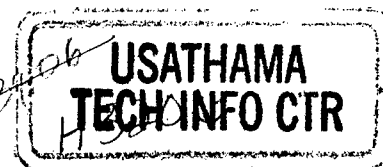


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Contamination Analysis Report for
Environmental Contamination Survey of the
Longhorn Army Ammunition Plant, Marshall, Texas

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Prepared For

Thiokol Corporation/Longhorn Division
Marshall, Texas

For Submission To

U.S. Army Toxic and Hazardous Materials Agency
Aberdeen Proving Grounds, MD 21010

Best Available Copy

Prepared By

Environmental Protection Systems, Inc.
7215 Pine Forest Road
Pensacola, FL 32506

20070419608

Submitted

March 14, 1983
Revised May 3, 1984

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TABLE OF CONTENTS

1. Introduction	1
2. Sampling and Analysis	1
A. Sampling Methods	1
B. Parameters and Analytical Methods	2
3. Quality Control	3
4. Analytical Results	9
A. Data Reports	9
B. Detection Limits	9
5. Preliminary Conclusions	9
6. Recommendations	11
Table I. EPS Certified Methods	3
Appendices	
A. Analytical Results for Groundwater Sampling Sites	A-1
B. Analytical Results for Surfacewater Sampling Sites	B-1
C. Analytical Results for Sediment Sampling Sites	C-1
D. Analytical Results for Soil Sampling Sites	D-1
E. Data Management Forms on Batches of Metal Analytes for Which FQAC Had to Override Established Quality Assurance/Quality Control System	E-1
F. Screening Analysis Results	F-1
G. Manual, Field Sampling Protocol	G-1

1. Introduction

The main purpose of this interim report is the transference of analytical data to Thiokol Corporation and the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) to allow for in-process review and focusing of the remaining geotechnical and analytical effort on those areas found to be of continued concern.

At the outset of this project, nine sites within Longhorn Army Ammunition Plant were designated as potential areas of concern. These areas have been investigated geotechnically and analytically through the logging of existing soil conditions, as well as the sampling of groundwaters, surface waters, sediments, and soils at each of the study areas. The technical results associated with the geotechnical investigation have been submitted under separate cover in November 1982 as Interim Technical Report No. 1. This document contains the analytical data and field sampling methodology used for this survey.

The following sections of this interim report will rely heavily on other documents previously prepared by Environmental Protection Systems, Inc. (EPS) and already submitted to Thiokol and USATHAMA.

2. Sampling and Analysis

A. Sampling Methods

Sampling methods used during this study are presented in detail in Appendix G of this document. The manual which constitutes appendix G was issued to all field personnel, and the field sampling protocol established in this manual was strictly adhered to. Of notable exception to the methods prescribed in our field sampling protocol manual would be the method used by EPS to collect soil samples. Due to site-specific field conditions encountered during the survey, soil samples were routinely collected from each study area with a very narrow, long-nosed shovel. Specifically, a hole 1 foot deep was dug, and then a slice

approximately 5 inches wide and 1 inch thick was removed from the side of the hole using the shovel.

All other sampling procedures outlined in Appendix G were strictly adhered to. EPS collected all water and sediment samples during a one-week period from November 16-21, 1982. Ninety-seven percent of all samples collected at LHAAP were collected in a three-day period from November 17-20, 1982.

B. Parameters and Analytical Methods

A list of all parameters for which EPS was certified for the Longhorn AAP Contamination Survey is presented as Table 1A in Appendix G.

Prior to the initiation of all sampling, EPS underwent a rigorous certification process which was administered by USATHAMA. Before the first samples were collected at LHAAP, EPS achieved certification for the parameters listed in table 1A in Appendix G and all matrices to be tested. Table I provides a list of all parameters for which EPS was specifically certified for this survey, and the associated assigned method numbers and detection limits.

A detailed description of each of the analytical procedures used during this survey can be found in EPS's quality assurance document previously submitted to Thiokol and USATHAMA.

3. Quality Control

A detailed description of the quality control plan established for the Longhorn Army Ammunition Plant Contamination Survey is presented in EPS's quality assurance document. All data generated during this survey, unless otherwise noted, met the rigid analytical requirements presented in EPS's quality assurance document. A data summary sheet for each batch of samples (water, soil, and sediment) and analytes which did not meet quality control requirements, including the rationale used by the

Table I
LONGHORN AAP
EPS CERTIFIED METHODS

<u>Analyte</u>	<u>Test Name</u>	<u>Matrix</u>	<u>Cert Level</u>	<u>Method Number</u>	<u>Tested Range</u>	<u>Detection Limit</u>
Mercury	HG	WA	QN	1D	0.5-10 ug/l	1.3 ug/l
Copper	CU	WA	QN	1M	10-200 ug/l	23.9 ug/l
Zinc	ZN	WA	QN	1M	10-200 ug/l	27.1 ug/l
Beryllium	BE	WA	SQ	1M	10-200 ug/l	10 ug/l
Nickel	NI	WA	SQ	1M	10-200 ug/l	30 ug/l
Silver	AG	WA	SQ	1M	10-200 ug/l	10 ug/l
Manganese	MN	WA	QN	1M	10-200 ug/l	12.1 ug/l
Strontium	SR	WA	QN	1M	25-500 ug/l	25 ug/l
Aluminum	AL	WA	QN	1M	10-200 ug/l	10 ug/l
Thallium	TL	WA	SQ	1M	50-1000 ug/l	50 ug/l
Lead	PB	WA	QN	1B	5-100 ug/l	7.49 ug/l
Chromium	CR	WA	QN	1B	5-100 ug/l	6.64 ug/l
Cadmium	CD	WA	QN	1B	0.25-5 ug/l	0.28 ug/l
Antimony	SB	WA	QN	1B	10-200 ug/l	10.2 ug/l
Arsenic	AS	WA	SQ	1B	5-100 ug/l	6 ug/l
Barium	BA	WA	QN	1B	10-200 ug/l	11.4 ug/l
Selenium	SE	WA	SQ	1B	5-100 ug/l	6 ug/l
Mercury	HG	SO	QN	2D	0.5-10 ugg	2.7 ugg
Chromium	CR	SO	QN	1N	0.5-10 ugg	0.6 ugg
Cadmium	CD	SO	QN	1N	0.5-10 ugg	0.5 ugg
Copper	CU	SO	QN	1N	0.5-10 ugg	0.5 ugg
Zinc	ZN	SO	QN	1N	0.5-10 ugg	0.5 ugg
Beryllium	BE	SO	SQ	1N	0.5-10 ugg	0.5 ugg

<u>Analyte</u>	<u>Test Name</u>	<u>Matrix</u>	<u>Cert Level</u>	<u>Method Number</u>	<u>Tested Range</u>	<u>Detection Limit</u>
Nickel	NI	SO	SQ	1N	0.5-10 ugg	0.5 ugg
Silver	AG	SO	SQ	1N	0.5-10 ugg	0.5 ugg
Manganese	MN	SO	QN	1N	0.25-5 ugg	0.25 ugg
Aluminum	AL	SO	QN	1N	0.25-5 ugg	0.36 ugg
Strontium	SR	SO	QN	1N	0.5-10 ugg	0.5 ugg
Thallium	TL	SO	SQ	1N	2.5-50 ugg	3 ugg
Lead	PB	SO	QN	1J	0.5-10 ugg	0.89 ugg
Arsenic	AS	SO	SQ	1J	0.25-10 ugg	0.3 ugg
Barium	BA	SO	QN	1J	0.5-10 ugg	0.99 ugg
Antimony	SB	SO	QN	1J	0.5-10 ugg	0.76 ugg
Selenium	SE	SO	SQ	1J	0.5-10 ugg	0.5 ugg
Nitrate	NO3	WA	QN	2P	500-10000 ug/l	500 ug/l
Nitrite	NO2	WA	QN	2P	250-5000 ug/l	250 ug/l
Phosphate	PO4	WA	QN	2P	125-2500 ug/l	125 ug/l
Sulfate	SO4	WA	QN	2P	500-10000 ug/l	580 ug/l
Chloride	CL	WA	SQ	2P	500-10000 ug/l	500 ug/l
Fluoride	F	WA	SQ	2P	500-10000 ug/l	500 ug/l
Chromate	CR04	WA	SQ	2P	500-10000 ug/l	500 ug/l
Thiocyanate	SCN	WA	SQ	2P	500-10000 ug/l	500 ug/l
Cyanide	CYN	WA	SQ	2P	500-10000 ug/l	600 ug/l
Nitrate	NO3	SO	SQ	7U	5-100 ugg	5 ugg
Nitrite	NO2	SO	QN	7U	5-100 ugg	5 ugg
Sulfate	SO4	SO	QN	7U	25-500 ugg	25 ugg
Chloride	CL	SO	SQ	7U	5-100 ugg	7 ugg
Fluoride	F	SO	SQ	7U	5-100 ugg	5 ugg
Chromate	CR04	SO	SQ	7U	5-100 ugg	5 ugg

<u>Analyte</u>	<u>Test Name</u>	<u>Matrix</u>	<u>Cert Level</u>	<u>Method Number</u>	<u>Tested Range</u>	<u>Detection Limit</u>
Thiocyanate	SCN	SO	SQ	7U	5-100 ug	10 ug
Cyanide	CYN	SO	SQ	7U	5-100 ug	5 ug
1,3-Dinitrobenzene	13DNB	WA	QN	7V	0.5-10 ug	1.68 ug
2,4,6-Trinitoluene	246TNT	WA	QN	7V	0.5-10 ug	1.46 ug
1,3,5-Trinitrobenzene	135TNB	WA	QN	7V	0.5-10 ug	1.08 ug
2,4-Dinitrotoluene	24DNT	WA	QN	7V	0.5-10 ug	0.89 ug
2,6-Dinitrotoluene	26DNT	WA	QN	7V	0.5-10 ug	1.20 ug
Nitrobenzene	NB	WA	QN	7V	0.5-10 ug	0.76 ug
1,3-Dinitrobenzene	13DNB	SO	QN	7W	0.5-10 ug	0.75 ug
2,4,6-Trinitrotoluene	246TNT	SO	QN	7W	0.5-10 ug	0.73 ug
1,3,5-Trinitrobenzene	135TNB	SO	QN	7W	0.5-10 ug	0.71 ug
2,4-Dinitrotoluene	24DNT	SO	QN	7W	0.5-10 ug	0.5 ug
2,6-Dinitrotoluene	26DNT	SO	QN	7W	0.5-10 ug	0.61 ug
Nitrobenzene	NB	SO	QN	7W	0.5-10 ug	1.15 ug
p,p-DDT	PPDDT	WA	SQ	2F	0.05-1 ug	0.05 ug
Dieldrin	DLDRN	WA	SQ	2F	0.05-1 ug	0.09 ug
ABHC	ABHC	WA	SQ	2F	0.05-1 ug	0.09 ug
Heptachlor	HPCL	WA	SQ	2F	0.05-1 ug	0.05 ug
Lindane	LIN	WA	SQ	2F	0.05-1 ug	0.09 ug
Toxaphene	TXPHEN	WA	SQ	2F	2.5-50 ug	4 ug
PCB 1016	PCB016	WA	SQ	2F	0.52-11 ug	0.6 ug
PCB 1260	PCB260	WA	SQ	2F	0.52-11 ug	1 ug

<u>Analyte</u>	<u>Test Name</u>	<u>Matrix</u>	<u>Cert Level</u>	<u>Method Number</u>	<u>Tested Range</u>	<u>Detection Limit</u>
p,p'-DDT	PPDDT	SO	SQ	6V	0.05-1 ugg	0.09 ugl
Dieldrin	DLDRN	SO	SQ	6V	0.05-1 ugg	0.05 ugg
ABHC	ABHC	SO	SQ	6V	0.05-1 ugg	0.05 ugg
Heptachlor	HPCL	SO	SQ	6V	0.05-1 ugg	0.05 ugg
Lindane	LIN	SO	SQ	6V	0.05-1 ugg	0.05 ugg
Toxaphene	TXPHEN	SO	SQ	6V	2.5-50 ugg	4 ugg
PCB 1016	PCB016	SO	SQ	6V	0.52-11 ugg	0.6 ugg
PCB 1260	PCB260	SO	SQ	6V	0.52-11 ugg	0.7 ugg
Benzene	C6H6	WA	SQ	2J	0.5-10.4 ugl	1 ugl
Chloroform	CHCL3	WA	SQ	2J	0.5-10 ugl	1 ugl
Trichloro-ethene	TRCLE	WA	SQ	2J	0.5-10.4 ugl	1 ugl
Trichloro-fluoromethane	CCL3F	WA	SQ	2J	0.5-10 ugl	2 ugl
Pentachloro-phenol	PCP	WA	SQ	1X	0.43-22.4 ugl	2 ugl
2-Chlorophenol	2CLP	WA	SQ	1X	0.46-20.6 ugl	0.7 ugl
2,4-Dichloro-phenol	24DCLP	WA	SQ	1X	0.46-22.2 ugl	1 ugl
2-Fluorophenol	2FP	WA	SQ	1X	1.02-20.4 ugl	6 ugl
Pentafluoro-phenol	PFP	WA	SQ	1X	1.15-23 ugl	4 ugl
Phenol-D6	PHEND6	WA	SQ	1X	1.07-21.4 ugl	2 ugl
Di-N-Butyl-phthalate	DNBP	WA	SQ	1Z	0.502-20.4 ugl	2 ugl
Diethylphthalate	DEP	WA	SQ	1Z	0.53-20.4 ugl	2 ugl
Nitrobenzene	NB	WA	SQ	1Z	0.49-20.2 ugl	1 ugl
1-Fluoro-naphthalene	1FNAP	WA	SQ	1Z	1.07-21.4 ugl	2 ugl

<u>Analyte</u>	<u>Test Name</u>	<u>Matrix</u>	<u>Cert Level</u>	<u>Method Number</u>	<u>Tested Range</u>	<u>Detection Limit</u>
2-Fluorobiphenyl	2FBP	WA	SQ	1Z	1.09-21.8 ug/l	2 ug/l
Pentachloro-phenol	PCP	SO	SQ	1Y	0.43-11.2 ugg	1 ugg
2-Chlorophenol	2CLP	SO	SQ	1Y	0.46-10.3 ugg	0.7 ugg
2,4-Dichloro-phenol	24DLCP	SO	SQ	1Y	0.45-11.1 ugg	1 ugg
2-Fluorophenol	2FP	SO	SQ	1Y	0.51-10.7 ugg	3 ugg
Pentafluoro-phenol	PFP	SO	SQ	1Y	0.575-11.5 ugg	3 ugg
Phenol-D6	PHEND6	SO	SQ	1Y	0.535-10.7 ugg	3 ugg
Di-N-Butyl-phthalate	DNBP	SO	SQ	2A	0.51-10.4 ugg	0.7 ugg
Diethyl-phthalate	DEP	SO	SQ	2A	0.51-10.6 ugg	1 ugg
Nitrobenzene	NB	SO	SQ	2A	0.49-10.1 ugg	0.6 ugg
1-Fluoro-naphthalene	1FNAP	SO	SQ	2A	0.535-10.7 ugg	2 ugg
2-Fluorobi-phenyl	2FBP	SO	SQ	2A	1.09-21.8 ugg	2 ugg

FQAC to override the system, is presented in Appendix E. All results generated during the analytical portion of the survey for explosives, anions, GC/MS, and GC/EC parameters met the quality control requirements established in EPS's quality control program.

However, considerable problems were encountered in the analysis of metals in natural samples of water and soil collected at LHAAP. All water samples collected during the survey were analyzed in four groups of 17 batches each, or 68 discrete batches (AAX through ADM). The quality control for each batch included a duplicate and two spikes at different levels. the duplicates analyzed for all four batches of water samples had at least 2 of the 17 parameters being tested out of specifications with respect to precision. Most, if not all, of these problems were caused by the high concentration of a particular element encountered in natural samples, along with the resulting impact of numerous dilutions on the analytical scheme. The quality control for the spikes indicated several conditions under which our analytical process would be considered out of control; however, upon closer examination, it was determined that these problems occurred with the parameters for which EPS was certified semiquantitatively. The body of data which was used in the preparation of the quality control charts was rather limited for these parameters, and after review by the field quality control coordinator, it was determined that a re-calculation of the existing tables was in order. Accordingly, results for all spikes for batches presented in this report for atomic absorption water samples fell within reasonable and expected quality control ranges.

All soil and sediment samples collected at LHAAP were analyzed by EPS in three groups of 17 batches each, or 51 discrete batches (AEU through AGS). Here, too, results for several parameters in certain batches were found to be outside of the pre-established quality control limits set for this project. On closer analysis it was found that these quality control anomalies were all associated with high background levels in the blanks and spiked matrices, and the associated need for several dilutions, as well as, for many of the semiquantitative analytical parameters, an

unrealistic accuracy target range based on limited analytical data generated during the quality assurance certification.

4. Analytical Results

A. Data Reports

All analytical results generated during this survey are presented in Appendices A, B, C, D, and F. Appendix A contains all analytical results generated for groundwater sampling sites. Appendix B contains analytical results for samples collected at all surface water sites. Appendix C contains all analytical results for sediment sampling sites. Appendix D contains analytical results for samples collected at soil sampling sites. Appendix F contains results for all compounds isolated during the screening analyses (HPLC, GC/EC, and GC/MS) which have either been identified, or are being reported as unidentified compounds at this time. All results are presented by analytical category according to each station sample.

B. Detection Limits

The detection limits established for this project are presented in Table I. These detection limits were generated during the certification process which EPS underwent for both the Longhorn and Lone Star Army Ammunition Plants, and generally represent a composite detection limit for all analyses conducted by EPS for USATHAMA.

5. Preliminary Conclusions

Of the nine areas studied in-depth during this survey, only two have been demonstrated as having the potential for being a source of contamination which might conceivably migrate off-post.

The first area of continued concern is the TNT area. Wells 114 through 119 do not indicate the existence of any groundwater contamination in

this area. The geotechnical results to date indicate that this area has soils of relatively low permeability, and, therefore, it is not surprising that, although soil contamination does exist at this site, the explosive contaminants present have not penetrated into the groundwater. Our analyses indicated relatively widespread and locally heavy contamination of sites within the TNT area for several of the explosive compounds tested.

Our sampling effort for this project took place during a period of very heavy rainfall. The rainfall (exact meteorological data will be presented in the final report) caused flash flooding in the small creeks and bayous which run through LHAAP just prior to the sampling of the surrounding surface waters associated with the TNT area. Even though the area was subjected to a tremendous flushing from the heavy rainfall, traces of 2,4,6-TNT (0.78 ug/l) were still found in surface water at Station SW006, as well as a relatively high level (206.90 ug/l) of 2,4,6-TNT. Also detected at this station were 2,4-DNT (23.40 ug/l) and 2,6-DNT (13.65 ug/l). Inasmuch as these concentrations of explosive compounds were detected at this site immediately downstream from the TNT area, and additionally considering that traces of 2,4,6-TNT (2.27 ug/l) and nitrobenzene (6.27 ug/l) were found at Station SW002, which is further downstream from the TNT area, this potential source of contamination warrants additional investigation.

During this survey one other site, which had been preliminarily identified as an area of concern, has been tentatively confirmed as a potential contamination source based on the analytical data presented. This area is the current and active burning grounds and associated rocket motor casing washout pond. Many of the wells surrounding the pond have high concentrations of several halogenated organic compounds.

Other sites within the initial nine general areas of concern have been determined to have localized low levels of contamination; however, data gathered to date would not support the imminent potential for migration off LHAAP.

6. Recommendations

A detailed review of the analytical and geotechnical data thus far produced for this survey is now in progress. However, some preliminary recommendations are evident from an initial review of the existing data. These recommendations pertain to those areas found to be of significant continuing concern with respect to their potential for having hazardous substances which might migrate off LHAAP.

1. It is recommended that, since major groundwater contamination was found in one area (active burning grounds), the majority of the additional geotechnical investigation be centered on the wells at the active burning grounds, with specific emphasis on those wells surrounding the rocket motor washout pond.
2. It is recommended that additional wells be installed in the wooded area between the rocket motor washout pond and the Harrison Bayou floodplain. This recommendation is based on the fact that many of the wells surrounding the pond were highly contaminated with halogenated organic compounds and that this contamination was not uniformly distributed from the apparent source of the contamination. The data indicates that there are major differences in the amount of contamination in wells that were equally distant from the apparent contamination source (rocket motor washout pond). Because of the fact that this area's soils have relatively higher permeability than other sites within LHAAP, and because the initial geotechnical report indicates that this area is probably underlain by discontinuous layers of material, it is very possible that the contamination from the rocket motor washout pond follows a very specific and localized pathway into the groundwater. The wells presently installed around the pond are too close to the pond for us to establish with any precision the extent of groundwater contamination in this area. Since it is predicted that the general groundwater flow from this site is towards Harrison Bayou, we recommend that at least six to eight wells be established at

distances of approximately 300 feet and 500 feet from the northeastern and northwestern edges of the rocket motor washout pond.

3. It is recommended that additional water and sediment samples be collected along the entire length of the main drainage course leaving the TNT area at Stations SW001, SW002, and SW006. Additionally, another sampling station should be established in the drainage course leaving the TNT area just prior to its confluence with the north bayou inlet to Caddo Lake. It is suggested that additional samples be collected during a period of normal rainfall at all sediment sampling points. It is further suggested that water samples be collected at surface water Station SW006 every 30 minutes during a storm water hydrograph. Samples collected during the rising and falling hydrograph periods should be analyzed for the presence of explosive compounds. This additional data will be vital in determining whether or not the concentrations previously observed in the surface waters at these sites were an anomaly caused by the very heavy rains in the area, or simply a fraction of the concentrations normally found in the system prior to major flushing.
4. It is further recommended that tissue samples from bottom-feeding fishes in the area of the north bayou inlet to Caddo Lake be analyzed for the presence of explosive compounds and their degradation products.
5. It is suggested that several additional borings be made in area 080 (the suspected TNT burial site) for analysis of explosive compounds. Since traces of explosives were found in bottom soil from one bore hole in this area, and considering that the sampling at this site was totally random, it is suggested that additional historical information be gathered, if possible, and that more specific, and possibly deeper, bore holes be dug for analysis of sediment samples.

APPENDIX A
ANALYTICAL RESULTS FOR
GROUNDWATER SAMPLING SITES
(WELL 101 - WELL 53)

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 101

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	3.35	Zinc	330.00
2,4,6 - TNT	<	Arsenic	50.
1,3,5 - TNB	15.00	Beryllium	<
2,4 - DNT	<	Nickel	81.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	1600.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	36500.	Pentachlorophenol	<
Chloride	2000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	168.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	279.00	Alpha BHC	<
Cadmium	<	Heptachlor	<
Chromium	56.30	Lindane	<
Lead	93.60	Toxaphene	<
Manganese	452.00	Aroclor 1015	<
Strontium	260.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 102

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	54.00
1,3-DNB	5.74	Zinc	270.00
2,4,6 - TNT	<	Arsenic	160.
1,3,5 - TNB	53.95	Beryllium	<
2,4 - DNT	<	Nickel	232.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	4980.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	9690.	Pentachlorophenol	<
Chloride	3000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	382.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	365.00	Alpha BHC	*
Cadmium	0.56	Heptachlor	*
Chromium	84.10	Lindane	*
Lead	67.40	Toxaphene	*
Manganese	476.00	Aroclor 1016	*
Strontium	444.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope. (limited sample)

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 103

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	0910.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	69920.	Pentachlorophenol	<
Chloride	41000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthiate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	361.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	32.00	Alpha BHC	<
Cadmium	11.52	Heptachlor	<
Chromium	13.50	Lindane	<
Lead	15.80	Toxaphene	<
Manganese	169.00	Aroclor 1016	<
Strontium	398.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 104

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	21.
1,3,5 - TNB	9.74	Beryllium	<
2,4 - DNT	<	Nickel	57.
2,6 - DNT	<	Selenium	<
Nitrobenzene	1.82	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	3500.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	5710.	Pentachlorophenol	<
Chloride	8000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	372.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	67.00	Alpha BHC	<
Cadmium	0.07	Heptachlor	<
Chromium	45.70	Lindane	<
Lead	34.30	Toxaphene	<
Manganese	85.00	Aroclor 1016	<
Strontium	96.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 105

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	137.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	50.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	24000.	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	1846690.	Pentachlorophenol	*
Chloride	820000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	377.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	32.50	Alpha BHC	*
Cadmium	9.72	Heptachlor	*
Chromium	11.90	Lindane	*
Lead	<	Toxaphene	*
Manganese	3340.00	Aroclor 1016	*
Strontium	6920.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 106

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	4.38	Beryllium	<
2,4 - DNT	<	Nickel	41.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	73300.	Pentachlorophenol	*
Chloride	137000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	249.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	13.30	Alpha BHC	<
Cadmium	3.92	Heptachlor	<
Chromium	8.50	Lindane	<
Lead	15.10	Toxaphene	<
Manganese	652.00	Aroclor 1248	<
Strontium	272.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 107

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	1.
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	54650.	Pentachlorophenol	<
Chloride	145000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	154.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	<	Alpha BHC	*
Cadmium	4.68	Heptachlor	*
Chromium	10.30	Lindane	*
Lead	10.00	Toxaphene	*
Manganese	187.00	Aroclor 1016	*
Strontium	260.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 100

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	234.
2,6 - DNT	<	Selenium	19.
Nitrobenzene	<	Silver	<
		Thallium	80.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	1378000.	Pentachlorophenol	<
Chloride	2734000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	147.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	31.60	Alpha BHC	1.
Cadmium	15.38	Heptachlor	<
Chromium	12.90	Lindane	<
Lead	<	Toxaphene	<
Manganese	11800.00	Aroclor 1016	<
Strontium	8200.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 100

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	14000.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	66000.	Pentachlorophenol	<
Chloride	2037000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	184.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	260.00	Alpha BHC	*
Cadmium	6.78	Heptachlor	*
Chromium	10.40	Lindane	*
Lead	<	Toxaphene	*
Manganese	15.00	Aroclor 1016	*
Strontium	80.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 110

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	64.
2,6 - DNT	<	Selenium	28.
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	2407100.	Pentachlorophenol	<
Chloride	1414000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	180.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	32.00	Alpha BHC	<
Cadmium	1.44	Heptachlor	<
Chromium	10.00	Lindane	<
Lead	<	Toxaphene	<
Manganese	1570.00	Aroclor 1016	<
Strontium	3920.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 111

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	4350.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	54500.	Pentachlorophenol	<
Chloride	41000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	172.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	15.60	Alpha BHC	<
Cadmium	13.00	Heptachlor	<
Chromium	7.00	Lindane	<
Lead	13.80	Toxaphene	<
Manganese	116.00	Aroclor 1016	<
Strontium	190.00	Aroclor 1250	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 112

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	9.00	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	67500.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	951000.	Pentachlorophenol	<
Chloride	820000.	O-chlorophenol	<
Fluoride	2000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	247.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	17.10	Alpha BHC	<
Cadmium	16.27	Heptachlor	<
Chromium	10.10	Lindane	<
Lead	<	Toxaphene	<
Manganese	3300.00	Aroclor 1016	<
Strontium	80.00	Aroclor 1250	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 113

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 114

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL J15

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthiate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1254	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 116

ANALYTES	CON. ug/i	ANALYTES	CON. ug/i
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthiate	*
Thiocyanate	*	Diethylphthiate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 112

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	9.00	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	67500.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	951000.	Pentachlorophenol	<
Chloride	820000.	O-chlorophenol	<
Fluoride	2000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	247.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	17.10	Alpha BHC	<
Cadmium	16.27	Heptachlor	<
Chromium	10.10	Lindane	<
Lead	<	Toxaphene	<
Manganese	3300.00	Aroclor 1016	<
Strontium	80.00	Aroclor 1250	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 113

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 114

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 115

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthiate	*
Thiocyanate	*	Diethylphthiate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 116

ANALYTES	CON. ug/i	ANALYTES	CON. ug/i
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 117

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 118

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthiate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1248	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 119

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1015	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 120

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	64.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	1170000.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	122000.	Pentachlorophenol	<
Chloride	1375000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	192.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	44.20	Alpha BHC	<
Cadmium	5.44	Heptachlor	<
Chromium	10.20	Lindane	<
Lead	<	Toxaphene	<
Manganese	604.00	Aroclor 1016	<
Strontium	412.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 121

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,5 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichloroethylene	*
Sulfate	63700.	Pentachlorophenol	*
Chloride	82000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthiate	*
Thiocyanate	<	Diethylphthiate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	215.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	75.10	Alpha BHC	<
Cadmium	5.91	Heptachlor	<
Chromium	27.70	Lindane	<
Lead	15.70	Toxaphene	<
Manganese	125.00	Aroclor 1016	<
Strontium	180.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 122

