#### DRAFT PROJECT REPORT

#### FIELD INVESTIGATION FORMER INCINERATOR SITE FT. RILEY, KANSAS

#### CONTRACT NO. DAKF19-01-P0091 SOLICITATION NO. DADF19-01-T0022

Submitted to:

Directorate of Environmental Safety Ft. Riley Building 407 Pershing Court Ft. Riley, Kansas 66442

Submitted by:



Arrowhead Contracting, Incorporated 12920 Metcalf, Suite 150 Overland Park, Kansas 66213

April 13, 2001





April 18, 2001

Ms. Janet Wade Department of Environmental Safety Building 407 Pershing Court Fort Riley, Kansas 66442

> Draft Project Report Soil Characterization at Former Incinerator Site Contract No. DAKF19-01-P-0091

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Dear Ms. Wade:

In accordance with change to Contract DAKF19-01-P-0091 for soil characterization at the former WWI-era incinerator site, please find attached two (2) copies of the Draft Project Report (referred to as Draft Data Assessment Report in Proposal dated March 22, 2001). This report package includes the data from XRF field screening and off-site confirmatory analysis (refer to Appendix A). A full set of sample collection field sheets are also transmitted with this report (refer to Appendix B).

Please note that Figure 1-1 (Sample Locations) is not included at this time, because it has not yet been completed. We expect to have the figure completed in the next couple of days. It will be mailed to you upon completion.

If you have any questions, feel free to contact me at (913) 814-9994.

Sincerely,

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Scott Siegwald Project Engineer



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## 1.0 Introduction

This document constitutes for the project report for the field investigation of the former WWI-era incinerator site at Fort Riley, Kansas. Arrowhead Contracting, Inc. of Overland Park, Kansas conducted the work in March and April of 2000 pursuant to the requirements of Contract DAKF19-01-P0091 and under the direction of the Ft. Riley Directorate of Environmental Safety (DES). The purpose of this report is to describe the field and analytical procedures used during the project and present the results and findings of the investigation.

WWI-era mapping indicates that an incinerator was formerly located immediately south of present Huebner Road and rail road tracks and west of Threemile Creek. Foundation and slab remnants were identified at the site. Based on observation of concrete remnants in the field and depiction of the footprint of the incinerator foundation on historical maps, it is estimated that former foundation covered an area of 10,750 ft<sup>2</sup> (refer to Figure 1-1) with a maximum length and width of 200 feet and 70 feet, respectively. The investigation was performed because the site could potentially contain heavy metals contamination in shallow soil as a result of historic operation of an incinerator by the military. The results of this field investigation will support Fort Riley's assessment of the environmental impact at the site.

The remainder of this report consists of five sections. Section 2.0 presents a discussion of the field activities and methods associated with the collection of soil samples. Section 3.0 presents a discussion of analytical activities and methods, including x-ray fluorescence (XRF) field screening and off-site confirmatory analysis of soil samples. Section 4.0 presents a discussion of the results and findings of the field investigation. A list of applicable references is presented in Section 5.0. In addition to the various tables and figures included with this report, two appendices are provided. Appendix A contains all of the XRF and laboratory data (including QA/QC). Appendix B contains the sample collection field sheets for soil samples.

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## 2.0 Soil Sampling Activities

This section discusses the general sampling approach, the methods used for soil sampling, the sample labeling protocol, and field documentation and quality control procedures.

#### 2.1 Sampling Locations, Approach, and Quantities

The sampling program included the collection of composite soil samples from 30 distinct locations identified as INC01 through INC30 (refer to Figure 1-1). The locations were selected randomly in the field to adequately cover the area interest. The rationale/approach for each group of sample locations is summarized by the following table.

INC01 - INC04, and INC28	Characterize soils within the limits of former foundation.	
INC05, INC07 and	Characterize soils adjacent to the perimeter of former	
INC10 – INC14	foundation.	
INC06, INC08, INC09, and	Characterize soils immediately upgradient of site.	
INC27		
INC10 and INC29	Characterize soils west of site.	
INC25, INC26, and INC30	Characterize soils east of site.	
INC15 – INC18	Characterize soils immediately downgradient of site.	
INC19 – INC24	Characterize soils downgradient of site.	

At each location, samples were collected from 0 in. to 6 in. below ground surface (bgs). At 22 of the 30 locations, samples were collected from 6 in. to 12 in. bgs. Samplers were unable to obtain a sample from 6 in. to 12 in. bgs at eight locations due to the presence of concrete or rock below the soil. At 6 locations (20% of the total number of locations), a third sample was collected from the depth interval 12 in. to 24 in. bgs. In total, 58 samples were collected from the 30 sample locations.

#### 2.2 Sample Collection Methods

Sampling personnel staked out the locations on the morning of March 23. Locations were selected to provide areal coverage of the site in accordance with approach outlined in Section 2.1. The sampling team also collected the samples on March 23, 2001. Following sample collection, the locations were measured relative to the presumed corners of the former foundation based on the position of concrete slab remnants.



In general, sample collection was performed in accordance with the Field Sampling Plan and amendment (Arrowhead, 2001). At each location, soil samples were composited from five sample points (aliquots). Sample aliquots were identified by centering a pre-fabricated, wooden grid over the sample location. Discrete soil samples were then collected from each interval (0 in. to 6 in. bgs, 6 in. to 12 in. bgs, and, as necessary, 12 in. to 24 in. bgs) using a stainless-steel, small barrel drive sampler. Soil from each aliquot was composited by thoroughly mixing in a stainless steel bowl with a stainless steel spoon. All vegetation, debris, and particles exceeding 2 mm were removed and returned to the sample boring location. The soil was then placed into a quart-size, plastic (Ziploc) bag and labeled to identify the location and depth interval (refer to Section 2.3). The soil within the plastic bag was kneaded by hand to facilitate homogenization. To prevent cross-contamination, the sampling equipment was decontaminated between each sampling location and between the 6 in. to 12 in. bgs and 12 in. to 24 in. bgs depth intervals. Decontamination consisted of rinsing the equipment with clean water and scrubbing with phosphate-free soap, followed by rinsing with de-ionized water. After collection, samples were delivered to an on-site field laboratory for XRF analysis (refer to Section 3.1).

#### 2.3 Sample Labeling and Identification

Soil samples were labeled with the sample ID, date, and time. Sample IDs consisted of a prefix corresponding to the location ID (e.g. INC08, INC24) followed by four digits representing the depth interval:

- "0006" ground surface to 6 in. bgs
- "0612" 6 in. to 12 in. bgs
- "1224" 12 in. to 24 in. bgs

For example, the sample ID "INC230612" represented the sample from the 6 in. to 12 in. bgs depth interval from location INC23.

#### 2.4 Field Documentation and Quality Control

The Site Supervisor and Field Team Leaders maintained a field logbook that documented the field and analytical activities and other pertinent information. The field logbooks were submitted to Ft. Riley DES at the conclusion of the project. In addition to the field logbooks, sampling technicians completed sample collection field sheets. The sample collection field sheets for this site are included in Appendix B.





The Site Supervisor completed a daily quality control (QC) inspection which was documented on a Daily QC Checklist. The Site Supervisor also completed a Daily Quality Control Report (DQCR). This report presented a summary of the day's field and analytical production, including XRF field screening results. The DQCR and QC checklist were previously submitted to the Ft. Riley DES project manager; thus, they are not provided with this document.



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## 3.0 Field Screening and Analysis Activities

This section discusses the XRF field screening procedure, QA/QC field screening procedures, method detection limits, and confirmatory sampling and analysis.

#### 3.1 Field Screening Methods

Samples collected during the project were screened/analyzed for the following heavy metals using a field-portable XRF spectrometer (Spectrace Model 9000 with a Model 9290 probe manufactured by Thermo MeasureTech of Round Rock, Texas):

- Barium
- Copper
- Lead
- Tin
- Zinc



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The XRF bench-scale system consisted of the electronic unit (with software), instrument probe, lab stand, sample shield, and power and computer cords. Samples for this site were analyzed on April 2, 2001.

XRF field screening was performed in accordance with the Field Sampling Plan and amendment (Arrowhead, 2001), referencing SW-846 Method 6200 (EPA, 1998) and Thermo MeasureTech instructions and operating procedures (Thermo MeasureTech, 1994). At the beginning of the day, the FPXRF spectrometer was turned on and allowed to warm up for at least 10 minutes. After warming up, initial quality control checks (refer to Section 3.2) were performed. Soil samples were then prepared for analysis as follows:

- A small portion of soil was removed from the plastic bag collected in the field.
- The soil was wrapped in aluminum foil and dried in an oven for 2 4 hours at less than 150 °C.
- Following drying, the sample was further homogenized by grinding/pulverizing using a mortar and pestle to the extent the soil would pass through a 10-mesh sieve.
- Approximately 20 grams of the pulverized soil was placed in a 31-mm polyethylene sample cup. The remaining ground soil was placed in a plastic container, labeled, and retained for possible off-site confirmatory analysis (refer to Section 3.4).



• The sample cup was then be covered with Mylar x-ray film and secured with a polyethylene locking ring.

Following preparation, the polyethylene cup containing the soil was placed within the sample ring above the instrument probe aperture. The sample shield was then placed over the sample cup, and the sample analyzed. (Refer to Section 3.3 for a discussion of the total "counting time" required to analyze the sample.) After analysis was complete, the sample ID was entered into the Spectrace 9000, and the result (concentration and standard deviation) for each metal was manually recorded in the field logbook. The results were saved by the Spectrace 9000 computer, and were eventually downloaded to a personal computer in text (.txt) format. Following analysis, all equipment (sample cup, mortar, etc.) was thoroughly cleaned to prevent cross contamination. The soil from the sample cup was poured into the plastic container along with the corresponding pulverized soil that was retained for possible off-site confirmatory analysis.

#### 3.2 Field Screening QA/QC

In accordance with the Field Sampling Plan and amendment (Arrowhead, 2001), the following quality assurance/quality control (QA/QC) checks were performed:

- Energy calibration (resolution) checks
- Instrument blanks
- Calibration verification (standard) checks
- Method blanks
- Precision checks

Table 3-1 presents a summary of each QA/QC check, including the frequency, rationale, and corrective actions. In addition to these QA/QC checks, the overall QA/QC program included analysis of confirmatory samples by an off-site laboratory to verify the comparability of XRF field screening results (refer to Section 3.4).

#### 3.3 Field Screening Detection Limits

For XRF analysis, method detection limits are a function of the "counting time" – the amount of time each radioactive source within the instrument probe irradiates the sample. In general, increasing the source's counting time (up to a point) decreases the detection limit for the

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elements detected by that source. The counting times are adjustable depending on the required detection limits and other data objectives.

The method detection limits were determined as described in SW-846 Method 6200 (EPA, 1998). According to Method 6200 Section 9.6, the results of replicate analyses of the lowconcentration NIST standard can be used to calculate average site-specific method detection limits. The method detection limit is defined as three times the standard deviation (SD) of the results for the low concentration NIST sample.

At the beginning of the project, the low-concentration NIST standard (No. 2709) was analyzed to determine the initial detection limits and source counting times. The NIST sample was analyzed several times in replicate at various source counting times. This process was repeated iteratively until optimal detection limits and counting times were achieved. The estimated project-specific detection limits for the five required heavy metals are presented in Table 3-2. It should be noted that the NIST 2709 sample did not contain tin. Therefore, the detection limit for tin is estimated based on the results for site samples with low concentrations of tin.

According to Method 6200 Section 9.6, the SD-based detection limit criteria can be used to determine the usability of a particular result. A result greater than the average calculated detection limit (refer to Table 3-2), but less than three times the SD associated with the result, should not be used as a quantitative measurement. Conversely, a result is below the average calculated detection limit, but greater than three times the associated SD, should be coded as an estimated value. For this reason, project XRF results are reported as the measurement concentration (PPM) combined with the SD.

#### 3.4 Confirmatory Sampling and Analysis

As part of the overall QA/QC program, 25 percent of all samples collected were submitted to an off-site laboratory for confirmatory analysis of the following metals:

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- Antimony
- Arsenic
- Copper \_\_
- Lead \_
- Mercury

's electo

• Zinc -

to be worthless to do us/o field values to correlate

Off-site analytical services were provided by Continental Analytical Services, Inc. of Salina, Kansas. Samples were analyzed per SW-846 Method 6010B for antimony, arsenic, copper, lead and zinc and SW-846 Method 7471A for mercury.

Confirmatory samples were selected by the Field Supervisor to represent a range of lead concentrations and to provide spatial coverage of the site. Off-site laboratory QA/QC was verified through the collection and analysis of duplicate samples. Duplicate samples were collected at a frequency of 10% of the confirmatory samples. For the project, a total of 15 confirmatory samples and 2 confirmatory duplicate samples were collected and analyzed.

Confirmatory samples were collected/prepared at the on-site laboratory following XRF field screening. Each sample was taken from the pulverized soil that that was previously prepared for XRF field screening (refer to Section 3.1). Soil was placed in a 25-ml glass jar provided by the off-site laboratory, and the jar was filled to at least 33 percent capacity. The sample was then labeled as described in Section 2.3 plus "-L" or "-LD" at the end of the ID to denote a laboratory sample or laboratory duplicate, respectively. The samples were then packed in a cooler for shipment to the off-site laboratory. Chain-of-custody records were completed and placed in the cooler. The cooler was sealed and taped, and a custody seal was applied. The samples were shipped by Fed<sub>2</sub>Ex to the off-site laboratory.

## 4.0 Field Investigation Results and Findings

This section presents the results of the field investigation, including a summary of XRF field screening, an assessment of the QA/QC performance of the XRF field screening process, an evaluation of the correlation between XRF results and confirmatory results, and a summary of laboratory analytical results. The data and findings/interpretations provided in the following sections are based on assessment of project results (XRF and confirmatory). For the purpose of data interpretation:

- "Elevated" results are defined as concentrations greater than the Kansas KSK Residential residential level for metals in soil (the assumed action levels).
- Lead is believed to be the governing contaminant at the site i.e. the contaminant present  $\frac{4}{6}$  will releven at the highest concentration relative to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any future actions (if  $\frac{ke}{6}$  relevent to the action level and for which any futu

### 4.1 Field Screening Results

Table 4-1 provides a summary of the results of XRF field screening for metals at the site. Lead was detected at a concentration greater than 400 PPM in samples from INC10 and INC13, suggesting that lead may be present at elevated levels in soils immediately surrounding the former incinerator foundation.

#### 4.2 Confirmatory Results

A summary of the laboratory analytical results for metals is presented in Table 4-2. Additionally, Figure 4-2 illustrates a comparison lead concentration to concentrations of arsenic, copper, and zinc in samples analyzed by the off-site laboratory. Overall, there appears to be a correlation between the lead concentration and the concentrations of other metals. High concentrations of arsenic, copper, and zinc are generally associated with high concentrations of lead; conversely, lower concentrations of lead are generally associated with lower concentrations of the other metals. The concentrations for copper appear to be the least correlated with lead. The following are additional generalized interpretations regarding the metals data:

• With a few exceptions (see below), arsenic, copper, zinc and mercury were not detected at levels significantly above the national ranges or averages for these metals in soil (refer to Table 4-2).



- Zinc, copper, and mercury concentrations in all samples were well below the Kansas RSK Residential levels.
- Arsenic was detected at a level slightly above Kansas RSK Residential criteria in samples from INC13, INC14, and INC15, indicating that arsenic may present at elevated levels on downgradient side of the former foundation. However, the concentrations were below the upper national range for arsenic in soil.
- The highest two detections for zinc (1,380 PPM and 1,040 PPM) were detected in the same samples as the highest two concentrations of arsenic INC15006 and INC130006. The corresponding concentrations for lead were 170 PPM and 160 PPM, respectively.
- All antimony and the majority of mercury results were ND. Mercury results greater than ND were generally associated with higher results for other metals.

### 4.3 Field Screening QA/QC Assessment

The following table summarizes the results of QA/QC checks performed during XRF analysis (refer to Table 3-1).

Energy Calibration Checks - Number of Failed Checks	0
Analytical Background (Blank) Checks – Number of	0
Failed Checks	·
Method Blanks – Number of Failed Checks	0
Precision Checks – Number of Failed Checks	0
Calibration Verification (Standard) Checks - Number of	0
Failed Checks	
Standard Checks - %D for Medium Concentration	-10.6% to +10.3%
NIST Standard	
Standard Check – %D for High Concentration NIST	-2.7%
Standard	
Precision Check – %RSD	7.7%

Per SW-846 Method 6200 (EPA, 1998), the acceptable %D is for a calibration verification (standard) check is +/-20%. The acceptable %RSD for a precision check is < 20%. Therefore, all calibration verification checks and the precision check were within the allowable limits. Based on successful calibration verification checks and energy calibration checks, it is apparent that the XRF system retained proper calibration thorough out the project. Precision check results indicate that the XRF system was able to reproduce a measurement for a standard of known

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concentration. The success of analytical background checks and method blank analyses indicate that laboratory cross-contamination was adequately prevented and did not compromise the integrity of the XRF results.

#### 4.4 Field Screening/Confirmatory Analysis Comparability

A summary of the comparability between XRF results and confirmatory results is provided by Table 4-3. The average %D for confirmatory results was -61%, -39%, and -13% for copper, lead, and zinc, respectively, indicating that the XRF results were typically higher than the corresponding confirmatory results. Of 45 confirmatory results (15 samples x 3 metals per sample), 28 results were within 50% of the corresponding XRF result. All confirmatory results (excluding the copper result for INC100006-L) were within 100% of the corresponding XRF result. A correlation coefficient ( $r^2$ ) was also calculated for the data for each metal per SW-846 Method 6200. According to Section 9.7 of Method 6200 (EPA, 1998): "The correlation coefficient ( $r^2$ ) for the results should be 0.7 or greater for the FPXRF data to be considered screening level data. If the  $r^2$  is 0.9 or greater ..., the data could potentially meet definitive level data criteria." The correlation coefficients for copper, lead, and zinc were calculated to be 0.82, 0.95, and 0.94, respectively. Thus the XRF results significantly exceed the criteria for screening level data. XRF results for lead and zinc meet the criteria for definitive data. Overall, the relatively good comparability between confirmatory results and XRF results suggests that the XRF process was reliable and that the XRF data is accurate and valid.

