RECEIVED
JAN 2 3 2015
NMED
Hazardous Waste Bureau
JAN 1 2 2015

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)

Colonel Tom D. Miller
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5000

Mr. Jerry Schoeppner
New Mexico Environment Department (NMED)
Ground Water Quality Bureau
1190 St. Francis Drive, Room N2150
Santa Fe, New Mexico 87502-5469

Dear Mr. Schoeppner

Kirtland Air Force Base (AFB) is pleased to submit the "Final Stage 2 Abatement Program for Nitrate-Contaminated Groundwater (Site ST-105) Sixth Annual Groundwater Monitoring Report, January 2015". The submittal is being presented as both hard copy and compact disc for your convenience.

Please contact Mr. Cole Crosgrove at (505) 853-3098 or at cole.crosgrove@kirtland.af.mil if you have any questions.

Sincerely

TOM D. MILLER, Colonel, USAF
Commander

Attachment:
Final Stage 2 Abatement Program for Nitrate-Contaminated Groundwater (Site ST-105) Sixth Annual Groundwater Monitoring Report, January 2015

cc:
NMED-GWQB (B. Faris), w/ hard and cd copy
NMED-HWB (J. Kieling), w/ cd copy
SNL (M. Skelly), w/ cd copy
EPA Region 6 (L. King), w/out attach
AFCEC/CZO (L. Oyelowo), w/out attach
Administrative Record/Information Repository (AR/IR), w/ attach
File, w/ attach

KAFB4211

KIRTLAND AIR FORCE BASE
ALBUQUERQUE, NEW MEXICO

Stage 2 Abatement Program for Nitrate-Contaminated Groundwater (Site ST-105) Sixth Annual Groundwater Monitoring Report

January 2015

377 MSG/CEANR
2050 Wyoming Boulevard SE
Kirtland AFB, New Mexico 87117-5670

Kirtland Air Force Base, Albuquerque, New Mexico **January 2015**

Stage 2 Abatement Program for Nitrate-Contaminated Groundwater (Site ST-105)
Sixth Annual Groundwater Monitoring Report

KIRTLAND AIR FORCE BASE
ALBUQUERQUE, NEW MEXICO

FINAL
STAGE 2 ABATEMENT PROGRAM FOR NITRATE-CONTAMINATED GROUNDWATER (SITE ST-105) SIXTH ANNUAL GROUNDWATER MONITORING REPORT

January 2015

Prepared for:
Air Force Civil Engineering Center
2261 Hughes Avenue, Suite 163
Lackland Air Force Base, Texas 78236-9861

Contract No. FA8903-08-D-8602, Task Order No. R156

Prepared by
CAPE Environmental Management, Inc.
12037 Starcrest Drive
San Antonio, Texas 78247-4349

NOTICE

CAPE Environmental Management, Inc. prepared this Sixth Annual Groundwater Monitoring Report for the Air Force Civil Engineering Center and Kirtland Air Force Base for the purpose of aiding in the implementation of a final remedial action plan under the U.S. Air Force Environmental Compliance Program. Because the report relates to actual or possible releases of potentially hazardous substances, its distribution prior to an Air Force final decision on remedial action may be in the public's interest. The limited objectives of this report and the ongoing nature of the Environmental Compliance Program, along with the evolving knowledge of site conditions and chemical effects on the environment and health, must be considered when evaluating this report, since subsequent facts may become known that may make this report premature or inaccurate.

A copy of this document is available for public review at the Central New Mexico Community College, Montoya Campus Library Reference Section at 4700 Morris NE in Albuquerque, New Mexico.

Government agencies and their contractors registered with the Defense Technical Information Center should direct requests for copies of this study to the Defense Technical Information Center, Cameron Station, Alexandria, Virginia 22304-6145.

Non-government agencies may purchase copies of this document from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161. Inquiries regarding the associated postage and handling charges can be directed to the NTIS at (703) 605-6000.

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE	Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to U.S. Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. AGENCY USE ONLY	2. REPORT DATE January 2015	3. REPORT TYPE AND DATES COVERED Annual Groundwater Monitoring Report

4. TITLE AND SUBTITLE	5. FUNDING NUMBERS
Stage 2 Abatement Program for Nitrate-Contaminated Groundwater (Site ST-105) Sixth Annual Groundwater Monitoring Report, Kirtland Air Force Base, New Mexico	Contract No. FA8903-08-D-8602 Task Order No. R156
6. AUTHOR(S) CAPE Environmental Management, Inc.	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) CAPE Environmental Management, Inc. 12037 Starcrest Drive, San Antonio, Texas 78247-4349	8. PERFORMING ORGANIZATION REPORT NUMBER Not assigned
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) HQ AFCEC 2261 Hughes Avenue, Suite 163 Lackland Air Force Base, Texas 78236-9861	10. SPONSORING/MONITORING AGENCY REPORT NUMBER A001f

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT	12b. DISTRIBUTION CODE

13. ABSTRACT

The Sixth Annual Groundwater Monitoring Report documents activities conducted from September 2013 through July 2014 as part of the Stage 2 Abatement Program for nitrate-contaminated groundwater at Kirtland Air Force Base, New Mexico. This Report describes the sampling activities, presents the analytical data, and evaluates the progress of the remedial action.

14. SUBJECT TERMS Stage 2 Abatement Program for Nitrate-Contaminated Groundwater (Site ST-105) Sixth Annual Groundwater Monitoring Report	15. NUMBER OF PAGES: 42
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION	20. LIMITATION OF ABSTRACT

THIS PAGE INTENTIONALLY LEFT BLANK

40 CFR 270.11
DOCUMENT CERTIFICATION
JANUARY 2015

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

TOM D. MILLER, Colonel, USAF
Commander, 377th Air Base Wing

This document has been approved for public release.

KIRTLAND AIR FORCE BASE
377th Air Base Wing Public Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

NATURAL RESOURCE INJURY

The Natural Resource Injury (NRI) Program is a mechanism designed to restore natural resources injured by hazardous substance releases. The NRI Program requires parties responsible for contamination and injuries to pay for losses, and measures natural resource injuries and determines liability. The NRI Program demonstrates the nature of injury and any environmental pathways. It also measures the extent of injury and the necessary restoration measures and costs. In certain cases, restoration may include replacement or acquisition of equivalents for habitats; populations of wildlife; and human services, including hunting, fishing, and recreational activities.

The NRI Program is carried out by various federal, state, and tribal trustees for fish, wildlife, other living resources, water, lands, and protected areas. Trusteeship is derived from treaties (federal and tribal), statutes (federal and state), and other regulations. Federal agencies responsible for land management include the U.S. National Park Service; U.S. Fish and Wildlife Service; U.S. Bureau of Land Management; U.S. Department of Agriculture, including the U.S. Forest Service; U.S. Department of Defense; and the U.S. Department of Energy.

The NRI Program has established a restoration fund to be used to restore resources lost or injured by the release of hazardous materials and oil spills. The NRI Program has been traditionally associated with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLA directed the Department of Interior to prepare rules for NRI at hazardous waste sites and for emergency incidents involving CERCLA substances.

CERCLA and the Resource Conservation and Recovery Act provide tools to clean up contaminants from the environment. These cleanup programs focus on risks to human health and the environment but do not provide efforts for the restoration or compensation for natural resources. The programs are primarily carried out by the U.S. Environmental Protection Agency working with the states. These programs do not concentrate on restoring natural resources, although cleanup may prevent further injuries to natural resources. With regard to injuries to natural resources, CERCLA states the following: (1) responsible parties are liable for compensatory damages for injuries to natural resources owned, managed, or controlled by government agencies or Indian tribes; (2) government agencies and Indian tribes may assess and collect the damages, acting on behalf of the public as trustees for the injured natural resources; and (3) recovered damages must be used to restore, rehabilitate, replace, or acquire the equivalent of the injured natural resources. Therefore, the NRI Program was established to ensure restoration and compensation where needed and appropriate.

Conclusions and Recommendations:

Based on the site-specific conditions of Kirtland Air Force Base, the subject site is unlikely to require the NRI program. The sampling activities described herein have not attributed NRI to the site. The pre-investigation condition of the site has been maintained, and the sampling activities were conducted using minimally invasive tools and techniques. The field activities were developed and conducted to minimize any NRI.

THIS PAGE INTENTIONALLY LEFT BLANK

ENVIRONMENTAL JUSTICE CONSIDERATION

Presidential Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of federal programs, policies, and activities on minority and low-income populations. For purposes of this report, the population within a 50-mile radius around Kirtland Air Force Base (AFB) was considered. Demographic and economic census information presented in Addressing Environmental Justice under the National Environmental Policy Act at Sandia National Laboratories (SNL)/New Mexico (SNL, 1997) and the United States Census Bureau (USCB) web site (http://quickfacts.census.gov/qfd/states/35/3502000.html accessed on October 6, 2010) were used as primary references.

The population living within a 50-mile radius of Kirtland AFB, which exceeds 49 percent of the total population according to census data (SNL, 1997), was evaluated with regard to health and environmental effects from activities at Kirtland AFB. Similarly, the low-income population, which exceeds 21 percent of the general population, was analyzed for effects from corrective measures activities at Kirtland AFB.

Minority populations are considered to be all people of all color except white people who are not Hispanic. In 1990, 49 percent (51 percent by 1996, 34.2 percent by 2000) of New Mexico's population was minority (USCB, 1998; http://quickfacts.census.gov/qfd/states/35/3502000.html accessed on October 6, 2010). Neighborhoods having minority population percentages exceeding the minority population percentage of 49 percent (slightly more conservative than 51 percent) were identified on a block-by-block basis with clusters of blocks known as block groups.

The USCB characterizes persons in poverty (low-income persons) as those whose incomes are less than a statistical poverty threshold. The threshold is a weighted-average based on family size and age of family members. For instance, the 1990 census threshold for a family of four was based on a 1989 household income of $12,674 (USCB, 1990). By 1996, the household income threshold rose to $16,036 (USCB, 1997). In 1989, 21 percent of New Mexico's population was listed in poverty or designated as having low income (USCB, 1996). By 1996, the estimated percentage stood at 24 percent (USCB, 1997) and by 2000, the state-wide percent decreased to 18.4 (http://quickfacts.census.gov/qfd/states/35/3502000.html accessed on October 6, 2010). In this analysis, low-income block groups (same as above) occur where the low-income population percentage in the block group exceeds the poverty percentage for the state of New Mexico.

According to 1990 census data, approximately 280,360 minority individuals from an approximate total population of 609,500 reside within the 50-mile radius. This represents 46 percent of the total radius of-influence population (SNL, 1997).

Block groups having less than 21 percent low-income individuals were not considered to contain a large number of low-income neighborhoods because they contain less than or equal to the state average of 21 percent. Approximately 85,330 persons were identified as being low income, thus representing approximately 14 percent of the radius-of-influence population.

This distribution of low-income population has a strong correlation to minority populations of Blacks, Native Americans, and Hispanics. For example, portions of the Pueblo of Isleta, south of the city, have high percentages of low-income individuals. To the southeast of Kirtland AFB, the rural Hispanic villages of Tajique, Torreon, and Escobosa are also low income. To the north of Kirtland AFB, high concentrations of low-income populations are located in the Pueblos of Jemez, Santo Domingo, and

Cochiti, as well as in the rural Hispanic villages of La Cienega and Jemez Springs. High concentrations of low-income populations occur west of Kirtland AFB, along the Rio Grande, in the predominantly Hispanic South Valley neighborhoods. In addition, small pockets of low-income populations reflect the locations of Black neighborhoods such as the Kirtland Addition and South Broadway/East San Jose areas.

The environmental and human health effects considered for this investigation include potential impacts to soil from contamination, restricted access by Native Americans to traditional cultural sites, biological resources, air quality, and noise. Based on the findings of this report, there are no identified negative impacts from the area of concern that would pose adverse health effects on the general human populations. Based on the analysis of any potential impacts, there would be no disproportionately high or adverse impacts to minority and low-income populations. Any impacts as a result of restrictions of access to cultural sites would be removed by coordination between Kirtland AFB and the local tribes to develop processes to allow access during periods in which safety standards and practices would be maintained.

PREFACE

This report documents the annual groundwater monitoring activities conduction from September 2013 through July 2014 as part of the Stage 2 Abatement Program for Nitrate-Contaminated Groundwater at Kirtland Air Force Base (AFB), New Mexico. The work documented in this report was performed under the Stage 2 Abatement Plan approved by New Mexico Environment Department in a letter dated September 26, 2008.

The Environmental Restoration Branch Chief for this program is Mr. Ludie (Wayne) Bitner of Kirtland AFB. Mr. Cole G. Crosgrove is the Kirtland AFB Environmental Restoration Branch Project Manager. This report was prepared by CAPE Environmental Management, Inc.

Dave Bettendorf
CAPE Environmental Management, Inc.
Project Manager

THIS PAGE INTENTIONALLY LEFT BLANK

CONTENTS

Section **Page**

ACRONYMS AND ABBREVIATIONS xii

EXECUTIVE SUMMARY ES-1

1. INTRODUCTION 1-1

1.1 Background 1-1
1.2 Overview of Report 1-2

2. FIELD ACTIVITIES 2-1

2.1 Water-Level Elevation Measurements 2-1
2.2 Groundwater Sampling 2-1
2.3 The Tijeras Arroyo Golf Course Water Application 2-2
2.4 Abatement Action – Groundwater Extraction and Use 2-2

3. GROUNDWATER MONITORING RESULTS 3-1

3.1 Groundwater Level Measurements 3-1
3.2 Groundwater Analytical Results 3-1
3.3 Natural Attenuation Evaluation 3-2
3.4 Investigation Derived Waste 3-4

4. CONCLUSIONS AND RECOMMENDATIONS 4-1

REFERENCES

APPENDICES

A Well Gauging Data Forms for Semiannual Gauging Events and Water Quality Field Data Sheets for Annual Sampling Event

B Laboratory Analytical Reports

C Data Quality Assessment Report

FIGURES

Figure

1-1 General Location Map for Site ST-105

2-1 Monitoring Well Locations

2-2 Well Location Map, McCormick Ranch Area

3-1 Fall 2013 Groundwater Elevation Map for the Perched Aquifer at Site ST-105

3-2 Spring 2014 Groundwater Elevation Map for the Perched Aquifer at Site ST-105

3-3 Fall 2013 Groundwater Elevation Map for the Regional Aquifer at Site ST-105

3-4 Spring 2014 Groundwater Elevation Map for the Regional Aquifer at Site ST-105

3-5 Spring 2014 Groundwater Elevation Map for the Regional Aquifer at McCormick Ranch Area

3-6 Nitrate Concentrations in the Perched Aquifer at Site ST-105

3-7 Nitrate Concentrations in the Regional Aquifer at Site ST-105

3-8 Nitrate Concentrations in the Regional Aquifer at McCormick Ranch Area

3-9 Dissolved Oxygen Concentrations in the Perched Aquifer at Site ST-105

3-10 Dissolved Oxygen Concentrations in the Regional Aquifer at Site ST-105

TABLES

Table

2-1 Sample Locations for the Sixth Annual Groundwater Monitoring Event for the Stage 2 Abatement Plan at Site ST-105

2-2 Analytical Parameters and Testing Methods Used for the Sixth Annual Groundwater Monitoring Event for the Stage 2 Abatement Plan at Site ST-105

2-3 Meter Readings for Production Wells KAFB-0602, KAFB-0609, KAFB-0610, and Golf Course Production Well

2-4 Groundwater Extraction and Use at Site ST-105

3-1 Water Level Elevations for Monitoring Wells at Site ST-105

3-2 Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

ACRONYMS AND ABBREVIATIONS

ABCWUA	Albuquerque Bernalillo County Water Utility Authority
AFB	Air Force Base
CAPE	CAPE Environmental Management, Inc.
GCMP	Golf Course main pond
KAFB	Kirtland Air Force Base
mg/L	milligram per liter
msl	mean sea level
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMWQCC	New Mexico Water Quality Control Commission
NTIS	National Technical Information Service
SNL	Sandia National Laboratories
SNL/NM	Sandia National Laboratories/New Mexico
SWMU	Solid Waste Management Unit
TDS	total dissolved solids
USAF	U.S. Air Force
USCB	U.S. Census Bureau

EXECUTIVE SUMMARY

This Sixth Annual Groundwater Monitoring Report for the Stage 2 Abatement Program was prepared to document the remediation of nitrate-contaminated groundwater at Kirtland Air Force Base (AFB), New Mexico. The purpose of the Stage 2 Abatement Program is to evaluate potential abatement options for nitrate-contaminated groundwater at Kirtland AFB and to select and design an abatement option that will meet regulatory requirements. A combination of monitored natural attenuation, and pump and use were selected as the abatement options for nitrate-contaminated groundwater at Kirtland AFB. Monitoring under the Stage 2 Abatement Program is intended to track both the groundwater quality and quantity of contaminated groundwater extracted under the abatement program. The primary objective of the Stage 2 Abatement Program is to evaluate natural attenuation of nitrate-contaminated groundwater at Kirtland AFB. A secondary objective is to monitor and evaluate groundwater withdrawal and land application at the Tijeras Arroyo Golf Course. This Report documents field activity for the Stage 2 Abatement Program performed from September 2013 through June 2014. This Report also documents the monitoring activities for the Tijeras Arroyo Golf Course groundwater withdrawal performed from September 2013 through June 2014.

Depth-to-groundwater measurements were collected from 73 monitoring wells in the fall of 2013. An accident that occurred on December 11, 2013, while attempting to sample golf course main pond monitoring well Kirtland AFB (KAFB)-0609, led to a stop-work order and subsequent safety investigation. As a result, water levels at 37 monitoring wells were not collected in the fall of 2013. Groundwater flow in the regional aquifer is generally to the northwest in the monitoring area and is influenced by groundwater withdrawals from Kirtland AFB and city of Albuquerque water supply wells. Groundwater flow in the perched aquifer is to the southeast.

Groundwater samples were collected from one surface water body and 38 monitoring wells during the fall 2013 and spring 2014 monitoring events. Groundwater and surface water samples were analyzed for field parameters and laboratory parameters, including total dissolved solids, major anions, major cations, iron, manganese, alkalinity, total organic carbon, nitrate, nitrite, ammonia, and total Kjeldahl nitrogen. Nitrate concentrations at or above the New Mexico Water Quality Control Commission (NMWQCC) standard of 10 milligrams per liter (mg/L) were found in groundwater from 16 regional aquifer wells and 5 perched aquifer wells. The nitrate concentrations detected at or above the NMWQCC standard ranged from 2.62 to 350 mg/L in the regional aquifer and 2.19 to 63.2 mg/L in the perched aquifer. Areas with nitrate concentrations exceeding the NMWQCC standard included the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) sanitary sewer line breaks and ponding areas; the Tijeras Arroyo; Coyote Arroyo; Sandia National Laboratories Technical Areas II and IV; and a broad area surrounding the Tijeras Arroyo Golf Course.

The highest nitrate concentration measured in the regional aquifer was350 mg/L in the samples from well KAFB-0505. This well is located in Plume 1 just north of the closed sewage lagoons. The lateral extent of Plume 1 contamination now extends east beyond well KAFB-0525 (adjacent to the ABCWUA sanitary sewer line) and west to well KAFB-0520. The vertical extent of nitrate groundwater contamination in Plume 1 extends up to 150 feet into the regional aquifer, based on data from well KAFB-0523. The depth of contamination is thought to be associated with past groundwater withdrawal from production well KAFB-2. Production well KAFB-2 was taken out of service in 2006. It is anticipated that nitrate concentrations in the vicinity will stabilize or decrease.

Nitrate concentrations in regional aquifer Plume 2 have been relatively stable in most of the wells within the plume boundaries. In 2010, Plume 2 boundaries were expanded to the north and to the east as a result of samples collected from newly installed monitoring wells KAFB-0624 and KAFB-0625. Nitrate concentrations were detected above 10.0 mg/L in well KAFB-0624 along the northeastern Kirtland AFB boundary, and well KAFB-0625 in the southeastern Plume 2 area.

In 2007, monitoring at McCormick Ranch was incorporated into the Stage 2 Abatement Program. Elevated groundwater nitrate concentrations have been detected at McCormick Ranch since monitoring began in 1997. Nitrate concentrations were not detected above the NMWQCC standard during the spring 2014 sampling event. However, McCormick Ranch monitoring wells KAFB-1006 and KAFB-1009 could not be sampled due to a faulty dedicated pump and a decline in groundwater elevations in the area.

The perched aquifer nitrate plume is mapped as one contiguous plume and referred to as Plume 4 in this Report. The highest nitrate concentration measured in the perched aquifer was collected from well KAFB-0623 at 63.2 mg/L. Well KAFB-0623 is located in the middle of Plume 4 adjacent to the Tijeras Arroyo and downgradient of the ABCWUA sanitary sewer line. Groundwater nitrate concentrations at the head and distal portions of the Plume 4 boundary appear to be stable or declining, while concentrations are increasing in the center of the plume in the Tijeras Arroyo. This suggests that there is an active source of nitrate contamination for Plume 4 in the vicinity of the Tijeras Arroyo.

A leak-detection survey of the ABCWUA sewer lines in the Kirtland AFB rights-of-way is recommended to determine if the sewer lines are an active source of nitrate contamination in the regional and perched aquifers. The increasing groundwater nitrate concentration trends observed at the head of Plume 1and the center of Plume 4 in the Tijeras Arroyo are evidence of an ongoing source of nitrate contamination in this area.

1. INTRODUCTION

This Sixth Annual Groundwater Monitoring Report (also referred to as Report) documents annual monitoring activities conducted at Kirtland Air Force Base (AFB) from September 2013 through June 2014 under the *Stage 2 Abatement Plan for Nitrate-Contaminated Groundwater at Kirtland Air Force Base* (U.S. Air Force [USAF], 2007). The purpose of the Stage 2 Abatement Plan was to select the preferred abatement option and provide a framework for the implementation of the remedy. The Abatement Plan specifies a combination of pump and use, and monitoring and natural attenuation as the preferred abatement action. This Abatement Plan was approved by the New Mexico Environment Department (NMED) in a letter, dated September 26, 2008 (NMED, 2008). Monitoring data presented in this Report documents the implementation of the selected abatement as directed in New Mexico Administrative Code (NMAC) Title 20 Section 6.2. Figure 1-1 presents a site location map for Site ST-105 abatement action.

This Report was prepared as part of the USAF Environmental Compliance Program. The work described in the Report was performed under Contract No. FA8903-08-D-8602, Task Order. R156 by CAPE Environmental Management, Inc. (CAPE). The activities presented in this Report were conducted using the procedures outlined in the *Kirtland Air Force Base, Final Base-Wide Plans for the Environmental Restoration Program, 2004 Update* (USAF, 2004), unless specifically modified by the Stage 2 Abatement Plan (USAF, 2007), and are detailed in CAPE's approved *Quality Assurance Project Plan (QAPP) for Long-Term Groundwater Monitoring at Multiple Sites: Solid Waste Management Unit (SWMU) 6-1, Landfill 1; SWMU 6-2, Landfill 2; SWMU 6-4, Landfills 4, 5, and 6; ST-105 (CG-C564); UST-58 (PL567); WP026; and ST070* (CAPE, 2013). The Quality Assurance Project Plan was prepared to meet the most recent requirements of the U.S. Department of Defense regarding planning documents for U.S. Department of Defense facilities, and covers only groundwater monitoring.

The following appendices are included in this report:

- Appendix A – Well Gauging Data Forms for Semiannual Gauging Events and Water Quality Field Data Sheets for Annual Sampling Event
- Appendix B – Laboratory Analytical Reports
- Appendix C – Data Quality Assessment Report

1.1 Background

In a letter dated July 2, 1999, the Assessment and Abatement section of the Groundwater Quality Bureau of NMED required Kirtland AFB to complete a Stage 1 Abatement Plan to investigate nitrate-contaminated groundwater (NMED, 1999). Groundwater nitrate concentrations from monitoring wells at the closed sewage lagoons, the Tijeras Arroyo Golf Course main pond (GCMP), and production well Kirtland AFB (KAFB)-7 were historically measured above the New Mexico Water Quality Control Commission (NMWQCC) standard of 10 milligrams per liter (mg/L) (20 § 7.1 NMAC).

NMED specifically named three areas at Kirtland AFB as suspected sources of nitrate-contaminated groundwater: the closed sewage lagoons, the GCMP, and a 1994 Albuquerque Bernalillo County Water Utility Authority (ABCWUA) sanitary sewer line break. In 2003, subsequent to the NMED abatement order, an ABCWUA sanitary sewer line ruptured in the Tijeras Arroyo. The Stage 1 Abatement Plan investigations were expanded to include the area impacted by the 2003 sanitary sewer line break. The

Stage 1 Abatement Plan for nitrate-contaminated groundwater was prepared and submitted to NMED for approval in August 2000 (USAF, 2000). NMED formally approved the Stage 1 Abatement Plan on May 31, 2001, and amended the approval on July 6, 2001.

The initial Stage 1 Abatement Plan groundwater monitoring event was conducted from September through October 2001. The results were reported in the *Semiannual Groundwater Monitoring Report for the Stage 1 Abatement Plan for Nitrate-Impacted Groundwater at Kirtland Air Force Base, New Mexico* (USAF, 2002a).

In April 2002, an Interim Stage 2 Abatement Plan was submitted to NMED (USAF, 2002b). Activities outlined in the Interim Stage 2 Abatement Plan provided for hydraulic containment and mass removal of nitrate-contaminated groundwater near production well KAFB-7 and for the beneficial use of the nitrate-contaminated groundwater produced from the well. As part of the Interim Stage 2 Abatement Plan, production well KAFB-7 was redeveloped and tested, and a water transmission pipeline was constructed to move water from the production well to the GCMP.

The Interim Stage 2 Abatement Plan required water quality monitoring in the regional aquifer near production well KAFB-7 using three monitoring wells: KAFB-0505, KAFB-0507, and KAFB-0508. These wells were also included in the Stage 1 Abatement Plan monitoring program.

The Stage 2 Abatement Plan was completed in July 2007 and approved in September 2008 (USAF, 2007). Semiannual monitoring was supplanted by annual monitoring conducted in two events (by east and west plumes) with the implementation of the Stage 2 Abatement Plan. A Revised Stage 2 Abatement Plan was completed in December 2009. The revised plan concludes that groundwater nitrate contamination is not the result of Kirtland AFB sources, and recommends No Further Action as the preferred abatement alternative. The revised plan is still pending review by NMED.

The McCormick Ranch is an undeveloped property located adjacent to the southwestern corner of Kirtland AFB and is bordered on the north by the Department of Energy buffer zone, on the east by Kirtland AFB, on the south by Isleta Pueblo, and on the west by the Mesa del Sol development area. Monitoring activities at McCormick Ranch were incorporated into the Stage 2 Abatement Plan in 2007 (USAF, 2007). The USAF previously leased the 8-square-mile parcel of land from the state of New Mexico and used 747.24 acres of it for explosives testing (Phillips Laboratory, 1993 and 1994). The Resource Conservation and Recovery Act Facility Investigations of McCormick Ranch did not identify groundwater contamination associated with explosives testing at the site (USAF, 1993 and 1997). Elevated groundwater nitrate concentrations have been detected at McCormick Ranch since a long-term monitoring program began in 1996.

1.2 Overview of Report

The report is divided into the following sections:

- Section 1 presents an introduction to the project, summarizes background information, and provides an overview of the Report.

- Section 2 provides a discussion of the field activities performed from September 2013 through June 2014, including measuring water levels, conducting groundwater sampling, and monitoring water application at the Tijeras Arroyo Golf Course.

- Section 3 discusses the results of the field activities.
- Section 4 presents the conclusions and recommendations.

Appendix A contains the Well Gauging Data Forms and Water Quality Field Data Sheets for the groundwater monitoring activities conducted at ST-105. Appendix B includes the laboratory analytical reports for the 2014 annual groundwater sampling event. Appendix C contains the Data Quality Assessment Report from the groundwater analytical results.

THIS PAGE INTENTIONALLY LEFT BLANK

2. FIELD ACTIVITIES

Groundwater monitoring, nitrate-contaminated water extraction, and nitrogen application monitoring performed between September 2013 and June 2014 are described in this section. Annual groundwater monitoring was performed during two events (fall 2013 and spring 2014). The fall 2013 event included groundwater elevation measurements and sampling monitoring well KAFB-0523. The spring 2014 event included groundwater elevation measurements and the sampling of 33 wells at Site ST-105. Groundwater extraction readings from wells KAFB-0602, KAFB-0609, KAFB-0610, and the golf course production well were recorded monthly as part of the ST-105 monitoring.

Site-specific monitoring methods and procedures were performed in accordance with the *Final Groundwater Monitoring Work Plan for the Stage 2 Abatement Plan for Nitrate-Contaminated Groundwater* (USAF, 2010) submitted to the Air Force Center for Engineering and the Environment. General monitoring procedures were performed according to the Hazardous Waste Treatment Facility Operating Permit (NMED, 2010), and the Kirtland AFB Base-Wide Plans (USAF, 2004).

2.1 Water-Level Elevation Measurements

Depth-to-groundwater measurements were collected from 73 monitoring wells between November 4 and December 10, 2013. An accident that occurred on December 11, 2013, while attempting to sample GCMP monitoring well KAFB-0609, led to a stop-work order and subsequent safety investigation. As a result, water levels at 37 monitoring wells were not collected in the fall of 2013. Groundwater elevation data was not collected from KAFB-0521 and KAFB-3391 due to both wells having obstructions in the well casing. Monitoring well KAFB-0624 was not measured because the length of the water-level meter was insufficient for the depth of the well. The groundwater level measurement data forms are presented in Appendix A. Locations of the groundwater monitoring wells are shown on Figures 2-1 and 2-2.

2.2 Groundwater Sampling

Thirty-eight wells were sampled during the fall 2013 and spring 2014 monitoring events. One surface water sample was collected from the GCMP. Analytical results for the annual sampling are presented in Appendix B.

The production and monitoring wells were selected to provide comprehensive data for the areas affected by nitrate in groundwater. The surface water samples were collected to provide information on the pump and use remedial action (USAF, 2007). Samples were collected from monitoring wells screened in both the regional and perched aquifers. Table 2-1 presents the monitoring well locations and the aquifer in which each well was screened. Locations of the groundwater monitoring wells are shown on Figures 2-1 and 2-2. Monitoring wells KAFB-1009 and KAFB-0512 could not be sampled due to insufficient water columns, and well KAFB-1006 could not be sampled because of a faulty dedicated pump. Production well KAFB-7 was not functioning at the time of sampling, and therefore, no samples were collected. Monitoring wells KAFB-0602 and KAFB-0608 at the GCMP were not sampled due to an accident that occurred at an adjacent GCMP monitoring well, as mentioned above. The accident and subsequent safety investigation also affected the sampling of monitoring wells KAFB-0521 and KAFB-0626, which were deemed unsafe due to the unfamiliarity of the dedicated sampling equipment.

Groundwater samples and the surface water sample collected during the fall 2013 and spring 2014 events were analyzed for the parameters presented in Table 2-2. Laboratory analyses were performed for nitrate, nitrite, ammonia, total Kjeldahl nitrogen, major anions, major cations, alkalinity, dissolved organic carbon, and total dissolved solids (TDS). The groundwater sampling forms for the sample locations are presented in Appendix A.

2.3 The Tijeras Arroyo Golf Course Water Application

Flow from extraction wells KAFB-0602, KAFB-0609, and KAFB-0610; and the golf course production well (KAFB-1598) are monitored on a monthly basis to document the volume of nitrate-contaminated groundwater supplied to the GCMP. Table 2-3 provides the water production volumes.

The abatement option implemented from the Interim Stage 2 Abatement Plan outlines how groundwater pumped from production well KAFB-7 was routed to the GCMP for application to the Tijeras Arroyo Golf Course. Tijeras Arroyo Golf Course irrigation system volumes were not collected during the period of performance for this Report; therefore, an analysis of supplied water to the pond by production wells versus the amount of water applied to the Tijeras Arroyo Golf Course cannot be provided.

2.4 Abatement Action – Groundwater Extraction and Use

In accordance with the Stage 2 Abatement Plan, well KAFB-7 is used to extract nitrate-contaminated groundwater for beneficial use as irrigation water. Nitrate-contaminated groundwater from the regional aquifer is extracted at well KAFB-7 and transmitted to the GCMP through an underground pipeline. The nitrate-contaminated groundwater pumped to the GCMP is used as irrigation water for the golf course. The objectives of the abatement action are to remove nitrate mass from the regional aquifer and provide partial capture of nitrate in Plume 1 as it migrates toward downgradient water supply well KAFB-16. The extraction of nitrate-contaminated groundwater by well KAFB-7 has resulted in steady or slightly declining groundwater nitrate concentrations in the vicinity of this well. Changes in Plume 1 are discussed in Section 4.

For the period from September 2002 through June 2014, approximately 66.38 million gallons of groundwater have been extracted and conveyed to the GCMP. A summary of the groundwater volume produced by wells KAFB-0602, KAFB-0609, KAFB-0610 and the golf course production well is presented in Table 2-4.

3. GROUNDWATER MONITORING RESULTS

Results from the sixth annual groundwater monitoring event are discussed in this section.

3.1 Groundwater Level Measurements

The well locations, and groundwater elevation contours for the fall 2013 and spring 2014 events are shown on Figures 3-1 through 3-5, respectively. The depth-to-water measurements and groundwater elevations are documented on the Well Gauging Data forms presented in Appendix A and are summarized in Table 3-1.

The perched aquifer is present in the central and eastern portions of Kirtland AFB. The upgradient northwestern edge of the perched groundwater unit is thin and incongruous. This groundwater unit slopes to the southeast where it meets the regional aquifer. Groundwater flow in the perched aquifer is typically to the southeast and in the approximate opposite direction of the regional groundwater flow direction.

During the fall 2013 and spring 2014 monitoring events, the perched groundwater flow direction was consistently to the southeast (Figures 3-1 and 3-2). Groundwater elevations in the perched aquifer during the period of performance ranged from 5,021.62 feet (feet) above mean sea level (msl) in well KAFB-0619 to 5,159.24 feet above msl in well KAFB-2625. Depth to the perched water table below Site ST-105 ranged from 197.35 to 416.23 feet below the top of the well casing as measured in wells KAFB-2625 and KAFB-0314, respectively.

During the fall 2013 and spring 2014 monitoring events, the regional groundwater flow direction was to the northwest in the monitoring area (Figures 3-3 and 3-4). The groundwater flow direction in the regional aquifer in the northern part of Kirtland AFB is influenced by current groundwater withdrawals from Kirtland AFB and recent withdrawals from the ABCWUA water supply wells. Groundwater elevations in the regional aquifer during the period of performance ranged from 4,853.7 feet above msl in well KAFB-0510 to 5,582.16 feet above msl in well KAFB-2009. Depth to the regional water table below Site ST-105 ranged from 109.58 to 627.59 feet below the top of the well casing as measured in wells KAFB-2005 and KAFB-0621, respectively.

Groundwater flow direction in the McCormick Ranch area is not clearly defined because the wells are present in a linear arrangement with an axis not located along the maximum gradient direction (Figure 3-5). Historical regional groundwater elevation data indicate seasonal fluctuations with flat or decreasing long-term trends across many areas.

3.2 Groundwater Analytical Results

The field parameter measurements and laboratory analytical results for nitrogen species, major anions, major cations, alkalinity, dissolved organic carbon, and TDS are summarized in Table 3-2. The field data sheets from the sampling event are presented in Appendix A. Laboratory analytical reports are provided in Appendix B. The data quality assessment report is included as Appendix C. All data were determined to be usable for the purpose of this Report and qualified as necessary.

Nitrate

Nitrate concentrations exceeded the NMWQCC standard of 10 mg/L (20 § 7.1 NMAC) in samples collected from 20 wells (16 regional aquifer wells and 5 perched aquifer wells). The five perched aquifer groundwater samples that exceeded the NMWQCC nitrate standard were from monitoring wells TJA-2, TJA-5, KAFB-0612, KAFB-0614, and KAFB-0623. A nitrate concentration data map for the perched aquifer is presented on Figure 3-6. Plume boundaries are shown for the areas in the perched aquifer with nitrate concentrations greater than the NMWQCC standard. Historically, two plumes were identified in the perched aquifer, Plume 3 beneath Sandia National Laboratories/New Mexico (SNL/NM) Technical Area II and Plume 4 beneath the Tijeras Arroyo Golf Course. The installation and sampling of several monitoring wells, TJA-5, TJA-7, and KAFB-0623, failed to identify a boundary between Plumes 3 and 4. Therefore, the perched aquifer nitrate plume is now shown as one contiguous plume and is referred to as Plume 4 in this Report.

The 16 regional aquifer groundwater samples that exceeded NMWQCC standards for nitrate were from monitoring wells KAFB-0505, KAFB-0508, KAFB-0514, KAFB-0517, KAFB-0520, KAFB-0522, KAFB-0312, KAFB-0611, KAFB-0613, KAFB-0616, KAFB-0617, KAFB-0620, KAFB-0621, KAFB-0625, KAFB-0904, and TJA-4. A nitrate concentration data map for the regional aquifer is presented on Figure 3-7.

Plume boundaries are shown for areas in the regional aquifer with nitrate concentrations greater than the NMWQCC standard. Two plumes have been identified to date in the regional aquifer. Plume 1 is located west of the closed sewage lagoons. Plume 2 is bounded by the Tijeras Arroyo on the north, Coyote Arroyo on the south, and the Sandia Fault on the east. No concentrations greater than the NMWQCC were reported from samples at McCormick Ranch (Figure 3-8).

The highest nitrate concentration measured in the regional aquifer was in the samples from well KAFB-0505 at 350 mg/L. This well is located in Plume 1 just north of the closed sewage lagoons. The highest nitrate concentration measured in the perched aquifer was in the sample from well KAFB-0623 at 63.2 mg/L. Well KAFB-0623 is located in the middle of Plume 4 adjacent to the Tijeras Arroyo and downgradient of the ABCWUA sanitary sewer line.

Total Dissolved Solids

Concentrations of TDS exceeded the secondary maximum contaminant level for drinking water at five wells. Three of these are perched zone wells screened across fine-grained sediments with low hydraulic conductivities and higher concentrations of soluble minerals. However, elevated TDS concentrations are associated with elevated nitrate concentrations at wells KAFB-0514 and KAFB-0623. Other anions and metals are not typically detected above regulatory standards at most monitoring locations, and there are no extensive salinity problems or dissolved metals in the ST-105 monitoring area.

3.3 Natural Attenuation Evaluation

Natural attenuation processes include a variety of physical, chemical, or biological processes, which under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, and concentration of contaminants in groundwater. The processes affecting the natural attenuation of nitrate in groundwater systems include transformations, retardation, and advection and dispersion. Natural attenuation processes can be evaluated through the documentation of contaminant trends and the mapping of concentration changes in reactants, such as electron acceptors or donors, and products of the biogeochemical processes, such as dissolved ferrous iron (Fe^{2+}), which degrade or

immobilize the contaminants (Sutheran, 2002). These mappings can be measured to document if transformation processes are active at a site. The observation of the loss of contaminant coupled with the observation of biogeochemical reaction byproducts helps establish which processes are responsible for the decrease in contaminant mass and concentration.

Nitrogen transformations most likely occur within groundwater aquifers at Kirtland AFB. Historical discharges of sewage effluent to groundwater at several Kirtland AFB and SNL/NM facilities provide evidence of the nitrogen transformations presented in the following equations:

Equation 1-1 $RNH_2 + H_2 \rightarrow NH+_4 + \text{energy}$

Equation 1-2 $2NH_4 + 3O\text{-}_2 \rightarrow 2NO\text{-}_2 + 2H_2O + 4H + \text{energy}$

Equation 1-3 $2NO\text{-}_2 + O_2 \rightarrow 2NO\text{-}_3 + \text{energy}$

Where:

R = the organic compound.

Ammonia comprises approximately 60 percent, and organic nitrogen comprises approximately 40 percent of the total nitrogen content of sewage effluent (U.S. Environmental Protection Agency, 1993). The mixing of sewage effluent with oxygenated groundwater, under aerobic conditions (dissolved oxygen greater than 0.5 mg/L), would result in the nitrogen transformations presented in Equations 1-1 through 1-3 and the formation of nitrate.

Both the presence of ammonia and organic nitrogen in the soil profile to the depth of the regional aquifer at the former Kirtland AFB sewage lagoons as well as the historical detection of elevated nitrate concentrations in groundwater adjacent to the sewage lagoons provide evidence of the nitrification transformation in the regional aquifer. If sewage effluent mixes with groundwater flow in dissolved oxygen, under anaerobic conditions (dissolved oxygen concentrations less than 0.5 mg/L), organic nitrogen will undergo the ammonification transformation presented in Equation 1-1, and the nitrogen will remain as ammonium.

Groundwater in the perched aquifer and shallow portions of the regional aquifer is high in dissolved oxygen with concentrations approaching saturation limits at many well locations (Table 3-2). Figures 3-9 and 3-10 present the most recent groundwater dissolved oxygen concentration data for monitoring wells in the perched and regional aquifers, respectively. As shown on the figures, aerobic conditions exist in both aquifers with dissolved oxygen concentrations above 0.5 mg/L. This condition may account for the general absence of ammonium and organic nitrogen in groundwater at Kirtland AFB.

The denitrification transformation of nitrate to nitrogen gas presented in the following equation occurs under anaerobic conditions and requires a carbon source to support the reaction:

Equation 1-4 $5C + 4NO\text{-}_3 + 2H_2O \rightarrow 2N_2 + 4HCO_3 + CO_2$

The very low concentrations of dissolved organic carbon (Table 3-2), the high dissolved oxygen concentrations (Figures 3-9 and 3-10), and the persistence of nitrate in perched and shallow regional groundwater at Kirtland AFB suggest that denitrification transformation is not occurring at an appreciable rate in these aquifers. Therefore, denitrification does not contribute substantially to the natural attenuation of nitrate in the perched and shallow regional aquifers.

Partitioning of contamination between the aqueous and solid phases (also known as sorption) leads to retardation of the contaminant relative to the advective velocity of the groundwater. Depending on the soil composition and the contaminants present, sorption can substantially retard the migration of a contaminant with respect to groundwater flow. Sorption depends on the properties of the contaminants and the properties of the aquifer. Since nitrate occurs as an oxyanion with a negative charge, sorption should to be minimal because soil generally has a negative charge. Therefore, sorption and the associated retardation of dissolved nitrate are probably not contributing to the attenuation of nitrate in groundwater at Kirtland AFB.

Dissolved nitrate is transported by flowing groundwater through the process of advection. The advective velocity is equal to the groundwater flux velocity, or Darcy velocity, divided by the effective porosity of the aquifer material. Site stratigraphy and geometry ultimately control hydraulic conductivity, hydraulic gradients, and therefore, advective velocities. Advective velocities for the Plume 1 area ranged from 6 to 232 feet per year with an average of 73 feet per year (USAF, 2009). Advective velocities within the Plume 2 area are expected to be similar, and the range of values closely matches the range reported by SNL/NM of 7 to 217 feet/year in the *Tijeras Arroyo Groundwater Investigation Report* (SNL/NM, 2005). Advective velocities are highest along preferential pathways, which are areas with high hydraulic conductivity materials, such as sand and gravel.

The process of hydrodynamic dispersion acts to dilute and spread contamination as it is transported with groundwater by advection. Hydrodynamic dispersion is the combination of mechanical dispersion and molecular diffusion. Mechanical dispersion is generally dominant unless groundwater flow velocities are extremely slow, as they may be in the case of clays. There are three basic factors contributing to mechanical dispersion:

- Groundwater flows at different velocities in pores of different sizes, fastest in large pores and slowest in small pores.
- Groundwater flows at different velocities within a pore, fastest in the center of a pore and slowest near the sides of the pore.
- Groundwater follows paths of different lengths.

These processes occur in all porous media. The observed decreases in groundwater nitrate concentrations in portions of Plumes 1, 2, and 4 are likely the result of dispersion and dilution. Dispersion appears to be the most substantial mechanism for natural attenuation of groundwater nitrate concentrations in the perched and shallow regional aquifers at Kirtland AFB.

If all nitrate sources were eliminated, nitrate groundwater concentrations should decline through time as a result of dispersion and dilution. Wells in the downgradient areas may increase through time without an ongoing source, but increasing concentrations in upgradient monitoring wells such as KAFB-0514 and KAFB-0525 indicate an ongoing source in that area or farther upgradient.

3.4 Investigation Derived Waste

Water was generated during well-purging activities as part of the sampling process. For the fall 2013 and spring 2014 sampling events, the purge water was stored in drums at each well location pending approval for disposal. Purge water that is determined to be non-hazardous clean was discharged to the ground surface at the appropriate well location. A Notice of Intent for the release of the purge water to the ground surface was submitted to Kirtland AFB. Notices of Intent were prepared and submitted in

accordance with Subsection A of 20.6.2 NMAC. Discharge approval from NMED Groundwater Quality Bureau was received on August 15, 2014. All wastewater was discharged at applicable well locations on December 3, 2014.

THIS PAGE INTENTIONALLY LEFT BLANK

4. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based upon the results of Stage 2 Abatement Plan monitoring activities conducted from September 2013 through June 2014:

- Groundwater flow direction in the regional aquifer is to the northwest. Groundwater withdrawals from Kirtland AFB and City of Albuquerque water supply wells continue to influence the groundwater flow direction in the regional aquifer.