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	122000.	Pentachlorophenol	<
Chloride	328000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	352.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	217.00	Alpha BHC	<
Cadmium	6.84	Heptachlor	<
Chromium	3.70	Lindane	<
Lead	<	Toxaphene	<
Manganese	4460.00	Aroclor 1016	<
Strontium	1112.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 123

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	44.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	20500.	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	35680.	Pentachlorophenol	*
Chloride	24000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthiate	*
Thiocyanate	<	Diethylphthiate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	161.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	52.30	Alpha BHC	<
Cadmium	5.27	Heptachlor	<
Chromium	40.0	Lindane	<
Lead	<	Toxaphene	<
Manganese	72.00	Aroclor 1016	<
Strontium	72.00	Aroclor 1250	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 124

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	7.31	Beryllium	<
2,4 - DNT	<	Nickel	78.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	1030.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	4700.	Pentachlorophenol	<
Chloride	29000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	408.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	160.00	Alpha BHC	<
Cadmium	7.77	Heptachlor	<
Chromium	11.20	Lindane	<
Lead	<	Toxaphene	<
Manganese	83.00	Aroclor 1016	<
Strontium	72.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 125

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	122.00
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	2.5P	Beryllium	<
2,4 - DNT	<	Nickel	377.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	140.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	6570.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	4000.	Pentachlorophenol	<
Chloride	2345000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	21.40	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	2210.00	Alpha BHC	<
Cadmium	14.28	Heptachlor	<
Chromium	10.50	Lindane	<
Lead	<	Toxaphene	<
Manganese	1340.00	Aroclor 1016	<
Strontium	7440.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 126

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	114.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	120.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	3200.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	4000.	Pentachlorophenol	<
Chloride	2725000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	308.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	333.00	Alpha BHC	<
Cadmium	3.54	Heptachlor	<
Chromium	12.10	Lindane	<
Lead	<	Toxaphene	<
Manganese	1320.00	Aroclor 1016	<
Strontium	7760.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 127

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	157.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	140.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	1622000.	Pentachlorophenol	*
Chloride	832000.	O-chlorophenol	*
Fluoride	1000.	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	36.90	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	46.00	Alpha BHC	*
Cadmium	0.90	Heptachlor	*
Chromium	11.60	Lindane	*
Lead	<	Toxaphene	*
Manganese	1850.00	Aroclor 1015	*
Strontium	3350.00	Aroclor 1250	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 128

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	82.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	110.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	559000.	Pentachlorophenol	<
Chloride	1000000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	353.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	51.50	Alpha BHC	*
Cadmium	4.69	Heptachlor	*
Chromium	<	Lindane	*
Lead	<	Toxaphene	*
Manganese	1088.00	Aroclor 1015	*
Strontium	4120.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 129

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	100.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	130.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	99200.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	13400.	Pentachlorophenol	<
Chloride	2592000.	1-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	73.
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	272.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	431.00	Alpha BHC	*
Cadmium	9.67	Heptachlor	*
Chromium	11.40	Lindane	*
Lead	<	Toxaphene	*
Manganese	780.00	Aroclor 1016	*
Strontium	1060.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 130

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	91.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	100.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	152200.	Pentachlorophenol	<
Chloride	2348000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	125.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	105.00	Alpha BHC	*
Cadmium	2.22	Heptachlor	*
Chromium	<	Lindane	*
Lead	<	Toxaphene	*
Manganese	<	Aroclor 1016	*
Strontium	1160.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 131

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	52.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	80.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	216600.	Pentachlorophenol	<
Chloride	27850000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	52.
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	222.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	47.00	Alpha BHC	*
Cadmium	0.93	Heptachlor	*
Chromium	<	Lindane	*
Lead	<	Toxaphene	*
Manganese	<	Aroclor 1016	*
Strontium	1340.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 132

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	102.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	100.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	337000.	Pentachlorophenol	*
Chloride	10330000.	O-chlorophenol	*
Fluoride	1000.	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	232.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	53.40	Alpha BHC	*
Cadmium	9.24	Heptachlor	*
Chromium	14.50	Lindane	*
Lead	16.30	Toxaphene	*
Manganese	1448.00	Aroclor 1016	*
Strontium	2640.00	Aroclor 1250	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 33

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	59.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	90.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	90500.	Pentachlorophenol	<
Chloride	227000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	2.
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	132.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	49.70	Alpha BHC	<
Cadmium	3.60	Heptachlor	<
Chromium	2.10	Lindane	<
Lead	<	Toxaphene	<
Manganese	193.00	Aroclor 1216	<
Strontium	920.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 34

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	62.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	100.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	153400.	Pentachlorophenol	<
Chloride	2725000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	36.60	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	20.20	Alpha BHC	<
Cadmium	1.26	Heptachlor	<
Chromium	<	Lindane	<
Lead	54.40	Toxaphene	<
Manganese	16.00	Aroclor 1015	<
Strontium	1160.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONCHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 35

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	2.25	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	71.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	110.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	235000.	Pentachlorophenol	*
Chloride	200000.	O-chlorophenol	*
Fluoride	1000.	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	29.80	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	14.70	Alpha BHC	<
Cadmium	1.99	Heptachlor	<
Chromium	<	Lindane	<
Lead	44.00	Toxaphene	<
Manganese	36.00	Aroclor 1016	<
Strontium	960.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 36

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	165.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	160.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	67000.	Pentachlorophenol	*
Chloride	878000.	O-chlorophenol	*
Fluoride	1000.	2,4-dichlorophenol	*
Chromate	<	Dibutylphthiate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	235.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	156.60	Alpha BHC	<
Cadmium	0.91	Heptachlor	<
Chromium	9.00	Lindane	<
Lead	<	Toxaphene	<
Manganese	360.00	Aroclor 1016	<
Strontium	2020.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 37

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	73.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	140.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	67000.	Pentachlorophenol	<
Chloride	826000.	O-chlorophenol	<
Fluoride	2000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	227.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	95.50	Alpha BHC	<
Cadmium	2.97	Heptachlor	<
Chromium	7.60	Lindane	<
Lead	80.00	Toxaphene	<
Manganese	312.00	Aroclor 1015	<
Strontium	1560.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 38

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	74.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	140.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	6150.	Pentachlorophenol	*
Chloride	728000.	O-chlorophenol	*
Fluoride	1000.	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	229.00	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	963.00	Alpha BHC	*
Cadmium	6.81	Heptachlor	*
Chromium	7.10	Lindane	*
Lead	8.80	Toxaphene	*
Manganese	506.00	Aroclor 1016	*
Strontium	1520.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 39

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	1327.00	Beryllium	<
2,4 - DNT	<	Nickel	60.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	150.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	1790.	Pentachlorophenol	<
Chloride	653000.	O-chlorophenol	<
Fluoride	5000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	94.3	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	797.00	Alpha BHC	*
Cadmium	3.78	Heptachlor	*
Chromium	<	Lindane	*
Lead	<	Toxaphene	*
Manganese	196.00	Aroclor 1016	*
Strontium	1220.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 40

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	50.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	2230.	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	3300.	Pentachlorophenol	*
Chloride	254000.	O-chlorophenol	*
Fluoride	1000.	2,4-dichlorophenol	*
Chromate	<	Tributylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	50.9	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	<	Alpha BHC	*
Cadmium	0.99	Heptachlor	*
Chromium	11.70	Lindane	*
Lead	9.30	Toxaphene	*
Manganese	632.00	Aroclor 1015	*
Strontium	1420.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 41

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	29.00
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	80.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	100.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	118100.	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	46480.	Pentachlorophenol	*
Chloride	711000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	30.50	p.p'-PDT	*
Antimony	<	Dieldrin	*
Barium	615.00	Alpha BHC	*
Cadmium	2.00	Heptachlor	*
Chromium	8.00	Lindane	*
Lead	<	Toxaphene	*
Manganese	740.00	Aroclor 1015	*
Strontium	1820.00	Aroclor 1250	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 42

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	30.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	90.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	7700.	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	4950.	Pentachlorophenol	*
Chloride	981000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	40.10	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	624.00	Alpha BHC	*
Cadmium	4.22	Heptachlor	*
Chromium	8.20	Lindane	*
Lead	17.40	Toxaphene	*
Manganese	460.00	Aroclor 1016	*
Strontium	2240.00	Aroclor 1250	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 43

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Peryllium	<
2,4 - DNT	<	Nickel	39.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	70.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	720.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	2460.	Trichlorethylene	<
Sulfate	6880.	Pentachlorophenol	<
Chloride	1126000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	330.
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	102.70	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	500.00	Alpha BHC	*
Cadmium	7.20	Heptachlor	*
Chromium	8.90	Lindane	*
Lead	<	Toxaphene	*
Manganese	550.00	Aroclor 1015	*
Strontium	1240.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 44

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	44.00
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNP	<	Beryllium	<
2,4 - DNT	<	Nickel	85.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	80.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	22360.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	1390.	Pentachlorophenol	<
Chloride	702000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	200.
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	10.80	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	32.50	Alpha BHC	*
Cadmium	7.40	Heptachlor	*
Chromium	<	Lindane	*
Lead	<	Toxaphene	*
Manganese	140.00	Aroclor 1016	*
Strontium	1320.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 45

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	41.00
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNP	<	Beryllium	<
2,4 - DNT	<	Nickel	40.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	70.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	16700.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	4470.	Pentachlorophenol	<
Chloride	545000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	16.
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	112.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	18.40	Alpha BHC	*
Cadmium	6.20	Heptachlor	*
Chromium	9.60	Lindane	*
Lead	<	Toxaphene	*
Manganese	520.00	Aroclor 1016	*
Strontium	1700.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 46

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	80.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	4470.	Pentachlorophenol	<
Chloride	545000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	68.90	p.p'-DDT	*
Antimony	<	Dieldrin	<
Barium	534.00	Alpha BHC	<
Cadmium	0.87	Heptachlor	<
Chromium	<	Lindane	<
Lead	<	Toxaphene	<
Manganese	204.00	Aroclor 1015	<
Strontium	1592.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 47

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	41.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	1990.	Pentachlorophenol	<
Chloride	441000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	5.
Thiocyanate	<	Diethylphthlate	243.
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	36.70	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	539.00	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	9.00	Lindane	*
Lead	<	Toxaphene	*
Manganese	624.00	Aroclor 1016	*
Strontium	1080.00	Aroclor 1250	*
Mercury	2.70		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 48

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	29.47	Beryllium	<
2,4 - DNT	<	Nickel	55.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	75.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	106000.	Trichlorethylene	<
Sulfate	2900.	Pentachlorophenol	<
Chloride	554000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	8.
Thiocyanate	<	Diethylphthlate	3.
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	33.70	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	648.00	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	12.40	Lindane	*
Lead	13.40	Toxaphene	*
Manganese	576.00	Aroclor 1016	*
Strontium	1500.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 49

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	9.58	Arsenic	<
1,3,5 - TNB	106.38	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	2990.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	2540.	Pentachlorophenol	<
Chloride	580000.	O-chlorophenol	<
Fluoride	1000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	98.50	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	85.00	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	<	Lindane	*
Lead	<	Toxaphene	*
Manganese	468.00	Aroclor 1016	*
Strontium	1246.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 50

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	5.37	Arsenic	<
1,3,5 - TNB	34.20	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	10910.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	4270.	Pentachlorophenol	<
Chloride	580000.	O-chlorophenol	<
Fluoride	980.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	520.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	66.70	Alpha BHC	*
Cadmium	7.90	Heptachlor	*
Chromium	9.80	Lindane	*
Lead	<	Toxaphene	*
Manganese	150.00	Aroclor 1016	*
Strontium	900.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 51

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	6.00	Peryllium	<
2,4 - DNT	<	Nickel	no.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	1230.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	2110	Pentachlorophenol	<
Chloride	3000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthiate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	67.70	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	42.40	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	55.80	Lindane	*
Lead	49.60	Toxaphene	*
Manganese	151.00	Aroclor 1016	*
Strontium	62.00	Aroclor 1260	*
Mercury	3.20		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 52

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	34.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	700.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	2930.	Trichlorethylene	<
Sulfate	1340.	Pentachlorophenol	<
Chloride	1056000.	O-chlorophenol	<
Fluoride	2000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthalate	7.
Thiocyanate	<	Diethylphthalate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	24.20	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	60.50	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	13.30	Lindane	*
Lead	<	Toxaphene	*
Manganese	127.00	Aroclor 1016	*
Strontium	930.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING SITE
WELL 53

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Peryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	70.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	1120.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	1890.	Trichlorethylene	<
Sulfate	8570.	Pentachlorophenol	<
Chloride	319000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	5.
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	22.90	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	<	Alpha BHC	*
Cadmium	3.20	Heptachlor	*
Chromium	10.40	Lindane	*
Lead	18.90	Toxaphene	*
Manganese	1990.00	Aroclor 1016	*
Strontium	1100.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

APPENDIX B
ANALYTICAL RESULTS FOR
SURFACEWATER SAMPLING SITES
(SW001 - SW021)

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 001

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	<
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	60.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	500.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	7120.	Pentachlorophenol	<
Chloride	3000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	87.50	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	14.70	Alpha BHC	.06
Cadmium	<	Heptachlor	<
Chromium	10.40	Lindane	<
Lead	11.30	Toxaphene	<
Manganese	43.00	Aroclor 1016	<
Strontium	<	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 665

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	*
1,3-DNP	<	Zinc	*
2,4,6 - TNT	206.90	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	22.40	Nickel	*
2,6 - DNT	13.65	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthiate	*
Thiocyanate	*	Diethylphthiate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1216	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 007

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	*
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNP	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 002

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	*
1,3-DNB	<	Zinc	*
2,4,6 - TNT	<	Arsenic	*
1,3,5 - TNB	<	Beryllium	*
2,4 - DNT	<	Nickel	*
2,6 - DNT	<	Selenium	*
Nitrobenzene	<	Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Benzene	*
Nitrite	*	Chloroform	*
Phosphates	*	Trichlorethylene	*
Sulfate	*	Pentachlorophenol	*
Chloride	*	O-chlorophenol	*
Fluoride	*	2,4-dichlorophenol	*
Chromate	*	Dibutylphthlate	*
Thiocyanate	*	Diethylphthlate	*
Cyanide	*	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 009

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	32.00
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	37.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	2000.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	5100.	Pentachlorophenol	<
Chloride	8000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	235.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	54.10	Alpha BHC	0.06
Cadmium	<	Heptachlor	<
Chromium	<	Lindane	<
Lead	<	Toxaphene	<
Manganese	64.00	Aroclor 1016	<
Strontium	168.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 010

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	43.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	980.	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	11380.	Pentachlorophenol	*
Chloride	3000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	236.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	30.00	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	<	Lindane	*
Lead	7.50	Toxaphene	*
Manganese	28.00	Aroclor 1016	*
Strontium	60.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 011

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	41.00
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	36.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Penzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	19000.	Pentachlorophenol	<
Chloride	20000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	252.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	28.80	Alpha BHC	<
Cadmium	<	Heptachlor	<
Chromium	<	Lindane	<
Lead	11.10	Toxaphene	<
Manganese	39.00	Aroclor 1015	<
Strontium	66.00	Aroclor 1250	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW #12

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	44.00
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	47.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	2075.	Pentachlorophenol	<
Chloride	8000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	240.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	28.00	Alpha BHC	0.1
Cadmium	0.37	Heptachlor	<
Chromium	<	Lindane	<
Lead	10.20	Toxaphene	<
Manganese	50.00	Aroclor 1016	<
Strontium	70.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW C13

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	37.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	1000.	Trichlorethylene	<
Sulfate	17240.	Pentachlorophenol	<
Chloride	9000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthiate	<
Thiocyanate	<	Diethylphthiate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	323.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	24.00	Alpha BHC	<
Cadmium	<	Heptachlor	<
Chromium	<	Lindane	<
Lead	<	Toxaphene	<
Manganese	85.00	Aroclor 1016	<
Strontium	74.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 014

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	4.83	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNR	<	Beryllium	<
2,4 - DNT	<	Nickel	57.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	165500.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	12960.	Pentachlorophenol	<
Chloride	14000.	O-chlorophenol	<
Fluoride	66000.	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	251.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	1620.00	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	<	Lindane	*
Lead	8.20	Toxaphene	*
Manganese	26.00	Aroclor 1016	*
Strontium	14,400.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 015

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNP	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TMB	<	Beryllium	<
2,4 - DNT	<	Nickel	52.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	12860.	Pentachlorophenol	<
Chloride	14000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	126.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	750.00	Alpha BHC	0.07
Cadmium	3.00	Heptachlor	<
Chromium	7.20	Lindane	<
Lead	<	Toxaphene	<
Manganese	31.00	Aroclor 1016	<
Strontium	132.00	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 016

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	5P.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	94P.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	10500.	Pentachlorophenol	<
Chloride	4000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	110.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	<	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	34.50	Lindane	*
Lead	<	Toxaphene	*
Manganese	33.00	Aroclor 1016	*
Strontium	74.00	Aroclor 1260	*
Mercury	1.60		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW C17

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNP	<	Beryllium	<
2,4 - DNT	<	Nickel	82.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	40.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	8170.	Pentachlorophenol	<
Chloride	8000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	337.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	<	Alpha BHC	0.05
Cadmium	<	Heptachlor	<
Chromium	8.40	Lindane	<
Lead	20.10	Toxaphene	<
Manganese	40.00	Aroclor 1015	<
Strontium	80.00	Aroclor 1250	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 018

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNP	<	Beryllium	<
2,4 - DNT	<	Nickel	59.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	680.	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	8450.	Pentachlorophenol	*
Chloride	8000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthlate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	407.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	<	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	10.50	Lindane	*
Lead	23.90	Toxaphene	*
Manganese	26.00	Aroclor 1016	*
Strontium	100.00	Aroclor 1260	*
Mercury	1.60		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 019

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	47.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	590.	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	6410.	Pentachlorophenol	<
Chloride	8000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	340.00	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	<	Alpha BHC	<
Cadmium	<	Heptachlor	<
Chromium	<	Lindane	<
Lead	8.10	Toxaphene	<
Manganese	36.00	Aroclor 1016	<
Strontium	92.00	Aroclor 1255	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 020

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	60.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	<
Nitrite	<	Chloroform	<
Phosphates	<	Trichlorethylene	<
Sulfate	6410.	Pentachlorophenol	<
Chloride	8000.	O-chlorophenol	<
Fluoride	<	2,4-dichlorophenol	<
Chromate	<	Dibutylphthlate	<
Thiocyanate	<	Diethylphthlate	<
Cyanide	<	Nitrobenzene	<
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	226.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	<	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	8.20	Lindane	*
Lead	32.50	Toxaphene	*
Manganese	38.00	Aroclor 1015	*
Strontium	44.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SURFACEWATER SAMPLING SITE
SW 021

ANALYTES	CON. ug/l	ANALYTES	CON. ug/l
<u>Explosives:</u>		Copper	<
1,3-DNB	<	Zinc	<
2,4,6 - TNT	<	Arsenic	<
1,3,5 - TNB	<	Beryllium	<
2,4 - DNT	<	Nickel	71.
2,6 - DNT	<	Selenium	<
Nitrobenzene	<	Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Benzene	*
Nitrite	<	Chloroform	*
Phosphates	<	Trichlorethylene	*
Sulfate	9340.	Pentachlorophenol	*
Chloride	5000.	O-chlorophenol	*
Fluoride	<	2,4-dichlorophenol	*
Chromate	<	Dibutylphthiate	*
Thiocyanate	<	Diethylphthlate	*
Cyanide	<	Nitrobenzene	*
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	355.00	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	404.00	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	83.70	Lindane	*
Lead	<	Toxaphene	*
Manganese	115.00	Aroclor 1016	*
Strontium	40.00	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

APPENDIX C
ANALYTICAL RESULTS FOR
SEDIMENT SAMPLING SITES
(Sed001 - Sed003, Sed005 - Sed021)

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 001

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	8.2
2,4,6 - TNT	<	Zinc	36.8
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	7.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	498.49	2,4-dichlorophenol	<
Chloride	79.	Dibutylphthlate	<
Fluoride	<	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	643.6	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	92.2	Alpha BHC	<
Cadmium	<	Heptachlor	<
Chromium	6.8	Lindane	<
Lead	15.5	Toxaphene	<
Manganese	83.8	Aroclor 1015	<
Strontium	11.2	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 002

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	8.8
2,4,6 - TNT	<	Zinc	42.3
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	5.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	212.89	2,4-dichlorophenol	*
Chloride	34.	Dibutylphthlate	*
Fluoride	<	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	2116.4	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	52.0	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	9.3	Lindane	*
Lead	14.6	Toxaphene	*
Manganese	130.0	Aroclor 1016	*
Strontium	5.4	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 003

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Peryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha PHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 005

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	5.1
2,4,6 - TNT	<	Zinc	29.5
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	7.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	152.91	2,4-dichlorophenol	*
Chloride	14.	Dibutylphthlate	*
Fluoride	5.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1007.8	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	66.7	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	23.4	Lindane	*
Lead	21.4	Toxaphene	*
Manganese	95.5	Aroclor 1016	*
Strontium	7.0	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 005

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	0.78	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1248	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 007

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONCHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 008

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNP	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 069

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	3.6
2,4,6 - TNT	<	Zinc	19.2
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	8.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	
Sulfate	129.18	2,4-dichlorophenol	<
Chloride	7.	Dibutylphthlate	<
Fluoride	<	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1872.2	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	255.0	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	7.8	Lindane	*
Lead	17.0	Toxaphene	*
Manganese	177.1	Aroclor 1016	*
Strontium	17.5	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 010

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNE	<	Copper	9.1
2,4,6 - TNT	<	Zinc	36.5
1,3,5 - TNP	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	9.1
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	34.78	2,4-dichlorophenol	*
Chloride	9.	Dibutylphthlate	*
Fluoride	60.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1408.0	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	91.4	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	16.2	Lindane	*
Lead	13.3	Toxaphene	*
Manganese	210.7	Aroclor 1015	*
Strontium	14.8	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 011

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	<
2,4,6 - TNT	<	Zinc	5.0
1,3,5 - TNE	<	Arsenic	28.4
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	6.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	162.17	2,4-dichlorophenol	<
Chloride	8.	Dibutylphthlate	<
Fluoride	<	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1134.6	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	67.1	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	7.4	Lindane	*
Lead	12.3	Toxaphene	*
Manganese	120.5	Aroclor 1016	*
Strontium	13.0	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED C12

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNP	<	Copper	11.7
2,4,6 - TNT	<	Zinc	53.
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	1.
2,6 - DNT	<	Nickel	14.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	405.93	2,4-dichlorophenol	<
Chloride	120.	Dibutylphthlate	<
Fluoride	<	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1229.6	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	<	Alpha BHC	<
Cadmium	<	Heptachlor	<
Chromium	9.8	Lindane	<
Lead	42.7	Toxaphene	<
Manganese	151.6	Aroclor 1016	<
Strontium	18.3	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 013

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	24.8
2,4,6 - TNT	<	Zinc	105.0
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	1.
2,6 - DNT	<	Nickel	24.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	2072.9	2,4-dichlorophenol	<
Chloride	87.	Dibutylphthlate	<
Fluoride	<	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	2154.7	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	<	Alpha BHC	<
Cadmium	<	Heptachlor	<
Chromium	16.5	Lindane	<
Lead	32.0	Toxaphene	<
Manganese	5.9	Aroclor 1016	<
Strontium	42.2	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 014

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	69.6
2,4,6 - TNT	<	Zinc	3.3
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	6.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	75.1	2,4-dichlorophenol	<
Chloride	372.	Dibutylphthlate	<
Fluoride	12.	Diethylphthlate	2.
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1142.4	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	1031.4	Alpha PHC	*
Cadmium	<	Heptachlor	*
Chromium	130.6	Lindane	*
Lead	72.2	Toxaphene	*
Manganese	119.7	Aroclor 1015	*
Strontium	372.2	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 015

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	4.2
2,4,6 - TNT	<	Zinc	18.3
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	4.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	54.8	2,4-dichlorophenol	<
Chloride	11.	Dibutylphthlate	<
Fluoride	<	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1247.2	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	138.7	Alpha PHC	*
Cadmium	<	Heptachlor	*
Chromium	6.7	Lindane	*
Lead	10.1	Toxaphene	*
Manganese	63.8	Aroclor 1216	*
Strontium	10.5	Aroclor 1254	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 016

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	3.4
2,4,6 - TNT	<	Zinc	19.3
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	3.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	19.62	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	414.40	2,4-dichlorophenol	<
Chloride	55.	Dibutylphthlate	<
Fluoride	6.	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1291.4	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	122.0	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	7.1	Lindane	*
Lead	9.9	Toxaphene	*
Manganese	73.2	Aroclor 1016	*
Strontium	13.9	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 017

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNP	<	Copper	12.2
2,4,6 - TNT	<	Zinc	3.9
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	15.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	12.25	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	84.92	2,4-dichlorophenol	<
Chloride	41.	Dibutylphthlate	<
Fluoride	<	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1520.7	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	333.	Alpha PHC	*
Cadmium	<	Heptachlor	*
Chromium	9.1	Lindane	*
Lead	32.1	Toxaphene	*
Manganese	1032.3	Aroclor 1016	*
Strontium	29.6	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 012

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	3.7
2,4,6 - TNT	<	Zinc	101.5
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	6.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	113.36	2,4-dichlorophenol	*
Chloride	7.	Dibutylphthlate	*
Fluoride	<	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1502.2	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	133.6	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	5.0	Lindane	*
Lead	11.3	Toxaphene	*
Manganese	426.3	Aroclor 1016	*
Strontium	18.2	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED C19

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	8.3
2,4,6 - TNT	<	Zinc	25.0
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	6.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	92.54	2,4-dichlorophenol	<
Chloride	26.	Dibutylphthlate	<
Fluoride	<	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	967.2	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	175.8	Alpha PHC	*
Cadmium	<	Heptachlor	*
Chromium	11.4	Lindane	*
Lead	22.6	Toxaphene	*
Manganese	239.2	Aroclor 1016	*
Strontium	26.7	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 020

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	1.6
2,4,6 - TNT	<	Zinc	3.0
1,3,5 - TNP	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	2.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	<
Nitrite	<	O-chlorophenol	<
Sulfate	27.1	2,4-dichlorophenol	<
Chloride	73.	Dibutylphthlate	<
Fluoride	6.	Diethylphthlate	<
Chromate	<	Nitrobenzene	<
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1486.0	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	42.1	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	4.3	Lindane	*
Lead	30.7	Toxaphene	*
Manganese	139.6	Aroclor 1016	*
Strontium	3.1	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SEDIMENT SAMPLING SITE
SED 021

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	9.3
2,4,6 - TNT	<	Zinc	37.2
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	6.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	0-chlorophenol	*
Sulfate	650.2	2,4-dichlorophenol	*
Chloride	24.	Dibutylphthlate	*
Fluoride	6.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	702.	p.p'-DDT	<
Antimony	<	Dieldrin	<
Barium	160.2	Alpha PHC	<
Cadmium	<	Heptachlor	<
Chromium	8.0	Lindane	<
Lead	30.3	Toxaphene	<
Manganese	143.4	Aroclor 1016	<
Strontium	20.0	Aroclor 1260	<
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

APPENDIX D
ANALYTICAL RESULTS FOR SOIL SAMPLING SITES
SOIL SAMPLING SITES
(AREAS 010 - 080)

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC101

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	8.1
2,4,6 - TNT	<	Zinc	25.4
1,3,5 - TMB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	6.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	40.0	2,4-dichlorophenol	*
Chloride	6.	Dibutylphthlate	*
Fluoride	7.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1361.4	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	102.6	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	11.2	Lindane	*
Lead	20.4	Toxaphene	*
Manganese	40.8	Aroclor 1016	*
Strontium	10.1	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC152

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	17.4
2,4,6 - TNT	<	Zinc	55.4
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	5.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	29.7	2,4-dichlorophenol	*
Chloride	5.	Dibutylphthlate	*
Fluoride	8.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1435.	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	106.6	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	12.3	Lindane	*
Lead	26.1	Toxaphene	*
Manganese	99.4	Aroclor 1016	*
Strontium	9.5	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0103

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	15.4
2,4,6 - TNT	<	Zinc	47.2
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	5.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	8.33	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	46.48	2,4-dichlorophenol	*
Chloride	7.	Dibutylphthlate	*
Fluoride	9.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1128.6	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	98.4	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	14.4	Lindane	*
Lead	28.4	Toxaphene	*
Manganese	122.1	Aroclor 1616	*
Strontium	9.4	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0100