#### 4.5 Field Observations

Prior sampling, the Site Supervisor conducted a reconnaissance of the site to determine the preliminary sample locations. During the site reconnaissance, an empty, rusted 55-gallon drum was observed approximately 50 southwest of the former incinerator foundation. No other significant observations were noted during the reconnaissance.

Additionally, during sample collection and XRF analysis, samples were visually assessed for the presence of residual ash or other waste-related materials. The following samples were noted as containing a small pieces of hardened, black, slag-like material: INC030006, INC080006, INC130006, INC140006, INC141224, and INC150006. The material was relatively porous and hand some structure, but was not conclusively identified as ash.



## 5.0 References

- Arrowhead Contracting, Inc. Draft-Final Sampling and Field Sampling Plan and Health and Safety Plan. March 2001.
- Arrowhead Contracting, Inc. Quality Control Checks Amendment to Field Sampling Plan and Health and Safety Plan. March 2001

Thermo MeasureTech. Spectrace 9000 Standard Operating Check – Soils Application. May 1994.

Thermo MeasureTech. Spectrace 9000 Portable XRF Analyzer. August 1994.

U.S. Environmental Protection Agency. SW-846 Method 6200 - Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment. July 1998.





## TABLES





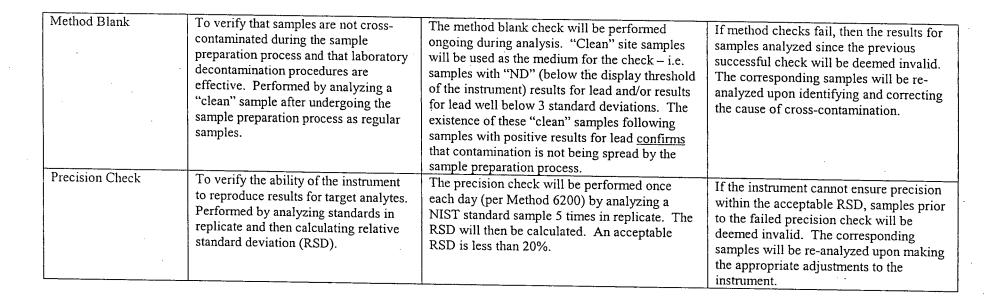
## Table 3-1. XRF Field Screening QA/QC Checks

QC Check	Purpose and Method of Performance	Frequency and Rationale	Corrective Action
Energy Calibration Calibration Verification	To verify instrument resolution and check for instrument "drift" (i.e. shifting of x-ray lines). Performed by analyzing pure iron (Fe) sample and then checking to be sure the Fe spectrum peak is correctly positioned and has the correct intensity (in kiloelectron volts). To verify the ability of the instrument to accurately quantify analytes of interest. Performed by analyzing standards with known (certified) concentrations of target analytes and calculating percent difference (%D) from the certified values.	This check will be performed at the beginning of each day. A successful energy calibration check at the beginning of the day adequately <u>confirms</u> that (1) the instrument is operating properly and is ready for ensuring analyses and (2) the instrument was operating properly during the previous day. Energy calibration checks will also be performed randomly during analysis. The calibration verification check will be performed using National Institute of Standards & Technology (NIST) standards. The check will be performed in accordance with Method 6200: at the beginning and end of each day and during analysis.	If an energy calibration check fails, then the results for samples analyzed between the failed check and the previous successful check will be deemed invalid. The corresponding samples will be re- analyzed upon making the appropriate adjustments to the instrument If the calibration verification check fails, then the results for samples analyzed between the failed check and the previous successful check will be deemed invalid. The corresponding samples will be re- analyzed upon making the appropriate
Instrument Blank	To verify that contamination is not being spread to the instrument probe. Performed by analyzing a quartz block.	The instrument blank check will be performed using the quartz block during analysis (random frequency) and at the end of the day. A successful instrument blank check at the end of the day <u>confirms</u> that the probe is clean and ready for the next day of analysis. Performing successful checks during analysis ensures that samples analyzed prior to the check were not affected by contamination in the probe. As a further check of proper instrument	adjustments to the instrument. If the instrument blank check fails, then the results for samples analyzed between the failed check and the previous successful check will be deemed invalid. The corresponding samples will be re- analyzed upon cleaning (decontaminating) the instrument probe.
		decontamination, the low-concentration NIST standard (with lead concentration below the instrument detection limit) will be periodically analyzed. A result for lead below the detection limit will confirm that the probe is clean.	

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Element	Detection Limit Cd-109 Source	Detection Limit Am-241 Source
Lead	50 PPM	`
Copper	120 PPM	
Barium		100 PPM
Zinc	110 PPM	
Tin		90 PPM

## Table 3-2. Project-Specific Method Detection Limits

NOTES:

- The detection limits presented above are based on replicate analysis of the low-• concentration NIST Standard (No. 2709) using a count time of 130 seconds for the Cd-109 source, 40 seconds for the Am-241 source, and 40 seconds for the Fe-55 source.
- Tin is not a component of the low-concentration NIST standard. Therefore, the detection limit is estimated using results from low-concentration site samples.



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Metal	No. of Samples	No. of Samples "BD"	Kansas RSK Residential Level - Soil	No. of Samples > KS RSK	Location(s) of Sample(s) > KS RSK
Barium	58	0	5,500 PPM	0	
Copper	58	18	2,900 PPM	0	
Lead	58	10	400 PPM	2	INC10 INC13
	58	46			
Zinc	58	12	23,000 PPM	0	

Table 4-1. Summary of XRF Field Screening Results for Metals

NOTES:

BD = Low results below the display threshold of XRF spectrometer

Kansas RSK Residential Levels taken from table provided in Statement of Work (March 21, 2001).

Metal	Low Conc. (PPM)	High Conc. (PPM)	Kansas RSK Residential Level – Soil	No. of Samples > KS RSK	Location(s) of Sample(s) > KS RSK
Antimony	ND(2.0)	ND(2.0)	31 PPM	0	
Arsenic	. 2.9	23.3	11/29 PPM Sil G. 18,0 (5.5)	3	INC13 INC14 INC15
Copper	7.6	88.2	2,900 PPM	0	
Lead	10.9	488	400 PPM	1	
Mercury	ND(0.1)	0.2	2 PPM		INC10
Zinc	37.6	1,380	23,000 PPM	0	

Table 4-2. Summary of Confirmatory Analytical Results for Metals

NOTES:

The above data excludes sample INC100006-L due to anomalously high result for copper.

Kansas RSK Residential Levels taken from table provided in Statement of Work (March 21, 2001).

The following national ranges and averages for inorganics in soil [taken from *Hazardous Waste Land Treatment*, U.S. Environmental Protection Agency, Office of Surface Water (OSWGR), SW-274, April 1983]:

- Antimony -2 10 PPM
- Arsenic 1 50 PPM (avg. 5 PPM)
- Copper 2 100 PPM (avg. 30 PPM)
- Lead 2 200 PPM (avg. 10 PPM)
- Mercury 0.01 0.3 PPM (avg. 0.03 PPM)
- Zinc 10 300 PPM (avg. 50 PPM)

# Table 4-3. Summary of Correlation Between XRF Resultsand Confirmatory Results

Element	Average %D	Correlation Coefficient
Copper	-61%	0.82
Lead	-39%	0.95
Zinc	-13%	0.94

NOTES:

- %D = Percent difference from XRF result [calculated by (Conf Result XRF Result) / (XRF Result) x 100]
- A positive %D indicates that the confirmatory result was greater than the XRF results. Conversely, a negative %D indicates that the XRF result was greater than the confirmatory result.
- The above does not incorporate the result for INC100006-L, due to an anomalously high result for copper.
- Correlation data for antimony is not applicable since all confirmatory results were ND.
- According to Section 9.7 of Method 6200 (EPA, 1998): "The correlation coefficient (r<sup>2</sup>) for the results should be 0.7 or greater for the FPXRF data to be considered screening level data. If the r<sup>2</sup> is 0.9 or greater ..., the data could potentially meet definitive level data criteria."

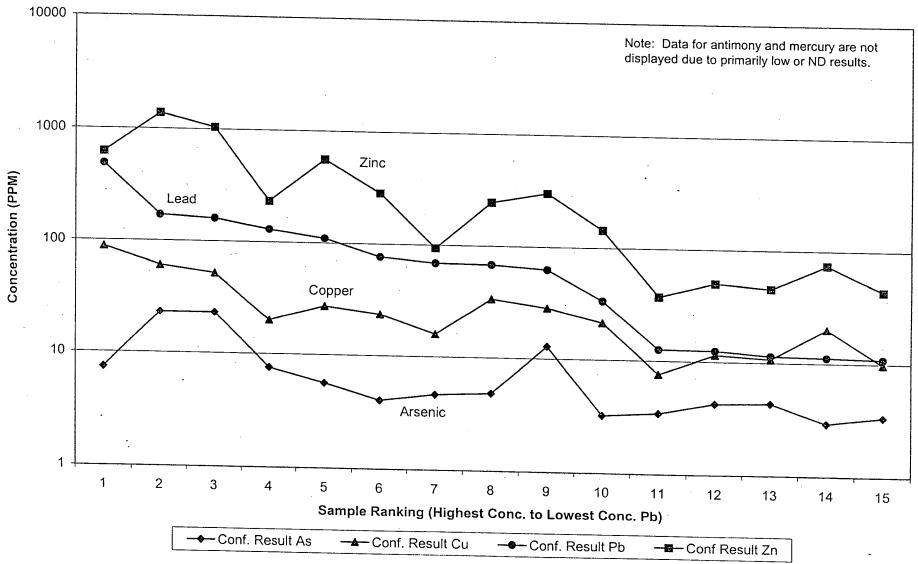


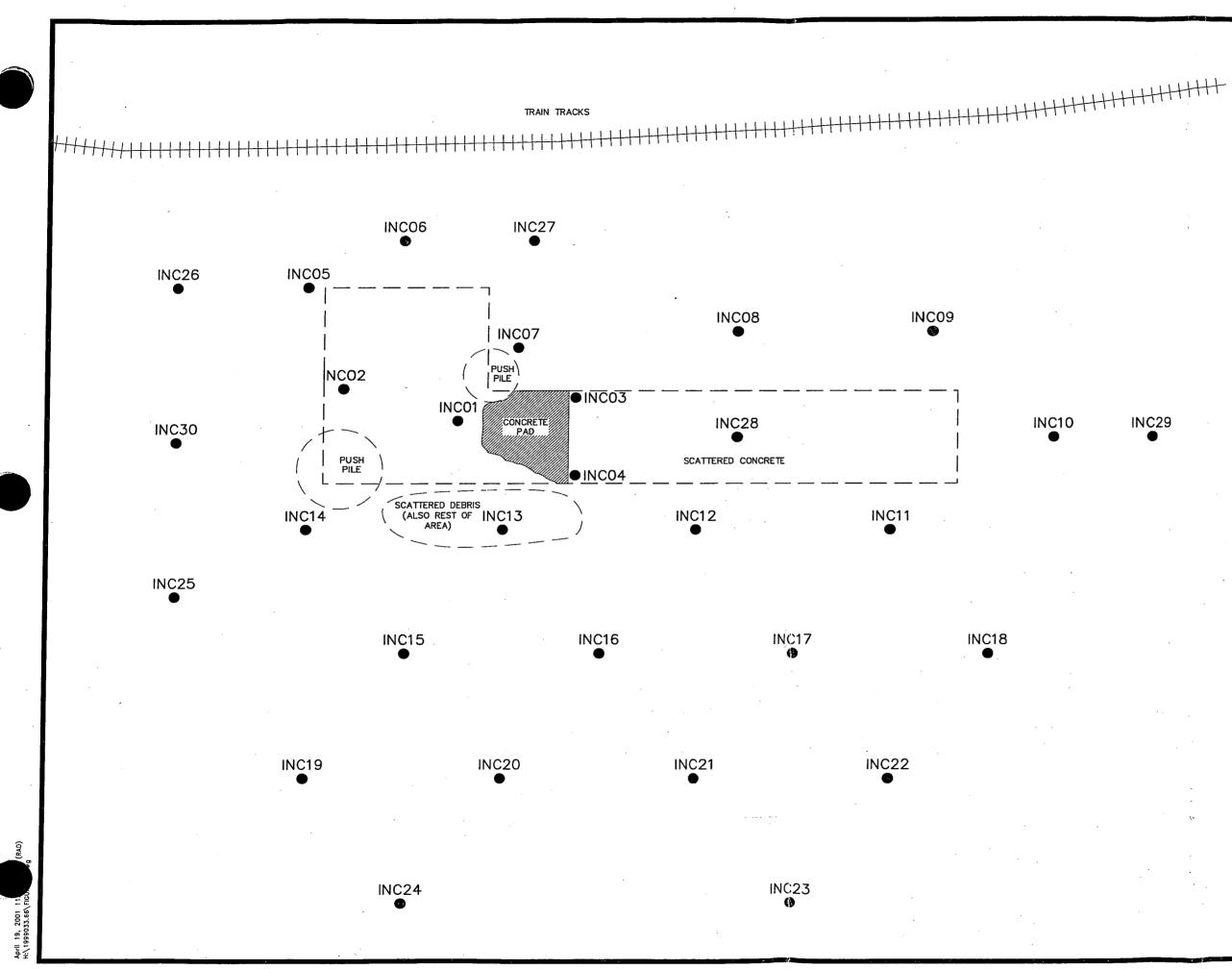
# FIGURES





Figure 4-1. Comparison of Lead Results to Other Metals





#### LEGEND:

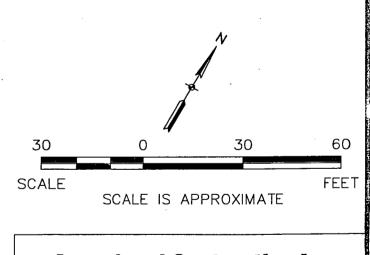
#### INC29 SAMPLE LOCATIONS

OBSERVATION OF CONCRETE/SLAB REMNANTS

#### NOTE:

1. FOUNDATION LIMITS AND SAMPLE LOCATION ARE APPROXIMATE.





Arrov	vheau	1 Co	ntra	cting	Inc.
Overland				•	

FORT RILEY DES CLIENT:

LOCATION: FORT RILEY, KANSAS

TITLE:

#### SAMPLE LOCATIONS

DRAWN BY	CHK'D. BY	APPROVED BY -
<u>R.A.D.</u>	S.F.S.	
PROJ. NO.	DATE	FIG. NO.
01 - 224	4/12/01	1-1

## **APPENDIX A**

## XRF FIELD SCREENING AND CONFIRMATORY ANALYSIS RESULTS – ALL DATA

#### XRF Field Screening Results Ft. Riley Incinerator Site

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Date Anal.	Time Anal.	Sample ID	Resuli Cu	SD Cu	Resul Zn	t SD Zn	Resul Pb	t SD Pb	Resu Ba	lt SD Ba	Resul Sn	t SD Sn
4/2/01		INC010006	63	33	38	30.7	BD	BD	762	· 27.7	37	29.3
4/2/01		INC020006	44	32.3	45	31.6	23	14	918	30.8	BD	BD
4/2/01		INC020612	62	32.7	53	31.2	25	14.3	850	29.3	BD	BD
4/2/01		INC021224	68	33	BD	BD	21	14	891	30.1	BD	BD
4/2/01		INC030006	BD	BD	197	39.5	74	17.5	595	25.1	BD	BD
4/2/01		INC040006	36	33	292	44.4	157	21.7	468	22.8	37	1
4/2/01		INC050006	BD	BD	232	39.7	40	15.3	940	31.4		27.6
4/2/01		INC050612	54	32.9	134	36	17	13.8	593	24.6	BD	BD
4/2/01		INC060006	135	39.4	393	47.9	120	19.6	373		BD	BD
4/2/01		INC070006	BD	BD	940	65.3	200	23.6	389	20.6	BD	BD
4/2/01		INC080006	48	33.5	111	35.6	108	19.6			BD	BD
4/2/01		INC080612	70	33.7	66	32.1	30	19.0	943	31.3	BD	BD
4/2/01		INC081224	34	31.4	54	31.8	50		7.85	28.1	BD	BD
4/2/01		NC090006	52					16	818	28.9	BD	BD
4/2/01		NC090008	- 52 - 81	35.7	255	44.6	123	21.3	754	29.4	BD	BD
4/2/01		T		36.3	84	35.4	20	14.8	932	31.7	BD	BD
4/2/01		NC100006	123	38.6	556	53.3	544	35.4	716	28.2	70	31.5
		NC100612	BD	BD	142	36.8	206	24	895	30.8	71	32.7
4/2/01		NC110001	81	41.7	980	73.5	204	27.8	1447	43.2	BD	BD
4/2/01		NC110612	40	33.8	282	44.3	168	23.6	1155	36.3	BD	BD
		NC120006	100	43.6	583	62.3	232	10.3	1938	51.6	52	37.1
		NC120612	BD	BD	97	33.8	BD	BD	870	29.8	BD	BD
		NC130006	108	48.1	2010	106	272	32.8	1737	50.2	44	39.9
		NC130612	255	62.3	2120	117	515	45.4	1852	55.2	55	45.1
		NC140006	76	34.5	120	35.9	45	16.2	820	29.2	37	29.9
		NC140612	104	38.6	302	45.1	72	18.6	957	32.6	BD	BD
		NC141224	82 1	40.5	569	59.2	149	24.8	1640	45.4	BD	BD
		NC150006	158	50.8	1570	96.3	365	37.4	1155	41.6	97	41.6
		VC160006	BD	BD	68	33.6	BD	BD	826	29.9	BD	BD
4/2/01		NC160612	BD	BD	91	34.7	32	15.2	969	31.9	BD	BD
4/2/01		NC170006	89	37.2	60	34	BD	BD	1052	33.5	BD	BD
		VC170612	74	33.8	BD	BD	BD	BD	811	28.8	BD	BD
		IC180006	47	32.6	63	32.5	51	16.2	802	28.9	BD	BD
		IC180612	BD	BD	BD	BD	55	16.7	875	30.2	BD	BD
		IC190006	BD	BD	47	31.2	16	14.3	858	29.6	BD	BD
		IC190612	BD	BD	BD	BD	BD	BD	821	29.2	BD	BD
		IC191224	BD	BD	66	32.8	28	15	879	30.4	67	32
		IC200006	BD	BD		32.1	25	14.9	946	31.6	BD	BD
		C200612	75	34		32.7	33	14.7	811	28.8	BD	BD
		C210006		33.3		35.2	BD	BD	910	30.9	BD	BD
		C210612		34.5	BD	BD		16.5	812	28.9	BD	BD
		C211224		34.4	BD	BD		14.8	824	28.8	37	29.7
		C220006		34.5		32.3	59	17	869	30.2	BD	BD
		C220612		32.7	BD	BD	BD	BD	857	29.7	BD	BD
······		C230006	BD	BD	BD	BD		14.6	748	27.8	BD	BD
		C230612	BD	BD		33.2	BD	BD	760	28.2	BD	BD
	3:59 IN	C240006	BD	BD	53	32.1	32	14.7	893	30.3	BD	BD
/2/01 1	1:07 IN	C240612	BD	BD	94	34.3	15	14.6	848	29.7	BD	BD
/2/01 1:	3:54 IN	C250006	41	32.5	127	36.1	37		803	29.1	BD	BD
/2/01 10	0:50 IN	C250612	93 3	35.3	BD	BD	35		797	28.6	BD	BD