- Groundwater flow direction in the perched aquifer is to the southeast.

- The highest nitrate concentration measured in the regional aquifer was 350 mg/L collected from well KAFB-0505. This well is located in Plume 1 just north of the closed sewage lagoons. The lateral extent of Plume 1 contamination now extends east beyond well KAFB-0505 and west to well KAFB-0520 (Figure 3-7). The center of the contaminant mass for Plume 1 is located in the Tijeras Arroyo and appears to be migrating downgradient towards well KAFB-0522. Groundwater nitrate concentrations near the toe or distal end of Plume 1 have been declining over the last 7 years as observed in wells KAFB-0508, KAFB-0524, and KAFB-0523. This decline is thought to be the result of contaminant mass removal associated with groundwater extraction by production well KAFB-7 and dilution from groundwater dispersion.

- Elevated groundwater nitrate concentrations measured in wells KAFB-0520 and KAFB-0525, immediately downgradient of the ABCWUA sewer line, suggest that the sewer line is a likely nitrate source for Plume 1. Infiltration of sewage effluent from the closed sewage lagoons is also considered a potential source of nitrate contamination in Plume 1. However, the increasing nitrate concentrations observed over the past 4 years in monitoring wells KAFB-0514 and KAFB-0525 suggest there is an ongoing source of nitrate contamination in the Tijeras Arroyo area.

- Nitrate concentrations in the central portions of regional aquifer Plume 2 have remained relatively stable over time. The known boundaries of Plume 2 were expanded to the northeast and to the southwest in 2009, following the incorporation of groundwater analytical data from monitoring wells KAFB-0624 and KAFB-0625.

- The sources of nitrate contamination for Plume 2 have not been completely defined, but are thought to include infiltration from Plume 4, recharge along the Tijeras Arroyo, and leakage from the ABCWUA sewer line. Infiltration from the GCMP may be a contributing source of nitrate for Plume 2. High nitrate groundwater concentrations are also found upgradient of the GCMP, thus indicating that it cannot be the sole source of nitrate for Plume 2.

- The highest nitrate concentration measured in the perched aquifer was 63.2 mg/L collected from well KAFB-0623. Well KAFB-0623 is located in the middle of Plume 4 adjacent to the Tijeras Arroyo and downgradient of the ABCWUA sanitary sewer line (Figure 3-9).

- Several potential sources of nitrate have been identified for Plume 4. Former septic tank leach fields and the Old Acid Waste Line Outfall at SNL/NM Technical Areas II and IV are likely sources of nitrate for Plume 4. Sewage effluent leaking from the ABCWUA sewer line is also considered a likely source of nitrate for Plume 4. Historical infiltration from the closed sewage lagoons and the GCMP may have been contributing sources of nitrate for Plume 4. However, the highest nitrate

groundwater concentrations are found in monitoring wells upgradient of the GCMP. This indicates that the GCMP cannot be the sole source of nitrate for Plume 4.

- Nitrate-contaminated groundwater has been extracted from several wells in the vicinity of the Tijeras Arroyo Golf Course and discharged to the GCMP. A total of 66.38 million gallons has been extracted from wells KAFB-0602, KAFB-0609, KAFB-0610, and the GCMP production well since 2003.

- A leak-detection survey of the ABCWUA sewer lines in the Kirtland AFB rights-of-way is recommended to determine if the sewer lines are an active source of nitrate contamination in the regional and perched aquifers. Increasing groundwater nitrate concentration trends observed at the head of Plume 1 and the center of Plume 4, downgradient of the ABCWUA sewer line, is evidence of ongoing sources of nitrate contamination in the Tijeras Arroyo area.

REFERENCES

CAPE Environmental Management, Inc. 2013. *Quality Assurance Project Plan (QAPP) for Long-Term Groundwater Monitoring at Multiple Sites: Solid Waste Management Unit (SWMU) 6-1, Landfill 1; SWMU 6-2, Landfill 2; SWMU 6-4, Landfills 4, 5, and 6; ST-105 (CG-C564); UST-58 (PL567); WP026; and ST070*.

NMED. 2010. Hazardous Waste Treatment Facility Operating Permit EPA ID No. NM9570024423. July.

NMED. 2008. Correspondence from William C. Olson, Chief, Ground Water Quality Bureau, New Mexico Environment Department, to Mr. John S. Pike, Chief, Restoration Program, Environmental Management Division, Kirtland Air Force Base, New Mexico. September 26.

NMED. 1999. Correspondence from Marcy Leavitt, Chief, Ground Water Quality Bureau, New Mexico Environment Department, to Christopher DeWitt, Chief, Restoration Program, Environmental Management Division, Kirtland Air Force Base, New Mexico. July 2.

Phillips Laboratory. 1994. *Draft Report, Phase II Environmental Baseline Survey of McCormick Ranch/Range*. Kirtland Air Force Base, New Mexico.

Phillips Laboratory. 1993. *Phase I Environmental Baseline Survey of McCormick Ranch/Range*. Kirtland Air Force Base, New Mexico.

Sutheran. 2002. *Natural and Enhanced Remediation Systems.* Lewis Publishers, CRC Press LLC, Boca Raton, Florida.

Sandia National Laboratories. 1997. Addressing Environmental Justice Under the National Environmental Policy Act at Sandia National Laboratories/New Mexico. Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico. 2005. *Tijeras Arroyo Groundwater Investigation Report*. Sandia National Laboratories, Albuquerque, New Mexico.

U.S. Air Force. 2010. *Final Groundwater Monitoring Work Plan for the Stage 2 Abatement Plan for Nitrate-Contaminated Groundwater.* U.S. Air Force, Environmental Restoration Branch, Kirtland Air Force Base, New Mexico.

U.S. Air Force. 2009. *Stage 2 Abatement Plan Report for Nitrate-Contaminated Groundwater at Kirtland Air Force Base, New Mexico.* U.S. Air Force, Environmental Restoration Branch, Kirtland Air Force Base, New Mexico. December.

U.S. Air Force. 2007. *Stage 2 Abatement Plan for Nitrate-Contaminated Groundwater at Kirtland Air Force Base, New Mexico.* U.S. Air Force, Environmental Restoration Branch, Kirtland Air Force Base, New Mexico. April.

U.S. Air Force. 2004. *Kirtland Air Force Base, Final Base-Wide Plans for the Environmental Restoration Program, 2004 Update.* U.S. Air Force, Environmental Restoration Branch, Kirtland Air Force Base, New Mexico. April.

U.S. Air Force. 2002a. *Semiannual Groundwater Monitoring Report for the Stage 1 Abatement Plan for Nitrate-Impacted Groundwater at Kirtland Air Force Base, New Mexico*. U.S. Air Force, Environmental Restoration Branch, Kirtland Air Force Base, New Mexico. July.

U.S. Air Force, 2002b. *Interim Stage 2 Abatement Plan for Nitrate-Impacted Groundwater within Corrective Action Unit ST-105, Trichloroethylene and Nitrate Contaminated Groundwater*. U.S. Air Force, Environmental Restoration Branch, Kirtland Air Force Base, New Mexico. April.

U.S. Air Force. 2000. *Stage 1 Abatement Plan for Nitrate-Impacted Groundwater at WP-26, Sewage Lagoons and Golf Course Pond (WP-26); and the ABCWUA Sanitary Sewer Line Break*. U.S. Air Force, Environmental Restoration Branch, Kirtland Air Force Base, New Mexico. August.

U.S. Air Force. 1997. *Appendix I Phase 2 RCRA Facility Investigation*. Kirtland Air Force Base, New Mexico.

U.S. Air Force. 1993. *Installation Restoration Program Stage 2A RCRA Facility Investigation, Technical Report*. Kirtland Air Force Base, New Mexico.

U.S. Bureau of Census. 1998. *Estimations of the Population of States by Race and Hispanic Origin; April 1, 1990 and July 1, 1996.* January.

U.S. Bureau of Census. 1997. *Estimates of the Population of States by Counties: July 1, 1996 and Percent Population Change: April 1, 1990 to July 1, 1996.* CO-96-7. March 20. http://quickfacts.census.gov/qfd/states/35/3502000.html.

U.S. Bureau of Census. 1996. "Persons by Poverty Status in 1969, 1979, and 1989, by State," *Census Historical Poverty Tables,* CPH-L-162. June. http://quickfacts.census.gov/qfd/states/35/3502000.html.

U.S. Bureau of Census. 1990. *Poverty Thresholds. 1989.* Washington, D.C.

U.S. Environmental Protection Agency. 1993. *Manual Nitrogen Control, EPA/625/R-93/010*. U.S. Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information, Risk Reduction Engineering Laboratory, Cincinnati, Ohio. September.

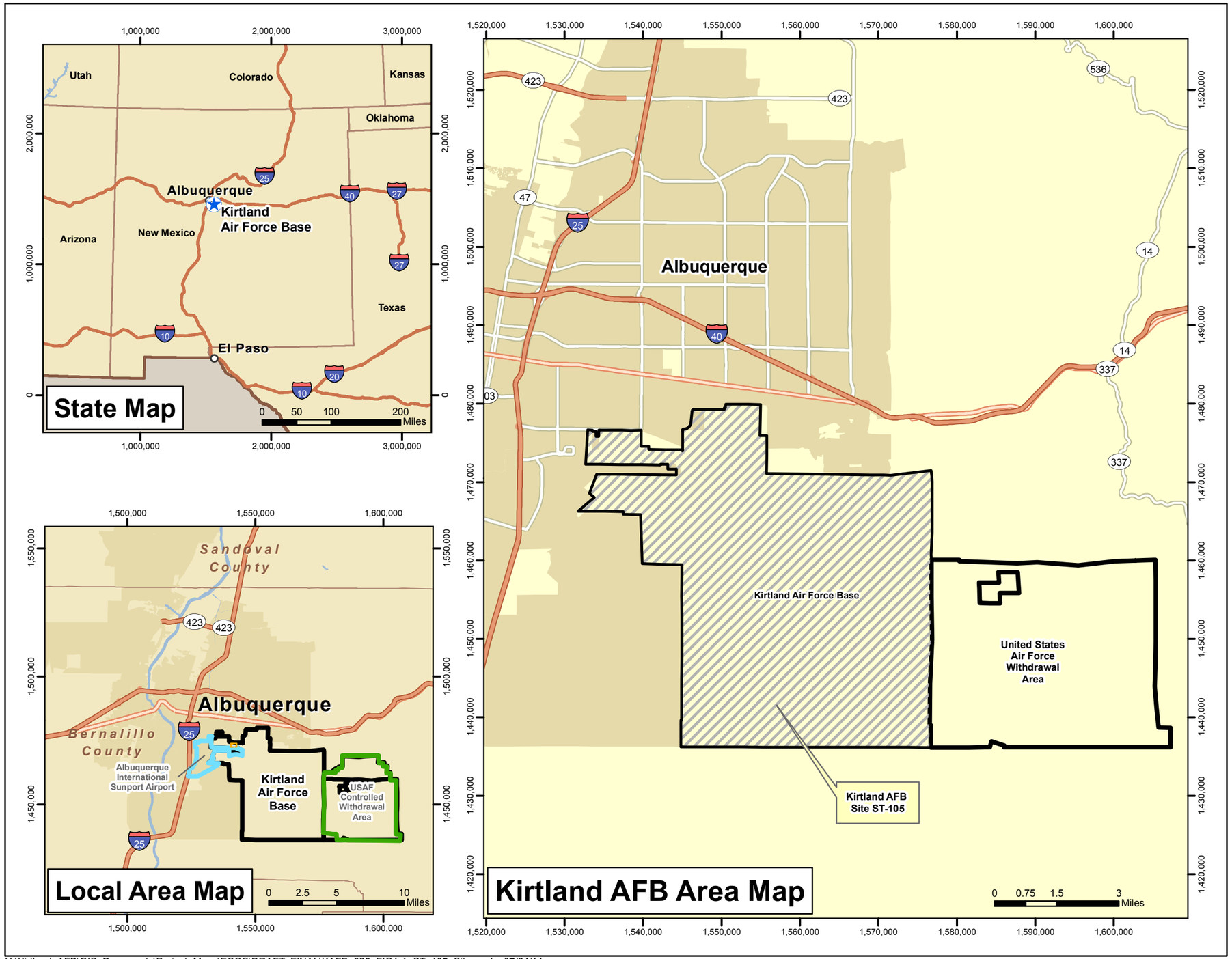
NEW MEXICO ADMINISTRATIVE CODE

20 § 6.2 New Mexico Administrative Code. Ground and Surface Water Protection, New Mexico Administrative Code, Title 20, Chapter 6, Part 2. December 1, 1995.

20 § 7.1 New Mexico Administrative Code. Wastewater and Water Supply Facilities, Drinking Water, New Mexico Administrative Code, Title 20, Chapter 7, Part 1. January 1, 1995.

FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK



Legend

- Major Highways
- Highways
- Major Roads
- Counties
- States
- Rivers
- Urban Areas

Installation Boundary

- Site ST-105
- Kirtland Air Force Base

N

Revision Date: 07/24/14

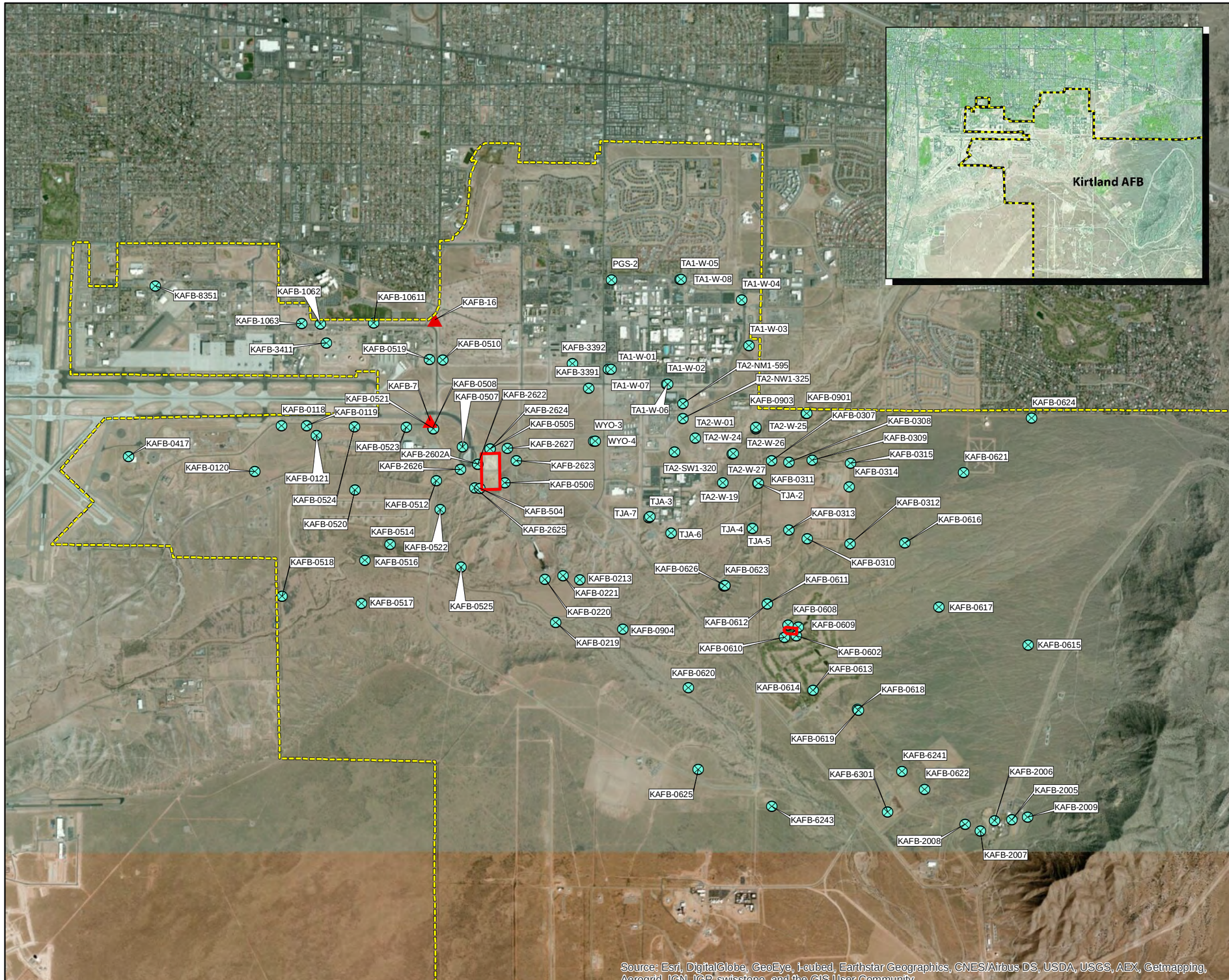
Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 1-1

GENERAL LOCATION MAP
FOR SITE ST-105,
KIRTLAND AFB, NM

H:\Kirtland_AFB\GIS_Documents\Project_Maps\ECOS\DRAFT_FINAL\KAFB_029_FIG1-1_ST_105_Site.mxd 07/24/14

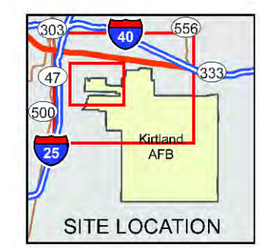


Legend

- Monitoring Well
- Production Well
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base



Source: Microsoft Virtual Earth

N

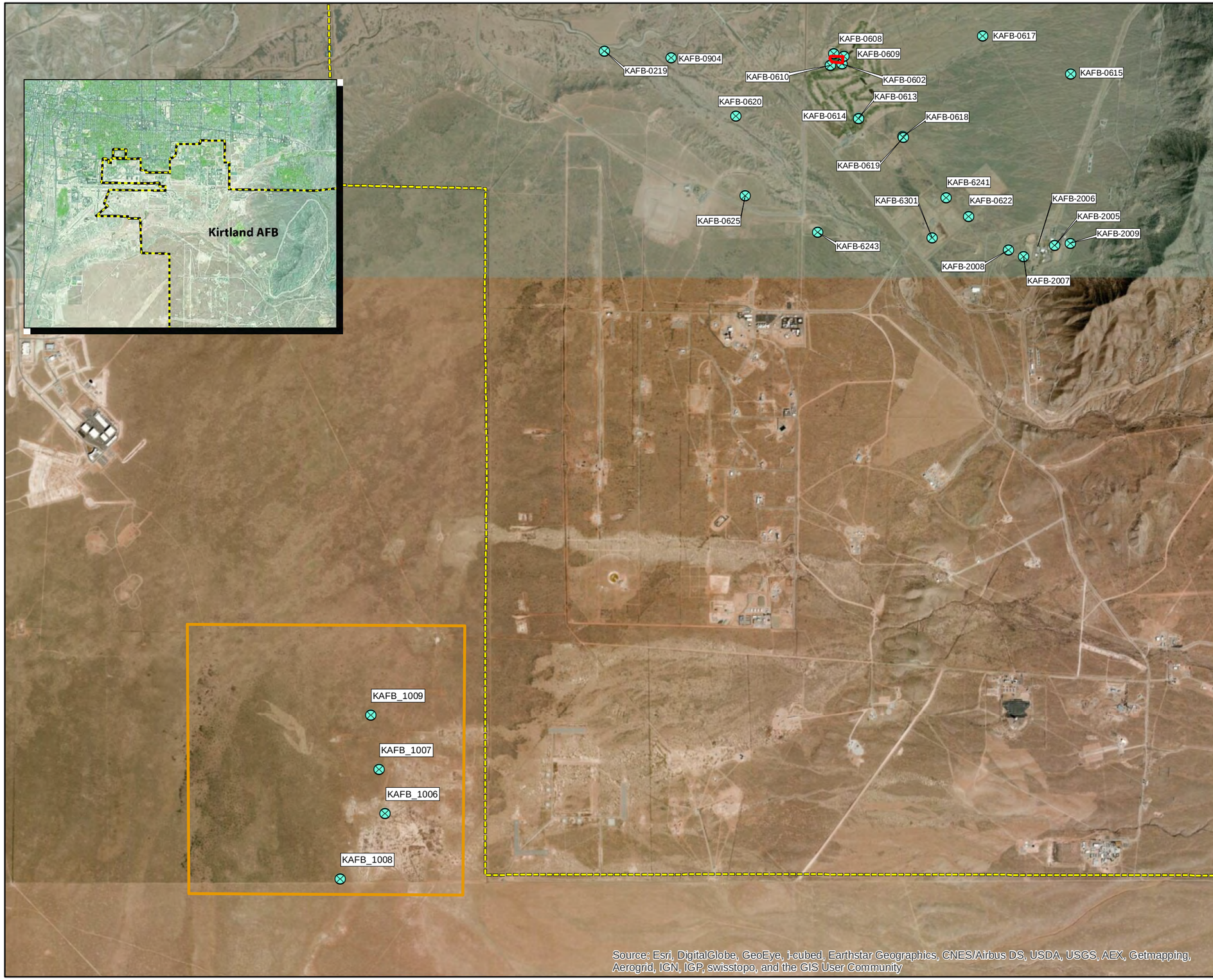
0 4,000 Feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 2-1

MONITORING WELL LOCATIONS

Generated By: CLW Date: 07/25/14 File Path:H:\KAFB_ECOS\KAFB_001_Fig_2-1_st105.mxd

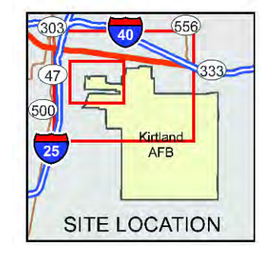


Legend

- Monitoring Well
- Kirtland AFB
- Ponds
- McCormick Ranch

NOTES:

AFB = Air Force Base



Source: Microsoft Virtual Earth

N

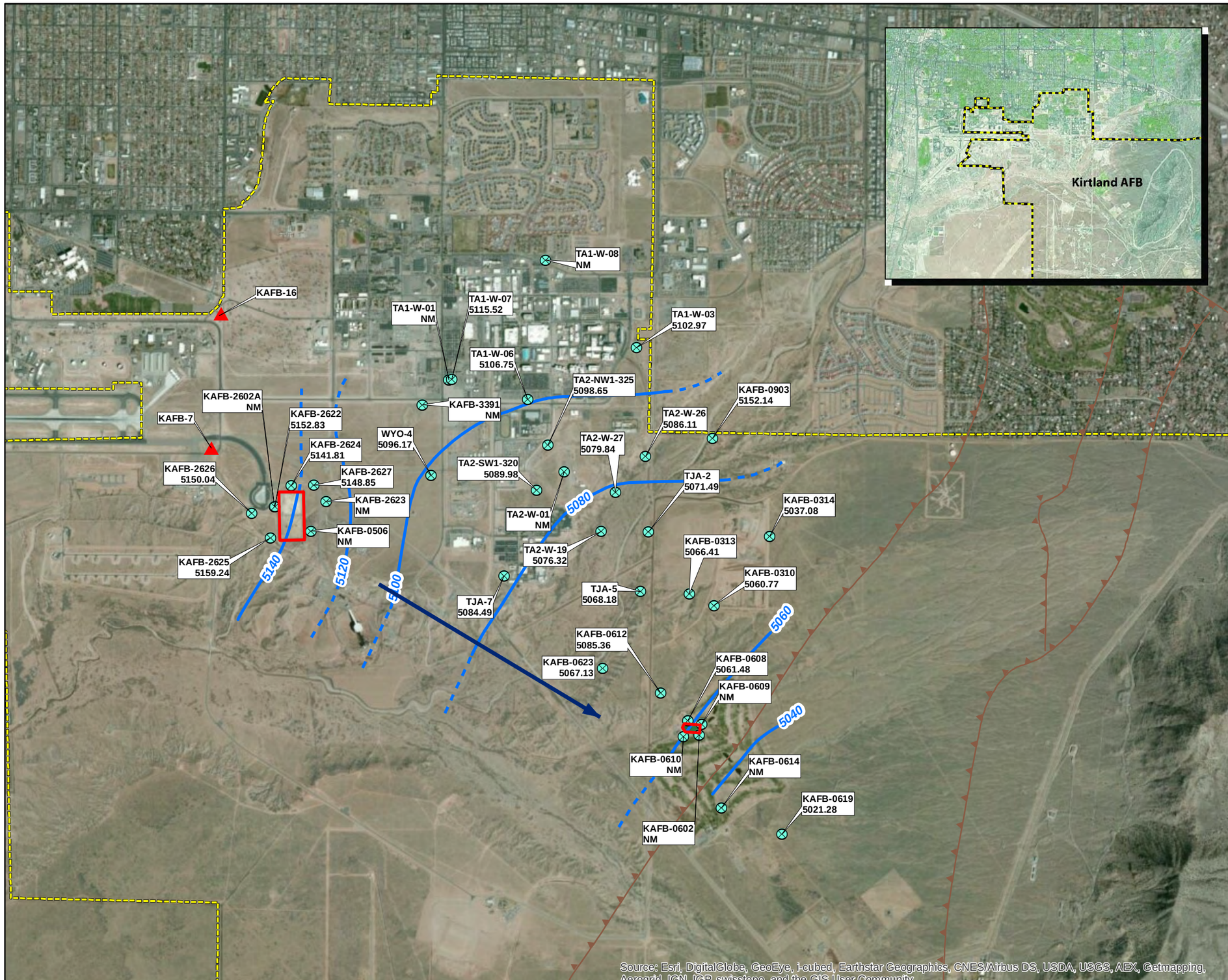
0 4,000 Feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 2-2

WELL LOCATION MAP
McCORMICK RANCH AREA

Generated By: CLW Date: 07/25/14 File Path:H:\KAFB_ECOS\KAFB_002_Fig_2-2_st105.mxd

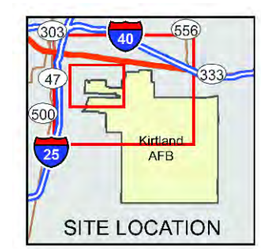


Legend

- Monitoring Well
- KAFB-0903 — Monitoring Well Identification
- 5152.14 — Groundwater Elevation (ft amsl)
- Production Well
- Groundwater Elevation Contour (ft amsl, dashed where inferred)
- Groundwater Flow Direction
- Faults
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
ft amsl = Feet above mean sea level
NM = Not measured



Source: Microsoft Virtual Earth

N

0 3,000 Feet

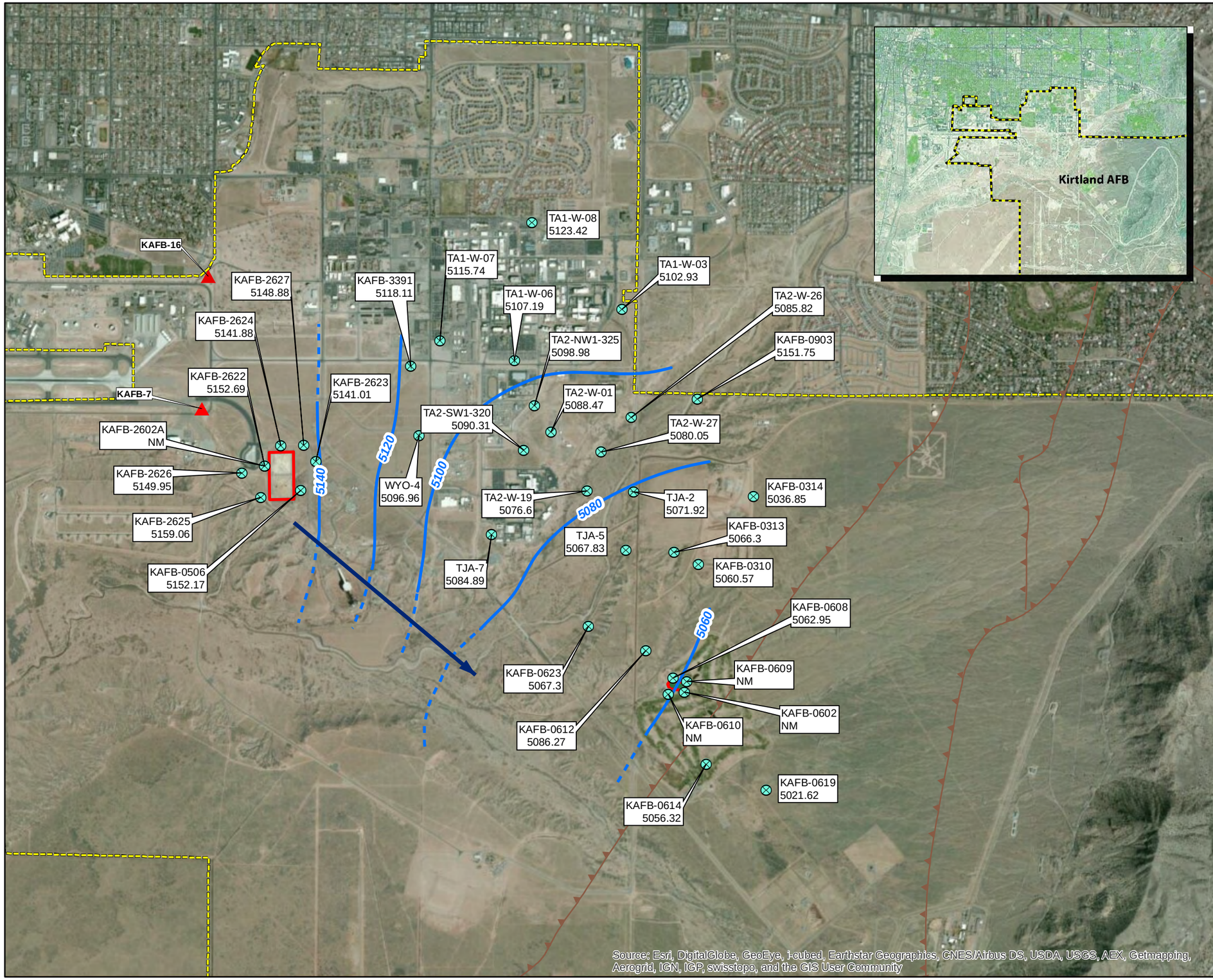
1 inch = 3,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-1

FALL 2013 GROUNDWATER ELEVATION MAP FOR THE PERCHED AQUIFER AT SITE ST-105

Generated By: CLW Date: 07/30/14 File Path:H:\KAFB_ECOS\KAFB_003_Fig_3-1_st105b.mxd

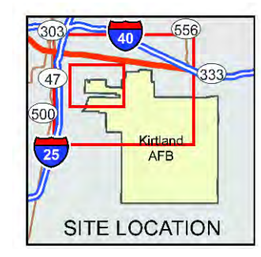


Legend

- Monitoring Well
- KAFB-0903 — Monitoring Well Identification
- 5152.14 — Groundwater Elevation (ft amsl)
- Production Well
- Groundwater Elevation Contour (ft amsl, dashed where inferred)
- Groundwater Flow Direction
- Faults
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
ft amsl = Feet above mean sea level
NM = Not measured



Source: Microsoft Virtual Earth

N

0 3,000 Feet

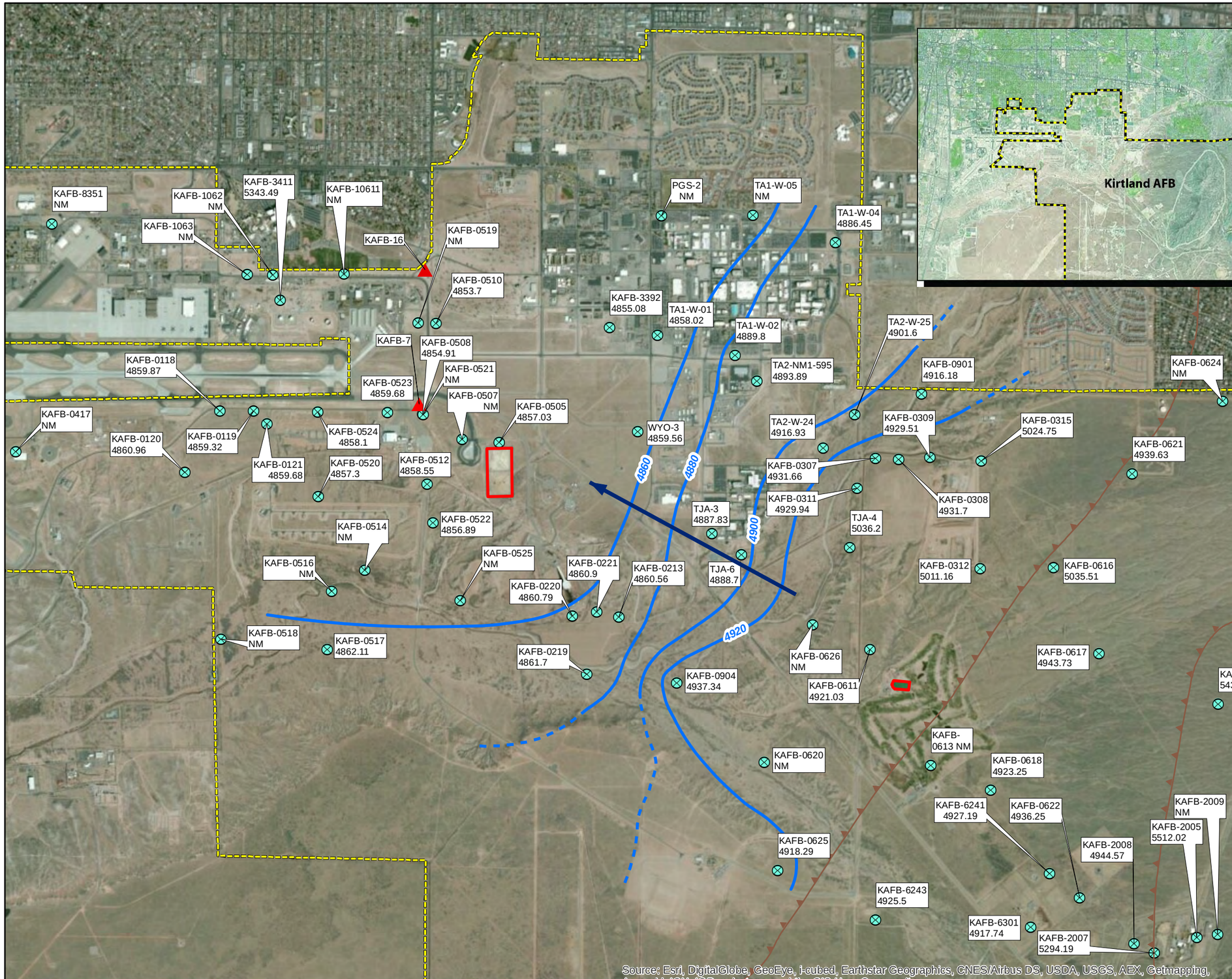
1 inch = 3,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-2

SPRING 2014
GROUNDWATER ELEVATION MAP
FOR THE PERCHED AQUIFER AT SITE ST-105

Generated By: CLW Date: 07/29/14 File Path:H:\KAFB_ECOS\KAFB_004_Fig_3-2_st105.mxd

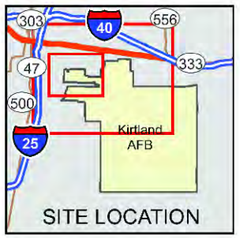


Legend

- Monitoring Well
- KAFB-0903 — Monitoring Well Identification
- 5152.14 — Groundwater Elevation (ft amsl)
- Production Well
- Groundwater Elevation Contour (ft amsl, dashed where inferred)
- Groundwater Flow Direction
- Faults
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
ft amsl = Feet above mean sea level
NM = Not measured



Source: Microsoft Virtual Earth

N

0 3,000 Feet

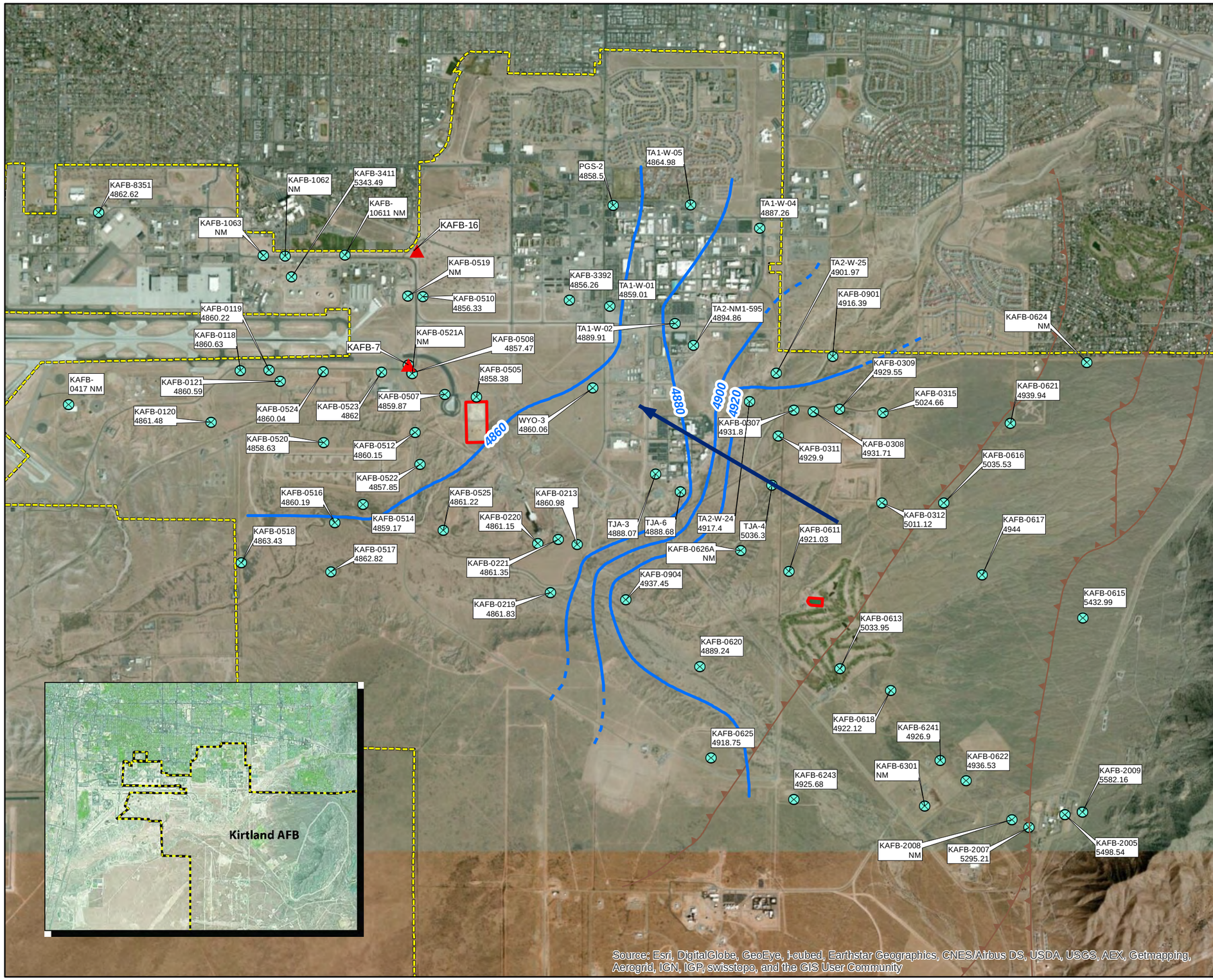
1 inch = 3,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-3

FALL 2013 GROUNDWATER ELEVATION MAP FOR THE REGIONAL AQUIFER AT SITE ST-105

Generated By: CLW Date: 07/29/14 File Path:H:\KAFB_ECOS\KAFB_005_Fig_3-3_st105.mxd

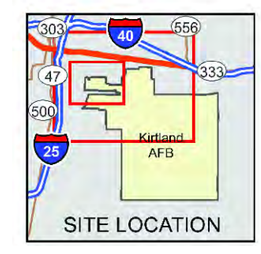


Legend

- Monitoring Well
- **KAFB-0903** Monitoring Well Identification
- **5152.14** Groundwater Elevation (ft amsl)
- Production Well
- Groundwater Elevation Contour (ft amsl, dashed where inferred)
- Groundwater Flow Direction
- Faults
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
ft amsl = Feet above mean sea level
NM = Not measured



Source: Microsoft Virtual Earth

N

0 3,500 Feet

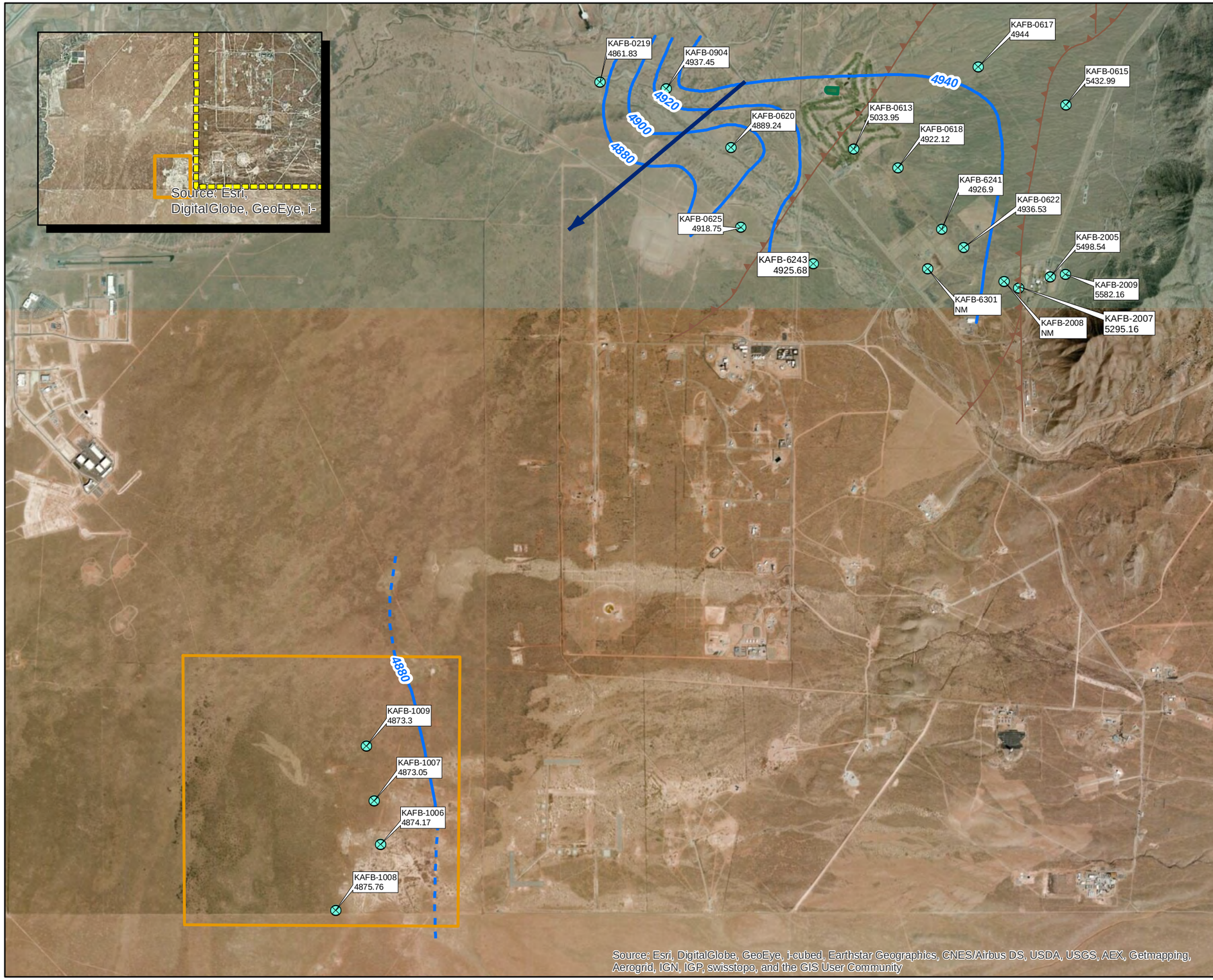
1 inch = 3,500 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-4

SPRING 2014 GROUNDWATER ELEVATION MAP FOR THE REGIONAL AQUIFER AT SITE ST-105

Generated By: CLW Date: 08/07/14 File Path:H:\KAFB_ECOS\KAFB_006_Fig_3-4_st105.mxd

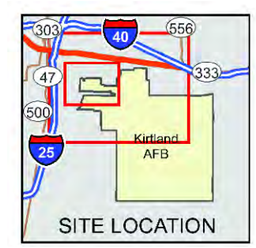


Legend

⊗	Monitoring Well
KAFB-0903	Monitoring Well Identification
5152.14	Groundwater Elevation (ft amsl)
	Groundwater Elevation Contour (ft amsl, dashed where inferred)
	Groundwater Flow Direction
	Faults
	Kirtland AFB
	McCormick Ranch
	Ponds

NOTES:

AFB = Air Force Base
ft amsl = Feet above mean sea level
NM = Not measured



Source: Microsoft Virtual Earth

N

0 4,000 Feet

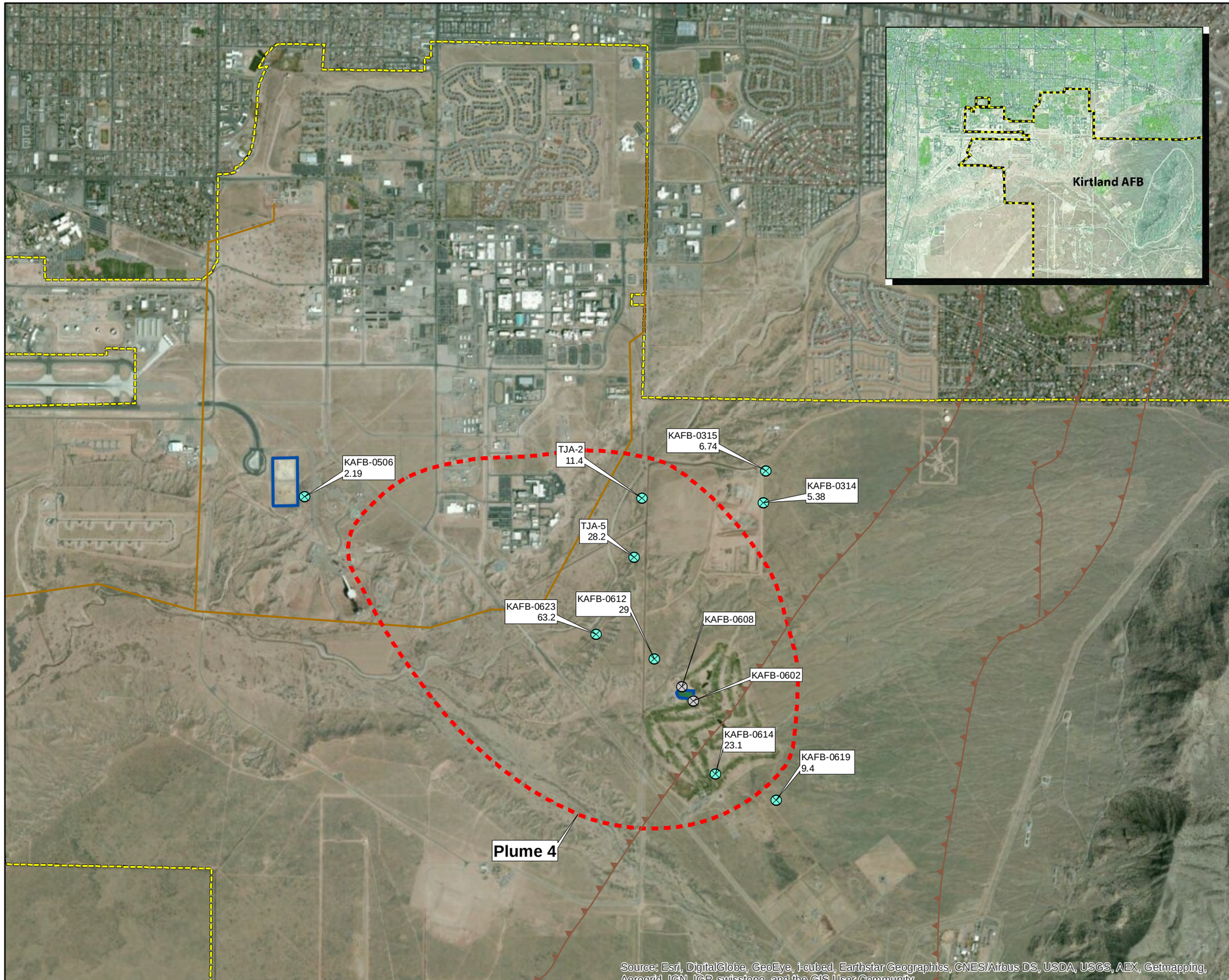
1 inch = 4,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-5

SPRING 2014 GROUNDWATER ELEVATION MAP FOR THE REGIONAL AQUIFER AT McCORMICK RANCH AREA

Generated By: CLW Date: 08/07/14 File Path:H:\KAFB_ECOS\KAFB_007_Fig_3-5_st105.mxd

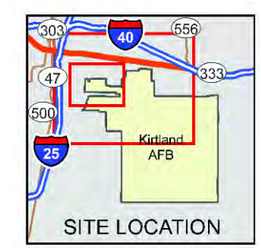


Legend

- Monitoring Well
- Well Not Sampled
- **KAFB-0621** Monitoring Well Identification
- **12.5** Nitrate Concentration (mg/L)
- Estimated Area of Nitrate Concentration Greater than 10.0 mg/L
- Faults
- Sewer Lines
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
mg/L = milligrams per liter



Source: Microsoft Virtual Earth

N

0 3,000 Feet

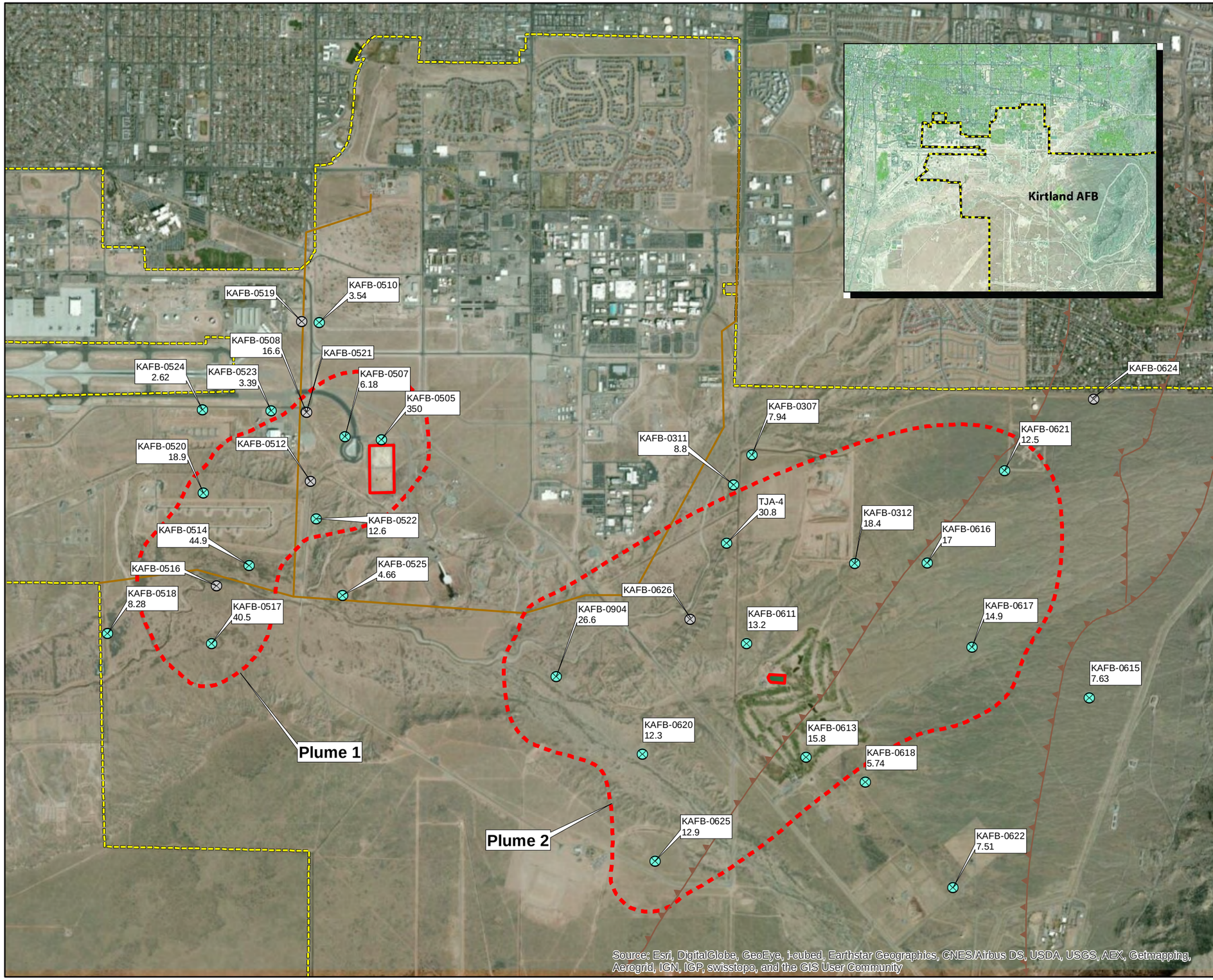
1 inch = 3,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-6

NITRATE CONCENTRATIONS IN
THE PERCHED AQUIFER AT SITE ST-105

Generated By: CLW Date: 07/29/14 File Path:H:\KAFB_ECOS\KAFB_008_Fig_3-6_st105.mxd

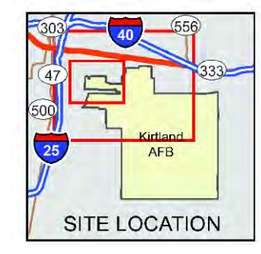


Legend

- Monitoring Well
- Well Not Sampled
- **KAFB-0621** Monitoring Well Identification
- **12.5** Nitrate Concentration (mg/L)
- Estimated Area of Nitrate Concentration Greater than 10.0 mg/L
- Faults
- Sewer Lines
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
mg/L = milligrams per liter



Source: Microsoft Virtual Earth

N

0 3,000 Feet

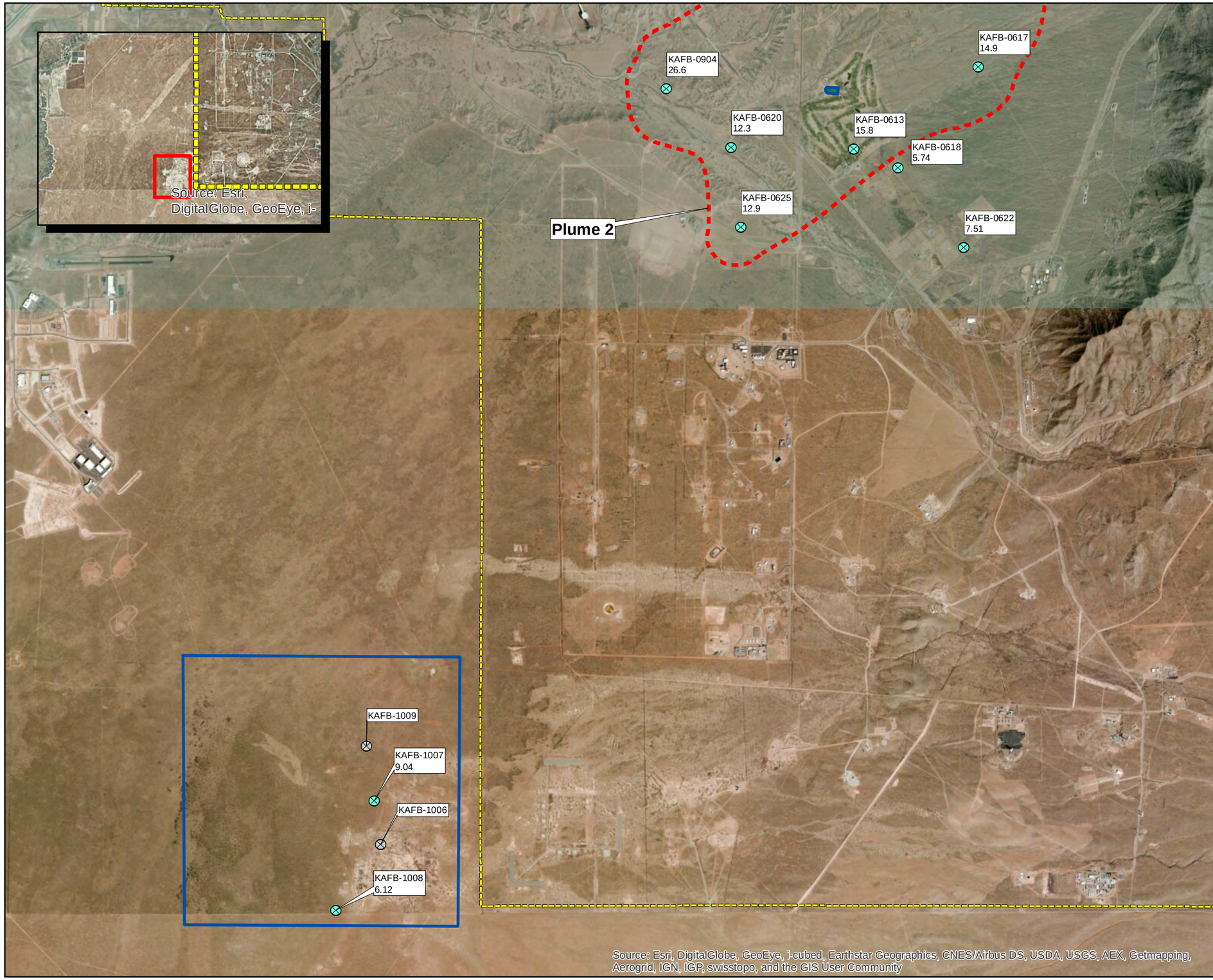
1 inch = 3,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-7

NITRATE CONCENTRATIONS
IN THE REGIONAL AQUIFER
AT SITE ST-105

Generated By: CLW Date: 07/29/14 File Path:H:\KAFB_ECOS\KAFB_009_Fig_3-7_st105.mxd

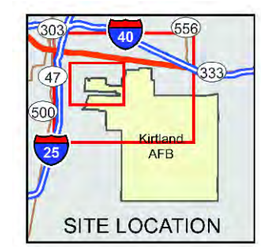


Legend

- Monitoring Well
- Well Not Sampled
- **KAFB-0621** Monitoring Well Identification
- **12.5** Nitrate Concentration (mg/L)
- Estimated Area of Nitrate Concentration Greater than 10.0 mg/L
- Faults
- Sewer Lines
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
mg/L = milligrams per liter



Source: Microsoft Virtual Earth

N

0 4,000 Feet

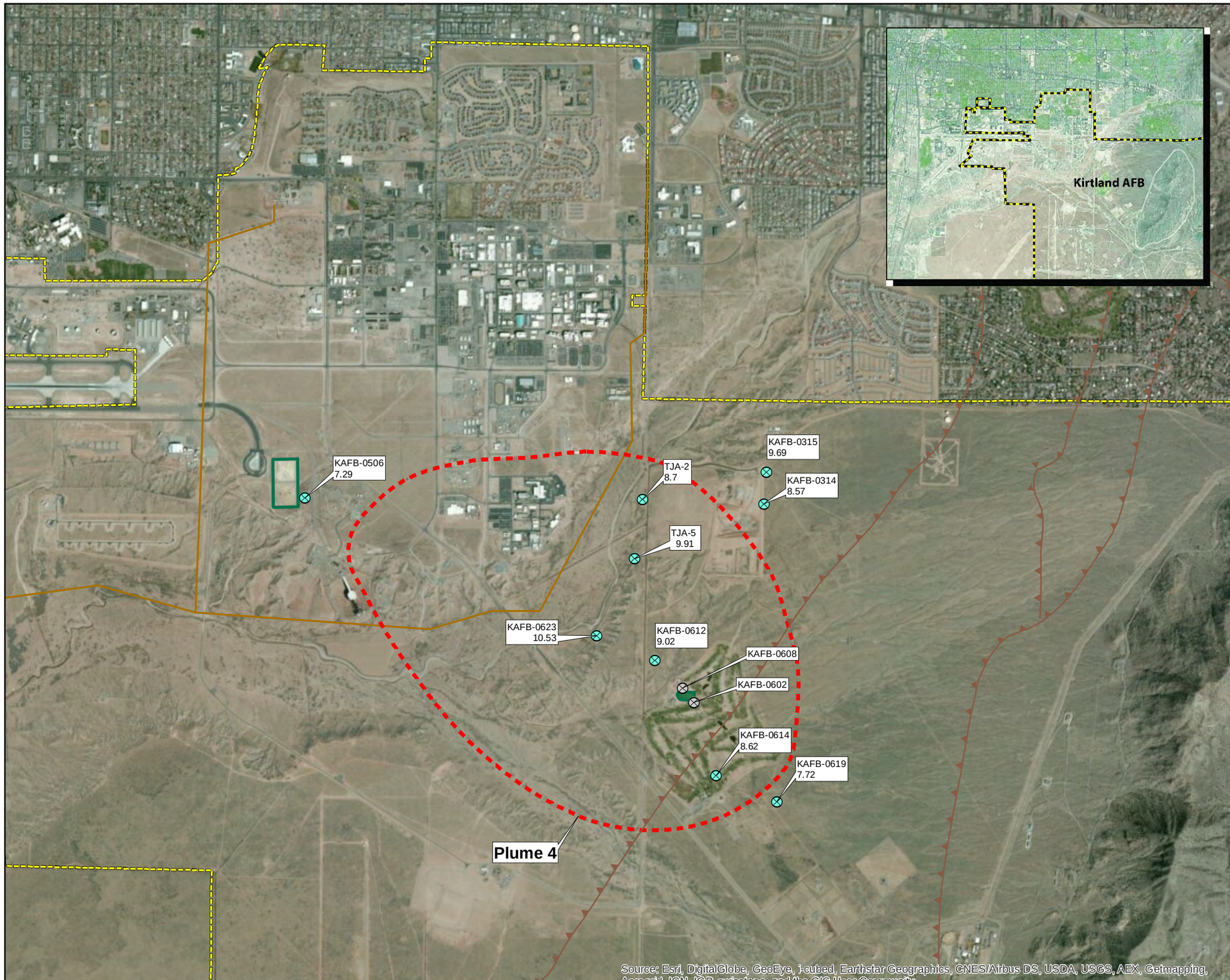
1 inch = 4,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-8

NITRATE CONCENTRATIONS
IN THE REGIONAL AQUIFER
AT McCORMICK RANCH AREA

Generated By: CLW Date: 07/29/14 File Path:H:\KAFB_ECOS\KAFB_010_Fig_3-8_st105.mxd

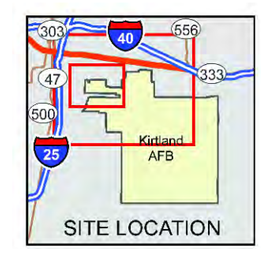


Legend

- Monitoring Well
- Well Not Sampled
- KAFB-0621 — Monitoring Well Identification
- 12.5 — Dissolved Oxygen Concentration (mg/L)
- Estimated Area of Nitrate Concentration Greater than 10.0 mg/L
- Sewer Lines
- Faults
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
mg/L = milligrams per liter



Source: Microsoft Virtual Earth

N

0 3,000 Feet

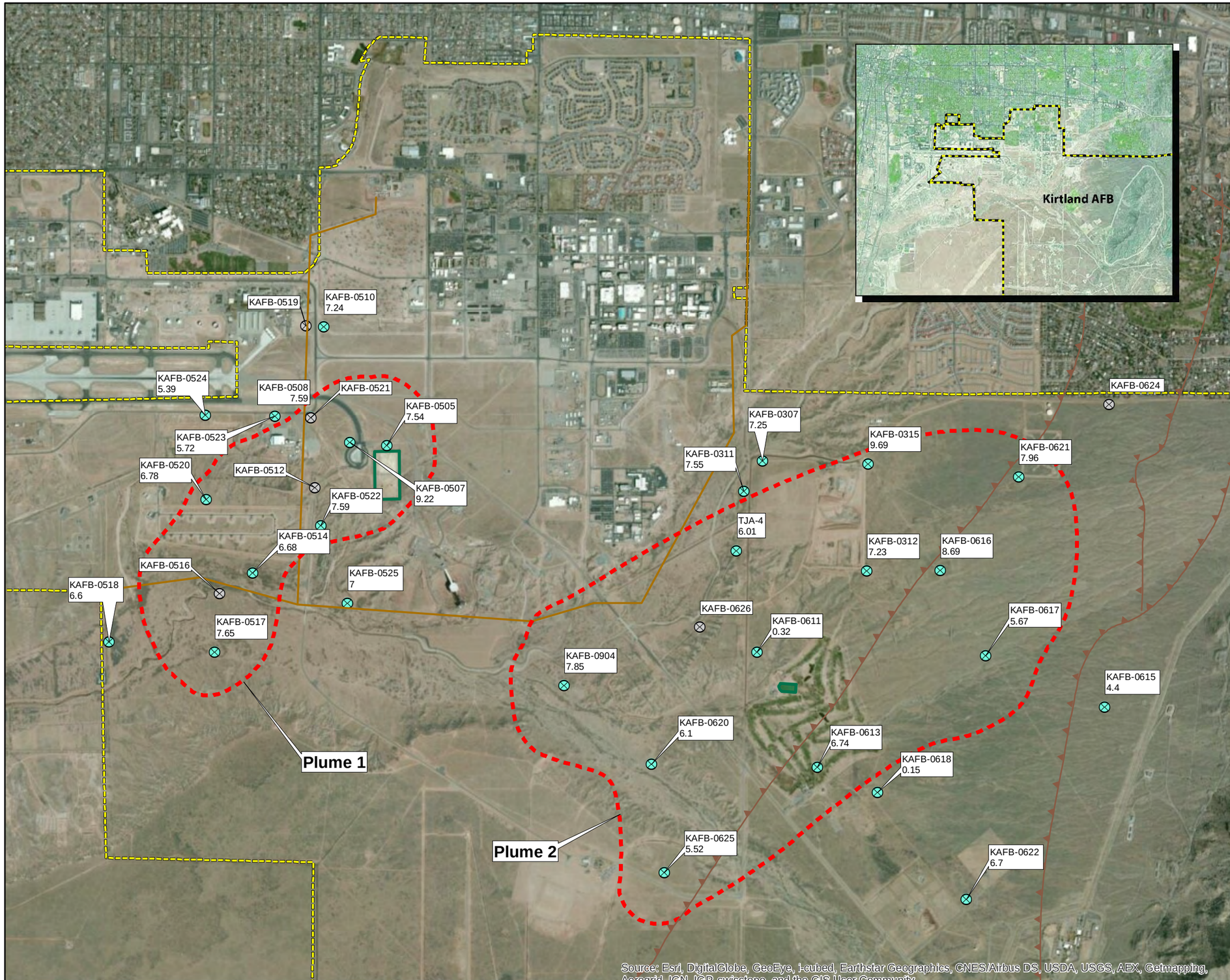
1 inch = 3,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-9

DISSOLVED OXYGEN CONCENTRATIONS
IN THE PERCHED AQUIFER AT SITE ST-105

Generated By: CLW Date: 08/07/14 File Path:H:\KAFB_ECOS\KAFB_011_Fig_3-9_st105.mxd



Legend

- Monitoring Well
- Well Not Sampled
- **KAFB-0621** Monitoring Well Identification
- **12.5** Dissolved Oxygen Concentration (mg/L)
- Estimated Area of Nitrate Concentration Greater than 10.0 mg/L
- Faults
- Sewer Lines
- Kirtland AFB
- Ponds

NOTES:

AFB = Air Force Base
mg/L = milligrams per liter

Source: Microsoft Virtual Earth

N

0 3,000 Feet

1 inch = 3,000 feet

LONG TERM MONITORING
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-10

DISSOLVED OXYGEN CONCENTRATIONS
IN THE REGIONAL AQUIFER
AT SITE ST-105

Generated By: CLW Date: 08/07/14 File Path:H:\KAFB_ECOS\KAFB_012_Fig_3-10_st105.mxd

TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

Table 2-1. Sample Locations for the Sixth Annual Groundwater Monitoring Event for the Stage 2 Abatement Plan at Site ST-105

Well Identification	Aquifer	Target Plume	Sampling Event	Location	Well Type	Owner
KAFB-0505	Regional	Plume 1	Spring 2014	Sewage Lagoons	Monitoring	KAFB
KAFB-0506	Perched	Plume 1	Spring 2014	Sewage Lagoons	Monitoring	KAFB
KAFB-0507	Regional	Plume 1	Spring 2014	Sewage Lagoons	Monitoring	KAFB
KAFB-0508	Regional	Plume 1	Spring 2014	Sewage Lagoons	Monitoring	KAFB
KAFB-0510	Regional	Plume 1	Spring 2014	East of Runway	Monitoring	KAFB
KAFB-0514	Regional	Plume 1	Spring 2014	Sewage Spill	Monitoring	KAFB
KAFB-0517	Regional	Plume 1	Spring 2014	Tijeras Arroyo	Monitoring	KAFB
KAFB-0518	Regional	Plume 1	Spring 2014	Tijeras Arroyo	Monitoring	KAFB
KAFB-0520	Regional	Plume 1	Spring 2014	Sewage Lagoons	Monitoring	KAFB
KAFB-0522	Regional	Plume 1	Spring 2014	Sewage Spill	Monitoring	KAFB
KAFB 0523	Regional	Plume 1	Fall 2013	Northwest of Sewage Lagoons	Monitoring	KAFB
KAFB-0524	Regional	Plume 1	Spring 2014	Northwest of Sewage Lagoons	Monitoring	KAFB
KAFB-0525	Regional	Plume 1	Spring 2014	Tijeras Arroyo	Monitoring	KAFB
KAFB-0611	Regional	Plume 2	Spring 2014	Golf Course Main Pond	Monitoring	KAFB
KAFB-0612	Perched	Plume 4	Spring 2014	Golf Course Main Pond	Monitoring	KAFB
KAFB-0613	Regional	Plume 2	Spring 2014	Golf Course Main Pond	Monitoring	KAFB
KAFB-0614	Perched	Plume 4	Spring 2014	Golf Course Main Pond	Monitoring	KAFB
KAFB-0615	Regional	Plume 2	Spring 2014	East of West Sandia Fault	Monitoring	KAFB
KAFB-0616	Regional	Plume 2	Spring 2014	Golf Course Main Pond	Monitoring	KAFB
KAFB-0617	Regional	Plume 2	Spring 2014	East of West Sandia Fault	Monitoring	KAFB
KAFB-0618	Regional	Plume 2	Spring 2014	East of West Sandia Fault	Monitoring	KAFB
KAFB-0619	Perched	Plume 4	Spring 2014	East of West Sandia Fault	Monitoring	KAFB
KAFB-0620	Regional	Plume 2	Spring 2014	Coyote Arroyo	Monitoring	KAFB
KAFB-0621	Regional	Plume 2	Spring 2014	SECOM Relay Station	Monitoring	KAFB
KAFB-0622	Regional	Plume 2	Spring 2014	Former Manzano Sewage Lagoons	Monitoring	KAFB
KAFB-0623	Perched	Plume 4	Spring 2014	Tijeras Arroyo	Monitoring	KAFB
KAFB-0625	Regional	Plume 2	Spring 2014	West of Power Line Road	Monitoring	KAFB
KAFB-0904	Regional	Plume 2	Spring 2014	Tijeras Arroyo	Monitoring	KAFB
KAFB-1006*	Regional	none	Spring 2014	McCormick Ranch	Monitoring	KAFB
KAFB-1007	Regional	none	Spring 2014	McCormick Ranch	Monitoring	KAFB
KAFB-1008	Regional	none	Spring 2014	McCormick Ranch	Monitoring	KAFB
KAFB-1009*	Regional	none	Spring 2014	McCormick Ranch	Monitoring	KAFB
TJA-2	Perched	Plume 4	Spring 2014	Sandia North	Monitoring	SNL/NM

Table 2-1. Sample Locations for the Sixth Annual Groundwater Monitoring Event for the Stage 2 Abatement Plan at Site ST-105

Well Identification	Aquifer	Target Plume	Sampling Event	Location	Well Type	Owner
TJA-4	Regional	Plume 2	Spring 2014	Sandia North	Monitoring	SNL/NM
TJA-5	Perched	Plume 4	Spring 2014	Sandia North	Monitoring	SNL/NM
Golf Course Main Pond	Surface Water	Plume 1	Spring 2014	Golf Course Main Pond	Not applicable	KAFB

* Well not sampled due to insufficient water column or faulty pump.

KAFB = Kirtland Air Force Base

LF = Landfill

SECOM = Security Communications Mission

SNL/NM = Sandia National Laboratories/New Mexico

TJA = Tijeras Arroyo

Table 2-2. Analytical Parameters and Testing Methods Used for the Sixth Annual Groundwater Monitoring Event for the Stage 2 Abatement Plan at Site ST-105

Analysis	Method	Testing Location	Data Use
Groundwater elevation	Water level meter	Field	Groundwater flow direction
pH	pH probe	Field, flow-through cell	General groundwater parameter
Temperature	Digital thermometer	Field, flow-through cell	General groundwater parameter
Specific conductance	Conductivity meter	Field, flow-through cell	General groundwater parameter
Dissolved oxygen	Dissolved oxygen probe	Field, flow-through cell	Assess aerobic or anaerobic conditions for denitrification
Oxidation-reduction potential	EH meter	Field, flow-through cell	Assess conditions for denitrification
Turbidity	Turbidity meter	Field	General groundwater parameter
Total dissolved solids	EPA Method 160.1	Laboratory	General groundwater parameter
Nitrate/nitrite	EPA Method 300.0	Laboratory	Assess nitrate-contaminated groundwater
Ammonia	EPA Method 350.1	Laboratory	Assess nitrogen species
Total Kjeldahl nitrogen	EPA Method 350.1	Laboratory	Assess nitrogen species
Major anions (bromide, chloride, fluoride, and sulfate)	EPA Method 300.0	Laboratory	Assess groundwater chemistry
Major cations (calcium, sodium, magnesium, potassium)	SW 6010B	Laboratory	Assess groundwater chemistry
Alkalinity	EPA Method 310.1	Laboratory	Assess natural attenuation potential
Total organic carbon	SW 9060	Laboratory	Assess natural attenuation potential
Dissolved organic carbon	SW 9060	Laboratory	Assess natural attenuation potential
Iron	SW 6010B	Laboratory	Assess natural attenuation potential
Manganese	SW 6010B	Laboratory	Assess natural attenuation potential

EH = hydrogen electrode

EPA = U.S. Environmental Protection Agency

Table 2-3. Meter Readings for Production Wells KAFB-0602, KAFB-0609, KAFB-0610, and Golf Course Production Well

Date	Golf Course Production Well (gallons)	KAFB-0602 (gallons)	KAFB-0609 (gallons)	KAFB-0610 (gallons)
October-13	400,855	250,762	213,987	584,503
November-13	416,012	269,375	213,748	598,195
December-13	439,026	298,419	221,091 (shut down)*	609,919 (shut down)*
January-14	451,327	313,788	221,091 (shut down)*	609,919 (shut down)*
February-14	462,847	329,131	221,091 (shut down)*	609,919 (shut down)*
March-14	502,107	366,584	221,091 (shut down)*	609,919 (shut down)*
April-14	523,060	389,283	221,091 (shut down)*	609,919 (shut down)*
May-14	531,113	405,598	221,091 (shut down)*	609,919 (shut down)*
June-14	546,425	429,497	--	609,919 (shut down)*

* = Production wells were shut down following an accident which occurred on December 11, 2013 at KAFB-0609

-- = KAFB-0609 was abandoned on June 22, 2014 after a safety investigation determined the well to be damaged beyond repair

KAFB = Kirtland Air Force Base

Table 2-4. Groundwater Extraction and Use at Site ST-105

Production Well	Year	Operating Period	Water Extracted (Million Gallons)	Cumulative Gallons Extracted (Million Gallons)
KAFB-0602	2003	All year	2.47	2.47
	2004	January to October; December	2.79	5.26
	2005	All year	2.74	8
	2006	All year	2.27	10.27
	2007	All year	2.93	13.2
	2008	January to June	1.41	14.61
	2009	September to December	0.88	15.49
	2010	All year	2.02	17.51
	2011	All year	1.76	19.27
	2012	January to June	1.28	20.55
	2013	October to December	0.818	21.37
	2014	January to June	2.23	23.60
KAFB-0609	2003	January to April; July to October	0.49	0.49
	2004	January to June; August to October; December	1.16	1.65
	2005	January; March to May	0.482	2.13
	2006	Not operational	0	2.13
	2007	Not operational	0	2.13
	2008	Not operational	0	2.13
	2009	September to December	0.921	3.05
	2010	All year	1.72	4.77
	2011	All year	1.11	5.88
	2012	January to June	0.41	6.29
	2013	October to December	0.65	6.94
	2014	Not operational	0	6.94
KAFB-0610	2003	January to May; July to December	1.45	1.45
	2004	February to September; December	1.93	3.38
	2005	All year	2.87	6.25
	2006	All year	2.22	8.47
	2007	All year	2.78	11.25
	2008	January to August	1.68	12.93
	2009	September to December	1.31	14.24
	2010	All year	0.968*	15.21
	2011	All year	1.69	16.90
	2012	January to June	1.04	17.94
	2013	October to December	1.79	19.73
	2014	Not operational	0	19.73
Golf Course Production Well	2003	Not operational	0	0.00
	2004	February to June; December	0.74	0.74
	2005	All year	1.69	2.43
	2006	All year	1.47	3.90
	2007	January to September	1.54	5.44
	2008	Not operational	0	5.44
	2009	September to December	1.08	6.52
	2010	All year	2.29	8.81
	2011	All year	2.04	10.85
	2012	January to June	1.01	11.86
	2013	October to December	1.26	13.12
	2014	January to June	2.99	16.11

* Readings collected from unreadable totalizer from March to November 2010 underestimate actual production values.

Table 3-1 Water Level Elevations for Monitoring Wells at Site ST-105

Monitoring Well	Water Level Measurement Point Elevation (ft amsl)	Fall 2013		Spring 2014		Notes
		DTW (ft)	Groundwater Elevation (ft)	DTW (ft)	Groundwater Elevation (ft)	
Perched Aquifer						
KAFB-0310	5413.81	353.04	5060.77	353.24	5060.57	
KAFB-0313	5416.31	349.9	5066.41	350.01	5066.3	
KAFB-0314	5453.08	416	5037.08	416.23	5036.85	
KAFB-0506	5360.8	NM	--	208.63	5152.17	
KAFB-0602	5361.49	NM	--	NM	--	
KAFB-0608	5357.23	295.75	5061.48	294.28	5062.95	
KAFB-0609	5361.95	NM	--	NM	--	
KAFB-0610	5354.56	NM	--	NM	--	
KAFB-0612	5382.78	297.42	5085.36	296.51	5086.27	
KAFB-0614	5388.22	NM	--	331.9	5056.32	
KAFB-0619	5408.11	386.83	5021.28	386.49	5021.62	
KAFB-0623	5326.27	259.14	5067.13	258.97	5067.3	
KAFB-0903	5388.96	236.82	5152.14	237.21	5151.75	
KAFB-2602A	5357.42	NM	--	NM	--	could not locate
KAFB-2622	5355.47	202.64	5152.83	202.78	5152.69	
KAFB-2623	5362.6	NM	--	221.59	5141.01	
KAFB-2624	5359.6	217.79	5141.81	217.72	5141.88	
KAFB-2625	5356.59	197.35	5159.24	197.53	5159.06	
KAFB-2626	5357.51	207.47	5150.04	207.56	5149.95	
KAFB-2627	5367.47	218.62	5148.85	218.59	5148.88	
KAFB-3391	5393.93	NM	--	275.82	5118.11	meter blocked at 270'
TA1-W-03	5454.36	351.39	5102.97	351.43	5102.93	
TA1-W-06	5414.43	307.68	5106.75	307.24	5107.19	
TA1-W-07	5402.25	286.73	5115.52	286.51	5115.74	
TA1-W-08	5434.48	NM	--	311.06	5123.42	
TA2-NW1-325	5417.31	318.66	5098.65	318.33	5098.98	
TA2-SW1-320	5409.18	319.2	5089.98	318.87	5090.31	
TA2-W-01	5417.32	NM	--	328.85	5088.47	
TA2-W-19	5348.54	272.22	5076.32	271.94	5076.6	
TA2-W-26	5373.1	286.99	5086.11	287.28	5085.82	
TA2-W-27	5360.18	280.34	5079.84	280.13	5080.05	

Table 3-1 Water Level Elevations for Monitoring Wells at Site ST-105

Monitoring Well	Water Level Measurement Point Elevation (ft amsl)	Fall 2013		Spring 2014		Notes
		DTW (ft)	Groundwater Elevation (ft)	DTW (ft)	Groundwater Elevation (ft)	
TJA-2	5349.81	278.32	5071.49	277.89	5071.92	
TJA-5	5338.79	270.61	5068.18	270.96	5067.83	
TJA-7	5388.6	304.11	5084.49	303.71	5084.89	
WYO-4	5389.9	293.73	5096.17	292.94	5096.96	
Regional Aquifer						
KAFB-0118	5318.02	458.15	4859.87	457.39	4860.63	
KAFB-0119	5313.09	453.77	4859.32	452.87	4860.22	
KAFB-0120	5286.89	425.93	4860.96	425.41	4861.48	
KAFB-0121	5304.93	445.25	4859.68	444.34	4860.59	
KAFB-0213	5279.33	418.77	4860.56	418.35	4860.98	
KAFB-0219	5261.02	399.32	4861.7	399.19	4861.83	
KAFB-0220	5262.43	401.64	4860.79	401.28	4861.15	
KAFB-0221	5271.69	410.79	4860.9	410.34	4861.35	
KAFB-0307	5361.86	430.2	4931.66	430.06	4931.8	
KAFB-0308	5378.98	447.28	4931.7	447.27	4931.71	
KAFB-0309	5409.13	479.62	4929.51	479.58	4929.55	
KAFB-0311	5350.62	420.68	4929.94	420.72	4929.9	
KAFB-0312	5429.5	418.34	5011.16	418.38	5011.12	
KAFB-0315	5463.44	438.69	5024.75	438.78	5024.66	
KAFB-0417	5310.4	NM	--	NM	--	
KAFB-0505	5360.14	503.11	4857.03	501.76	4858.38	
KAFB-0507	5356.15	NM	--	496.28	4859.87	
KAFB-0508	5349.21	494.3	4854.91	491.74	4857.47	
KAFB-0510	5364.43	510.73	4853.7	508.1	4856.33	
KAFB-0512	5300.48	441.93	4858.55	440.33	4860.15	
KAFB-0514	5203.74	NM	--	344.57	4859.17	
KAFB-0516	5202.97	NM	--	342.78	4860.19	
KAFB-0517	5194.43	332.32	4862.11	331.61	4862.82	
KAFB-0518	5175.09	NM	--	311.66	4863.43	
KAFB-0519	NA	NM	--	NM	--	
KAFB-0520	5245.23	387.93	4857.3	386.6	4858.63	
KAFB-0521	NA	NM	--	NM	--	could not access - tubing in way

Table 3-1 Water Level Elevations for Monitoring Wells at Site ST-105

Monitoring Well	Water Level Measurement Point Elevation (ft amsl)	Fall 2013		Spring 2014		Notes
		DTW (ft)	Groundwater Elevation (ft)	DTW (ft)	Groundwater Elevation (ft)	
KAFB-0522	5264.81	407.92	4856.89	406.96	4857.85	
KAFB-0523	5349.95	490.27	4859.68	487.95	4862	
KAFB-0524	5342.94	484.84	4858.1	482.9	4860.04	
KAFB-0525	5227.08	NM	--	365.86	4861.22	
KAFB-0611	5383.42	462.39	4921.03	462.39	4921.03	
KAFB-0613	5388.11	NM	--	354.16	5033.95	
KAFB-0615	5635.76	202.18	5433.58	202.77	5432.99	
KAFB-0616	5478.4	442.89	5035.51	442.87	5035.53	
KAFB-0617	5503.11	559.38	4943.73	559.11	4944	
KAFB-0618	5407.38	484.13	4923.25	485.26	4922.12	
KAFB-0620	5331.97	NM	--	442.73	4889.24	
KAFB-0621	5567.22	627.59	4939.63	627.28	4939.94	
KAFB-0622	5485.97	549.72	4936.25	549.44	4936.53	
KAFB-0624	5673.78	NM	--	NM	--	deeper than 750'
KAFB-0625	5390.23	471.94	4918.29	471.48	4918.75	
KAFB-0626	5328.8	NM	--	NM	--	
KAFB-0901	5387.4	471.22	4916.18	471.01	4916.39	
KAFB-0904	5289.23	351.89	4937.34	351.78	4937.45	
KAFB-1006	5254.34	NM	--	380.17	4874.17	
KAFB-1007	5257.44	NM	--	384.39	4873.05	
KAFB-1008	5255.49	NM	--	379.73	4875.76	
KAFB-1009	5266.86	NM	--	393.56	4873.3	
KAFB-10611	5353.01	NM	--	NM	--	
KAFB-1062	5338.59	NM	--	NM	--	
KAFB-1063	5339.71	NM	--	NM	--	
KAFB-2005	5621.6	109.58	5512.02	123.06	5498.54	
KAFB-2006	5590.91	NM	--	NM	--	
KAFB-2007	5564.51	270.32	5294.19	269.3	5295.21	
KAFB-2008	5541.77	597.2	4944.57	NM	--	
KAFB-2009	5652.96	NM	--	70.8	5582.16	
KAFB-3392	5391.84	536.76	4855.08	535.58	4856.26	
KAFB-3411	5343.49		5343.49		5343.49	

Table 3-1 Water Level Elevations for Monitoring Wells at Site ST-105

Monitoring Well	Water Level Measurement Point Elevation (ft amsl)	Fall 2013		Spring 2014		Notes
		DTW (ft)	Groundwater Elevation (ft)	DTW (ft)	Groundwater Elevation (ft)	
KAFB-6241	5463.83	536.64	4927.19	536.93	4926.9	
KAFB-6243	5423.55	498.05	4925.5	497.87	4925.68	
KAFB-6301	5456.97	539.23	4917.74	NM	--	
KAFB-8351	5322.84	NM	--	460.22	4862.62	
PGS-2	5405.62	NM	--	547.12	4858.5	
TA1-W-01	5401.15	543.13	4858.02	542.14	4859.01	
TA1-W-02	5413.95	524.15	4889.8	524.04	4889.91	
TA1-W-04	5458.31	571.86	4886.45	571.05	4887.26	
TA1-W-05	5433.11	NM	--	568.13	4864.98	
TA2-NW1-595	5418.59	524.7	4893.89	523.73	4894.86	
TA2-W-24	5360.99	444.06	4916.93	443.59	4917.4	
TA2-W-25	5372.19	470.59	4901.6	470.22	4901.97	
TJA-3	5387.89	500.06	4887.83	499.82	4888.07	
TJA-4	5338.49	302.29	5036.2	302.19	5036.3	
TJA-6	5340.49	451.79	4888.7	451.81	4888.68	
WYO-3	5389.42	529.86	4859.56	529.36	4860.06	

amsl = above mean sea level
ft = feet
DTW = depth to water
KAFB = Kirtland Air Force Base
NA = not available
NM = not measured
NW = northwest
PGS = parade grounds
SW = southwest
TA = technical area
TJA = Tijeras Arroyo
W = west
WYO = Wyoming