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	**	Copper	*
2,4,6 - TNT	**	Zinc	*
1,3,5 - TNB	**	Arsenic	*
2,4 - DNT	**	Beryllium	*
2,6 - DNT	**	Nickel	*
Nitrobenzene	**	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	<
Nitrite	*	O-chlorophenol	<
Sulfate	*	2,4-dichlorophenol	<
Chloride	*	Dibutylphthlate	<
Fluoride	*	Diethylphthlate	<
Chromate	*	Nitrobenzene	<
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1015	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

** Samples 0101, 0102 and 0103 each screened individually for organics by HPLC.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL#201

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNP	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluorid	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	P.P'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC202

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNP	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthiate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha PBC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0203

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1248	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0301

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	328.76	Zinc	*
1,3,5 - TNB	10.35	Arsenic	*
2,4 - DNT	<	Peryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0302

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	7645.62	Zinc	*
1,3,5 - TNB	64.65	Arsenic	*
2,4 - DNT	13.50	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p,p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1216	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL 303

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	42.44	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthiate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC364

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	0.90	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC305

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	6.03	Zinc	*
1,3,5 - TNB	2.92	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p,p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0305

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNP	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthalate	*
Fluoride	*	Diethylphthalate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p,p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1250	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC307

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	20.77	Zinc	*
1,3,5 - TNP	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p,p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha PBC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0300

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	5598.82	Zinc	*
1,3,5 - TNB	17.55	Arsenic	*
2,4 - DNT	16.80	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1248	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC401

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNP	<	Copper	2.7
2,4,6 - TNT	10.15	Zinc	2.1
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	1.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	15.2	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	32.2	2,4-dichlorophenol	*
Chloride	<	Dibutylphthlate	*
Fluoride	6.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1299.2	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	27.0	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	16.3	Lindane	*
Lead	25.5	Toxaphene	*
Manganese	90.0	Aroclor 1016	*
Strontium	5.0	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL6462

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	41.1
2,4,6 - TNT	4.61	Zinc	17.4
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	4.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	22.3	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	37.5	2,4-dichlorophenol	*
Chloride	<	Dibutylphthlate	*
Fluoride	5.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1386.4	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	136.6	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	12.3	Lindane	*
Lead	26.3	Toxaphene	*
Manganese	122.2	Aroclor 1016	*
Strontium	0.0	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONCHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0403

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	2.8
2,4,6 - TNT	<	Zinc	0.2
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	2.2
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	0.96	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	33.25	2,4-dichlorophenol	*
Chloride	<	Dibutylphthlate	*
Fluoride	6.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1426.1	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	57.2	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	10.3	Lindane	*
Lead	24.6	Toxaphene	*
Manganese	137.5	Aroclor 1016	*
Strontium	4.3	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC40C

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	**	Copper	*
2,4,6 - TNT	**	Zinc	*
1,3,5 - TNB	**	Arsenic	*
2,4 - DNT	**	Beryllium	*
2,6 - DNT	**	Nickel	*
Nitrobenzene	**	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	<
Nitrite	*	O-chlorophenol	<
Sulfate	*	2,4-dichlorophenol	<
Chloride	*	Dibutylphthalate	<
Fluoride	*	Diethylphthalate	<
Chromate	*	Nitrobenzene	<
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p,p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha PHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONCHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC501

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNP	<	Copper	3.2
2,4,6 - TNT	:	Zinc	6.3
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	4.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	2.00	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	61.02	2,4-dichlorophenol	*
Chloride	5.	Diethylphthlate	*
Fluoride	6.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1128.6	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	227.8	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	8.4	Lindane	*
Lead	27.6	Toxaphene	*
Manganese	742.0	Aroclor 1016	*
Strontium	9.4	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONCHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0502

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	2.7
2,4,6 - TNT	<	Zinc	10.1
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Peryllium	<
2,6 - DNT	<	Nickel	5.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	7.41	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	22.23	2,4-dichlorophenol	*
Chloride	<	Dibutylphthlate	*
Fluoride	6.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1105.5	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	165.8	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	9.2	Lindane	*
Lead	26.5	Toxaphene	*
Manganese	499.5	Aroclor 1016	*
Strontium	11.8	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC503

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	2.0
2,4,6 - TNT	<	Zinc	11.1
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	4.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	41.04	2,4-dichlorophenol	*
Chloride	<	Dibutylphthlate	*
Fluoride	<	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	3.6	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	61.0	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	9.4	Lindane	*
Lead	26.6	Toxaphene	*
Manganese	140.8	Aroclor 1016	*
Strontium	3.0	Aroclor 1250	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL05CC

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	**	Copper	*
2,4,6 - TNT	**	Zinc	*
1,3,5 - TNB	**	Arsenic	*
2,4 - DNT	**	Beryllium	*
2,6 - DNT	**	Nickel	*
Nitrobenzene	**	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	<
Nitrite	*	O-chlorophenol	<
Sulfate	*	2,4-dichlorophenol	<
Chloride	*	Dibutylphthlate	<
Fluoride	*	Diethylphthlate	<
Chromate	*	Nitrobenzene	<
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0601

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	23.8
2,4,6 - TNT	<	Zinc	26.9
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	P.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	70.00	2,4-dichlorophenol	*
Chloride	21.	Dibutylphthlate	*
Fluoride	11.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	3.7	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	126.2	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	9.8	Lindane	*
Lead	27.6	Toxaphene	*
Manganese	141.6	Aroclor 1216	*
Strontium	14.5	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC602

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	4.2
2,4,6 - TNT	<	Zinc	52.0
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Peryllium	<
2,6 - DNT	<	Nickel	3.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	14.94	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	411.05	2,4-dichlorophenol	*
Chloride	1224.	Dibutylphthlate	*
Fluoride	<	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1276.7	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	83.8	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	6.0	Lindane	*
Lead	27.3	Toxaphene	*
Manganese	61.2	Aroclor 1016	*
Strontium	6.6	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0603

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	9.4
2,4,6 - TNT	<	Zinc	10.0
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	7.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	12.23	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	148.72	2,4-dichlorophenol	*
Chloride	89.	Dibutylphthlate	*
Fluoride	9.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1185.6	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	106.1	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	8.8	Lindane	*
Lead	27.4	Toxaphene	*
Manganese	162.2	Aroclor 1016	*
Strontium	10.8	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL660C

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNP	**	Copper	*
2,4,6 - TNT	**	Zinc	*
1,3,5 - TNB	**	Arsenic	*
2,4 - DNT	**	Beryllium	*
2,6 - DNT	**	Nickel	*
Nitrobenzene	**	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	<
Nitrite	*	O-chlorophenol	<
Sulfate	*	2,4-dichlorophenol	<
Chloride	*	Dibutylphthlate	<
Fluoride	*	Diethylphthlate	<
Chromate	*	Nitrobenzene	<
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONCHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC701T

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNR	<	Copper	155.1
2,4,6 - TNT	<	Zinc	12.6
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	7.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	244.02	2,4-dichlorophenol	*
Chloride	72.	Dibutylphthlate	*
Fluoride	11.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1054.3	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	557.3	Alpha BHC	*
Cadmium	2.3	Heptachlor	*
Chromium	14.5	Lindane	*
Lead	27.2	Toxaphene	*
Manganese	121.0	Aroclor 1016	*
Strontium	153.0	Aroclor 1250	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC761B

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>		Mercury	<
1,3-DNB	<	Copper	153.9
2,4,6 - TNT	<	Zinc	472.0
1,3,5 - TNP	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	18.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	52.44	2,4-dichlorophenol	*
Chloride	14.	Dibutylphthlate	*
Fluoride	9.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1067.0	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	290.4	Alpha BHC	*
Cadmium	5.2	Heptachlor	*
Chromium	22.6	Lindane	*
Lead	<	Toxaphene	*
Manganese	3.1	Aroclor 1016	*
Strontium	232.0	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0702T

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,2-DNB	<	Copper	5.1
2,4,6 - TNT	<	Zinc	37.9
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	5.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	<
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	7.09	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	236.89	2,4-dichlorophenol	*
Chloride	120.	Dibutylphthlate	*
Fluoride	9.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1461.5	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	208.5	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	9.0	Lindane	*
Lead	<	Toxaphene	*
Manganese	396.4	Aroclor 1616	*
Strontium	25.9	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0702B

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	53.6
2,4,6 - TNT	<	Zinc	133.0
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	6.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	5.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	469.17	2,4-dichlorophenol	*
Chloride	236.	Dibutylphthlate	*
Fluoride	10.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1462.6	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	201.0	Alpha BHC	*
Cadmium	1.3	Heptachlor	*
Chromium	16.5	Lindane	*
Lead	<	Toxaphene	*
Manganese	352.3	Aroclor 1016	*
Strontium	340.0	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONCHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0703T

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	23.9
2,4,6 - TNT	<	Zinc	160.6
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	8.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	5.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	24.46	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	1322.09	2,4-dichlorophenol	*
Chloride	102.	Dibutylphthlate	*
Fluoride	78.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	504.2	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	991.1	Alpha PHC	*
Cadmium	<	Heptachlor	*
Chromium	95.4	Lindane	*
Lead	<	Toxaphene	*
Manganese	234.3	Aroclor 1016	*
Strontium	91.2	Aroclor 1260	*
Mercury	6.00		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC7C2B

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	26.5
2,4,6 - TNT	<	Zinc	132.6
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	9.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	5.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	446.25	2,4-dichlorophenol	*
Chloride	100.	Dibutylphthlate	*
Fluoride	19.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1162.8	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	42.6	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	47.9	Lindane	*
Lead	<	Toxaphene	*
Manganese	184.6	Aroclor 1016	*
Strontium	116.3	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC704T

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	66.6
2,4,6 - TNT	13.6	Zinc	750.2
1,3,5 - TNP	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	10.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	5.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	187.26	2,4-dichlorophenol	*
Chloride	426.	Dibutylphthlate	*
Fluoride	17.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1799.2	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	151.8	Alpha BHC	*
Cadmium	31.2	Heptachlor	*
Chromium	70.7	Lindane	*
Lead	<	Toxaphene	*
Manganese	5.2	Aroclor 1016	*
Strontium	1071.2	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0704B

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNR	<	Copper	63.6
2,4,6 - TNT	<	Zinc	773.8
1,3,5 - TNB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	18.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	5.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	<	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	239.56	2,4-dichlorophenol	*
Chloride	818.	Dibutylphthlate	*
Fluoride	10.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	2024.6	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	178.1	Alpha BHC	*
Cadmium	15.9	Heptachlor	*
Chromium	58.3	Lindane	*
Lead	<	Toxaphene	*
Manganese	2.	Aroclor 1016	*
Strontium	1378.	Aroclor 1260	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0705T

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,2-DNB	<	Copper	8.2
2,4,6 - TNT	<	Zinc	53.2
1,3,5 - TMB	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	5.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	5.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	5.90	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	54.45	2,4-dichlorophenol	*
Chloride	5.	Dibutylphthlate	*
Fluoride	7.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	2230.1	p,p'-DDT	*
Antimony	<	Dieldrin	*
Barium	200.5	Alpha BHC	*
Cadmium	<	Heptachlor	*
Chromium	10.0	Lindane	*
Lead	12.8	Toxaphene	*
Manganese	325.3	Aroclor 1016	*
Strontium	32.8	Aroclor 1250	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0705B

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	26.3
2,4,6 - TNT	<	Zinc	23.9
1,3,5 - TNP	<	Arsenic	<
2,4 - DNT	<	Beryllium	<
2,6 - DNT	<	Nickel	7.
Nitrobenzene	<	Selenium	<
		Silver	<
		Thallium	5.
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	19.43	Pentachlorophenol	*
Nitrite	<	O-chlorophenol	*
Sulfate	152.76	2,4-dichlorophenol	*
Chloride	6.	Dibutylphthlate	*
Fluoride	9.	Diethylphthlate	*
Chromate	<	Nitrobenzene	*
Thiocyanate	<		
Cyanide	<		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	1591.2	p.p'-DDT	*
Antimony	<	Dieldrin	*
Barium	198.2	Alpha BHC	*
Cadmium	2.7	Heptachlor	*
Chromium	15.6	Lindane	*
Lead	4.9	Toxaphene	*
Manganese	49.9	Aroclor 1216	*
Strontium	137.3	Aroclor 1254	*
Mercury	<		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL070CT

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	**	Copper	*
2,4,6 - TNT	**	Zinc	*
1,3,5 - TNB	**	Arsenic	*
2,4 - DNT	**	Peryllium	*
2,6 - DNT	**	Nickel	*
Nitrobenzene	**	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	<
Nitrite	*	o-chlorophenol	<
Sulfate	*	2,4-dichlorophenol	<
Chloride	*	Dibutylphthlate	<
Fluoride	*	Diethylphthlate	<
Chromate	*	Nitrobenzene	<
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0070CB

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	**	Copper	*
2,4,6 - TNT	**	Zinc	*
1,3,5 - TNB	**	Arsenic	*
2,4 - DNT	**	Beryllium	*
2,6 - DNT	**	Nickel	*
Nitrobenzene	**	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	<
Nitrite	*	O-chlorophenol	
Sulfate	*	2,4-dichlorophenol	<
Chloride	*	Dibutylphthlate	<
Fluoride	*	Diethylphthlate	<
Chromate	*	Nitrobenzene	<
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p,p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1216	*
Strontium	*	Aroclor 1248	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL 0901T

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthiate	*
Fluoride	*	Diethylphthiate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1248	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC801P

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	1.86	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0802T

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNP	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p,p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC882B

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNE	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOIL0803T

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Dibutylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
ANALYTICAL RESULTS FOR SOIL SAMPLING SITE
SOILC803B

ANALYTES	CON. ug/g	ANALYTES	CON. ug/g
<u>Explosives:</u>			
1,3-DNB	<	Copper	*
2,4,6 - TNT	<	Zinc	*
1,3,5 - TNB	<	Arsenic	*
2,4 - DNT	<	Beryllium	*
2,6 - DNT	<	Nickel	*
Nitrobenzene	<	Selenium	*
		Silver	*
		Thallium	*
<u>Anions:</u>		<u>Organics (GC/MS):</u>	
Nitrate	*	Pentachlorophenol	*
Nitrite	*	O-chlorophenol	*
Sulfate	*	2,4-dichlorophenol	*
Chloride	*	Diethylphthlate	*
Fluoride	*	Diethylphthlate	*
Chromate	*	Nitrobenzene	*
Thiocyanate	*		
Cyanide	*		
<u>Metals:</u>		<u>Organics (GC/EC)</u>	
Aluminum	*	p.p'-DDT	*
Antimony	*	Dieldrin	*
Barium	*	Alpha BHC	*
Cadmium	*	Heptachlor	*
Chromium	*	Lindane	*
Lead	*	Toxaphene	*
Manganese	*	Aroclor 1016	*
Strontium	*	Aroclor 1260	*
Mercury	*		

< less than established detection limit.

* Analyte or category not tested as per project scope.

APPENDIX E

DATA MANAGEMENT FORMS ON BATCHES OF METAL ANALYTES
FOR WHICH FQAC HAD TO OVERRIDE ESTABLISHED QA/QC SYSTEM

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Donaka Pinnore
 Date Samples Analyzed 12-6-82 Time 11:20 PM
 Parameter (Metals) MANGANESE USATHAMA Method # 1M
 Matrix 1 Category 3 Batch 1
 Systems Calibration: (X) Passed () Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 11, Page # 1
 File # _____

NOTES: 11/11/82 11/11/82 11/11/82

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>50</u>	<u>49</u>	<u>50</u>	
2.0X _D	<u>125</u>	<u>124</u>	<u>124</u>	
10.0X _D	<u>250</u>	<u>256</u>	<u>253</u>	
Blank	<u>0</u>	<u>0</u>	<u>0</u>	

Standard Curve Data

Corr. Coeff.: 1/11 Slope: 1/11 Y-intercept: 1/11

DATA:

ABD

Batch	Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	+01 Actual Concentration	Analytical POAC # Note
<u>ABD</u>	2x _D Spike	<u>1 - 3 - 1</u>	<u>46</u>			<u>46</u>	<u>001</u>
	<u>101</u>	<u>1 - 3 - 2</u>	<u>113</u>	<u>4</u>		<u>452</u>	<u>002</u>
	<u>102</u>	<u>1 - 3 - 3</u>	<u>119</u>	<u>4</u>		<u>476</u>	<u>003</u>
	<u>104</u>	<u>1 - 3 - 4</u>	<u>85</u>			<u>85</u>	<u>004</u>
	<u>103</u>	<u>1 - 3 - 5</u>	<u>169</u>			<u>169</u>	<u>005</u>
<u>Dup.</u>	<u>105</u>	<u>1 - 3 - 6</u>	<u>33.4</u>	<u>100</u>		<u>3340</u>	<u>006</u>
	<u>103</u>	<u>1 - 3 - 7</u>	<u>90</u>	<u>4</u>		<u>360</u>	<u>007</u>
	<u>106</u>	<u>1 - 3 - 8</u>	<u>163</u>	<u>4</u>		<u>652</u>	<u>008</u>
	<u>107</u>	<u>1 - 3 - 9</u>	<u>189</u>			<u>189</u>	<u>009</u>
	<u>108</u>	<u>1 - 3 - 10</u>	<u>118</u>	<u>100</u>		<u>11800</u>	<u>010</u>
	<u>109</u>	<u>1 - 3 - 11</u>	<u>15</u>			<u>15</u>	<u>011</u>
	<u>110</u>	<u>1 - 3 - 12</u>	<u>157</u>	<u>10</u>		<u>1570</u>	<u>012</u>
	<u>111</u>	<u>1 - 3 - 13</u>	<u>29</u>	<u>4</u>		<u>116</u>	<u>013</u>
	<u>112</u>	<u>1 - 3 - 14</u>	<u>330</u>	<u>100</u>		<u>3300</u>	<u>014</u>
	<u>120</u>	<u>1 - 3 - 15</u>	<u>151</u>	<u>4</u>		<u>604</u>	<u>015</u>
	<u>121</u>	<u>1 - 3 - 16</u>	<u>126</u>			<u>126</u>	<u>016</u>
	<u>122</u>	<u>1 - 3 - 17</u>	<u>44.6</u>	<u>100</u>		<u>4460</u>	<u>017</u>
	<u>123</u>	<u>1 - 3 - 18</u>	<u>72</u>			<u>72</u>	<u>018</u>
	5x _D Spike	<u>1 - 3 - 19</u>	<u>129</u>			<u>129</u>	<u>019</u>

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Spike>	191	142	49	50	98	20	30
Blind Spike	46	0	46	50	92	105.2	104.3
FQAC>	129	0	129	125	103.2	96.8	94.7

Precision (Replicates)

Analyst	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Replicate>	I 146	II 142	4.0	6.54
Blind Replicate	169	360		
FQAC>				

Analyst's Report to Departmental Supervisor:

PASSES Analytical & C.DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FQAC: ☒ Passed () FailedNOTES: None Noted

DS check on uncorrected concentrations for range requirement:

☒ Passed () FailedNOTES: All samples between 10-200 ug/lDS check accuracy: ☒ Passed () Failed

NOTES: _____

DS check precision: ☒ Passed () Failed

NOTES: _____

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Sammy Warren DATE 12-10-82 TIME 4:15 pm
 CERTIFICATION: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed Sammy Warren

FQAC DATA REVIEW:

FQAC check blind replicates (precision): () Passed (X) Failed

NOTES: FQAC checked Analyst replicates precision ok Replicates were
FQAC will override standard Q.C. one diluted.

FQAC check blind spike (30 accuracy): (X) Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): (X) Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: (X) Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I (X) can () cannot certify this data as
being in compliance with the EPS quality assurance program established for
the LSAAP Contamination Survey. I, furthermore, (X) can () cannot
authorize its release for incorporation into USATHAMA DATA SYSTEM.Signed Richard D. Langley

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Doralea W. J. J.
 Date Samples Analyzed 12-4-82 Time 10:00 AM
 Parameter (Metals) Strontium USATHAMA Method # 1/1
 Matrix 1 Category 3 Batch 1
 Systems Calibration: (X) Passed () Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 11, Page # 5

File # _____

NOTES: UNITS None 15/1

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _P	50	52	50	
2.0X _D	175	176	173	
10.0X _D	200	202	201	
Blank	0	0	0	

Standard Curve Data

Corr. Coeff.: 1.00Slope: 1.00Y-intercept: 0.00

DATA:

Batch	Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	Analytical #
ABE	2 ND Spike	1 - 3 - 1	47				47	001
	101	1 - 3 - 2	260				260	002
	102	1 - 3 - 3	260				260	003
	104	1 - 3 - 4	76				76	004
	103	1 - 3 - 5	76				76	005
	105	1 - 3 - 6	173		40		6920	006
	103	1 - 3 - 7	274				274	007
	106	1 - 3 - 8	272				272	008
	107	1 - 3 - 9	260				260	009
	108	1 - 3 - 10	80		40		3200	010
	109	1 - 3 - 11	80				80	011
	110	1 - 3 - 12	98		20		1960	012
	111	1 - 3 - 13	170				170	013
	112	1 - 3 - 14	70				70	014
	120	1 - 3 - 15	412				412	015
	121	1 - 3 - 16	180				180	016
	122	1 - 3 - 17	208		4		1112	017
	123	1 - 3 - 18	72				72	018
	5 ND Spike	1 - 3 - 19	126				126	019

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20"	CL 30"
Spikes>	294	- 321	= 53	÷ 50	x 106		
Blind Spike						103.1	113.6
FQAC>	47	- 0	= 47	÷ 50	x 94	84.1	81.8
	126	- 0	= 126	÷ 125	x 100.8		

Precision (Replicates)

Analyst	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Replicate>	I 221	II 199	22	24.2
Blind Replicate				
FQAC>	398	454	56	

Analyst's Report to Departmental Supervisor:

*Passing, slightly below & C.*DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: *None noted*

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: *All samples between 25-500 ug/l*

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME *Samantha Wapner* DATE *12-13-82* TIME *8:45*
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed *Samantha Wapner*

FQAC DATA REVIEW:

FQAC check blind replicates (precision): ☒ Passed () Failed
Limited Data base for precision Results Accepted by FQAC
NOTES: AS within Reason.

FQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed

Phillip D. Sanfel

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) W. J. ...
Date Samples Analyzed 12-16-82 Time 9:25
Parameter (Metals) Aluminum USATHAMA Method # 18
Matrix 1 Category 3 Batch 2
Systems Calibration: (X) Passed () Failed
Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 5, Page # 43,
File # _____

NOTES: all units are below

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	10	8.9	10.6	
2.0X _D	50	53.8	48.5	
10.0X _D	100	98.3	72.6	
Blank	0	0	0	

Standard Curve Data

Corr. Coeff.: 0.9943 Slope: 0.0180
Y-intercept: 0.00001

DATA:

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FOAC Notes
ABO AAAA 121	1 - 3 - 20	21.4				21.4	
122	1 - 3 - 21	40.8		10		408	
123	1 - 3 - 22	30.8		10		308	
124	1 - 3 - 23	20.0				200	
125	1 - 3 - 24	36.9				369	
126	1 - 3 - 25	35.3		10		353	
127	1 - 3 - 26	24.2		10		242	
128	1 - 3 - 27	12.5				125	
129	1 - 3 - 28	22.2				222	
130	1 - 3 - 29	90.5				905	
131	1 - 3 - 30	23.2		10		232	
132	1 - 3 - 31	24.2		10		242	
133	1 - 3 - 32	13.2				132	
134	1 - 3 - 33	36.6				366	
135	1 - 3 - 34	29.8				298	
136	1 - 3 - 35	23.6		10		236	
137	1 - 3 - 36	22.7		10		227	
138	1 - 3 - 37	22.1		10		221	
139	1 - 3 - 38	94.3				943	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
	188.7	- 87.6	= 101.1	100	x 101.1		
Blind Spike FQAC>	97.5	- 0	= 97.5	100	x 97.5	11.1	21.0
	272.0	- 0	= 272.0	250	x 108.8	80.5	77.6
<u>Precision (Replicates)</u>							

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	93.3	87.6	5.70	6.40
Blind Replicate FQAC>	408	200		

Analyst's Report to Departmental Supervisor:

Passes Analytical QCDEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FQAC: ☒ Passed () FailedNOTES: None Noted

DS check on uncorrected concentrations for range requirement:

☒ Passed () FailedNOTES: All samples in range 100-250 mg/LDS check accuracy: ☒ Passed () Failed

NOTES: _____

DS check precision: ☒ Passed () Failed

NOTES: _____

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:NAME SARAH J. HARRIS DATE 12-29-92 TIME 4:00 PMCERTIFICATION: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.Signed Sammy Harris

FQAC DATA REVIEW:

FQAC check blind replicates (precision): ☒ Passed () Failed

Out of RANGE ANALYST precision out of sample bottle

NOTES: OK field duplicates indicate wide variation in sample quality.

FQAC
override
based on
all other
dataFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

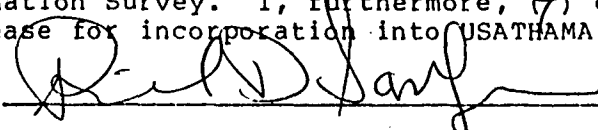
FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

**LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM**

MANAGEMENT DATA:

Analyst(s) Name(s) Dupley, D. K. AND R
 Date Samples Analyzed 12-23-72 Time 11:00
 Parameter (Metals) Barium USATHAMA Method # 1B
 Matrix 1 Category 3 Batch 2
 Systems Calibration: (X) Passed () Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 6, Page # 9
 File # _____
 NOTES: _____

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>5.10</u>	<u>5.6</u>	<u>5.17</u>	
2.0X _D	<u>20.4</u>	<u>20.9</u>	<u>20.6</u>	
10.0X _D	<u>100</u>	<u>100.0</u>	<u>100.0</u>	
Blank	<u>0</u>	<u>0</u>	<u>0</u>	

Standard Curve Data

Corr. Coeff.: 0.9995 Slope: 0.0030
 Y-intercept: 0

DATA:

ABQ	Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FOAC Notes
	001	125	1 - 3 - 20					
	002	124 ^{K Dup}	1 - 3 - 21					
	003	126	1 - 3 - 22					
	004	124 ^V	1 - 3 - 23					
	005	127	1 - 3 - 24					
	006	128	1 - 3 - 25					
	007	129	1 - 3 - 26					
	008	130	1 - 3 - 27					
	009	131	1 - 3 - 28					
	010	Spikes ^{2x}	1 - 3 - 29					
	011	132	1 - 3 - 30					
	012	Spikes ^{5x}	1 - 3 - 31					
	013	133	1 - 3 - 32					
	014	134	1 - 3 - 33					
	015	135	1 - 3 - 34					
	016	136	1 - 3 - 35					
	017	137	1 - 3 - 36					
	018	138	1 - 3 - 37					
	019	139	1 - 3 - 38					

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
Spike>	<u>100</u>	-	=	<u>100</u>	x 100		
Blind Spike							
FQAC>		-	=	<u>203</u>	x <u>101.5</u>		
				<u>488</u>	<u>97.6</u>		

Precision (Replicates)

Analyst	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Replicate>	<u>61.1</u>	<u>61.1</u>	<u>1.5</u>	<u>81.2</u>
Blind Replicate				
FQAC>	<u>169</u>	<u>92.1</u>		

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (✓) Passed () Failed

NOTES: _____

DS check on uncorrected concentrations for range requirement:
(✓) Passed () Failed

NOTES: _____

DS check accuracy: (✓) Passed () Failed

NOTES: _____

DS check precision: (✓) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (✓) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME _____ DATE 12-29-82 TIME 1:00
 CERTIFICATION: I (✓) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed _____

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: 4 of 5 Q.C. check within 10 precision problem only on field duplicate.FQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: () ☒ Passed () Warning () Failed

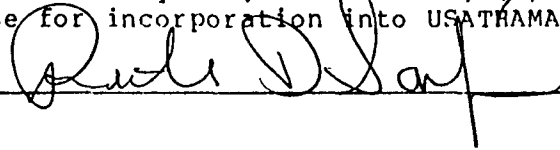
NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on

date _____

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can ☒ cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot) authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) D. J. ...
 Date Samples Analyzed 12-27-... Time 11:00 AM
 Parameter (Metals) Cadmium USATHAMA Method # 12
 Matrix 1 Category 3 Batch 2
 Systems Calibration: ☒ Passed ☐ Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 6, Page # 19

File # _____

NOTES: _____

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>2.50</u>	<u>2.66</u>	<u>2.52</u>	_____
2.0X _D	<u>10.00</u>	<u>10.94</u>	<u>10.90</u>	_____
10.0X _D	<u>100.00</u>	<u>100.24</u>	<u>100.10</u>	_____
Blank	<u>0</u>	<u>0</u>	<u>0</u>	_____

Standard Curve Data

Corr. Coeff.: 0.9981Slope: -0.0035Y-intercept: -0.0000

DATA:

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	Actual Concentration	FOAC Note
001 125	1 - 3 - 20	1.428		10	14.28	
002 124	1 - 3 - 21	3.444		10	34.44	
003 126	1 - 3 - 22	3.540			35.40	
004 124	1 - 3 - 23	3.950			39.50	
005 127	1 - 3 - 24	4.999		10	49.99	
006 128	1 - 3 - 25	4.646			46.46	
007 129	1 - 3 - 26	5.984		30	17.95	
008 130	1 - 3 - 27	2.220			22.20	
009 131	1 - 3 - 28	2.130			21.30	
010 Spike 2 nd	1 - 3 - 29	1.235		10	12.35	
011 132	1 - 3 - 30	0.924		10	9.24	
012 Spike 5 th	1 - 3 - 31	2.404		5	12.02	
013 33	1 - 3 - 32	3.642			36.42	
014 34	1 - 3 - 33	1.060			10.60	
015 35	1 - 3 - 34	1.559			15.59	
016 36	1 - 3 - 35	0.910			9.10	
017 37	1 - 3 - 36	0.990			9.90	
018 38	1 - 3 - 37	0.631		10	6.31	
019 39	1 - 3 - 38	0.498			4.98	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20'	CL 30'
	10.00	-	9.76	10.00	X 100		
Blind Spike FOAC>		-	12.35	10.00	X 100	11.5	12.5
			24.64	25.00	98.56		

Precision (Replicates)

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	12.35	2.05	0.31	2.04
Blind Replicate FOAC>	7.77	3.54		

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FOAC: (X) Passed () Failed

NOTES: _____

DS check on uncorrected concentrations for range requirement:
(X) Passed () Failed

NOTES: _____

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Sammy Wilson DATE 12-12-82 TIME 4:00 PM
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance
 with the EPS quality assurance program established for the LSAAP Contamination
 Survey.