#### XRF Field Screening Results Ft. Riley Incinerator Site



Date Anal.	Time Anal.	Sample ID	Result Cu	SD Cu	Result Zn	SD Zn	Result Pb	SD Pb	Result Ba	SD Ba	Result Sn	SD Sn
4/2/01	11:44	INC251224	64	33.8	BD	BD	BD	BD	892	30.4	43	31
4/2/01	10:56	INC260006	132	37.5	51	31.5	18	14.3	810	28.5	BD	BD
4/2/01	12:32	INC260612	53	31.6	BD	BD	40	14.6	781	27.9	BD	BD
4/2/01	9:33	INC270006	BD	BD	269	43.1	119	19.3	308	18.7	BD	BD
4/2/01	15:58	INC280006	59	34.8	448	50	150	21.2	462	22.2	BD	BD
4/2/01	10:05	INC290006	BD	BD	BD	BD	36	15	831	28.9	BD	BD
4/2/01	10:32	INC290612	36	30.8	35	30.2	20	13.4	787	27.7	BD	BD
4/2/01	10:45	INC300006	84	35.9	135	32.1	36	15.4	633	26	BD	BD
4/2/01	12:44	INC300612	68	33.8	228	40.2	45	16.9	902	30.6	BD	BD

Notes: Results are reported in parts per million (PPM) SD = Standard deviation BD = Low results suppressed (not displayed) by Spectrace 9000 ND (2.0) = Not detected (detection limit)

General: According to SW-846 Method 6200 - A measurement above the average calculated or manufacturer's detection limit, but smaller than three times its SD, should not be used as a quantitative measurement. Conversely, if the measurement is below the average calculated or manufacturer's detection limit, but greater than three times its associated SD, it should be coded as an estimated value.

Per SW-846 Method 6200 (Section 9.6) detection limits were calculated based on analysis of the low-concentration NIST sample. Approximate detection limits were: Pb - 50 PPM, Cu - 120 PPM, Ba - 100 PPM, Zn - 110 PPM, and Sn - 90 PPM.



### Results of Confirmatory Analysis and Analyses of Other Metals Ft. Riley Former Incinerator Site

Date Anal.	XRF	XRF Result	XRF SD	XRF Result	XRF SD	XRF Result	XRF SD		Date	Conf.	Conf.	Conf.	Conf.	Conf.	Conf.
XRF	Sample ID	Cu	Cu	Pb	Pb	Zn		Confirmatory ID	Submitted to Lab	Result Sb	Result As	Result Cu	Result Pb	Result Zn	Result Hg
4/2/01	INC010006	63	33		BD	38	30.7	INC010006-L	4/3/01	ND(2.0)	2.9	20	11.2		
4/2/01	INC030006	BD	BD		17.5	197	39.5	INC030006-L	4/3/01	ND(2.0)	3.2	21.5			ND(0.1)
4/2/01	INC060006	135	39.4	120	19.6	393		INC060006-L	4/3/01	ND(2.0)	4.8	33.8		144	0.1
4/2/01	INC070006	BD	BD		23.6	940		INC070006-L	4/3/01	ND(2.0)		27.5	67.8		ND(0.1)
4/2/01	INC080006	48	33.5		19.6	111		INC080006-L	4/3/01	ND(2.0)	4.6		110	561	0.2
4/2/01	INC100006	123	38.6		35.4	556		INC100006-L	4/3/01	ND(2.0)	<u> </u>	16	68.7		ND(0.1)
4/2/01	INC100006	123	38.6	544	35.4	556		INC100006-LD	4/3/01	ND(2.0)			448	663	0.2
4/2/01	INC110612	40	33.8	168	23.6	282		INC110612-L		ND(2.0)	7.4		488	624	0.2
4/2/01	INC130006	108	48.1	272	32.8	2010		INC130006-L			7.6		130		ND(0.1)
4/2/01	INC141224	82	40.5	149	24.8	569		INC141224-L		ND(2.0)	23.3	51.9	160		ND(0.1)
4/2/01	INC150006	158	50.8	365	37.4	1570		INC150006-L		ND(2.0)	12.9	28.7	62.5		ND(0.1)
4/2/01	INC190612	BD	BD	BD	BD	BD		INC190612-L		ND(2.0)	23.3	60	170	1380	0.2
4/2/01	INC190612	51	32.7	BD	BD	BD		INC220612-L		ND(2.0)	4.3	10.7	11.4		ND(0.1)
4/2/01	INC220612	51	32.7	BD	BD	BD		INC220612-LD		ND(2.0)		11.5	12.5		ND(0.1)
4/2/01	INC240612	BD	BD	15	14.6	94		INC240612-LD		ND(2.0)	4.1	11.3	11.9		ND(0.1)
4/2/01	INC260612	. 53	31.6	40	14.6	BD		INC260612-L		ND(2.0)		9.8	10.9		ND(0.1)
4/2/01	INC280006	59	34.8	150	21.2	448	_	INC280006-L		ND(2.0)	3.4	7.6	12.6		ND(0.1)
			······						4/3/01	ND(2.0)	4	23.7	76.5	284	ND(0.1)

Notes: Results are reported in parts per million (PPM).

SD = Standard deviation

BD = Low results suppressed (not displayed) by Spectrace 9000

ND (2.0) = Not detected (detection limit)

General: According to SW-846 Method 6200 - A measurement above the average calculated or manufacturer's detection limit, but smaller than three times its SD, should not be used as a quantitative measurement. Conversely, if the measurement is below the average calculated or manufacturer's detection limit, but greater than three times its associated SD, it should be coded as an estimated value.

Per SW-846 Method 6200 (Section 9.6) detection limits were calculated based on analysis of the low-concentration NIST sample. Approximate detection limits were: Pb - 50 PPM, Cu - 120 PPM, Ba - 100 PPM, and Zn - 110 PPM.



Sample ID	XRF Result Cu	Conf. Result Cu	XRF Result Pb	Conf. Result Pb	XRF Result Zn	Conf. Result Zn	Correlation (%D from XRF Result) Cu	Correlation (%D from XRF Result) Pb	
INC010006	63	20	15	11.2	38	74	-68		Zn
INC030006	40	21.5	74	33.8	197			-25	95
INC060006	135	33.8	120	67.8	393	144	-46	-54	-27
INC070006	40	27.5	200	110		245	-75	44	-38
INC080006	48	16	108		940	561	-31	45	-40
INC100006	123	88.2		68.7	111	94.1	-67	-36	-15
INC110612	40	20.2	544	488	556	624	-28	-10	12
INC130006	108		168	130	282	231	50	-23	-18
INC141224		51.9	272	160	2010	1040	-52	-41	-48
INC150006	82	28.7	149	62.5	569	301	-65	-58	-47
	158	60	365	170	1570	1380	-62	-53	-12
INC190612	40	10.7	15	11.4	40	45.6	-73	-24	14
INC220612	51	11.3	15	11.9	40	48.7	-78	-21	
INC240612	40	9.8	15	10.9	94	43.8	-76	-21	22
INC260612	53	7.6	40	12.6	40	37.6	-86		
INC280006	59	23.7	150	76.5	448		-60	-69 -49	6 -37

Average:

-61

-13

-39

Notes:

%D = Percent difference from XRF result

XRF results originally BD (below display threshold of instrument) are assigned a value of approximately one third the XRF detection limit for purposes of calculating the %D. The affected results are represented in bold.

For INC100006, the duplicate confirmatory sample result (INC100006-LD) was used to calculate correlation due to anomalously high copper result for INC100006-L.



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Results of Calibration Verification checks and Precision Checks Ft. Riley Former Incinerator Site

Date Anal. QC Check ID	Time Anal.	Result Pb	SD Pb	Result Zn	SD Zn	Result Ba	QC Check Description	%D	%D			
4/2/01 NIST2709-3	9:22	16	13.1	76	33.4			РЬ	Zn	Ba	SD	RSD
4/2/01 NIST2710-1	8:55	5380		6350	186		Standard Check	NA	NA	-17.4		
4/2/01 NIST2711-1	9:03	1193	58.1	369			Standard Check	-2.7	-8.7	NA		
4/2/01 NIST2711-2	13:22	1223	51.8		54	715	Standard Check	2.7	5.4 ·	-1.5	······································	
4/2/01 NIST2711-3	16:19			293	44.4	675	Standard Check	5.2	-16.3			· · · · · · · · · · · · · · · · · · ·
4/2/01 NIST2711-4			50.8				 Precision/Calibration Check	0.7				
4/2/01 NIST2711-5	16:25	1195	51.5				 Precision Check	2.8				
	16:29	1282	53.3				Precision Check	10.3				
4/2/01 NIST2711-6	16:35	1121	49.9				 Precision Check					
4/2/01 NIST2711-7	16:40	1039	47.9					-3.5				
							 Precision Check	-10.6			89.9	7.7

Notes:

BD = Low result suppressed (not displayed) by Spectrace 9000

NA = Not applicable; result below the detection limit

SD = Standard deviation

RSD = Relative standard deviation

%D = Percent difference from certified (true) value

NIST certified concentrations (PPM):

NIST2709 (low concentration) = Pb 18.9 +/- 0.5, Zn 106 +/-3, Ba 968 +/- 40 NIST 2711 (medium concentration) = Pb 1162 +/- 31, Zn 350.4 +/- 4.8, Ba 726 +/- 38 NIST 2710 (high concentration) = Pb 5532 +/- 80, Zn 6952 +/- 91, Ba 707 +/- 51

General:

According to SW-846 Method 6200, the measured value should be within +/- 20% (%D) of the true value for the calibration verification check to be acceptable.

According to SW-846 Method 6200, for XRF data to be adequately precise, the RSD should not be greater than 20 percent.



04/17/2001

Arrowhead Contracting Attn: Scott Siegwald 12920 Metcalf Ste.150 Overland Park, KS 66213

Date Received: 04/04/2001 Continental File No.: 7121 Continental Order No.: 69906 Your P.O./Project No.: 2328

Dear Mr. Siegwald:

This laboratory report consisting of 13 pages contains the analytical results for the following samples:

CAS LAB ID #	SAMPLE DESCRIPTION	SAMPLE TYPE	DATE SAMPLED
01040228 01040229 01040230 01040231 01040232 01040233 01040235 01040235 01040236 01040237 01040238 01040239 01040240 01040241 01040242 01040243 01040244	INC110612-L INC150006-L INC220612-L INC220612-LD INC100006-LD INC100006-LD INC260612-L INC130006-L INC190612-L INC040612-L INC040612-L INC240612-L INC010006-L INC280006-L INC041224-L INC030006-L INC080006-L	Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid	03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001 03/23/2001
		*	

Thank you for choosing Continental for this project. If you have any questions, please contact me at (800)-535-3076.

CONTINENTAL ANALYTICAL SERVICES, INC.

Brian T. O'Donnell

Project Manager



1804 GLENDALE ROAD • SALINA, KANSAS 67401-6675 785-827-1273 • 800-535-3076 • FAX 785-823-7830

Page 1



Page: 2

Client: Arrowhead Contracting Attn: Scott Siegwald 12920 Metcalf Ste.150 Overland Park, KS 66213

Date Sample Rptd: Date Sample Rptd: 04/17/2001 Date Sample Recd: 04/04/2001 Continental File No: 7121 Continental Order No: 69905 Client P.O.: 2328

Lab Number: 01040228 Sample Description: INC110612-L

Date Sampled: 03/23/2001 Time Sampled: 1330

Analysis	Concentration	Units		Date Analyzed	Book/Page
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total	ND(2.0) 7.6 20.2 130. ND(0.1) 231.	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	04 04 04 04	4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	4866/26 4866/26 4866/26 4866/26 4425/343
Analysis	Date Prepared	QC Batch	Analyst	Method(s	)
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total ICP Metals Total Preparation Mercury Total Preparation A Antimony Total Preparation	nalvet/Mothed	010411-6 010411-6 010411-6 010413-2	MAG MAG MAG AMB MAG SKR AMB SKR	6010B 6010B 6010B 7471A 6010B 3050B 7471A 3050B	

Conclusion of Lab Number: 01040228

Lab Number: 01040229 Sample Description: INC150006-L

Date Sampled: 03/23/2001 Time Sampled: 1410

Analysis	Concentration	Units		Date Analyzed	Book/Page
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total	ND (2.0) 23.3 60.0 170. 0.2 1380.	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	04 04 04 04	4/12/2001 1/13/2001 1/13/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001	4866/26 4866/26 4866/26 4866/26 4866/26 4425/343
Analysis	Date Prepared	QC Batch	Analyst	Method(s	:)
Antimony, Total (ICP)	04/12/2001	010412-1	MAG	6010B	

-Continued-



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## CONTINENTAL ANALYTICAL SERVICES, INC.

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	LABORATORY	REPORT			Page:
Client: Arrowhead Contrac Lab Number: 01040229	ting	•			
、 ·					
Analysis	Date				
	Prepared	1 QC Batch	<u>Analys</u>	t Method	l(s)
Arsenic, Total (ICP)	04/11/200	010411-6			
Copper, Total	04/11/200	)1 010411- $\epsilon$	MAG	601.0B	
Lead, Total (ICP)	04/11/200	010411-6	MAG MAG	6010B	
Mercury, Total Soil	04/13/200	1 010413-2	AMB	6010B	
Zinc, Total			MAG	7471A	
ICP Metals Total Preparatic	<u> </u>		SKR	6010B	
			AMB	3050B 7471A	
Antimony Total Preparation	Analyst/Method		SKR	3050B	
Conclusi	on of Lab Number			50500	
	ton of hab Number	: 01040229			
Lab Number: 01040230 Sample Description: INC2206	12-L		Date Sa Time Sa	mpled: 03 mpled: 15	3/23/2001 520
Sample Description: INC2206 Analysis	12-L Concentration	Units	Time Sa	mpled: 03 mpled: 15 Date Analyzed	520
Sample Description: INC2206 Analysis Antimony, Total (ICP)	<u>Concentration</u>	· · ·	Time Sa	Date Date	Book/Pa
Sample Description: INC2206 Analysis Antimony, Total (ICP) Arsenic, Total (ICP)		mg/kg	Time Sa	Date Date Analyzed 4/12/2001	520 <u>Book/Pa</u> 4866/26
Sample Description: INC2206 Analysis Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total	Concentration ND(2.0)	mg/kg mg/kg	Time Sa : 0 0	Date Date Analyzed 4/12/2001 4/13/2001	Book/Pag 4866/26 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP)	Concentration ND(2.0) 4.2	mg/kg mg/kg mg/kg	Time Sa 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001	Book/Pac 4866/26 4866/26 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1)	mg/kg mg/kg mg/kg mg/kg	Time Sa 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date <u>Analyzed</u> 4/12/2001 4/13/2001 4/13/2001 4/13/2001	Book/Pac 4866/26 4866/26 4866/26 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP)	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5	mg/kg mg/kg mg/kg	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/16/2001	Book/Pac 4866/26 4866/26 4866/26 4866/26 4866/26 4425/344
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2	mg/kg mg/kg mg/kg mg/kg mg/kg	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date <u>Analyzed</u> 4/12/2001 4/13/2001 4/13/2001 4/13/2001	Book/Pac 4866/26 4866/26 4866/26 4866/26 4866/26 4425/344
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u>	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1)	mg/kg mg/kg mg/kg mg/kg mg/kg	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/16/2001	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> Antimony, Total (ICP)	Concentration ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date Prepared	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg. QC Batch	Time Sa	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP)	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date <u>Prepared</u> 04/12/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6	Time Sa	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg. QC Batch 010412-1 010411-6	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B 6010B	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total Copper, Total Lead, Total (ICP)	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg. QC Batch 010412-1 010411-6 010411-6	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B 6010B 6010B	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> <u>Antimony, Total (ICP)</u> <u>Arsenic, Total</u> (ICP) <u>Copper, Total</u> Lead, Total (ICP) <u>Mercury, Total Soil</u>	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/13/2001	mg/kg mg/kg mg/kg mg/kg mg/kg Mg/kg 010412-1 010411-6 010411-6 010411-6	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B 6010B 6010B 6010B 6010B	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> <u>Antimony, Total (ICP)</u> <u>Arsenic, Total (ICP)</u> Copper, Total Lead, Total (ICP) <u>Mercury, Total Soil</u> <u>Sinc, Total</u>	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/13/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg. QC Batch 010412-1 010411-6 010411-6 010411-6	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B 6010B 6010B 6010B 6010B 6010B	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total Cop Metals Total Preparation	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/13/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg. QC Batch 010412-1 010411-6 010411-6 010411-6	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B 6010B 6010B 6010B 6010B	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total CP Metals Total Preparation And Mercury Total Preparation And	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/13/2001 04/11/2001 Analyst/Method	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg. QC Batch 010412-1 010411-6 010411-6 010411-6	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC2206 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total Cop Metals Total Preparation	<u>Concentration</u> ND(2.0) 4.2 11.5 12.5 ND(0.1) 50.2 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/13/2001 04/11/2001 Analyst/Method	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg. QC Batch 010412-1 010411-6 010411-6 010411-6	Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mpled: 15 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 3050B	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26

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CONTINENTAL ANALYTICAL SERVICES, INC.