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	GCMP		KAFB0307		KAFB0311		KAFB0312		KAFB0314	
					SAMPLE NUMBER	ST105-30029		ST105-30001		ST105-30001		ST105-30001		LF008-30007	
					SAMPLE DATE	1-May-14		19-Mar-14		19-Mar-14		19-Mar-14		21-Apr-14	
					SAMPLE PURPOSE	REGULAR		REGULAR		REGULAR		REGULAR		REGULAR	
					AQUIFER	NONE		REGIONAL		REGIONAL		REGIONAL		PERCHED	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	126		132		144		131		97.5	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	ND	U	--		--		--		--	
	BROMIDE	mg/L	NS	NS	NS	0.074	J	--		--		--		--	
	CHLORIDE	mg/L	250	250	250	9.98		58.1		18.5		20		124	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	1.75	J	--		--		--		--	
	DOC-MAX	mg/L	NS	NS	NS	2.11	J	--		--		--		--	
	DOC-MIN	mg/L	NS	NS	NS	1.57	J	--		--		--		--	
	FLUORIDE	mg/L	1.6	4	1.6	0.427		0.357		0.376		0.349		0.285	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	ND	U	--		--		--		--	
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	3.61		7.94		8.8		**18.4**		5.38	
	SULFATE	mg/L	600	250	250	27		39.2		35.3		41		183	
	TOC-MAX	mg/L	NS	NS	NS	1.85	J	--		--		--		--	
	TOC-MIN	mg/L	NS	NS	NS	ND	U	--		--		--		--	
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	186		398		332		339		**10600**	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	1.39	J	--		--		--		--	
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	34.2		--		--		--		--	
	IRON	mg/L	1	0.3	0.3	0.0233	J	0.0527		ND		0.0195	J	0.0641	
	MAGNESIUM	mg/L	NS	NS	NS	6.12		--		--		--		--	
	MANGANESE	mg/L	0.2	0.05	0.05	0.003	J	0.000928	J	ND		0.00136	J	0.0018	J
	POTASSIUM	mg/L	NS	NS	NS	1.97		--		--		--		--	
	SODIUM	mg/L	NS	NS	NS	21.4		--		--		--		--	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	9.71		7.25		7.55		7.23		8.57	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	-107		67		185		34		44	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	8.31		7.50		7.53		7.53		7.42	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	271.4		510.6		419.2		472.7		885.3	
	TEMPERATURE	˚C	NS	NS	NS	16.65		18.29		18.64		19.32		19.15	
	TURBIDITY	NTU	NS	NS	NS	2.65		2.19		2.22		0.28		1.92	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	120		152		200		155		116	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	KAFB0315		KAFB0505		KAFB0506		KAFB0507		KAFB0508	
					SAMPLE NUMBER	LF008-30008		ST105-30001		ST105-30002		ST105-30003		ST105-30004	
					SAMPLE DATE	28-Apr-14		19-Mar-14		20-Mar-14		24-Mar-14		19-Mar-14	
					SAMPLE PURPOSE	REGULAR		REGULAR		REGULAR		REGULAR		REGULAR	
					AQUIFER	PERCHED		REGIONAL		PERCHED		REGIONAL		REGIONAL	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	122		172		77		246		121	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	--		ND	U	ND	U	ND	U	ND	U
	BROMIDE	mg/L	NS	NS	NS	--		0.117	J	0.566	J	0.131	J	0.114	J
	CHLORIDE	mg/L	250	250	250	63.5		14		64.4		14.4		12.2	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	--		ND	U	1.48	J	ND	U	ND	U
	DOC-MAX	mg/L	NS	NS	NS	--		1.39	J	1.84	J	1.27	J	ND	U
	DOC-MIN	mg/L	NS	NS	NS	--		ND	U	1.33	J	ND	U	ND	U
	FLUORIDE	mg/L	1.6	4	1.6	0.32		0.382		0.296		0.288		0.397	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	--		ND	U	ND	U	ND	U	ND	U
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	6.74		**350**		2.19		6.18		**16.6**	
	SULFATE	mg/L	600	250	250	83.7		85.7		**311**		82.9		26.5	
	TOC-MAX	mg/L	NS	NS	NS	--		ND	U	1.47	J	ND	U	ND	U
	TOC-MIN	mg/L	NS	NS	NS	--		ND	U	ND	U	ND	U	ND	U
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	396		322		**605**		401		231	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	--		ND	U	ND	U	ND	U	ND	U
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	--		69.1		131		68.3		52.9	
	IRON	mg/L	1	0.3	0.3	0.0164	J	0.0105	J	0.212		0.00974	J	ND	U
	MAGNESIUM	mg/L	NS	NS	NS	--		12.2		19		11.2		7.63	
	MANGANESE	mg/L	0.2	0.05	0.05	0.000997	J	ND	U	0.00326	J	0.000757	J	ND	U
	POTASSIUM	mg/L	NS	NS	NS	--		2.54		2.02		2.36		2.21	
	SODIUM	mg/L	NS	NS	NS	--		28.2		25.9		28.7		25.1	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	9.69		7.54		7.29		9.22		7.59	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	1.69		47		32		50		61	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	7.49		7.62		7.29		7.56		7.71	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	579.8		493.4		769		491.9		386.4	
	TEMPERATURE	˚C	NS	NS	NS	18.45		18.65		16.93		18.62		18.4	
	TURBIDITY	NTU	NS	NS	NS	1.69		1.1		3.56		1.36		0.74	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	160		200		76		192		132	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	KAFB0510		KAFB0510		KAFB0514		KAFB0517		KAFB0518	
					SAMPLE NUMBER	ST105-30005		ST105-30006		ST105-30008		ST105-30010		ST105-30011	
					SAMPLE DATE	20-Mar-14		20-Mar-14		27-Mar-14		25-Mar-14		25-Mar-14	
					SAMPLE PURPOSE	REGULAR		FD		REGULAR		REGULAR		REGULAR	
					AQUIFER	REGIONAL		REGIONAL		REGIONAL		REGIONAL		REGIONAL	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	112		110		119		103		108	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	ND	U	0.4		ND	U	ND	U	ND	U
	BROMIDE	mg/L	NS	NS	NS	0.129	J	0.131	J	0.232	J	0.182	J	0.055	J
	CHLORIDE	mg/L	250	250	250	19		19		19.9		14.5		8.24	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	DOC-MAX	mg/L	NS	NS	NS	ND	U	ND	U	1.38	J	ND	U	ND	U
	DOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	FLUORIDE	mg/L	1.6	4	1.6	0.451		0.447		0.381		0.335		0.427	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	3.54		3.6		**44.9**		**40.5**		8.28	
	SULFATE	mg/L	600	250	250	26.3		26.4		50.4		29.3		28.9	
	TOC-MAX	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	199		160		**559**		491		279	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	40.8		42.5		88.9		72.2		40	
	IRON	mg/L	1	0.3	0.3	ND	U	ND	U	ND	J	0.0124	J	ND	U
	MAGNESIUM	mg/L	NS	NS	NS	5.46		5.61		12.9		8.04		4.41	
	MANGANESE	mg/L	0.2	0.05	0.05	ND	U	ND	U	ND	U	0.000784	J	ND	U
	POTASSIUM	mg/L	NS	NS	NS	2		2.07		3.28		3.43		2.5	
	SODIUM	mg/L	NS	NS	NS	20.9		21		26.4		32		21.6	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	7.24		7.24		6.68		7.65		6.6	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	44		44		167		50		24	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	7.73		7.73		7.48		7.65		7.78	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	314		314		642.5		538		310	
	TEMPERATURE	˚C	NS	NS	NS	18.55		18.55		17.78		18.08		18.47	
	TURBIDITY	NTU	NS	NS	NS	0.75		0.75		0.76		1.14		0.9	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	116		116		132		124		125	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	KAFB0520		KAFB0522		KAFB-0523		KAFB0524		KAFB0525	
					SAMPLE NUMBER	ST105-30013		ST105-30018		ST105-30019		ST105-30020		ST105-30021	
					SAMPLE DATE	26-Mar-14		26-Mar-14		9-Dec-13		25-Mar-14		25-Mar-14	
					SAMPLE PURPOSE	REGULAR		REGULAR		REGULAR		REGULAR		REGULAR	
					AQUIFER	REGIONAL		REGIONAL		REGIONAL		REGIONAL		REGIONAL	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	118		142		113		113		175	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	1.35		ND	U	ND	U	ND	U	ND	U
	BROMIDE	mg/L	NS	NS	NS	0.121	J	0.139	J	0.059	J	ND	U	0.139	J
	CHLORIDE	mg/L	250	250	250	14.4		13.3		7.61		8.18		16.1	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	DOC-MAX	mg/L	NS	NS	NS	1.39	J	ND	U	1.27	J	1.46	J	1.34	J
	DOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	FLUORIDE	mg/L	1.6	4	1.6	0.331		0.28		0.409		0.385		0.367	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	**18.9**		**12.6**		3.39		2.62		4.66	
	SULFATE	mg/L	600	250	250	28.2		59.5		22		26.7		89.7	
	TOC-MAX	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	321		333		234		245		420	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	47.3		63.6		37.9		35		73	
	IRON	mg/L	1	0.3	0.3	ND	U	ND	J	0.0724		0.0124	J	0.0096	J
	MAGNESIUM	mg/L	NS	NS	NS	7.4		10.4		5.8		5.48		13.2	
	MANGANESE	mg/L	0.2	0.05	0.05	ND	U	ND	U	0.00135	J	0.00145	J	0.000863	J
	POTASSIUM	mg/L	NS	NS	NS	2.62		2.36		1.96		2.15		2.81	
	SODIUM	mg/L	NS	NS	NS	29.2		27.1		22.9		24.4		27.8	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	6.78		7.59		5.72		5.39		7	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	34		37		207		152		141	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	7.86		7.66		7.66		8.07		7.85	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	410.4		463.6		324.7		258.1		494.5	
	TEMPERATURE	˚C	NS	NS	NS	18.81		18.45		17.93		18.6		18.77	
	TURBIDITY	NTU	NS	NS	NS	0.87		0.88		1.64		2.01		0.33	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	140		100		140		130		192	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	KAFB0611		KAFB0612		KAFB0613		KAFB0614		KAFB0615	
					SAMPLE NUMBER	ST105-30031		ST105-30032		ST105-30033		ST105-30034		ST105-30035	
					SAMPLE DATE	8-Apr-14		8-Apr-14		9-Apr-14		8-Apr-14		14-Apr-14	
					SAMPLE PURPOSE	REGULAR		REGULAR		REGULAR		REGULAR		REGULAR	
					AQUIFER	REGIONAL		PERCHED		REGIONAL		PERCHED		REGIONAL	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	145		124		153		143		108	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	BROMIDE	mg/L	NS	NS	NS	0.098	J	0.37	J	0.157	J	0.297	J	0.59	J
	CHLORIDE	mg/L	250	250	250	7.95		24		14.6		24.7		56.4	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	DOC-MAX	mg/L	NS	NS	NS	1.36	J	ND	U	1.36	J	ND	U	1.32	J
	DOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	FLUORIDE	mg/L	1.6	4	1.6	0.543		0.297		0.489		0.378		**2.38**	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	**13.2**		**29**		**15.8**		**23.1**		7.63	
	SULFATE	mg/L	600	250	250	22.2		114		18.1		41.3		247	
	TOC-MAX	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	259		460		363		344		**688**	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	46		88		47.2		66		95.4	
	IRON	mg/L	1	0.3	0.3	ND	U	0.0386		0.0205	J	0.0181	J	ND	J
	MAGNESIUM	mg/L	NS	NS	NS	9.83		16.5		9.84		13.9		29.4	
	MANGANESE	mg/L	0.2	0.05	0.05	0.00353	J	0.00117	J	ND	U	0.00114	J	0.00211	J
	POTASSIUM	mg/L	NS	NS	NS	4.02		2.07		3.45		2.66		7.06	
	SODIUM	mg/L	NS	NS	NS	26.6		26.7		34.8		25.1		44	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	0.32		9.02		6.74		8.62		4.4	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	-33		56		46		1222		48	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	7.63		7.5		7.59		7.8		7.52	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	390.7		650.9		441.3		512.4		811.4	
	TEMPERATURE	˚C	NS	NS	NS	18.92		18.22		18.93		18.4		18.66	
	TURBIDITY	NTU	NS	NS	NS	0.55		3.03		0.82		0.91		1.48	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	164		132		196		150		136	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	KAFB0616		KAFB0617		KAFB0618		KAFB0619		KAFB0619	
					SAMPLE NUMBER	ST105-30036		ST105-30037		ST105-30038		ST105-30039		ST105-30040	
					SAMPLE DATE	1-Apr-14		12-May-14		27-Mar-14		1-Apr-14		1-Apr-14	
					SAMPLE PURPOSE	REGULAR		REGULAR		REGULAR		REGULAR		FD	
					AQUIFER	REGIONAL		REGIONAL		REGIONAL		PERCHED		PERCHED	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	129		167		167		162		159	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	BROMIDE	mg/L	NS	NS	NS	0.621	J	0.178	J	0.074	J	0.119	J	0.119	J
	CHLORIDE	mg/L	250	250	250	56.6		16		8.17		11.9		12.8	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	DOC-MAX	mg/L	NS	NS	NS	1.27	J	1.37	J	ND	U	1.25	J	ND	U
	DOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	FLUORIDE	mg/L	1.6	4	1.6	0.439		0.505		0.569		0.469		0.465	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	**17**		**14.9**		5.74		9.4		9.39	
	SULFATE	mg/L	600	250	250	55.1		20.5		26.9		20.3		21.1	
	TOC-MAX	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	380		314		279		288		292	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	74.1		51.1		31.6		41.9		41.6	
	IRON	mg/L	1	0.3	0.3	ND	U	0.141		ND	U	**0.45**		**0.424**	
	MAGNESIUM	mg/L	NS	NS	NS	16.5		10.1		4.84		8.33		8.22	
	MANGANESE	mg/L	0.2	0.05	0.05	ND	U	0.00521		ND	J	0.00719		0.00668	
	POTASSIUM	mg/L	NS	NS	NS	2.52		2.11		5.19		3.67		3.65	
	SODIUM	mg/L	NS	NS	NS	28.2		30.1		52.3		40.4		39.7	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	8.69		5.67		0.15		7.72		7.72	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	33		-57		81		34		34	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	7.45		7.52		7.74		7.61		7.61	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	620.9		442.4		396.4		404.1		404.1	
	TEMPERATURE	˚C	NS	NS	NS	20.19		20.76		19.88		19.18		19.18	
	TURBIDITY	NTU	NS	NS	NS	0.79		4.88		1.29		26.8		26.8	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	136		180		180		180		180	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	KAFB0620		KAFB0621		KAFB0622		KAFB0623		KAFB0625	
					SAMPLE NUMBER	ST105-30041		ST105-30042		ST105-30043		ST105-30044		ST105-30045	
					SAMPLE DATE	7-May-14		13-May-14		1-May-14		15-Apr-14		7-May-14	
					SAMPLE PURPOSE	REGULAR		REGULAR		REGULAR		REGULAR		REGULAR	
					AQUIFER	REGIONAL		REGIONAL		REGIONAL		PERCHED		REGIONAL	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	152		139		132		118		149	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	BROMIDE	mg/L	NS	NS	NS	0.169	J	0.313		0.248	J	0.366	J	0.153	J
	CHLORIDE	mg/L	250	250	250	17.7		29.1		23.6		27.2		16.4	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	DOC-MAX	mg/L	NS	NS	NS	ND	U	1.51	J	ND	U	1.34	J	1.28	J
	DOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	FLUORIDE	mg/L	1.6	4	1.6	0.387		0.404		0.632		0.3		0.411	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	**12.3**		**12.5**		7.51		**63.2**		**12.9**	
	SULFATE	mg/L	600	250	250	37.9		51.3		35.5		74.3		30.2	
	TOC-MAX	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	330		354		264		**658**		347	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	59.5		64.5		43.6		103		47.9	
	IRON	mg/L	1	0.3	0.3	ND	U	0.0778		0.164		0.0105	J	0.0287	
	MAGNESIUM	mg/L	NS	NS	NS	11		11.9		9.48		22.4		10.5	
	MANGANESE	mg/L	0.2	0.05	0.05	ND	U	0.00177	J	0.00553		ND	U	0.000984	J
	POTASSIUM	mg/L	NS	NS	NS	4.19		2.19		2.29		2.71		6.27	
	SODIUM	mg/L	NS	NS	NS	23.4		26		32.8		24.2		29.5	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	6.1		7.96		6.7		10.53		5.52	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	-70		-49		-55		72		-74	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	7.50		7.50		7.65		7.39		7.62	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	447.6		499.6		410.9		775.8		429.9	
	TEMPERATURE	˚C	NS	NS	NS	19.14		19.85		20.28		17.42		19.2	
	TURBIDITY	NTU	NS	NS	NS	0.66		1.7		5.41		10.67		1.77	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	176		140		144		140		186	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	KAFB0904		KAFB1007		KAFB1008		TJA-2		TJA-4	
					SAMPLE NUMBER	ST105-30046		ST105-30024		ST105-30025		ST105-30047		ST105-30048	
					SAMPLE DATE	15-Apr-14		5-May-14		6-May-14		28-Apr-14		30-Apr-14	
					SAMPLE PURPOSE	REGULAR		REGULAR		REGULAR		REGULAR		REGULAR	
					AQUIFER	REGIONAL		REGIONAL		REGIONAL		PERCHED		REGIONAL	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	134		120		109		106		124	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	BROMIDE	mg/L	NS	NS	NS	0.171	J	0.135	J	0.085	J	0.665		0.239	J
	CHLORIDE	mg/L	250	250	250	14.2		11.2		8.28		65.6		21.7	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	DOC-MAX	mg/L	NS	NS	NS	1.58	J	1.38	J	ND	U	ND	U	ND	U
	DOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	FLUORIDE	mg/L	1.6	4	1.6	0.408		0.475		0.481		0.298		0.34	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	**26.6**		9.04		6.12		**11.4**		**30.8**	
	SULFATE	mg/L	600	250	250	24.7		40.3		31		53.1		16.6	
	TOC-MAX	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	373		266		240		368		344	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U	ND	U	ND	U	ND	U
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	63		42.5		33.7		75.3		64.3	
	IRON	mg/L	1	0.3	0.3	0.161		**0.477**		ND	U	ND	U	ND	U
	MAGNESIUM	mg/L	NS	NS	NS	13		10.9		9.25		11.7		12.8	
	MANGANESE	mg/L	0.2	0.05	0.05	0.0045		0.0164		ND	U	ND	U	ND	U
	POTASSIUM	mg/L	NS	NS	NS	5.07		3.87		3.32		1.82		3.15	
	SODIUM	mg/L	NS	NS	NS	21		21		18.9		22.4		24.5	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	7.85		7.83		7.36		8.7		6.01	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	40		-117		-49		35		-61	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	7.59		7.62		7.77		7.52		7.53	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	484.4		396.7		320.6		533.5		509.5	
	TEMPERATURE	˚C	NS	NS	NS	18.67		22.07		21.23		17.59		18.17	
	TURBIDITY	NTU	NS	NS	NS	4.86		8.78		0.37		0.34		0.27	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	124		150		124		108		152	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

					SAMPLE LOCATION	TJA-4		TJA-5	
					SAMPLE NUMBER	ST105-30049		ST105-30050	
					SAMPLE DATE	30-Apr-14		30-Apr-14	
					SAMPLE PURPOSE	FD		REGULAR	
					AQUIFER	REGIONAL		PERCHED	
Chemical Class Analytical Method	**Analyte**	**Units**	**NMAC 20.6.2 Human WQCC Standard[1]**	**Federal MCL[2]**	**Evaluation Criteria[3]**	**Result**	**Qualifier**	**Result**	**Qualifier**
General Chemistry E300.0, E310.1, E350.1, SW9060, E160.1	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	133		110	
	AMMONIA (AS NITROGEN)	mg/L	NS	NS	NS	0.252	J	ND	U
	BROMIDE	mg/L	NS	NS	NS	0.245	J	0.318	
	CHLORIDE	mg/L	250	250	250	22.1		29.1	
	DISSOLVED ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U
	DOC-MAX	mg/L	NS	NS	NS	ND	U	ND	U
	DOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U
	FLUORIDE	mg/L	1.6	4	1.6	0.346		0.302	
	NITROGEN, KJELDAHL, TOTAL	mg/L	NS	NS	NS	ND	U	ND	U
	NITROGEN, NITRATE-NITRITE	mg/L	10	10	10	**30.6**		**28.2**	
	SULFATE	mg/L	600	250	250	16.9		70.1	
	TOC-MAX	mg/L	NS	NS	NS	1.34	J	ND	U
	TOC-MIN	mg/L	NS	NS	NS	ND	U	ND	U
	TOTAL DISSOLVED SOLIDS	mg/L	1000	500	500	369		392	
	TOTAL ORGANIC CARBON	mg/L	NS	NS	NS	ND	U	ND	U
Major Cations SW6010B	CALCIUM	mg/L	NS	NS	NS	65.8		79.3	
	IRON	mg/L	1	0.3	0.3	ND	U	0.046	
	MAGNESIUM	mg/L	NS	NS	NS	13		14.4	
	MANGANESE	mg/L	0.2	0.05	0.05	ND	U	0.00172	J
	POTASSIUM	mg/L	NS	NS	NS	3.22		2	
	SODIUM	mg/L	NS	NS	NS	25		23.1	
Field Parameters	DISSOLVED OXYGEN	mg/L	NS	NS	NS	6.01		9.91	
	OXIDATION-REDUCTION POTENTIAL	mV	NS	NS	NS	-61		-44	
	pH	S.U.	6-9	6.5-8.5	6.5-8.5	7.53		7.55	
	SPECIFIC CONDUCTANCE	$\mu S/cm^2$	NS	NS	NS	509.5		564.3	
	TEMPERATURE	˚C	NS	NS	NS	18.17		17.62	
	TURBIDITY	NTU	NS	NS	NS	0.27		0.9	
	ALKALINITY (AS CALCIUM CARBONATE)	mg/L	NS	NS	NS	152		140	

Table 3-2. Analytical Results and Field Parameters, Stage 2 Nitrate Abatement Program

Notes:
[1] New Mexico Administrative Code (NMAC), Title 20, Chapter 6, Part 2.3103 Standards for Ground Water of 10,000 mg/L TDS concentration or lower.
[2] U.S. Environmental Protection Agency National Drinking Water Regulations, including primary and secondary standards (May 2009).
[3] The evaluation criteria is the lowest value between the New Mexico and federal regulatory levels.

Notes:
Shading indicates the analyte was detected
Bold = detected concentration exceeds the evaluation criterion
-- = not analyzed
˚C = degrees Celsius
DOC = dissolved organic carbon
FD = field duplicate sample
FT = feet
GCMP = golf course main pond
J = estimated value, concentration is less than the Level of Quantitation (LOQ) but greater than the detection limit (DL)
KAFB = Kirtland Air Force Base
MCL = maximum contaminant level
mg/L = milligram per liter
µS/cm^2 = microSiemen per centimeters squared
mV = millivolt
ND = analyte was not detected
NS = not specified
NTU = nephelometric turbidity unit
REG = regular sample
S.U. = standard unit
TOC = total organic carbon
TJA = Tijeras Arroyo
U = the analyte was analyzed for but was not detected or the concentration was below the detection limit
WQCC = Water Quality Control Commission

APPENDIX A

Well Gauging Data Forms for Semiannual Gauging Events and Water Quality Field Data Sheets for Annual Sampling Event

THIS PAGE INTENTIONALLY LEFT BLANK

KIRTLAND AIR FORCE BASE, ECOS, WATER LEVELS, 4th Quarter 2013

Meter Serial Number:

Field Personnel Names:

DATABASE ID	PUMP	COMPLETION	MEASUREMENT DATE	MEASUREMENT TIME	DEPTH TO LNAPL (FT BELOW OUTER CASING OR VAULT RIM)	DEPTH TO WATER (FT BELOW OUTER CASING OR VAULT RIM)	Quality Check by Timotheus Noger	AS BUILT DEPTH TO BOTTOM (CH2M OR COMPLETION DATA, BGS)	COMMENTS / NOTES
LF-001 Regional Wells									
KAFB-0018	P		11-4-13	0927	N/A	458.15			
KAFB-0019	P		11-4-13	0918	N/A	453.77			
KAFB-0120	P		11-4-13	0943	N/A	425.93			
KAFB-0121	P		11-4-13	0954	N/A	445.25			
LF-002 Regional Wells									
KAFB-0213	P		11-4-13	1032	N/A	418.77			
KAFB-0219	P		11-4-13	1359	N/A	399.32			
KAFB-0220	P		11-4-13	1127	N/A	401.64			
KAFB-0221	P		11-4-13	1046	N/A	410.79			
LF-008 Perched Aquifer Wells									
KAFB-0310	P		11-4-13	1531	N/A	353.04			
KAFB-0313	P		11-4-13	1541	N/A	349.90			
KAFB-0314	P		11-4-13	1512	N/A	416.00			
KAFB-0315	P		11-4-13	1503	N/A	438.69			
TJA-2			11-12-13	1226	N/A	278.32			
LF-008 Regional Wells									
KAFB-0307	P		11-4-13	1431	N/A	430.20			
KAFB-0308	P		11-4-13	1440	N/A	447.28			
KAFB-0309	P		11-4-13	1449	N/A	479.62			
KAFB-0311	P		11-4-13	1555	N/A	420.68			
KAFB-0312	P		11-4-13	1523	N/A	418.34			
PL567/UST (Quarterly)									
RW-1									
RW-2	P		11-14-13	10:59	62.16	~~60.12~~ 65.09			
RW-3									

150577

KIRTLAND AIR FORCE BASE, ECOS, WATER LEVELS, 4th Quarter 2013

RW-4	P		11-14-13	1250	61.21	66.61			
RW-5	P		11-14-13	1255	61.70	64.15			
MW-1	P		11-14-13	1106	62.01	64.21			
MW-2			11-14-13	1305	n/a	59.56			
MW-3			11-14-13	1310	n/a	61.04 TN			
MW-4			11-14-13	1111	n/a	~~63.44~~ 63.56			
MW-5			11-14-13	1307	n/a	60.30			
MW-6			11-14-13	1300	n/a	63.21			
MW-7			11-14-13	1303	n/a	62.82			
ST-070 (Quarterly)									
KAFB-7001									
ST-105 (Semiannual)									
KAFB-0118 ✓									
KAFB-0119 ✓									
KAFB-0120 ✓									
KAFB-0121 ✓									
KAFB-0213 ✓									
KAFB-0216 ✓									
KAFB-0219 ✓									
KAFB-0220 ✓									
KAFB-0221 ✓									
KAFB-0307 ✓									
KAFB-0308 ✓									
KAFB-0309 ✓									
KAFB-0310 ✓									
KAFB-0311 ✓									
KAFB-0312 ✓									
KAFB-0313 ✓									
KAFB-0314 ✓									
KAFB-0315 ✓									
KAFB-0417 ✓									
KAFB-0505 ✓									
KAFB-0506									
KAFB-0507									
KAFB-0508	P		11-6-13	0829	n/a	494.30			
KAFB-0509									
KAFB-0510	P		11-7-13	0919	n/a	510.73			
KAFB-0512	P		11-6-13	0950	n/a	441.93			
KAFB-0514									
KAFB-0516									
KAFB-0517	P		12-10-13	1256	n/a	332.32			
KAFB-0518									
KAFB-0519									
KAFB-0520	P		11-6-13	0926	n/a	384.93			

150577

KIRTLAND AIR FORCE BASE, ECOS, WATER LEVELS, 4th Quarter 2013

KAFB-0521									
KAFB-0522	P		12-10-13	1325	n/a	407.92			tubing in the way of measuring
KAFB-0523	P		11-6-13	0847	n/a	490.27			
KAFB-0524	P		11-6-13	0900	n/a	484.84			
KAFB-0525									
KAFB-0602									
KAFB-0608									
KAFB-0611	P		11-5-13	1005	n/a	462.39			
KAFB-0612	P		11-5-13	1012	n/a	297.42			
KAFB-0613									
KAFB-0615	P		11-5-13	1142	n/a	202.18			
KAFB-0616	P		11-5-13	1159	n/a	442.89			
KAFB-0617	P		11-5-13	1127	n/a	559.38			
KAFB-0618	P		11-5-13	1104		484.19			
KAFB-0619	P		11-5-13	1100	n/a	386.33			
KAFB-0620									
KAFB-0621	P		11-5-13	1216	n/a	627.59			
KAFB-0622	P		11-7-13	1155	n/a	549.72			
KAFB-0623	P		11-5-13	1035	n/a	259.14			
KAFB-0624	D								
KAFB-0625	P		12-10-13	1226	n/a	471.94			deeper than 750 ft
KAFB-0901	D		11-14-13	1524	n/a	471.22			
KAFB-0903	P		11-14-13	1514	n/a	236.82			
KAFB-0904	P		11-4-13	1346	n/a	351.89			
KAFB-1006									
KAFB-1007									
KAFB-1008									
KAFB-1009									
KAFB-10611									
KAFB-1062									
KAFB-1063									
KAFB-2005	P		11-14-13	1353	n/a	109.58			Flushmount
KAFB-2006									
KAFB-2007	P		11-13-13	1540	n/a	270.32			
KAFB-2008	P		11-13-13	1529	n/a	597.20			
KAFB-2009									
KAFB-2602A									
KAFB-2622	P		11-5-13	1455	n/a	202.64			
KAFB-2623									
KAFB-2624	P		11-5-13	1433	n/a	217.79			
KAFB-2625									
KAFB-2626	P		11-25-13	1600	n/a	207.47			
KAFB-2627	P		11-5-13	1426	n/a	218.62			
KAFB-3391	D								Meter gets blocked @ 270'

150577

KIRTLAND AIR FORCE BASE, ECOS, WATER LEVELS, 4th Quarter 2013

KAFB-3392	D		11-19-13	1237		536.76			
KAFB-3411									
KAFB-504									
KAFB-6241	P		11-7-13	1143	n/a	536.64			
KAFB-6243	P		12-10-13	1213	n/a	498.05			
KAFB-6301	P		11-7-13	1126	n/a	539.23			
KAFB-8351									
PGS-2									
TA1-W-01	P		11-7-13	1015	n/a	543.13			
TA1-W-02	P		11-19-13	1301	n/a	524.15			
TA1-W-03	P		12-10-13	0930	n/a	351.39			flush mount
TA1-W-04	P		12-10-13	0935	n/a	571.86			
TA1-W-05									
TA1-W-06	P		11-19-13			307.06			
TA1-W-07	P		11-7-13	1022	n/a	286.73			flush mount
TA1-W-08									
TA2-NW1-325	D		12-10-13	1004	n/a	318.66			
TA2-NW1-595	P		12-10-13	0955	n/a	524.70			
TA2-SW1-320	D		12-10-13	1016	n/a	319.20			
TA2-W-01									
TA2-W-19	P		12-10-13	1115	n/a	272.22			can't locate
TA2-W-24	D		12-10-13	1125	n/a	444.06			
TA2-W-25	P		11-14-13	1455	n/a	470.59			
TA2-W-26	P		11-14-13	1501	n/a	286.99			
TA2-W-27 ✓	P		12-10-13	1132	n/a	280.34			
TJA-2									
TJA-3	P		12-10-13	1052	n/a	500.06			1'5" PVC stickup
TJA-4	P		11-14-13	1441	n/a	302.79			
TJA-5	P		11-14-13	1437	n/a	270.61			
TJA-6	P		11-14-13	1424	n/a	451.79			
TJA-7	P		12-10-13	1045	n/a	304.11			
WYO-3	P		11-7-13	1045	n/a	529.86			
WYO-4	P		11-7-13	0902	n/a	293.73			
WP0-026 (Quarterly)									
Sewage Lagoons Pearched Aquifer wells									
KAFB-0606									
KAFB-2622 ✓									
KAFB-2624 ✓									
KAFB-2625									
KAFB-2626 ✓									
KAFB-2630									
KAFB-2631									
KAFB-2632									Flush mount
Sewage Lagoons Regional									

150577

KIRTLAND AIR FORCE BASE, ECOS, WATER LEVELS, 4th Quarter 2013

KAFB-0505	P		11-5-13	1437	n/a	503.11			
KAFB-2628	P		11-6-13	0809	na	509.65			
KAFB-2629									
Golf Course Main Pond									
KAFB-0608	D		12-10-13	0935	n/a	295.75			
KAFB-0609									
KAFB-0610									

150577

Kirtland Air Force Base, ECOS, Water Levels, March 2014

DATABASE ID	PUMP	MEASUREMENT DATE	MEASUREMENT TIME	DEPTH TO LNAPL (FT BELOW OUTER CASING OR VAULT RIM)	DEPTH TO WATER (FT BELOW OUTER CASING OR VAULT RIM)	Quality Check by Tim Noger	AS BUILT DEPTH TO BOTTOM (CH2M OR COMPLETION DATA, BGS)	COMMENTS / NOTES
LF-008 Wells								
KAFB-0307	P	3/10/2014	1213	NA	430.06	TN		
KAFB-0311	P	3/10/2014	1113	NA	420.72	TN		
KAFB-0312	P	3/10/2014	1330	NA	418.38	TN		
KAFB-0314	P	3/10/2014	1318	NA	416.23	TN		
KAFB-0315	P	3/10/2014	1308	NA	438.78	TN		
TJA-2	P	3/10/2014	1458	NA	277.89	TN		
ST-105								
KAFB-0417	P	NA	NA	NA	NA			OBSTRUCTION @ 445
KAFB-0504	P	3/11/2014	957	NA	497.07	TN		
KAFB-0505	P	3/10/2014	851	NA	501.76	TN		
KAFB-0506	P	3/10/2014	952	NA	208.63	TN		
KAFB-0507	P	3/11/2014	1014	NA	496.28	TN		
KAFB-0508	P	3/11/2014	1059	NA	491.74	TN		
KAFB-0510	P	3/10/2014	1613	NA	508.1	TN		
KAFB-0512	P	3/10/2014	1046	NA	440.33	TN		
KAFB-0514	P	3/10/2014	1201	NA	344.57	TN		
KAFB-0516	P	3/10/2014	1139	NA	342.78	TN		
KAFB-0517	P	3/10/2014	1131	NA	331.61	TN		
KAFB-0518	P	3/10/2014	904	NA	311.66	TN		
KAFB-0520	P	3/10/2014	1100	NA	386.6	TN		
KAFB-0522	P	3/10/2014	1113	NA	406.96	TN		
KAFB-0523	P	3/11/2014	1047	NA	487.95	TN		
KAFB-0524	P	3/11/2014	1033	NA	482.9	TN		
KAFB-0525	P	3/11/2014	924	NA	365.86	TN		
KAFB-0608	D	3/11/2014	1458	NA	294.28	TN		
KAFB-0611	P	3/10/2014	1601	NA	462.39	TN		
KAFB-0612	P	3/10/2014	1556	NA	296.51	TN		
KAFB-0613	P	3/11/2014	1259	NA	354.16	TN		
KAFB-0614	P	3/11/2014	1252	NA	331.90	TN		
KAFB-0615	P	3/10/2014	1500	NA	202.77	TN		
KAFB-0616	P	3/10/2014	1541	NA	442.87	TN		
KAFB-0617	P	3/10/2014	1528	NA	559.11	TN		
KAFB-0618	P	3/11/2014	1335	NA	485.26	TN		
KAFB-0619	P	3/11/2014	1342	NA	386.49	TN		
KAFB-0620	P	3/11/2014	1208	NA	442.73	TN		
KAFB-0621	P	3/10/2014	1413	NA	627.28	TN		
KAFB-0622	P	3/11/2014	1401	NA	549.44	TN		
KAFB-0623	P	3/10/2014	1616	NA	258.97	TN		
KAFB-0625	P	3/11/2014	1225	NA	471.48	TN		
KAFB-0901	P	3/10/2014	1429	NA	471.01	TN		
KAFB-0903	P	3/10/2014	1142	NA	237.21	TN		
KAFB-0904	P	3/11/2014	1146	NA	351.78	TN		
KAFB-2005	P	3/11/2014	1425	NA	123.06	TN		
KAFB-2007	P	3/11/2014	1437	NA	269.30	TN		
KAFB-2009	P	3/11/2014	1528	NA	70.80	TN		

DATABASE ID	PUMP	MEASUREMENT DATE	MEASUREMENT TIME	DEPTH TO LNAPL (FT BELOW OUTER CASING OR VAULT RIM)	DEPTH TO WATER (FT BELOW OUTER CASING OR VAULT RIM)	Quality Check by Tim Noger	AS BUILT DEPTH TO BOTTOM (CH2M OR COMPLETION DATA, BGS)	COMMENTS / NOTES
KAFB-2602A		NA	NA	NA	NA			CAN'T LOCATE
KAFB-2622	P	3/10/2014	903	NA	202.78	TN		
KAFB-2623	P	3/10/2014	1001	NA	221.59	TN		
KAFB-2624	P	3/10/2014	857	NA	217.72	TN		
KAFB-2625	P	3/10/2014	1014	NA	197.53	TN		
KAFB-2626	P	3/10/2014	918	NA	207.56	TN		
KAFB-2627	P	3/10/2014	837	NA	218.59	TN		
KAFB-2628	P	3/10/2014	830	NA	508.03	TN		
KAFB-2629	P	3/10/2014	942	NA	500.69	TN		
KAFB-2630	P	3/10/2014	938	NA	212.42	TN		
KAFB-2631	P	3/10/2014	927	NA	173.79	TN		
KAFB-2632	P	3/10/2014	1031	NA	169.25	TN		
KAFB-3391	P	3/11/2014	902	NA	275.82	TN		
KAFB-3392	P	3/11/2014	850	NA	535.58	TN		
KAFB-6241	P	3/11/2014	1151	NA	536.93	TN		
KAFB-6243	P	3/11/2014	1132	NA	497.87	TN		
KAFB-6301		NA	NA	NA	NA			NOT ACCESSABLE, LOCKED GATE
KAFB-8351	D	3/11/2014	816	NA	460.22	TN		
PGS-2	D	3/10/2014	1304	NA	547.12	TN		
TA1-W-01	P	3/11/2014	918	NA	542.14	TN		
TA1-W-02	P	3/11/2014	943	NA	524.04	TN		
TA1-W-03	P	3/10/2014	1354	NA	351.43	TN		
TA1-W-04	P	3/10/2014	1339	NA	571.05	TN		
TA1-W-05	P	3/12/2014	750	NA	568.13	TN		
TA1-W-06	P	3/11/2014	940	NA	307.24	TN		
TA1-W-07	P	3/11/2014	925	NA	286.51	TN		
TA1-W-08	P	3/10/2014	1327	NA	311.06	TN		
TA2-NW1-325	D	3/10/2014	1007	NA	318.33	TN		
TA2-NW1-595	P	3/10/2014	1013	NA	523.73	TN		
TA2-SW1-320	D	3/11/2014	1040	NA	318.87	TN		
TA2-W-01	P	3/11/2014	1051	NA	328.85	TN		
TA2-W-19	P	3/11/2014	1111	NA	271.94	TN		
TA2-W-24	D	3/10/2014	1446	NA	443.59	TN		
TA2-W-25	P	3/10/2014	1404	NA	470.22	TN		
TA2-W-26	P	3/10/2014	1410	NA	287.28	TN		
TA2-W-27	P	3/10/2014	1442	NA	280.13	TN		
TJA-3	P	3/10/2014	1548	NA	499.82	TN		
TJA-4	P	4/9/2014	1123	NA	302.19	TN		
TJA-5	P	4/9/2014	1112	NA	270.96	TN		
TJA-6	P	3/10/2014	1512	NA	451.81	TN		
TJA-7	P	3/10/2014	1543	NA	303.71	TN		
WYO-3	P	3/10/2014	1602	NA	529.36	TN		
WYO-4	P	3/10/2014	1558	NA	292.94	TN		
Mc Cormick Ranch								
KAFB-1006	D	3/11/2014	1420	NA	380.17	TN		
KAFB-1007	P	3/11/2014	1452	NA	384.39	TN		
KAFB-1008	D	3/11/2014	1404	NA	379.73	TN		
KAFB-1009	D	3/11/2014	1437	NA	393.56	TN		

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Well ID No.: KAFB-0307
Site / SWMU No.: LF008
Date: 4/17/14
Weather: clear, windy, ~54°
Time: 1004
Field Crew: GP, DT
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	461.33	ft
(B) Pre-Purge Depth to Water	430.00	ft
(C) Water Column Height (A-B)	~~31~~ 31.33	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	20.4	gal
(F) Depth to Top of Screen	406.33	ft
(G) Depth to Bottom of Screen	451.33	ft
(H) Saturated Filter Pack Length (G –F, or B)	~~18~~ 21.33	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	26	gal
(K) Min Purge Volume (E + J)	46.4	gal

EQUIPMENT / MODEL	ID NUMBER
Parameter Meter In Situ	R25194
Turbidity Meter HACH 2100Q	0165
Pump Portable Bennett	On-File
Field Alkalinity La Motte	3467-01

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
~~1004~~ ~~0933~~	0	~~15.8~~ 430.0	15.8	7.06	471.1	7.02	180	12.2	1.2 L/min
1035	10	432.86	18.26	7.48	510.6	7.44	46	13.3	
1106	20	432.75	18.29	7.48	511.2	7.48	39	6.70	
1137	30	432.82	18.43	7.50	512.8	7.38	41	1.22	
1208	40	432.82	18.48	7.50	512.2	7.27	83	1.49	
1239	50	432.82	18.29	7.50	510.6	7.25	67	2.19	

Values Prior to Sampling

1239	50	432.82	18.29	7.50	510.6	7.25	67	2.19	1.2 L/min

Field Alkalinity Result 152 mg/L $CaCO_3$
Sample ID: LF008-30001
BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** KAFB-0311

Site / SWMU No.: ~~SW~~ LF008 **Date:** 4/16/14

Weather: clear, ~ 68° **Time:** 1115

Field Crew: GB, DT **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	469.4	ft
(B) Pre-Purge Depth to Water	420.50	ft
(C) Water Column Height (A-B)	48.9	ft
(D) Casing Factor (4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	31.8	gal
(F) Depth to Top of Screen	434.5	ft
(G) Depth to Bottom of Screen	459.5	ft
(H) Saturated Filter Pack Length (G –F, or B)	25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	61.8	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ Troll	R25194	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Bennett	on file	
Field Alkalinity: La Motte	3657-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
04/16 1115	0	420.5	18.77	7.35	423.2	7.77	163	3.17	~~0.9 L/min~~ 2.2 L/min
~~1205~~ 1155	~~232~~ 52	420.75	18.87	7.51	420.8	7.18	154	3.42	
~~1255~~ 1235	~~474~~ 24	420.83	18.83	7.52	420.8	7.55	179	3.09	
1254 ~~1345~~ ~~1315~~	~~525~~ 236	420.69	18.77	7.52	420.3	7.48	183	2.39	0.5 ~~Lpm~~ 1.0 L/min
~~1435~~ 1313	~~575~~ 48	420.68	18.67	7.52	419.6	7.54	183	2.82	
~~1539~~ 1332	~~62~~ 62	420.68	18.64	7.53	419.2	7.55	185	2.22	

Values Prior to Sampling

1332	62	420.68	18.64	7.53	419.2	7.55	185	2.22	1.0 L/min

Field Alkalinity Result 200 mg/L $CaCO_3$ **Sample ID:** LF008-30003

BUBBLES: YES_____ **NO** X **WHERE**_____ **AMOUNT**_____ **SIZE**_____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** KAFB-0312

Site / SWMU No.: LF008 **Date:** 4/23/14

Weather: clear, ~60° **Time:** 1022

Field Crew: GP, AC **Crew Signature:** [illegible]

Review Signature: [illegible] **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	538.6	ft	(J) Filter Pack Volume (H x I)	26.75	gal
(B) Pre-Purge Depth to Water	418.10	ft	(K) Min Purge Volume (E + J)	149.6	gal
(C) Water Column Height (A-B)	120.5	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 5"=1.02	1.02		Parameter Meter		
(E) One Well Casing Volume (C x D):	122.91	gal	In Situ	R25194	
(F) Depth to Top of Screen	504.6	ft	Turbidity Meter		
(G) Depth to Bottom of Screen	529.6	ft	HACH 2100Q	0165	
(H) Saturated Filter Pack Length (G –F, or B)	25	ft	Pump	Portable Bennett	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07		Field Alkalinity	la motte	3467-01

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
10:22	0	418.1	19.62	7.34	469.7	7.06	100	1.02	1.8 L/min
1238	67	418.19	19.77	7.51	476.8	7.33	31	1.32	
1454	135	418.50	19.71	7.53	477.3	7.38	32	1.62	
1513	140	418.37	19.35	7.53	475.6	7.28	35	0.18	1.0 L/min
1532	145	418.37	19.35	7.53	473.8	7.30	34	0.49	↓
1551	150	418.37	19.32	7.53	472.7	7.23	34	0.28	↓

Values Prior to Sampling

1551	150	418.37	19.32	7.53	472.7	7.23	34	0.28	

Field Alkalinity Result 155 mg/L CaCO3 **Sample ID:** LF008-30004

BUBBLES: YES ____ **NO** X **WHERE** ____ **AMOUNT** ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS
Well ID No.: LAFB0314
Site / SWMU No.: LF008
Date: 4/21/14
Weather: sunny 80's
Time: 1230
Field Crew: TN, GP
Crew Signature: TN
Review Signature: TN
Date Review: 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No

Notes: BH VOC's 0ppm BZ VOC's 0ppm

CALCULATIONS

(A) Depth to Well Bottom	455.17	ft	(J) Filter Pack Volume (H x I)	21.40	gal
(B) Pre-Purge Depth to Water	416.37	ft	(K) Min Purge Volume (E + J)	60.95	gal
(C) Water Column Height (A-B)	38.80	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02		Parameter Meter: In Situ 9500	R 25194	
(E) One Well Casing Volume (C x D):	39.58	gal	Turbidity Meter: Hach 2100 Q	0165	
(F) Depth to Top of Screen	430.17	ft	Pump: portable Bennett	on file	
(G) Depth to Bottom of Screen	450.17	ft	Field Alkalinity: La Motte	3467-01	
(H) Saturated Filter Pack Length (G –F, or B)	20.00	ft			
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07				

PURGING INFORMATION

Description first water purged: clear, no odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/21/14 1307	0	416.37	22.96	7.39	953.8	7.07	77	3.85	~~1.2 L/min~~ 2.12 L/min
1348 ~~1419~~ TN	23	416.44	19.23	7.41	881.7	8.58	41	1.61	
1429	46	416.42	19.18	7.41	879.7	8.62	45	1.29	
1448	51	416.38	19.18	7.41	884.5	8.54	43	0.60	1.0 L/min
1507	56	416.36	19.21	7.40	885.8	8.57	44	1.18	
1526	61	416.36	19.15	7.42	885.3	8.57	44	1.92	
Values Prior to Sampling									
1526	61	416.36	19.15	7.42	885.3	8.57	44	1.92	1.0 L/min

Field Alkalinity Result 116 mg/L @ $CaCO_3$ **Sample ID:** LF008-30007

BUBBLES: YES_____ **NO**_____ **WHERE**_____ **AMOUNT**_____ **SIZE**_____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** KAFB-0315

Site / SWMU No.: LF008 **Date:** 4/28/14

Weather: partly cloudy, ~ 43° **Time:** 0929

Field Crew: GP, AC **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	479	ft
(B) Pre-Purge Depth to Water	438.57	ft
(C) Water Column Height (A-B)	40.43	ft
(D) Casing Factor: 4"=0.65 6"=1.02	1.02	
(E) One Well Casing Volume (C x D):	41.24	gal
(F) Depth to Top of Screen	449	ft
(G) Depth to Bottom of Screen	474	ft
(H) Saturated Filter Pack Length (G –F, or B)	25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07	

(J) Filter Pack Volume (H x I)	26.75	gal
(K) Min Purge Volume (E + J)	67.99	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25794	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Bennett	On-File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0929	0	438.57	17.61	7.37	567.1	9.55	160	1.73	1.84 L/min
1024	26	439.42	18.36	7.45	576.0	9.94	50	1.52	↓
1120	53	439.46	18.47	7.45	579.1	9.97	45	0.84	↓
1139	58	439.10	18.21	7.48	574.5	9.69	57	0.51	1.0 L/min
1158	63	439.10	18.31	7.49	577.7	9.73	45	0.36	↓
1217	68	439.10	18.45	7.49	579.8	9.69	43	1.69	↓