Signed _____

FQAC DATA REVIEW:

FQAC check blind replicates (precision): () Passed () Failed

NOTES: Apparent sample error in replicate shows up in a number of metals.

FQAC check blind spike (30 accuracy): (X) Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): (X) Passed () Failed

NOTES: _____

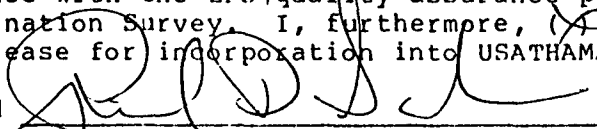
FQAC check trend rejection criteria: (X) Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, (X) can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Donalea Dison
Date Samples Analyzed 12-18-82 Time 8:20
Parameter (Metals) Chromium USATHAMA Method # 1B
Matrix 1 Category 3 Batch 2
Systems Calibration: (X) Passed () Failed
Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 5, Page # 45

File # _____

NOTES: 12/18/82 12/18/82 12/18/82

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	5.0	5.0	4.9	
2.0X _D	10.0	9.9	10.1	
10.0X _D	20.0	20.1	20.0	
Blank	0	0	0	

Standard Curve Data

Corr. Coeff.: 0.9999Slope: 0.1052Y-intercept: 2.0000

DATA:

Analytical No.	Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	Actual Concentration	FOAC Note
1111 ABS							
001	125	1 - 3 - 20	10.5			10.5	
002	124 ⁵	1 - 3 - 21	11.2			11.2	
003	126	1 - 3 - 22	12.1			12.1	
004	124 ²	1 - 3 - 23	16.6			16.6	
005	127	1 - 3 - 24	11.6			11.6	
006	128	1 - 3 - 25	16.6			16.6	
007	129	1 - 3 - 26	11.4			11.4	
008	130	1 - 3 - 27	16.6			16.6	
009	131	1 - 3 - 28	16.6			16.6	
010	Spike ^{2x}	1 - 3 - 29	20.2			20.2	
011	132	1 - 3 - 30	14.5			14.5	
012	Spike ^{5x}	1 - 3 - 31	48.0			48.0	
013	33	1 - 3 - 32	8.1			8.1	
014	34	1 - 3 - 33	16.6			16.6	
015	35	1 - 3 - 34	16.6			16.6	
016	36	1 - 3 - 35	9.0			9.0	
017	37	1 - 3 - 36	9.6			9.6	
018	38	1 - 3 - 37	9.1			9.1	
019	39	1 - 3 - 38	16.6			16.6	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Spike>	22.0	2.6	19.4	20	97.0	109	113
Blind Spike							
FQAC>			20.2	20	101	11	87
			48.0	50	96.0		

Precision (Replicates)

Analyst	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Replicate>	22.0	2.6		
Blind Replicate				
FQAC>	11.0	< 6.6		

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: _____

DS check on uncorrected concentrations for range requirement:
(X) Passed () Failed

NOTES: _____

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Johnny [Signature] DATE 12-22-82 TIME 9:15
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed _____

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: ^{Quality of} Field sample has caused precision to be poor on this sampleFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed _____

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) D. J. A. Vincent
 Date Samples Analyzed 12-27-82 Time 7:00 AM
 Parameter (Metals) Lead USATHAMA Method # 12
 Matrix 1 Category 3 Batch 2
 Systems Calibration: (X) Passed () Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 5, Page # 13

File # _____

NOTES: _____

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>100</u>	<u>100</u>	<u>112</u>	_____
2.0X _D	<u>200</u>	<u>200</u>	<u>217</u>	_____
10.0X _D	_____	_____	<u>526</u>	_____
Blank	_____	<u>0</u>	<u>0</u>	_____

Standard Curve Data

Corr. Coeff.: 1 Slope: -0.0150Y-intercept: 1

DATA:

Analytical No.	Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	Actual Concentration	FQAC Note
001	125	1 - 3 - 20	29.49			29.49	
001	125	1 - 3 - 20	29.49			29.49	
002	124	1 - 3 - 21	29.49			29.49	
003	126	1 - 3 - 22	29.49			29.49	
004	124	1 - 3 - 23	36.2			36.2	
005	127	1 - 3 - 24	29.49			29.49	
006	128	1 - 3 - 25	29.49			29.49	
007	124	1 - 3 - 26	29.49			29.49	
008	130	1 - 3 - 27	29.49			29.49	
009	131	1 - 3 - 28	29.49			29.49	
010	30.6 2X _D	1 - 3 - 29	21.2			21.2	
011	132	1 - 3 - 30	16.3			16.3	
012	30.6 5X _D	1 - 3 - 31	53.8			53.8	
013	33	1 - 3 - 32	29.49			29.49	
014	34	1 - 3 - 33	54.7			54.7	
015	35	1 - 3 - 34	44.0			44.0	
016	310	1 - 3 - 35	29.49			29.49	
017	37	1 - 3 - 36	80.9			80.9	
018	38	1 - 3 - 37	8.8			8.8	
019	39	1 - 3 - 38	29.49			29.49	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 2σ	CL 3σ
	23.2	<7.49	23.2	20	116		
Blind Spike FOAC>			21.2	20	106	125.7	143.2
			53.8	50	107.6		

Precision (Replicates)

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	<7.49	<7.49	0	2.17
Blind Replicate FOAC>	<7.49	36.2		

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FOAC: ☒ Passed () FailedNOTES: None noted

DS check on uncorrected concentrations for range requirement:

☒ Passed () FailedNOTES: All samples in range 5-10 ppbDS check accuracy: ☒ Passed () Failed

NOTES: _____

DS check precision: ☒ Passed () Failed

NOTES: _____

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Spencer W. Price DATE 12-23-82 TIME 9:00
 CERTIFICATION: ☒ I can () cannot certify this data as being in compliance
 with the EPS quality assurance program established for the LSAAP Contamination
 Survey.

Signed _____

FQAC DATA REVIEW:

FQAC check blind replicates (precision): () Passed () Failed

NOTES: poor field duplicate sample has caused problems with a number of metalsFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

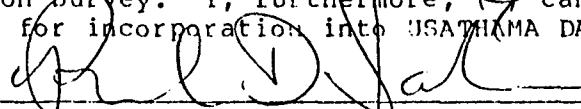
FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Deanna D. Jones
Date Samples Analyzed 12-1-91 Time 12:00
Parameter (Metals) MANGANESE USATHAMA Method # 101
Matrix 2 Category 3 Batch 4
Systems Calibration: ☒ Passed ☐ Failed
Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 11, Page # 4,
File # _____
NOTES: 12/1/91 12:00 11

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	_____	_____	_____	_____
2.0X _D	_____	_____	_____	_____
10.0X _D	_____	_____	_____	_____
Blank	_____	_____	_____	_____

Standard Curve Data

Corr. Coeff.: N/A Slope: 1.0
Y-intercept: 0.0

DATA:

ADC

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FOAC Notes
009	2 - 3 - 58	64				64	
010	2 - 3 - 59	28				28	
011	2 - 3 - 60	39				39	
012 _D	2 - 3 - 61 ✓	50				50	
013 _D	2 - 3 - 62 ✓	85				85	
012 _X	2 - 3 - 63 ✓	35				35	
014	2 - 3 - 64	26				26	
015	2 - 3 - 65	31				31	
016	2 - 3 - 66	33				33	
Spike 2 _{XD}	2 - 3 - 67 ✓	51				51	
017	2 - 3 - 68	49				49	
Spike 5 _{XD}	2 - 3 - 69 ✓	124				124	
018	2 - 3 - 70	26				26	
019	2 - 3 - 71	36				36	
020	2 - 3 - 72	28				28	
021	2 - 3 - 73	115				115	
005	2 - 3 - 74	31				31	
002	2 - 3 - 75	99				99	
_____	_____	_____				_____	
_____	_____	_____				_____	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Spike>	79	- 27	= 52	50	x 100	104	30
Blind Spike						105.2	101.3
FOAC>	52	-	=	50	x 100	96.8	97.4
	127			125		101.6	

Precision (Replicates)

Analyst	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Replicate>	I 27	II 24	3	6.54
Blind Replicate				
FOAC>	50	35	15	

Analyst's Report to Departmental Supervisor:

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FOAC: (X) Passed () Failed

NOTES: None notedDS check on uncorrected concentrations for range requirement:
(X) Passed () FailedNOTES: All samples below 10000

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Sprague, William DATE 12-10-82 TIME 4:30 PM
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed Sprague, William

FQAC DATA REVIEW:FQAC check blind replicates (precision): () Passed (☒) FailedNOTES: Sample variability override systemFQAC check blind spike (30 accuracy): (☒) Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): (☒) Passed () Failed

NOTES: _____

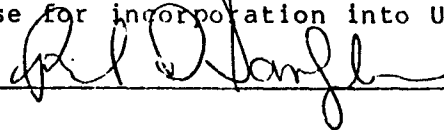
FQAC check trend rejection criteria: (☒) Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I (☒) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, (☒) can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Sammy Wilson
Date Samples Analyzed 12-6-82 Time 8:00 PM
Parameter (Metals) ZINC USATHAMA Method # 1M
Matrix 2 Category 3 Batch 4
Systems Calibration: (X) Passed () Failed
Instrument # _____ ID# _____
NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 12, Page # 12,
File # _____
NOTES: _____

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>41</u>	<u>42</u>	<u>41</u>	
2.0X _D	<u>112</u>	<u>121</u>	<u>118</u>	
10.0X _D	<u>233</u>	<u>239</u>	<u>235</u>	
Blank	<u>0</u>	<u>0</u>	<u>0</u>	

Standard Curve Data
Corr. Coeff.: 1.0

Slope: 1.0
Y-intercept: 0.0

DATA:

ADG	Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FQAC Notes
	009	2 - 3 - 58	<u>32</u>				<u>32</u>	
	010	2 - 3 - 59	<u><29.1</u>				<u><29.1</u>	
	011	2 - 3 - 60	<u>41</u>				<u>41</u>	
	012	2 - 3 - 61	<u>44</u>				<u>44</u>	
	013 _D	2 - 3 - 62	<u><29.1</u>				<u><29.1</u>	
	012	2 - 3 - 63						
	014	2 - 3 - 64						
	015	2 - 3 - 65						
	016	2 - 3 - 66	<u><29.1</u>				<u><29.1</u>	
	Spike 2 nd	2 - 3 - 67 ✓	<u>41</u>				<u>41</u>	
	017	2 - 3 - 68	<u><29.1</u>				<u><29.1</u>	
	Spike 6 th	2 - 3 - 69 ✓	<u>98</u>				<u>98</u>	
	018	2 - 3 - 70	<u><29.1</u>				<u><29.1</u>	
	019	2 - 3 - 71						
	020	2 - 3 - 72						
	021	2 - 3 - 73						
	005	- - -						
	002	2 - 3 - 74	<u><29.1</u>				<u><29.1</u>	
		- - -						
		- - -						

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20"	CL 30"
	41	0	41	40	102.5		
Blind Spike FOAC>	41			40	102.5	152.1	125.3
	98			100	98.0	61.5	38.7

Precision (Replicates)

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	<27.1	<27.1	0	13.7
Blind Replicate FOAC>	<27.1	44	16.9	

Analyst's Report to Departmental Supervisor:

*Passes duplicate QC*DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FOAC: ☒ Passed () FailedNOTES: *None noted*

DS check on uncorrected concentrations for range requirement:

☒ Passed () Failed

NOTES:

DS check accuracy: ☒ Passed () Failed

NOTES:

DS check precision: ☒ Passed () Failed

NOTES:

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES:

Department Supervisor Data:

NAME *SAMMY LUPIN* DATE *12-12-82* TIME *8:00 PM*
 CERTIFICATION: ☒ can () cannot certify this data as being in compliance
 with the EPS quality assurance program established for the LSAAP Contamination
 Survey.

Signed

Sammy Lupin

FQAC DATA REVIEW:

FQAC check blind replicates (precision): () Passed () Failed

NOTES: One sample fell below detection limit which
may be set to low for actual field samples.FQAC check blind spike (30 accuracy): () Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): () Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: () Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can () cannot certify this data as
being in compliance with the EPS quality assurance program established for
the LSAAP Contamination Survey. I, furthermore, () can () cannot
authorize its release for incorporation into USATHAMA DATA SYSTEM.Signed R. J. [Signature]

LONGHORN ARMY AMMUNITION PLANT

CONTAMINATION STUDY DATA MANAGEMENT FORM

Analyst(s) Name(s)

Date Samples Analyzed 16/83 Time 12:00

Parameter	Aluminum	(Metals)	USATHAMA Method	IN
-----------	----------	----------	-----------------	----

Matrix	Category	Batch
3	3	

Systems Calibration: (X) Passed () Failed

Instrument	ID
------------	----

NOTES:

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 7, Page # 64.

NOTES: 11/11-15 ARE MS / 9

<u>Standard Levels</u>	<u>Expected Concentration</u>	<u>Found Value #1</u>	<u>Found Value #2</u>	<u>Found Value #3</u>
0.5X _D	0.80	0.64	0.75	
2.0X _D	2.00	1.93	2.08	
10.0X _D	4.00	4.02	3.94	
Blank _D	0	0	0	

Standard Curve Data

Corr. Coff.: 0.9173

Slope: 0.0371

Y-intercept: 5.2126

DATA:

AEU Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FQAC Notes
001	3 - 3 - 1	0.63		1000		630	
001 D	3 - 3 - 2	1.36		1000		1330	
002	3 - 3 - 3	1.11		1000		1110	
005	3 - 3 - 4	0.99		1000		990	
009	3 - 3 - 5	1.85		1000		1850	
010	3 - 3 - 6	1.39		1000		1390	
011	3 - 3 - 7	1.35		1000		1350	
011 D	3 - 3 - 8	1.35		1000		1350	
012	3 - 3 - 9	1.16		1000		1160	
013	3 - 3 - 10	1.82		1000		1820	
Blank	3 - 3 - 11	1.39		1000		1390	
014	3 - 3 - 12	1.42		1000		1420	
Spike	3 - 3 - 13	1.33		1000		1330	
015	3 - 3 - 14	1.40		1000		1400	
Spike	3 - 3 - 15	1.26		1000		1260	
016	3 - 3 - 16	1.37		1000		1370	
017	3 - 3 - 17	1.48		1000		1480	
018	3 - 3 - 18						

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
	1280	- 1210	= 70	0.80	x 100	87.5	
Blind Spike FQAC>	1420	- 1390	= 30	40	x 100	75%	
	1460		70	80		87.5%	

Precision (Replicates)

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	1210	1210		
Blind Replicate FQAC>	1350	1160	1160	
	630	1360	720	

Analyst's Report to Departmental Supervisor:

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (/) Passed () Failed

NOTES: none

DS check on uncorrected concentrations for range requirement:

(/) Passed () Failed

NOTES: all samples between 0.2 and 5.00 mg/L

DS check accuracy: () Passed (/) Failed

NOTES: none

DS check precision: (/) Passed () Failed

NOTES: none

DS check rejection trend criteria: (/) Passed () Warning () Failed

NOTES: noneDepartment Supervisor Data:NAME Sammy WilsonDATE 2/9/82TIME 11:30

CERTIFICATION: I (/) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed Sammy Wilson

EQAC DATA REVIEW:

EQAC check blind replicates (precision): ☒ Passed () FailedDilution factor caused imprecision
NOTES: Very close UCL N/A for RANGEEQAC check blind spike (30 accuracy): ☒ Passed () FailedNOTES: One spike slightly out of range but great considering backgroundEQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

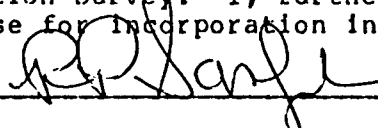
EQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

EQAC sent memo report # _____ to Principle Investigator on
_____ date

EQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, () can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Douglas Winsmore
Date Samples Analyzed 2/18/83 Time 7:00 AM
Parameter Barium (Metals) USATHAMA Method # 75
Matrix 3 Category 3 Batch 1
Systems Calibration: (X) Passed () Failed
Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 7, Page # 32
File # _____

NOTES: Units are mg/l

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>41.1</u>	<u>0.40</u>	<u>0.42</u>	
2.0X _D	<u>1.00</u>	<u>0.98</u>	<u>1.05</u>	
10.0X _D	<u>2.00</u>	<u>1.89</u>	<u>1.98</u>	
Blank		<u>0</u>	<u>0</u>	

Standard Curve Data

Corr. Coeff.: 0.9915 Slope: 0.1500
Y-intercept: 0.0456

DATA:

AEW

Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	Actual Concentration	FOAC Notes
	3-3-1	9.02		10	90.2	
	3-3-2	<0.99			<0.99	
	3-3-3	6.15		10	61.5	
	3-3-4	6.53		10	65.3	
	3-3-5	8.52		100	852.0	
	3-3-6	9.02		10	90.2	
	3-3-7	6.02		10	60.2	
	3-3-8	5.62		10	56.2	
	3-3-9	20.99			<0.99	
	3-3-10	20.99			20.99	
	3-3-11	5.82		10	58.2	
	3-3-12	9.48		100	948.0	
	3-3-13	6.53		10	65.3	
	3-3-14	1.29		100	129.0	
	3-3-15	9.08		10	90.8	
	3-3-16	1.20		100	120.0	
	3-3-17	3.00		100	300.0	
	3-3-18	1.33		100	133.0	
	-					
	-					

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Spike>	130.0	- 120.0	= 10.0	10.0	X 100.0	20	30
					100		
Blind Spike							
FQAC>	65.2	- 58.2	= 7	5.0	X 140%	118.9	127.7
	70.8		12.6	10.0	100	82.9	93.9
					126%		

Precision (Replicates)

Analyst	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Replicate>	80.0	46.1	33.9	8.44
Blind Replicate				
FQAC>	66.2	56.2	10	

Analyst's Report to Departmental Supervisor: _____

*Pass. Analytical Q.C.*DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: *None Noted*

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: *all spikes below 0.5 to 100 ppb*

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME *SAMMY HARRIS* DATE *2/11/83* TIME *4:31*
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed *Sammy Harris*

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (30 accuracy): ☒ Passed () FailedNOTES: Spike only 1/10th of total CON. Recovery goodFQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: (☒) Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, () can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed RB Say

FEB 8 1983

DATA SHEET # 82 760 A DATA SHEET SERIES (A-C) 7 OF 17

**LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM**

MANAGEMENT DATA:

Analyst(s) Name(s) SAUNDY WATSON
 Date Samples Analyzed 1-27-83 Time 10:00 AM
 Parameter Manganese (Metals) USATHAMA Method # 1N
 Matrix 3 Category 3 Batch 1
 Systems Calibration: (X) Passed () Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 13, Page # 17,
 File # _____

NOTES: UNIT 3 P10 10/12

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>0.25</u>	<u>0.25</u>	<u>0.25</u>	_____
2.0X _D	<u>0.50</u>	<u>0.50</u>	<u>0.50</u>	_____
10.0X _D	<u>2.50</u>	<u>2.50</u>	<u>2.50</u>	_____
Blank	_____	<u>0</u>	<u>0</u>	_____

Standard Curve Data

Corr. Coeff.: N/A Slope: N/A
 Y-intercept: N/A

DATA:**AFA**

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FOAC Notes
_____	<u>3 - 3 - 1</u>	<u>0.82</u>	_____	<u>100</u>	_____	<u>82</u>	_____
_____	<u>3 - 3 - 2</u>	<u>1.08</u>	_____	<u>100</u>	_____	<u>108</u>	_____
_____	<u>3 - 3 - 3</u>	<u>1.29</u>	_____	<u>100</u>	_____	<u>129</u>	_____
_____	<u>3 - 3 - 4</u>	<u>0.84</u>	_____	<u>100</u>	_____	<u>84</u>	_____
_____	<u>3 - 3 - 5</u>	<u>1.25</u>	_____	<u>100</u>	_____	<u>125</u>	_____
_____	<u>3 - 3 - 6</u>	<u>2.08</u>	_____	<u>100</u>	_____	<u>208</u>	_____
_____	<u>3 - 3 - 7</u>	<u>1.19</u>	_____	<u>100</u>	_____	<u>119</u>	_____
_____	<u>3 - 3 - 8</u>	<u>0.58</u>	_____	<u>100</u>	_____	<u>58</u>	_____
_____	<u>3 - 3 - 9</u>	<u>1.43</u>	_____	<u>100</u>	_____	<u>143</u>	_____
_____	<u>3 - 3 - 10</u>	<u>5.0</u>	_____	_____	_____	<u>5.0</u>	_____
_____	<u>3 - 3 - 11</u>	<u>2.89</u>	_____	<u>100</u>	_____	<u>289</u>	_____
_____	<u>3 - 3 - 12</u>	<u>1.10</u>	_____	<u>100</u>	_____	<u>110</u>	_____
_____	<u>3 - 3 - 13</u>	<u>2.90</u>	_____	<u>100</u>	_____	<u>290</u>	_____
_____	<u>3 - 3 - 14</u>	<u>0.63</u>	_____	<u>100</u>	_____	<u>63</u>	_____
_____	<u>3 - 3 - 15</u>	<u>2.92</u>	_____	<u>100</u>	_____	<u>292</u>	_____
_____	<u>3 - 3 - 16</u>	<u>0.92</u>	_____	<u>100</u>	_____	<u>92</u>	_____
_____	<u>3 - 3 - 17</u>	<u>0.93</u>	_____	<u>1000</u>	_____	<u>930</u>	_____
_____	<u>3 - 3 - 18</u>	<u>0.42</u>	_____	<u>1000</u>	_____	<u>420</u>	_____
_____	<u>- - -</u>	_____	_____	_____	_____	_____	_____
_____	<u>- - -</u>	_____	_____	_____	_____	_____	_____

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
	<u>10.0</u>	<u>9.6</u>	<u>0.40</u>	<u>0.50</u>	<u>80</u>		
Blind Spike FQAC>	<u>290</u>	<u>289</u>	<u>1</u>	<u>2</u>	<u>50%</u>		
	<u>292</u>		<u>3</u>	<u>4</u>	<u>75%</u>		

Precision (Replicates)

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	<u>82</u>	<u>108</u>	<u>26</u>	<u>40</u>
Blind Replicate FQAC>	<u>82</u>	<u>108</u>	<u>26</u>	

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: None noted

DS check on uncorrected concentrations for range requirement:
 (X) Passed () Failed

NOTES: All spikes below 200 to 2500 plus 10%

DS check accuracy: (X) Passed () Failed

NOTES: All within 10%

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Sampy DATE 2-8-82 TIME 5:40 PM
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance
 with the EPS quality assurance program established for the LSAAP Contamination
 Survey.

Signed Sampy

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed ☐ FailedNOTES: UCL established for lower RANGE, dup. Samples not great qualityFQAC check blind spike (30 accuracy): ☒ Passed ☐ FailedNOTES: Spike far to low to obtain good RecoveryFQAC check blind spike (20 accuracy): ☒ Passed ☐ Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed ☐ Warning ☐ Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☐ can ☐ cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☐ can ☐ cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed

R. L. D. Jar

DATA SHEET # 82 771 A DATA SHEET SERIES (A-C) 1 OF 17

DATA SHEET # 82 771 A DATA SHEET SERIES (A-C) 1 OF 17

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) W. J. W. W. W.
Date Samples Analyzed 2-6-12 Time 12:00
Parameter Aluminum (Metals) USATHAMA Method # 17
Matrix 3 AND 4 Category 3 Batch 2
Systems Calibration: (x) Passed () Failed
Instrument # ID#

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 7, Page # 20,
File # _____.