	LABORATORY	BEDODM			
Client: Arrowhead Contrac		REPORT			Page: 4
Lab Number: 01040231 Sample Description: INC220	612-LD		Date Sa Time Sa	ampled: 0 ampled: 1	3/23/2001 520
Analysis	Concentration	Units	·	Date Analyzed	Book/Page
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total	ND(2.0) 4.1 11.3 11.9 ND(0.1) 48.7	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0 0 0 0	4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	L 4866/26 L 4866/26 L 4866/26 L 4866/26 L 4866/26 L 4425/344
Analysis	Date Prepared	QC Batch			
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total ICP Metals Total Preparation And Mercury Total Preparation And Antimony Total Preparation And	04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/13/2001 04/13/2001 04/11/2001 n Analyst/Method	010412-1 010411-6 010411-6 010411-6 010413-2 010411-6	MAG MAG MAG MAG AMB MAG SKR AMB SKR	<u>Method(</u> 6010B 6010B 6010B 7471A 6010B 3050B 7471A 3050B	
Lab Number: 01040232 Sample Description: INC10000	96-L		Date Sam Time Sam	pled: 03/ pled: 132	23/2001 20
Analysis	Concentration	Units	A	Date nalyzed	Book/Page
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Jead, Total (ICP) Mercury, Total Sinc, Total	ND (2.0) 5.5 2320 448. 0.2 663.	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	04 04 04 04	/12/2001 /13/2001 /13/2001 /13/2001 /16/2001 /16/2001	4866/26 4866/26 4866/27 4866/26 4425/344
nalysis	Date Prepared	QC Batch	Analyst	Method(s)	)
ntimony, Total (ICP) rsenic, Total (ICP) opper, Total	04/12/2001 0 04/11/2001 0 04/11/2001 0	010411-6	MAG MAG MAG	6010B 6010B 6010B	

-Continued-



	LABORATORY	REPORT			Page:
Client: Arrowhead Contract Lab Number: 01040232	ling	•			
	Date				
Analysis		QC Batch	Analyst	Metho	d(s)
Lead, Total (ICP)		01 010411-6			
Mercury, Total	04/13/200	010411-6 010413-2		6010B	
Zinc, Total	04/11/200	1 010411 6	amb Mag	7471A	
ICP Metals Total Preparatio	n Analvet/Mothod	- 010111 0	SKR	6010B 3050B	
A reparation A	nalvet/Mothed		AMB	7471A	
Antimony Total Preparation	Analyst/Method		SKR	3050B	
· . Conclusi	on of Ish Mund				
COACTEST	on of Lab Number	: 01040232			<u>    .                                </u>
Lab Number: 01040233					
Sample Description: INC10000	16-LD		Date Sa	mpled: 0	3/23/200
			Time Sai	mpled: 1	320
_				Data	
nalysis	<u>Concentration</u>	Units	1	Date Analyzed	Book/Pa
ntimony, Total (ICP)					
rsenic, Total (ICP)	ND(2.0) 7.4	mg/kg	04	1/12/200	1 4866/26
opper, Total	88.2	mg/kg	04	1/13/200	1 4866/26
ead, Total (ICP)	488.	mg/kg mg/kg	04	/13/200	1 4866/26
ercury, Total Soil	0.2	mg/kg	. 04	/13/200	L 4866/26 L 4425/34
inc, Total	624.	mg/kg	04	/13/2003	L 4425/34 L 4866/27
	Date				
nalysis	Prepared	QC Batch	Analyst	Method	s)
ntimony, Total (ICP)	04/12/2001	010412-1	MAG	6010B	
rsenic, Total (ICP) opper, Total	04/11/2001	010411-6	MAG	6010B	
ad, Total (ICP)	04/11/2001	010411-6	MAG	6010B	
ercury, Total Soil	04/11/2001	010411-6	MAG	6010B	
Inc, Total	04/13/2001	010413-2	AMB	7471A	
P Metals Total Preparation	04/11/2001 Analyst /Method	010411-6	MAG	6010B ·	
foury Total Preparation Ana	lyst/Method		SKR	3050B	
timony Total Preparation An	alyst/Method		AMB SKR	7471A 3050B	
Conclusion	of Lab Number:	01040233			
			Date Samp		/22/2007
b Number: 01040234				$\mathbf{J} = \mathbf{J} + \mathbf{J} = \mathbf{J}$	23/2001
b Number: 01040234 mple Description: INC260612	- L		Time Samp	tea: 16	JQ
b Number: 01040234 mple Description: INC260612	- L	. '	Time Samp	)1ed: 160	50
b Number: 01040234 mple Description: INC260612 alysis			-	Date	
mple Description: INC260612	-L <u>Concentration</u> -Continued	Units	-		Book/Pag



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Client Arreshard a	LABORATORY				Page:
Client: Arrowhead Contra Lab Number: 01040234 Sample Description: INC26	-				
Analysis				Date	
MIALYSIS	Concentration	<u>Units</u>		Analyzed	Book/Pa
Antimony, Total (ICP)	ND(2.0)	mg/kg			
Arsenic, Total (ICP) Copper, Total	3.4	mg/kg		04/12/200 04/13/200	1 4866/2
Lead, Total (ICP)	7.6	mg/kg		04/13/200	1 4866/2
Mercury, Total Soil	12.6 ND(0.1)	mg/kg		04/13/200	1 4866/2
Zinc, Total	37.6	mg/kg	•	04/16/200	1 4425/3
	57.0	mg/kg		04/13/200	1 4866/2
Analysis	Date				
	Prepared		· · · · · · · · · · · · · · · · · · ·	t Method	<u>(s)</u>
Antimony, Total (ICP) Arsenic, Total (ICP)	04/12/200	1 010412-1	MAG	6010B	
Copper, Total	04/11/2003	1 010411-6	MAG	6010B	
Lead, Total (ICP)	04/11/2001	1 010411-6 L 010411-6	MAG	6010B	
Mercury, Total Soil	04/13/2001	L 010411-6	MAG AMB	6010B	
Zinc, Total	04/11/2001	010411-6	MAG	7471A 6010B	
	-,, = • • •				
ICP Metals Total Preparation	On Analyst Mathad		SKR	3050B	
nercury Iolar Preparation :	on Analyst/Method		AMB	7471A	
Antimony Total Preparation	on Analyst/Method Analyst/Method Analyst/Method				
Antimony Total Preparation	on Analyst/Method		AMB	7471A	
	on Analyst/Method Analyst/Method Analyst/Method		AMB	7471A	
Antimony Total Preparation J Conclus	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number:		AMB SKR Date Sa	7471A 3050B	/23/2001
Lab Number: 01040235	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number:		AMB SKR Date Sa	7471A	/23/2001 50
Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number: D06-L		AMB SKR Date Sa	7471A 3050B mpled: 03 mpled: 13	/23/2001 50
Lab Number: 01040235 Sample Description: INC1300	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number:		AMB SKR Date Sa Time Sa	7471A 3050B	50
Lab Number: 01040235 Sample Description: INC1300 Analysis	on Analyst/Method Analyst/Method ion of Lab Number: 006-L <u>Concentration</u>	01040234 <u>Units</u>	AMB SKR Date Sa Time Sa	7471A 3050B 	50 Book/Pa
Antimony Total Preparation Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Analysis Antimony, Total (ICP) Arsenic, Total (ICP)	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number: D06-L	01040234 <u>Units</u> mg/kg	AMB SKR Date Sa Time Sa	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001	50 <u>Book/Pa</u> 4866/26
Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Malysis Intimony, Total (ICP) Isenic, Total (ICP) Copper, Total	on Analyst/Method Analyst/Method ion of Lab Number: D06-L <u>Concentration</u> ND(2.0) 23.3 51.9	01040234 Units mg/kg mg/kg	AMB SKR Date Sa Time Sa 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001	50 <u>Book/Pa</u> 4866/26 4866/26
Antimony Total Preparation Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis	on Analyst/Method Analyst/Method ion of Lab Number: D06-L <u>Concentration</u> ND(2.0) 23.3 51.9 160.	<u>Units</u> mg/kg mg/kg mg/kg mg/kg	AMB SKR Date Sa Time Sa 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/25
Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Intimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil	on Analyst/Method Analyst/Method ion of Lab Number: D06-L D06-L ND(2.0) 23.3 51.9 160. ND(0.1)	<u>Units</u> mg/kg mg/kg mg/kg mg/kg mg/kg	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344
Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Analysi	on Analyst/Method Analyst/Method ion of Lab Number: D06-L <u>Concentration</u> ND(2.0) 23.3 51.9 160.	<u>Units</u> mg/kg mg/kg mg/kg mg/kg	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344
Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Intimony, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total	on Analyst/Method Analyst/Method ion of Lab Number: D06-L <u>Concentration</u> ND(2.0) 23.3 51.9 160. ND(0.1) 1040. Date	<u>Units</u> mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344
Antimony Total Preparation J Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Intimony, Total (ICP) Opper, Total ead, Total (ICP) ercury, Total Soil inc, Total	on Analyst/Method Analyst/Method ion of Lab Number: D06-L <u>Concentration</u> ND(2.0) 23.3 51.9 160. ND(0.1) 1040. Date	<u>Units</u> mg/kg mg/kg mg/kg mg/kg mg/kg	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344 4866/27
Antimony Total Preparation Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Analysis Analysis Copper, Total (ICP) Provide Conclusion Conclus: Conclus	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number: D06-L Concentration ND(2.0) 23.3 51.9 160. ND(0.1) 1040. Date <u>Prepared</u>	<u>Units</u> mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344 4866/27
Antimony Total Preparation J Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Antimony, Total (ICP) Presenic, Total (ICP) ercury, Total Soil inc, Total analysis ntimony, Total (ICP) rsenic, Total (ICP)	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number: D06-L Concentration ND(2.0) 23.3 51.9 160. ND(0.1) 1040. Date <u>Prepared</u> 04/12/2001	<u>Units</u> mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg 02 Batch	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344 4866/27
Antimony Total Preparation J Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Analysis Analysis Analysis Analysis Copper, Total (ICP) ercury, Total Soil inc, Total Analysis	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number: D06-L D06-L D06-L ND(2.0) 23.3 51.9 160. ND(0.1) 1040. Date <u>Prepared</u> 04/12/2001 04/11/2001	<u>Units</u> <u>mg/kg</u> mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg 010412-1 010411-6	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344 4866/27
Antimony Total Preparation J Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Analysis Analysis Analysis Analysis Copper, Total (ICP) Sopper, Total Soil inc, Total (ICP) rsenic, Total (ICP) rsenic, Total (ICP) pper, Total ead, Total (ICP) copper, Total (ICP) copper, Total copper, Total copper, Total copper, Total copper, Total	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number: D06-L D06-L <u>Concentration</u> ND(2.0) 23.3 51.9 160. ND(0.1) 1040. <u>Date</u> <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001	<u>Units</u> mg/kg mg/kg mg/kg mg/kg mg/kg gC Batch 010412-1 010411-6 010411-6	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344 4866/27
Antimony Total Preparation J Antimony Total Preparation Conclus: Lab Number: 01040235 Sample Description: INC1300 Analysis Analysis Analysis Analysis Analysis Copper, Total (ICP) ercury, Total Soil inc, Total Analysis	on Analyst/Method Analyst/Method Analyst/Method ion of Lab Number: D06-L D06-L D06-L ND(2.0) 23.3 51.9 160. ND(0.1) 1040. Date <u>Prepared</u> 04/12/2001 04/11/2001	<u>Units</u> mg/kg mg/kg mg/kg mg/kg mg/kg g/kg g/kg	AMB SKR Date Sa Time Sa 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7471A 3050B mpled: 03 mpled: 13 Date Analyzed 4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 Method(s 6010B 6010B 6010B	50 Book/Pa 4856/26 4866/26 4866/26 4866/26 4425/344 4866/27

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CONTINENTAL ANALYTICAL SERVICES, INC.

	LABORATORY	REPORT		Page:
Client: Arrowhead Contra Lab Number: 01040235	cting			
ICP Metals Total Preparat: Mercury Total Preparation Antimony Total Preparation	Analyst /Mothod	1	SKR 305 AMB 747 SKR 305	1A .
Conclus	sion of Lab Number	: 01040235	5	•
Lab Number: 01040236 Sample Description: INC190	612-L		Date Sampled Time Sampled	: 03/23/2001 : 1450
Analysis	Concentration	Units	Date Analyz	-
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total	ND(2.0) 4.3 10.7 11.4 ND(0.1) 45.6	mg/kg mg/kg mg/kg mg/kg mg/kg	04/13/2 04/13/2 04/13/2 04/13/2 04/16/2	001 4866/26 001 4866/26 001 4866/26 001 4866/26 001 4866/26 001 4425/344 001 4866/26
Analysis	Date Prepared	<u>QC Batch</u>	Analyst Meth	od(s)
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Dercury, Total Soil Linc, Total CP Metals Total Preparation Preparation Antimony Total Preparation	nalvst/Method	010411-6 010411-6 010411-6 010413-2	MAG         6010           MAG         6010           MAG         6010           MAG         6010           MAG         6010           MAG         6010           AMB         7471           MAG         6010           SKR         3050           AMB         7471           SKR         3050	B 3 3 4 3 3 3
Conclusi	on of Lab Number;	01040236		
ab Number: 01040237 ample Description: INC0600	06-L		Date Sampled: Time Sampled:	03/23/2001 1240
nalysis	Concentration	Units	Date Analyze	d <u>Book/Page</u>
ntimony, Total (ICP) csenic, Total (ICP) opper, Total ad, Total (ICP) ercury, Total Soil	ND(2.0) 4.8 33.8 67.8 ND(0.1)	mg/kg mg/kg mg/kg mg/kg mg/kg	04/13/20 04/13/20 04/13/20	01 4866/26 01 4866/26 01 4866/26 01 4866/26 01 4425/344
	Cartings			
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	LABORATORY	REPORT			Page:	8
Client: Arrowhead Contrac Lab Number: 01040237 Sample Description: INC060		_				
Analysis	Concentration	<u>Units</u>	A	Date nalyzed	Book/P	age
Zinc, Total	245.	mg/kg		4/13/200		
Analysis	Date Prepared	QC Batch	Analyst	Method	(s)	
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total ICP Metals Total Preparatic Mercury Total Preparation A Antimony Total Preparation	04/11/200 04/11/200 04/11/200 04/13/200 04/11/200 04/10/100 04/11/200 04/10000000000		MAG MAG MAG AMB MAG SKR AMB SKR	6010B 6010B 6010B 6010B 7471A 6010B 3050B 7471A 3050B		· .
Conclusi Lab Number: 01040238 Sample Description: INC2406	on of Lab Number 12-L	01040237	Date Samj Time Samj	pled: 03 pled: 15	/23/200 40	1
Analysis	Concentration	Units	Ar	Date nalyzed	Book/Pa	age
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total ead, Total (ICP) ercury, Total Soil inc, Total	ND(2.0) 3.3 9.8 10.9 ND(0.1) 43.8	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	04/ 04/ 04/ 04/ 04/	/12/2001 /13/2001 /13/2001 /13/2001 /13/2001 /16/2001 /13/2001	4866/26 4866/26 4866/26 4866/26 4866/26	
nalysis	Date Prepared	QC Batch	Analyst	Method(s	:)	

	Prepared	QC Batch	Analyst	Method(s)	
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total ICP Metals Total Preparation Ana Antimony Total Preparation And	lvst/Method	010411-6 010411-6 010411-6 010411-6	MAG MAG MAG AMB MAG SKR AMB SKR	6010B 6010B 6010B 6010B 7471A 6010B 3050B 7471A 3050B	-