Values Prior to Sampling

1217	68	439.10	18.45	7.49	579.8	9.69	43	1.69	1.0 L/min

Field Alkalinity Result 160 mg/L $CaCO_3$ **Sample ID:** LF008-30208

BUBBLES: YES_____ **NO** X **WHERE**_____ **AMOUNT**_____ **SIZE**_____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOSS
Well ID No.: KAFB-0505
Site / SWMU No.: WP26 / ST105
Date: 3/19/14
Weather: clear, ~50°
Time: 1304
Field Crew: GP, JM
Crew Signature: [illegible]
Review Signature: TT Nagy
Date Review: 4/2/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - Locked: Yes - No Well ID Mark: Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	522.75	ft
(B) Pre-Purge Depth to Water	501.62	ft
(C) Water Column Height (A-B)	21.13	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	21.56	gal
(F) Depth to Top of Screen	496	ft
(G) Depth to Bottom of Screen	521	ft
(H) Saturated Filter Pack Length (G - F, or B)	19.38	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	20.7	gal
(K) Min Purge Volume (E + J)	42.3	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ Troll	R25194	
Turbidity Meter: HACH 2100Q	0157	
Pump: Portable Bennett	On File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time (3/19/14)	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1304	0	501.62	17.55	7.42	478.8	6.40	140	4.40	2.56 L/min
1324	14	501.28	19.23	7.50	500.4	6.23	47	6.96	↓
1345	28	501.21	19.16	7.52	498.6	7.07	48	2.55	↓
1404	33	501.49	18.79	7.56	493.8	7.39	44	1.42	1.0 L/min
1423	38	501.50	18.70	7.58	493.7	7.40	46	1.83	↓
1442	43	501.52	18.65	7.62	493.4	7.54	47	1.10	↓
Values Prior to Sampling									
1442	43	501.52	18.65	7.62	493.4	7.54	47	1.10	

Field Alkalinity Result 200 mg/L $CaCO_3$ Sample ID: ST105-30001 WP026-30013

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Well ID No.: KAFB-0506
Site / SWMU No.: WP26 / ST105
Date: 3/20/14
Weather: Clear, ~65°
Time: 1339
Field Crew: GP, JM
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/2/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - Locked: Yes - No Well ID Mark: Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	224	ft
(B) Pre-Purge Depth to Water	208.56	ft
(C) Water Column Height (A-B)	15.44	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	15.74	gal
(F) Depth to Top of Screen	200	ft
(G) Depth to Bottom of Screen	220	ft
(H) Saturated Filter Pack Length (G –F, or B)	11.44	ft
(I) Casing/~~Borehole Factor~~ 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	12.24	gal
(K) Min Purge Volume (E + J)	27.98	gal

EQUIPMENT / MODEL	ID NUMBER
Parameter Meter: In Situ Troll	R25194
Turbidity Meter: HACH 2100 Q	0157
Pump: Portable Bennett	On-File
Field Alkalinity: La Motte	3467-01

PURGING INFORMATION

Description first water purged: clear

Date and / or Time (3/20/14)	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1339	0	208.56	18.47	7.59	853.0	6.83	90	0.96	1.2 L/min
1358	6	211.93	16.89	7.54	864.5	7.70	37	1.27	↓
1417	13	214.22	16.88	7.56	836.5	7.53	36	1.39	↓
1436	18	216.30	16.92	7.56	833.0	7.48	35	1.93	1.0 L/min
1455	23	217.61	16.93	7.23	751.1	7.23	31	2.42	↓
1514	28	218.94	16.93	7.29	769.0	7.29	32	3.56	↓

Values Prior to Sampling

1514	28	218.94	16.93	7.29	769.0	7.29	32	3.56	1.0 L/min

Field Alkalinity Result 76 mg/L $CaCO_3$ Sample ID: WP026-30001 ST105-30002

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Well ID No.: KAFB-0507
Site / SWMU No.: ST105
Date: 3/24/14
Weather: clear, ~68°
Time: 1159
Field Crew: GP, MB
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/2/14

WELL OBSERVATIONS

Protective Casing / Vault: Intact - Damaged -
Locked: Yes No
Well ID Mark: Yes No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	515.4	ft
(B) Pre-Purge Depth to Water	496.46	ft
(C) Water Column Height (A-B)	18.94	ft
(D) Casing Factor 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	12.31	gal
(F) Depth to Top of Screen	482.3	ft
(G) Depth to Bottom of Screen	507	ft
(H) Saturated Filter Pack Length (G -F, or B)	10.54	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	12.65	gal
(K) Min Purge Volume (E + J)	24.96	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ Troll	R25194	
Turbidity Meter: HACH 2100Q	0157	
Pump: Portable Bennett	On-File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
3/24/11:59	0	496.46	19.02	7.2	484.0	9.15	106	~~3.62~~ 3.07	2.4 L/min
1207	5	496.60	18.84	7.52	493.0	10.04	53	2.22	↓
1215	10	496.59	18.81	7.52	493.0	10.32	54	3.71	↓
1234	15	496.49	18.56	7.54	490.6	9.44	52	2.26	1.0 L/min
1253	20	496.49	18.59	7.55	491.3	9.22	51	1.49	↓
1312	25	496.49	18.62	7.56	491.9	9.22	50	1.36	↓
Values Prior to Sampling									
1312	25	496.49	18.62	7.56	491.9	9.22	50	1.36	1.0 L/min

Field Alkalinity Result 192 mg/L $CaCO_3$ Sample ID: ST105-30003

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, ~~Bulk Fuels Facility Spill~~

Project Name: KAFB ECOS

Site / SWMU No.: ST105

Weather: clear, ~45°

Field Crew: GP, JM

Review Signature: [illegible]

Well ID No.: KAFB-0508

Date: 3/19/14

Time: 0924

Crew Signature: [illegible]

Date Review: 4/2/14

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -

Locked: (Yes) - No

Well ID Mark: (Yes) - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	513	ft
(B) Pre-Purge Depth to Water	491.90	ft
(C) Water Column Height (A-B)	21.1	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	13.71	gal
(F) Depth to Top of Screen	481	ft
(G) Depth to Bottom of Screen	506	ft
(H) Saturated Filter Pack Length (G -F, or B)	25	ft
(I) Casing/Borehole Factor (4/10 = 1, 2/10 = 1.07,)	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	43.7	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ Troll	R25~~[illegible]~~194	
Turbidity Meter: HACH 2100Q	0157	
Pump: Portable Bennett	On-File	
Field Alkalinity: La motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0924	0	491.90	14.92	7.38	362.0	8.72	199	2.54	2.8 L/m
0944	14	491.93	18.52	7.68	386.9	7.61	76	1.22	↓
1004	29	492.05	18.60	7.69	387.8	7.59	70	0.98	↓
1023	34	492.08	18.20	7.71	384.7	7.57	66	0.94	1.0
1042	39	492.12	18.34	7.71	386.0	7.58	63	0.56	↓
1101	44	492.18	18.40	7.71	386.4	7.59	61	0.74	↓
Values Prior to Sampling									
1101	44	492.18	18.40	7.71	386.4	7.59	61	0.74	1.0 L/min

Field Alkalinity Result 132 mg/L $CaCO_3$ Sample ID: ST105-30004

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Well ID No.: KAFB - 0510
Site / SWMU No.: ST105
Date: 3/20/14
Weather: clear, ~60°
Time: 0952
Field Crew: GP, JM
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/2/14

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	539.1	ft
(B) Pre-Purge Depth to Water	508.09	ft
(C) Water Column Height (A-B)	31.01	ft
(D) Casing Factor: (4"=0.65) 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	20.16	gal
(F) Depth to Top of Screen	514	ft
(G) Depth to Bottom of Screen	536	ft
(H) Saturated Filter Pack Length (G -F, or B)	22	ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07,)	1.2	

(J) Filter Pack Volume (H x I)	26.4	gal
(K) Min Purge Volume (E + J)	46.7	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ Troll	R25194	
Turbidity Meter: HACH 2100Q	0157	
Pump: Portable Bennett	On-file	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time (3/20/14)	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0952	0	508.09	15.46	7.22	296.9	9.48	212	7.87	2.48 L/min
1016	16	508.15	18.81	7.69	318.0	7.30	62	2.47	↓
1041	32	508.15	18.87	7.70	316.0	7.26	54	1.13	↓
1100	37	508.10	18.31	7.72	311.7	7.29	51	0.75	1.0 L/min
1119	42	508.10	18.41	7.75	310.9	7.22	47	0.64	↓
1138	47	508.10	18.55	7.73	314.0	7.24	44	0.75	↓

Values Prior to Sampling

1138	47	508.10	18.55	7.73	314.0	7.24	44	0.75	1.0 L/min

Field Alkalinity Result 116 mg/L $CaCO_3$
Sample ID: ST105-30005, ST105-30006

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: E/OS
Well ID No.: KAFB-0517
Site / SWMU No.: ST 105
Date: 3-25-14
Weather: Sunny
Time: 0944
Field Crew: GP, MB
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 4/2/14

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	353.55	ft
(B) Pre-Purge Depth to Water	331.68	ft
(C) Water Column Height (A-B)	18.32	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	11.36	gal
(F) Depth to Top of Screen	325	ft
(G) Depth to Bottom of Screen	350	ft
(H) Saturated Filter Pack Length (G –F, or B) 18.32	~~331.68~~	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	21.98	gal
(K) Min Purge Volume (E + J)	33.34	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ Troll	R25194	
Turbidity Meter: HACH 2100Q	0157	
Pump: Portable Bennett	On file	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
9:44	0	331.68	16.55	7.02	0.473	7.94	173	2.38	3.12 L/min
9:56	10	331.71	18.48	7.63	0.497	7.91	62	5.00	↓
1008	19	331.70	18.58	7.62	0.537	7.95	56	2.61	↓
1027	24	331.69	18.17	7.64	0.543	7.89	53	1.62	1.0 L/min
1046	29	331.65	18.00	7.65	0.538	7.74	51	1.73	↓
1105	34	331.67	18.08	7.65	0.538	7.65	50	1.14	↓

Values Prior to Sampling

1105	34	331.67	18.08	7.65	0.538	7.65	50	1.14	

Field Alkalinity Result 124 mg/L $CaCO_3$ Sample ID: ST105-30010

BUBBLES: YES____ NO X WHERE_____ AMOUNT_____ SIZE_____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Well ID No.: KAFB-0518
Site / SWMU No.: ST105
Date: 3/25/14
Weather: clear, ~ 70°
Time: 1315
Field Crew: GP, BM
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/2/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - Locked: Yes - No Well ID Mark: Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	338.29	ft
(B) Pre-Purge Depth to Water	311.78	ft
(C) Water Column Height (A-B)	26.51	ft
(D) Casing Factor: 4"=0.63 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	17.23	gal
(F) Depth to Top of Screen	305	ft
(G) Depth to Bottom of Screen	335	ft
(H) Saturated Filter Pack Length (G –F or B)	23.22	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	27.86	gal
(K) Min Purge Volume (E + J)	45.09	gal

EQUIPMENT / MODEL	ID NUMBER
Parameter Meter: In Situ Troll	R25194
Turbidity Meter: HACH 2100Q	0157
Pump: Portable Bennett	On-File
Field Alkalinity: La Motte	3467-01

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1315	0	311.78	20.09	7.74	~~6.85~~ 0.323	~~6.86~~ 6.85	108	1.35	3.44 L/min
1331	15	311.78	18.63	7.76	~~6.84~~ 0.313	6.84 ~~23~~	23	1.53	↓
1347	31	311.80	18.56	7.77	~~6.80~~ 0.315	6.80 ~~24~~	24	1.49	↓
1406	36	311.73	18.48	7.78	~~6.63~~ 0.314	6.63 ~~25~~	25	0.91	1.0 L/min
1425	41	311.71	18.50	7.78	~~6.61~~ 0.309	6.61 ~~24~~	24	1.05	↓
1444	46	311.69	18.47	7.78	~~6.60~~ 0.310	6.60 ~~24~~	24	0.90	↓

Values Prior to Sampling

1444	46	311.69	18.47	7.78	0.310	6.60	24	0.90	1.0 L/min

Field Alkalinity Result 125 mg/L $CaCO_3$ Sample ID: ST105-30011 ST105-30011-MS ST105-30011-MSD

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, ~~Bulk Fuels Facility Spill~~

Project Name: ECOS

Site / SWMU No.: 106

Weather: Sunny 60's

Field Crew: GP, AS

Review Signature: [signature]

Well ID No.: KAFB-0520

Date: 3/26/14

Time: 0820

Crew Signature: [signature]

Date Review: 4/1/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - Locked: Yes - No Well ID Mark: Yes - No

Notes: BZ VOC's ~ Ø ppm BZ VOCS = Ø ppm

CALCULATIONS

(A) Depth to Well Bottom	408.87	ft
(B) Pre-Purge Depth to Water	386.18	ft
(C) Water Column Height (A-B)	22.69	ft
(D) Casing Factor: 4"=0.65, 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	14.74	gal
(F) Depth to Top of Screen	~~404~~ 379.5	ft
(G) Depth to Bottom of Screen	~~379.5~~ 404	ft
(H) Saturated Filter Pack Length (G -F, or B)	17.82 ~~29.37~~ AS	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	21.38 ~~35.24~~ AS	gal
(K) Min Purge Volume (E + J)	~~57.93~~ AS	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R25194	
Turbidity Meter: HACH 2100Q	0157	
Pump: Portable Bennett	On File	
Field Alkalinity: La Motte	3467-01	

36.12

PURGING INFORMATION

Description first water purged: clear

3/26/14 Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0918	Ø	386.18	15.79	7.22	403.9	8.66	211	2.11	3.24/m
0930	~~22~~ AS 10	386.25	19.05	7.78	431.6	6.86	53	0.75	↓
0942	~~23~~ AS 21	386.25	19.11	7.82	421.0	6.89	42	1.29	
1001	~~28~~ AS 26	386.25	18.63	7.86	409.5	6.86	37	0.70	1.04/m
1020	~~53~~ AS 31	386.25	18.70	7.86	411.8	6.80	35	0.65	↓
1039	~~58~~ AS 36	386.25	18.81	7.86	410.4	6.78	34	0.87	↓

Values Prior to Sampling

1039	~~58~~ AS 36	386.25	18.81	7.86	410.4	6.78	34	0.87	1.04/m

Field Alkalinity Result 140 mg/L @ $CaCO_3$ Sample ID: ST05-30013

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

~~140705~~

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS
Site / SWMU No.: 106
Weather: Sunny 60
Field Crew: GP AS
Review Signature: TT Nagy

Well ID No.: KAFB-0522
Date: 3/26/14
Time: 1200
Crew Signature: Andrew Sale
Date Review: 4/1/14

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No

Notes: BH VOC's = ∅ppm BZ VOC's = ∅ppm

CALCULATIONS

(A) Depth to Well Bottom	434.22	ft
(B) Pre-Purge Depth to Water	406.49	ft
(C) Water Column Height (A-B)	27.73	ft
(D) Casing Factor (4"=0.65 5"=1.02)	0.65	
(E) One Well Casing Volume (C x D):	18.02	gal
(F) Depth to Top of Screen	404	ft
(G) Depth to Bottom of Screen	430	ft
(H) Saturated Filter Pack Length (G -F, or B)	23.51	ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07,)	1.2	

(J) Filter Pack Volume (H x I)	28.21	gal
(K) Min Purge Volume (E + J)	46	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In-Situ U500	R 25194	
Turbidity Meter: HACH 2100Q	0157	
Pump: Portable Bennett	On-File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear, no odor

3/26/14 Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1314	0	406.49	19.65	7.70	479.2	7.33	89	21.7	2.94 L/m
1335	16	406.49	18.84	7.65	466.6	7.67	31	7.99	↓
1356	32	406.49	18.86	7.65	461.7	7.63	37	1.49	↓
1415	37	406.43	18.69	7.66	466.7	7.57	38	1.19	1.04 L/m
1434	42	406.39	18.53	7.66	463.1	7.58	36	0.86	↓
1453	47	406.39	18.45	7.66	463.6	7.59	37	0.88	↓
Values Prior to Sampling									
1453	47	406.39	18.45	7.66	463.6	7.59	37	0.88	1.04 L/m

Field Alkalinity Result 100 mg/L $CaCO_3$ Sample ID: ST105-30018

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

~~110705~~

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS

Site / SWMU No.: 106

Weather: partly cloudy

Field Crew: TN JM

Review Signature: TNagh

Well ID No.: KAFB 0514

Date: 3/27/14

Time: 0845

Crew Signature: TNagh

Date Review: 4/1/14

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -

Locked: (Yes) - No

Well ID Mark: (Yes) - No

Notes: BH VOC's 0 ppm BZ VOC's 0 ppm

CALCULATIONS

(A) Depth to Well Bottom	368 ~~353.55~~ ft
(B) Pre-Purge Depth to Water	344.45 ft
(C) Water Column Height (A-B)	24.06 ft
(D) Casing Factor: (4"=0.65) 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	15.64 gal
(F) Depth to Top of Screen	340.00 ft
(G) Depth to Bottom of Screen	365.00 ft
(H) Saturated Filter Pack Length (G -F, or B)	20.55 ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07, ____)	1.2

(J) Filter Pack Volume (H x I)	24.66	gal
(K) Min Purge Volume (E + J)	40.30	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R 23548	
Turbidity Meter: Hach 2100Q	158	
Pump: portable Bennett	on file	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear, no odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
3/27/14 0934	0	344.45	13.70	6.65	512.8	7.41	257	2.75	1.0 L/min
1023	13	344.45	17.71	6.89	565.9	6.65	167	1.49	
1113	26	344.50	17.72	7.48	611.4	6.65	183	1.49	
1132	31	344.50	17.77	7.48	623.2	6.66	181	0.78	
1151	36	344.45	17.73	7.48	632.9	6.66	173	0.92	
1210	41	344.45	17.78	7.48	642.5	6.68	167	0.76	
Values Prior to Sampling									
1210	41	344.45	17.78	7.48	642.5	6.68	167	0.76	1.0 L/min

Field Alkalinity Result 132 mg/L @ $CaCO_3$ Sample ID: ST105-30008

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Long-Term Monitoring

Project Name: ECOS
Site / SWMU No.: ST 105
Weather: Cloudy Cold
Field Crew: A.A. S.Z.
Review Signature: [illegible]

Well ID No.: KAFB-0523
Date: 12/9/13
Time: 0924
Crew Signature: [illegible]
Date Review: 12/16/13

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: No VOC in BZ or Well Head

CALCULATIONS

(A) Depth to Well Bottom	630	ft
(B) Pre-Purge Depth to Water	489.35	ft
(C) Water Column Height (A-B)	140.65	ft
(D) Casing Factor: 2"dia=0.17, 3"dia=0.37, 4"=0.65 5"=1.02 (if the exact casing factor of the well is not listed, please round up to the closest one)	.65	
(E) One Well Casing Volume (C x D):	~~273.68~~ 91	gal
(F) Minimum Purge Volume (E x 3):	273.68	gal
(F) Screened Interval	35	ft

EQUIPMENT / MODEL	ID NUMBER
Parameter Meter	In Situ 24913
Turbidity Meter	Hach 2100Q
Pump	Portable Bennett
Water Level Meter	Geo Tech 82050089

PURGING INFORMATION

Description first water purged: No bubbles Clear No Smell

Date and / or Time	Gallons Removed	Depth to Ground-water	Temp (°C)	pH	Spec Cond (mS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1025	0	489.35	16.93	7.12	340.40	6.24	265	5.77	
1145	25	489.39	18.98	7.61	324.30	5.73	219	3.04	
1230	45	489.39	18.94	7.64	324.60	5.71	215	3.1	
1315	65	489.39	18.89	7.63	324.36	5.72	205	1.8	
1334	70	489.39	18.1	7.65	324.80	5.70	208	2.15	
1353	75	489.4	17.96	7.65	324.1	5.73	208	1.63	
1412	80	489.4	17.93	7.66	324.7	5.72	207	1.64	

Field Alk 140 ppm

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS
Site / SWMU No.:
Weather: Sunny 40's
Field Crew: JM, AS
Review Signature: [illegible]

Well ID No.: KAFB-0524
Date: 3/25/14
Time: 0925
Crew Signature: [illegible]
Date Review: 3/26/14

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) No

Notes: BH VOCs = Ø ppm BZ VOCs = Ø ppm

CALCULATIONS

(A) Depth to Well Bottom	514.8	ft
(B) Pre-Purge Depth to Water	483.17	ft
(C) Water Column Height (A-B)	31.63	ft
(D) Casing Factor 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	20.55	gal
(F) Depth to Top of Screen	484	ft
(G) Depth to Bottom of Screen	509	ft
(H) Saturated Filter Pack Length (G -F. or B)	25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	50.55	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: HV-Situ 2500	R25496	
Turbidity Meter: HACH 2100		
Pump: Portable Bennett		
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear, no odor

3/25/14 Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1016	Ø	483.17	16.71	7.12	0.2649	7.04	202	4.62	2.2 L/m
1047	18	483.23	18.64	8.02	0.2345	5.37	158	1.40	↓
1118	36	483.23	18.72	8.05	0.2594	5.40	144	0.80	↓
1137	41	483.17	18.72	8.06	0.2564	5.40	156	1.07	1.0 L/m
1156	46	483.17	18.31	8.07	0.2563	5.40	157	1.63	↓
1215	51	483.17	18.60	8.07	0.2581	5.39	152	2.01	↓
Values Prior to Sampling									
1215	51	483.17	18.60	8.07	0.2581	5.39	152	2.01	1.0 L/m

Field Alkalinity Result: 130 mg/L @ $CaCO_3$ Sample ID: ST105-30020

BUBBLES: YES____ NO____ WHERE____ AMOUNT____ SIZE____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS
Site / SWMU No.: 106
Weather: Sunny 50's
Field Crew: JM AS TN
Review Signature: [signature]

Well ID No.: KAFB0525
Date: 3/25/14
Time: 1405
Crew Signature: [signature]
Date Review: 4/1/14

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No

Notes: BH VOC's = ∅ ppm BZ VOC's = ∅ ppm

CALCULATIONS

(A) Depth to Well Bottom	401.70	ft
(B) Pre-Purge Depth to Water	365.98	ft
(C) Water Column Height (A-B)	35.72	ft
(D) Casing Factor: (4"=0.65) 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	23.21	gal
(F) Depth to Top of Screen	371.00	ft
(G) Depth to Bottom of Screen	396.00	ft
(H) Saturated Filter Pack Length (G - F, or B)	25.00	ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07, ____)	1.2	

(J) Filter Pack Volume (H x I)	30.00	gal
(K) Min Purge Volume (E + J)	65.72	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In-situ 9500	R25496	
Turbidity Meter: HACH 2100Q	0158	
Pump: portable Bennett	on file	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear, stinky

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1405 ~~1405~~ AS	0	365.98	20.44	8.03	505.6	6.65	135	7.14	22 L/m
1450 ~~1450~~ AS	25	366.07	18.86	7.86	494.7	6.94	135	1.65	↓
1535 ~~1435~~ AS	51	365.98	18.87	7.85	496.4	6.94	135	1.32	↓
1554 ~~1454~~ AS	56	365.95	18.79	7.85	495.0	6.82	140	0.35	1.0 L/m
1613 ~~1513~~ AS	61	365.95	18.84	7.86	494.4	6.83	141	0.31	↓
1632 ~~1532~~ AS	66	365.95	18.77	7.85	494.5	7.00	141	0.33	↓
~~1632 AS 1532~~									
Values Prior to Sampling									
1632 ~~1532~~ AS	66	365.95	18.77	7.85	494.5	7.00	141	0.33	1.0 L/m

Field Alkalinity Result 192 mg/L @ $CaCO_3$ Sample ID: ST105-30021

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Long-Term Monitoring

Project Name: ECOS
Site / SWMU No.: WP026
Weather: Sunny Cold
Field Crew: AA SZ
Review Signature: [illegible]

Well ID No.: KAFB-0608
Date: 12/10/13
Time: 0851
Crew Signature: [illegible]
Date Review: 12/16/13

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No

Notes: No VOC in BZ or WZ

CALCULATIONS

(A) Depth to Well Bottom	330	ft
(B) Pre-Purge Depth to Water	295.75	ft
(C) Water Column Height (A-B)	34.25	ft
(D) Casing Factor: 2"dia=0.17, 3"dia=0.37, 4"=0.65 5"=1.02 (if the exact casing factor of the well is not listed, please round up to the closest one)	.65	
(E) One Well Casing Volume (C x D):	22.3	gal
(F) Minimum Purge Volume (E x 3):	67	gal
(F) Screened Interval	20	ft

EQUIPMENT / MODEL	ID NUMBER
Parameter Meter	In Situ
Turbidity Meter	Hach 2100Q
Pump	Dedicated
Water Level Meter	Geotech

PURGING INFORMATION

Description first water purged: clear no smell no bubbles

Date and / or Time	Gallons Removed	Depth to Ground-water	Temp (°C)	pH	Spec Cond (mS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0935	0	295.75	18.04	7.17	748.9	8.16	205	18.7	
0951	26	306.62	18.22	7.25	744.8	8.57	230	7.94	
1007	52	307.2	18.20	7.28	705.5	8.89	229	11.7	
1026	57	296.89	17.18	7.3	700.7	7.84	236	4.38	
1045	62	296.89	17.34	7.31	704.7	7.75	239	3.12	
1104	67	296.80	17.27	7.30	700.3	7.88	243	3.88	

Field Alk 160 ppm mg/L @ $CaCO_3$

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB - ECOS **Well ID No.:** KAFB0611

Site / SWMU No.: ST 105 **Date:** 4/8/14

Weather: sunny 60's **Time:** 0915

Field Crew: TN BS **Crew Signature:** TN

Review Signature: TN **Date Review:** 4/9/14

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: BH VOC's 0 ppm BZ VOC's 0 ppm

CALCULATIONS

(A) Depth to Well Bottom	521.00	ft	(J) Filter Pack Volume (H x I)	12.00	gal
(B) Pre-Purge Depth to Water	462.62	ft	(K) Min Purge Volume (E + J)	49.94	gal
(C) Water Column Height (A-B)	58.38	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor (4"=0.65 5"=1.02)	0.65		Parameter Meter: LaSalle 9500	R25194	
(E) One Well Casing Volume (C x D):	37.94	gal	Turbidity Meter: Hach 2100Q	0165	
(F) Depth to Top of Screen	498.00	ft	Pump: portable Bennett	on file	
(G) Depth to Bottom of Screen	508.00	ft	Field Alkalinity: La Motte	3467-01	
(H) Saturated Filter Pack Length (G –F, or B)	10.00	ft			
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2				

PURGING INFORMATION

Description first water purged: clear, no odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/8/14 0931	0	462.62	16.86	7.23	376.4	4.30	198	4.95	2.9L/min
0953	17	463.34	19.40	7.60	392.4	0.19	-39	2.15	
1016	35	463.40	19.50	7.61	394.0	0.23	-27	1.31	
1035	40	462.99	18.74	7.63	388.3	0.27	-25	1.30	1.0L/min
1054	45	462.99	18.86	7.63	389.5	0.28	-27	0.78	
1113	50	462.99	18.92	7.63	390.7	0.32	-33	0.55	
Values Prior to Sampling									
1113	50	462.99	18.92	7.63	390.7	0.32	-33	0.55	1.0L/min

Field Alkalinity Result 164 mg/L @ $CaCO_3$ **Sample ID:** ST 105-30031

BUBBLES: YES _____ **NO** X **WHERE** _____ **AMOUNT** _____ **SIZE** _____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** KAFB-0612

Site / SWMU No.: ST105 **Date:** 4/8/14

Weather: Clear **Time:** 1305

Field Crew: GP, BS **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 4/9/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	319	ft	(J) Filter Pack Volume (H x I)	12	gal
(B) Pre-Purge Depth to Water	~~262.60~~ 292.6	ft	(K) Min Purge Volume (E + J)	~~48.7~~ 29.96	gal
(C) Water Column Height (A-B)	~~56.4~~ 26.4		**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 5"=1.02	0.65		Parameter Meter		
(E) One Well Casing Volume (C x D):	~~36.7~~ 17.2		In Situ Troll	R825194	
(F) Depth to Top of Screen	305	ft	Turbidity Meter		
(G) Depth to Bottom of Screen	315	ft	HACH 2100Q	0165	
(H) Saturated Filter Pack Length (G –F, or B)	10	ft	Pump		
			Portable Bennett	On File	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2		Field Alkalinity		
			La motte	3467-01	

PURGING INFORMATION

Description first water purged: slightly brownish

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1305	0	~~262.60~~ 292.60	18.61	7.56	654.7	8.59	39	33.1	~~2.6 L/min~~ 1.2 L/min
1327	~~17~~ 7	296.85	18.29	7.50	652.2	8.78	47	9.18	↓
1350	~~34~~ 15	296.85	18.26	7.50	654.0	8.93	50	5.19	↓
~~1413~~ 1409	~~39~~ 20	296.83	18.22	7.50	652.6	8.99	52	6.19	1.0 L/min
~~1432~~ 1428	~~49~~ 25	296.83	18.19	7.50	650.2	8.98	55	3.28	↓
~~1451~~ 1447	~~49~~ 30	296.83	18.22	7.50	650.9	9.02	56	3.03	↓
Values Prior to Sampling									
1447	30	296.83	18.22	7.50	650.9	9.02	56	3.03	1.0 L/min

Field Alkalinity Result 132 mg/L $CaCO_3$ **Sample ID:** ST105-30032

BUBBLES: YES ____ **NO** X **WHERE** ____ **AMOUNT** ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-ECOS **Well ID No.:** KAFB-0613

Site / SWMU No.: ST105 **Date:** 4/9/14

Weather: clear, ~75° **Time:** 1002

Field Crew: GR, BS **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	452.3	ft	(J) Filter Pack Volume (H x I)	36	gal
(B) Pre-Purge Depth to Water	354.20	ft	(K) Min Purge Volume (E + J)	99.8	gal
(C) Water Column Height (A-B)	98.1	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 5"=1.02	0.65		Parameter Meter		
(E) One Well Casing Volume (C x D):	63.77	gal	In Situ Troll	R25194	
(F) Depth to Top of Screen	420	ft	Turbidity Meter		
(G) Depth to Bottom of Screen	450	ft	HACH 2100 Q	0165	
(H) Saturated Filter Pack Length (G –F, or B)	30	ft	Pump		
			Portable Bennett	On File	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2		Field Alkalinity		
			La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1002	0	354.20	17.60	7.27	438.5	7.23	146	5.25	2.96 L/min
1057	43	365.43	19.27	7.57	444.3	6.91	48	1.74	↓
1152	85	368.28	19.45	7.58	444.9	6.88	47	1.61	↓
1211	90	363.87	18.95	7.59	441.3	6.90	46	1.02	1.0 L/min
1230	95	362.62	18.90	7.59	441.1	6.91	46	0.76	↓
1249	100	362.00	18.93	7.59	441.3	6.74	46	0.82	↓

Values Prior to Sampling

1249	100	362.00	18.93	7.59	441.3	6.74	46	0.82	1.0 L/min

Field Alkalinity Result 196 mg/L $CaCO_3$ **Sample ID:** ST105-30033

BUBBLES: YES____ **NO** X **WHERE**____ **AMOUNT**____ **SIZE**____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS

Site / SWMU No.: ST-105

Weather: Sunny Warm

Field Crew: AA JM

Review Signature: TT Nagh

Well ID No.: KAFB-0614

Date: 4/8/14

Time: 0856

Crew Signature: [signature]

Date Review: 4/9/14

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -

Locked: (Yes) - No

Well ID Mark: (Yes) - No

Notes: No VOC in BH No VOC in BZ

CALCULATIONS

(A) Depth to Well Bottom	381.68	ft
(B) Pre-Purge Depth to Water	332.48	ft
(C) Water Column Height (A-B)	49.2	ft
(D) Casing Factor (4"=0.65 5"=1.02)	.65	
(E) One Well Casing Volume (C x D):	31.98	gal
(F) Depth to Top of Screen	360	ft
(G) Depth to Bottom of Screen	370	ft
(H) Saturated Filter Pack Length (G - F, or B)	10	ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07, ____)	1.2	

(J) Filter Pack Volume (H x I)	12	gal
(K) Min Purge Volume (E+J)	44	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu	25496	
Turbidity Meter: Hach 2100Q	Ecos 1	
Pump: Portable Bennett	on file	
Field Alkalinity: Lamotte	3467-01	

PURGING INFORMATION

Description first water purged: No Odor mostly Clear Small Bubbles

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0940	0	332.48	18.62	7.6	518.9	8.39	244	21.6	2.8 L/m
0959	14	335.00	18.59	7.75	522.6	8.54	181	8.45	
1019	~~29~~ 29	335.19	18.63	7.78	515.0	8.54	140	6.16	1 L/m
1038	34	334.92	18.25	7.79	511.7	8.52	138	2.44	
1057	39	333.89	18.38	7.80	515.5	8.72	130	1.15	
1116	44	333.89	18.4	7.80	512.4	8.65	122	.91	
Values Prior to Sampling									
1116	44	333.89	18.4	7.80	512.4	8.65	122	.91	

Field Alkalinity Result 150 mg/L $CaCO_3$

Sample ID ST105-30034-MS,MSD

BUBBLES: YES X NO ____ WHERE Insitu & tubing AMOUNT Few SIZE Pin Head

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** KAFB 0615

Site / SWMU No.: ST105 **Date:** 4/14/14

Weather: clear, windy, ~50° **Time:** 1017

Field Crew: GP, TA **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	325.2	ft
(B) Pre-Purge Depth to Water	203.06	ft
(C) Water Column Height (A-B)	122.14	ft
(D) Casing Factor 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	79.39	gal
(F) Depth to Top of Screen	300	ft
(G) Depth to Bottom of Screen	325	ft
(H) Saturated Filter Pack Length (G –F, or B)	25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	109.39	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ Troll	R25794	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Bennett	On-File	
Field Alkalinity: La Motte	3567-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1017	0	203.06	17.48	7.07	792.5	5.93	125	1.94	2.56 L/min
1126	47	261.84	17.11	7.51	791.1	11.47	60	8.08	↓
1236	95	292.50	18.81	7.50	814.0	4.55	51	4.01	↓
1255	100	292.07	18.48	7.52	811.0	4.42	49	2.70	1.0 L/min
1314	105	291.66	18.61	7.52	811.0	4.40	48	1.73	↓
1333	110	291.22	18.66	7.52	811.4	4.40	48	1.48	↓
Values Prior to Sampling									
1333	110	291.22	18.66	7.52	811.4	4.40	48	1.48	1.0 L/min

Field Alkalinity Result 136 mg/L $CaCO_3$ **Sample ID:** ST105-30035

BUBBLES: YES____ **NO** X **WHERE**____ **AMOUNT**____ **SIZE**____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS

Site / SWMU No.: ST105

Weather: Sunny Windy

Field Crew: GP, MB

Review Signature: [illegible]

Well ID No.: KAFB-0616

Date: 4/1/14

Time: 13:15

Crew Signature: [illegible]

Date Review: 4/3/14

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -

Locked: (Yes) - No

Well ID Mark: (Yes) No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	~~497~~ 497.8	ft
(B) Pre-Purge Depth to Water	442.76	ft
(C) Water Column Height (A-B)	55.06	ft
(D) Casing Factor: (4"=0.65) 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	35.78	gal
(F) Depth to Top of Screen	472	ft
(G) Depth to Bottom of Screen	497	ft
(H) Saturated Filter Pack Length (G –F, or B)	25	ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07, ____)	~~2~~ 1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	65.78	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu Troll	R259 14	
Turbidity Meter: HACH	FSLVE 0165	
Pump: Portable Bennett	On File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
13:15	0	442.76	20.35	7.54	607.0	7.34	32	6.38	2.4 L/min
13:56	26	442.87	20.65	7.45	620.3	9.10	31	~~6.38~~ 2.33	↓
14:35	51	442.84	20.57	7.45	617.7	9.05	33	1.57	↓
14:54	56	442.72	20.24	7.45	619.8	8.97	33	1.34	1.0 L/min
15:12	61	442.76	20.25	7.45	620.2	8.86	33	0.76	↓
15:31	66	442.75	20.19	7.45	620.9	8.69	33	0.79	↓
Values Prior to Sampling									
1531	66	442.75	20.19	7.45	620.9	8.69	33		1.0 L/min

Field Alkalinity Result 136 mg/L $CaCO_3$ Sample ID: ST105-30036

BUBBLES: YES_____ NO ✓ WHERE_____ AMOUNT_____ SIZE_____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Site / SWMU No.: ST105
Weather: partly cloudy, ~ 55°
Field Crew: GR, AS
Review Signature:

Well ID No.: KAFB-0617
Date: 5/12/14
Time: 0955
Crew Signature:
Date Review:

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -
Locked: Yes - No
Well ID Mark: Yes - No
Notes: BH VOCs = ∅ ppm
BZ VOCs = ∅ ppm

CALCULATIONS

(A) Depth to Well Bottom	588.0	ft
(B) Pre-Purge Depth to Water	559.08	ft
(C) Water Column Height (A-B)	28.92	ft
(D) Casing Factor: 4"=0.65 5"=1.02	18.79 0.65	
(E) One Well Casing Volume (C x D):	18.79	gal
(F) Depth to Top of Screen	575	ft
(G) Depth to Bottom of Screen	590	ft
(H) Saturated Filter Pack Length (G –F, or B)	25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	48.79	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25194	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Pump	On-File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0955	∅	559.08	18.69	6.89	496.8	6.08	107	11.5	1.4 L/m
1042	17	561.00	21.40	7.50	446.9	5.63	-38	5.03	↓
1129	34	561.16	21.35	7.50	446.2	5.71	-51	4.85	↓
1148	39	560.58	20.88	7.51	442.8	5.66	-62	3.90	1.0 L/m
1207	44	560.50	20.75	7.51	441.4	5.68	-57	4.20	↓
1226	49	560.47	20.76	7.52	442.4	5.67	-57	4.88	↓

Values Prior to Sampling

1226	49	560.47	20.76	7.52	442.4	5.67	-57	4.88	1.0 L/min

Field Alkalinity Result 180 mg/L $CaCO_3$
BUBBLES: YES ____ **NO** X **WHERE** ____
Sample ID: ST105-30037
AMOUNT ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

532 .053

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-ECOS
Site / SWMU No.: 106
Weather: Sunny 60s
Field Crew: GP, AS
Review Signature: [signature]

Well ID No.: KAFB-0618
Date: 3/27/14
Time: 0835
Crew Signature: [signature]
Date Review: 4/1/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -
Locked: Yes - No
Well ID Mark: Yes - No

Notes: BH VOC's = 0 ppm
B2 VOC's = 0 ppm

CALCULATIONS

(A) Depth to Well Bottom	565.40	ft
(B) Pre-Purge Depth to Water	484.24	ft
(C) Water Column Height (A-B)	81.16	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	52.75	gal
(F) Depth to Top of Screen	535	ft
(G) Depth to Bottom of Screen	560	ft
(H) Saturated Filter Pack Length (G –F, or B)	25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	82.75	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: ~~R 25194~~ AS Insitu 9500	R25194	
Turbidity Meter: HACH 2100Q	0157	
Pump: Portable Bennett		
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear, no odor

3/27/14 Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0957	0	494.24	16.43	7.35	374.3	5.96	195	7.79	2.94 m
1042	34	532.63	20.36	7.72	401.6	1.56	2	10.50	↓
1250 ~~1124~~ AS	68	535.45	19.64	7.74	394.0	0.18	-76	4.50	↓ 1.04 m
1309 ~~1145~~ AS	73	535.60	19.71	7.74	394.8	0.17	-78	2.12	~~1.0 m~~
1328 ~~1205~~ AS	78	535.75	19.68	7.74	394.5	0.16	-79	1.22	↓
1347 ~~1224~~ AS	83	535.95	19.88	7.74	396.4	0.15	-81	1.29	
Values Prior to Sampling									
1347 ~~1224~~ AS	83	535.95	19.88	7.74	396.4	0.15	81	1.29	1.04 m

Field Alkalinity Result 180 mg/L @ $CaCO_3$ Sample ID: ST05-30038

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS
Well ID No.: KAFB-0619
Site / SWMU No.: ST105
Date: 4-1-14
Weather: Sunny
Time: 0947
Field Crew: MB, GP
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/3/14

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark (Yes) No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	407	ft
(B) Pre-Purge Depth to Water	386.45	ft
(C) Water Column Height (A-B)	20.55	ft
(D) Casing Factor: 4"=(0.65) 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	13.35	gal
(F) Depth to Top of Screen	389	ft
(G) Depth to Bottom of Screen	404	ft
(H) Saturated Filter Pack Length (G –F, or B)	17.55	ft
(I) Casing/Borehole Factor 4/10 = (1.2), 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	21.06	gal
(K) Min Purge Volume (E + J)	35	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In-situ troll	R25914	
Turbidity Meter: HACH	FSLVE0165	
Pump: Portable Bennett	On-File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
9:47	0	386.45	17.43	7.24	0.392	8.81	199	8.37	2.64 L/min
10:01	10	392.34	19.43	7.56	0.405	7.62	50	34.1	↓
10:15	20	393.51	19.51	7.59	406.9	7.54	42	54.8	↓
10:34	25	393.13	19.11	7.59	403.4	7.82	46	34.2	1.0 L/min
10:53	30	393.03	19.14	7.61	403.7	7.76	37	27.8	↓
11:12	35	393.00	19.18	7.61	404.1	7.72	34	26.8	↓
Values Prior to Sampling									
11:12	35	393.00	19.18	7.61	404.1	7.72	34	26.8	1.0 L/min

Field Alkalinity Result 180 mg/L $CaCO_3$ Sample ID: ST105-30039 ST105-30040

BUBBLES: YES____ NO ✓ WHERE____ AMOUNT____ SIZE____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-0620 **Well ID No.:** KAFB-0620

Site / SWMU No.: ST105 **Date:** 5/7/14

Weather: Partly cloudy, ~65° **Time:** 0940

Field Crew: GP, AC **Crew Signature:** [signature]

Review Signature: **Date Review:**

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	472	ft
(B) Pre-Purge Depth to Water	442.69	ft
(C) Water Column Height (A-B)	29.31	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	19.05	gal
(F) Depth to Top of Screen	447	ft
(G) Depth to Bottom of Screen	472	ft
(H) Saturated Filter Pack Length (G -F, or B)	~~29~~ 25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	49.05	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25794	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Bennett	On-File	
Field Alkalinity: LaMotte	3467-01	

Description first water purged: clear

PURGING INFORMATION

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp °(°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0940	0	442.69	18.28	6.81	446.9	6.95	119	1.58	1.92 L/min
1015	18	442.73	18.99	7.48	446.8	6.14	-60	0.96	
1050	35	442.73	19.12	7.49	448.0	6.11	-67	0.84	
1109	40	442.70	19.03	7.50	447.7	6.10	-67	0.54	1.0 L/min
1128	45	442.70	19.18	7.49	448.2	6.08	-71	0.81	↓
1147	50	442.70	19.14	7.50	447.6	6.10	-70	0.66	
~~1206~~ GP									
Values Prior to Sampling									
1147	50	442.70	19.14	7.50	447.6	6.10	-70	0.66	1.0 L/min

Field Alkalinity Result 176 mg/L $CaCO_3$

BUBBLES: YES ____ **NO** X **WHERE** ____ **Sample ID:** ST105-30041

AMOUNT ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw™ Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB EIOS
Well ID No.: KAFB-0621
Site / SWMU No.: ST105
Date: 5/13/14
Weather: partly cloudy, ~49°
Time: 1151
Field Crew: GP, AS
Crew Signature: [signature]
Review Signature:
Date Review:

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes:

CALCULATIONS

(A) Depth to Well Bottom	@ 650.3 644	ft
(B) Pre-Purge Depth to Water	627.60	ft
(C) Water Column Height (A-B)	22.7	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	14.75	gal
(F) Depth to Top of Screen	624	ft
(G) Depth to Bottom of Screen	649	ft
(H) Saturated Filter Pack Length (G –F, or B)	21.4	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	25.68	gal
(K) Min Purge Volume (E + J)	40.43	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25194	
Turbidity Meter: HACH 2100 Q	0165	
Pump: Portable Bennett	On File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1151	Ø	627.60	16.53	6.71	468.8	8.09	106	11.1	1.4 L/m
1227	13	627.73	19.90	7.49	497.9	7.99	109	3.34	
1303	26	627.71	19.96	7.48	499.7	8.01	-9	3.89	↓
1322	31	627.68	19.89	7.50	499.0	7.91	-42	2.67	1.0 L/m
1341	36	627.70	19.92	7.50	499.2	7.91	-49	1.85	
1400	41	627.67	19.85	7.50	499.6	7.96	-49	1.70	↓

Values Prior to Sampling

1400	41	627.67	19.85	7.50	499.6	7.96	-49	1.70	1.0 L/m

Field Alkalinity Result 140 mg/L $CaCO_3$
Sample ID: ST105-30042
BUBBLES: YES ____ **NO** X **WHERE** ____ **AMOUNT** ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** KAFB-0622