NOTES: 1/1/73 11:0 11:5/9

<u>Standard Levels</u>	<u>Expected Concentration</u>	<u>Found Value #1</u>	<u>Found Value #2</u>	<u>Found Value #3</u>
0.5X _D	0.80	0.84	0.75	
2.0X _D	2.00	1.93	2.08	
10.0X _D	10.0	10.0	3.74	
Blank _D	0	0	0	

Standard Curve Data

Corr. Coff.: 0.9912

Slope:

Y-intercept: 0.0116

DATA: AFL

Sample Point #	Lab I.D. #	Concentration Uncorrected For Dilution Factor	X Dilution Factor	= Actual Concentration	FQAC Notes
001 019	3 - 3 - 19	1.53	1100	930	
002 0190	3 - 3 - 20	1.66	1220	1610	
003 020	3 - 3 - 21	1.48	1000	1480	
004 021	3 - 3 - 22	0.62	1000	620	
005 0101	4 - 3 - 23	1.34	1000	1340	
006 0102	4 - 3 - 24	1.40	1000	1400	
007 0103	4 - 3 - 25	1.2	1000	1200	
008 0401	4 - 3 - 26	1.07	1000	1070	
009 0401D	4 - 3 - 27	1.26	1000	1260	
010 0402	4 - 3 - 28	1.35	1000	1350	
011 0403	4 - 3 - 29	1.39	1000	1390	
012 0501	4 - 3 - 30	1.05	1000	1050	
013 Spike	4 - 3 - 31	1.14	1000	1140	
014 0502	4 - 3 - 32	1.10	1000	1100	
015 Blank	4 - 3 - 33	1.08	1000	1080	
016 0503	4 - 3 - 34	3.60		3.6	
017 Spike	4 - 3 - 35	1.10	1000	1100	
018 0601	4 - 3 - 36	3.60		3.6	

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Spikes>	1380	1350	= 30.0	0.80	x 375	20	30
					100		
Blind Spike	1400	1080	= 320.0			11.1	21
FQAC>	1100		20.0	20	x 100	13	11

Precision (Replicates)

Analyst	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Replicate>	I 1350	II 1330	20.0	6.4
Blind Replicate				
FQAC>	1090	1260	170	

Analyst's Report to Departmental Supervisor: _____

_____ *Don't know* _____ *sample* _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: None noted

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: All samples between 1250 to 1400

DS check accuracy: () Passed (X) Failed

NOTES: _____

DS check precision: () Passed (X) Failed

NOTES: _____

DS check rejection trend criteria: () Passed () Warning (X) Failed

NOTES: _____

Department Supervisor Data:

NAME Sammy Wilson DATE 2-9-83 TIME 11:00
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed Sammy Wilson

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: Override due to sample concentrationFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on

date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, () can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Douglas Dismore
Date Samples Analyzed 2/8/83 Time 8:45
Parameter Barium (Metals) USATHAMA Method # 70
Matrix 3 AND 4 Category 3 Batch 2
Systems Calibration: (X) Passed () Failed
Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 1, Page # 34
File # _____

NOTES: 11/11/83 AIR M/S

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	0.40	0.42	0.42	
2.0X _D	1.00	0.98	1.05	
10.0X _D	3.00	1.89	1.98	
Blank	0	0	0	

Standard Curve Data

Corr. Coeff.: 0.9915

Slope: 0.1500

Y-intercept: 0.0436

DATA: **AFN**

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	EQAC Notes
	3-3-19	1.69		100		169.0	
	3-3-20	1.22		100		122.0	
	3-3-21	4.19		10		41.9	
	3-3-22	1.63		100		163.0	
	4-3-23	1.01		100		101.0	
	4-3-24	1.04		100		104.0	
	4-3-25	9.59		10		95.9	
	4-3-26	8.62		10		86.2	
	4-3-27	6.44		10		64.4	
	4-3-28	1.33		100		133.0	
	4-3-29	5.58		10		55.8	
	4-3-30	2.18		100		218.0	
	4-3-31	7.70		10		77.0	
	4-3-32	1.65		100		165.0	
	4-3-33	7.29		10		72.9	
	4-3-34	6.06		10		60.6	
	4-3-35	7.53		10		75.3	
	4-3-36	1.22		100		122.0	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
Spike>	<u>137.1</u>	- <u>127.0</u>	= <u>10.1</u>	<u>10.0</u>	X <u>101</u> 100		
Blind Spike							
FQAC>	<u>77.7</u>	- <u>72.9</u>	= <u>4.8</u>	<u>5</u>	X <u>96</u> 100	<u>118.7</u>	<u>121</u>
	<u>75.3</u>		<u>2.4</u>	<u>2.5</u>		<u>82.7</u>	<u>82.1</u>

Precision (Replicates)

Analyst	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Replicate>	I <u>130.9</u>	II <u>127.0</u>	<u>3.9</u>	<u>8.44</u>
Blind Replicate				
FQAC>	<u>86.2</u>	<u>64.4</u>	<u>21.8</u>	

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: None Noted

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: All samples between 215 to 1000 mg/l

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:NAME SALLY WARRON DATE 2/14/83 TIME 5:00
CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.Signed Sally Warren

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () Failed
Override due to poor sample quality and UCL notNOTES: Exceeded far enough.FQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

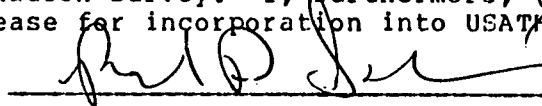
NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as
being in compliance with the EPS quality assurance program established for
the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot
authorize its release for incorporation into USATHAMA DATA SYSTEM.Signed 

DATA SHEET # 82 781 A DATA SHEET SERIES (A-C) 11 OF 17

DATA SHEET # 82 781 A DATA SHEET SERIES (A-C) 11 OF 17

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) W. H. B. B. W. S. M. O. K. E.
Date Samples Analyzed 7-21-83 Time 4:00
Parameter Zinc (Metals) USATHAMA Method #
Matrix 3 AND 4 Category 3 Batch 2
Systems Calibration: (X) Passed () Failed
Instrument # ID#

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 13, Page # 12

NOTES: Units are 13/9

<u>Standard Levels</u>	<u>Expected Concentration</u>	<u>Found Value #1</u>	<u>Found Value #2</u>	<u>Found Value #3</u>
0.5X _D	0.50	0.60	0.40	
2.0X _D	1.00	1.10	1.00	
10.0X _D	5.00	5.00	5.20	
Blank	0	0	0	

Standard Curve Data

Corr. Coff.: N/A

Slope:

y-intercept: $1/10$

DATA :

AFV

Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FQAC Notes
3	3-19	2.4		10		24.0	
3	3-20	2.1		10		21.0	
3	3-21	3.0				3.0	
3	3-22	3.6		10		36.0	
4	3-23	2.5		10		25.0	
4	3-24	5.5		10		55.0	
4	3-25	4.6		10		46.0	
4	3-26	8.0				8.0	
4	3-27	8.0				8.0	
4	3-28	1.7		10		17.0	
4	3-29	9.0				9.0	
4	3-30	6.0				6.0	
4	3-31	1.3		10		13.0	
4	3-32	10.0				10.0	
4	3-33	10.0				10.0	
4	3-34	1.1		10		11.0	
4	3-35	1.1		10		11.0	
4	3-36	2.6		10		26.0	

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
	<u>21.0</u>	<u>20.0</u>	<u>1.0</u>	<u>100</u>	<u>100</u>		
Blind Spike FQAC>	<u>13.0</u>	<u>10.0</u>	<u>3.0</u>	<u>5</u>	<u>60%</u>	<u>108</u>	<u>113</u>
	<u>11.0</u>		<u>1</u>	<u>2</u>	<u>50%</u>	<u>88</u>	<u>83</u>

Precision (Replicates)

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	<u>8.0</u>	<u>8.0</u>	<u>0.0</u>	<u>0.10</u>
Blind Replicate FQAC>	<u>24.0</u>	<u>21.0</u>	<u>3</u>	

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: ☒ Passed () Failed

NOTES: None noted

DS check on uncorrected concentrations for range requirement:

☒ Passed () Failed

NOTES: All samples between 0.1 to 12.0 mg/l

DS check accuracy: ☒ Passed () Failed

NOTES: _____

DS check precision: ☒ Passed () Failed

NOTES: _____

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME SAHME WATSON DATE 2-2-83 TIME 10:00
 CERTIFICATION: I ☒ can () cannot certify this data as being in compliance
 with the EPS quality assurance program established for the LSAAP Contamination
 Survey.

Signed _____

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: Sample concentration AND variability account for noncomplianceFQAC check blind spike (30 accuracy): ☒ Passed () FailedNOTES: Con. of sample too high for spikeFQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed _____

**LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM**

MANAGEMENT DATA:

Analyst(s) Name(s) DOUGLAS DISAIO
 Date Samples Analyzed 2-8-83 Time 11:00
 Parameter Barium (Metals) USATHAMA Method # 15
 Matrix 4 Category 3 Batch 3
 Systems Calibration: (X) Passed () Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 7, Page # 36
 File # _____

NOTES: Units are mg/g

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X ^D	<u>0.40</u>	<u>0.40</u>	<u>0.41</u>	
2.0X ^D	<u>1.00</u>	<u>1.00</u>	<u>1.01</u>	
10.0X ^D	<u>2.00</u>	<u>1.99</u>	<u>1.99</u>	
Blank	<u>0</u>	<u>0</u>	<u>0</u>	

Standard Curve DataCorr. Coeff.: 0.9999Slope: 0.2056Y-intercept: 0.0010**DATA:****AGE**

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FQAC Notes
	4 - 3 - 37	8.07		10		80.7	
	4 - 3 - 38	1.02		100		102.0	
	4 - 3 - 39	6.97		10		69.7	
	4 - 3 - 40	5.39		100		539.0	
	4 - 3 - 41	7.34		10		73.4	
	4 - 3 - 42	2.83		100		283.0	
	4 - 3 - 43	2.04		100		204.0	
	4 - 3 - 44	1.96		100		196.0	
	4 - 3 - 45	7.35		100	9	735.0	
	4 - 3 - 46	4.18		10		41.8	
	4 - 3 - 47	1.46		100		146.0	
	4 - 3 - 48	1.68		100		168.0	
	4 - 3 - 49	1.96		100		196.0	
	4 - 3 - 50	1.81		100		181.0	
	4 - 3 - 51	9.92		10		99.2	
	4 - 3 - 52	6.41		10		64.1	
	4 - 3 - 53	1.98		100		198.0	
	- - -						
	- - -						
	- - -						

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
Spike>	<u>176.0</u>	- <u>168.0</u>	= <u>8.0</u>	<u>10.0</u>	X <u>80</u> 100		
Blind Spike	<u>69.1</u>	- <u>64.1</u>	= <u>5.0</u>	<u>5</u>	X <u>100%</u>	<u>17.1</u>	<u>17</u>
FQAC>	<u>73.4</u>	- <u>9.3</u>	= <u>9.3</u>	<u>10</u>	X <u>93%</u> 100		

Precision (Replicates)

Analyst	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Replicate>	<u>172</u>	<u>168</u>	<u>4.0</u>	<u>8.0</u>
Blind Replicate	<u>181</u>	<u>99.2</u>		
FQAC>				

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: None noted

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: All samples between 0.5-10 1000 1115 1115 1115

DS check accuracy: (X) Passed () Failed

NOTES: at 1000 1000 1000

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:NAME Sammy Wynn DATE 2/15/83 TIME 8:30pm

CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed Sammy Wynn

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedANALYST REP. ^{Good}
NOTES: Sample ~~was~~ not consistent between bottlesFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

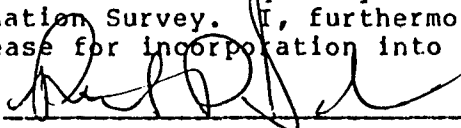
FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
date _____

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, () can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

**LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM**

MANAGEMENT DATA:

Analyst(s) Name(s) DAVID R. DAVENPORT
 Date Samples Analyzed 1-29-83 Time 12:00
 Parameter Chromium (Metals) USATHAMA Method # 11
 Matrix 4 Category 3 Batch 3
 Systems Calibration: ☒ Passed () Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 13, Page # 03
 File # _____

NOTES: Units 1100 11/15

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>0.60</u>	<u>0.60</u>	<u>0.50</u>	
2.0X _D	<u>1.20</u>	<u>1.20</u>	<u>1.10</u>	
10.0X _D	<u>6.00</u>	<u>6.10</u>	<u>6.00</u>	
Blank	<u>0</u>	<u>0</u>	<u>0</u>	

Standard Curve Data

Corr. Coeff.: N/ASlope: N/AY-intercept: 1/12

DATA:

AGG

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FOAC Notes
	4 - 3 - 37	5.8				5.8	
	4 - 3 - 38	8.5				8.5	
	4 - 3 - 39	9.6				9.6	
	4 - 3 - 40	14		10		14.0	
	4 - 3 - 41	1.3		10		13.0	
	4 - 3 - 42	2.2		10		22.0	
	4 - 3 - 43	8.5				8.5	
	4 - 3 - 44	1.6		10		16.0	
	4 - 3 - 45	9.0		10		9.0	
	4 - 3 - 46	4.0		10		40.0	
	4 - 3 - 47	6.8		10		6.8	
	4 - 3 - 48	5.5		10		55.0	
	4 - 3 - 49	9.8				9.8	
	4 - 3 - 50	1.5		10		15.0	
	4 - 3 - 51	2.0		10		20.0	
	4 - 3 - 52	6.8				6.8	
	4 - 3 - 53	7.4				7.4	
	- - -						
	- - -						
	- - -						

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
Spike>	55.2	- 53.9	= 1.30	1.20	X 108		
					100		
Blind Spike	9.6	- 6.8	= 1.4	1.20	X 116	112	120
FQAC>	13.0		6.2		100		

Precision (Replicates)

Analyst	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Replicate>	1.4	1.4	0.0	0.86
Blind Replicate				
FQAC>	15	20	5	

Analyst's Report to Departmental Supervisor: _____

*Pass: AVALIATION & C.*DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FQAC: ☒ Passed () FailedNOTES: *None Noted*

DS check on uncorrected concentrations for range requirement:

☒ Passed () FailedNOTES: *All samples are between 0.5 to 10.0 lbs/s*DS check accuracy: ☒ Passed () Failed

NOTES: _____

DS check precision: ☒ Passed () Failed

NOTES: _____

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME *Sammie P. Pinner* DATE *2/2/83* TIME *2:30*
 CERTIFICATION: ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed _____

Sammie P. Pinner

EQAC DATA REVIEW:EQAC check blind replicates (precision): ☒ Passed () FailedNOTES: Sample quality for replicates poorEQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

EQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

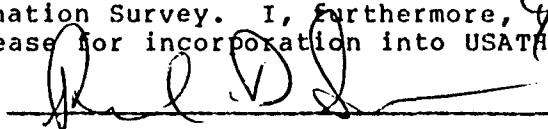
EQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

EQAC sent memo report # _____ to Principle Investigator on
_____ date

EQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ~~do~~ can ~~not~~ cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot) authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) DAVID L. WILSON
Date Samples Analyzed 1/2/82 Time 10:00
Parameter Lead (Metals) USATHAMA Method # 15
Matrix 4 Category 3 Batch 3
Systems Calibration: (x) Passed () Failed
Instrument # _____ ID# _____

NOTES:

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 7, Page # 12
File # _____

NOTES:

UNITS ARE m/s

<u>Standard Levels</u>	<u>Expected Concentration</u>	<u>Found Value #1</u>	<u>Found Value #2</u>	<u>Found Value #3</u>
0.5X ^D		0.470	0.42	
2.0X ^D		0.97	1.00	
10.0X ^D		1.97	1.96	
Blank ^D				

Standard Curve Data

Corr. Coff.: .9962

Slope:

y-intercept: (0, 0)

DATA:

AG-H

Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FQAC Notes
4	- 3 - 37	26.3		10	-	263	
4	- 3 - 38	26.4		10	-	264	
4	- 3 - 39	26.1		10	-	261	
4	- 3 - 40	26.3		10	-	263	
4	- 3 - 41	32.5		10	-	325	
4	- 3 - 42	50.99				< 0.99	
4	- 3 - 43	50.99				< 0.99	
4	- 3 - 44	50.99				< 0.99	
4	- 3 - 45	50.99				< 0.99	
4	- 3 - 46	50.99				< 0.99	
4	- 3 - 47	50.99				< 0.99	
4	- 3 - 48	50.99				< 0.99	
4	- 3 - 49					12.5	
4	- 3 - 50	41.70				417	
4	- 3 - 51	152		10		1512	
4	- 3 - 52	152		10		1512	
4	- 3 - 53	31.75		10		3175	
-	-						
-	-						

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
Spike>	<u>2.02</u>	- <u><0.99</u>	= <u>2.02</u>	<u>2.00</u>	<u>101</u>		
					<u>100</u>		
Blind Spike	<u>26.1</u>	- <u>19.4</u>	= <u>6.7</u>	<u>5</u>	<u>134</u>	<u>113.1</u>	<u>11.1</u>
FQAC>	<u>32.5</u>		<u>13.1</u>	<u>10</u>	<u>131</u>	<u>113.1</u>	<u>11.1</u>

Precision (Replicates)

Analyst	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Replicate>	<u>I</u>	<u>II</u>		
	<u>5.79</u>	<u>5.091</u>	<u>0.00</u>	<u>1.49</u>
Blind Replicate	<u>4.7</u>	<u>15.2</u>		
FQAC>				

Analyst's Report to Departmental Supervisor: _____

Passes Analytical S.C.I.DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FQAC: (☒) Passed () FailedNOTES: None Noted

DS check on uncorrected concentrations for range requirement:

(☒) Passed () FailedNOTES: All samples met and 2.51 was 1.73DS check accuracy: (☒) Passed () Failed

NOTES: _____

DS check precision: (☒) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (☒) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Spongy Wpover DATE 2/11/82 TIME 1:10
 CERTIFICATION: I (☒) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed Spongy Wpover

FQAC DATA REVIEW:FQAC check blind replicates (precision): (☒) Passed () FailedNOTES: Replicate poor many metals do not checkFQAC check blind spike (30 accuracy): (☒) Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): (☒) Passed () Failed

NOTES: _____

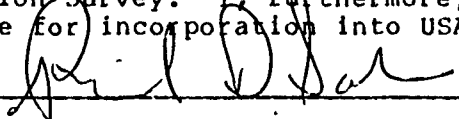
FQAC check trend rejection criteria: (☒) Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I (☒) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. Furthermore, (☒) can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

DATA SHEET # 82 794 A DATA SHEET SERIES (A-C) 7 OF 17

MANAGEMENT DATA:

MANAGEMENT DATA:

Analyst(s) Name(s) Sanyu NARAYAN

Date Samples Analyzed 11/20/11 Time 11:10 AM

Parameter Manganese (Metals) USATHAMA Method # N

Matrix 4 Category 3 Batch 3

Systems Calibration: (X) Passed () Failed

Instrument # _____ ID# _____

NOTES:

Designated Location of Permanent Lab Records: Book # 18, Page # 28
File #

NOTES:

<u>Standard Levels</u>	<u>Expected Concentration</u>	<u>Found Value #1</u>	<u>Found Value #2</u>	<u>Found Value #3</u>
0.5X _D	0.25	0.24	0.25	
2.0X _D	0.50	0.50	0.50	
10.0X _D	0.50	0.50	0.50	
Blank	0	0	0	

Standard Curve Data

Corr. Coff.:

Slope:

Y-intercept:

DATA:

AGI

Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FQAC Notes
4	- 3 - 37	0.59		100		59	
4	- 3 - 38	1.56		100		156	
4	- 3 - 39	3.09		100		309	
4	- 3 - 40	1.17		100		117	
4	- 3 - 41	3.08		100		308	
4	- 3 - 42	3.00		100		300	
4	- 3 - 43	3.12		100		312	
4	- 3 - 44	2.10		100		210	
4	- 3 - 45	2.17		100		217	
4	- 3 - 46	1.81		100		181	
4	- 3 - 47	5.10				510	
4	- 3 - 48	2.10				210	
4	- 3 - 49	3.18		100		318	
4	- 3 - 50	4.40		10		44	
4	- 3 - 51	2.18		100		218	
4	- 3 - 52	3.05		100		305	
4	- 3 - 53	1.79		1000		1790	
-	-						
-	-						
-	-						

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
Spike>	<u>3120</u>	- <u>2100</u>	= <u>1020</u>	<u>1025</u>	X <u>96</u> 100		
Blind Spike						<u>1141</u>	<u>1212</u>
FQAC>	<u>307</u>	- <u>305</u>	= <u>2</u>		X 100		
	<u>308</u>		<u>3</u>				

Precision (Replicates)

Analyst	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Replicate>	<u>2.0</u>	<u>2.0</u>	<u>0.0</u>	<u>0.03</u>
Blind Replicate				
FQAC>	<u>48</u>	<u>218</u>		

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (.) Passed () Failed

NOTES: None noted.

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: all samples between 0.025-10 5.00 ft. plus 1.00 ft.

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Spring, J. J. DATE 2/3/83 TIME 6:10 PM
 CERTIFICATION: (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed J. J. Spring

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: Disregard this replicateFQAC check blind spike (30 accuracy): ☒ Passed () FailedNOTES: Spike far to small

FQAC check blind spike (20 accuracy): () Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: () Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, () can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed _____

FEB 8 1983

DATA SHEET # 82 795

A DATA SHEET SERIES (A-C)

8 OF 17

**LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM**

MANAGEMENT DATA:

Analyst(s) Name(s) DWYER, P. S. M. - e
 Date Samples Analyzed 1-31-83 Time 8:15
 Parameter Strontium (Metals) USATHAMA Method # 1N
 Matrix 4 Category 3 Patch 3
 Systems Calibration: (X) Passed () Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 13, Page # 31
 File # _____

NOTES: 1/11/83 110 1313

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>0.50</u>	<u>0.60</u>	<u>0.50</u>	_____
2.0X _D	<u>1.00</u>	<u>1.00</u>	<u>0.90</u>	_____
10.0X _D	<u>5.00</u>	<u>5.00</u>	<u>4.90</u>	_____
Blank	<u>0</u>	<u>0</u>	<u>0</u>	_____

Standard Curve DataCorr. Coeff.: 1.00Slope: 1.00Y-intercept: 0.00**DATA:****A6J**

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	QCAC Notes
_____	<u>4 - 3 - 37</u>	<u>0.64</u>	_____	<u>10</u>	_____	<u>6.4</u>	_____
_____	<u>4 - 3 - 38</u>	<u>1.04</u>	_____	<u>10</u>	_____	<u>10.4</u>	_____
_____	<u>4 - 3 - 39</u>	<u>1.85</u>	_____	<u>10</u>	_____	<u>18.5</u>	_____
_____	<u>4 - 3 - 40</u>	<u>1.48</u>	_____	<u>100</u>	_____	<u>148</u>	_____
_____	<u>4 - 3 - 41</u>	<u>1.15</u>	_____	<u>10</u>	_____	<u>11.5</u>	_____
_____	<u>4 - 3 - 42</u>	<u>2.27</u>	_____	<u>100</u>	_____	<u>227</u>	_____
_____	<u>4 - 3 - 43</u>	<u>2.52</u>	_____	<u>10</u>	_____	<u>25.2</u>	_____
_____	<u>4 - 3 - 44</u>	<u>2.31</u>	_____	<u>100</u>	_____	<u>231</u>	_____
_____	<u>4 - 3 - 45</u>	<u>0.86</u>	_____	<u>100</u>	_____	<u>86</u>	_____
_____	<u>4 - 3 - 46</u>	<u>1.14</u>	_____	<u>100</u>	_____	<u>114</u>	_____
_____	<u>4 - 3 - 47</u>	<u>1.03</u>	_____	<u>1000</u>	_____	<u>1030</u>	_____
_____	<u>4 - 3 - 48</u>	<u>1.30</u>	_____	<u>1000</u>	_____	<u>1300</u>	_____
_____	<u>4 - 3 - 49</u>	<u>3.21</u>	_____	<u>10</u>	_____	<u>32.1</u>	_____
_____	<u>4 - 3 - 50</u>	<u>1.32</u>	_____	<u>100</u>	_____	<u>132</u>	_____
_____	<u>4 - 3 - 51</u>	<u>1.04</u>	_____	<u>100</u>	_____	<u>104</u>	_____
_____	<u>4 - 3 - 52</u>	<u>0.62</u>	_____	<u>10</u>	_____	<u>6.2</u>	_____
_____	<u>4 - 3 - 53</u>	<u>1.10</u>	_____	<u>10</u>	_____	<u>11.0</u>	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
	<u>1300</u>	<u>1300</u>	<u>=</u>	<u>1300</u>	<u>x</u> <u>100</u>	<u>0</u>	
Blind Spike FOAC>	<u>8.5</u>	<u>6.2</u>	<u>=</u>	<u>2.3</u>	<u>x</u> <u>100</u>	<u>92%</u>	<u>109</u> <u>81</u>
	<u>11.5</u>		<u>5.3</u>	<u>5</u>		<u>106</u>	<u>114</u> <u>82</u>

Precision (Replicates)

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	<u>131</u>	<u>127</u>	<u>4</u>	<u>0150</u>
Blind Replicate FOAC>	<u>132</u>	<u>104</u>		<u>N/A</u>

Analyst's Report to Departmental Supervisor: _____

100% accuracy
100% accuracy
100% accuracy

DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FOAC: ☒ Passed () FailedNOTES: None notedDS check on uncorrected concentrations for range requirement:
() Passed () FailedNOTES: all samples below detection limit

DS check accuracy: () Passed () Failed

NOTES: See above

DS check precision: () Passed () Failed

NOTES: _____

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Sammy Linder DATE 2/3/85 TIME 9:00
 CERTIFICATION: I () can ☒ cannot certify this data as being in compliance
 with the EPS quality assurance program established for the LSAAP Contamination
 Survey.

Signed Sammy Linder

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: RANGE N/A poor Replicate qualityFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed POJ

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

ANAGEMENT DATA:

Analyst(s) Name(s) Miller W. S. Miller
Date Samples Analyzed 1/28/83 Time 1:27
Parameter Copper (Metals) USATHAMA Method # 1N
Matrix 4 Category 3 Batch 3
Systems Calibration: (X) Passed () Failed
Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 11, Page # 47
File # _____

NOTES: 4/27/83

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>0.50</u>	<u>0.50</u>	<u>0.50</u>	
2.0X _D	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	
10.0X _D	<u>5.00</u>	<u>5.10</u>	<u>5.10</u>	
Blank	<u>0</u>	<u>0</u>	<u>0</u>	

Standard Curve Data

Corr. Coeff.: _____

Slope: 1/2

Y-intercept: 0.17

DATA:

AGL

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FOAC Notes
	<u>4 - 3 - 37</u>	<u>4.0</u>				<u>4.0</u>	
	<u>4 - 3 - 38</u>	<u>7.0</u>				<u>7.0</u>	
	<u>4 - 3 - 39</u>	<u>8.0</u>				<u>8.0</u>	
	<u>4 - 3 - 40</u>	<u>1.5</u>		<u>100</u>		<u>150.0</u>	
	<u>4 - 3 - 41</u>	<u>1.1</u>		<u>10</u>		<u>11.0</u>	
	<u>4 - 3 - 42</u>	<u>1.5</u>		<u>100</u>		<u>150.0</u>	
	<u>4 - 3 - 43</u>	<u>5.0</u>				<u>5.0</u>	
	<u>4 - 3 - 44</u>	<u>5.0</u>		<u>10</u>		<u>50.0</u>	
	<u>4 - 3 - 45</u>	<u>5.0</u>		<u>10</u>		<u>50.0</u>	
	<u>4 - 3 - 46</u>	<u>5.0</u>		<u>10</u>		<u>50.0</u>	
	<u>4 - 3 - 47</u>	<u>5.4</u>		<u>10</u>		<u>54.0</u>	
	<u>4 - 3 - 48</u>	<u>6.0</u>		<u>10</u>		<u>60.0</u>	
	<u>4 - 3 - 49</u>	<u>8.0</u>				<u>8.0</u>	
	<u>4 - 3 - 50</u>	<u>8.3</u>		<u>10</u>		<u>83.0</u>	
	<u>4 - 3 - 51</u>	<u>4.0</u>		<u>10</u>		<u>40.0</u>	
	<u>4 - 3 - 52</u>	<u>6.0</u>				<u>6.0</u>	
	<u>4 - 3 - 53</u>	<u>5.0</u>				<u>5.0</u>	
	<u>- - -</u>						
	<u>- - -</u>						
	<u>- - -</u>						

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Analyst Spike>	<u>7.0</u>	- <u>6.0</u>	= <u>1.0</u>	<u>1.0</u>	$\times \frac{100}{100}$	<u>20</u>	<u>30</u>
Blind Spike						<u>112</u>	<u>118</u>
FQAC>	<u>8.0</u>	- <u>6.0</u>	= <u>3</u>	<u>2.5</u>	$\times \frac{120}{100}$	<u>80</u>	<u>80</u>
	<u>11.0</u>		<u>5</u>	<u>5</u>			

Precision (Replicates)

	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Analyst Replicate>	I <u>1.5</u>	II <u>1.5</u>	<u>0.0</u>	<u>0.0</u>
Blind Replicate				
FQAC>	<u>83</u>	<u>40</u>		

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: () Passed () Failed

NOTES: None noted

DS check on uncorrected concentrations for range requirement:

() Passed () Failed

NOTES: all samples passed 11/3/83

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Smiley, L. J. DATE 11/3/83 TIME 11:00
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed _____

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: Poor ReplicateFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on

date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed *Paul D. J.*

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20	CL 30
Spike>	<u>74.0</u>	- <u>73.1</u>	= <u>0.9</u>	<u>1.00</u>	x <u>90</u> 100		
Blind Spike							
FQAC>	<u>22.0</u>	- <u>20.0</u>	= <u>2</u>	<u>2.5</u>	x <u>80</u> 100		

Precision (Replicates)

Analyst	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Replicate>	I <u>18</u>	II <u>17</u>	<u>0.1</u>	<u>0.10</u>
Blind Replicate				
FQAC>	<u>23.0</u>	<u>16.0</u>		

Analyst's Report to Departmental Supervisor: _____

None ReportedDEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: None

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: All samples between 0.5-10.0 mg/g all in range

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:NAME Sammy WynnDATE 2/2/83TIME 11:15

CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed Sammy Wynn

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: Poor Replicate UCL N/AFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on

_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed RL DLS

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Spike>	191	- 142	= 49	50	$\frac{98}{100} \times$	20	30
Blind Spike	49.5	-	= 49.5	50	$\frac{99}{100} \times$	105.2	101.3
FQAC>	127.0	-	= 127.	125	$\frac{101.6}{100} \times$	96.8	94.9

Precision (Replicates)

Analyst	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Replicate>	146	142	4.0	6.54
Blind Replicate	83	63		
FQAC>				

Analyst's Report to Departmental Supervisor:

PASSES Analytical Q.C.DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FQAC: ☒ Passed () FailedNOTES: NONE noted

DS check on uncorrected concentrations for range requirement:

☒ Passed () FailedNOTES: All samples between 10-200 ug/lDS check accuracy: ☒ Passed () Failed

NOTES: _____

DS check precision: ☒ Passed () Failed

NOTES: _____

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME SAMMY WARREN DATE 12-10-82 TIME 4:20pm
 CERTIFICATION: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed SAMMY WARREN

FQAC DATA REVIEW:FQAC check blind replicates (precision): (☒) Passed () FailedNOTES: Field sample precision quality poor.FQAC check blind spike (30 accuracy): (☒) Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): (☒) Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: (☒) Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I (☒) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, (☒) can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed Bill D. Sanf

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

ANALYST'S DATA:
Analyst(s) Name(s) SPERRY, W/ALLEN
Date Samples Analyzed 12-6-81 Time 11:30 AM
Parameter (Metals) Beryllium USATHAMA Method # 1M
Matrix 1 Category 3 Batch 2
Systems Calibration: (N) Passed () Failed
Instrument # _____ ID# _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 12, Page # 2

File #

NOTES:

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	10	10	12	
2.0X _D	20	23	24	
10.0X _D	50	50	50	
Blank	0	0	0	

Standard Curve Data

Corr. Coff.:

Slope :

Y-intercept:

DATA:

Analytical No.	Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FOAC Note
001	125	1 - 3 - 20	<10				<10	
002	124	1 - 3 - 21						
003	126	1 - 3 - 22						
004	124	1 - 3 - 23						
005	127	1 - 3 - 24						
006	128	1 - 3 - 25						
007	129	1 - 3 - 26						
008	130	1 - 3 - 27						
009	131	1 - 3 - 28	<10				<10	
010	50.3g 2x D	1 - 3 - 29	18				18	
011	132	1 - 3 - 30	<10				<10	
012	20.1g 5x D	1 - 3 - 31	48				48	
013	33	1 - 3 - 32	<10				<10	
014	34	1 - 3 - 33						
015	35	1 - 3 - 34						
016	36	1 - 3 - 35						
017	37	1 - 3 - 36						
018	38	1 - 3 - 37						
019	39	1 - 3 - 38	<10				<10	

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

Analyst Spike>	Found Value	-	Background Value	=	Recovered Concentration	÷	Expected Concentration Of Spike	x	% Recovery	WL 2σ	CL 3σ
	19	-	0	=	19	÷	20	x	95		
Blind Spike FOAC>	19	-		=	18		20	x	90	103.1	107.8
	48						50	x	96%	96.3	97.6

Precision (Replicates) 78.