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LABORATORY I	REPORT	Page	: 9
cting			
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Concentration	Units	Date Analyzed Book	/Page
ion of Lab Number:	01040238	· .	
		· · · · · · · · · · · · · · · · · · ·	······································
006-L		Date Sampled: 03/23/2 Time Sampled: 1150	2001
Concentration	Units	Date Analyzed Book	/Page
ND(2.0)	mg/kg	04/12/2001 4866	/26
	mg/kg	04/13/2001 4866	/26
		04/13/2001 4866	/26
		04/13/2001 4866	/26
		04/16/2001 4425	/344
74.0	mg/kg	04/13/2001 4866	/26
Date			
Prepared	QC Batch	Analyst Method(s)	
04/12/2001	010412-1	MAG 6010B	
04/11/2001	010411-6		
04/11/2001	010411-6		
04/11/2001	010411-6		
04/13/2001	010413-2		
04/11/2001	010411-6		
n Analyst/Method			
nalvet/Method			
Analyst/Method		SKR 3050B	
on of Lab Number:	01040239		
			-
		Date Sampled: 03/23/20	01
06-L			
	LABORATORY 1 cting <u>Concentration</u> <u>ion of Lab Number:</u> 006-L <u>Concentration</u> ND(2.0) 2.9 20.0 11.2 ND(0.1) 74.0 <u>Date</u> <u>Prepared</u> 04/12/2001 04/11/2001 04/1/	LABORATORY REPORT Concentration Units Concentration Units ion of Lab Number: 01040238 006-L Concentration Units ND(2.0) mg/kg 2.9 mg/kg 20.0 mg/kg 11.2 mg/kg ND(0.1) mg/kg 74.0 mg/kg 74.0 mg/kg Date Prepared QC Batch 04/12/2001 010412-1 04/11/2001 010411-6 04/11/2001 010411-6 04/11/2001 010411-6 04/11/2001 010411-6 04/11/2001 010411-6 04/11/2001 010411-6 04/11/2001 010411-6 04/11/2001 010411-6 04/11/2001 010411-6 n Analyst/Method Analyst/Method Analyst/Method	Date         Date           Concentration         Units         Analyzed Book,           dion of Lab Number:         01040238           006-L         Date Sampled:         03/23/2           Time Sampled:         1150           Date         Analyzed Book,           006-L         Date           Concentration         Units         Date           MD(2.0)         mg/kg         04/12/2001 4866           2.9         mg/kg         04/13/2001 4866           2.0         mg/kg         04/13/2001 4866           11.2         mg/kg         04/13/2001 4866           ND(0.1)         mg/kg         04/13/2001 4866           Date         Date         Date           Date         Date         04/13/2001 4866           Date         Date         04/13/2001 4866           Date         Date         Date           Date         Date         04/13/2001 4866           Date         Date         Date           Date         Date         Date           Date         Date         Maged 6010B           04/11/2001 010411-6         MAG 6010B           04/11/2001 010411-6         MAG 6010B

Analysis	Concentration	Units	Date Analyzed	Book/Page
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total	ND(2.0) 4.0 23.7 76.5 ND(0.1) 284.	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	04/12/2001 04/13/2001 04/13/2001 04/13/2001 04/16/2001 04/13/2001	4866/26 4866/26 4866/26 4425/344

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	LABORATORY	REPORT	<u></u>		Page:
Client: Arrowhead Contra	acting	_			
Lab Number: 01040240	-				
Sample Description: INC28	30006-1				
<b>•</b> • • •				Date	
Analysis	Concentration	u Units	;	Analyzed	Book / Day
· ·			-	ular y zeu	Book/Pac
	D-+-				
Analysis	Date <u>Prep</u> ared		» 7		
	Frepareo	<u>QC</u> Batch	Analyst	Method	(s)
Antimony, Total (ICP)	04/12/200	1 010412-1	MAG	6010B	
Arsenic, Total (ICP)	04/11/200	1 010411-6	MAG	6010B	
Copper, Total	04/11/200	1 010411-6	MAG		
Lead, Total (ICP)	04/11/200	1 010411-6	MAG	6010B	
Mercury, Total Soil	04/13/200	1 010411-8 1 010413-2		6010B	
Zinc, Total	04/11/200	1 010411 6	AMB	7471A	
ICP Metals Total Preparat	ion Analyst/Method	- 010411-0	MAG	6010B	
Mercury Total Preparation	Analyst/Method		SKR	3050B	
Antimony Total Preparation	analyse/Method		AMB	7471A	
	i Analyst/Method		SKR	3050B	
Conclus	sion of Lab Number	01040240			
			•		
ab Number: 01040241					
ab Number: 01040241			Date Sa	mpled: 03	/23/2001
ab Number: 01040241 Sample Description: INC070	0006-Ľ		Date Sa Time Sa	mpled: 03 mpled: 12	/23/2001 50
ab Number: 01040241 Sample Description: INC070	0006-L		Date Sa Time Sa	mpled: 03 mpled: 12	/23/2001 50
Jample Description: INC070	)006-Ľ	·	Date Sa Time Sa	mpled: 03 mpled: 12 Date	/23/2001 50
Jample Description: INC070	0006-L Concentration	Units	Time Sa	mpled: 12 Date	50
ample Description: INC070 nalysis	Concentration		Time San	Date Date	50 Book/Pa
ample Description: INC070 <u>nalysis</u> ntimony, Total (ICP)	Concentration ND(2.0)	mg/kg	Time San <u>1</u> 04	Date Date Malyzed	50 <u>Book/Pa</u> 4866/26
Sample Description: INC070 <u>nalysis</u> ntimony, Total (ICP) rsenic, Total (ICP)	Concentration ND(2.0) 5.6	mg/kg mg/kg	Time San <u>1</u> 04	Date Date Malyzed	50 <u>Book/Pa</u> 4866/26
ample Description: INC070 nalysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total	Concentration ND(2.0)	mg/kg mg/kg mg/kg	Time San <u>7</u> 04 04	Date Date Malyzed 1/12/2001 1/13/2001	50 <u>Book/Pa</u> 4866/26 4866/26
Sample Description: INC070 <u>malysis</u> ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP)	<u>Concentration</u> ND(2.0) 5.6 27.5 110.	mg/kg	Time San <u>7</u> 04 04 04	Date Date <u>nalyzed</u> 1/12/2001 1/13/2001	Book/Pac 4866/26 4866/26 4866/26
ample Description: INC070 nalysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil	<u>Concentration</u> ND(2.0) 5.6 27.5	mg/kg mg/kg mg/kg mg/kg	Time San 7 04 04 04 04 04	mpled: 12 Date Analyzed 1/12/2001 1/13/2001 1/13/2001 1/13/2001	Book/Pa 4866/26 4866/26 4866/26 4866/26 4866/26
ample Description: INC070 nalysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil	<u>Concentration</u> ND(2.0) 5.6 27.5 110.	mg/kg mg/kg mg/kg	Time San 2 04 04 04 04 04 04 04	<pre>mpled: 12     Date     Date     Analyzed     //12/2001     //13/2001     //13/2001     //13/2001     //16/2001</pre>	Book/Pa 4866/26 4866/26 4866/26 4866/26 4866/26 4425/344
Malysis nalysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil	<u>Concentration</u> ND(2.0) 5.6 27.5 110. 0.2 561.	mg/kg mg/kg mg/kg mg/kg mg/kg	Time San 2 04 04 04 04 04 04 04	mpled: 12 Date Analyzed 1/12/2001 1/13/2001 1/13/2001 1/13/2001	Book/Pac 4866/26 4866/26 4866/26 4866/26 4866/26 4425/344
ample Description: INC070 nalysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total	Concentration ND(2.0) 5.6 27.5 110. 0.2 561. Date	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	Time San 04 04 04 04 04	<pre>mpled: 12     Date     Date     Analyzed     /12/2001     /13/2001     /13/2001     /16/2001     /13/2001</pre>	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
ample Description: INC070 nalysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total	<u>Concentration</u> ND(2.0) 5.6 27.5 110. 0.2 561.	mg/kg mg/kg mg/kg mg/kg mg/kg	Time San 2 04 04 04 04 04 04 04	<pre>mpled: 12     Date     Date     Analyzed     //12/2001     //13/2001     //13/2001     //13/2001     //16/2001</pre>	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC070 <u>malysis</u> ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total <u>malysis</u> ntimony, Total (ICP)	<u>Concentration</u> ND(2.0) 5.6 27.5 110. 0.2 561. Date <u>Prepared</u> 04/12/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1	Time San 04 04 04 04 04	<pre>mpled: 12     Date     Date     Analyzed     /12/2001     /13/2001     /13/2001     /16/2001     /13/2001</pre>	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC070 <u>malysis</u> ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total <u>malysis</u> ntimony, Total (ICP) rsenic, Total (ICP)	<u>Concentration</u> ND(2.0) 5.6 27.5 110. 0.2 561. Date <u>Prepared</u> 04/12/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6	Time San 2 04 04 04 04 04 04 Analyst	<pre>mpled: 12 Date Analyzed 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 Method(s</pre>	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC070 malysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total nalysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total	<u>Concentration</u> ND(2.0) 5.6 27.5 110. 0.2 561. Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6	Time San 04 04 04 04 04 04 04 04 04 04 <u>Analyst</u> MAG	<pre>mpled: 12 Date Analyzed 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 Method(s 6010B 6010B</pre>	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Malysis Malysis Intimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total malysis ntimony, Total (ICP) rsenic, Total ppper, Total ead, Total (ICP)	<u>Concentration</u> ND(2.0) 5.6 27.5 110. 0.2 561. Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6 010411-6	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	<pre>mpled: 12 Date Analyzed 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 Method(s 6010B</pre>	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Malysis Analysis Intimony, Total (ICP) Isenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total malysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil	Concentration ND(2.0) 5.6 27.5 110. 0.2 561. Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/13/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6 010411-6 010411-6 010413-2	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	<pre>mpled: 12     Date     Date     Analyzed     /12/2001     /13/2001     /13/2001     /13/2001     /13/2001     Method(s     6010B     6010B     6010B     6010B     6010B     6010B</pre>	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Malysis Malysis Intimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total malysis ntimony, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total	Concentration ND(2.0) 5.6 27.5 110. 0.2 561. Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/13/2001 04/13/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6 010411-6 010411-6 010413-2	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	mpled: 12 Date Malyzed 12/2001 13/2001 13/2001 13/2001 13/2001 Method(s 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Dab Number: 01040241 Sample Description: INC070 Malysis ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total nalysis ntimony, Total (ICP) rsenic, Total (ICP) pper, Total ead, Total (ICP) ercury, Total Soil inc, Total P Metals Total Preparatic	Concentration ND(2.0) 5.6 27.5 110. 0.2 561. Date Prepared 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/11/2001 04/11/2001 04/11/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6 010411-6 010411-6 010413-2	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	mpled: 12 Date Malyzed 1/12/2001 1/13/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 Method(s 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC070 <u>malysis</u> ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total <u>malysis</u> ntimony, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total CP Metals Total Preparatic ercury Total Preparation A	Concentration ND(2.0) 5.6 27.5 110. 0.2 561. Date Prepared 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/13/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6 010411-6 010411-6 010413-2	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	mpled: 12 Date <u>Analyzed</u> 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 <u>Method(s</u> 6010B 6010B 6010B 6010B 7471A 6010B 3050B	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Malysis Malysis Intimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total malysis ntimony, Total (ICP) opper, Total ead, Total (ICP) opper, Total ercury, Total Soil inc, Total P Metals Total Preparation A	Concentration ND(2.0) 5.6 27.5 110. 0.2 561. Date Prepared 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/13/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6 010411-6 010411-6 010413-2	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	mpled: 12 Date Malyzed 1/12/2001 1/13/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 Method(s 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B 6010B	Book/Pa 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26
Sample Description: INC070 <u>malysis</u> ntimony, Total (ICP) rsenic, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil inc, Total <u>malysis</u> ntimony, Total (ICP) opper, Total ead, Total (ICP) ercury, Total Soil Inc, Total P Metals Total Preparation etimony Total Preparation	Concentration ND(2.0) 5.6 27.5 110. 0.2 561. Date Prepared 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/13/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6 010411-6 010411-6 010411-6 010411-6	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	mpled: 12 Date <u>Analyzed</u> 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 <u>Method(s</u> 6010B 6010B 6010B 6010B 7471A 6010B 3050B 7471A	Book/Pac 4866/26 4866/26 4866/26 4866/26 4425/344 4866/26

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	LABORATORY REPORT	Page:	11
Client: Arrowhead Contracting			
Lab Number: 01040242 Sample Description: INC141224-L	Date Sampled: 0 Time Sampled: 1	03/23/200 L400	l

Analysis	Concentration	Units	1	Date Analyzed	Book/Page
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total	ND(2.0) 12.9 28.7 62.5 ND(0.1) 301.	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	04 04 04 04	<pre>4/12/2001 4/13/2001 4/13/2001 4/13/2001 4/13/2001 4/16/2001 4/13/2001 4/11 4/11 4/11 4/11 4/11 4/11 4/11 4</pre>	4866/26 4866/26 4866/26 4425/344
Analysis	Date Prepared	QC Batch	Analyst	Method (s	5)
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total ICP Metals Total Preparation Anal Antimony Total Preparation Ana	vst/Method	010411-6 010411-6 010411-6 010411-6		6010B 6010B 6010B 7471A 6010B 3050B 7471A 3050B	

Conclusion of Lab Number: 01040242

Lab Number: 01040243 Sample Description: INC030006-L

Date Sampled: 03/23/2001 Time Sampled: 1210

Analysis	Concentration	Units	Ţ	Date nalyzed	Book/Page
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Lead, Total (ICP) Mercury, Total Soil Zinc, Total	ND(2.0) 3.2 21.5 33.8 0.1 144.	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	04 04 04 04	/12/2001 /13/2001 /13/2001 /13/2001 /16/2001 /13/2001	4866/26 4866/26 4866/26 4425/344
Analysis	Date Prepared	QC Batch	Analyst	Method(s	5)
Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total	04/12/2001 04/11/2001 04/11/2001	010411-6	MAG MAG MAG	6010B 6010B 6010B	

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	LABORATORY	REPORT			Page:	:
Client: Arrowhead Contra Lab Number: 01040243	lcting					
	Date					
Analysis	Prepared	QC Batch	Analyst	Method	(s)	
Lead, Total (ICP)					(0)	
Mercury, Total Soil	04/11/200	1 010411-6	MAG	6010B		
Zinc, Total	04/13/200	1 010413-2		7471A		
ICP Metals Total Preparat	04/11/200	1 010411-6	MAG	6010B		
Mercury Total Preparation	ion Analyst/Method		SKR	3050B		
Antimony Total Propagation	Analyst/Method		AMB	7471A		
Antimony Total Preparation	n Analyst/Method		SKR	3050B		
Conclus	sion of Lab Number	• 01040243				
		. 01040245				
Lab Number: 01040244						
			Date Sa	moled • A3	/23/200	17
Sample Description: INCOM				mpica. 05		11
Sample Description: INC080	006-L		Time Sa	mpled: 13	00	1
Sample Description: INC080	006-L		Time Sa	npled: 13	00	1
Sample Description: INC080	006-Г		Time Sar	mpled: 13	00	1
Sample Description: INC08(		Unito	Time Sar	mpled: 13 Date	00	
Sample Description: INC080	O006-L Concentration	Units	Time Sar	mpled: 13	00	
Sample Description: INC080	Concentration		Time Sar <u>1</u>	Date Date	Book/P	a
Sample Description: INC080 <u>Analysis</u> Antimony, Total (ICP) Arsenic, Total (ICP)		mg/kg	Time San <u>1</u> 04	Date Date Malyzed	Book/P 4866/2	a.
Sample Description: INC080	Concentration ND(2.0) 4.5	mg/kg mg/kg	Time Sar <u>1</u> 04 04	Date Date <u>Analyzed</u> 1/12/2001 1/13/2001	Book/P 4866/2 4866/2	a. 6
Sample Description: INC080	Concentration ND(2.0) 4.5 16.0	mg/kg mg/kg mg/kg	Time Sar <u>1</u> 04 04 04	npled: 13 Date <u>Analyzed</u> 1/12/2001 1/13/2001 2/13/2001	Book/P 4866/2 4866/2 4866/2 4866/2	a. 666
Sample Description: INC080 Analysis Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Head, Total (ICP) Hercury, Total Soil	<u>Concentration</u> ND(2.0) 4.5 16.0 68.7	mg/kg mg/kg mg/kg mg/kg	Time Sar <u>1</u> 04 04 04 04	npled: 13 Date <u>Analyzed</u> 1/12/2001 1/13/2001 1/13/2001 1/13/2001	Book/P 4866/2 4866/2 4866/2 4866/2 4866/2	a 6666
Sample Description: INC080	<u>Concentration</u> ND(2.0) 4.5 16.0 68.7 ND(0.1)	mg/kg mg/kg mg/kg mg/kg mg/kg	Time Sar <u>1</u> 04 04 04 04 04 04	<pre>mpled: 13     Date     Date     Mnalyzed     //12/2001     //13/2001     //13/2001     //13/2001     //16/2001</pre>	Book/P 4866/2 4866/2 4866/2 4866/2 4866/2 4425/3	a 666644
Sample Description: INC080 Analysis Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Head, Total (ICP) Arcal (ICP) Arcury, Total Soil	<u>Concentration</u> ND(2.0) 4.5 16.0 68.7	mg/kg mg/kg mg/kg mg/kg	Time Sar <u>1</u> 04 04 04 04 04 04	npled: 13 Date <u>Analyzed</u> 1/12/2001 1/13/2001 1/13/2001 1/13/2001	Book/P 4866/2 4866/2 4866/2 4866/2 4866/2 4425/3	a 666644
Sample Description: INC080 Analysis Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total ead, Total (ICP) ercury, Total Soil inc, Total	Concentration ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	Time Sar 04 04 04 04 04 04 04	<pre>mpled: 13     Date     Date     Analyzed     /12/2001     /13/2001     /13/2001     /16/2001     /13/2001</pre>	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	6 6 6 6 4 4
Sample Description: INC080 Analysis Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Head, Total (ICP) Arcal (ICP) Arcury, Total Soil	Concentration ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1	mg/kg mg/kg mg/kg mg/kg mg/kg	Time Sar <u>1</u> 04 04 04 04 04 04	<pre>mpled: 13     Date     Date     Mnalyzed     //12/2001     //13/2001     //13/2001     //13/2001     //16/2001</pre>	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	a 666644
Sample Description: INC080 Analysis Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Mead, Total (ICP) ercury, Total Soil inc, Total Analysis Antimony, Total (ICP)	Concentration ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date Prepared	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch	Time San	Date Date Analyzed 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 Method(s	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	a 666644
Sample Description: INC080 Analysis Antimony, Total (ICP) Arsenic, Total (ICP) Copper, Total Pead, Total (ICP) ercury, Total Soil inc, Total Analysis Antimony, Total (ICP) rsenic, Total (ICP)	<u>Concentration</u> ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date <u>Prepared</u> 04/12/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1	Time San <u>1</u> 04 04 04 04 04 04 <u>Analyst</u> <u>MAG</u>	<pre>mpled: 13     Date     Date     Malyzed     /12/2001     /13/2001     /13/2001     /13/2001     /13/2001     Method(s     6010B</pre>	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	a 666644
Sample Description: INC080 Analysis Analysis Antimony, Total (ICP) Arsenic, Total (ICP) Popper, Total Mead, Total (ICP) Percury, Total Soil inc, Total Analysis Antimony, Total (ICP) Prsenic, Total (ICP) Popper, Total	<u>Concentration</u> ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date <u>Prepared</u> 04/12/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg QC Batch 010412-1 010411-6	Time San	<pre>mpled: 13     Date     Date     Analyzed     /12/2001     /13/2001     /13/2001     /16/2001     /13/2001     Method(s     6010B     6010B</pre>	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	a 666644
Sample Description: INC080 Malysis Analysis	<u>Concentration</u> ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg <u>QC Batch</u> 010412-1 010411-6 010411-6	Time San <u>1</u> 04 04 04 04 04 04 04 04 04 04	<pre>mpled: 13     Date     Date     Analyzed     /12/2001     /13/2001     /13/2001     /13/2001     /16/2001     /13/2001     Method(s     6010B     6010B     6010B</pre>	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	a 666644
Sample Description: INC080 Malysis Analysis	Concentration ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg <u>QC Batch</u> 010412-1 010411-6 010411-6	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	mpled: 13 Date <u>hnalyzed</u> 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 <u>Method(:</u> 6010B 6010B 6010B 6010B 6010B	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	a 666644
Sample Description: INC080 Analysis	Concentration ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/13/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg <u>QC Batch</u> 010412-1 010411-6 010411-6 010411-6	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	mpled: 13 Date <u>halyzed</u> 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/13/2001 <u>Method(s</u> 6010B 6010B 6010B 6010B 6010B 7471A	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	a 666644
Sample Description: INC080 Malysis Analysis	Concentration ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/13/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg <u>QC Batch</u> 010412-1 010411-6 010411-6 010411-6	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	<pre>mpled: 13     Date     Malyzed     //12/2001     //13/2001     //13/2001     //13/2001     //16/2001     //13/2001     Method(s     6010B     6010B     6010B     6010B     6010B     7471A     6010B</pre>	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	a 666644
Sample Description: INC080 <u>Analysis</u> Analysis Ana	Concentration ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/11/2001 04/11/2001 04/11/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg <u>QC Batch</u> 010412-1 010411-6 010411-6 010411-6	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	npled: 13 Date <u>halyzed</u> 1/12/2001 1/13/2001 1/13/2001 1/16/2001 1/16/2001 1/16/2001 010B 6010B	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	6 6 6 6 4 4
Sample Description: INC080 Malysis Analysis	Concentration ND(2.0) 4.6 16.0 68.7 ND(0.1) 94.1 Date <u>Prepared</u> 04/12/2001 04/11/2001 04/11/2001 04/13/2001 04/13/2001 04/11/2001 04/11/2001 04/13/2001 04/11/2001 04/13/2001 04/13/2001	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg <u>QC Batch</u> 010412-1 010411-6 010411-6 010411-6	Time San 04 04 04 04 04 04 04 04 04 04 04 04 04	<pre>mpled: 13     Date     Malyzed     //12/2001     //13/2001     //13/2001     //13/2001     //16/2001     //13/2001     Method(s     6010B     6010B     6010B     6010B     6010B     7471A     6010B</pre>	Book/P 4866/2 4866/2 4866/2 4866/2 4425/3 4866/2	6 6 6 6 4 4

