 12-5-05

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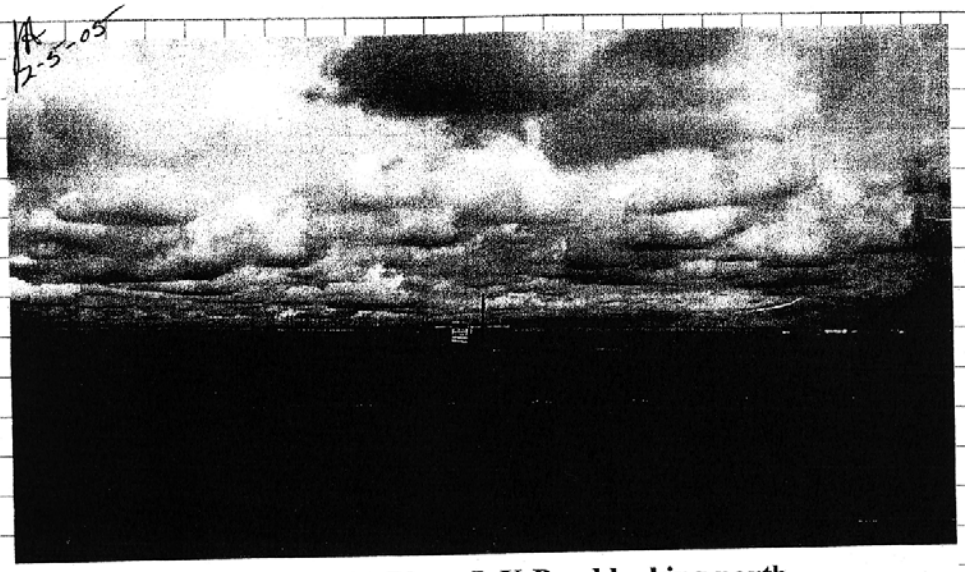
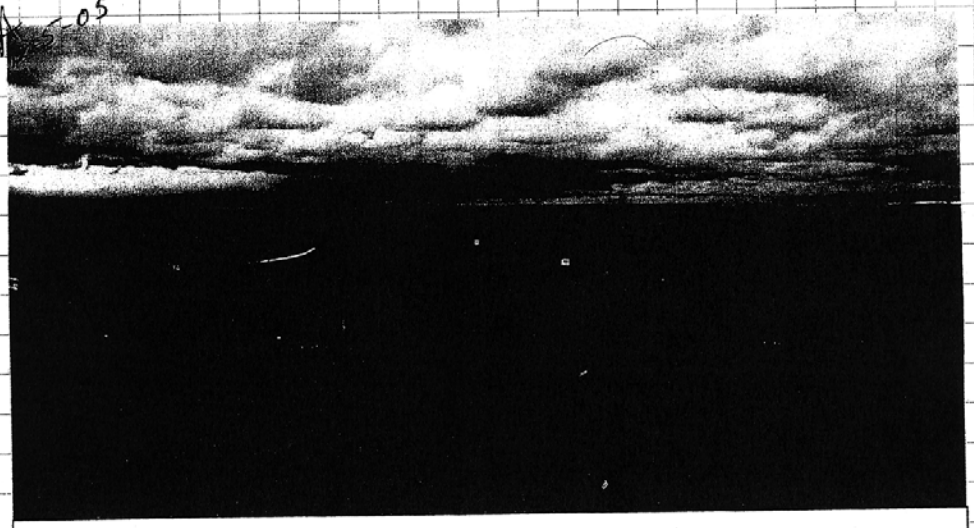
12-5-05



SAF# S05-045, Phase I, U-Pond looking north.

12-5-05

12-5-05



SAF# S05-045, Phase I, S-10 Ditch looking west.