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	<10	<10	0	1.64
Blind Replicate FOAC>	<10	<10		

Analyst's Report to Departmental Supervisor: Pass. All OK.DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FOAC: (X) Passed () Failed

NOTES: _____

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: All samples between 10-200 ug/l

DS check accuracy: (X) Passed () Failed

NOTES: at warning level

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Samir J. J. J. DATE 12-13-20 TIME 9:30 AM
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance
 with the EPS quality assurance program established for the LSAAP Contamination
 Survey.

Signed Samir J. J. J.

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (30 accuracy): ☒ Passed () FailedNOTES: One spike does not check out but our control chartwas very narrow and based on limited data. Override PDSFQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on

date _____

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed Bill D. Lang

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Donna P. ...
 Date Samples Analyzed 12-9-82 Time 10:00
 Parameter (Metals) Nickel USATHAMA Method # 111
 Matrix 1 Category 3 Batch 2
 Systems Calibration: (X) Passed () Failed
 Instrument # _____ ID# _____
 NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 11, Page # 18

File # _____

NOTES: _____

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>43</u>	<u>43</u>	<u>43</u>	<u>43</u>
2.0X _D	<u>172</u>	<u>172</u>	<u>172</u>	<u>172</u>
10.0X _D	<u>860</u>	<u>860</u>	<u>860</u>	<u>860</u>
Blank	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Standard Curve Data

Corr. Coeff.: _____

Slope: 1.12Y-intercept: 1.2

DATA:

Analytical No.	Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	Actual Concentration	FOAC Note
001 ACB 001	125	1 - 3 - 20	<u>21.1</u>		<u>10</u>	<u>211</u>	
002	124	1 - 3 - 21	<u>98</u>			<u>98</u>	
003	126	1 - 3 - 22	<u>114</u>			<u>114</u>	
004	124	1 - 3 - 23	<u>61</u>			<u>61</u>	
005	127	1 - 3 - 24	<u>151</u>			<u>151</u>	
006	128	1 - 3 - 25	<u>82</u>			<u>82</u>	
007	129	1 - 3 - 26	<u>109</u>			<u>109</u>	
008	130	1 - 3 - 27	<u>81</u>			<u>81</u>	
009	131	1 - 3 - 28	<u>53</u>			<u>53</u>	
010	516 2x0	1 - 3 - 29 ✓	<u>38</u>			<u>38</u>	
011	132	1 - 3 - 30	<u>102</u>			<u>102</u>	
012	501 5x0	1 - 3 - 31 ✓	<u>102</u>			<u>102</u>	
013	33	1 - 3 - 32	<u>59</u>			<u>59</u>	
014	34	1 - 3 - 33	<u>62</u>			<u>62</u>	
015	35	1 - 3 - 34	<u>41</u>			<u>41</u>	
016	36	1 - 3 - 35	<u>125</u>			<u>125</u>	
017	37	1 - 3 - 36	<u>93</u>			<u>93</u>	
018	38	1 - 3 - 37	<u>111</u>			<u>111</u>	
019	39	1 - 3 - 38	<u>60</u>			<u>60</u>	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Spike>	101	60	41	40	102.5	100	100
Blind Spike	38			40	95.0	100	100
FQAC>	102			100	102		

Precision (Replicates)

Analyst	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Replicate>	38	44	6.0	6.5
Blind Replicate	78	61		
FQAC>				

Analyst's Report to Departmental Supervisor:

*Passes analytical D.C.*DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES:

None Noted

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES:

All samples between 10-200 µg/L

DS check accuracy: (X) Passed () Failed

NOTES:

DS check precision: (X) Passed () Failed

NOTES:

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES:

Department Supervisor Data:

NAME SAMMY LUCIAN DATE 12-13-82 TIME 9:15
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed

Sammy Lucian

FQAC DATA REVIEW:FQAC check blind replicates (precision): ☒ Passed () FailedNOTES: Slightly out of precision range poor field replicatesFQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

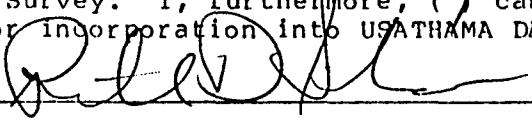
FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS (quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot) authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

Accuracy (Spikes)

	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 2σ	CL 3σ
Analyst Spike>	250	- 150	= 100	100	100		
Blind Spike							
FOAC>	106	-	=	100	106.0	103.2	104.4
	230			250	92.0	98.4	97.2

Precision (Replicates)

	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Analyst Replicate>	150	150	0	4.6
Blind Replicate				
FOAC>	<50	<50		

Analyst's Report to Departmental Supervisor: _____

*Passes analytical test.*DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FOAC: ☒ Passed () FailedNOTES: *None noted*

DS check on uncorrected concentrations for range requirement:

☒ Passed () FailedNOTES: *All samples between 50-1000 µg/L*DS check accuracy: ☒ Passed () Failed

NOTES: _____

DS check precision: ☒ Passed () Failed

NOTES: _____

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME *SALLY VORON* DATE *12-15-82* TIME *8:15*
 CERTIFICATION: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed *Sally Voron*

FQAC DATA REVIEW:

FQAC check blind replicates (precision): (X) Passed () Failed

NOTES: _____

FQAC check blind spike (30 accuracy): () Passed () Failed

NOTES: Results are within 10% but because of limited
data for thallium our control time were up 7 minutes.

FQAC check blind spike (20 accuracy): (X) Passed () Failed

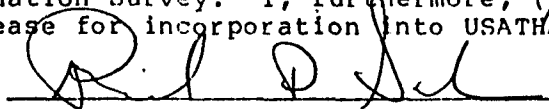
NOTES: _____

FQAC check trend rejection criteria: (X) Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can (X) cannot certify this data as
being in compliance with the EPS quality assurance program established for
the LSAAP Contamination Survey. I, furthermore, (X) can () cannot
authorize its release for incorporation into USATHAMA DATA SYSTEM.Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) SPAINY / UPHON
Date Samples Analyzed 12-16-82 Time 6:00 PM
Parameter (Metals) Aluminum DHAHAMA Method # 18
Matrix 1+2 Category 3 Batch 3
Systems Calibration: (X) Passed () Failed
Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 5, Page # 63,
File # _____

NOTES: Units are Mg/l

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	10	11.4	9.5	
2.0X _D	50	47.1	49.6	
10.0X _D	100	101.1	98.3	
Blank _D	0	0	0	

Standard Curve Data

Corr. Coeff.: 0.9987

Slope: 0.0066

Y-intercept: 0.0001

DATA:

ACF	Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FQAC Notes
	40	1 - 3 - 39	50.9				50.9	
	41	1 - 3 - 40	30.5				30.5	
	42	1 - 3 - 41	40.1				40.1	
	43	1 - 3 - 42	103.7				103.7	
	44	1 - 3 - 43	19.8				19.8	
	45	1 - 3 - 44	112				112	
	46	1 - 3 - 45	68.7				68.7	
	48	1 - 3 - 46	33.7				33.7	
	47	1 - 3 - 47 ✓	36.7				36.7	
	49	1 - 3 - 48	98.5				98.5	
	4702	1 - 3 - 49 ✓	210				210	
	50	1 - 3 - 50	52.0		10		52.0	
	51	1 - 3 - 51	69.7				69.7	
	52	1 - 3 - 52	24.2				24.2	
	53	1 - 3 - 53	22.9		10		22.9	
	001	2 - 3 - 54	84.5				84.5	
	Spike ^{2x}	2 - 3 - 55	93.6				93.6	
	004	2 - 3 - 56	49.7				49.7	
	Spike ^{5x}	2 - 3 - 57	24.2		10		24.2	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst Spike>	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 2σ	CL 3σ
	140.6	- 33.7	= 106.9	100	x 100	106.9	
Blind Spike FQAC>			= 93.6	100	x 93.6	86.5	97.6
			242	250	100	96.8	

Precision (Replicates)

Analyst Replicate>	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
	33.7	32.6	1.1	
Blind Replicate FQAC>	36.7	<10		

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: None noted

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: All samples between 10-200 ug/l pfb. 1/1/82

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME Sunny DATE 12-24-82 TIME 4:15 PM
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance
 with the EPS quality assurance program established for the LSAAP Contamination
 Survey.

Signed Sunny

FQAC DATA REVIEW:FQAC check blind replicates (precision): () Passed ☒ FailedNOTES: FQAC override, Analyst precision very good.FQAC check blind spike (30 accuracy): ☒ Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): ☒ Passed () Failed

NOTES: _____

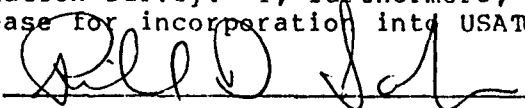
FQAC check trend rejection criteria: ☒ Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Donna Dinnane
 Date Samples Analyzed 12-6-82 Time 12:00 noon
 Parameter (Metals) MANGANESE USATHAMA Method # 1M
 Matrix 1+2 Category 3 Batch 3
 Systems Calibration: ☒ Passed ☐ Failed
 Instrument # _____ ID# _____

NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 11, Page # 3

File # _____

NOTES: 11/15 M2 IV 15/18

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	50	49	53	
2.0X _D	125	127	130	
10.0X _D	250	254	260	
Blank	0	0	0	

Standard Curve Data

Corr. Coff.: N/ASlope: N/AY-intercept: N/A

DATA:

ACL	Sample Point	Lab I.D.	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	EQAC Note
001	40	1 - 3 - 39	158		4		632	
002	41	1 - 3 - 40	185		4		740	
003	42	1 - 3 - 41	115		4		460	
004	43	1 - 3 - 42	165		4		660	
005	44	1 - 3 - 43	140				140	
006	45	1 - 3 - 44	130		4		520	
007	46	1 - 3 - 45	224				224	
008	48	1 - 3 - 46	177				177	
009	47	1 - 3 - 47 ✓	171		4		684	
010	49	1 - 3 - 48	117		4		468	
011	47	1 - 3 - 49 ✓	155		4		620	
012	50	1 - 3 - 50	150				150	
013	51	1 - 3 - 51	151				151	
014	52	1 - 3 - 52	127				127	
015	53	1 - 3 - 53	199		10		1990	
016	001	2 - 3 - 54	43				43	
017	Spike 2 nd	2 - 3 - 55 ✓	16				16	
018	004	2 - 3 - 56	21				21	
019	Spike 5 th	2 - 3 - 57 ✓	125				125	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Analyst Spike>	606	555	51	50	102	20	30
Blind Spike							
FQAC>	66			50	132		
	125			125	100		

Precision (Replicates)

	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Analyst Replicate>	I 147	II 144	3.0	6.54
Blind Replicate				
FQAC>	620	684	64	

Analyst's Report to Departmental Supervisor:

*Passes duplicate QC.*DEPARTMENTAL DATA REVIEW:DS check calculations on samples noted by FQAC: ☒ Passed () FailedNOTES: *None noted*

DS check on uncorrected concentrations for range requirement:

☒ Passed () FailedNOTES: *All samples between 10-200 mg/L*DS check accuracy: ☒ Passed () Failed

NOTES:

DS check precision: ☒ Passed () Failed

NOTES:

DS check rejection trend criteria: ☒ Passed () Warning () Failed

NOTES:

Department Supervisor Data:

NAME SAMMY WAIRON DATE 12-10-82 TIME 4:25 PM
 CERTIFICATION: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed

Sammy Wairon

FQAC DATA REVIEW:FQAC check blind replicates (precision): (☒) Passed () FailedNOTES: Out of range of cal. precision $\approx 10\%$ OK P28FQAC check blind spike (30 accuracy): (☒) Passed () FailedNOTES: One spike did not PASS however 775% methyFQAC check blind spike (20 accuracy): (☒) Passed () Failed

NOTES: _____

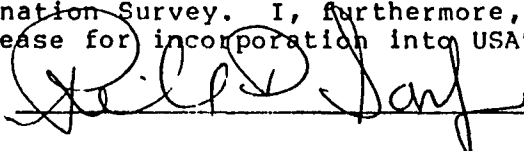
FQAC check trend rejection criteria: (☒) Passed () Warning () Failed

NOTES: _____

FQAC sent memo report # _____ to Principle Investigator on
_____ date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I ☒ can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, ☒ can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed 

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Dorcia Dismore
 Date Samples Analyzed 12-7-82 Time 9:30 AM
 Parameter (Metals) Thallium USATHAMA Method # 1A
 Matrix 1+2 Category 3 Batch 3
 Systems Calibration: ☒ Passed ☐ Failed
 Instrument # _____ ID# _____

NOTES:

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 11, Page # 15

File # _____

NOTES:

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>150</u>	<u>160</u>	<u>90</u>	
2.0X _D	<u>250</u>	<u>240</u>	<u>260</u>	
10.0X _D	<u>50</u>	<u>500</u>	<u>700</u>	
Blank	<u>0</u>	<u>0</u>	<u>0</u>	

Standard Curve Data
Corr. Coeff.: _____Slope: 1/11
Y-intercept: 1.1DATA: **ACV**

Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FQAC Note
001 40	1 - 3 - 39	60				60	
002 41	1 - 3 - 40	100				100	
003 42	1 - 3 - 41	90				90	
004 43	1 - 3 - 42	70				70	
005 44	1 - 3 - 43	60				60	
006 45	1 - 3 - 44	40				40	
007 46	1 - 3 - 45	50				50	
008 48	1 - 3 - 46	25				25	
009 47	1 - 3 - 47 ✓	250				250	
010 49	1 - 3 - 48	250				250	
011 47	1 - 3 - 49 ✓	250				250	
012 50	1 - 3 - 50	250				250	
013 51	1 - 3 - 51	250				250	
014 52	1 - 3 - 52	250				250	
015 53	1 - 3 - 53	70				70	
016 001	2 - 3 - 54	60				60	
017 Spike 2 nd	2 - 3 - 55	90				90	
018 004	2 - 3 - 56	250				250	
019 Spike 5 th	2 - 3 - 57	250				250	

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Analyst Spike>	177	75	102	100	102	20	30
Blind Spike							
FQAC>	90			100	90	103.2	104.4
	250			250		98.4	99.2

Precision (Replicates)

	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Analyst Replicate>	70	70	0	4.6
Blind Replicate				
FQAC>	<50	<50		

Analyst's Report to Departmental Supervisor: _____

*PASSOS Analytical Q.C.*DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: *None Noted*

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: *All samples between 50-1000 PPM*

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME *Sunny Warner* DATE *12-13-82* TIME *8:45*
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed _____

Sunny Warner

FQAC DATA REVIEW:

FQAC check blind replicates (precision): (X) Passed () Failed

NOTES: _____

FQAC check blind spike (30 accuracy): (X) Passed () Failed

NOTES: _____

One spike did not pass 30 test however
accuracy lines for Thallium to various bases & limit data

FQAC check blind spike (20 accuracy):

() Passed () Failed

+ 75%

NOTES: _____

of 2160
me-ins passed.

FQAC check trend rejection criteria: (X) Passed () Warning () Failed

NOTES: _____

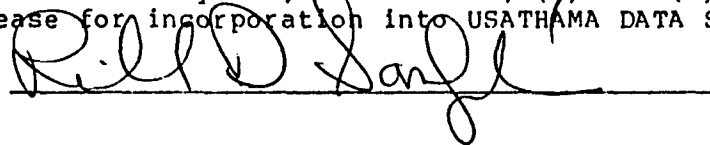
FQAC sent memo report # _____ to Principle Investigator on

date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, (X) can () cannot) authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed



LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

Analyst(s) Name(s) Sunny Lopez
Date Samples Analyzed 12-21-82 Time 7:00 PM
Parameter (Metals) Aluminum USATHAMA Method # 13
Matrix 2 Category 3 Batch 4
Systems Calibration: (X) Passed () Failed
Instrument # _____ ID# _____
NOTES: _____

ANALYTICAL RESULTS:

Designated Location of Permanent Lab Records: Book # 5, Page # 65,
File # _____
NOTES: _____

Standard Levels	Expected Concentration	Found Value #1	Found Value #2	Found Value #3
0.5X _D	<u>50</u>	<u>49.5</u>	<u>49.7</u>	
2.0X _D	<u>100</u>	<u>100.5</u>	<u>98.9</u>	
10.0X _D	<u>500</u>	<u>199.7</u>	<u>215.0</u>	
Blank	<u>0</u>	<u>0</u>	<u>0</u>	

Standard Curve Data

Corr. Coeff.: 0.9999

Slope:

0.0220Y-intercept: 0.0001

DATA:

ACW	Sample Point #	Lab I.D. #	Calculated Concentration Uncorrected For Dilution Factor	X	Dilution Factor	=	Actual Concentration	FOAC Notes
001	009	2 - 3 - 58	23.5		10		235	
002	010	2 - 3 - 59	23.6		10		236	
003	011	2 - 3 - 60	25.3		10		253	
004	012	2 - 3 - 61 ✓	24.0		10		240 ✓	
005	013	2 - 3 - 62	33.3		10		333	
006	0120	2 - 3 - 63 ✓	198				198 ✓	
007	014	2 - 3 - 64	25.1		10		251	
008	015	2 - 3 - 65	106				106	
009	016	2 - 3 - 66 ✓	110				110	
010	Spike	2 - 3 - 67 ✓	100				100	
011	017	2 - 3 - 68 ✓	33.7		10		337	
012	Spike	2 - 3 - 69 ✓	24.4		10		244	
013	018	2 - 3 - 70	40.7		10		407	
014	019	2 - 3 - 71	34.0		10		340	
015	020	2 - 3 - 72	22.0		10		220	
016	021	2 - 3 - 73	25.5		10		255	
017	005	2 - 3 - 74	<10				<10	
018	002	2 - 3 - 75	<10				<10	

SUPPLEMENTARY DATA SHEET USED _____

Accuracy (Spikes)

Analyst	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL 20"	CL 30"
Spike>	360	- 250	= 110	100	X 110		
Blind Spike							
FQAC>		-	= 100	100	X 100%	114.1	121.0
			244	250	100	86.5	77.6
					97.6%		

Precision (Replicates)

Analyst	Found Value	Found Value	Calculated Range	Established UCL For Found Range
Replicate>	I	II		
	251	247	2.0	6.0
Blind Replicate				
FQAC>	240	178	62	

Analyst's Report to Departmental Supervisor:

*Passes All Samples D.C.*DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FQAC: (X) Passed () Failed

NOTES: *None noted*

DS check on uncorrected concentrations for range requirement:

(X) Passed () Failed

NOTES: *All samples between 10-200 ppb after 1st run*

DS check accuracy: (X) Passed () Failed

NOTES:

DS check precision: (X) Passed () Failed

NOTES:

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES:

Department Supervisor Data:

NAME *Sammy Wilson* DATE *12-21-82* TIME *4:30*
 CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed

Sammy Wilson

FQAC DATA REVIEW:

FQAC check blind replicates (precision): () Passed () Failed

Analyst check of replicates from one sample ok
NOTES: Blind check out of RANGE. Sampling problem

FQAC check blind spike (30 accuracy): (X) Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): (X) Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: (X) Passed () Warning () Failed

NOTES: _____

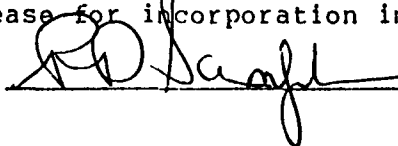
FQAC sent memo report # _____ to Principle Investigator on

date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I () can (X) cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I, furthermore, (X) can () cannot) authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed



CONTAMINATION STUDY DATA MANAGEMENT FORM

MANAGEMENT DATA:

IDA#

NOTES:

ANALYTICAL RESULTS:

NOTES:

Standard Curve Data

Corr. Coff.:

Slope:

Y-intercept:

DATA:

1000

SUPPLEMENTARY DATA SHEET USED

Accuracy (Spikes)

	Found Value	Background Value	Recovered Concentration	Expected Concentration Of Spike	% Recovery	WL	CL
Analyst Spike>	1860	- 1620	= 240	200	x 100	123.0	20
Blind Spike							30
FOAC>		-	= 180	200	x 100	90%	
			543	500		108.6	

Precision (Replicates)

	Found Value I	Found Value II	Calculated Range	Established UCL For Found Range
Analyst Replicate>	1860	1620	240	
Blind Replicate				
FOAC>	28.1	139.5		

Analyst's Report to Departmental Supervisor: _____

DEPARTMENTAL DATA REVIEW:

DS check calculations on samples noted by FOAC: (X) Passed () Failed

NOTES: _____

DS check on uncorrected concentrations for range requirement:

() Passed () Failed

NOTES: _____

DS check accuracy: (X) Passed () Failed

NOTES: _____

DS check precision: (X) Passed () Failed

NOTES: _____

DS check rejection trend criteria: (X) Passed () Warning () Failed

NOTES: _____

Department Supervisor Data:

NAME _____

DATE 12-3-82

TIME _____

CERTIFICATION: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey.

Signed _____

FQAC DATA REVIEW:

FQAC check blind replicates (precision): () Passed (X) Failed

Large difference must be Sample Replicate Problem
NOTES: all other Q.C. check out Analyst Precision goaloverly
P10

FQAC check blind spike (30 accuracy): (X) Passed () Failed

NOTES: _____

FQAC check blind spike (20 accuracy): (X) Passed () Failed

NOTES: _____

FQAC check trend rejection criteria: (X) Passed () Warning () Failed

NOTES: _____

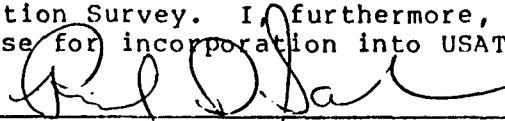
FQAC sent memo report # _____ to Principle Investigator on

date

FQAC DATA: NAME _____ DATE _____ TIME _____

Certification/Authorization: I (X) can () cannot certify this data as being in compliance with the EPS quality assurance program established for the LSAAP Contamination Survey. I furthermore, (X) can () cannot authorize its release for incorporation into USATHAMA DATA SYSTEM.

Signed



APPENDIX F

LISTING OF ALL COMPOUNDS (IDENTIFIED AND UNIDENTIFIED)

IN SCREENING ANALYSIS OF WELL AND SURFACE WATERS

LONCHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
LISTING OF OTHER IDENTIFIED AND UNIDENTIFIED COMPOUNDS
FOUND DURING HPLC SCREENING OF
GROUNDWATER AND SURFACEWATER SAMPLES

<u>Site ID</u>	<u>Analytical No.</u>	<u>Compound Name</u>	<u>Con. ug/l</u>
Well 39	AAEC009	UKNC26	45.
Well 39	AAEC009	UKNC19	23.
Well 39	AAEC009	UKNC20	18.
Well 39	AAEC009	UKNC21	18.
Well 39	AAEC009	UKNC06	77.
Well 39	AAEC009	UKNC22	24.
Well 39	AAEC009	UKNC23	10.
Well 39	AAEC009	UKNC24	11.
Well 44	AAEC002	UKNC18	12.
Well 44	AAEC002	UKNC02	6.
Well 44	AAEC002	UKNC17	3.
Well 44	AAEC002	UKNC12	5.
Well 44	AAEC002	UKNC11	3.
Well 46	AAEC004	UKNC18	20.
Well 46	AAEC004	UKNC02	6.
Well 46	AAEC004	UKNC17	3.
Well 46	AAEC004	UKNC12	9.
Well 46	AAEC004	UKNC10	2.
Well 47	AAEC005	UKNC18	36.
Well 47	AAEC005	UKNC02	13.
Well 47	AAEC005	UKNC04	50.
Well 47	AAEC005	UKNC16	13.
Well 47	AAEC005	UKNC06	10.
Well 47	AAEC005	UKNC12	21.
Well 47	AAEC005	UKNC10	5.
Well 48	AAEC006	UKNC06	24.
Well 48	AAEC006	UKNC07	13.
Well 48	AAEC006	UKNC15	14.
Well 48	AAEC006	UKNC10	7.
Well 49	AAEC008	UKNC01	20.
Well 49	AAEC008	UKNC02	14.
Well 49	AAEC008	UKNC04	60.
Well 49	AAEC008	UKNC06	44.
Well 49	AAEC008	UKNC07	45.
Well 49	AAEC008	UKNC08	54.
Well 49	AAEC008	UKNC09	4.
Well 49	AAEC008	UKNC10	7.
Well 49	AAEC008	UKNC11	10.

<u>Site ID</u>	<u>Analytical No.</u>	<u>Compound Name</u>	<u>Con. ug/l</u>
Well 50	AAEC009	UKNC002	5.
Well 50	AAEC009	UKNC006	16.
Well 50	AAEC009	UKNC007	13.
Well 50	AAEC009	UKNC008	3.
Well 50	AAEC009	UKNC10	2.
Well 51	AAEC010	UKNC007	1.
Well 51	AAEC010	UKNC12	2.
Well 51	AAEC010	UKNC13	3.
Well 51	AAEC010	UKNC14	6.
Well 51	AAEC010	UKNC10	12.
SW014	AAEC005	UKNC006	11.

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
LISTING OF OTHER IDENTIFIED AND UNIDENTIFIED COMPOUNDS
FOUND DURING GC/EC SCREENING OF
GROUNDWATER AND SURFACE WATER SAMPLES

<u>Site ID</u>	<u>Analytical No.</u>	<u>Test Name</u>	<u>CON ug/l</u>
Well 101	AEF001	Beta-BHC	0.05
Well 108	AEF006	Aldrin	0.16
		Endosulfan I	0.07
Well 121	AEG002	Delta-BHC	0.11
		Endrin	0.11
Well 122	AEG001	Delta-BHC	0.06
		Endosulfan I	0.11
		p,p-DDE	0.07
		endrin	0.10
Well 123	AEG004	Endosulfan I	0.07
		p,p-DDE	0.17
		endrin	0.19
Well 23	AEH001	DDT	0.27
Well 35	AEH004	DDT	0.24
Well 37	AEH006	gamma-BHC	0.05
		beta-BHC	0.07
SW 001	AEH007	gamma-BHC	0.05
SW 011	AEI002	p,p-DDE	0.63
SW 012	AEI001	gamma-PHC	0.07
		delta-BHC	0.06
		beta-BHC	0.1
		p,p-DDE	0.38
SW 013	AEI004	p,p-DDE	0.56
SW 015	AEI006	beta-BHC	0.11
SW 017	AEI008	gamma-BHC	0.08
		beta-BHC	0.17
		p,p-DDE	0.35

LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY
LISTING OF OTHER IDENTIFIED AND UNIDENTIFIED COMPOUNDS
FOUND DURING GC/MS SCREENING OF
GROUNDWATER AND SURFACEWATER SAMPLES

<u>Site ID</u>	<u>Analytical No.</u>	<u>Test Name</u>	<u>CON ug/l</u>
Well 101	ADN001	Dichloromethane	123.
Well 101	ADN001	Pentane	24.
Well 101	ADN001	Trichlorethene	28.
Well 101	ADN001	Hexane	2.
Well 101	ADO001	di-N-butyphenol	2.
Well 101	ADP001	phthalic acid	78.
Well 102	ADR001	4-decene, 2,2-dimethyl	12.
Well 102	ADR001	2-pentanone, 4-hydroxy- 4-methyl	5.
Well 102	ADR001	3,4-hexanedione, 2,2,5,5- tetramethyl-monooxime	7.
Well 102	ADR001	cyclohexane, chloro	5.
Well 102	ADS001	ethanol, 2-(1,1-diethylethoxy)	12.
Well 102	ADS001	phenol	2.
Well 103	ADN003	Dichloromethane	45.
Well 103	ADN003	Pentane	3.
Well 104	ADN002	Dichloromethane	4.
Well 107	ADN004	Dichloromethane	2.
Well 107	ADN004	Pentane	1.
Well 107	ADN004	Trichloroethane	9.
Well 107	ADN004	Trichloromethane	1.
Well 107	ADN004	Trichloroethene	1.
Well 107	ADN004	Benzene	1.