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Page 5 of :

CONTINENTAL ANALYTICAL SERVICES, INC.

#### LABORATORY REPORT

Page: 13

Client: Arrowhead Contracting Lab Number: 01040244

#### <u>Analysis</u>

#### Concentration Units

Date <u>Analyze</u>

Analyzed Book/Page

Laboratory analyses were performed on samples utilizing procedures published in Title 40 of the Code of Federal Regulations, Parts 136 or 141, or in EPA Publication, SW-846, 3rd edition, September, 1986 and the latest promulgated update. ND(), where noted, indicates none detected with the reporting limit in parentheses. Samples will be retained for thirty days unless otherwise notified.

CONTINENTAL ANALYTICAL SERVICES, INC.

Cliffold J. Baker Technical (Manager





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# APPENDIX B

### SAMPLE COLLECTION FIELD SHEETS



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Project: SOIL CHARACTERIZATION			PROJECT NAME	:	FT. RILEY		
Site: InC			ARROWHEAD Pro	oject	01-224		
Sample No.:	Туре:	SO	Sampling A	ndy	Arenold		
Location: Inc-01			Personnel: 8	614	Boyer		
Start Depth: Finis Sample Date: 3 / 23 /			Site				
			Manager: SP	<u>55</u>			
Sample Matrix: Soil · 🗸	Sample Method:	_50i	1 probe			Composite?	У_
Weather CLR P. CLDY CLDY FOG Temp <b>55</b> °F Wind Calm Mod High			,				
Precip Rain Lite Mod High							
Snow Lite Mod High							
Location Description:							

#### Soil Description:

Deoth:	Decertica	
Debui.	Description:	
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#### Sampling Information:

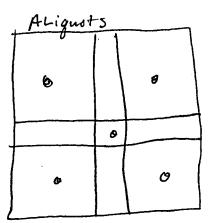
Sample Container	Preservative	Analysis Required	Method Number	Laboratory
Ziploc Bags				
(quarts) size				
<u> </u>				
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#### QA/QC Information

Туре	Sample Number	Container	Preservative	Analysis Required	Method Number	Laboratory
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Samples Collected Inc-01-0006



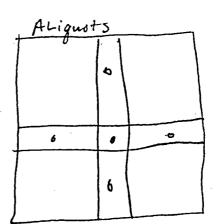


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	SOIL CHARACTE	RIZATION			PROJECT NAME :	FT. RILEY	
Site: In	С				ARROWHEAD Project Number:	01-224	
Start Depl	<b>INC - 0</b> th:	ft. Finisl	Type h Depth:	2 oc	Sampling Andy Personnel: Bata Site Manager: SFS	ARNold Boy +1	
Sample M	atrix: Soil	$\checkmark$	Sample	e Method:	manager. 3F3		Composite? V
Src Lecation D	n Lite Mod Higi w Lite Mod Hig Description:	h	• •				
Soil Descr Decth:	Descri	ption:					
		ption:					· · · · · · · · · · · · · · · · · · ·
Decth:							
Decth: ampling I Sample (	Descri	· · · · · · · · · · · · · · · · · · ·	ervative	Analysis Requi	red   Meinco	• I Number	Laboratory
Decth: ampling I Sample (	Descri	· · · · · · · · · · · · · · · · · · ·	ervative	Analysis Requi	red   Method	I Number	Laboratory
Decth: ampling I Sample ( Z:p Inc ( guarts)	Descri	· · · · · · · · · · · · · · · · · · ·	ervative	Analysis Requi	red Method	I Number       	Laboratory
Decth: Campling I Sample ( Z:p Icc )	Descri	Prese	ervative	Analysis Requi	red   Meinco		

Notes/Sketch Map:

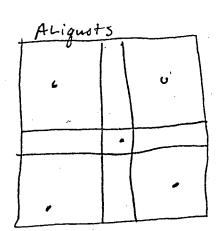
Samples Collected Inc-20006 In (-02 - 0612 Inc-02-1224



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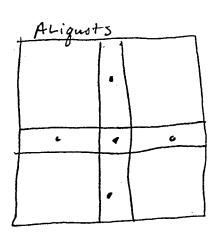
Site:       ARROWHEAD Project Number:       OI-224         Semple No.:       Type:       SO       Sampling findy Az no (d Personnel: But+ Boy+r)         Location:       Inc - 03       Start Depth:       O       Krish Depth:       Krish Depth:	Project:	SOIL CHARACTERI	IZATION			PROJECT NAME :	FT. RILEY	
Location:       Inc - 03         Start Depth:       0       if Finish Depth:       if         Sample Date:       0       if Finish Depth:       if         Sample Date:       0       if Finish Depth:       if         Sample Date:       0       if       if         Sample Date:       0       if       if         Sample Matrix:       Soil       Sample Method:       soil         Sample Matrix:       Soil       Sample Method:       soil       rate         Versity:       Sample Cathing       Composite?       Sample Container       Composite?         Preservative:       Analysis Required       Method Number       Laboratory         Lipting Information:       Sample Container       Laboratory       Laboratory         Site       Sample Container       Preservative       Analysis Required       Method Number       Laboratory         MQC Information       Image:       Image:       Image:       Image:       Image:	Site:						ect 01-224	•
Location:       Image: Sps         Start Depth:       O       Image: Sps         Sample Date:       O3/23/       Time:       Image: Sps         Sample Matrix:       Soil       Sample Method:       Soil       Composite?         Yreather CLR P. CLDY CLDY FOG       Sample Method:       Soil       Composite?       Yeather CLR P. CLDY CLDY FOG         Temp JJC?       FWind Celm Med High       Probe       Composite?       Yeather CLR P. CLDY CLDY FOG         Temp JJC?       FWind Celm Med High       Soil       Soil       Composite?       Yeather CLR P. CLDY CLDY FOG         Temp JJC?       FWind Celm Med High       Soil       Soil       Composite?       Yeather CLR P. CLDY CLDY FOG         Somple Container       Description:       Description:       Description:       Description:       Description:         Impling Information:       Sample Container       Preservative       Analysis Required       Method Number       Laboratory         Sample Container       Preservative       Analysis Required       Method Number       Laboratory         AQC Information       Image: Source Container       Image: Source Container       Image: Source Container       Image: Source Container	Sample N	0.:		Туре	: <u>SO</u>	Sampling An	by Arenold	· · · · · · · · · · · · · · · · · · ·
Sample Matrix:       Soil       Sample Method:       Soil       Composite?         Weather CLR P CLOY CLOY FOG         Temp JL? Wind Calm Mod High         Precip Rain Lite Mod High         Scow Lite Mod High         Scow Lite Mod High         Scow Lite Mod High         Control         Oil Description:         Oil Description:         Opeth:       Description:         Image: Sample Container         Preservative       Analysis Required         Method Number       Laboratory         2: pice Bags       Image: Solution description         Sample Container       Preservative         Analysis Required       Method Number         Laboratory       Image: Solution description         MQC Information       Image: Solution description	Start Dept	h: <u>0</u>	ft? Finis 2 <b>3</b> /	sh Depth: Time:7	<u>é</u> . 210	Site		
Weather CLR P. CLDY CLDY FOG   Temp 52   F Wind Calm Mod High   Precip Rain Lile Mod High   Snow Lile Mod High   Location Description:   oil Description:   Depth:   Description:   Impling Information:   Sample Container   Preservative   Analysis Required   Method Number   Laboratory   2:p Inc Bags   guards)   sinc	Sample Ma	atrix: Soil	$\checkmark$	Sample	e Method:		the second s	Composite?
npling Information:         Sample Container       Preservative         Analysis Required       Method Number         Laboratory         zip loc       Bags         guarts)       size         VQC Information								
Sample Container       Preservative       Analysis Required       Method Number       Laboratory         Z:p loc       Bags       I       I       I       I         guarts)       sixc       I       I       I       I         VQC Information       I       I       I       I       I       I	oil Descr	iption:			······	• • • • • • • • •		· · · · · · · · · · · · · · · · · · ·
Sample Container       Preservative       Analysis Required       Method Number       Laboratory         Z:p inc       Bags       I       I       I       I         guarts)       sinc       I       I       I       I         VQC Information       I       I       I       I       I       I	oil Descr	iption:	tion:	· · · · · · · · · · · · · · · · · · ·			······································	
2)p loc Bags guarts) size NQC Information	oil Descr. Depth:	iption: Descrip	ition:				· · · · · · · · · · · · · · · · · · ·	
guarts) size	oil Descr Depth:	iption: Descrip		servative	Analysis Requ	ired Ma	ihod Number	
	oil Descr Depth: Apling In Sample (	iption: Descrip		servative	Analysis Requ	ired Me	ihod Number	Laboratory
	oil Descr Deoth: Apling In Sample ( 2: p loc 1	iption: Descrip		servative	Analysis Requ	ired Me	ihcd Number	Laboratory
Type Sample Number Container Preservative Analysis Required Method Number Laboratory	oil Descr Deoth: Apling In Sample ( 2) P Inc	iption: Descrip		servative	Analysis Requ	ired Me	ihcd Number	Laboratory
	oil Descr Depth: Apling In Sample ( 2\p loc 6 guarts)	iption: Descrip		servative	Analysis Requ	ired Me	ihcd Number	Laboratory

Samples Collected Inc-03-0006



Site: <u>InC</u> Sample No.: Location: <b>In</b>							
Location: <b>In</b>		_		ARROWHEA	D Project	01-224	
		Туре	:SO			ARnold	
	(-04			Personne	Brata	Boyar	
Start Depth:		Finish Depth:	ft.				
Sample Date:	03/23	/ Time:	^	Site			
				Manager:	SFS		
Sample Matrix:	CLDY CLDY FOG	· Sample	Method:	1 prob		· · · · · · · · · · · · · · · · · · ·	Composite? Y
Precip Rain Lite	e Mcd High iption:	jh	1				
ampling Inform	 mation:					***	
Sample Conta	······································	Preservative	Analysis Requ	ured	Metho	I Number	Laboratory
Ziploc Bags	s						
(quarts) si						,	······································
· · · · · · · · · · · · · · · · · · ·							
			· · ·				
A/QC Informat	tion						
Type :	Sample Number	Container	Preservative	Analysis	Required	d   Method Nun	nber   Laboratory
					·!		

Samples Collected Inc - 04-0006

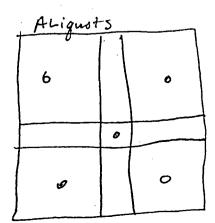


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Project:	SOIL CHARACTE	RIZATION			PROJEC	T NAME :	FT. RILEY	
Site:	с				ARROWH Numbe	EAD Project	01-224	
Sample No	0.:		Туре:	<u>SO</u>	Sampli	ng Andy I nel: Bata	ARnold Rover	
	thc-		h Depth:	ft		•		
Sample Da	ate: 03	123 /	Time: <b>[</b> '	230	Site Manao	er: SFS	. ·	
Sample Ma	atrix: Soil	$\overline{}$	Sample	Method:			•	Composite? Y
Precip Rain	PF Wind Calm Lite Mod Hig v Lite Mod Hig escription:	ົ່						
oil Descri		· .						
Deoth:	Descr	iption:	······					
		- <del></del>		·· · · · · · · · · · · · · · · · · · ·			<u> </u>	
				· · · · · · · · · · · · · · · · · · ·				
mpling Ir	nformation:							
Sample (			ervative	Analysis Req	uired	Method i	Number	Laboratory
zipioc e	bags							
quarts)_	sire			······································	·		1	
•						i		
VQC Infor	rmation		L_				<u>.</u>	· · · · · · · · · · · · · · · · · · ·
Type	Sample	Number	Container	Preservative	e Analy	sis Required	Method Num	ber Laboratory
						······································		
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Samples Collected INC-05-0006 INC-05-0612



Project: SOIL CHARACTERIZATION	· · · · ·		PROJECT NAME :	FT. RILEY		
Site: InC	 		ARROWHEAD Project	01-224		
Sample No.:	Туре:	SO	Sampling Andy	Arenold	· · · · · · · · · · · · · · · · · · ·	
Location: Inc-06			Personnel: 844	Boyer		
Start Depth: f Finish	Depth: 6' at.					
Sample Date: 03/23/	Time: 1240		Site			
· · · · · · · · · · · · · · · · · · ·			Manager: SFS			
Sample Matrix: Soil 🗸 -	Sample Method:	501	1 probe	·····	Composite?	У
Weather CLR P. CLDY CLDY FOG Temp 555°F Wind Calm Mod High			/		··· · · · · · · · · · · · · · · · · ·	
Precip Rain Lite Mod High				· .		
Snow Lite Mod High	·					
Location Description:		•				

Depth:	Description:	
<u> </u>		

#### Sampling Information:

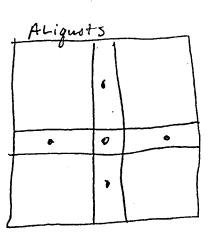
Sample Container	Preservative	Analysis Required	Method Number	Laboratory
Ziploc Bags			}	
(quarts) size			· · ·	
			······	· · · · · · · · · · · · · · · · · · ·
				·····

#### QA/QC Information

Туре	Sample Number	Container	Preservative	Analysis Required	Method Number	Laboratory
			-			

Samples Collected Inc-06-0006





Project:	SOIL CHARACT	ERIZATION	······		PROJECT NAME :	· FT.	RILEY	
Site:					<b>ARROWHEAD</b> Pro Number:			
Sample No	0.: INC - C	) <b>7</b>	Туре:	<u>SO</u>	Sampling Am Personnel: Bi	dy ARnol	d	· ·
Start Depth Sample Da	h:		sh Depth: 6	250	Site Manager: SF	۰. ۲		
Veather CLF emp <u><b>55</b></u> ° recip Rain	atrix: <u>Soil</u> R P. CLDY CL F Wind Calm Lite Mod Hig v Lite Mod Hig escription:	Mod High	Sample	Method: <u>soil</u>	probe		C	Composite? Y
oil Descri		·		·				
eoth:	Descr	iption:			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
	    iformation.						****	
Sample C . ip icc B fuarts)	<del>~ • • • • • • • • • • • • • • • • • • •</del>	Pres	ervative	Analysis Requir	ed Me	thed Number		Laboratory
<u>.</u>								
/QC Infor	mation					. •		
Туре	Sample	Number	Container	Preservative	Analysis Req	uired Meth	od Number	Laboratory
	· · · · · · · · · · · · · · · · · · ·							

Notes/Sketch Map:

Samples Collected

Inc-07-0006

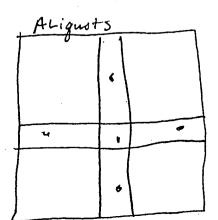


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Project:	SOIL CHARACTI	ERIZATION			PROJECT NAME	FT. RILEY	
Site: In					ARROWHEAD Project Number:	01-224	
Sample N			Туре:	SO	Sampling Andy A Personnel: Bata	ARNold	
Location:	Inc- c	8			Viara I	504 41	
Start Dept	h:	ft. Finis	sh Depth: <u>2</u>	ft.			
Sample Da	ate: <u>03</u>	<u> 23  </u>		0	Site		
<u> </u>					Manager: SFS		
	atrix: <u>Soil</u> R P. CLDY CL		Sample	Method:	probe	(	Composite? Y
Temp <b>55</b>	F Wind Calm	Mod High					5
Precip Rain	Lite Mod Hig	h Č		•			
Snov Snov	w Lite Mod Hig	'n			•		
	escription:		•			· .	
oil Descr	iption:						
Deoth:	Descr	ption:					
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			•				
				•			
		····			<u> </u>		
pling li	nformation:						
Sample (	Container		ervative	Analysis Requir	ed   Method N	lumber	Laboratory
Liploc B	bags						·
quarts)	sire						
·				·····			
			<u>l</u>				. <u></u>
VQC Info	rmation						
Туре	Sample I	Number	Container	Preservative	Analysis Required	Method Number	Laboratory
			· · · · · · · · · · · · · · · · · · ·				
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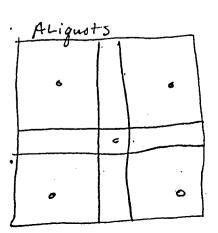
Samples Collected Inc- 08-000p Inc-08-0612 Inc. 08 12244



	SOIL CHARACTERIZATION			PROJECT NAME	FT. RILEY	
Site: In	C			<b>RROWHEAD</b> Project Number:	01-224	
Sample N	0.:	Туре:	SO	Sampling Andy	Arenold	
Location.	Inc - 09			Personnel: Brata	Boyar	
	h: 🕅 🕅 Fi	nish Deoth: 6"	6			
Sample Da	ate: 03/23/	Time: 131		Site		
,				Manager: SFS		
	atrix: Soil	Sample M		probe		Composite? Y
Precip Rain Snow Cocation De	%F Wind Calm Mcd High Lite Mcd High w Lite Mcd High escription: intion:					
oil Descri epth:	Description:			· · · · · · · · · · · · · · · · · · ·	······································	
					· · · · · · · · · · · · · · · · · · ·	
				· · · ·		
npling Ir	nformation:					
		eservative	Analysis Recuir	ed Method	Number	Laboratory
Sample C	bags				l	
·		1				
Liploc B	sive					
Liploc B						
Lipioc B guarts)	sine		· · · · · · · · · · · · · · · · · · ·			
Lip loc B guarts) /QC Infor	six					
Lipioc B guarts)	sine	Container	Preservative	Analysis Required	Method Numb	er Laboratory
ip loc B fuarts) /QC Infor	six	Container	Preservative	Analysis Required	Method Numb	er Laboratory

Samples Collected Inc-09-0006





Project:	SOIL CHARACTERIZATION			PROJECT NAME :	FT. RILEY	
Site:				ARROWHEAD Project Number:	01-224	
Sample No	o.: 1 Enc-1P	Туре:	<u>SO</u>	Sampling Andy A Personnel: Bista	tenold Boy «1	•
Start Depti Sample Da	h: <u>D</u> ft. Fi ate: <u>03/<b>23</b>/</u>	nish Depth: Time: <b>13</b>		Site Manager: <b>SFS</b>	·	
	atrix: Soil V.	Sample	Method:	probe	С	omposite? Y
Precip Rain Snow Location De	PF Wind Calm Mcd High Lite Mcd High v Lite Mcd High escription:			• • • • • • • • • • • • • • • • • • • •		
o <i>il Descri</i> Depth:			· · · · · · · · · · · · · · · · · · ·			
	Description:			<u> </u>		
		an a search an			· · · · · · · · · · · · · · · · · · ·	
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······································	nformation:					
Sample C		eservative	Analysis Requir	ed Method M	umber	Laboratory
Juarts)	•					
· · · ·						
<u>/QC Infor</u>						
Туре	Sample Number	Container	Preservative	Analysis Required	Method Number	Laboratory
		·				
				}		

Samples Collected INC-10-0006 INC-10-0612

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Project:	SOIL CHARACT	ERIZATION			PROJECT NAME :	FT. RILEY	
Site:	С				ARROWHEAD Project Number:	01-224	
Sample N	0.:	· · · · · · · · · · · · · · · · · · ·	Туре:	<u>SO</u>	Sampling Andy	Arenold	
Lecation:	Inc - I	(			Personnel: 844	Boy or .	
Start Depl	h:	ft. Finis	sh Depth: 🔥	ft.			
Sample D	ate: <u>03</u>	123 /	sh Depth: Time: <b></b> 3	20	Site		
					Manager: SFS		
	atrix: Soil		Sample	Method:	probe	•	Composite? Y
emp <b>55</b>	.R P. CLDY CI ºF Wind Calm	I Mod Hich			-		-
recip Rair	i Lite Mod Hi	çh					
	w Lite Mod Hi	çh					
ccation D	escription:		•				
il Descr	iption:						
eoth:		ription:					
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theling L	nformation						·
	Container		ervative	Analysis Requi	red Matho	d Number	Laboratory
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fuarts)							
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				<u></u>			
	rmation	· · ·	I	······································		<u> </u>	
/OC Info	manon	Number	Container	Preservative	Analysis Require	d Method Numb	er Laboratory
/QC Info. Type	Sample		· · · · · · · · · · · · · · · · · · ·				
	Sample			1			
	Sample						
/QC Info Type	Sample						· ·

Samples Collected Inc-11-0006

Inc-11-0612

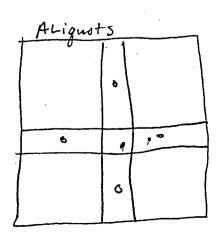
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Project:	SOIL CHARACT	ERIZATION			PROJECT NAME :	FT. RILEY	
Site: In					ARROWHEAD Proje Number:		
Sample N	lo.: Inc	12	Туре:	<u>SO</u>	Sampling And Personnel: Bid	y Arenold	· · · · · · · · · · · · · · · · · · ·
	•		sh Depth: 6 2/ Time: 13	40 	Site Manager: <i>SFS</i>		
	atrix: <u>Soil</u> .R. P. CLDY CL		Sample	Method: 501	1 probe		Composite? V
Snc		;h gh iotion:					
				·			
· · · · · · · · · · · · · · · · · · ·	nformation. Container		servative	Analysis Requi	rod   Mail	od Number	
ziploc (				Analysis Requi			Laboratory
quarts)	<b>v</b>						
·				•			
	····	<u> </u>		·····		<u> </u>	· · · · · · · · · · · · · · · · · · ·
VQC Info		<u> </u>					· .
Туре	Sample	Number	Container	Preservative	Analysis Requi	red   Method Nu	Imber   Laboratory
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	1		······································		<u> </u>		
		1		1	1		1

Notes/Sketch Map:

Samples Collected

Inc-12-0006



Project: SOIL CHA	RACTERIZATION			PROJECT NAME :	FT. RILEY	
Site: InC				ARROWHEAD Project Number:	01-224	
Sample No.:		Туре:	<u>SO</u>	Sampling Andy Personnel: Andy	ARnold	
Location: Inc-				Personnel: BLA	Boyar	
Start Depth: Sample Date:	ft. Finis	sh Depth:	ft.			
	<u>0 3   23  </u>	lime:;		Site Manager: SCC		
Sample Matrix:		Sample	Method:	Manager: SFS		Composite?
Temp 55 PF Wind ( Precip Rain Lite Mod Snow Lite Mod Location Description	t High d High					
oil Description:						
	escription:	•			······································	
	escription:					· · · · · · · · · · · · · · · · · · ·
	escription:				······································	· · · · · · · · · · · · · · · · · · ·
Depth: D						
Depth: D	ion:					· · · · · · · · · · · · · · · · · · ·
Depth: D	ion:	ervative	Analysis Requi	red Method	Number	Laboratory
Depth: Dr Depth: Dr mpling Informat Sample Container Cip Inc Bags	ion:	servative	Analysis Requi	red Method	Number	Laboratory
Deoth: Di Deoth: Di mpling Informat Sample Container 2:p loc Bags	ion:	ervative	Analysis Requi	red Method	Number     	Laboratory
Depth: Di Depth: Di mpling Informat Sample Container 2: P Inc Bags guarts) size	ion:	servative	Analysis Requi	red Method	Number       	Laboratory
Depth: Du Depth: Du mpling Information Sample Container Sample Container Sample Container Sample Container Jacob Bags guarts) size JQC Information	ion: Pres					
Depth: Du Depth: Du Mpling Information Sample Container Sample Container	ion:	ervative Container	Analysis Requi	red Method		
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Samples Collected

Inc-13-0006 Inc-13-0612

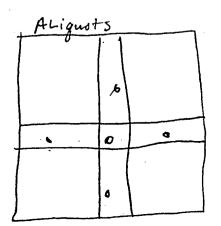
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501	L CHARACTERIZATION		· ·	PROJECT NAME	FT. RILEY		
Site: InC		•		ARROWHEAD Project Number:	01-224		
Sample No.:		Туре:	SO	Sampling Andy	Arriold		
Looolioo, 😽				Personnel: Bitt	Boyar		
		ich Dooth 7	. "		-		
Sample Date:	ft. Fini ft_ /	Time:	π.	Site			
ermpre Bate.		nine <b></b>	00	Manager: <b>SFS</b>			
Sample Matrix		Sample	Method: Join	probe	,,,,,,,	Composite? Y	
Neather CLR P	CLDY CLDY FOG						
recip Rain Lit	Vind Calm Mod High						
Snow Lit	e Mod High			а.			
ccation Desci		•					
oil Descripti	оп:		· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	
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Apling Infor Sample Cont	rmation:	servative	Analysis Requi	red Meinco	1 Number	Laboraiory	
Apling Infor Sample Cont	rmation: ainer Pre	servative	Analysis Requi	red Meihco	1 Number	Laboratory	
Apling Infor Sample Cont Sample Cont	rmation: ainer Pres	servative	Analysis Requi	red Meihco	1 Number	Laboraiory	
Apling Infor Sample Cont	rmation: ainer Pres	servative	Analysis Requi	red Method	I Number     	Laboratory	
Apling Infor Sample Cont Sip Icc Bag	rmation: ainer Pres	servative	Analysis Requi	red Meihoo	I Number         	Laboraiory	
Apling Infor Sample Cont Sip Icc Bag	rmation: ainer Pres	servative	Analysis Requi	red Method	I Number         	Laboratory	
Apling Infor Sample Cont Sample Cont Spice Bag Juarts) si JQC Informa	rmation: ainer Pres	servative	Analysis Requi				
Apling Infor Sample Cont Sample Cont Spice Bag Juarts) si JQC Informa	rmation: ainer Pres s s tion			red Method		· · · · · · · · · · · · · · · · · · ·	
Apling Infor Sample Cont Sample Cont Spice Bag Juarts) si JQC Informa	rmation: ainer Pres s s tion						

Notes/Sketch Map:

Samples Collected

Inc-14-0006 Inc-14-0612 Inc-1224



	SOIL CHARACT	FERIZATION			PROJECT	NAME :	FT. RILEY	
Site: In	C	. :			ARROWHEAD Project Number: 01-224			
Sample N	lo.:		Туре	: SO			Arenold	
	Inc -	<i>،</i> ۲		<u> </u>	Personn	el: Brta	Boy+1	
			ch Daathi (a'	( <sub>K1</sub>				
Sample D	ate: 01	<u> </u>	sh Depth: <u>6'</u> Time: <b>/</b>		Site			
			nine	110	Manager	555		
Sample M			Sample	Method: 501	1 prol			Composite? Y
leather CL	R P. CLDY CI	DY FOG	•					
amp <u>75</u> recin Rain	PF Wind Calm Lite Mod Hi	n Mcd High						
Score	w Lite Mod Hi	çn ch			,			
	escription:	5.1						
il Descr	intion.		•			······································		
eoth:		ription:			····	<u>.</u>		······································
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	<u> </u>							
noling li	nformation							· · ·
	nformation Container		servative	Analysis Requ	ired 1	Maibod	Number	
Sample (	Container		servative	Analysis Requ	ired	Method	Number	Laboratory
Sample (	Container		servative	Analysis Requ	ired	Method	Number	Laboratory
Sample (	Container		servative	Analysis Requ	ired	Method	Number   	Laboratory
Sample (	Container		servative	Analysis Requ	ired	Method	Number	Laboratory
Sample ( <b>p loc (</b> <b>uarts)</b>	Container Sags size		servative	Analysis Requ	ired	Method	Number       	
Sample ( p loc ( warts) QC Infor	Container	Pres						
Sample ( <b>P loc (</b> <b>uarts</b> ) QC Infor	Container Sags size	Pres	container	Analysis Requ		Method s Required		
Sample (	Container	Pres						

Notes/Sketch Map:

Samples Collected

Inc- 14-0006



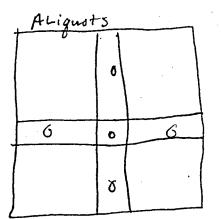
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Wield sheets/soil doc 04/07/99

Project: S	SOIL CHARAC	TERIZATION			PROJEC	T NAME :	FT. RILEY		
Site: InC	2				ARROWHEAD Project Number: 01-224				
Sample No	.:		Type	SO		ing Andy			
-	TIAC		••		Persor	nnel: Brita	Roual		
Location:							DUY		
Start Depth	0	ft. Fini:	sh Depth:						•
Sample Dat	te: <u>0</u>	3 / 23 /	lime:	1420	Site	• •			
Sample Mat	triv: Soil		Comolo			er: SFS			
Weather CLR			Sample	wethod: <u>5011</u>	pro	pe		Compos	<u>:e?</u>
Temp <b>55</b> %	Wind Calm	n Mcd High							
Precip Rain	Lite Mod Hi	ich					•		
Snow Location De	Lite Mcd H	ເຽລ							
			· ·						
oil Descrip				·					
Deoth:	Desc	ription:							
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4	<u> </u>						· · · · · · · · · · · · · · · · · · ·		
Ampling Int	formation	n:							
Sample Co	·	Pres	ervative	Analysis Requir	ed	Method	Number	Labora	tory
Liploc Bo	<u>295</u>								
quarts)_	sire	· · · · · · · · · · · · · · · · · · ·		·					
		· · · · · · · · · · · · · · · · · · ·		······					
		L		· <u> </u>					
VQC Inform	nation								
Туре	Sample	Number	Container	Preservative	Anal	sis Required	Method Nun	nber   Lab	oratory
			· · · · · · · · · · · · · · · · · · ·		1	· <u> </u>	1		
			· · · · · · · · · · · · · · · · · · ·		1				

Samples Collected

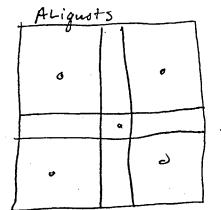
IAC-16-0006 INC-16-0612



Project:	SOIL CHARACT	ERIZATION			PROJECT NAME	FT. RILEY	
Site: In					ARROWHEAD Project Number:	01-224	
Sample No.:     Type:     SO       Location:     Image:					Sampling Andy Personnel: Brita	Arenold	
Sample Da	ate: <u>03</u>	ft. Fir _/ <u>23 /</u>	Time: <u>/ 4</u>	ft. 30	Site Manager: <i>SFS</i>		
Sample Ma	atrix: <u>Soil</u> .R. P. CLDY CL	<u> </u>	Sample	Method:		· · · · · · · · · · · · · · · · · · ·	Composite? >
Shov	n Lite Mcd Hig w Lite Mcd Hig escription: iption: Descr	;h		······································			
hpling Ir	I I I nformation:	, 			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
Sample C			servative	Analysis Requi	ed Method	Number	Laboratory
iploc B	bags						
marts)	sire						
'QC Infor	rmation	1				· .	
Туре	Sample N	lumber	Container	Preservative	Analysis Required	Method Number	Laboratory
<u> </u>						· · · · · · · · · · · · · · · · · · ·	
	1		+	1	<u> </u>	<u>.</u>	

Samples Collected Inc-1770006

Inc- 17-0612



L'field sheets/soil doc 04/07/99

Project: SOIL CHARACTERIZATION					PROJECT NAME :	FT. RILEY	
Site:					ARROWHEAD Project Number:	01-224	
Sample N Location:	10.: Inc-19	8	Туре:	<u>SO</u>	Sampling Andy Personnel: Bata	Arenold Boy +1	· ·
Start Dep	th:O	ft. Fin	ish Depth: Time:	tuo	Site Manager: <i>SFS</i>		
	latrix: <u>Soil</u> _R P. CLDY CL		Sample	Method:	probe		Composite? Y
<u>_ocation D</u>	w Lite Mcd Hig Description:						
		iption:	· · · · · · · · · · · · · · · · · · ·		· · ·		
		iption:					
Depth:	Descr						
Depth: mpling l	Descr						
mpling I Sample (	Descr		servative	Analysis Requi	red Method	Number	Laboratory
mpling I Samole (	Descr		servative	Analysis Requi	red Meincd	Number     	Laboratory
mpling I Samole (	Descr Descr nformation. Container		servative	Analysis Requi	red Method	Number       	Laboratory
	Descr Descr I I I I I I I I I I I I I I I I I I I		servative	Analysis Requi	red Meincd	Number       	Laboratory
mpling I Samele ( 21 p loc ( 21 p loc (	Descr Descr I I I I I I I I I I I I I I I I I I I	Pre	container	Analysis Requi	red Method	Number                 	