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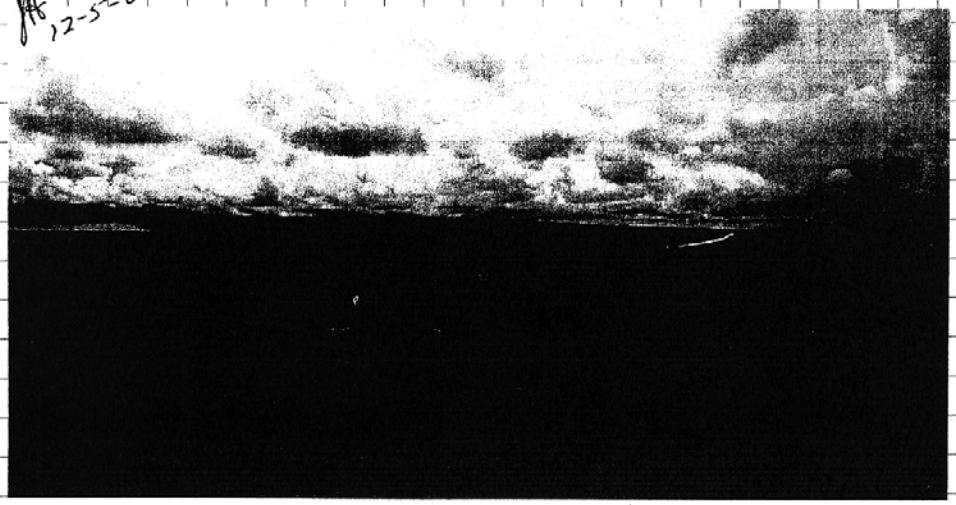
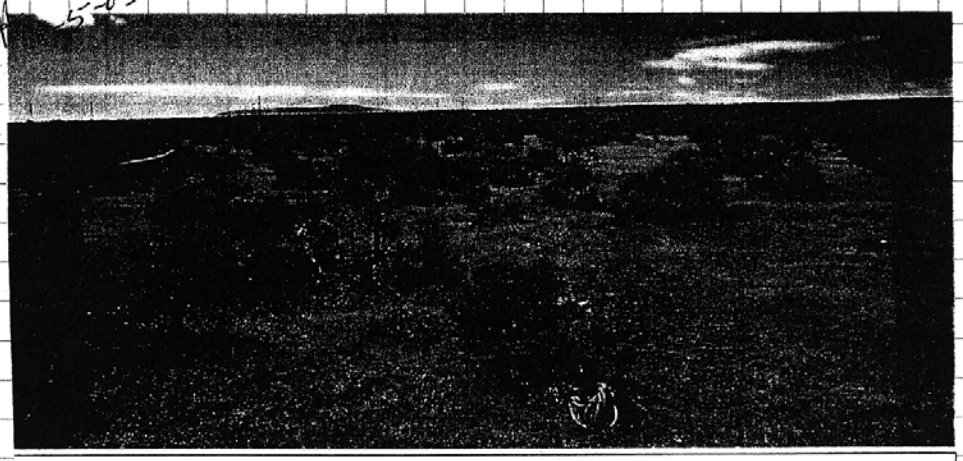
JA 12-5-05



SAF# S05-045, Phase I, Reference Site looking southwest.

JA 12-5-05

JA 5-05



SAF# ~~F05-027~~, Phase II Soils, Reference Site looking southeast.
S05-045 JA

JA 12-5-05

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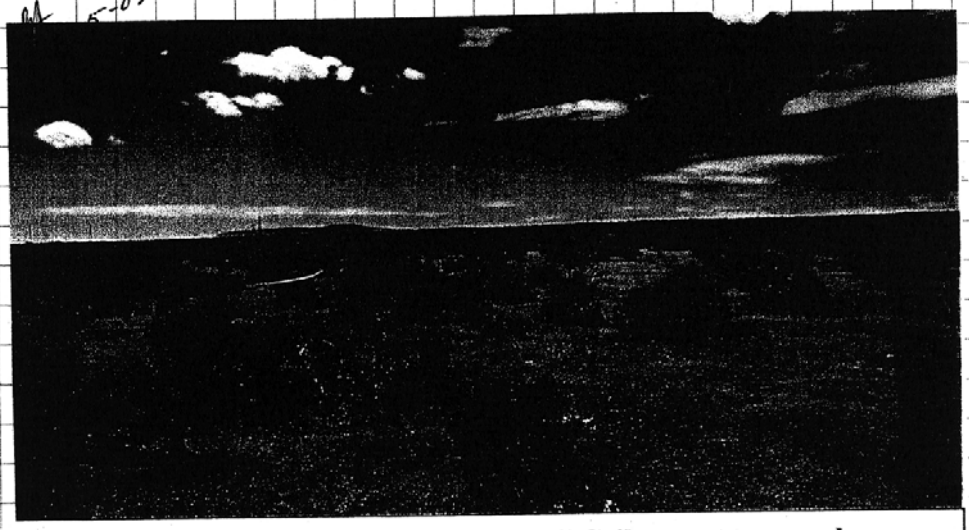

SAF# S05-045, Phase II, typical BC Crib area topography.

JA 12-5-05

SAF S05-045, Phase I & II, typical pit trap.

JA 12-05-05

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SAF# S05-045, Phase I & II, typical drift fence setup.

SAF# S05-045. Clean soil splitter setup. Gable Mountain Pond area.

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SAF# S05-045. Typical HPT survey of soil prior to sieving.

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SAF# S05-045. Typical sieving method. Note blue flag for location.

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