<u>Site ID</u>	<u>Analytical No.</u>	<u>Test Name</u>	<u>CON. ug/l</u>
Well 107	ADO004	Glycine, N-acetyl-N- (trifluoroacetyl)-, methylester	4.
Well 107	ADO004	Cyclopentane, 1-bromo-2- methoxy	2.
Well 107	ADO004	diethylphthalate	3.
Well 107	ADO004	di-N-butylphthalate	1.
Well 108	ADQ003	Dichloromethane	2.
Well 108	ADQ003	Toluene	24.
Well 108	ADR003	ethanol, 2-(1,1 dimethylethoxy)	2.
Well 109	ADQ011	Dichloromethane	12.
Well 109	ADQ011	1,2-dichloroethane	1.
Well 109	ADQ011	Tetrahydrofuran	3.
Well 109	ADQ011	1,2-dichloroethene	3.
Well 109	ADQ011	1,1,2-trichloroethane	45.
Well 109	ADQ011	Trichloroethene	29.
Well 109	ADR010	1,1'-bicyclohexyl	4.
Well 109	ADR010	ethanol, 2-(1,1-dimethylethoxy)	4.
Well 110	ADN008	Dichloromethane	13.
Well 110	ADN008	1,1'-oxybisethane	2.
Well 110	ADN008	Pentane	1.
Well 110	ADN008	Trichloroethene	31.
Well 111	ADO006	butyric acid ester with p-hydroxybenzonitrile	3.
Well 112	ADN010	Dichloromethane	14.
Well 112	ADN010	1,1'-oxybisethane	11.
Well 112	ADN010	Pentane	20.
Well 120	ADN007	Dichloromethane	108.
Well 120	ADO007	methanamine, N-methoxy	3.
Well 120	ADP007	Phosphoric acid	18.

<u>Site ID</u>	<u>Analytical No.</u>	<u>Test Name</u>	<u>CON. ug/l</u>
Well 122	ADQ002	Dichloromethane	1.
Well 122	ADQ002	1,1'-oxybisethane	2.
Well 122	ADQ002	Pentane	1.
Well 122	ADR002	4-decene,2,2-dimethyl	12.
Well 122	ADR002	2 pentanone,4-hydroxy- 4-methyl	5.
Well 122	ADR002	3,4-hexanedione,2,2,5,5- tetramethyl-monooxime	7.
Well 122	ADR002	cyclohexane,chloro	5.
Well 122	ADR002	ethanol,2-(1,1-dimethylethoxy)	12.
Well 122	ADS002	phenol	2.
Well 124	ADQ004	Dichloromethane	7.
Well 124	ADQ004	Trichloromethane	312.
Well 124	ADQ004	Pentane	1.
Well 124	ADQ004	Methylcyclopentane	24.
Well 124	ADQ004	2-chlorobutane	5.
Well 124	ADQ004	Tetrachloroethene	4.
Well 124	ADR004	ethanol,2-(1,1-dimethylethoxy)	2.
Well 125	ADQ009	Dichloromethane	7.
Well 125	ADQ009	1,2-dichloroethane	2.
Well 125	ADQ009	2,2-dichloroethane	8.
Well 125	ADQ009	1,1,2-trichloroethane	354.
Well 125	ADQ009	Toluene	55.
Well 125	ADR009	1,1'bicyclohexyl	4.
Well 125	ADS009	cyclohexane,1,3-dichloro	18.
Well 125	ADS009	2-propanone,1,3-dichloro	38.
Well 125	ADS009	2H-pyran-4-ol,tetrahydro- 2-(iodomethyl)-6-methoxy	5.

<u>Site ID</u>	<u>Analytical No.</u>	<u>Test Name</u>	<u>CON. ug/l</u>
Well 126	ADQ007	Dichloromethane	4.
Well 126	ADQ007	Trichloromethane	1.
Well 126	ADR007	1,1'-bicyclohexyl	9.
Well 126	ADR007	ethanol,2-(1,1-dimethylethoxy)	16.
Well 126	ADS007	2-dibenzofuranol	3.
Well 129	ADU006	1,1'-bicyclohexyl	5.
Well 129	ADU006	di-N-butylphthalate	2.
Well 129	ADV006	ethanol,2-(1,1-dimethylethoxy)	12.
Well 129	ADU006	diethylphthalate	73.
Well 130	ADT010	Dichloromethane	153.
Well 130	ADT010	Tetrahydrofuran	46.
Well 130	ADT010	Trichloroethene	9.
Well 130	ADV009	ethanol,2-(1,1-dimethylethoxy)	9.
Well 131	ADU004	1,1'-bicyclohexyl	9.
Well 131	ADV004	ethanol,2-(1,1-dimethylethoxy)	24.
Well 131	ADU004	diethylphthalate	52.
Well 33	ADU001	diethylphthalate	2.
Well 34	ADU003	1,1'-bicyclohexyl	11.
Well 39	ADT009	Dichloromethane	95,960.
Well 39	ADT009	Trichloroethane	1120.
Well 39	ADU008	ethanol,2-(1,1-dimethylethoxy)	9.
Well 43	ADW001	Dichloromethane	30.
Well 43	ADW001	1,2-dichloroethene	3.
Well 43	ADW001	1,2-dichloroethane	12.
Well 43	ADW001	1,1,2-trichloroethane	2.
Well 43	ADW001	Trichloroethene	63.
Well 43	ADY001	cyclohexanol,2-bromo	5.
Well 43	ADY001	diethylphthalate	330.

Site ID	Analytical No.	Test Name	CON. ug/l
Well 44	ADW003	Dichloromethane	251.
Well 44	ADW003	1,2-dichloroethane	3.
Well 44	ADW003	Pentane	9.
Well 44	ADW003	Trichloroethene	36.
Well 44	ADW003	Hexane	1.
Well 44	ADY003	diethylphthalate	200.
Well 45	ADW005	Dichloromethane	206.
Well 45	ADW005	1,2-dichloroethene	1.
Well 45	ADW005	1,2-dichloroethane	5.
Well 45	ADW005	Tetrahydrofuran	53.
Well 45	ADW005	Pentane	7.
Well 45	ADW005	Trichloroethene	63.
Well 45	ADX005	di-N-butylphthalate	16.
Well 46	ADW007	Dichloromethane	7.
Well 46	ADX006	di-N-butylphthalate	12.
Well 46	ADY006	naphtalene,5-ethyl- 1,2,3,4-tetrahydro	4.
Well 47	ADW002	Dichloromethane	712.
Well 47	ADW002	1,2-dichloroethene	45.
Well 47	ADW002	1,2-dichloroethane	17.
Well 47	ADW002	Pentane	6.
Well 47	ADW002	Cyclohexane	9.
Well 47	ADW002	Trichloroethene	198.
Well 47	ADX002	benzene,1,2,3-trimethyl	2.
Well 47	ADX002	benzothiazole,2-butyl	6.
Well 47	ADY002	diethylphthalate	3.
Well 47	ADX002	di-N-butylphthalate	5.
Well 47	ADY002	cyclohexane,3-(2-propynyl)	5.
Well 47	ADY002	diethylphthalate	240.

Site ID	Analytical No.	Test Name	CON. ug/l
Well 48	ADW011	1,2-dichloroethene	55.
Well 48	ADW011	Trichloromethane	24.
Well 48	ADW011	1,1,2-trichloroethane	72.
Well 48	ADW011	Trichloroethene	1232.
Well 48	ADW011	Tetrachloroethene	72.
Well 48	ADY010	diethylphthalate	3.
Well 48	ADX010	di-N-butylphthalate	8.
Well 49	ADZ002	1,2-dichloroethene	126.
Well 49	ADZ002	1,2-dichloroethane	800.
Well 49	ADZ002	1,1,2-trichloroethane	2150.
Well 49	ADZ002	Trichloroethene	7200.
Well 49	AEA002	benzene,1-ethyl-4-methyl	12.
Well 49	AEA002	1-hexanol,2-ethyl	19.
Well 49	AEA002	benzaldehyde	30.
Well 49	AEA002	benzenemethanol	17.
Well 49	AEA002	ethanone,1-phenyl	68.
Well 49	AEA002	heptadecane	34.
Well 49	AEA002	phosphoric acid, triethylester	84.
Well 49	AEA002	hydroxylamine, O-decyl	52.
Well 49	AEA002	naphthalene,1-methyl	31.
Well 49	AEA002	dimethylphthalate	52.
Well 49	AEA002	decane,2-methyl	6.
Well 49	AEA002	benzene,1,2,3-trimethyl	13.
Well 49	AEA002	diethylphthalate	35.
Well 49	AEB002	pentanoic acid	4.
Well 49	AEB002	tetradecanoic acid	4.
Well 49	AEB002	butanoic acid,4 chloro	2.
Well 49	AEB002	4-methylphenol	3.
Well 49	AEB002	phthalic acid,monomethyl ester	8.
Well 49	AEB002	benzoic acid	32.
Well 49	AEB002	benzene acetic acid	215.

Site ID	Analytical No.	Test Name	CON. ug/l
Well 50	ADZ003	Dichloromethane	86.
Well 50	ADZ003	Tetrahydrofuran	21.
Well 50	ADZ003	1,2-dichloroethene	118.
Well 50	ADZ003	Trichloromethane	94.
Well 50	ADZ003	1,1,2-trichloroethane	2295.
Well 50	AEA003	heptadecane, 2-methyl	56.
Well 50	AEA003	naphthalene	22.
Well 50	AEA003	dodecane, 2,6,11-trimethyl	24.
Well 50	AEA003	naphthalene, 1-methyl	30.
Well 50	AEA003	undecane, 4,6-dimethyl	2.
Well 50	AEA003	tetradecane, 2-methyl	5.
Well 50	AEA003	eicosane, 10-methyl	8.
Well 51	ADZ001	Pentane	1.
Well 52	ADW009	Dichloromethane	24.
Well 52	ADW009	Tetrahydrofuran	10.
Well 52	ADW009	Trichloromethane	10.
Well 52	ADX008	di-N-butylphthalate	7.
Well 53	ADW008	Dichloromethane	48.
Well 53	ADW008	Pentane	3.
Well 53	ADX008	di-N-butylphthalate	6.
SW001	ADZ007	Dichloromethane	7.
SW001	AE006	4-methylphenol	3.
SW009	ADZ011	Trichloroethene	2.
SW011	AEA004	2-hexanone, 5-bromo	6000.
SW012	ADZ010	Dichloromethane	9.
SW013	ADZ008	Dichloromethane	6.

<u>Site ID</u>	<u>Analytical No.</u>	<u>Test Name</u>	<u>CON. ug/l</u>
SWC14	AEC001	Dichloromethane	87.
SWC14	AEC001	2-pentanone	23.
SWC14	AEC001	Pentane	2.
SWC14	AEC001	Trichloroethene	45.
SWC14	AEC001	Tetrachloroethene	35.
SWC14	AED001	ethanol,2-(1,1-dimethylethoxy)	46.
SWC14	AED001	phosphoric acid,triethylester	345.
SWC14	AED001	ethanol,2-(1,1-dimethylethoxy)	3.
SWC14	AEE001	phosphoric acid	4.
SWC14	AEE001	2-nitrophenol	5.
SWC15	AED008	1,1'-bicyclohexyl	32.
SWC15	AEE008	phenol	12.
SWC15	AEE008	tetradecanoic acid	35.
SWC16	AEE007	phenol	14.
SWC17	AEC003	pentane	1.
SWC17	AED003	1,1'-bicyclohexyl	17.
SWC17	AED003	2-quinolinecarboxaldehyde, 8-hydroxy,oxime	10.
SWC17	AEE003	phenol	10.
SWC19	AED005	2-hexanone,5-bromo	346.
SWC19	AED005	cyclohexane,(cyclopentylmethyl)	27.
SWC19	AED005	phenol	8.
SWC20	AEE002	phenol	12.

APPENDIX G
MANUAL FIELD SAMPLING PROTOCOL
AND SAMPLE LOG BOOK

Manual

Field Sampling Protocol and Sample Log Book for
Environmental Contamination Survey of the
Longhorn Army Ammunition Plant, Marshall, Texas

Prepared For

Thiokol Corporation/Longhorn Division
Marshall, Texas

For Submission To

U.S. Army Toxic and Hazardous Materials Agency
Aberdeen Proving Grounds, MD 21010

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Submitted
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Table of Contents

	PAGE
Introduction	1
General Sampling Sites and Required Samples and Analysis	1
Preparation and Selection of Specific Sampling Sites	
1. Wells	13
2. Surface Water	13
3. Sediment	15
4. Soil	15
Collection of Samples	
1. Well Water	15
2. Surface Water	16
3. Sediments	17
4. Soils	17
Treatment in the Field	18
Labeling and Logging in of Field Samples	
Preparation of CDIR Form 13-2.1, 1 September 1978	21
Preparation of Sample Manifests	24
Maintenance of Chain of Custody of Samples	26
Transportation of Samples to Laboratory	26
Transfer of Sample Custody	28
TABLES	
Table 1A, Analytes Determined for the Longhorn Army Ammunition Plant Survey	2
Table 2A, Groundwater Sampling Points and Analytical Requirements	3
Table 3A, Surface Water/Sediment Points and Analytical Requirements	5
Table 4A, Soil Sampling Points and Analytical Requirements	6

Table of Contents (Continued)

Table 5A, Standing Water Volumes In A Two-Inch Monitoring Well	14
FIGURES	
Figure 1A, Longhorn Army Ammunition Plant Monitor Well Locations	7
Figure 2A, Longhorn Army Ammunition Plant Sediment/Surface Water Sampling Points	8
Figure 3A, Longhorn Army Ammunition Plant Soil Sample Areas	9
Figure 4A, Longhorn Army Ammunition Plant Existing AEHA Wells Near Evaporation Point in the Burning Grounds	10
Figure 5A, Longhorn Army Ammunition Plant Existing AEHA Wells Near Old Landfill	11
Figure 6A, Longhorn Army Ammunition Plant Existing AEHA Wells At Current Landfill	12
Figure 7A, Installation Restoration, Sampling and Analysis - Chemical (Form 13-2.1, 1 Sept. 1978)	22
Figure 8A, Longhorn AAP, Contamination Survey Sample and Transference Manifest	25
Figure 9A, Certifications	27
List of Log Books	
1. Groundwater	Pages 30-135
2. Surface Water	Pages 136-142
3. Sediment	Pages 143-146
4. Soil	Pages 147-152

INTRODUCTION

The importance of a well-planned, well executed and documented sampling program cannot be overstated. It is the foundation on which the analyses and, ultimately, all decisions are based. Because of this fact, EPS has developed the following document to provide in one book all of the information which should be needed by the field sampling crew to comply with the LHAAP contamination survey Scope of Work and, additionally, to insure a specific predetermined protocol is regorously implemented. This document contains the sampling plan which will be used. Deviation from this plan cannot be accepted except under the most unusual of circumstances and then only with the approval of the FQAC and the proper documentation.

General Sampling Sites and Required Sample and Analytical Categories

The monitoring station locations, parameter coverage, and sampling frequency have been specified by USATHAMA in a manner suitable to meet all objectives of this study. The design has taken into consideration past and existing ambient monitoring programs which may have been conducted, as well as the existing environmental conditions and past history associated with the utilization of the different sampling site locations.

Table 1A provides a list of analytical categories being investigated during this study. Tables 2A-4A provide a brief sampling point description and listing of stations to be sampled and analytical categories to be tested associated with well water, surface water/sediments and soils respectively. Figures 1A-6A provide the general location of well water, surface water/sediment and soil sampling points as well as site specific locations for selected monitoring well sites.

Table 1A

Analytes Determined for the Longhorn
Army Ammunition Plant Survey

Analytical Category	Analyte	Matrix
1	1,3 Dinitrobenzene (1,3 DNB)	All
	2,4,6-Trinitrotoluene (2,4,6 TNT)	All
	1,3,5-Trinitrobenzene (1,3,5,-TNB)	All
	2,4-Dinitrotoluene (2,4 DNT)	All
	2,6-Dinitrotoluene (2,6-DNT)	All
	Nitrobenzene (NB)	All
2	Nitrates	All
	Nitrites	All
	Phosphates	All
	Sulfates	All
	Chloride*	All
	Fluoride*	All
	Chromate*	All
	Thiocyanate*	All
	Acetate*	All
	Cyanide*	All
3	Aluminum	All
	Antimony	All
	Barium	All
	Cadmium	All
	Chromium	All
	Lead	All
	Manganese	All
	Strontium	All
	Mercury*	All
	Copper*	All
	Zinc*	All
	Arsenic*	All
	Beryllium*	All
	Nickel*	All
	Selenium*	All
	Silver*	All
	Thallium*	All
4	GC-MS (Volatiles)	W
	GC-MS (Acid fraction)	All
	GC-MS (Base/neutral fraction)	All
5	HPLC (Screen of general organic compounds)	All
6	GC-EC (Screen for pesticides, organochlorines, PCB's, and related compounds)	All

*Semi-Quantitative Determination

W=Surface/Well water

S = Sediment and Soil

Table 2A

Groundwater Sampling Points and Analytical Requirements

<u>Sample Point</u>	<u>Analytical Category</u>	<u>Approximate Location</u>
101	123456	N Boundary, NW of Plant 2
102	123456	N Boundary, N of Plant 3
103	123456	E of Magazine Area, near Starr Ranch Rd
104	123456	E of Inert Burning Ground
105	123	E of Plant 3, near Independence Ave.
106	1236	NW of Igniter Area
107	12345	E of Static Test Area
108	123456	SSE of Harrison Bayou inlet into Codd Lake
109	12345	E Boundary, N of Long Point Rd.
110	123456	S Boundary, E of Harrison Bayou
111	123456	SW Boundary, W of Ave. P
112	123456	W Boundary, W of Classification Yard
113	1	NE of TNT Waste Disposal Plant
114	1	WNW of TNT Area, Near 1st Street
115	1	TNT Area, Near Ave K
116	1	NE of TNT Area, Near Ave D
117	1	ENE of TNT Area, Near Ave D and 18th St
118	1	SE of TNT Area, Near 18th St
119	1	SSW of TNT Area, Near 18th St
120	123456	NE of Intersection, Ave P and Ave Q
121	1236	SSW of Current Landfill
122	123456	E of Old Landfill
123	1236	WNW of Burning Ground
124	123456	NNW of Burning Ground
125	123456	NNE of Burning Ground
126	123456	SE of Burning Ground
127	123	WNW of Ground Signal Test Area
128	12345	NE of Ground Signal Test Area
129	12345	SSE of Ground Signal Test Area
130	12345	WNW of South Test Area
131	12345	NE of South Test Area
132	123	SE of South Test Area

Table 2A (Continued)

<u>Sample Point</u>	<u>Analytical Category</u>	<u>Approximate Location</u>	<u>AEHA Desig.</u>
33	123456	Existing 2" well at Current Landfill	BH20
34	123456	Existing 2" well at Current Landfill	BH19
35	1236	Existing 2" well at Current Landfill	BH18
36	1236	Existing 2" well at Old Landfill	BH16
37	123456	Existing 2" well at Old Landfill	BH14
38	123	Existing 2" well at Burning Ground	BH22
39	12345	Existing 2" well at Burning Ground	BH 5
40	123	Existing 2" well at Burning Ground	BH 7
41	123	Existing 2" well at Burning Ground	BH 3
42	123	Existing 2" well at Burning Ground	BH 1
43	12345	Existing 2" well at Burning Ground	BH 8
44	12345	Existing 2" well at Burning Ground	BH 9
45	12345	Existing 2" well at Burning Ground	BH10
46	12345	Existing 2" well at Burning Ground	BH 4
47	12345	Existing 2" well at Burning Ground	BH 2
48	12345	Existing 2" well at Burning Ground	BH 6
49	12345	Existing 2" well at Burning Ground	BH11
50	12345	Existing 2" well at Burning Ground	BH21
51	12345	Existing 2" well at Old Landfill	BH12
52	12345	Existing 2" well at Old Landfill	BH13
53	12345	Existing 2" well at Current Landfill	BH17

TABLE 3A

Surface Water/Sediment Sampling Points and Analytical Requirements

<u>Sample Point</u>	<u>Water Analyses</u>	<u>Sediment Analysis</u>	<u>Approximate Location</u>
001	123456	12345	North Bayou inlet into Caddo Lake
002	123	123	North Bayou, E of Plant 3
003	16	1	North Bayou, W of Plant 3
004	123	-	Foundation of TNT Waste Disposal Plant
005	123	123	Pumphouse Pond in TNT Area
006	1	1	NE of TNT Area
007	1	1	S of TNT Area, Near Avenue N
008	1	1	S of TNT Area, Near Avenue E
009	123456	12345	At W Boundary, S of Admin. Area
010	123	123	Central Creek, E of Avenue P
011	123456	12345	NW of Current Landfill
012	123456	12345	Central Creek Inlet into Caddo Lake
013	123456	12345	Harrison Bayou Inlet into Caddo Lake
014	12345	12345	Rocket Motor Casing Washout Pond
015	123456	12345	NW of Burning Ground
016	12345	12345	NW of Flashing Area
017	123456	12345	E of Old Landfill
018	123	123	Harrison Bayou, S of Avenue Q
019	123456	12345	At S Boundary, Harrison Bayou
020	12345	12345	Saunders Branch inlet into Caddo Lake
021	123	123	Saunders Branch, S of Longpoint Rd.

TABLE 4A

Soil Sampling Points and Analytical Requirements

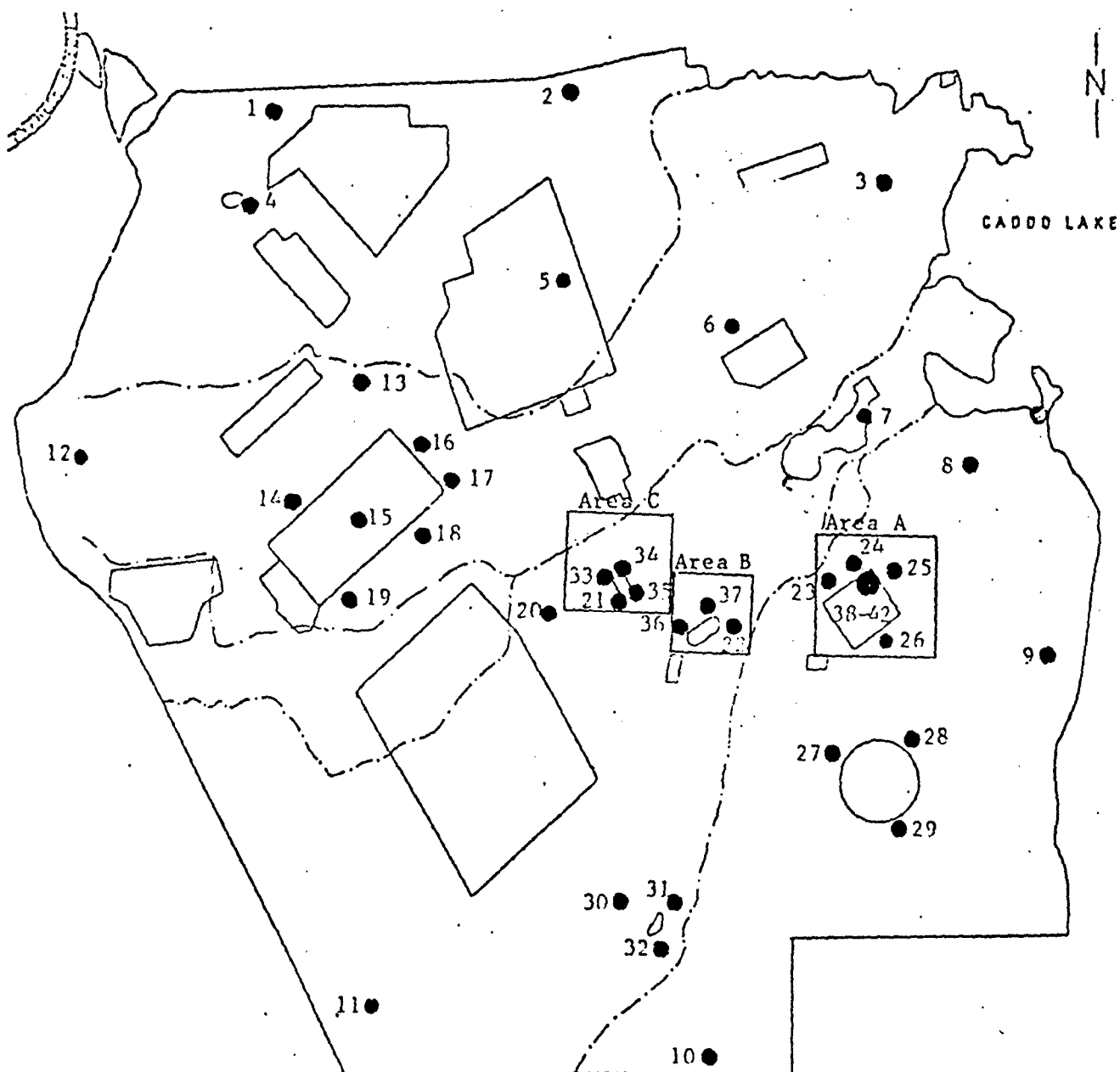
<u>Area #</u>	<u>Sample Type</u>	<u># Sample Points*</u>	<u>Analytical Category</u>	<u>Area Description</u>
010	1' Cores	3	123(45)**	Inert Burning Ground
020	1' Cores	3	1	TNT Waste Disposal Plant
030	1' Cores	8	1	TNT Area
040	1' Cores	3	123(45)**	South Test Area
050	1' Cores	3	123(45)**	Ground Signal Test Area
060	1' Cores	3	123(45)**	Static Test Area
070	5' Cores	5	123(45)**	Old Landfill
080	5' Cores	3	1	Suspect TNT Burial Site

* Each area will have the number of sample points specified above and identified, for example, as 0101, 0102, and 0103, or 0701T, 0701B, 0702T, 0702B, etc.

** GC/MS and HPLC will be performed only on the composite sample (identified for example as 010C) made up of equal portions taken from each of the sample points in an area. For area 070 a composite sample will be made up of equal portions taken from each of the upper sections of the five-foot cores and one made from the lower sections (identified as 070CT and 070CB, respectively).

FIGURE 1A

LONGHORN ARMY AMMUNITION PLANT
MONITORING WELL LOCATIONS *



* SPECIFIC LOCATIONS OF EXISTING AEHA WELLS DEPICTED ON FIGURES 4A-6A

LONGHORN ARMY AMMUNITION PLANT
EXISTING AEHA WELLS NEAR EVAPORATION
POND IN THE BURNING GROUNDS



The Preparation and Selection of Specific Sampling Sites

No. 1: Monitoring well sampling site preparation. Upon arrival at the monitoring well sampling site, the upper well casing shall be cleaned using approved water and wiped dry before unplugging. A clean piece of polyethylene plastic sheet shall be placed on the ground to protect against possible contaminants caused by sampling equipment touching the ground. The height of the water column shall be determined and a calculation done to determine the standing volume of water in the well casing. Five times this calculated volume of standing water shall be removed prior to the extraction of any well water samples for analysis. Table 5A contains a list of standing water heights with associated water volumes for 2" monitoring wells. The purged water shall be bailed out into a calibrated pail in order to determine volume removed. The pail shall be attached via a hook to the existing well protection pipes and the bailing pipe shall be coiled into the pail as the bailer is removed from the well. Before dumping the contents of the pail, the conductivity of the water which has been purged out will be determined. If the well recharge rate is very slow, i.e., six hours or more required to achieve 90% recovery an alternate purging method may be used. This method will involve the bailing of the well twice to remove all standing water, allowing a minimum of 16 hours between the bailing cycles and after the final cycle before the sample is collected. Once the appropriate volume has been bailed from the test well, the well water sample can be collected as outlined in the subsequent section.