Samples Collected Inc- 18-0006 IN (-18-0612

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Project:	SOIL CHARACTERIZ	ATION		PROJECT NAME : FT. RILEY			
Site: In	С			ARROWHEAD Project	01-224		
Sample N	0.:		/pe:SO	Sampling Andy			
			00	Personnel: Brata	Range		
Location:	INC - 19		0		DUY		
Start Dept	n: <u> </u>	ft. Finish Depth:	<u>ft.</u>				
Sample Di		<b>3</b> / Time:	1450	Site			
Samole M	atrix: Soil	C		Manager: SFS	· · · · · · · · · · · · · · · · · · ·		
	R P. CLDY CLDY	▼Sam	ple Method:	1. probe		Composite?	
remp <u>55</u>	F Wind Calm Mcd	d High					
Precip Rain	Lite Mod Hich	•					
	v Lite Mcd High escription:		,				
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oil Descri	ption:						
epth:	Descriptio	n:		······································			
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molina Ir	formation:						
Sample C		Preservative	Analysis Desu	in a la se se se			
iploc B		110301720190	Analysis Requ		Number	Laboratory	
marts)	V 1						
(amb)_	Sile						
<u>·</u>							
	<u>_</u>	<u> </u>	<u> </u>				
<u>/QC Infor</u>							
Туре	Sample Num	ber Container	Preservative	Analysis Required	Method Number	Laboratory	
						1	
		1			1	1	
					1	1	

Samples Collected

Inc-19-0006

Inc: 19-0612

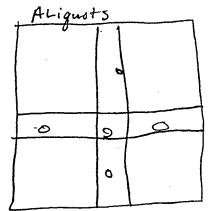
Wield sheets/soil dec 04/07/99

ALigust O	-5	6
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Project:	SOIL CHARACTERIZATION		•	PROJECT NAME :	FT. RILEY	
Site: In				ARROWHEAD Project	01-224	•
Sample No	0.:	Туре	: <u> </u>	Sampling Andy	ARnold	
Lacation	TIAC 7 ()			Personnel: 8674	Boyar	
Start Depth	<b>ДИС-20</b> h: <u>D</u> ft. Fir	hish Denth:	ft.	· ·	·	
Sample Da	ate: <u>03/23/</u>		500	Site		
				Manager: SFS		
	atrix: Soil R P. CLDY CLDY FOG	Sample	Method:			Composite? Y
ocation De	v Lite Mcd High escription:	·	· · · · · · · · · · · · · · · · · · ·			
	ption: Description:			-		
	Description:			ired Maiboo	i Number	
Ceoth:	Description:	eservative	Analysis Requ	ired Method	I Number	Laboratory
Deoth: Impling In Sample C	Description:	eservative	Analysis Requ	ired Method	I Number	Laboratory
mpling In Sample C	Description:	eservative	Analysis Requ	ired Method	I Number	Laboratory
mpling In Sample C 2: p Inc B	Description:	eservative	Analysis Requ	ired Method	I Number         	Laboratory
Mpling In Sample C Sample C Sa	Description:		······			
mpling In Sample C 2: p Inc B	Description:	eservative	Analysis Requ	ired Method		
Mpling In Sample C Sample C Sa	Description:		······			
Mpling In Sample C Sample C Sa	Description:		······			

Inc-20-0006

The-20-0612

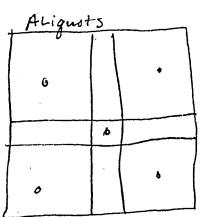


H.Vield sheets/soil doc 04/07/99

Project:	SOIL CHARACT	FERIZATION			PROJECT	NAME :	FT. RILEY	
Site: <u>In</u>					ARROWHEAD Project Number: 01-224			
Sample N	с.: с.:	י ר	Туре	: <u>SO</u>	Samplin	g Andy iel: Bidt	Arenold	
Start Dept	h: <u>0</u> ate: <u>0</u>	ft. Fini	sh Depth: 2 Time:	<sup>ft.</sup> <u>5סר5</u>	Site	SFS		
Sample Ma	atrix: <u>Soil</u> .R P. CLDY C		Sample	Method:				Composite? <b>Y</b>
Show		çn İçn ription:						
			·					
			· · · · · · · · · · · · · · · · · · ·	<u></u>			· · · · · · ·	
mpling Ir	nformation	·			•			
Samole C	Container		servative	Analysis Req	uired	Method	Number	Laboratory
ip loc B quarts)	sire			· · · · · · · · · · · · · · · · · · ·		······································		
/QC Infor	rmation	L			<u>_</u>		<u>_</u> _	
Туре		Number	Container	Preservative	Analys	is Required	Method Numi	ber Laboratory
			·					·
			····			······································		

("01 18CT 40 Inc-21-0006 Inc-21-0662 hc-11-1274 nc-21-1224

H. Tield sheets soil doe 04/07/99



Project: SOIL CHARACTERIZATION		PROJECT NAME :	FT. RILEY		
Site: InC		ARROWHEAD Project Number:	01-224		
Sample No.:	Type:S		Arnold		
Location: INC-22		Personnel: 844	Boyar		
Start Depth: ft. Finish	Depth: ft.				
Sample Date: 03/23 /	Time: 1520	Site			
· · ·		Manager: SFS			
Sample Matrix: Soil 🗸	Sample Method:	soil probe	· · · · · · · · · · · · · · · · · · ·	Composite?	y .
Weather CLR P. CLDY CLDY FOG					/
Temp 55°F Wind Calm Mod High					
Precip Rain Lite Mod High				۸.	
Snow Lite Mod High					
Location Description:	· ·				!

#### Soil Description:

Deoth:	Description:	
<u> </u>		
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	· · · · · · · · · · · · · · · · · · ·	

#### Sumpling Information:

Samole Container	Preservative	Analysis Required	Method Number	Laboratory
Ziploc Bags				
(quarts) size		•		

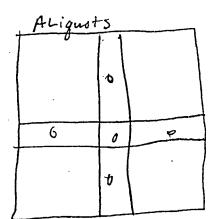
#### QA/QC Information

Туре	Sample Number	Container	Preservative	Analysis Required	Method Number	Laboratory
 		<u></u>				
				· .		

Samples Collected

IN(-22-0006

Inc-22-0612



Project:	SOIL CHARACT	ERIZATION			PROJECT NAME :	FT. RILEY	
Site: In	С				ARROWHEAD Project Number:	01-224	· .
Sample N			Туре:	<u>SO</u>	Sampling Andy Personnel: Brata	Arenold	
	Inc						
Start Dept Samole Da	h: <u>0</u> 3	/ft. Fini / <b>23</b> /	sh Depth: l Time:15	ft.	Site		,
			- mile: -15		Manager: SFS		
	atrix: Soil		Sample	Method:	make		Composite? Y
leather CL	R P. CLDY CL	DY FOG	<b>⊸</b>				
emp <b>55</b>	⁰F Wind Calm	Mcd High			•		
nisk grout Scov	i Lite Mod Hig w Lite Mod Hig	ה הי			•		
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mpling li	nformation:	•					
Sample (	Container	Pre	servative	Analysis Requir	ed Method I	Number	Laboratory
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narts)	¥						
'QC Infoi	rmation						
Туре	Sample	Number	Container	Preservative	Analysis Required	Method Number	Laboratory
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es/Sketci	h 14	<u> </u>			· · · · · · · · · · · · · · · · · · ·	<u>I</u>	

Inc-23-0006

IN (-23-0612

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Project:	SOIL CHARACT	ERIZATION			PROJECT N	IAME :	FT. RILEY	<u> </u>	·····
Site: In					ARROWHEA Number:	D Project	01-224		
Sample N	0.:		Туре:	<u>SO</u>	Sampling	Andy	Arnold Boy +1		
	enc 24				r croonine	Owr	Boyar		
Start Dept	h:	ft. Fini	sh Depth:	ft.					
Sample Da	ate: <u>03</u>	23			Site				
Sample Ma	atrix: Soil		Comple		Manager:		<del> </del>		
	R P. CLDY CL	DY FOG		Method:	prob	L		C	omposite? У
emp 55	<sup>o</sup> F Wind Calm	Mcd High							
recip Rain	<ol> <li>Lite Mod Hid</li> </ol>	;h							
	w Lite Mcd Hig escription:	;'n					· · ·		
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		iotion:		······					
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		iption:	· · · · · · · · · · · · · · · · · · ·						
eoth:									
eoth:	Descr		servative	Analysis Requir	ed	Method	Number		Laboratory
eoth: hpling In Sample (	Descr		servative	Analysis Requir	ed	Method	I Number		Laboratory
hpling In Sample ( Sample (	Descr		servative	Analysis Requir	ed	Meinco	Number		Laboratory
eoth: mpling lr Sample C	Descr Descr		servative	Analysis Requir	ed	Method	I Number		Laboratory
hpling Ir Sample C	Descr Descr		servative	Analysis Requir	ed	Meinco	Number		Laboratory
hpling In Sample ( Proc B Marts)	Descr Descr I I I I I I I I I I I I I I I I I I I		servative	Analysis Requir	ed	Method	I Number		Laboratory
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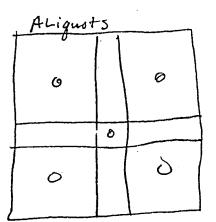
Notes/Sketch Map:

Samples Collected Inc-24-6006

INC-24-0612

ALiquots 6 6 0 0 ð

Project:	SOIL CHARACTERIZATION			PROJECT NAME	FT. RILEY	
Site: In	С			ARROWHEAD Project Number:	01-224	
Start Depi	±ης-25 th:ft. Fir		ft.	Sampling Andy / Personnel: Bata	Arenold	
Sample D Sample M	ate: <u>03/23/</u> atrix: Soil		550 Method:	Site Manager: SFS probe		Composite? >
<sup>p</sup> recip Rair Sno	PF Wind Calm Mcd High Lite Mcd High w Lite Mcd High Description:					
Deoth:	Description:					
	nformation: Container   Pre	eservative	Analysis Dequi			
iploc ( juarts)			Analysis Requi	red Method N		
/OC Info	rmation	<u> </u>			· · · · · · · · · · · · · · · · · · ·	
	Sample Number	Container	Preservative	Analysis Required	Method Number	Laboratory
Туре						



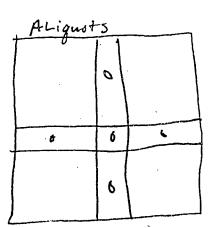
4. Tield sheets tool foe 04/07/99

Curried and			+					
Project:	SOIL CHARACTERI	ZATION			PROJECT	NAME :	FT. RILEY	
Site:					ARROWHE Numbe	AD Project	01-224	
Sample N	0.:		Туре:	SO	Sampli	ng Andy	Arenold	
Location:	INC-26				Person	nel: Brita	Boy «1	
	h: <u>0</u>	ft. Finish	Depth:	ft.				
Sample Da	ate: <u>03</u> /	23 /	Time: 10	00	Site			
					Manage	er: SFS		
	atrix: Soil	$\checkmark$	Sample	Method: <u>_</u>	l pro	be.		Composite? Y
Temp 55 Precip Rain	R P. CLDY CLDY PF Wind Calm M Lite Mod High w Lite Mod High escription:	FOG cd High		•				
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Soil Descri	·					······		
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	1						<u></u> ,	
Sincling In	nformation:					· · · · ·		
	Container	Preser	/ative	Analysis Requi	red	Method	Number I	Laboratory
Ziploc B				, , , , , , , , , , , , , , , , , , , ,				
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QA/QC Infor	rmation							
Тусе	Sample Nu	mber	Container	Preservative	Analy	sis Required	Method Num	ber Laboratory
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Notes/Sketch Map:

Samples Collected INC-26-0006

Inc-26-0612



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Project:							
	SOIL CHARAC	TERIZATION			PROJECT NAME :	FT. RILEY	<u> </u>
Site:					ARROWHEAD Project Number:		·
Sample N	No.:		Туре:	SO	Sampling Andy		
Location:	Inc-	27	· ·		Personnel: Brita	Boy +1	
Start Dep Sample D	oth: <u>0</u>	94t. Fini <u>3 / <b>23</b> /</u>	sh Depth:		Site	• •	
Samole M	latrix: Soil		Samola	Method: <u>Soil</u>	Manager: SFS		
Temp <b>55</b> Precip Rain Sno	LR P. CLDY C F Wind Calm n Lite Mod Hi w Lite Mod Hi Description:	n 'Mod High gh			<u>pross</u>		Composite? Y
ioil Descr	ription:				· · · · · · · · · · · · · · · · · · ·	<del></del>	
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	nformation	•					
	Container	Pres	ervative	Analysis Recuir	red Method	Number	Laboratory
ziples f	<u>Bags</u>						
quarts)	sire			·····			
<u> </u>	·	[					
		<u></u>					
		<u></u>			·····		
	1 0 1	Allombor I	Container	Preservative	Analysis Required	Method Num	ber Lacoratory
A/QC Info Type	Sample	Number				1	
	Sample						·
A/QC Info Type	Sample	Inumber					·

Notes/Sketch Map:

Samples Collected

In 677 0006

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Project:	SOIL CHARACT	TERIZATION			PROJECT NAME :	FT. RILEY	
Site: In					ARROWHEAD Project	01-224	
Sample N	No.:		Туре	<u> </u>	Sampling Andy	Arenold	
Location: Start Depl	Inc - 2			<b>/ 1</b>	Personnel: BLA	Boy +1	
		<u>i</u> t. Fin <u>3 / <b>23</b> /</u>	ish Depth:6	1. 620	Site		
Samole M	latrix: Soil		Sample	Method: 501	Manager: SFS		Composite? >
recip Rair Sno	F Wind Caim n Lite Mod Hi w Lite Mod Hi Description:	ch ,			•		
oil Descr							
epth:	Desci	ription:					
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apling II	     nformation		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
Sample (	nformation.		servative	Analysis Recu	ired   Method	Number	
Sample (	Container		servative	Analysis Requ	ired Method	Number	Laboratory
Sample (	Container		servative	Analysis Requ	ired Method	Number     	Laboratory
Sample ( Plac B uarts)	Container Sags sive		servative	Analysis Requ	ired Method	Number     	Laboratory
Sample ( P Icc 8 Marts) QC Infor	Container Sags six rmation	Pre:		Analysis Reçu	ired Meincd	Number       	Laboratory
Sample ( <b>P Icc 8</b> <b>uards)</b> QC Infor	Container Sags sive	Pre:	Servative	Analysis Requ Presecvative	ired Method	Number           Method Number	Laboratory Laboratory
Sample ( P Icc 8 Marts) QC Infor	Container Sags six rmation	Pre:					· · · · · · · · · · · · · · · · · · ·
Sample ( P Icc 8 Marts) QC Infor	Container Sags six rmation	Pre:					· · · · · · · · · · · · · · · · · · ·
Sample ( <b>)e loc 8</b> <b>uarts)</b> QC Infor Type	Container	Pre:					
Sample ( P Inc B Marts) QC Infor Type	Container	Pre:					· · · · · · · · · · · · · · · · · · ·
Sample ( p loc B marts) QC Infor Type s/Sketch	Container	Number			Analysis Required		· · · · · · · · · · · · · · · · · · ·
Sample ( p icc B marts) QC Infor Type s/Sketcl ample	Container Bags sive rmation Sample i Sample i h Map:	Number					· · · · · · · · · · · · · · · · · · ·
Sample ( p icc B marts) QC Infor Type s/Sketcl ample	Container Sags sixc rmation Sample Sample	Number			Analysis Required		· · · · · · · · · · · · · · · · · · ·

Project:	SOIL CHARAC	TERIZATION			PROJECT NAME :	· FT. RILEY	
Site:					ARROWHEAD Project	01-224	
Sample			Туре	s: <u>SO</u>	Sampling Andy Personnel: Brite	ARNold	
Start Dec	th: _0	ft Fin	ish Depth:	n / A		DUY	
Sample [	Date: 0	3/23/	<u> </u>	630	Site Manager: <b>SFS</b>		
Sample N	latrix: Soil		Sample	Method:			Composite?
Precip Rai Sno	PF Wind Calm n Lite Mod Hi ow Lite Mod Hi Description:	ch	· · ·				
oil Desci	ription:			· · · · · · · · · · · · · · · · · · ·			
eoth:	Desc	ription:					
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						•••• <u>•</u> •••••••••••••••••••••••••••••••	
npling l	nformation	:			· · · · · · · · · · · · · · · · · · ·	<del>.</del>	
	Container	Pres	servative	Analysis Requ	ired Method	Number	Laboratory
iploc (	sire						
fuarts)	514						
<u> </u>							
/QC Info							
Туре	Sample i	Number	Container	Preservative	Analysis Required	Method Numb	er Laboratory
·			-		1	1	

Samples Collected

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Project:	SOIL CHARACTERIZATION			PROJECT NAME :	FT. RILEY	
Site: In	· ·			ARROWHEAD Project Number:	01-224	
Sample N	10.:	Туре	: <u>SO</u>	Sampling Andy	Arenold	
Location:	Inc - 30			Personnel: 844	Boy +1	
Start Depi		nish Depth:	ft.		-	· ·
Sample D		Time: 16	772	Site		
				Manager: SFS		
	latrix: Soil	Sample	Method:	pro be	. C	omposite? Y
Neather Cl Temp <b>55</b>	R P. CLDY CLDY FOG F Wind Calm Mcd High		•			<i>f</i>
Precip Rain	n Lite Mod Hich					
Shc	w Lite Mod High					
ccation D	Description:					
oil Descr	ription:					
epth:	Description:	· · · · · · · · · · · · · · · · · · ·				
				·····	· · · · · · · · · · · · · · · · · · ·	
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hpling li	nformation:					······································
Sample (		servative	Analysis Requir	ed . Method I	Number	Laboratory
iploc e						
marts)_						•
<u>.</u>						······
					1	
/QC Infoi	rmation			· · ·	· · · · · · · · · · · · · · · · · · ·	
Туре	Sample Number	Container	Preservative	Analysis Required	Method Number	Laboratory
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· · · ·	the second se		· · · · · · · · · · · · · · · · · · ·			
<u> </u>						

Notes/Sketch Map:

Samples Collected

Inc-30-0006

Inc-30-0612