Site / SWMU No.: ST105 **Date:** 5/1/14

Weather: clear, ~ 50° **Time:** 1011

Field Crew: GP, AC **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	557.5	ft	(J) Filter Pack Volume (H x I)	4.70	gal
(B) Pre-Purge Depth to Water	550.08	ft	(K) Min Purge Volume (E + J)	9.52	gal
(C) Water Column Height (A-B)	7.42	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 5"=1.02	0.65		Parameter Meter		
(E) One Well Casing Volume (C x D):	4.82	gal	In Situ	R25194	
(F) Depth to Top of Screen	529	ft	Turbidity Meter		
(G) Depth to Bottom of Screen	554	ft	HACH 2100Q	0165	
(H) Saturated Filter Pack Length (G –F, or B)	3.92	ft	Pump		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2		Portable Bennett	on-file	
			Field Alkalinity		
			La Motte	3467-01	

PURGING INFORMATION

Description first water purged: cloudy

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1011	0	550.08	17.89	6.94	389.0	7.37	66	38.2	1.0 L/min
1019	2	Unable to get sensor to water	20.02	7.67	398.6	6.85	106	13.0	
1027	4		20.19	7.66	400.5	6.75	7	8.57	
1035	6		20.16	7.64	405.2	6.69	-50	7.59	
1043	8		20.23	7.65	408.4	6.70	-45	6.00	
1051	10		20.28	7.65	410.9	6.70	-55	5.41	
Values Prior to Sampling									
1051	10	—	20.28	7.65	410.9	6.70	-55	5.41	1.0 L/min

Field Alkalinity Result 144 mg/L CaCO3 **Sample ID:** ST105-30043

BUBBLES: YES_____ **NO** X **WHERE** NO INFO **AMOUNT**_____ **SIZE**_____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Well ID No.: KAFB-0623
Site / SWMU No.: ST105
Date: 4/15/14
Weather: clear
Time: 0918
Field Crew: GL, DT
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - Locked: Yes - No Well ID Mark: Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	293.50	ft
(B) Pre-Purge Depth to Water	259.23	ft
(C) Water Column Height (A-B)	34.27	ft
(D) Casing Factor 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	22.276	gal
(F) Depth to Top of Screen	265	ft
(G) Depth to Bottom of Screen	290	ft
(H) Saturated Filter Pack Length (G – F or B)	25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	~~DTJ 66.9~~ ~~52.3~~	gal 52.3

EQUIPMENT / MODEL	ID NUMBER
Parameter Meter: In Situ	R25794
Turbidity Meter: HACH 2100 Q	0165
Pump: Portable Bennett	On-File
Field Alkalinity: La Motte	3567-01

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
	0								
4/15 0918	0	259.23	17.56	7.21	781.1	10.83	112	0.86	3.6 L/min
0938	19	DTJ 260.39	17.66	7.36	784.6	10.75	76	3.77	↓
0958	38	260.48	17.76	7.37	782.3	10.82	77	4.32	↓
1017	43	259.79	17.29	7.39	775.6	10.21	74	2.99	1.0 L/min
1036	48	259.73	17.33	7.39	776.8	10.52	73	0.39	↓
1055	53	259.70	17.42	7.39	775.8	10.53	72	0.67	↓

Values Prior to Sampling

1055	53	259.70	17.42	7.39	775.8	10.53	72	0.67	1.0 L/min

Field Alkalinity Result 140 mg/L $CaCO_3$ Sample ID: ST105-30044

BUBBLES: YES ____ NO X WHERE ____ AMOUNT ____ SIZE ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** KAFB-0625

Site / SWMU No.: ST105 **Date:** 5/7/14

Weather: partly cloudy, v. windy **Time:** 1358

Field Crew: GR, AC **Crew Signature:** [signature]

Review Signature: **Date Review:**

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	497.5	ft
(B) Pre-Purge Depth to Water	471.38	ft
(C) Water Column Height (A-B)	26.12	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	16.98	gal
(F) Depth to Top of Screen	470	ft
(G) Depth to Bottom of Screen	495	ft
(H) Saturated Filter Pack Length (G –F, or B)	23.62	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	28.34	gal
(K) Min Purge Volume (E + J)	45.3	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25194	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Bennett	On-File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged:

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1358	0	471.38	19.50	7.65	428.2	5.68	38	4.40	1.68 L/min
1434	16	471.53	19.47	7.62	433.2	5.58	-76	1.88	↓
1510	31	471.53	19.41	7.63	432.3	5.55	-72	1.31	↓
1529	36	471.63	19.20	7.63	430.4	5.54	-73	0.98	1.04 L/min
1548	41	471.47	19.19	7.62	430.5	5.52	-73	1.10	↓
1607	46	471.47	19.20	7.62	429.9	5.52	-74	1.77	↓

Values Prior to Sampling

1607	46	471.47	19.20	7.62	429.9	5.52	-74	1.77	1.04 L/min

Field Alkalinity Result 186 mg/L $CaCO_3$ **Sample ID:** ST105-30045

BUBBLES: YES ____ **NO** X **WHERE** ____ **AMOUNT** ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB E603 **Well ID No.:** KAFB-0904

Site / SWMU No.: ST-105 **Date:** 04/15/2014

Weather: clear, ~60° **Time:** ~~0912~~ 1316

Field Crew: GP, DT **Crew Signature:** [signature]

Review Signature: T Nagy **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	369	ft
(B) Pre-Purge Depth to Water	351.84	ft
(C) Water Column Height (A-B)	17.16	ft
(D) Casing Factor: 4"=0.65, 8"=1.02	~~11.2~~ 0.65	
(E) One Well Casing Volume (C x D)	~~192.2~~ 11.2	gal
(F) Depth to Top of Screen	343	ft
(G) Depth to Bottom of Screen	368	ft
(H) Saturated Filter Pack Length (G –F, or B)	~~1.05~~ ~~25~~ 16.16	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 8/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	~~30~~ ~~1.26~~ 19.4	gal
(K) Min Purge Volume (E + J)	~~222.2~~ 30.6	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25194	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Bennett	on-site	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1316	0	~~0~~ 351.84	18.88	7.77	485.9	7.26	47	3.63	2.0 L/min
1331	~~16~~ 8	358.00	18.68	7.56	478.4	8.10	31	2.09	↓
1346	~~8~~ 16	359.72	18.73	7.58	485.6	8.01	39	1.39	↓
1405	21	362.99	18.67	7.57	482.3	7.45	38	5.67	1.0 L/min
1424	26	365.55	18.67	7.59	484.4	7.85	40	4.86	↓
~~1443~~	~~31~~	Purged dry @ 1430, sample taken after recharge							

Values Prior to Sampling

~~1443~~ 1424	~~31~~ 26	365.55	18.67	7.59	484.4	7.85	40	4.86	

Field Alkalinity Result 124 mg/L $CaCO_3$ **Sample ID:** ST105-30046

BUBBLES: YES ____ **NO** X **WHERE** ____ **AMOUNT** ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Well ID No.: KAFB-1007
Site / SWMU No.: ST105
Date: 5/5/14
Weather: clear, ~80°
Time: 1319
Field Crew: GP, AG
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 5/7/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -
Locked: Yes - No
Well ID Mark: Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	405	ft	(J) Filter Pack Volume (H x I)	0.39	gal
(B) Pre-Purge Depth to Water	384.50	ft	(K) Min Purge Volume (E + J)	13.7	gal
(C) Water Column Height (A-B)	20.5	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 5"=1.02	0.65		Parameter Meter: In Situ	R25194	
(E) One Well Casing Volume (C x D):	13.33	gal	Turbidity Meter: HACH 2100 Q	0165	
(F) Depth to Top of Screen	364.83	ft	Pump: Portable Bennett On Fire		
(G) Depth to Bottom of Screen	384.83	ft	Field Alkalinity: Lamotte	3467-01	
(H) Saturated Filter Pack Length (G –F, or B)	0.33	ft			
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2				

PURGING INFORMATION

Description first water purged: black

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1319	0	384.5	25.00	7.31	442.7	0.16	-199	1000+	1.0 L/min
1330	3	384.5	22.23	7.65	392.1	7.86	-144	45.7	
1341	6	384.48	22.03	7.64	392.7	8.01	-130	28.2	
1352	9	384.48	22.07	7.64	394.4	7.98	-126	17.4	
1403	12	384.48	21.94	7.94	394.6	7.84	-122	8.57	
1414	15	384.48	22.07	7.62	396.7	7.83	-117	8.78	

Values Prior to Sampling

1414	15	384.48	22.07	7.62	396.7	7.83	-117	8.78	1.0 L/min

Field Alkalinity Result 150 mg/L $CaCO_3$ **Sample ID:** ST105-30024

BUBBLES: YES_____ **NO** X **WHERE**_____ **AMOUNT**_____ **SIZE**_____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB Ecos **Well ID No.:** KAFB-1008

Site / SWMU No.: ST105 **Date:** 5/6/14

Weather: Clear, ~ 80° **Time:** 1236

Field Crew: GP, AC **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/7/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	405	ft	(J) Filter Pack Volume (H x I)	24.58	gal
(B) Pre-Purge Depth to Water	379.73	ft	(K) Min Purge Volume (E + J)	40.99	gal
(C) Water Column Height (A-B)	25.27	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 5"=1.02	0.65		Parameter Meter		
(E) One Well Casing Volume (C x D):	16.43	gal	In Situ	R25194	
(F) Depth to Top of Screen	370.2	ft	Turbidity Meter		
(G) Depth to Bottom of Screen	400.2	ft	HACH 2100 Q	0165	
(H) Saturated Filter Pack Length (G –F, or B)	20.47	ft	Pump		
			Portable Bennett	On-File	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2		Field Alkalinity		
			La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1236	0	379.73	18.64	7.55	254.1	6.92	41	5.73	1.6 L/min
1306	13	–	21.24	7.74	323.8	7.42	-62	1.32	↓
1337	26	–	21.38	7.76	325.2	7.44	-45	0.70	↓
1356	31	–	21.21	7.75	321.7	7.44	-49	0.53	1.0 L/min
1415	36	–	21.51	7.75	323.3	7.52	-49	0.34	↓
1434	41	–	21.23	7.77	320.6	7.46	-49	0.37	↓
Values Prior to Sampling		Unable to safely deploy water sensor							
1434	41		21.23	7.77	320.6	7.46	-49	0.37	1.0 L/min

Field Alkalinity Result 124 mg/L $CaCO_3$ **Sample ID:** ST105-30025 ST105-30025-MS ST105-30025-MSD

BUBBLES: YES _____ **NO** X **WHERE** NO INFO **AMOUNT** _____ **SIZE** _____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** TJA-2

Site / SWMU No.: ST105 **Date:** 4/28/14

Weather: windy, ~55° **Time:** 1348

Field Crew: GP, AC **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	307	ft
(B) Pre-Purge Depth to Water	277.83	ft
(C) Water Column Height (A-B)	29.17	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	18.96	gal
(F) Depth to Top of Screen	277	ft
(G) Depth to Bottom of Screen	297	ft
(H) Saturated Filter Pack Length (G –F, or B)	20	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	24	gal
(K) Min Purge Volume (E + J)	42.96	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25194	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Bennett	On-File	
Field Alkalinity: La Motte	3487-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1348	0	277.83	17.50	7.63	520.8	8.33	193	2.70	2.32 L/min
1410	14	277.90	17.01	7.51	535.6	8.74	34	4.78	
1432	28	277.89	17.74	7.51	535.4	8.78	34	1.78	
1451	33	277.90	17.70	7.53	534.1	8.67	35	0.52	1.0 L/min
1510	38	277.90	17.77	7.52	534.7	8.67	34	0.46	
1529	43	277.90	17.59	7.52	533.5	8.70	35	0.34	

Values Prior to Sampling

1529	43	277.90	17.59	7.52	533.5	8.70	35	0.34	1.0 L/min

Field Alkalinity Result 108 mg/L CaCO3 **Sample ID:** ST105-30047

BUBBLES: YES ____ **NO** X **WHERE** ____ **AMOUNT** ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS
Well ID No.: TJA-4
Site / SWMU No.: ST105
Date: 4/30/14
Weather: clear, ~50°
Time: 0845
Field Crew: GP, AC
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -
Locked: Yes - No
Well ID Mark: Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	389	ft
(B) Pre-Purge Depth to Water	302.0	ft
(C) Water Column Height (A-B)	87	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.07	
(E) One Well Casing Volume (C x D):	88.74	gal
(F) Depth to Top of Screen	360	ft
(G) Depth to Bottom of Screen	380	ft
(H) Saturated Filter Pack Length (G –F, or B)	20	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	21.4	gal
(K) Min Purge Volume (E + J)	110.14	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25194	
Turbidity Meter: HACH 2100Q	0165	
Pump: ~~Ba~~ Portable Bennett	On-File	
Field Alkalinity: La Motte	5467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0845	0	302	16.45	7.31	516.0	12.59	-2	6.12	2.32 L/min
1003	48	310.91	18.09	7.49	509.7	6.08	-48	0.99	
1121	96	311.06	18.27	7.51	510.9	6.11	-51	1.35	
1140	101	307.83	18.12	7.53	506.5	6.04	-58	0.40	1.0 L/min
1159	106	307.17	18.13	7.52	507.8	6.05	-57	0.33	
1218	111	306.89	18.17	7.53	509.5	6.01	-61	0.27	
Values Prior to Sampling									
1218	111	306.89	18.17	7.53	509.5	6.01	-61	0.27	1.0 L/min

Field Alkalinity Result 152 mg/L CaCO3
Sample ID: ST105-30048, ST105-30049
BUBBLES: YES ____ **NO** X **WHERE** ____ **AMOUNT** ____ **SIZE** ____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB ECOS **Well ID No.:** TJA-5

Site / SWMU No.: ST105 **Date:** 4/30/14

Weather: partly cloudy, ~55° **Time:** 1346

Field Crew: GP, AC **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	287	ft
(B) Pre-Purge Depth to Water	270.78	ft
(C) Water Column Height (A-B)	16.22	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	16.54	gal
(F) Depth to Top of Screen	267	ft
(G) Depth to Bottom of Screen	287	ft
(H) Saturated Filter Pack Length (G –F, or B)	16.22	ft
(I) Casing/Borehole Factor 4/10 = 1.2, (5/10 = 1.07)	1.07	

(J) Filter Pack Volume (H x I)	17.36	gal
(K) Min Purge Volume (E + J)	33.89	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ	R25194	
Turbidity Meter: HACH 2100Q	0165	
Pump: Portable Bennett	On-File	
Field Alkalinity: La Motte	3467-01	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1346	0	270.78	18.80	7.81	578.6	8.13	-77	5.69	2.48 L/min
1400	9	270.94	17.69	7.56	567.1	10.04	-53	2.58	
1414	19	270.94	17.70	7.56	566.0	10.10	-43	1.93	
1433	24	270.85	17.53	7.56	564.4	9.91	-47	1.63	1.0 L/min
1452	29	270.84	17.49	7.55	563.8	9.90	-44	1.47	
1511	34	270.84	17.62	7.55	564.3	9.91	-44	0.90	

Values Prior to Sampling

1511	34	270.84	17.62	7.55	564.3	9.91	-44	0.90	1.0 L/min

Field Alkalinity Result 140 mg/L $CaCO_3$ **Sample ID:** ST105-30050

BUBBLES: YES____ **NO** X **WHERE**____ **AMOUNT**____ **SIZE**____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: ECOS
Site - SWMU No.: ST 105
Weather: Sunny
Field Crew: TN, GP, AC
Review Signature: TNagh

Well ID No.: GCMP
Date: 5/1/14
Time: 1300
Crew Signature: TNagh
Date Review: 5/5/14

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - Locked: Yes - No Well ID Mark: Yes - No

Notes

CALCULATIONS

(A) Depth to Well Bottom	n/a	ft
(B) Pre-Purge Depth to Water		ft
(C) Water Column Height (A-B)		ft
(D) Casing Factor: 4"=0.65 5"=1.02		
(E) One Well Casing Volume (C x D):		gal
(F) Depth to Top of Screen		ft
(G) Depth to Bottom of Screen		ft
(H) Saturated Filter Pack Length (G -F, or B)		ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,		

(J) Filter Pack Volume (H x I)	n/a	gal
(K) Min Purge Volume (E - J)		gal

EQUIPMENT / MODEL	ID NUMBER
Parameter Meter: In Situ 9500	R25194
Turbidity Meter: Hach 2100Q	0165
Pump: n/a	n/a
Field Alkalinity: LaMotte	3467-01

PURGING INFORMATION

Description first water purged: clear, no odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1315	5	n/a	16.65	8.31	271.4	9.71	-107	2.65	
Values Prior to Sampling									
1315	5	n/a	16.65	8.31	271.4	9.71	-107	2.65	

Field Alkalinity Result 120 mg/L $CaCO_3$ Sample ID: ST105-30029

BUBBLES: YES____ NO____ WHERE____ AMOUNT____ SIZE____

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

APPENDIX B

Laboratory Analytical Reports

ANALYTICAL DATA PACKAGE
SDG # KirtlandECOS_003

PROJECT NAME: KIRTLAND AFB (ECOS)
PROJECT LOCATION: ALBUQUERQUE, NEW MEXICO

SUBMITTAL TO:
Susan Huang
SHAW E&I, Inc.
4005 Port Chicago Highway
Concord, CA 94520

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Marianne Walker
Tel (615)345-1115
Fax (866)417-0548
Email: mwalker@empirlabs.com

Original Report Date: January 8, 2014
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 121

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited Certificate Number L2226

Table of Contents

#	Description	Page No.
1	Cover Page	1
2	Table of Contents	2
3	Case Narrative	3
4	Sample Receipt Information Chain of Custody Forms Sample Receipt Confirmations WorkOrder Summary Sample Delivery Group (SDG) Sheets	9
7	Data for SW6010C Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	14
8	Data for Wet Chemistry Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	43

Sample Delivery Group Case Narrative

Receipt Information
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. No samples in this SDG were subcontracted.

Changes to the Revision
This is an original submittal of the final report package.

Analytical Information
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample prep and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

Chromatographic Flags for Manual Integration:
The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.
B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.
C: The peak was manually integrated to correct the baseline from the original chromatogram.
D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.
E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

SW6010C:
The following matrix spikes exceeded criteria:
3L12001-MS1 (1312069-01) for Calcium and Sodium; note – the parent sample concentrations for Calcium and Sodium are greater than 4 times the amount spiked

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:
No anomalies or deviations are noted.

Data Qualifiers
As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:
I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, Ms. Marcia K. McGinnity or an approved technical designee is authorized to sign this Statement of Data Authenticity.

_____
Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 12/16/2013)

DoD ELAP, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2014

State of Georgia, Environmental Protection Agency – NELAP
- Expires: 06/30/2014

State of Illinois, Environmental Protection Agency – NELAP, Certificate No.: 003300
- Groundwater
- Solid and Hazardous Waste
- Expires: 09/13/2014

State of Kansas Department of Health and Environment – NELAP, Certificate No.: E-10407
- Aqueous
- Non-aqueous
- Expires: 04/30/2014

State of Kentucky Department of Environmental Protection – NELAP, Certificate No.: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Nevada, Department of Conservation and Natural Resources – NELAP, Certificate No.: TN000042013-1
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

State of New Jersey Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2014

State of North Carolina, Department of Environment and Natural Resources - Certificate No.: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of North Dakota, Department of Health – NELAP, Certificate No.: R-204
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Texas, Commission on Environmental Quality – NELAP, Certificate No.: T104704307-13-8
- Aqueous
- Non-aqueous
- Expires: 12/31/2013

State of Utah, Department of Health – NELAP, Certificate No.: TN0042013-5
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

Commonwealth of Virginia, Department of General Services – VELAP, Certificate No.: 2558 – Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2014

State of Washington, Department of Ecology – NELAP, Lab ID: C934-13
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2014

Sample Receipt Information

1312069

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-ST105-80006

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 10 DEC 2013
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: Jennifer Chandler
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119369735

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) TN Nagel/Shaw Date: 12/10/13 Time: 1630
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) J Yrass Date: 12/11/13 Time: 0850

Comments:

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01 ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
02 ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

~~02~~ ST105-80006 FieldQC-BW-ST105-80006-TB 12/9/13 0800 40mL VOA VIAL 2 HCl<pH2 VOCs by SW8468260B
03 JG 12/11/13

KirtlandECOS_003

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: ~~12/10/13~~ 12/11/13 LS 0850

Workorder# 1312069

1. Tracking # 9735 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 0.6 °C + *correction factor (+0.1)* = 0.7 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

   If yes, how many and where: One, front

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) LS

7. Were custody seals on containers: YES NO and Intact YES NO NA

   Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

    b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # ____

I certify that I unloaded the cooler and answered questions 7-14 (initial) JG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

    b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JG

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JG

I certify that I attached a label with the unique LIMS number to each container (initial) JG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) ____

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO # ____

Additional Details:

WORK ORDER

Printed: 12/12/2013 11:28:18AM

1312069

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 01/06/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross
Date Received: 12/11/2013 08:50
Logged In By: Joshua T. Gross
Date Logged In: 12/11/2013 11:06

Samples Received at: **0.7°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1312069-01 ST105-30019 [Water] Sampled 12/09/2013 14:12 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	12/31/2013 14:00	15	01/06/2014 15:12	
SW9060A	WC_TOC_9060A_QUAD	12/31/2013 14:00	15	01/06/2014 15:12	
E351.2	WC_TKN_351.2	12/31/2013 14:00	15	01/06/2014 15:12	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	12/31/2013 14:00	15	01/06/2014 15:12	
SW9056A	WC_ANIONS_9056A (Regular)	12/31/2013 14:00	15	01/06/2014 15:12	Bromide, Flouride, Chloride, & Sulfate
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	12/31/2013 14:00	15	01/06/2014 15:12	
SM2320B	WC_ALKALINITY_2320B	12/31/2013 14:00	15	12/23/2013 15:12	
SW6010C	MET_ICP_LOW6010C_FULL	12/31/2013 14:00	15	06/07/2014 15:12	see versions
1312069-02 ST105-30019 [Water] Sampled 12/10/2013 14:12 Mountain 'Client Sample'					**Field filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	12/31/2013 14:00	15	01/07/2014 15:12	Field filtered
1312069-03 ST105-80006 [Water] Sampled 12/10/2013 00:00 Mountain 'Field Duplicate'					
	[NO ANALYSES]				

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Shaw Environmental, Inc.
PROJECT NAME: Kirtland AFB (ECOS)
SDG #: KirtlandECOS_003

QC LEVEL: Level III
Report Due: 1/6/2014
Client Sample Count: 2

Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	E351.2	E353.2	SM2320B
Client Sample	12/9/2013	12/11/2013	1312069-01	ST105-30019	Water	X	X	X
Client Sample	12/10/2013	12/11/2013	1312069-02	ST105-30019	Water			
Field Duplicate	12/10/2013	12/11/2013	1312069-03	ST105-80006	Water			

Sample Type	Sampled	Received	Lab ID	SM4500NH3BG	SW6010C	SW9056A	SW9060A
Client Sample	12/9/2013	12/11/2013	1312069-01	X	X	X	X
Client Sample	12/10/2013	12/11/2013	1312069-02				Field filtered
Field Duplicate	12/10/2013	12/11/2013	1312069-03				

Data for SW6010C Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1312069-01 [ST105-30019]	3L12001	100.00/25.00	100	25.0	1.00			12/12/13

ANALYSIS DATA SHEET

ST105-30019

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1312069-01
Sampled:	12/09/13 14:12	Received:	12/11/13 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**37900**	**250**	500	1250	1		SW6010C	3L12001	12/13/13 13:11
7439-89-6	Iron	**72.4**	**7.50**	15.0	25.0	1		SW6010C	3L12001	12/13/13 13:11
7439-95-4	Magnesium	**5800**	**250**	750	1250	1		SW6010C	3L12001	12/13/13 13:11
7439-96-5	Manganese	**1.35**	**0.750**	1.50	3.75	1	J	SW6010C	3L12001	12/13/13 13:11
7440-09-7	Potassium	**1960**	**250**	750	1250	1		SW6010C	3L12001	12/13/13 13:11
7440-23-5	Sodium	**22900**	**250**	750	1250	1		SW6010C	3L12001	12/13/13 13:11

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Laboratory ID: 3L12001-BLK1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	3L12001	12/13/13 11:33
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	3L12001	12/13/13 11:33
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	3L12001	12/13/13 11:33
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	3L12001	12/13/13 11:33
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	3L12001	12/13/13 11:33
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	3L12001	12/13/13 11:33

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L12001-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**645.2**	**250**	500	1250	1	J	SW6010C	3L12001	12/13/13 11:38
7439-89-6	Iron	**19.49**	**7.50**	15.0	25.0	1	J	SW6010C	3L12001	12/13/13 11:38
7439-95-4	Magnesium	**638.8**	**250**	750	1250	1	J	SW6010C	3L12001	12/13/13 11:38
7439-96-5	Manganese	**10.16**	**0.750**	1.50	3.75	1		SW6010C	3L12001	12/13/13 11:38
7440-09-7	Potassium	**613.5**	**250**	750	1250	1	J	SW6010C	3L12001	12/13/13 11:38
7440-23-5	Sodium	**649.3**	**250**	750	1250	1	J	SW6010C	3L12001	12/13/13 11:38

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L12001-DUP1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**38240**	**1250**	2500	6250	5	D	SW6010C	3L12001	12/13/13 13:24
7439-89-6	Iron	**71.08**	**37.5**	75.0	125	5	JD	SW6010C	3L12001	12/13/13 13:24
7439-95-4	Magnesium	**6018**	**1250**	3750	6250	5	JD	SW6010C	3L12001	12/13/13 13:24
7439-96-5	Manganese	ND	3.75	7.50	18.8	5	U	SW6010C	3L12001	12/13/13 13:24
7440-09-7	Potassium	**2024**	**1250**	3750	6250	5	JD	SW6010C	3L12001	12/13/13 13:24
7440-23-5	Sodium	**24590**	**1250**	3750	6250	5	D	SW6010C	3L12001	12/13/13 13:24

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L12001-MS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**38020**	**250**	500	1250	1		SW6010C	3L12001	12/13/13 13:15
7439-89-6	Iron	**305.1**	**7.50**	15.0	25.0	1		SW6010C	3L12001	12/13/13 13:15
7439-95-4	Magnesium	**6815**	**250**	750	1250	1		SW6010C	3L12001	12/13/13 13:15
7439-96-5	Manganese	**119.9**	**0.750**	1.50	3.75	1		SW6010C	3L12001	12/13/13 13:15
7440-09-7	Potassium	**3116**	**250**	750	1250	1		SW6010C	3L12001	12/13/13 13:15
7440-23-5	Sodium	**23560**	**250**	750	1250	1		SW6010C	3L12001	12/13/13 13:15

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Calibration: 3353001
Sequence: 3L35202

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35202-ICV1	Calcium	50000	52420	105	ug/L	+/- 10.00%
	Iron	10000	10270	103	ug/L	+/- 10.00%
	Magnesium	50000	49660	99.3	ug/L	+/- 10.00%
	Manganese	1000	964.9	96.5	ug/L	+/- 10.00%
	Potassium	10000	10300	103	ug/L	+/- 10.00%
	Sodium	50000	51780	104	ug/L	+/- 10.00%
3L35202-CCV1	Calcium	50000	53020	106	ug/L	+/- 10.00%
	Iron	10000	10180	102	ug/L	+/- 10.00%
	Magnesium	50000	49950	99.9	ug/L	+/- 10.00%
	Manganese	1000	1008	101	ug/L	+/- 10.00%
	Potassium	10000	10340	103	ug/L	+/- 10.00%
	Sodium	50000	51780	104	ug/L	+/- 10.00%
3L35202-CCV2	Calcium	50000	51730	103	ug/L	+/- 10.00%
	Iron	10000	10500	105	ug/L	+/- 10.00%
	Magnesium	50000	49460	98.9	ug/L	+/- 10.00%
	Manganese	1000	1003	100	ug/L	+/- 10.00%
	Potassium	10000	10390	104	ug/L	+/- 10.00%
	Sodium	50000	51360	103	ug/L	+/- 10.00%
3L35202-CCV3	Calcium	50000	52160	104	ug/L	+/- 10.00%
	Iron	10000	10480	105	ug/L	+/- 10.00%
	Magnesium	50000	49840	99.7	ug/L	+/- 10.00%
	Manganese	1000	1008	101	ug/L	+/- 10.00%
	Potassium	10000	10410	104	ug/L	+/- 10.00%
	Sodium	50000	51590	103	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 3353001

Sequence: 3L35202

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
3L35202-CRL1	Calcium	2000	2214	111	ug/L	80 - 120
	Iron	60.00	66.53	111	ug/L	80 - 120
	Magnesium	3000	3287	110	ug/L	80 - 120
	Manganese	6.000	6.328	105	ug/L	80 - 120
	Potassium	3000	3168	106	ug/L	80 - 120
	Sodium	3000	3359	112	ug/L	80 - 120

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 3L35202
Calibration: 3353001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35202-ICB1	Calcium	1.420	1000	5000	ug/L	U	SW6010C
	Iron	7.859	30.0	100	ug/L	U	SW6010C
	Magnesium	4.790	1000	5000	ug/L	U	SW6010C
	Manganese	-0.03255	3.00	15.0	ug/L	U	SW6010C
	Potassium	31.09	1000	5000	ug/L	U	SW6010C
	Sodium	19.26	1000	5000	ug/L	U	SW6010C
3L35202-CCB1	Calcium	6.85	1000	5000	ug/L	U	SW6010C
	Iron	0.393	30.0	100	ug/L	U	SW6010C
	Magnesium	2.87	1000	5000	ug/L	U	SW6010C
	Manganese	-0.000960	3.00	15.0	ug/L	U	SW6010C
	Potassium	63.7	1000	5000	ug/L	U	SW6010C
	Sodium	19.9	1000	5000	ug/L	U	SW6010C
3L12001-BLK1	Calcium	9.87	250	1250	ug/L	U	SW6010C
	Iron	-0.244	7.50	25.0	ug/L	U	SW6010C
	Magnesium	2.78	250	1250	ug/L	U	SW6010C
	Manganese	0.0157	0.750	3.75	ug/L	U	SW6010C
	Potassium	16.0	250	1250	ug/L	U	SW6010C
	Sodium	9.14	250	1250	ug/L	U	SW6010C
3L35202-CCB2	Calcium	51.9	1000	5000	ug/L	U	SW6010C
	Iron	10.3	30.0	100	ug/L	U	SW6010C
	Magnesium	9.06	1000	5000	ug/L	U	SW6010C
	Manganese	1.93	3.00	15.0	ug/L	U	SW6010C
	Potassium	36.4	1000	5000	ug/L	U	SW6010C
	Sodium	32.9	1000	5000	ug/L	U	SW6010C
3L35202-CCB3	Calcium	56.3	1000	5000	ug/L	U	SW6010C
	Iron	-2.22	30.0	100	ug/L	U	SW6010C
	Magnesium	21.1	1000	5000	ug/L	U	SW6010C
	Manganese	1.26	3.00	15.0	ug/L	U	SW6010C
	Potassium	24.5	1000	5000	ug/L	U	SW6010C
	Sodium	59.3	1000	5000	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 3353001
Sequence: 3L35202

Lab Sample ID	Analyte	True	Found	%R	Units
3L35202-IFA1	Calcium	500000	499,900.00	100	ug/L
	Iron	200000	194,850.00	97.4	ug/L
	Magnesium	500000	458,360.00	91.7	ug/L
	Manganese		-1.30		ug/L
	Potassium		42.31		ug/L
	Sodium		69.33		ug/L
3L35202-IFB1	Calcium	500000	506,350.00	101	ug/L
	Iron	200000	197,660.00	98.8	ug/L
	Magnesium	500000	463,880.00	92.8	ug/L
	Manganese	500.0	474.64	94.9	ug/L
	Potassium		35.09		ug/L
	Sodium		66.21		ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

ST105-30019

Laboratory: Empirical Laboratories, LLC

SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 3L12001

% Solids:

Source Sample Name: **1312069-01**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Calcium	1250	37900	38020	10.0	4x	80 - 120
Iron	250.0	72.35	305.1	93.1		80 - 120
Magnesium	1250	5796	6815	81.5		80 - 120
Manganese	125.0	1.349	119.9	94.9		80 - 120
Potassium	1250	1959	3116	92.5		80 - 120
Sodium	1250	22930	23560	50.6	4x	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

ST105-30019

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 3L12001-PS1
Batch: 3L12001
Lab Source ID: 1312069-01
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Calcium	155600	151600	5000	80.8	80 - 120
Iron	1354	289.4	1000	106	80 - 120
Magnesium	28010	23180	5000	96.6	80 - 120
Manganese	515.4	5.396	500.0	102	80 - 120
Potassium	12950	7837	5000	102	80 - 120
Sodium	96020	91700	5000	86.4	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	3L12001	Laboratory ID:	3L12001-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	645.2	108	80 - 120
Iron	20.00	19.49	97.4	80 - 120
Magnesium	600.0	638.8	106	80 - 120
Manganese	10.00	10.16	102	80 - 120
Potassium	600.0	613.5	102	80 - 120
Sodium	600.0	649.3	108	80 - 120

SERIAL DILUTION

SW6010C

ST105-30019

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Sequence: 3L35202
Preparation: MET_3005A_LOW

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Laboratory ID: 3L12001-DUP1
Lab Source ID: 1312069-01
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Calcium	151580	152970	0.917		SW6010C	10.00
Iron	289.41	284.34	-1.75		SW6010C	10.00
Magnesium	23184	24072	3.83		SW6010C	10.00
Manganese	5.3964	ND			SW6010C	10.00
Potassium	7836.7	8097	3.32		SW6010C	10.00
Sodium	91704	98375	7.27		SW6010C	10.00

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtllandECOS_003

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/21/2012

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Calcium	317.9	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	261.1	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.0	0.0000000	0.0000000	-0.000001	0.0000000	0.0000000
Manganese	257.6	0.0000000	0.0000000	0.000028	0.0000000	0.0000000
Potassium	766.4	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtllandECOS_003

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/21/2012

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Calcium	317.9	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	261.1	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.0	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.4	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtllandECOS_003

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/21/2012

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Calcium	317.9	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	261.1	0.0000000	-0.000701	0.0000000	0.0000000	-0.000794
Magnesium	279.0	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.4	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtllandECOS_003

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/21/2012

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Calcium	317.9	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	261.1	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.0	-0.000013	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.4	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtllandECOS_003

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/21/2012

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Calcium	317.9	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	261.1	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.0	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.4	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.6	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtllandECOS_003

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/21/2012

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Calcium	317.9	0.0000000				
Iron	261.1	0.0000000				
Magnesium	279.0	0.0000000				
Manganese	257.6	0.0000000				
Potassium	766.4	0.0000000				
Sodium	589.6	0.0000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc. SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

ICP Instrument ID: ME-ICP Date: 12/16/2013

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Calcium	15	500000	P
Iron	15	500000	P
Magnesium	15	500000	P
Manganese	15	10000	P
Potassium	15	100000	P
Sodium	15	500000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 3L12001 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30019	1312069-01	12/12/13 08:02	100.00	25.00
Blank	3L12001-BLK1	12/12/13 08:02	100.00	25.00
LCS	3L12001-BS1	12/12/13 08:02	100.00	25.00
ST105-30019	3L12001-DUP1	12/12/13 08:02	100.00	25.00
ST105-30019	3L12001-MS1	12/12/13 08:02	100.00	25.00
ST105-30019	3L12001-PS1	12/12/13 08:02	100.00	25.00

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35202	Instrument:	ME-ICP
Calibration:	3353001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35202-CAL1	12-13-13A-001	12/13/13 09:31
Cal Standard	3L35202-CAL2	12-13-13A-002	12/13/13 09:36
Cal Standard	3L35202-CAL3	12-13-13A-003	12/13/13 09:40
Cal Standard	3L35202-CAL4	12-13-13A-004	12/13/13 09:44
Cal Standard	3L35202-CAL5	12-13-13A-005	12/13/13 09:49
Cal Standard	3L35202-CAL6	12-13-13A-006	12/13/13 09:54
Cal Standard	3L35202-CAL7	12-13-13A-007	12/13/13 10:00
Cal Standard	3L35202-CAL8	12-13-13A-008	12/13/13 10:04
Initial Cal Check	3L35202-ICV1	12-13-13B-001	12/13/13 10:36
Initial Cal Blank	3L35202-ICB1	12-13-13B-002	12/13/13 10:44
Instrument RL Check	3L35202-CRL1	12-13-13B-003	12/13/13 10:48
Interference Check A	3L35202-IFA1	12-13-13B-007	12/13/13 11:08
Interference Check B	3L35202-IFB1	12-13-13B-008	12/13/13 11:13
Calibration Check	3L35202-CCV1	12-13-13B-010	12/13/13 11:22
Calibration Blank	3L35202-CCB1	12-13-13B-011	12/13/13 11:29
Blank	3L12001-BLK1	12-13-13B-012	12/13/13 11:33
LCS	3L12001-BS1	12-13-13B-013	12/13/13 11:38
Calibration Check	3L35202-CCV2	12-13-13B-025	12/13/13 12:32
Calibration Blank	3L35202-CCB2	12-13-13B-026	12/13/13 12:40
ST105-30019	1312069-01	12-13-13B-033	12/13/13 13:11
ST105-30019	3L12001-MS1	12-13-13B-034	12/13/13 13:15
ST105-30019	3L12001-PS1	12-13-13B-035	12/13/13 13:20
ST105-30019	3L12001-DUP1	12-13-13B-036	12/13/13 13:24
Calibration Check	3L35202-CCV3	12-13-13B-037	12/13/13 13:29
Calibration Blank	3L35202-CCB3	12-13-13B-038	12/13/13 13:37

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3353001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/13/13 9:31 12/13/13 10:04

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.1324E-05	10000	2.0582E-05			500000	2.0674E-05		
Antimony	0	0	100	0.0005693	1000	6.1292E-04					10000	6.1136E-04
Arsenic	0	0	100	0.0003057	1000	3.5925E-04					10000	3.4868E-04
Barium	0	0	50	0.0118374	1000	0.010291	5000	0.0101448				
Beryllium	0	0	100	0.0017636	1000	0.0017332					10000	0.00171
Boron	0	0	50	0.0000146	1000	1.604E-05					5000	1.5586E-05
Cadmium	0	0	100	0.019345	1000	0.019952					10000	0.01887
Calcium	0	0	1100	0.0000737	50000	0.0000672					10000	
Chromium	0	0	100	0.0000571	1000	5.411E-05					10000	5.3671E-05
Cobalt	0	0	100	0.0045766	1000	0.0043469					10000	0.0045501
Copper	0	0	100	0.0000766	1000	6.644E-05					10000	6.7201E-05
Iron	0	0	5100	1.660784E-05	10000	1.5621E-05			500000	1.4883E-05	10000	
Lead	0	0	100	0.0014649	1000	0.0014162					10000	0.0014938
Magnesium	0	0	5100		50000	2.3066E-06			500000	2.3246E-06	10000	
Manganese	0	0	100	0.0002928	1000	0.0002693	10000	2.7122E-04			10000	
Molybdenum	0	0	100	0.0031589	1000	0.0033967					10000	0.003287
Nickel	0	0	100	0.003178	1000	0.0031005					10000	0.0031967
Potassium	0	0	1000	0.0000104	10000	1.5702E-05						
Selenium	0	0	100	0.0003699	1000	3.4711E-04					10000	3.2685E-04
Silver	0	0	20	0.0000695	500	0.0000596	2000	6.2615E-05				
Sodium	0	0	1000		50000	5.0716E-05						
Thallium	0	0	100	0.0007753	1000	7.2001E-04					10000	0.0007509
Tin	0	0	50	0.0012888	1000	0.001346					5000	1.35584E-03
Titanium	0	0	100	0.0001735	1000	1.7216E-04					10000	1.7216E-04
Vanadium	0	0	100	0.0000531	1000	5.341E-05					10000	5.2736E-05
Zinc	0	0	100	0.0078098	1000	0.0080117					10000	0.0077526
Strontium	0	0	100	0.001481	1000	0.001398					10000	0.001443
Lithium (outside certification)	0	0	100	0.0000067	1000	6.83E-06					10000	6.354E-06

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3353001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/13/13 9:31 12/13/13 10:04

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.5382E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.3109E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.5765E-05										
Selenium												
Silver												
Sodium	100000	4.7947E-05	500000	4.8874E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003		
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)		
Calibration:	3353001	Instrument:	ME-ICP		
Matrix:	Water	Calibration Dates:	12/13/13 9:31	12/13/13 10:04	

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.5645E-05	66.70007	4.16211	175.6512	0.9999998		0.998	
Antimony	4.48395E-04	66.81878	5.68331	184.3001	0.9999992		0.998	
Arsenic	2.534075E-04	67.29011	1.258098	119.891	0.999984		0.998	
Barium	0.0080683	67.33888	1.040975	136.1804	0.9999935		0.998	
Beryllium	0.0013017	66.68798	44.90897	197.1474	0.9999984		0.998	
Boron	1.15565E-05	66.86927	6.188053	171.7771	0.9999576		0.998	
Cadmium	1.454175E-02	66.73618	2.79133	177.2136	0.9999683		0.998	
Calcium	5.15705E-05	67.02524	0.9290875	93.18535	0.999993		0.998	
Chromium	4.122025E-05	66.76905	3.125272	158.1716	0.9999996		0.998	
Cobalt	0.0033684	66.73622	1.617085	174.2094	0.9999791		0.998	
Copper	5.256025E-05	67.24378	1.05851	76.37238	0.9999954		0.998	
Iron	1.177796E-05	66.93607	4.72861	173.111	0.9999989		0.998	
Lead	1.093725E-03	66.73093	4.017042	182.6339	0.9999745		0.998	
Magnesium	1.735525E-06	66.66813	3.299488	188.6244	0.9999985		0.998	
Manganese	2.0833E-04	66.86254	3.558625	135.6124	0.9999984		0.998	
Molybdenum	2.46065E-03	66.78354	173.5789	199.7098	0.9999875		0.998	
Nickel	0.0023688	66.68984	16.63159	195.8062	0.9999911		0.998	
Potassium	1.046675E-05	70.8627	3.04541	107.8978	0.9999896		0.998	
Selenium	2.60965E-04	67.00636	1.400685	152.7762	0.9999742		0.998	
Silver	4.792875E-05	67.22482	3.07523	137.2288	0.9998158		0.998	
Sodium	3.688425E-05	66.73964	2.919875	154.0442	0.9999548		0.998	
Thallium	5.615525E-04	66.78829	4.86871	183.3421	0.9999823		0.998	
Tin	9.9766E-04	66.73247	0.8933975	126.9523	0.9999988		0.998	
Titanium	1.29455E-04	66.66845	8.683157	195.7207	1		0.998	
Vanadium	3.98115E-05	66.67026	1.77894	102.0322	0.9999987		0.998	
Zinc	5.893525E-03	66.69333	2.192873	168.1195	0.9999891		0.998	
Strontium	0.0010805	66.74056	0.925625	101.122	0.9999897		0.998	
Lithium (outside certification)	4.971E-06	66.78903	4.038	164.6025	0.9999376		0.998	

PREPARATION BENCH SHEET

3L12001

Empirical Laboratories, LLC **Printed: 12/26/2013 12:51:04PM**

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1312023-01	A	MET_ICP_LOW6010B_FULL	12/12/2013	100	25					NA	TAL list
1312023-02	A	MET_ICP_LOW6010B_FULL	12/12/2013	100	25					NA	TAL list
1312030-01	G	MET_ICP_LOW6010C_FULL_	12/12/2013	100	25					NA	see versions
1312030-03	G	MET_ICP_LOW6010C_FULL_	12/12/2013	100	25					NA	see versions
1312043-25	E	MET_ICP_LOW6010B_FULL	12/12/2013	100	25					NA	Added for BatchQC in: 3L12001
1312043-25	E	MET_ICP_LOW6010C_FULL_	12/12/2013	100	25					NA	Added for BatchQC in: 3L12001
1312043-25	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-26	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-28	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-29	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-30	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-30RE1	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-31	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-31RE1	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-32	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-32RE1	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-33	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-34	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-34RE1	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-35	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-35RE1	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions

PREPARATION BENCH SHEET

3L12001

Empirical Laboratories, LLC **Printed: 12/26/2013 12:51:04PM**

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1312043-36	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-36RE1	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-37	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312043-37RE1	E	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	avoid Tl dilutions
1312069-01	D	MET_ICP_LOW6010C_FULL	12/12/2013	100	25					NA	see versions
1312069-01	D	MET_ICP_LOW6010C_FULL_	12/12/2013	100	25					NA	Added for BatchQC in: 3L12001
1312069-01	D	MET_ICP_LOW6010B_FULL	12/12/2013	100	25					NA	Added for BatchQC in: 3L12001
3L12001-BLK1		QC	12/12/2013	100	25					NA	
3L12001-BS1		QC	12/12/2013	100	25	13L0071		600		NA	
3L12001-BS2		QC	12/12/2013	100	25	13L0071		600		NA	Added 12/20/2013 by BLQ
3L12001-DUP1		QC	12/12/2013	100	25		1312069-01			NA	
3L12001-DUP2		QC	12/12/2013	100	25		1312043-25			NA	
3L12001-MS1		QC	12/12/2013	100	25	13J0593	1312069-01	25		NA	
3L12001-PS1		QC	12/12/2013	100	25	13J0593	1312069-01	25		NA	

Reagents Used:

Standard	Description

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1312069-01 [ST105-30019]	3L13003	20.00/20.00	20.0	20.0	1.00			12/13/13