No. 2: Surface Water Sampling Site Selection. The surface water sampling sites have been generally located on Figure 2B. The exact location of the surface water sampling sites shall be determined at the time of sampling. The determination shall be jointly agreed to by representatives of EPS and the LHAAP representative. The site should be chosen for their ease of sampling and for their representativeness of the water course under investigation. Attempts should be made to select the site which has relatively calm or slow moving water. Sampling sites

TABLE 5A

Standing Water Volumes in a Two-Inch Monitoring Well

<u>Height of Water Column (ft)</u>	<u>Standing Volume of Water (gal)</u>	<u>Required Purge Volume (gal)</u>
10	1.63	8.15
11	1.79	8.96
12	1.96	9.78
13	2.12	10.50
14	2.28	11.41
15	2.44	12.22
16	2.61	13.04
17	2.77	13.86
18	2.93	14.67
19	3.10	15.48
20	3.26	16.30
21	3.42	17.12
22	3.59	17.93
23	3.75	18.74
24	3.91	19.56
25	4.08	20.38
26	4.24	21.19
27	4.40	22.00
28	4.56	22.82
29	4.72	23.64
30	4.89	24.45
31	5.05	25.26
32	5.22	26.08
33	5.38	26.89
34	5.54	27.71
35	5.70	28.52
36	5.87	29.34
37	6.03	30.15
38	6.19	30.97
39	6.36	31.78
40	6.52	32.60
41	6.68	33.42
42	6.85	34.23
43	7.01	35.04
44	7.17	35.86
45	7.34	36.70
46	7.49	37.49
47	7.66	38.30
48	7.82	39.12
49	7.99	39.94
50	8.15	40.75

should be located, if at all possible, upstream from manmade water course obstructions such as bridges and roadway culverts. Prior to the sampling at any of these points, the contractor will be responsible for providing a means of marking the sampling point to insure that a reoccupation of the sampling site can be accomplished within a reasonable period of time (3/4 iron pipe with Station # inscribed). The contractor will also make a permanent record of these sampling points on an installation map which will be provided by the LHAAP representative.

No. 3. Sediment Sampling Point: The sediment sampling points will be at the same location as the surface water sampling points. The specific selection criteria outlined above takes into consideration the requirements for identification of a specific sampling point for sediment analyses.

No. 4: Soil Sampling Point Selection and Preparation. The general areas of soil sampling have been indicated on Figure 3A. Within each of these areas the exact sampling points remain to be selected. This process will take place by a joint inspection with a representative of EPS, USATHAMA and a representative of LSAAP. The contractor will mark each of the specific five sampling points within each sampling area, which will be sampled for surface soils. The contractor will be responsible for developing a sketch of each area and the location of the representative sampling sites. Prior to the collection of any sample at any one of the points within the eight identified areas, the sampling crew will carefully remove all surface vegetation, rocks, leaves, and other organic debris. An area of approximately four feet square should be prepared in this way in order to insure no contamination from surface organic material.

The Collection of Samples

No. 1: Well Water. After the well has been prepared as outlined above, well water samples can be drawn for the variety of analyses to be conducted. The field sampling crew should consult the LHAAP, groundwater sampling log sheet (Matrix 1) to determine the exact type and number of specific samples which are

required at the particular well being sampled. The log book will indicate the sampling site identification number for each bottle as well as the specific categories being tested and whether or not duplicate samples will be required for this particular station. Each log sheet will contain data on the ground water status and volumes which need to be removed from each well. Prior to filling the bottles both the bottles and their caps will be thoroughly rinsed with the well water being sampled. The field technicians will take every precaution to insure that the sample bottles and well samples are not contaminated by surrounding soil or wind-blown material. After the bottles have been rinsed they are to be filled quickly and capped. In order to insure that no cross contamination takes place during sampling of ground water for the Longhorn Army Amunition Plant Contamination Survey, EPS Laboratories will install a discrete PVC Bailer in each of the 53 monitoring wells. This bailer will pre-cleaned at EPS's Laboratory and will be used only in this pre-designated well site. For those monitoring wells which require modified or protracted bailing operations, the sampling equipment will be temporarily left hanging inside the wells throughout the sampling period.

No. 2: Surface Water Sampling. Surface water samples will be collected directly in the bottles provided for use by EPS. The field sampling technician will wade into the creek or stream at the pre-designated location and will hold the sample bottle upstream from his location at a depth equal to approximately one half of the total depth of the sampling point. Alternately samples may be taken in the sample bottles with a hand held apparatus which can be used from a boat off a bridge. The technician will remove the cap from the bottle and allow the bottle to be filled at the appropriate depth. The first sample taken in each bottle will be discarded and used to rinse the field sampling container. The field sampling technician will repeat this process to collect his field sample. The field sample will be immediately capped after collection. The field sampler will take every precaution to insure that bottom sediments are not disturbed to the point where they are collected

in the water sample. It should be noted that bottom sampling may be taking at the same time as the collection of water samples (immediately after water samples).

No. 3: Sediment Sampling. Sediment samples will be taken at each of the 20 sites listed in Table 3A. The sampling at each station will consist of the collection of at least five (5) two inch cores of surface sediment, which will be taken across the stream profile. These cores will be taken with a one foot long, two inch inside diameter stainless steel coring device with lexan core liners. The cores will be placed in a one gallon glass container. Enough material will be collected to fill a one gallon glass container with sedimentary deposits. The field technician should collect extra cores at various locations across the stream profile in order to insure that one full gallon of sedimentary material is collected at each site. As in the case with water samples, all of the coring devices shall be thoroughly washed with deionized water after the collection of samples from each individual station and the pre-cleaned lexan liner changed to avoid any cross contamination of future sampling sites.

No. 4: Soil Samples. Soil samples will be taken from each of the eight areas indicated in Figure 3A and described on Table 4A. Within each of these eight areas, several discreet one gallon samples will be collected. Each of these discreet samples will be made up of several cores taken in a four foot square area. The samples will be collected with a one foot long, one and one half inch inside diameter stainless steel coring tube or a small hand held auger. Approximately eight to 12 cores will be collected to fill the one gallon bottle in each of the five sampling points associated with each of the eight areas designated in Figure 3A. A total of 31 specific sampling sites will be sampled. The field sampling technicians will be collecting one duplicate sample in every one of the six general sampling areas (as designated in the soil sampling log book Matrix 4). In those cases where duplicate samples are being taken, they should be done simultaneously and every other core removed from the sampling site should be placed in an alternate one gallon sample container. All sampling equipment should be thoroughly rinsed with deionized water between each specific sampling site to avoid any possible cross contamination. At

several locations, five foot deep cores will be taken and these cores split in an upper and lower half to determine the potential location of specific contaminants. This will be accomplished by driving a two inch core one foot into the ground and removing the material for analysis and then by augering down one foot and taking an additional one foot core from this location and so on down to the five foot level. This methodology will eliminate the potential for cross contamination of a single five foot core driven from the surface down to the five foot level.

Treatment in the Field

A great deal of the sample treatment will be accomplished once the samples are received at the analytical laboratory. However, we will review each analytical category being sampled for and any special treatment which is necessary for water samples being taken for each of these samples. Soil Samples will not require any special sampling treatment. Samples being taken for analytical category one and five, which will be analyzed by high performance liquid chromatography (HPLC), will not have any field preservative added to them. These samples will be collected in a one gallon amber bottle. They should be filled to the top of the bottle and sealed as tightly as possible. These samples should be stored from the point of collection at 4 °C until they are delivered to the laboratory.

Samples being collected for analytical category number two from wells and surface water sites will also not be preserved in the field in any way. These samples will be collected in one quart amber bottles which have been stored with deionized water in them. The deionized water will be poured out, the sample collected and filled to the top of the bottle, and the cap immediately placed on the bottle. These samples will also be stored at 4 °C until their arrival at the main laboratory.

Samples collected for analytical category number three from well waters will not be preserved in any way. They will be stored at 4 °C after collection and after arrival at the main

laboratory they will be filtered and then preserved with nitric acid to a pH of less than two.

Samples collected for analytical category number three from surface waters will be preserved in the field, using nitric acid. One half of a millimeter of Ultrix Nitric Acid will be added to each of these samples before they are capped and stored at 4 °C.

Samples collected for analytical category number four will require the collection of a one gallon water sample as well as a small 40 ml water sample (collected in duplicate). Neither of these two samples will be preserved; however, care should be taken to insure that the 40 ml sample collected in the specially provided vial is filled to the very top and that no air space exist prior to the placement of the vial cap back on the sample. Both the 40 ml sample and the one gallon sample destined for analysis in category four will be stored at 4 °C.

Samples collected for analytical category number six will require the collection of samples in one gallon amber bottles. Once again these samples will not be preserved in the field; however, they should be stored at 4 °C prior to reaching the main analytical laboratory.

Labeling and Logging-in of Field Samples

The positive identification of field samples requires that a systematic approach be taken to the labeling and recording of collection data at each specific sampling site. Therefore, a log book system has been developed and incorporated into this document for use during this survey.

There are four specific log books provided, one for each matrix type. These log books are located on the pages listed below.

<u>Matrix/Sampling Site</u>	<u>Log Book Pages</u>
1/Groundwater	30-135
2/Surface Water	136-142
3/Sediments	143-146
4/Soils	147-152

In association with the sampling log books provided, a complete set of stick-on labels and tie-on tags have been prepared for each sample bottle to be collected. These labels are contained within individual packets which have been identified for each station. The field sampling technician should consult the appropriate log book to check on the number and kind of samples to be collected at each site. Once he has collected all of the samples, the bottles should be thoroughly wiped dry, then the packet of labels associated with each sampling site should be removed from its box and each label affixed to the appropriate bottle. Additionally, each tag should be tied or wired to the appropriate bottle as well. The field sampling technician should not leave a particular sampling site until all of the labels provided are attached to the appropriate bottle which now contains the sample. In those cases where duplicate sets of samples are being taken as designated on the field sampling sheets, two packets of labels are provided for the duplicate bottles which will need to be collected. The labels provided in the individual packets have already had the sampling station number, the matrix number, and the analytical category number affixed to them. It will be the responsible of the field sampling technician to put the sampling time and sampling date, as well as checking the appropriate field preparation notes and signing each tag with his initials. Once all of the samples have been collected, labeled, and tagged, the field technician will be responsible for checking the appropriate boxes on the field log book and writing down the date and time of the field sampling and any other pertinent notes in the boxes provided. Once all of the samples have been collected and checked in the manner outlined above, the field sampling technician will initial in the box provided in each line, or on each sheet of the log book. The initialling in this box indicates that all of the samples have been collected and checked and are now ready for storage for ultimate transportation to the laboratory. All of the different size and type bottles used in the collection of field water samples should be placed back into their original shipping containers. Once each container has been filled with bottles, a sample manifest will be prepared as discussed in a subsequent section.

Soil and sediment samples will be labeled and logged in in their respective log books. A complete set of tags has been provided for all soil and sediment samples just as was done with the water samples. In the case of soils and sediment samples, however, only one sample (two samples in case of duplicate stations) will be collected at each site. Although this will be simpler than the water sampling, because of the fact that only one sample will exist from each site, the importance associated with that sample will be much greater for there will be no chance for utilization of alternate samples should a sample be found to be nonexistent. Therefore, upon collection of a particular soil sample, the bottle should be wiped clean and the stick-on label should be affixed immediately. The appropriate information which should be provided by the field technician should be added on to the already partially completed label. Additionally, the tag provided should be wired onto the neck of the bottle in a secure fashion and the same information should be added onto the tag. The appropriate boxes should be checked and filled in on the sediment and soil log book, and once the sample has been labeled and secured, the field sampling technician should sign the particular line of the log book indicating that a complete sample had been taken and identified for future use.

The Preparation of the CDIR Form 13-2.1, 1 September, 1978

The chief of the field sampling crew will be responsible for making an entry on the CDIR Form 13-2.1, 1 September, 1978, for each sample bottle taken during this survey. A copy of this form is included as Figure 7A. In the upper left hand corner of this form there are seven slots under the title of Gang Punch. Slots 1 and 2 should be filled in with the initials LS. Slot 3 and 4 should have the initials SA. Slot 5 should have the initials C. Slot 6 and 7 will vary depending on the type of sample being collected. For our use the following initials will be placed in slots 6 and 7 as is needed:

1. GW -- Groundwater
2. SW -- Surface Water
3. SE -- Sediments
4. SO -- Soils

SAMPLING AND ANALYSIS - CHEMICAL

1357

INS	FA	T	FIL
SAC			

7A

[illegible]

```
PRE = PRECISION
INSTR = INSTRUMENT
EXPON = EXPONENT
ACCUR = ACCURACY
```

```
SC = SAMPLING TECHN. CODE
MTH = METHOD
MEA = MEASUREMENT
BOO = BOOLEAN
```

INS = INSTALLATION
FA = FUNCTIONAL AREA
T = DATA TYPE
FIL = DATA FILE

Columns number eight through 12 need to be filled in with the Julian date for sample collection. For the purposes of this project, the Julian date will be construed as meaning the numerical day of the year preceded by the year date. Therefore, January 1, 1982, will be 82001 and November 16, 1982, will be 82320. Columns 13-15 should be filled in with the initials PRI (Preliminary Sruvey Phase I). Column 16-19 should be filled in with the site type which will be a four letter abbreviation for the particular types of areas to be sampled and will provide you with the following list which may be used during the study:

1. Creek -- (CREK)
2. Ditch or Drainage -- (DTCH)
3. Lake -- (LAKE)
4. Pond -- (POND)
5. River -- (RVER)
6. Spring -- (SPRG)
7. Stream -- (STRM)
8. Standing Water -- (STWA)
9. Sump -- (SUMP)
10. Soil Surface -- (SURF)
11. Well -- (WELL)

Columns 20-29 should be filled in with the site identification which should be left justified and should be listed as LHAAP and the Station number. Sampling depth should be listed in centimeters in columns 30-33. The sample technique should be listed in column 34 and the following is a list of letters which will be used for the types of sample which will be conducted:

B = Bailer

G = Single grab sampler

T = Tube core sampling

Columns number 35-39 should be left blank by the field sampling crew as well as columns 40 and 41. Columns number 42-47 should be filled in with the sample number code on each label. The code will consist of the sample number up to three digits, a one digit matrix code, and a one digit category code. The rest of the CDIR form can be left blank until a later date.

The Preparation of a Sample Manifest

After samples have been collected and logged in and the CDIR Form 13-2.1 has been completed, the samples should be placed in their shipping cases for transport to EPS Laboratory. This process should take place at the sample collection site if at all possible, and as different types of samples are placed back into their respective cases, certain specific information about each of them needs to be recorded on the sample manifest form. A copy of this sample manifest has been included as Figure 8A of this document. The chief field sampling technician will log each sample bottle in; he will write in the site number, matrix code and analytical code (these three pieces of information make up the sample identification). He will also put the date and time of the log-in down and he will then put the number of the shipping case in its appropriate spot and also include any notes about the sample condition or any other pertinent information. Once all of this information has been logged in,, the chief sampling technician will initial the second to the last column on the manifest indicating that the sample has been secured in an appropriate case and has been logged in for shipment. The sample manifest has been designed to hold information on 20 discreet samples and, in many cases, this will mean that one manifest will hold information about bottles contained in up to five different shipping cases. The manifest will be maintained by the chief of the field sampling crew and will be transmitted along with the samples at the time of shipping to the laboratory facility.

LONGHORN AAP, CONTAMINATION SURVEY SAMPLE SHIPPING AND TRANSFER MANIFEST

(Sheet of)

ITEM NO.	SAMPLE I.D.			LOG IN		NOTES	SHIPPING CASE NO.	SAMPLES LOGGED IN BY	
	SITE	MATRIX	ANAL. CODE	DATE	TIME			(Field)	(Lab)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Maintenance of Chain of Custody of Samples

The chief of the field sampling crew will be responsible for the maintenance of a clear chain of custody of each of the samples taken during the LHAAP Contamination Survey. The field sampling crew chief will see that once samples are logged in on the manifest and in the sample collection book that they are secured in a location which only he has direct access to (an example of this would be a locked refrigeration unit, room or a locked and refrigerated vehicle). The samples should be maintained either in direct site of the field sampling chief or under a locked condition until such time as they are transferred to an employee of EPS to transport the samples to the designated EPS laboratory. On the back of each sample manifest sheet is a certification statement which will allow for the documentable transfer of samples from the custody of the chief of the field sampling crew to the individual assigned with the responsibility of transporting the samples to the analytical laboratory. The appropriate information needs to be completed on each manifest at the time of transference of the samples for transport. An example of the certification statement for transference of samples is included as Figure 9A.

Transportation of Samples to the Laboratory

Water samples will be transported to EPS under refrigeration either using large insulated ice chest or a refrigerated truck. Samples which are destined for analysis in the laboratory should be transported as soon as possible to limit the holding time for those analytes particularly prone to degradation after collection. All water and soil samples collected should be maintained at approximately 4 °C until they are received at EPS's Jackson and Pensacola facilities.

The Transference of Sample Custody

The sample custody transference document has been incorporated into the certification statement on the back of each manifest sheet. See Figure 9A. At the time samples are delivered to EPS's Jackson and Pensacola facility, they will be checked in by the FQAC and he will initial each line indicating that each sample has been received. Additionally, he will sign the certification document in the appropriate spot certifying the receipt, time and date.

LOG BOOK 1

GROUNDWATER

LONGHORN AAP GROUNDWATER SAMPLING LOG SHEET
(MATRIX 1)

PART I: WELL NO. _____ (STATION)

Date: _____ Time: _____ (Hours)

Established *Depth to Bottom *Distance to Top
of Well _____ (ft) - of Water _____ (ft)

= Length of Water Column _____ (ft) X 0.815 =

Volume To Be Removed Before Sampling _____

PART II: Water Removal Begun: Date: _____ Time: _____ (Hrs.)

Volume of Water Removed: _____ (gal) Sampler: _____

Conductivity _____ (umho's)

Well Dry or Removal Complete Time: _____ (hours)

Remaining Volume To Be Bailed (if any) _____ (gal)

If Volume of Water Removed Equals That Required, Proceed to Part IV.

PART III: After at Least 16 Hours From First Attempt to Purge
Well, Proceed to Bail Well and Remove Remaining Required
Volume.

Date: _____ Time: _____ (Hours) Sampler _____

*Distance to Top of Water: _____ (ft)

Volume of Water Removed _____ + Previous Volume Removed

_____ = _____
Total Volume Removed

Conductivity _____ (umho's)

If Total Volume Removed Is Equal to Required Removal Volume,
Proceed Immediately to Part IV. If Not, Wait Sixteen Hours-then
proceed with Part IV.

(CONTINUED ON BACK)

LOG BOOK 2
SURFACEWATER

LHAAP, SURFACEWATER SAMPLING

Sample Point	Description of Site	Explosive Comp. Quantitative Analysis & Gen Org HPLC Screen (Analytical Category 1 & 5)		Anion Quantitative Analysis & Screening (Analytical Category No. 2)		Metal Quantitative Analysis & Screening (Analytical Category No. 3)	
		Sample 1 Gal. Amber Bt	Dup. Sample 1 Gal Amb Bt	Sample 1 Qt. Amber Bt	Dup. Sample 1 Qt. Amber Bt	Sample 1 Qt. Amber Bt	Dup. Sample 1 Qt. Amber Bt
001		ID 001-2-1&5	ID 001-2-1&5	ID 001-2-2	ID 001-2-2	ID 001-2-3	ID 001-2-3
002		ID 002-2-1		ID 002-2-2		ID 002-2-3	
003		ID 003-2-1					
004		ID 004-2-1		ID 004-2-2		ID 004-2-3	
005		ID 005-2-1		ID 005-2-2		ID 005-2-3	
006		ID 006-2-1					
007		ID 007-2-1					
008		ID 008-2-1					

[illegible]

LHAAP, SURFACE WATER SAMPLING

Sample Point	Description of Site	Expl. Comp. Quantitative Analysis & Gen. Org. HPIC SCR (Analytical Category 1 & 5)		Anion Quantitative Analysis & Screening (Analytical Category No. 2)		Metal Quantitative Analysis & Screening (Analytical Category No. 3)	
		Sample 1 Gal. Amb Bt	Dup. Sample 1 Gal Amb Bt	Sample 1 Qt Amb Bt	Dup. Sample 1 Qt Amb Bt	Sample 1 Qt Amb Bt	Dup. Sample 1 Qt Amb Bt
009		ID 009-2-1&5		ID 009-2-2		ID 009-2-3	
010		ID 010-2-1		ID 010-2-2		ID 010-2-3	
011		ID 011-2-1&5		ID 011-2-2		ID 011-2-3	
012		ID 012-2-1&5	ID 012-2-1&5	ID 012-2-2	ID 012-2-2	ID 012-2-3	ID 012-2-3
013		ID 013-2-1&5		ID 013-2-2		ID 013-2-3	
014		ID 014-2-1&5		ID 014-2-2		ID 014-2-3	
015		ID 015-2-1&5		ID 015-2-2		ID 015-2-3	
016		ID 016-2-1&5		ID 016-2-2		ID 016-2-3	

LOG SHEET (MATRIX 2)

GC/MS ORGANIC SCREENING ANALYSIS (Analytical Category No. 4)				GC/EC PESTICIDES & RELATED Compounds Screening Analysis (Analytical Category No. 6)		Sampler's Notes and Initials
Sample 1 Gal Amb Bt	Dup. Sample 1 Gal Am Bt	40 ml Sample Vial/2ea	40 ml Dup. Vial/2ea	Sample 1 Gal Amber Bt	Dup. Sample 1 Gal Amber Bt	
ID009-2-4		ID009-2-4V		ID009-2-6		
ID011-2-4		ID011-2-4V		ID011-2-6		
ID012-2-4	ID012-2-4	ID012-2-4V	ID012-2-4	ID012-2-6	ID012-2-6	
ID013-2-4		ID013-2-4V		ID013-2-6		
ID014-2-4		ID014-2-4V				
ID015-2-4		ID015-2-4V		ID015-2-6		
ID-16-2-4		ID016-2-4V				

LHMP, SURFACE WATER SAMPLING

Sample Point	Description of Site	Explosive Comp. Quantitative Analysis & Gen Org HPLC Screen (Analytical Category 1 & 5)			Anion Quantitative Analysis & Screening (Analytical Category No. 2)		Metal Quantitative Analysis & Screening (Analytical Category No. 3)	
		Sample 1 Gal Amb Bt.	Dup. Sample 1 Gal Amb Bt.		Sample 1 Qt Amb Bt.	Dup. Sample 1 Qt Amb Bt.	Sample 1 Qt Amb Bt.	Dup. Sample 1 Qt Amb Bt.
017		ID017-2-1&5			ID017-2-2		ID017-2-3	
018		ID018-2-1			ID018-2-2		ID018-2-3	
019		ID019-2-1&5			ID019-2-2		ID019-2-2	
020		ID020-2-1&5			ID020-2-2		ID020-2-3	ID020-2-3
021		ID021-2-1			ID021-2-2		ID021-2-3	

LOG SHEET (MATRIX 2)

[illegible]

LOG BOOK 3
SEDIMENTS

LHAAP, SEDIMENT SAMPLING LOG SHEET (MATRIX 3)

Sampl.	Description of Site	Sediment Sample for Uses in all Analytical Categories		Sampl.	Sampler's Notes and Initials
		Sample 1 Gal. Clear Jar	Dup. Sample 1 Gal. Clear Jar		
001		ID001-3-A11 _____	ID001-3-A11 _____		
002		ID002-3-A11 _____			
003		ID003-3-A11 _____			
005		ID005-3-A11 _____			
006		ID006-3-A11 _____			
007		ID007-3-A11 _____			
008		ID008-3-A11 _____			
009		ID009-3-A11 _____			

LHAAP, SEDIMENT SAMPLING LOG SHEET (MATRIX 3)

Sample Point	Description of Site	Sediment Sample for Uses in all Analytical Categories		Sample Date and Time	Sampler's Notes and Initials
		Sample 1 Gal Clear Jar	Dup. Sample 1 Gal Clear Jar		
010		ID010-3-A11 _____			
011		ID011-3-A11 _____	ID 011-3-A11		
012		ID012-3-A11 _____			
013		ID013-3-A11 _____			
014		ID014-3-A11 _____			
015		ID015-3-A11 _____			
016		ID016-3-A11 _____			
017		ID017-3-A11 _____			

LHAAP, SEDIMENT SAMPLING LOG SHEET (MATRIX 3)

Samp. Point	Description of Site	Sediment Sample for Uses in all Analytical Categories		Samp. Date and Time	Sampler's Notes and Initials
		Sample 1 Gal. Clear Jar	Dup. Sample 1 Gal. Clear Jar		
018		ID018-3-A11 _____			
019		ID019-3-A11 _____	ID 019-3-A11 _____		
020		ID020-3-A11 _____			
021		ID021-3-A11 _____			

LOG BOOK 4
SOILS

LHAAP, SOIL SAMPLING LOG SHEET (MATRIX 4)

Sample Point	Description of Site	Soil Sample for Uses in all Analytical Categories		Samp. Date and Time	Sampler's Notes and Initials
		Sample 1 Gal. Clear Jar	Dup. Sample 1 Gal. Clear Jar		
0101		ID 0101-4-A11 _____			
0102		ID 0102-4-A11 _____			
0103		ID 0103-4-A11 _____			
0201		ID 0201-4-A11 _____			
0202		ID 0202-4-A11 _____			
0203		ID 0203-4-A11 _____			
0301		ID 0301-4-A11 _____			
0302		ID 0302-4-A11 _____			

LHAAP, SOIL SAMPLING LOG SHEET (MATRIX 4)

Sample Point	Description of Site	Soil Sample for Uses in all Analytical Categories		Sampl. Date and Time	Sampler's Notes and Initials
		Sample 1 Gal. Clear Jar	Dup. Sample 1 Gal. Clear Jar		
0303		ID 0303-4-A11 _____			
0304		ID 0304-4-A11 _____			
0305		ID 0305-4-A11 _____			
0306		ID 0306-4-A11 _____			
0307		ID 0307-4-A11 _____			
0308		ID 0308-4-A11 _____			
0401		ID 0401-4-A11 _____	ID 0401-4-A11 _____		
0402		ID 0402-4-A11 _____			

Sample Point	Description of Site	Soil Sample for Uses in all Analytical Categories		Sampl. Date and Time	Sampler's Notes and Initials
		Sample 1 Gal. Clear Jar	Dup. Sample 1 Gal. Clear Jar		
0403		ID 0403-4-A11 _____			
0501		ID 0501-4-A11 _____	ID 0501-4-A11 _____		
0502		ID 0502-4-A11 _____			
0503		ID 0503-4-A11 _____			
0601		ID 0601-4-A11 _____			
0602		ID 0602-4-A11 _____			
0603		ID 0603-4-A11 _____			
0701T		ID 0701T-4-A11 _____			

Sample Point	Description of Site	Soil Sample for Uses in all Analytical Categories		Sampl. Date and Time	Sampler's Notes and Initials
		Sample 1 Gal. Clear Jar	Dup. Sample 1 Gal. Clear Jar		
0701B		ID 0701B-4-A11 _____			
0702T		ID 0702T-4-A11 _____			
0702B		ID 0702B-4-A11 _____			
0703T		ID 0703T-4-A11 _____			
0703B		ID 0703B-4-A11 _____			
0704T		ID 0704T-4-A11 _____			
0705B		ID 0705B-4-A11 _____	ID 0705B-4-A11 _____		
0801T		ID 0801T-4-A11 _____			

Sample Point	Description of Site	Soil Sample for Uses in all Analytical Categories		Sampl. Date and Time	Sampler's Notes and Initials
		Sample 1 Gal. Clear Jar	Sample 1 Gal. Clear Jar		
0801B		ID 0801B-4-A11 _____			
0802T		ID 0802T-4-A11 _____			
0802B		ID 0802B-4-A11 _____			
0803T		ID 0803T-4-A11 _____			
0803B		ID 0803B-4-A11 _____			