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1312069-01 [ST105-30019]	3L16017	100.00/100.00	100	100	1.00			12/16/13

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1312069-01 [ST105-30019]	3L17011	25.00/25.00	25.0	25.0	1.00			12/17/13

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1312069-01 [ST105-30019]	3L20016	5.00/5.00	5.00	5.00	1.00			12/20/13

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1312069-01 [ST105-30019]	3L23009	20.00/20.00	4.00	20.0	1.00			12/23/13

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1312069-01 [ST105-30019]	4A03004	40.00/40.00	40.0	40.0	1.00			01/03/14
1312069-02 [ST105-30019]	4A03004	40.00/40.00	40.0	40.0	1.00			01/03/14

ANALYSIS DATA SHEET

ST105-30019

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1312069-01
Sampled:	12/09/13 14:12	Received:	12/11/13 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.0750	0.150	0.300	1	U	SM4500NH3BG	3L16017	12/17/13 15:28
24959-67-9	Bromide	**0.0590**	**0.0420**	0.125	0.250	1	J	SW9056A	3L20016	12/21/13 07:44
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	3L13003	12/16/13 15:22
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4A03004	01/03/14 18:54
16887-00-6	Chloride	**7.61**	**0.170**	0.330	0.500	1		SW9056A	3L20016	12/21/13 07:44
NA	Nitrate/Nitrite as N	**3.39**	**0.250**	0.750	1.50	1		E353.2	3L23009	12/23/13 13:17
16984-48-8	Fluoride	**0.409**	**0.0330**	0.100	0.250	1		SW9056A	3L20016	12/21/13 07:44
471-34-1	Alkalinity, Total (as CACO3)	**113**	**1.00**	1.00	1.00	1		SM2320B	3L17011	12/17/13 17:48
14808-79-8	Sulfate as SO4	**22.0**	**0.330**	1.00	2.50	1		SW9056A	3L20016	12/21/13 07:44

ANALYSIS DATA SHEET

ST105-30019

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1312069-02
Sampled:	12/10/13 14:12	Received:	12/11/13 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4A03004	01/03/14 19:18

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Laboratory ID: 3L13003-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	ND	0.500	1.00	1.50	1	U	E351.2	3L13003	12/16/13 15:05

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L13003-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**14.04**	**0.500**	1.00	1.50	1		E351.2	3L13003	12/16/13 15:09

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L13003-BS2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**12.37**	**1.00**	2.00	3.00	2	D	E351.2	3L13003	12/16/13 16:09

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L13003-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**5.440**	**0.556**	1.11	1.67	1		E351.2	3L13003	12/16/13 15:23

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L13003-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**4.956**	**0.556**	1.11	1.67	1		E351.2	3L13003	12/16/13 15:24

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Laboratory ID: 3L16017-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.0750	0.150	0.300	1	U	SM4500NH3BG	3L16017	12/17/13 15:17

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L16017-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**5.122**	**0.0750**	0.150	0.300	1		SM4500NH3BG	3L16017	12/17/13 15:18

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Laboratory ID: 3L17011-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	3L17011	12/17/13 11:43

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L17011-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**205.9**	**1.00**	1.00	1.00	1		SM2320B	3L17011	12/17/13 11:17

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L17011-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**212.2**	**1.00**	1.00	1.00	1		SM2320B	3L17011	12/17/13 11:33

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 3L20016-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	3L20016	12/21/13 04:15
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	3L20016	12/21/13 04:15
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	3L20016	12/21/13 04:15
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	3L20016	12/21/13 04:15

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Laboratory ID: 3L20016-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.56**	**0.0420**	0.125	0.250	1		SW9056A	3L20016	12/21/13 04:32
16887-00-6	Chloride	**4.171**	**0.170**	0.330	0.500	1		SW9056A	3L20016	12/21/13 04:32
16984-48-8	Fluoride	**2.793**	**0.0330**	0.100	0.250	1		SW9056A	3L20016	12/21/13 04:32
14808-79-8	Sulfate as SO4	**21.07**	**0.330**	1.00	2.50	1		SW9056A	3L20016	12/21/13 04:32

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L23009-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	3L23009	12/23/13 13:14

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L23009-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**36.55**	**1.25**	3.75	7.50	1		E353.2	3L23009	12/23/13 13:16

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L23009-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**5.810**	**0.250**	0.750	1.50	1		E353.2	3L23009	12/23/13 13:19

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 3L23009-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**5.785**	**0.250**	0.750	1.50	1		E353.2	3L23009	12/23/13 13:20

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Laboratory ID: 4A03004-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4A03004	01/03/14 10:56
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4A03004	01/03/14 10:56

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtllandECOS_003

Project: Kirtland AFB (ECOS)

Laboratory ID: 4A03004-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**23.07**	**1.25**	2.50	3.00	1		SW9060A	4A03004	01/03/14 11:25
7440-44-0	Total Organic Carbon (dissolved)	**23.07**	**1.25**	2.50	3.00	1		SW9060A	4A03004	01/03/14 11:25

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Calibration: 3350002
Sequence: 3L35010

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35010-ICV1	Total Kjeldahl Nitrogen	10.00	10.92	109	mg/L	+/- 10.00%
3L35010-CCV1	Total Kjeldahl Nitrogen	10.00	10.66	107	mg/L	+/- 10.00%
3L35010-CCV2	Total Kjeldahl Nitrogen	10.00	10.69	107	mg/L	+/- 10.00%
3L35010-CCV3	Total Kjeldahl Nitrogen	10.00	10.66	107	mg/L	+/- 10.00%
3L35010-CCV4	Total Kjeldahl Nitrogen	10.00	10.69	107	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 3L35106

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35106-ICV1	Bromide	14.00	13.66	97.6	mg/L	+/- 10.00%
	Chloride	4.200	4.193	99.8	mg/L	+/- 10.00%
	Fluoride	2.800	2.803	100	mg/L	+/- 10.00%
	Sulfate as SO4	21.00	21.05	100	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Calibration: 3351004
Sequence: 3L35116

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35116-ICV1	Ammonia as N	2.000	2.152	108	mg/L	+/- 10.00%
3L35116-CCV1	Ammonia as N	2.000	2.057	103	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Calibration: 3357002
Sequence: 3L35708

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35708-ICV1	Nitrate/Nitrite as N	1.200	1.262	105	mg/L	+/- 10.00%
3L35708-CCV1	Nitrate/Nitrite as N	1.200	1.274	106	mg/L	+/- 10.00%
3L35708-CCV2	Nitrate/Nitrite as N	1.200	1.253	104	mg/L	+/- 10.00%
3L35708-CCV3	Nitrate/Nitrite as N	1.200	1.245	104	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 4A00604

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4A00604-CCV6	Bromide	6.300	5.933	94.2	mg/L	+/- 10.00%
	Chloride	25.00	24.98	99.9	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.93	99.7	mg/L	+/- 10.00%
4A00604-CCV7	Bromide	6.300	6.005	95.3	mg/L	+/- 10.00%
	Chloride	25.00	25.27	101	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.27	101	mg/L	+/- 10.00%
4A00604-CCV8	Bromide	6.300	5.936	94.2	mg/L	+/- 10.00%
	Chloride	25.00	25.02	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.527	101	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.95	99.8	mg/L	+/- 10.00%
4A00604-CCV9	Bromide	6.300	6.005	95.3	mg/L	+/- 10.00%
	Chloride	25.00	25.24	101	mg/L	+/- 10.00%
	Fluoride	2.500	2.537	101	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.09	100	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtllandECOS_003
Project: Kirtland AFB (ECOS)
Calibration: UNASSIGNED
Sequence: 4A00701

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4A00701-CCV1	Total Organic Carbon	25.00	23.85	95.4	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	23.85	95.4	mg/L	+/- 20.00%
4A00701-CCV2	Total Organic Carbon	50.00	50.62	101	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	50.62	101	mg/L	+/- 20.00%
4A00701-CCV3	Total Organic Carbon	25.00	24.43	97.7	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	24.43	97.7	mg/L	+/- 20.00%

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 3351002

Sequence: 4A00604

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4A00604-CRL4	Bromide	0.1260	0.1060	84.1	mg/L	75 - 125
	Chloride	0.5000	0.5200	104	mg/L	75 - 125
	Fluoride	0.05000	0.05100	102	mg/L	75 - 125
	Sulfate as SO4	0.5000	0.5210	104	mg/L	75 - 125

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 3L13003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L13003-BLK1	Total Kjeldahl Nitrogen	0.478	0.500	1.50	mg/L	U	E351.2

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 3L16017

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L16017-BLK1	Ammonia as N	0.0203	0.0750	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 3L17011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L17011-BLK1	Alkalinity, Total (as CACO3)	0.00	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 3L20016

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L20016-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 3L23009

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L23009-BLK1	Nitrate/Nitrite as N	-0.0233	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4A03004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4A03004-BLK1	Total Organic Carbon	0.445	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.445	1.25	3.00	mg/L	U	SW9060A

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 3L35010
Calibration: 3350002
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35010-ICB1	Total Kjeldahl Nitrogen	0.3292	0.500	1.50	mg/L	U	E351.2
3L35010-CCB1	Total Kjeldahl Nitrogen	0.278	0.500	1.50	mg/L	U	E351.2
3L35010-CCB2	Total Kjeldahl Nitrogen	0.362	0.500	1.50	mg/L	U	E351.2
3L35010-CCB3	Total Kjeldahl Nitrogen	0.278	0.500	1.50	mg/L	U	E351.2
3L35010-CCB4	Total Kjeldahl Nitrogen	0.362	0.500	1.50	mg/L	U	E351.2

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 3L35106
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35106-ICB1	Bromide	0.000	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.000	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.000	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.000	0.330	2.50	mg/L	U	SW9056A

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 3L35116
Calibration: 3351004
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35116-ICB1	Ammonia as N	-0.001760	0.0750	0.300	mg/L	U	SM4500NH3BG
3L35116-CCB1	Ammonia as N	-0.00413	0.0750	0.300	mg/L	U	SM4500NH3BG

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 3L35708
Calibration: 3357002
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35708-ICB1	Nitrate/Nitrite as N	-0.03099	0.0500	0.300	mg/L	U	E353.2
3L35708-CCB1	Nitrate/Nitrite as N	-0.0305	0.0500	0.300	mg/L	U	E353.2
3L35708-CCB2	Nitrate/Nitrite as N	-0.0270	0.0500	0.300	mg/L	U	E353.2
3L35708-CCB3	Nitrate/Nitrite as N	-0.0323	0.0500	0.300	mg/L	U	E353.2

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4A00604
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4A00604-CCB6	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4A00604-CCB7	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4A00604-CCB8	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4A00604-CCB9	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtllandECOS_003
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4A00701
Calibration: UNASSIGNED
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4A00701-CCB1	Total Organic Carbon	0.482	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.482	1.25	3.00	mg/L	U	SW9060A
4A00701-CCB2	Total Organic Carbon	0.473	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.473	1.25	3.00	mg/L	U	SW9060A
4A00701-CCB3	Total Organic Carbon	0.439	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.439	1.25	3.00	mg/L	U	SW9060A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E351.2

ST105-30019

Laboratory: Empirical Laboratories, LLC

SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 3L13003

% Solids:

Source Sample Name: **1312069-01**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	ND	5.440	97.9		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	4.956	89.2	9.32		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E353.2

ST105-30019

Laboratory: Empirical Laboratories, LLC

SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 3L23009

% Solids:

Source Sample Name: **1312069-01**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate/Nitrite as N	2.500	3.390	5.810	96.8		90 - 110

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Nitrate/Nitrite as N	2.500	5.785	95.8	0.431		20	90 - 110

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	3L13003	Laboratory ID:	3L13003-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	13.20	14.04	106	80 - 120

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	3L13003	Laboratory ID:	3L13003-BS2
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	13.20	12.37	93.7	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	3L16017	Laboratory ID:	3L16017-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	5.122	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	3L17011	Laboratory ID:	3L17011-BS1
Preparation:	pNone	Initial/Final:	25 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	200.0	205.9	103	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Alkalinity, Total (as CACO3)	200.0	212.2	106	2.99	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	3L20016	Laboratory ID:	3L20016-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.56	96.9	80 - 120
Chloride	4.200	4.171	99.3	80 - 120
Fluoride	2.800	2.793	99.8	80 - 120
Sulfate as SO4	21.00	21.07	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	3L23009	Laboratory ID:	3L23009-BS1
Preparation:	pNone	Initial/Final:	0.8 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	36.20	36.55	101	90 - 110

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4A03004	Laboratory ID:	4A03004-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	23.07	92.3	80 - 120
Total Organic Carbon (dissolved)	25.00	23.07	92.3	80 - 120

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 3L13003 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30019	1312069-01	12/13/13 07:54	20.00	20.00
Blank	3L13003-BLK1	12/13/13 07:54	20.00	20.00
LCS	3L13003-BS1	12/13/13 07:54	20.00	20.00
LCS	3L13003-BS2	12/13/13 07:54	20.00	20.00
ST105-30019	3L13003-MS1	12/13/13 07:54	18.00	20.00
ST105-30019	3L13003-MSD1	12/13/13 07:54	18.00	20.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 3L16017 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30019	1312069-01	12/16/13 09:53	100.00	100.00
Blank	3L16017-BLK1	12/16/13 09:53	100.00	100.00
LCS	3L16017-BS1	12/16/13 09:53	100.00	100.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 3L17011 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30019	1312069-01	12/17/13 07:52	25.00	25.00
Blank	3L17011-BLK1	12/17/13 07:52	25.00	25.00
LCS	3L17011-BS1	12/17/13 07:52	25.00	25.00
LCS Dup	3L17011-BSD1	12/17/13 07:52	25.00	25.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 3L20016 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30019	1312069-01	12/20/13 15:54	5.00	5.00
Blank	3L20016-BLK1	12/20/13 15:54	5.00	5.00
LCS	3L20016-BS1	12/20/13 15:54	5.00	5.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 3L23009 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30019	1312069-01	12/23/13 09:34	4.00	20.00
Blank	3L23009-BLK1	12/23/13 09:34	20.00	20.00
LCS	3L23009-BS1	12/23/13 09:34	0.80	20.00
ST105-30019	3L23009-MS1	12/23/13 09:34	4.00	20.00
ST105-30019	3L23009-MSD1	12/23/13 09:34	4.00	20.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4A03004 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30019	1312069-01	01/03/14 08:40	40.00	40.00
ST105-30019	1312069-02	01/03/14 08:40	40.00	40.00
Blank	4A03004-BLK1	01/03/14 08:40	40.00	40.00
LCS	4A03004-BS1	01/03/14 08:40	40.00	40.00

ANALYSIS SEQUENCE SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC

SDG: KirtllandECOS_003

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	3L17011-BS1	121713-002	12/17/13 11:17
LCS Dup	3L17011-BSD1	121713-003	12/17/13 11:33
Blank	3L17011-BLK1	121713-004	12/17/13 11:43

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35010	Instrument:	WC-Lachat
Calibration:	3350002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35010-CAL2	M_12-16-2013_02-53-44PM-0	12/16/13 14:56
Cal Standard	3L35010-CAL3	M_12-16-2013_02-53-44PM-0	12/16/13 14:57
Cal Standard	3L35010-CAL4	M_12-16-2013_02-53-44PM-0	12/16/13 14:59
Cal Standard	3L35010-CAL5	M_12-16-2013_02-53-44PM-0	12/16/13 15:00
Cal Standard	3L35010-CAL6	M_12-16-2013_02-53-44PM-0	12/16/13 15:01
Cal Standard	3L35010-CAL7	M_12-16-2013_02-53-44PM-0	12/16/13 15:02
Initial Cal Check	3L35010-ICV1	M_12-16-2013_02-53-44PM-0	12/16/13 15:03
Initial Cal Blank	3L35010-ICB1	M_12-16-2013_02-53-44PM-0	12/16/13 15:04
Blank	3L13003-BLK1	M_12-16-2013_02-53-44PM-0	12/16/13 15:05
LCS	3L13003-BS1	M_12-16-2013_02-53-44PM-0	12/16/13 15:09
Calibration Check	3L35010-CCV1	M_12-16-2013_04-06-08PM-0	12/16/13 15:19
Calibration Blank	3L35010-CCB1	M_12-16-2013_04-06-08PM-0	12/16/13 15:20
ST105-30019	1312069-01	M_12-16-2013_02-53-44PM-0	12/16/13 15:22
ST105-30019	3L13003-MS1	M_12-16-2013_02-53-44PM-0	12/16/13 15:23
ST105-30019	3L13003-MSD1	M_12-16-2013_02-53-44PM-0	12/16/13 15:24
Calibration Check	3L35010-CCV2	M_12-16-2013_04-06-08PM-0	12/16/13 15:27
Calibration Blank	3L35010-CCB2	M_12-16-2013_04-06-08PM-0	12/16/13 15:28
Calibration Check	3L35010-CCV3	M_12-16-2013_04-06-08PM-0	12/16/13 16:07
Calibration Blank	3L35010-CCB3	M_12-16-2013_04-06-08PM-0	12/16/13 16:08
LCS	3L13003-BS2	M_12-16-2013_04-06-08PM-0	12/16/13 16:09
Calibration Check	3L35010-CCV4	M_12-16-2013_04-06-08PM-0	12/16/13 16:11
Calibration Blank	3L35010-CCB4	M_12-16-2013_04-06-08PM-0	12/16/13 16:12

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35106	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35106-CAL1	121013-007	12/10/13 16:44
Cal Standard	3L35106-CAL2	121013-008	12/10/13 17:02
Cal Standard	3L35106-CAL3	121013-009	12/10/13 17:19
Cal Standard	3L35106-CAL4	121013-010	12/10/13 17:37
Cal Standard	3L35106-CAL5	121013-011	12/10/13 17:54
Cal Standard	3L35106-CAL6	121013-012	12/10/13 18:11
Cal Standard	3L35106-CAL7	121013-013	12/10/13 18:29
Cal Standard	3L35106-CAL8	121013-014	12/10/13 18:46
Initial Cal Check	3L35106-ICV1	121013-015	12/10/13 19:04
Initial Cal Blank	3L35106-ICB1	121013-016	12/10/13 19:21

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35116	Instrument:	WC-Lachat
Calibration:	3351004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35116-CAL1	M_12-17-2013_03-06-58PM-0	12/17/13 15:08
Cal Standard	3L35116-CAL2	M_12-17-2013_03-06-58PM-0	12/17/13 15:09
Cal Standard	3L35116-CAL3	M_12-17-2013_03-06-58PM-0	12/17/13 15:10
Cal Standard	3L35116-CAL4	M_12-17-2013_03-06-58PM-0	12/17/13 15:11
Cal Standard	3L35116-CAL5	M_12-17-2013_03-06-58PM-0	12/17/13 15:12
Cal Standard	3L35116-CAL6	M_12-17-2013_03-06-58PM-0	12/17/13 15:13
Cal Standard	3L35116-CAL8	M_12-17-2013_03-06-58PM-0	12/17/13 15:14
Cal Standard	3L35116-CAL7	M_12-17-2013_03-06-58PM-0	12/17/13 15:14
Initial Cal Check	3L35116-ICV1	M_12-17-2013_03-06-58PM-0	12/17/13 15:15
Initial Cal Blank	3L35116-ICB1	M_12-17-2013_03-06-58PM-0	12/17/13 15:16
Blank	3L16017-BLK1	M_12-17-2013_03-06-58PM-0	12/17/13 15:17
LCS	3L16017-BS1	M_12-17-2013_03-06-58PM-0	12/17/13 15:18
ST105-30019	1312069-01	M_12-17-2013_03-06-58PM-0	12/17/13 15:28
Calibration Check	3L35116-CCV1	M_12-17-2013_03-06-58PM-0	12/17/13 15:30
Calibration Blank	3L35116-CCB1	M_12-17-2013_03-06-58PM-0	12/17/13 15:31

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35708	Instrument:	WC-Lachat
Calibration:	3357002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35708-CAL1	M_12-23-2013_12-21-49PM-0	12/23/13 12:23
Cal Standard	3L35708-CAL2	M_12-23-2013_12-21-49PM-0	12/23/13 12:25
Cal Standard	3L35708-CAL3	M_12-23-2013_12-21-49PM-0	12/23/13 12:26
Cal Standard	3L35708-CAL4	M_12-23-2013_12-21-49PM-0	12/23/13 12:28
Cal Standard	3L35708-CAL5	M_12-23-2013_12-21-49PM-0	12/23/13 12:29
Cal Standard	3L35708-CAL6	M_12-23-2013_12-21-49PM-0	12/23/13 12:31
Cal Standard	3L35708-CAL7	M_12-23-2013_12-21-49PM-0	12/23/13 12:32
Cal Standard	3L35708-CAL8	M_12-23-2013_12-21-49PM-0	12/23/13 12:34
Initial Cal Check	3L35708-ICV1	M_12-23-2013_12-21-49PM-0	12/23/13 12:35
Initial Cal Blank	3L35708-ICB1	M_12-23-2013_12-21-49PM-0	12/23/13 12:36
Calibration Check	3L35708-CCV1	M_12-23-2013_12-21-49PM-0	12/23/13 13:00
Calibration Blank	3L35708-CCB1	M_12-23-2013_12-21-49PM-0	12/23/13 13:01
Calibration Check	3L35708-CCV2	M_12-23-2013_12-21-49PM-0	12/23/13 13:11
Calibration Blank	3L35708-CCB2	M_12-23-2013_12-21-49PM-0	12/23/13 13:13
Blank	3L23009-BLK1	M_12-23-2013_12-21-49PM-0	12/23/13 13:14
LCS	3L23009-BS1	M_12-23-2013_12-21-49PM-0	12/23/13 13:16
ST105-30019	1312069-01	M_12-23-2013_12-21-49PM-0	12/23/13 13:17
ST105-30019	3L23009-MS1	M_12-23-2013_12-21-49PM-0	12/23/13 13:19
ST105-30019	3L23009-MSD1	M_12-23-2013_12-21-49PM-0	12/23/13 13:20
Calibration Check	3L35708-CCV3	M_12-23-2013_12-21-49PM-0	12/23/13 13:35
Calibration Blank	3L35708-CCB3	M_12-23-2013_12-21-49PM-0	12/23/13 13:36

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4A00604	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4A00604-CCV6	121913-083	12/20/13 16:39
Calibration Blank	4A00604-CCB6	121913-084	12/20/13 16:56
Instrument RL Check	4A00604-CRL4	121913-087	12/20/13 17:48
Calibration Check	4A00604-CCV7	121913-105	12/20/13 23:02
Calibration Blank	4A00604-CCB7	121913-106	12/20/13 23:19
Calibration Check	4A00604-CCV8	121913-120	12/21/13 03:23
Calibration Blank	4A00604-CCB8	121913-121	12/21/13 03:40
Blank	3L20016-BLK1	121913-123	12/21/13 04:15
LCS	3L20016-BS1	121913-124	12/21/13 04:32
ST105-30019	1312069-01	121913-135	12/21/13 07:44
Calibration Check	4A00604-CCV9	121913-137	12/21/13 08:19
Calibration Blank	4A00604-CCB9	121913-138	12/21/13 08:36

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtllandECOS_003
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4A00701	Instrument:	WC-TOC1
Calibration:	UNASSIGNED		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4A00701-CCV1		01/03/14 10:09
Calibration Blank	4A00701-CCB1		01/03/14 10:34
Blank	4A03004-BLK1		01/03/14 10:56
LCS	4A03004-BS1		01/03/14 11:25
Calibration Check	4A00701-CCV2		01/03/14 16:57
Calibration Blank	4A00701-CCB2		01/03/14 17:21
ST105-30019	1312069-01		01/03/14 18:54
ST105-30019	1312069-02		01/03/14 19:18
Calibration Check	4A00701-CCV3		01/03/14 19:46
Calibration Blank	4A00701-CCB3		01/03/14 20:11

PREPARATION BENCH SHEET

3L13003

Empirical Laboratories, LLC

Printed: 1/8/2014 11:23:10AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1310001-01	-	WC_TKN_351.2	12/13/2013	20	20					NA	
1312019-01	B	WC_TKN_351.2	12/13/2013	20	20					NA	
1312019-03	A	WC_TKN_351.2	12/13/2013	20	20					NA	
1312022-03	A	WC_TKN_351.2	12/13/2013	2	20					NA	
1312022-03RE1	A	WC_TKN_351.2	12/13/2013	2	20					NA	Added 12/16/2013 by RGB
1312025-01	D	WC_TKN_351.2	12/13/2013	20	20					NA	
1312025-03	E	WC_TKN_351.2	12/13/2013	20	20					NA	
1312025-05	H	WC_TKN_351.2	12/13/2013	20	20					NA	
1312025-07	D	WC_TKN_351.2	12/13/2013	20	20					NA	
1312025-09	G	WC_TKN_351.2	12/13/2013	20	20					NA	
1312025-11	H	WC_TKN_351.2	12/13/2013	20	20					NA	
1312069-01	C	WC_TKN_351.2	12/13/2013	20	20					NA	Outside DoD cert
1312085-05	A	WC_TKN_351.2	12/13/2013	2	20					NA	
3L13003-BLK1		QC	12/13/2013	20	20					NA	
3L13003-BS1		QC	12/13/2013	20	20	13G0376		20000		NA	
3L13003-BS2		QC	12/13/2013	20	20	13G0376		20000		NA	
3L13003-MRL1		QC	12/13/2013	20	20	13A0473		20000		NA	
3L13003-MRL2		QC	12/13/2013	20	20	13A0474		20000		NA	
3L13003-MS1		QC	12/13/2013	18	20	13D0256	1312069-01	2000		NA	
3L13003-MSD1		QC	12/13/2013	18	20	13D0256	1312069-01	2000		NA	

PREPARATION BENCH SHEET

3L13003

Empirical Laboratories, LLC

Printed: 1/8/2014 11:23:10AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0179	TKN Carrier
13J0180	TKN 0.8M NaOH
13K0391	TKN Buffer
13L0045	TKN Salicylate Nitroprusside Reagent
13L0361	TKN Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

3L16017

Empirical Laboratories, LLC

Printed: 1/3/2014 4:27:27PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1311203-01	F	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312010-02	G	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312030-01	F	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312030-03	F	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312050-04	A	WC_AMMONIA_PHENATE_45	12/16/2013	10	100					NA	
1312065-01	A	WC_AMMONIA_PHENATE_45	12/16/2013	10	100					NA	
1312065-03	A	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312065-04	A	WC_AMMONIA_PHENATE_45	12/16/2013	10	100					NA	
1312069-01	C	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312085-01	A	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312085-03	A	WC_AMMONIA_PHENATE_45	12/16/2013	10	100					NA	
1312089-01	A	WC_AMMONIA_PHENATE_45	12/16/2013	10	100					NA	
1312089-03	A	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312089-07	A	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312089-08	A	WC_AMMONIA_PHENATE_45	12/16/2013	100	100					NA	
1312106-01	C	WC_AMMONIA_PHENATE_45	12/16/2013	10	100					NA	
3L16017-BLK1		QC	12/16/2013	100	100					NA	
3L16017-BS1		QC	12/16/2013	100	100	13L0052		100000		NA	
3L16017-DUP1		QC	12/16/2013	10	100		1312106-01			NA	
3L16017-MS1		QC	12/16/2013	100	100	13A0472	1312010-02	500		NA	

PREPARATION BENCH SHEET

3L16017

Empirical Laboratories, LLC

Printed: 1/3/2014 4:27:27PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13G0488	10.00 pH Buffer
13J0477	1N H2SO4
13J0555	10 N NaOH
13J0574	NH3 Sodium Nitroprusside Reagent
13K0358	pH 7.0 Buffer Yellow
13K0494	1N NaOH Solution
13K0500	Borate Buffer
13K0605	NH3 Buffer
13L0118	Boric Acid
13L0123	NH3 Sodium Phenolate Reagent
13L0397	NH3 Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

3L17011

Empirical Laboratories, LLC

Printed: 1/8/2014 11:24:08AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1312060-05	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-06	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-07	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-15	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-16	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-18	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-20	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-22	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-23	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-24	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-28	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-36	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312060-37	G	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
1312069-01	A	WC_ALKALINITY_2320B	12/17/2013	25	25					NA	
3L17011-BLK1		QC	12/17/2013	25	25					NA	
3L17011-BS1		QC	12/17/2013	25	25	13J0478		5000		NA	
3L17011-BSD1		QC	12/17/2013	25	25	13J0478		5000		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

3L20016

Empirical Laboratories, LLC

Printed: 1/8/2014 10:19:18AM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1312060-31	M	WC_ANIONS_9056A (Regular)	12/20/2013	5	5					NA	Added for BatchQC in: 3L20016
1312060-31	M	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	
1312060-32	G	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	
1312060-33	G	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	
1312060-34	G	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	
1312060-35	G	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	
1312060-36	G	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	
1312060-37	G	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	
1312069-01	A	WC_ANIONS_9056A (Regular)	12/20/2013	5	5					NA	Bromide, Flouride, Chloride, & Sulfate
1312070-01	D	WC_ANIONS_9056A (Regular)	12/20/2013	5	5					NA	see versions
1312086-02	J	WC_ANIONS_9056A (Regular)	12/20/2013	5	5					NA	Fl MS/MSD
1312086-02	J	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	Added for BatchQC in: 3L20016
1312086-03	D	WC_ANIONS_9056A (Regular)	12/20/2013	5	5					NA	Fl
1312086-04	D	WC_ANIONS_9056A (Regular)	12/20/2013	5	5					NA	Fl
1312086-05	D	WC_ANIONS_9056A (Regular)	12/20/2013	5	5					NA	Fl
1312086-06	D	WC_ANIONS_9056A (Regular)	12/20/2013	5	5					NA	Fl
1312139-01	E	WC_ANIONS_300.0 (Regular)	12/20/2013	5	5					NA	see version sulfate and Chloride
3L20016-BLK1		QC	12/20/2013	5	5					NA	
3L20016-BS1		QC	12/20/2013	5	5	13L0330		5000		NA	
3L20016-DUP1		QC	12/20/2013	5	5		1312060-31			NA	
3L20016-DUP2		QC	12/20/2013	5	5		1312086-02			NA	
3L20016-MS1		QC	12/20/2013	22.5	25	13L0054	1312060-31	2500		NA	

PREPARATION BENCH SHEET

3L20016

Empirical Laboratories, LLC

Printed: 1/8/2014 10:19:18AM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
3L20016-MS2		QC	12/20/2013	22.5	25	13L0054	1312086-02	2500		NA	
3L20016-MSD1		QC	12/20/2013	22.5	25	13L0054	1312060-31	2500		NA	
3L20016-MSD2		QC	12/20/2013	22.5	25	13L0054	1312086-02	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

3L23009

Empirical Laboratories, LLC **Printed: 1/6/2014 10:09:18AM**

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1312069-01	C	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312070-01	E	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312070-01RE1	E	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	Added 12/23/2013 by RGB
1312090-02	G	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312090-03	G	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312090-04	G	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312090-05	G	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312090-06	G	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312147-01	A	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312155-01	A	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312155-03	A	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312155-03RE1	A	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	Added 12/23/2013 by RGB
1312157-02	D	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
1312157-04	D	WC_NO3NO2_N_353.2	12/23/2013	4	20					NA	
3L23009-BLK1		QC	12/23/2013	20	20					NA	
3L23009-BS1		QC	12/23/2013	0.8	20	13G0629		800		NA	
3L23009-MS1		QC	12/23/2013	4	20	13I0566	1312069-01	500		NA	
3L23009-MSD1		QC	12/23/2013	4	20	13I0566	1312069-01	500		NA	

PREPARATION BENCH SHEET

3L23009

Empirical Laboratories, LLC

Printed: 1/6/2014 10:09:18AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0506	NO3/NO2 Carrier (Acid DI)
13L0521	NO2/NO3 Buffer
13L0522	NO2/NO3 Sulfanilimide Color Reagent

PREPARATION BENCH SHEET

4A03004

Empirical Laboratories, LLC

Printed: 1/8/2014 11:24:57AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1312060-22	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-23	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-24	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-27	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-28	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-29	E	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-31	N	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-31	N	WC_TOC_DISS_9060A_QUAD	01/03/2014	40	40					NA	Added for BatchQC in: 4A03004
1312060-32	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-33	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-34	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-35	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-36	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312060-37	H	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312069-01	C	WC_TOC_9060A_QUAD	01/03/2014	40	40					NA	
1312069-02	A	WC_TOC_DISS_9060A_QUAD	01/03/2014	40	40					NA	Field filtered
4A03004-BLK1		QC	01/03/2014	40	40					NA	
4A03004-BS1		QC	01/03/2014	40	40	13L0583		40000		NA	
4A03004-MS1		QC	01/03/2014	40	40	13F0271	1312060-31	600		NA	
4A03004-MSD1		QC	01/03/2014	40	40	13F0271	1312060-31	600		NA	

PREPARATION BENCH SHEET

4A03004

Empirical Laboratories, LLC

Printed: 1/8/2014 11:24:57AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13K0560	TOC Phosphoric Acid Reagent
13L0590	TOC PERSULFATE REAGENT

ANALYTICAL DATA PACKAGE
SDG # KirtlandECOS_004

PROJECT NAME: KIRTLAND AFB (ECOS)
PROJECT LOCATION: ALBUQUERQUE, NEW MEXICO

SUBMITTAL TO:
Susan Huang
SHAW E&I, Inc.
4005 Port Chicago Highway
Concord, CA 94520

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Marianne Walker
Tel (615)345-1115
Fax (866)417-0548
Email: mwalker@empirlabs.com

Original Report Date: January 21, 2014
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 24

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited Certificate Number L2226

Table of Contents

#	Description	Page No.
1	Cover Page	1
2	Table of Contents	2
3	Case Narrative	3
4	Sample Receipt Information Chain of Custody Forms Sample Receipt Confirmations WorkOrder Summary Sample Delivery Group (SDG) Sheets	9
5	Data for Wet Chemistry Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	14

Sample Delivery Group Case Narrative

Receipt Information

The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. No samples in this SDG were subcontracted.

Sample ST105-30019 was received on 12/11/2013 as laboratory work order 1312069; however, Total Dissolved Solids was missed upon log-in. Upon discovery, sample ST105-30019 was logged in for Total Dissolved Solids as laboratory work order 1401045. Sample ST105-30019 was analyzed outside of the method recommended holding time at the request of the client.

Changes to the Revision

This is an original submittal of the final report package.

Analytical Information

All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample prep and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.
B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.
C: The peak was manually integrated to correct the baseline from the original chromatogram.
D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.
E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

Wet Chemistry:
The following were analyzed outside of the method recommended holding time:
1401045-01 was analyzed 37 days after holding time with a 7 day method recommended holding time for Total Dissolved Solids; note – the sample was analyzed outside of the holding time at the client's request

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers
As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:
I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, Ms. Marcia K. McGinnity or an approved technical designee is authorized to sign this Statement of Data Authenticity.

_____
Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 12/16/2013)

DoD ELAP, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2014

State of Georgia, Environmental Protection Agency – NELAP
- Expires: 06/30/2014

State of Illinois, Environmental Protection Agency – NELAP, Certificate No.: 003300
- Groundwater
- Solid and Hazardous Waste
- Expires: 09/13/2014

State of Kansas Department of Health and Environment – NELAP, Certificate No.: E-10407
- Aqueous
- Non-aqueous
- Expires: 04/30/2014

State of Kentucky Department of Environmental Protection – NELAP, Certificate No.: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Nevada, Department of Conservation and Natural Resources – NELAP, Certificate No.: TN000042013-1
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

State of New Jersey Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2014

State of North Carolina, Department of Environment and Natural Resources - Certificate No.: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of North Dakota, Department of Health – NELAP, Certificate No.: R-204
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Texas, Commission on Environmental Quality – NELAP, Certificate No.: T104704307-13-8
- Aqueous
- Non-aqueous
- Expires: 12/31/2013

State of Utah, Department of Health – NELAP, Certificate No.: TN0042013-5
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

Commonwealth of Virginia, Department of General Services – VELAP, Certificate No.: 2558 – Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2014

State of Washington, Department of Ecology – NELAP, Lab ID: C934-13
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2014

Sample Receipt Information

1312069

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-ST105-80006

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 10 DEC 2013
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: Jennifer Chandler
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119369735

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) TN Nagel/Shaw Date: 12/10/13 Time: 1630
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) J Yrass Date: 12/11/13 Time: 0850

Comments:

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01 ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
02 ST105-30019	KAFB0523-GW-ST105-30019-REG	09 DEC 2013	14:12	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
~~02~~ ST105-30006	FieldQC-BW-ST105-30006-TB	12/9/13	0800	40mL VOA VIAL	2	HCl<pH2	VOC's by SW8468260B					
03	JG 12/11/13											

KirtlandECOS_004

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: ~~12/10/13~~ 12/11/13 LS 0850

Workorder# 1312069

1. Tracking # 9735 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 0.6 °C + *correction factor (+0.1)* = 0.7 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

   If yes, how many and where: One, front

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) LS

7. Were custody seals on containers: YES NO and Intact YES NO NA

   Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

    b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # ____

I certify that I unloaded the cooler and answered questions 7-14 (initial) JG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

    b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JG

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JG

I certify that I attached a label with the unique LIMS number to each container (initial) JG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) ____

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO # ____

Additional Details:

WORK ORDER

Printed: 1/21/2014 2:14:28PM

1401045

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 01/21/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross
Date Received: 12/11/2013 08:50
Logged In By: Joshua T. Gross
Date Logged In: 01/14/2014 08:45

Samples Received at:

Custody Seals	No	Received On Ice	No
Containers Intact	No		
COC/Labels Agree	No		
Preservation Confirme	No		

Method	Test Code	Due	TAT	Expires	Comments
1401045-01 ST105-30019 [Water] Sampled 12/09/2013 14:12 Central 'Client Sample'					
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	02/04/2013 14:00	15	12/16/2013 14:12	Analyze outside hold per client

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Shaw Environmental, Inc.
PROJECT NAME: Kirtland AFB (ECOS)
SDG #: KirtlandECOS_004

QC LEVEL: Level III
Report Due: 1/21/2014
Client Sample Count: 1

Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	SM2540C
Client Sample	12/9/2013	12/11/2013	1401045-01	ST105-30019	Water	X

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1401045-01 [ST105-30019]	4A15014	100.00/100.00	100	100	1.00			01/15/14

ANALYSIS DATA SHEET

ST105-30019

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_004
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1401045-01
Sampled:	12/09/13 14:12	Received:	12/11/13 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**234**	**20.0**	20.0	20.0	1	H1	SM2540C	4A15014	01/15/14 18:00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_004

Project: Kirtland AFB (ECOS)

Laboratory ID: 4A15014-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4A15014	01/15/14 18:00

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_004

Project: Kirtland AFB (ECOS)

Laboratory ID: 4A15014-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1030**	**20.0**	20.0	20.0	1		SM2540C	4A15014	01/15/14 18:00

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_004

Project: Kirtland AFB (ECOS)

Laboratory ID: 4A15014-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**970.0**	**20.0**	20.0	20.0	1		SM2540C	4A15014	01/15/14 18:00

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_004
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4A15014

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4A15014-BLK1	Total Dissolved Solids	-5.00	20.0	20.0	mg/L	U	SM2540C

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_004
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4A15014	Laboratory ID:	4A15014-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	988.0	1030	104	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Dissolved Solids	988.0	970.0	98.2	6.00	20	80 - 120

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_004

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4A15014 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30019	1401045-01	01/15/14 10:17	100.00	100.00
Blank	4A15014-BLK1	01/15/14 10:17	100.00	100.00
LCS	4A15014-BS1	01/15/14 10:17	20.00	20.00
LCS Dup	4A15014-BSD1	01/15/14 10:17	20.00	20.00

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_004

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS Dup	4A15014-BSD1	011514-003	01/15/14 18:00
LCS	4A15014-BS1	011514-002	01/15/14 18:00
Blank	4A15014-BLK1	011514-001	01/15/14 18:00

PREPARATION BENCH SHEET

4A15014

Empirical Laboratories, LLC

Printed: 1/21/2014 2:10:13PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1401027-01	F	WC_TOTAL_DISS_SOLIDS_25	01/15/2014	100	100					NA	
1401027-03	F	WC_TOTAL_DISS_SOLIDS_25	01/15/2014	100	100					NA	
1401027-05	F	WC_TOTAL_DISS_SOLIDS_25	01/15/2014	100	100					NA	
1401027-07	F	WC_TOTAL_DISS_SOLIDS_25	01/15/2014	100	100					NA	
1401027-09	F	WC_TOTAL_DISS_SOLIDS_25	01/15/2014	100	100					NA	
1401027-11	A	WC_TOTAL_DISS_SOLIDS_25	01/15/2014	100	100					NA	
1401045-01	A	WC_TOTAL_DISS_SOLIDS_25	01/15/2014	100	100					NA	
4A15014-BLK1		QC	01/15/2014	100	100					NA	
4A15014-BS1		QC	01/15/2014	20	20	13L0491		20000		NA	
4A15014-BSD1		QC	01/15/2014	20	20	13L0491		20000		NA	
4A15014-DUP1		QC	01/15/2014	100	100		1401027-01			NA	

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

ANALYTICAL DATA PACKAGE
SDG # KIRTLANDECOS_006

PROJECT NAME: KIRTLAND AFB (ECOS)
PROJECT LOCATION: ALBUQUERQUE, NEW MEXICO

SUBMITTAL TO:
Susan Huang
SHAW E&I, Inc.
4005 Port Chicago Highway
Concord, CA 94520

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Marianne Walker
Tel (615)345-1115
Fax (866)417-0548
Email: mwalker@empirlabs.com

Original Report Date: April 15, 2014
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 173

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

Table of Contents

#	Description	Page No.
1	Cover Page	1
2	Table of Contents	2
3	Case Narrative	3
4	Sample Receipt Information Chain of Custody Forms Sample Receipt Confirmations WorkOrder Summary Sample Delivery Group (SDG) Sheets	8
5	Data for SW6010C Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	16
6	Data for Wet Chemistry Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	61

Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6010C:
The following matrix spikes exceeded criteria:
4C27003-MS1 (1403160-03) for Calcium; note – the parent sample concentration for Calcium is greater than 4 times the amount spiked

The following post spikes exceeded criteria:
4C27003-PS1 (1403160-03) for Magnesium and Calcium; note – the parent sample concentrations for Magnesium and Calcium are greater than 4 times the amount spiked

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:
The following compounds are qualified with an M to indicate the LOQ was raised for to the level of the reporting limit standard within criteria:
Bromide (0.63mg/L) in 1403160-01, -03, -05, -07, and -09

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:
As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated

as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

_____

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 03/19/2014)

DoD ELAP, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2014

State of Georgia, Environmental Protection Agency – NELAP
- Expires: 06/30/2014

State of Illinois, Environmental Protection Agency – NELAP, Certificate No.: 003300
- Groundwater
- Solid and Hazardous Waste
- Expires: 09/13/2014

State of Kansas Department of Health and Environment – NELAP, Certificate No.: E-10407
- Aqueous
- Non-aqueous
- Expires: 04/30/2014

State of Kentucky Department of Environmental Protection – NELAP, Certificate No.: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Nevada, Department of Conservation and Natural Resources – NELAP, Certificate No.: TN000042013-1
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

State of New Jersey Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2014

State of North Carolina, Department of Environment and Natural Resources - Certificate No.: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of North Dakota, Department of Health – NELAP, Certificate No.: R-204
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Texas, Commission on Environmental Quality – NELAP, Certificate No.: T104704307-14-10
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of Utah, Department of Health – NELAP, Certificate No.: TN0042013-5
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

Commonwealth of Virginia, Department of General Services – VELAP, Certificate No.: 2633 – Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2014

State of Washington, Department of Ecology – NELAP, Lab ID: C934-14
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2015

Sample Receipt Information

ST 105

1403160

Shaw

Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-GW505

Project Number: 150577

Project Name: Kirtland AFB

Sample Coordinator: David Aubrey

Turnaround Time:

Samples Shipment Date: 20 MAR 2014

Lab Destination: Empirical Laboratories, Inc.

Lab Contact: ~~Jennifer Chandler~~ TN Brian Richard

Project Contact: Susan Huang

Carrier/Waybill No.: Fed Ex/565119370691

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:

Non-Hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:

Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) N Napp/Shaw Date: 3/20/14 Time: 1600

2. Relinquished By (Signature/Affiliation) Date: Time:

3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:

2. Received By (Signature/Affiliation) Date: Time:

3. Received By (Signature/Affiliation) Date: 3/21/14 Time: 840

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30001	KAFB0505-GW-ST105-30001-REG	19 MAR 2014	14:42	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30001	KAFB0505-GW-ST105-30001-REG	19 MAR 2014	14:42	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30001	KAFB0505-GW-ST105-30001-REG	19 MAR 2014	14:42	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
02	ST105-30001	KAFB0505-GW-ST105-30001-REG	19 MAR 2014	14:42	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
01	ST105-30001	KAFB0505-GW-ST105-30001-REG	19 MAR 2014	14:42	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		

1403160

Shaw™

Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-GW505

JTG 3/21/14

Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
04 ~~03~~ ST105-30002	KAFB0506-GW-ST105-30002-REG	20 MAR 2014	15:14	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03 ST105-30002	KAFB0506-GW-ST105-30002-REG	20 MAR 2014	15:14	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
ST105-30002	KAFB0506-GW-ST105-30002-REG	20 MAR 2014	15:14	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30002	KAFB0506-GW-ST105-30002-REG	20 MAR 2014	15:14	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
ST105-30002	KAFB0506-GW-ST105-30002-REG	20 MAR 2014	15:14	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
05 ST105-30004	KAFB0508-GW-ST105-30004-REG	19 MAR 2014	11:01	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
~~ST105-30004~~	~~KAFB0508-GW-ST105-30004-REG~~	~~19 MAR 2014~~	~~11:01~~	~~250 mL HDPE~~	~~1~~	~~None except cool to 4 C~~	~~Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C~~			~~N~~		
06 ST105-30004	KAFB0508-GW-ST105-30004-REG	19 MAR 2014	11:01	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
05 ST105-30004	KAFB0508-GW-ST105-30004-REG	19 MAR 2014	11:01	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
ST105-30004	KAFB0508-GW-ST105-30004-REG	19 MAR 2014	11:01	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
07 ST105-30005	KAFB0510-GW-ST105-30005-REG	20 MAR 2014	11:38	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
ST105-30005	KAFB0510-GW-ST105-30005-REG	20 MAR 2014	11:38	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30005	KAFB0510-GW-ST105-30005-REG	20 MAR 2014	11:38	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
ST105-30005	KAFB0510-GW-ST105-30005-REG	20 MAR 2014	11:38	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
08 ST105-30005	KAFB0510-GW-ST105-30005-REG	20 MAR 2014	11:38	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
10 ~~09~~ ST105-30006	KAFB0510-GW-ST105-30006-FD	20 MAR 2014	11:38	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
TG 3/21/14 09 ST105-30006	KAFB0510-GW-ST105-30006-FD	20 MAR 2014	11:38	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30006	KAFB0510-GW-ST105-30006-FD	20 MAR 2014	11:38	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
~~ST105-30006~~	~~KAFB0510-GW-ST105-30006-FD~~	~~20 MAR 2014~~	~~11:38~~	~~250 mL HDPE~~	~~1~~	~~H2SO4<pH 2~~	~~Dissolved Organic Carbon by SM 5310C~~			~~N~~		

Kirtlandocs_006

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 03/21/14 0840 Workorder# 1403160

1. Tracking # Ø691 (last 4 digits, FedEx)

Courier: Walk-In

2. Temperature of rep. sample or temp blank when opened: 1.Ø °C + correction factor (+0.1) = ~~Ø.~~ 1.1 °C JTG

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

If yes, how many and where: 2. front + back

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) TH

7. Were custody seals on containers: YES NO and Intact YES NO NA

Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial) TH

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) TH

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) TH

I certify that I attached a label with the unique LIMS number to each container (initial) TH

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) _____

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO #_____

Additional Details:

WORK ORDER

Printed: 4/15/2014 11:38:29AM

1403160

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 04/11/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Tiana L. Hutchings
Date Received: 03/21/2014 08:40
Logged In By: Tiana L. Hutchings
Date Logged In: 03/21/2014 11:44

Samples Received at: **1.1°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1403160-01 ST105-30001 [Water] Sampled 03/19/2014 14:42 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	04/08/2014 14:00	15	04/02/2014 15:42	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/08/2014 14:00	15	04/16/2014 15:42	
SW9056A	WC_ANIONS_9056A (Regular)	04/08/2014 14:00	15	04/16/2014 15:42	see versions
E353.2	WC_NO3NO2_N_353.2	04/08/2014 14:00	15	04/16/2014 15:42	
E351.2	WC_TKN_351.2	04/08/2014 14:00	15	04/16/2014 15:42	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/08/2014 14:00	15	04/16/2014 15:42	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/08/2014 14:00	15	03/26/2014 15:42	
SW6010C	MET_ICP_LOW6010C_FULL	04/08/2014 14:00	15	09/15/2014 15:42	see versions
1403160-02 ST105-30001 [Water] Sampled 03/19/2014 14:42 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	04/08/2014 14:00	15	04/16/2014 15:42	

1403160

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Method	Test Code	Due	TAT	Expires	Comments
1403160-03 ST105-30002 [Water] Sampled 03/20/2014 15:14 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	04/08/2014 14:00	15	04/03/2014 16:14	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/08/2014 14:00	15	03/27/2014 16:14	
SW9060A	WC_TOC_9060A_QUAD	04/08/2014 14:00	15	04/17/2014 16:14	
E351.2	WC_TKN_351.2	04/08/2014 14:00	15	04/17/2014 16:14	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	04/08/2014 14:00	15	04/17/2014 16:14	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/08/2014 14:00	15	04/17/2014 16:14	
SW6010C	MET_ICP_LOW6010C_FULL	04/08/2014 14:00	15	09/16/2014 16:14	see versions
SW9056A	WC_ANIONS_9056A (Regular)	04/08/2014 14:00	15	04/17/2014 16:14	see versions
1403160-04 ST105-30002 [Water] Sampled 03/20/2014 15:14 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	04/08/2014 14:00	15	04/17/2014 16:14	
1403160-05 ST105-30004 [Water] Sampled 03/19/2014 11:01 Mountain 'Client Sample'					
E351.2	WC_TKN_351.2	04/08/2014 14:00	15	04/16/2014 12:01	Outside DoD cert
SW6010C	MET_ICP_LOW6010C_FULL	04/08/2014 14:00	15	09/15/2014 12:01	see versions
SM2320B	WC_ALKALINITY_2320B	04/08/2014 14:00	15	04/02/2014 12:01	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/08/2014 14:00	15	04/16/2014 12:01	
SW9056A	WC_ANIONS_9056A (Regular)	04/08/2014 14:00	15	04/16/2014 12:01	see versions
SW9060A	WC_TOC_9060A_QUAD	04/08/2014 14:00	15	04/16/2014 12:01	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/08/2014 14:00	15	03/26/2014 12:01	
E353.2	WC_NO3NO2_N_353.2	04/08/2014 14:00	15	04/16/2014 12:01	
1403160-06 ST105-30004 [Water] Sampled 03/19/2014 11:01 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	04/08/2014 14:00	15	04/16/2014 12:01	
1403160-07 ST105-30005 [Water] Sampled 03/20/2014 11:38 Mountain 'Client Sample'					
E351.2	WC_TKN_351.2	04/08/2014 14:00	15	04/17/2014 12:38	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/08/2014 14:00	15	04/17/2014 12:38	
E353.2	WC_NO3NO2_N_353.2	04/08/2014 14:00	15	04/17/2014 12:38	
SW9056A	WC_ANIONS_9056A (Regular)	04/08/2014 14:00	15	04/17/2014 12:38	see versions
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/08/2014 14:00	15	04/17/2014 12:38	
SM2320B	WC_ALKALINITY_2320B	04/08/2014 14:00	15	04/03/2014 12:38	
SW6010C	MET_ICP_LOW6010C_FULL	04/08/2014 14:00	15	09/16/2014 12:38	see versions
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/08/2014 14:00	15	03/27/2014 12:38	

1403160

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Method	Test Code	Due	TAT	Expires	Comments
1403160-08 ST105-30005 [Water] Sampled 03/20/2014 11:38 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	04/08/2014 14:00	15	04/17/2014 12:38	
1403160-09 ST105-30006 [Water] Sampled 03/20/2014 11:38 Mountain 'Client Sample'					
E353.2	WC_NO3NO2_N_353.2	04/08/2014 14:00	15	04/17/2014 12:38	
E351.2	WC_TKN_351.2	04/08/2014 14:00	15	04/17/2014 12:38	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/08/2014 14:00	15	04/17/2014 12:38	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/08/2014 14:00	15	03/27/2014 12:38	
SW6010C	MET_ICP_LOW6010C_FULL	04/08/2014 14:00	15	09/16/2014 12:38	see versions
SM2320B	WC_ALKALINITY_2320B	04/08/2014 14:00	15	04/03/2014 12:38	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/08/2014 14:00	15	04/17/2014 12:38	
SW9056A	WC_ANIONS_9056A (Regular)	04/08/2014 14:00	15	04/17/2014 12:38	see versions
1403160-10 ST105-30006 [Water] Sampled 03/20/2014 11:38 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	04/08/2014 14:00	15	04/17/2014 12:38	

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Shaw Environmental, Inc.
PROJECT NAME: Kirtland AFB (ECOS)
SDG #: DRAFT KirtlandECOS_006

QC LEVEL: Level III
Report Due: 4/11/2014 - 4/11/2014
Client Sample Count: 10

Sample Type	Sampled	Received	Lab ID	Client ID	Lab Matrix	Report Matrix	E 351.2	E 353.2	SM 2320B	SM 2540C	SM 4500 NH3BG	SW 6010C	SW 9056A	SW 9060A
Client Sample	3/19/2014	3/21/2014	1403160-01	ST105-30001	Water	Water	X	X	X	X	X	X	X	X
Client Sample	3/19/2014	3/21/2014	1403160-02	ST105-30001	Water	Water								DISS
Client Sample	3/20/2014	3/21/2014	1403160-03	ST105-30002	Water	Water	X	X	X	X	X	X	X	X
Client Sample	3/20/2014	3/21/2014	1403160-04	ST105-30002	Water	Water								DISS
Client Sample	3/19/2014	3/21/2014	1403160-05	ST105-30004	Water	Water	X	X	X	X	X	X	X	X
Client Sample	3/19/2014	3/21/2014	1403160-06	ST105-30004	Water	Water								DISS
Client Sample	3/20/2014	3/21/2014	1403160-07	ST105-30005	Water	Water	X	X	X	X	X	X	X	X
Client Sample	3/20/2014	3/21/2014	1403160-08	ST105-30005	Water	Water								DISS
Client Sample	3/20/2014	3/21/2014	1403160-09	ST105-30006	Water	Water	X	X	X	X	X	X	X	X
Client Sample	3/20/2014	3/21/2014	1403160-10	ST105-30006	Water	Water								DISS

Data for SW6010C Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-01 [ST105-30001]	4C27003	100.00/25.00	100	25.0	1.00			03/27/14
1403160-03 [ST105-30002]	4C27003	100.00/25.00	100	25.0	1.00			03/27/14
1403160-03RE1 [ST105-30002]	4C27003	100.00/25.00	100	25.0	2.00			03/27/14
1403160-05 [ST105-30004]	4C27003	100.00/25.00	100	25.0	1.00			03/27/14
1403160-07 [ST105-30005]	4C27003	100.00/25.00	100	25.0	1.00			03/27/14
1403160-09 [ST105-30006]	4C27003	100.00/25.00	100	25.0	1.00			03/27/14

ANALYSIS DATA SHEET

ST105-30001

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-01
Sampled:	03/19/14 14:42	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**69100**	**250**	500	1250	1		SW6010C	4C27003	03/31/14 17:26
7439-89-6	Iron	**10.5**	**7.50**	15.0	25.0	1	J	SW6010C	4C27003	03/31/14 17:26
7439-95-4	Magnesium	**12200**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:26
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4C27003	03/31/14 17:26
7440-09-7	Potassium	**2540**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:26
7440-23-5	Sodium	**28200**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:26

ANALYSIS DATA SHEET

ST105-30002

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-03
Sampled:	03/20/14 15:14	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**131000**	**500**	1000	2500	2	D	SW6010C	4C27003	04/01/14 15:36
7439-89-6	Iron	**212**	**7.50**	15.0	25.0	1		SW6010C	4C27003	03/31/14 18:10
7439-95-4	Magnesium	**19000**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 18:10
7439-96-5	Manganese	**3.26**	**0.750**	1.50	3.75	1	J	SW6010C	4C27003	03/31/14 18:10
7440-09-7	Potassium	**2020**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 18:10
7440-23-5	Sodium	**25900**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 18:10

ANALYSIS DATA SHEET

ST105-30004

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-05
Sampled:	03/19/14 11:01	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**52900**	**250**	500	1250	1		SW6010C	4C27003	03/31/14 17:35
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4C27003	03/31/14 17:35
7439-95-4	Magnesium	**7630**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:35
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4C27003	03/31/14 17:35
7440-09-7	Potassium	**2210**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:35
7440-23-5	Sodium	**25100**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:35

ANALYSIS DATA SHEET

ST105-30005

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-07
Sampled:	03/20/14 11:38	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**40800**	**250**	500	1250	1		SW6010C	4C27003	03/31/14 17:39
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4C27003	03/31/14 17:39
7439-95-4	Magnesium	**5460**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:39
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4C27003	03/31/14 17:39
7440-09-7	Potassium	**2000**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:39
7440-23-5	Sodium	**20900**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:39

ANALYSIS DATA SHEET

ST105-30006

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-09
Sampled:	03/20/14 11:38	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**42500**	**250**	500	1250	1		SW6010C	4C27003	03/31/14 17:44
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4C27003	03/31/14 17:44
7439-95-4	Magnesium	**5610**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:44
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4C27003	03/31/14 17:44
7440-09-7	Potassium	**2070**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:44
7440-23-5	Sodium	**21000**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:44

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4C27003-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4C27003	03/31/14 16:59
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4C27003	03/31/14 16:59
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4C27003	03/31/14 16:59
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4C27003	03/31/14 16:59
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4C27003	03/31/14 16:59
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4C27003	03/31/14 16:59

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C27003-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**578.9**	**250**	500	1250	1	J	SW6010C	4C27003	03/31/14 17:03
7439-89-6	Iron	**19.02**	**7.50**	15.0	25.0	1	J	SW6010C	4C27003	03/31/14 17:03
7439-95-4	Magnesium	**582.6**	**250**	750	1250	1	J	SW6010C	4C27003	03/31/14 17:03
7439-96-5	Manganese	**10.18**	**0.750**	1.50	3.75	1		SW6010C	4C27003	03/31/14 17:03
7440-09-7	Potassium	**562.7**	**250**	750	1250	1	J	SW6010C	4C27003	03/31/14 17:03
7440-23-5	Sodium	**584.5**	**250**	750	1250	1	J	SW6010C	4C27003	03/31/14 17:03

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C27003-DUP1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**69810**	**250**	500	1250	1		SW6010C	4C27003	03/31/14 17:30
7439-89-6	Iron	**10.42**	**7.50**	15.0	25.0	1	J	SW6010C	4C27003	03/31/14 17:30
7439-95-4	Magnesium	**12160**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:30
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4C27003	03/31/14 17:30
7440-09-7	Potassium	**2563**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:30
7440-23-5	Sodium	**27990**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 17:30

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C27003-DUP2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-89-6	Iron	**213.6**	**37.5**	75.0	125	5	D	SW6010C	4C27003	03/31/14 18:24
7439-95-4	Magnesium	**19940**	**1250**	3750	6250	5	D	SW6010C	4C27003	03/31/14 18:24
7439-96-5	Manganese	ND	3.75	7.50	18.8	5	U	SW6010C	4C27003	03/31/14 18:24
7440-09-7	Potassium	**2019**	**1250**	3750	6250	5	JD	SW6010C	4C27003	03/31/14 18:24
7440-23-5	Sodium	**27200**	**1250**	3750	6250	5	D	SW6010C	4C27003	03/31/14 18:24

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C27003-DUP3

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**138800**	**2500**	5000	12500	10	D	SW6010C	4C27003	04/01/14 15:40

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Laboratory ID: 4C27003-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**250000000**	**250**	500	1250	1		SW6010C	4C27003	03/31/14 18:15
7439-89-6	Iron	**439.6**	**7.50**	15.0	25.0	1		SW6010C	4C27003	03/31/14 18:15
7439-95-4	Magnesium	**20140**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 18:15
7439-96-5	Manganese	**124.7**	**0.750**	1.50	3.75	1		SW6010C	4C27003	03/31/14 18:15
7440-09-7	Potassium	**3236**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 18:15
7440-23-5	Sodium	**27280**	**250**	750	1250	1		SW6010C	4C27003	03/31/14 18:15

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 4094003
Sequence: 4D09408

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D09408-ICV1	Calcium	50000	49520	99.0	ug/L	+/- 10.00%
4D09408-CCV1	Calcium	50000	49770	99.5	ug/L	+/- 10.00%
4D09408-CCV3	Calcium	50000	47610	95.2	ug/L	+/- 10.00%
4D09408-CCV4	Calcium	50000	47840	95.7	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 4094005
Sequence: 4D09410

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D09410-ICV1	Calcium	50000	50210	100	ug/L	+/- 10.00%
	Iron	10000	10500	105	ug/L	+/- 10.00%
	Magnesium	50000	49520	99.0	ug/L	+/- 10.00%
	Manganese	1000	1072	107	ug/L	+/- 10.00%
	Potassium	10000	9910	99.1	ug/L	+/- 10.00%
	Sodium	50000	51560	103	ug/L	+/- 10.00%
4D09410-CCV1	Calcium	50000	51240	102	ug/L	+/- 10.00%
	Iron	10000	10450	105	ug/L	+/- 10.00%
	Magnesium	50000	50410	101	ug/L	+/- 10.00%
	Manganese	1000	1066	107	ug/L	+/- 10.00%
	Potassium	10000	10210	102	ug/L	+/- 10.00%
	Sodium	50000	51800	104	ug/L	+/- 10.00%
4D09410-CCV2	Calcium	50000	51080	102	ug/L	+/- 10.00%
	Iron	10000	10160	102	ug/L	+/- 10.00%
	Magnesium	50000	49270	98.5	ug/L	+/- 10.00%
	Manganese	1000	1051	105	ug/L	+/- 10.00%
	Potassium	10000	10220	102	ug/L	+/- 10.00%
	Sodium	50000	51060	102	ug/L	+/- 10.00%
4D09410-CCV3	Calcium	50000	51720	103	ug/L	+/- 10.00%
	Iron	10000	9970	99.7	ug/L	+/- 10.00%
	Magnesium	50000	49490	99.0	ug/L	+/- 10.00%
	Manganese	1000	1039	104	ug/L	+/- 10.00%
	Potassium	10000	10300	103	ug/L	+/- 10.00%
	Sodium	50000	51430	103	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4094003

Sequence: 4D09408

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D09408-CRL1	Calcium	2000	2053	103	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4094005

Sequence: 4D09410

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D09410-CRL1	Calcium	2000	2091	105	ug/L	80 - 120
	Iron	60.00	64.50	108	ug/L	80 - 120
	Magnesium	3000	3178	106	ug/L	80 - 120
	Manganese	6.000	6.667	111	ug/L	80 - 120
	Potassium	3000	3065	102	ug/L	80 - 120
	Sodium	3000	3178	106	ug/L	80 - 120

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4D09408
Calibration: 4094003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D09408-ICB1	Calcium	-2.230	1000	5000	ug/L	U	SW6010C
4D09408-CCB1	Calcium	9.79	1000	5000	ug/L	U	SW6010C
4D09408-CCB3	Calcium	-1.72	1000	5000	ug/L	U	SW6010C
4D09408-CCB4	Calcium	4.53	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4D09410
Calibration: 4094005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D09410-ICB1	Calcium	1.590	1000	5000	ug/L	U	SW6010C
	Iron	6.597	30.0	100	ug/L	U	SW6010C
	Magnesium	-3.360	1000	5000	ug/L	U	SW6010C
	Manganese	-0.01043	3.00	15.0	ug/L	U	SW6010C
	Potassium	-23.46	1000	5000	ug/L	U	SW6010C
	Sodium	2.620	1000	5000	ug/L	U	SW6010C
4D09410-CCB1	Calcium	6.00	1000	5000	ug/L	U	SW6010C
	Iron	7.36	30.0	100	ug/L	U	SW6010C
	Magnesium	11.0	1000	5000	ug/L	U	SW6010C
	Manganese	0.0251	3.00	15.0	ug/L	U	SW6010C
	Potassium	-15.2	1000	5000	ug/L	U	SW6010C
	Sodium	-6.02	1000	5000	ug/L	U	SW6010C
4C27003-BLK1	Calcium	11.4	250	1250	ug/L	U	SW6010C
	Iron	2.52	7.50	25.0	ug/L	U	SW6010C
	Magnesium	8.06	250	1250	ug/L	U	SW6010C
	Manganese	0.0250	0.750	3.75	ug/L	U	SW6010C
	Potassium	7.13	250	1250	ug/L	U	SW6010C
	Sodium	3.91	250	1250	ug/L	U	SW6010C
4D09410-CCB2	Calcium	40.1	1000	5000	ug/L	U	SW6010C
	Iron	-2.64	30.0	100	ug/L	U	SW6010C
	Magnesium	8.18	1000	5000	ug/L	U	SW6010C
	Manganese	0.0366	3.00	15.0	ug/L	U	SW6010C
	Potassium	43.7	1000	5000	ug/L	U	SW6010C
	Sodium	47.2	1000	5000	ug/L	U	SW6010C
4D09410-CCB3	Calcium	10.5	1000	5000	ug/L	U	SW6010C
	Iron	0.00403	30.0	100	ug/L	U	SW6010C
	Magnesium	5.87	1000	5000	ug/L	U	SW6010C
	Manganese	0.0852	3.00	15.0	ug/L	U	SW6010C
	Potassium	-7.53	1000	5000	ug/L	U	SW6010C
	Sodium	39.6	1000	5000	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4094003

Sequence: 4D09408

Lab Sample ID	Analyte	True	Found	%R	Units
4D09408-IFA1	Calcium	500000	464,060.00	92.8	ug/L
4D09408-IFB1	Calcium	500000	459,780.00	92.0	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4094005
Sequence: 4D09410

Lab Sample ID	Analyte	True	Found	%R	Units
4D09410-IFA1	Calcium	500000	475,720.00	95.1	ug/L
	Iron	200000	199,610.00	99.8	ug/L
	Magnesium	500000	476,630.00	95.3	ug/L
	Manganese		-0.97		ug/L
	Potassium		-108.59		ug/L
	Sodium		61.92		ug/L
4D09410-IFB1	Calcium	500000	472,130.00	94.4	ug/L
	Iron	200000	201,380.00	101	ug/L
	Magnesium	500000	475,690.00	95.1	ug/L
	Manganese	500.0	521.75	104	ug/L
	Potassium		-115.52		ug/L
	Sodium		63.44		ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

ST105-30002

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4C27003

% Solids:

Source Sample Name: **1403160-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Calcium	1250	250000000	250000000	0.00	4x	80 - 120
Iron	250.0	212.1	439.6	91.0		80 - 120
Magnesium	1250	19040	20140	87.8		80 - 120
Manganese	125.0	3.257	124.7	97.2		80 - 120
Potassium	1250	2017	3236	97.5		80 - 120
Sodium	1250	25920	27280	109		80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

ST105-30002

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4C27003-PS1
Batch: 4C27003
Lab Source ID: 1403160-03
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Calcium	**1000000000**	**1000000000**	**5000**	**0.00**	**80 - 120**
Iron	1854	848.6	1000	101	80 - 120
Magnesium	**79760**	**76150**	**5000**	**72.2**	**80 - 120**
Manganese	542.5	13.03	500.0	106	80 - 120
Potassium	13110	8068	5000	101	80 - 120
Sodium	109400	103700	5000	114	80 - 120

ST105-30001

DUPLICATES

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4C27003
Preparation: MET_3005A_LOW
Source Sample Name: ST105-30001

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C27003-DUP1
Lab Source ID: 1403160-01
Initial/Final: 100 mL / 25 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Calcium	20	69100	69810	0.990		SW6010C
Iron	20	10.5 J	10.42 J	0.967		SW6010C
Magnesium	20	12200	12160	0.177		SW6010C
Manganese	20	3.75 U	3.75 U			SW6010C
Potassium	20	2540	2563	1.05		SW6010C
Sodium	20	28200	27990	0.730		SW6010C

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C27003	Laboratory ID:	4C27003-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	578.9	96.5	80 - 120
Iron	20.00	19.02	95.1	80 - 120
Magnesium	600.0	582.6	97.1	80 - 120
Manganese	10.00	10.18	102	80 - 120
Potassium	600.0	562.7	93.8	80 - 120
Sodium	600.0	584.5	97.4	80 - 120

SERIAL DILUTION

SW6010C

ST105-30002

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Sequence: 4D09410
Preparation: MET_3005A_LOW

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C27003-DUP2
Lab Source ID: 1403160-03
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Iron	848.59	854.4	0.685		SW6010C	10.00
Magnesium	76149	79755	4.74		SW6010C	10.00
Manganese	13.027	ND			SW6010C	10.00
Potassium	8068.5	8075	0.0806		SW6010C	10.00
Sodium	103670	108780	4.93		SW6010C	10.00

SERIAL DILUTION

SW6010C

ST105-30002

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Sequence: 4D09408
Preparation: MET_3005A_LOW

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C27003-DUP3
Lab Source ID: 1403160-03RE1
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Calcium	261460	277540	6.15		SW6010C	10.00

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_006

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_006

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_006

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_006

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_006

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_006

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Calcium	317.933	0.000000				
Iron	261.187	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.61	0.000000				
Potassium	766.49	0.000000				
Sodium	589.592	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc. SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

ICP Instrument ID: ME-ICP Date: 12/27/2013

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Calcium	15	500000	P
Iron	15	500000	P
Magnesium	15	500000	P
Manganese	15	15000	P
Potassium	15	100000	P
Sodium	15	500000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C27003 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30001	1403160-01	03/27/14 08:15	100.00	25.00
ST105-30002	1403160-03	03/27/14 08:15	100.00	25.00
ST105-30002	1403160-03RE1	03/27/14 08:15	100.00	25.00
ST105-30004	1403160-05	03/27/14 08:15	100.00	25.00
ST105-30005	1403160-07	03/27/14 08:15	100.00	25.00
ST105-30006	1403160-09	03/27/14 08:15	100.00	25.00
Blank	4C27003-BLK1	03/27/14 08:15	100.00	25.00
LCS	4C27003-BS1	03/27/14 08:15	100.00	25.00
ST105-30001	4C27003-DUP1	03/27/14 08:15	100.00	25.00
ST105-30002	4C27003-DUP2	03/27/14 08:15	100.00	25.00
ST105-30002	4C27003-DUP3	03/27/14 08:15	100.00	25.00
ST105-30002	4C27003-MS1	03/27/14 08:15	100.00	25.00
ST105-30002	4C27003-PS1	03/27/14 08:15	100.00	25.00

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D09408	Instrument:	ME-ICP
Calibration:	4094003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D09408-CAL1	4-01-14A-001	04/01/14 10:13
Cal Standard	4D09408-CAL2	4-01-14A-002	04/01/14 10:17
Cal Standard	4D09408-CAL3	4-01-14A-003	04/01/14 10:21
Cal Standard	4D09408-CAL4	4-01-14A-004	04/01/14 10:25
Cal Standard	4D09408-CAL5	4-01-14A-005	04/01/14 10:29
Cal Standard	4D09408-CAL6	4-01-14A-006	04/01/14 10:57
Cal Standard	4D09408-CAL7	4-01-14A-007	04/01/14 11:02
Cal Standard	4D09408-CAL8	4-01-14A-008	04/01/14 11:06
Initial Cal Check	4D09408-ICV1	4-01-14B-001	04/01/14 11:33
Initial Cal Blank	4D09408-ICB1	4-01-14B-002	04/01/14 11:40
Instrument RL Check	4D09408-CRL1	4-01-14B-003	04/01/14 11:44
Interference Check A	4D09408-IFA1	4-01-14B-005	04/01/14 11:53
Interference Check B	4D09408-IFB1	4-01-14B-006	04/01/14 11:58
Calibration Check	4D09408-CCV1	4-01-14B-008	04/01/14 12:07
Calibration Blank	4D09408-CCB1	4-01-14B-009	04/01/14 12:14
Calibration Check	4D09408-CCV3	4-01-14B-040	04/01/14 14:34
Calibration Blank	4D09408-CCB3	4-01-14B-041	04/01/14 14:42
ST105-30002	1403160-03RE1	4-01-14B-053	04/01/14 15:36
ST105-30002	4C27003-DUP3	4-01-14B-054	04/01/14 15:40
Calibration Check	4D09408-CCV4	4-01-14B-057	04/01/14 15:54
Calibration Blank	4D09408-CCB4	4-01-14B-058	04/01/14 16:02

ANALYSIS SEQUENCE SUMMARY
SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D09410	Instrument:	ME-ICP
Calibration:	4094005		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D09410-CAL1	3-31-14A-001	03/31/14 15:17
Cal Standard	4D09410-CAL2	3-31-14A-002	03/31/14 15:21
Cal Standard	4D09410-CAL3	3-31-14A-003	03/31/14 15:25
Cal Standard	4D09410-CAL4	3-31-14A-004	03/31/14 15:29
Cal Standard	4D09410-CAL5	3-31-14A-005	03/31/14 15:33
Cal Standard	4D09410-CAL6	3-31-14A-006	03/31/14 15:37
Cal Standard	4D09410-CAL7	3-31-14A-007	03/31/14 15:43
Cal Standard	4D09410-CAL8	3-31-14A-008	03/31/14 15:47
Initial Cal Check	4D09410-ICV1	3-31-14B-001	03/31/14 16:13
Initial Cal Blank	4D09410-ICB1	3-31-14B-002	03/31/14 16:20
Instrument RL Check	4D09410-CRL1	3-31-14B-003	03/31/14 16:24
Interference Check A	4D09410-IFA1	3-31-14B-005	03/31/14 16:33
Interference Check B	4D09410-IFB1	3-31-14B-006	03/31/14 16:38
Calibration Check	4D09410-CCV1	3-31-14B-008	03/31/14 16:47
Calibration Blank	4D09410-CCB1	3-31-14B-009	03/31/14 16:54
Blank	4C27003-BLK1	3-31-14B-010	03/31/14 16:59
LCS	4C27003-BS1	3-31-14B-011	03/31/14 17:03
ST105-30001	1403160-01	3-31-14B-016	03/31/14 17:26
ST105-30001	4C27003-DUP1	3-31-14B-017	03/31/14 17:30
ST105-30004	1403160-05	3-31-14B-018	03/31/14 17:35
ST105-30005	1403160-07	3-31-14B-019	03/31/14 17:39
ST105-30006	1403160-09	3-31-14B-020	03/31/14 17:44
Calibration Check	4D09410-CCV2	3-31-14B-023	03/31/14 17:59
Calibration Blank	4D09410-CCB2	3-31-14B-024	03/31/14 18:06
ST105-30002	1403160-03	3-31-14B-025	03/31/14 18:10
ST105-30002	4C27003-MS1	3-31-14B-026	03/31/14 18:15
ST105-30002	4C27003-PS1	3-31-14B-027	03/31/14 18:20
ST105-30002	4C27003-DUP2	3-31-14B-028	03/31/14 18:24
Calibration Check	4D09410-CCV3	3-31-14B-038	03/31/14 19:10
Calibration Blank	4D09410-CCB3	3-31-14B-039	03/31/14 19:17

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4094003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/1/14 10:13 4/1/14 11:06

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	1.9768E-05	10000	1.9356E-05			500000	2.0428E-05		
Antimony	0	0	100	0.0004946	1000	6.3046E-04					10000	0.0006407
Arsenic	0	0	100	0.0002956	1000	3.3601E-04					10000	0.0003245
Barium	0	0	50	0.0104124	1000	0.010037	5000	0.010611				
Beryllium	0	0	100	0.002221	1000	0.0021995					10000	0.00219
Boron	0	0	50	0.0000188	1000	1.916E-05					5000	1.9488E-05
Cadmium	0	0	100	0.01725	1000	0.017858					10000	0.017233
Calcium	0	0	1100	6.993637E-05	50000	6.719E-05					10000	
Chromium	0	0	100	0.0000513	1000	5.014E-05					10000	5.0329E-05
Cobalt	0	0	100	0.0047502	1000	0.0046543					10000	0.0047227
Copper	0	0	100	0.0000863	1000	8.034E-05					10000	8.2497E-05
Iron	0	0	5100	1.733922E-05	10000	1.6636E-05			500000	1.58976E-05	10000	
Lead	0	0	100	0.0014737	1000	0.0014541					10000	0.0015109
Magnesium	0	0	5100		50000	2.8186E-06			500000	2.8684E-06	10000	
Manganese	0	0	100	0.0003417	1000	3.2539E-04	10000	3.1063E-04			10000	
Molybdenum	0	0	100	0.0032834	1000	0.0034636					10000	0.0033648
Nickel	0	0	100	0.0031571	1000	0.0031649					10000	0.0031936
Potassium	0	0	1000	1.124E-05	10000	1.2721E-05						
Selenium	0	0	100	0.0004662	1000	4.4909E-04					10000	4.2673E-04
Silver	0	0	20	0.000067	500	5.794E-05	2000	6.161E-05				
Sodium	0	0	1000		50000	4.4702E-05						
Thallium	0	0	100	0.000733	1000	7.1784E-04					10000	7.4454E-04
Tin	0	0	50	0.0014208	1000	0.0014654					5000	0.0014842
Titanium	0	0	100	0.0001996	1000	1.9311E-04					10000	1.9552E-04
Vanadium	0	0	100	0.0000571	1000	5.603E-05					10000	5.5082E-05
Zinc	0	0	100	0.0068775	1000	0.0071408					10000	0.0067872
Strontium	0	0	100	0.001547	1000	0.001527					10000	0.001531
Lithium (outside certification)	0	0	100	0.0000108	1000	1.205E-05					10000	1.1601E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4094003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/1/14 10:13 4/1/14 11:06

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.7558E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.9596E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.3001E-05										
Selenium												
Silver												
Sodium	100000	4.4575E-05	500000	4.5008E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4094003		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	4/1/14 10:13	4/1/14 11:06

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.4888E-05	66.7326	9.28832	181.5175	0.9999993		0.998	
Antimony	4.4144E-04	68.35198	0.7982425	147.9587	0.9999998		0.998	
Arsenic	2.390275E-04	67.04491	3.745075	188.9867	0.9999819		0.998	
Barium	0.0077651	66.73709	1.180245	166.154	0.9998732		0.998	
Beryllium	1.652625E-03	66.67128	3.295992	161.2943	0.9999998		0.998	
Boron	1.4362E-05	66.69537	6.4063	168.6827	0.9999879		0.998	
Cadmium	1.308525E-02	66.70367	2.199797	158.572	0.9999869		0.998	
Calcium	5.117109E-05	66.70909	1.087245	113.8771	0.9999997		0.998	
Chromium	3.794225E-05	66.68012	23.80242	185.8011	0.9999998		0.998	
Cobalt	0.0035318	66.67644	0.7577125	173.4423	0.9999976		0.998	
Copper	6.228425E-05	66.78393	2.98975	100.0153	0.9999913		0.998	
Iron	1.24682E-05	66.83362	6.250645	187.3212	0.9999992		0.998	
Lead	1.109675E-03	66.70045	3.463707	192.1518	0.9999865		0.998	
Magnesium	2.16165E-06	66.72136	24.17369	198.051	0.9999396		0.998	
Manganese	2.4443E-04	66.8685	3.8814	118.5928	0.9999807		0.998	
Molybdenum	2.52795E-03	66.73035	2.744407	192.5981	0.9999907		0.998	
Nickel	0.0023789	66.66993	8.851897	195.5235	0.9999993		0.998	
Potassium	9.2405E-06	67.18899	6.575902	158.7086	0.9999988		0.998	
Selenium	3.35505E-04	66.84046	4.19028	183.5374	0.9999788		0.998	
Silver	4.66375E-05	67.14237	2.600125	68.0912	0.9997289		0.998	
Sodium	3.357125E-05	66.66886	1.772762	73.59246	0.9999973		0.998	
Thallium	5.48845E-04	66.69643	2.95908	180.3292	0.9999886		0.998	
Tin	0.0010926	66.71106	2.233182	188.5051	0.9999944		0.998	
Titanium	1.470575E-04	66.69155	4.058848	181.8236	0.999998		0.998	
Vanadium	4.2053E-05	66.69548	1.805827	67.22298	0.9999978		0.998	
Zinc	5.201375E-03	66.72901	2.335303	180.0561	0.9999734		0.998	
Strontium	1.15125E-03	66.67089	1.52885	124.0147	0.9999999		0.998	
Lithium (outside certification)	8.61275E-06	66.93638	2.6489	88.167	0.99998		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4094005	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	3/31/14 15:17 3/31/14 15:47

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	1.8846E-05	10000	1.9214E-05			500000	1.89584E-05		
Antimony	0	0	100	0.0004769	1000	6.2331E-04					10000	6.3356E-04
Arsenic	0	0	100	0.0002748	1000	3.1472E-04					10000	3.0236E-04
Barium	0	0	50	0.010164	1000	0.0098304	5000	0.0102942				
Beryllium	0	0	100	0.0021896	1000	0.0022438					10000	0.0021887
Boron	0	0	50	0.0000182	1000	1.863E-05					5000	1.8284E-05
Cadmium	0	0	100	0.017041	1000	0.017693					10000	0.01638
Calcium	0	0	1100	6.913636E-05	50000	6.7962E-05					10000	
Chromium	0	0	100	0.000051	1000	5.042E-05					10000	4.9853E-05
Cobalt	0	0	100	0.004451	1000	0.0043744					10000	0.0044701
Copper	0	0	100	0.0000836	1000	7.818E-05					10000	7.896E-05
Iron	0	0	5100	1.633333E-05	10000	0.0000157			500000	1.52018E-05	10000	
Lead	0	0	100	0.0013882	1000	0.001374					10000	0.0014306
Magnesium	0	0	5100		50000	2.7916E-06			500000	2.7686E-06	10000	
Manganese	0	0	100	0.000326	1000	3.1117E-04	10000	2.9106E-04			10000	
Molybdenum	0	0	100	0.0030618	1000	0.0032373					10000	0.003142
Nickel	0	0	100	0.0030149	1000	0.0030366					10000	0.0030828
Potassium	0	0	1000	9.59E-06	10000	1.255E-05						
Selenium	0	0	100	0.0004478	1000	4.3472E-04					10000	4.1146E-04
Silver	0	0	20	0.000063	500	5.602E-05	2000	5.785E-05				
Sodium	0	0	1000		50000	4.1978E-05						
Thallium	0	0	100	0.0006786	1000	6.6891E-04					10000	6.8895E-04
Tin	0	0	50	0.0013454	1000	0.0013914					5000	1.39986E-03
Titanium	0	0	100	0.0001858	1000	1.8165E-04					10000	1.8287E-04
Vanadium	0	0	100	0.0000555	1000	5.486E-05					10000	5.436E-05
Zinc	0	0	100	0.0063642	1000	0.0066165					10000	0.0063794
Strontium	0	0	100	0.001451	1000	0.001446					10000	0.001439
Lithium (outside certification)	0	0	100	0.0000111	1000	1.186E-05					10000	1.1369E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4094005	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	3/31/14 15:17 3/31/14 15:47

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.705E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.8865E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.2666E-05										
Selenium												
Silver												
Sodium	100000	4.2821E-05	500000	4.216E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4094005		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	3/31/14 15:17	3/31/14 15:47

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.42546E-05	66.67542	6.129912	166.1335	0.9999999		0.998	
Antimony	4.334425E-04	68.68034	0.8806375	133.2123	0.9999997		0.998	
Arsenic	2.2297E-04	67.0854	1.124022	120.9272	0.9999765		0.998	
Barium	7.57215E-03	66.71655	1.079077	139.7163	0.9999114		0.998	
Beryllium	1.655525E-03	66.68483	6.62078	170.0206	0.9999936		0.998	
Boron	1.37785E-05	66.68035	2.08069	159.6385	0.9999852		0.998	
Cadmium	0.0127785	66.79851	1.354555	134.5186	0.9999383		0.998	
Calcium	5.103709E-05	66.68767	2.821867	163.6753	0.9999982		0.998	
Chromium	3.781825E-05	66.67817	3.61232	172.9166	0.9999989		0.998	
Cobalt	3.323875E-03	66.67828	2.408852	176.5486	0.9999952		0.998	
Copper	6.0185E-05	66.78508	1.653883	100.6465	0.9999981		0.998	
Iron	1.180878E-05	66.7819	8.08554	189.0743	0.9999995		0.998	
Lead	0.0010482	66.70612	103.2857	199.5335	0.9999852		0.998	
Magnesium	2.111675E-06	66.71045	15.32243	198.2571	0.9999216		0.998	
Manganese	2.320575E-04	66.95159	1.64399	88.13308	0.9999581		0.998	
Molybdenum	2.360275E-03	66.73591	2.962305	183.6345	0.9999901		0.998	
Nickel	2.283575E-03	66.6782	4.746673	190.4353	0.9999981		0.998	
Potassium	8.7015E-06	68.64448	1.64763	78.87848	0.9999983		0.998	
Selenium	3.23495E-04	66.82834	2.07868	162.3616	0.9999754		0.998	
Silver	4.42175E-05	67.0008	2.99411	155.8046	0.999918		0.998	
Sodium	3.173975E-05	66.67643	1.110012	135.0211	0.9999859		0.998	
Thallium	5.09115E-04	66.68604	2.459642	175.584	0.9999927		0.998	
Tin	1.034165E-03	66.70681	3.200792	179.8639	0.999999		0.998	
Titanium	1.3758E-04	66.67868	2.415515	180.4349	0.9999993		0.998	
Vanadium	4.118E-05	66.6763	2.66616	135.926	0.9999994		0.998	
Zinc	4.840025E-03	66.70937	6.338265	181.818	0.9999861		0.998	
Strontium	0.001084	66.66821	3.80115	169.8629	0.9999998		0.998	
Lithium (outside certification)	8.58225E-06	66.7674	16.09883	190.4201	0.9999796		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4C27003

Empirical Laboratories, LLC **Printed: 4/15/2014 11:42:29AM**

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403118-01	E	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Good CCVs!
1403155-01	F	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Good CCVs!
1403156-01	F	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Good CCVs!
1403157-01	G	MET_ICP_LOW6010C_FULL_I	03/27/2014	100	25					NA	see versions
1403157-01RE1	G	MET_ICP_LOW6010C_FULL_I	03/27/2014	100	25					NA	Pb more negative than the RL
1403160-01	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	see versions
1403160-01	D	MET_ICP_LOW6010C_FULL_I	03/27/2014	100	25					NA	Added for BatchQC in: 4C27003
1403160-03	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	see versions
1403160-03	D	MET_ICP_LOW6010C_FULL_I	03/27/2014	100	25					NA	Added for BatchQC in: 4C27003
1403160-03RE1	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Ca OLR
1403160-05	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	see versions
1403160-07	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	see versions
1403160-09	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	see versions
1403165-01	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	MS/Dup Al,Sb,As,Cr,Fe,Pb,Mn,Ag,Tl,V,Zn
1403165-01RE1	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Ca OLR-IEC affect on Al, Zn
1403165-01RE2	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Pb more negative than the RL in x1 and x2
1403165-02	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	MS/Dup Al,Sb,As,Cr,Fe,Pb,Mn,Ag,Tl,V,Zn
1403165-03	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	MS/Dup Al,Sb,As,Cr,Fe,Pb,Mn,Ag,Tl,V,Zn
1403165-03RE1	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Ca OLR IEC on Al, Zn
1403165-04	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	MS/Dup Al,Sb,As,Cr,Fe,Pb,Mn,Ag,Tl,V,Zn
1403165-04RE1	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Added 4/4/2014 by BLQ
1403165-05	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	MS/Dup Al,Sb,As,Cr,Fe,Pb,Mn,Ag,Tl,V,Zn

PREPARATION BENCH SHEET

4C27003

Empirical Laboratories, LLC

Printed: 4/15/2014 11:42:29AM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403165-06	C	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	MS/Dup Al,Sb,As,Cr,Fe,Pb,Mn,Ag,Tl,V,Zn
1403171-01	F	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Good CCVs!
1403172-01	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Good CCVs!
1403172-02	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Field Filtered, Dissolved? Good CCVs!
1403172-04	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Good CCVs!
1403172-06	D	MET_ICP_LOW6010C_FULL	03/27/2014	100	25					NA	Good CCVs!
4C27003-BLK1		QC	03/27/2014	100	25					NA	
4C27003-BS1		QC	03/27/2014	100	25	14C0196		2000		NA	
4C27003-DUP1		QC	03/27/2014	100	25		1403160-01			NA	
4C27003-DUP2		QC	03/27/2014	100	25		1403160-03			NA	
4C27003-DUP3		QC	03/27/2014	100	25		1403160-03RE1			NA	Added 4/4/2014 by BLQ
4C27003-MS1		QC	03/27/2014	100	25	14C0199	1403160-03	25		NA	
4C27003-PS1		QC	03/27/2014	100	25	14C0199	1403160-03	25		NA	

Reagents Used:

Standard	Description

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-01 [ST105-30001]	4C21005	100.00/100.00	100	100	1.00			03/21/14
1403160-03 [ST105-30002]	4C21005	100.00/100.00	100	100	1.00			03/21/14
1403160-05 [ST105-30004]	4C21005	100.00/100.00	100	100	1.00			03/21/14
1403160-07 [ST105-30005]	4C21005	100.00/100.00	100	100	1.00			03/21/14
1403160-09 [ST105-30006]	4C21005	100.00/100.00	100	100	1.00			03/21/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-01 [ST105-30001]	4C21024	5.00/5.00	5.00	5.00	1.00			03/21/14
1403160-03 [ST105-30002]	4C21024	5.00/5.00	5.00	5.00	1.00			03/21/14
1403160-05 [ST105-30004]	4C21024	5.00/5.00	5.00	5.00	1.00			03/21/14
1403160-07 [ST105-30005]	4C21024	5.00/5.00	5.00	5.00	1.00			03/21/14
1403160-09 [ST105-30006]	4C21024	5.00/5.00	5.00	5.00	1.00			03/21/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-01RE3 [ST105-30001]	4C24028	20.00/20.00	4.00	20.0	50.00			03/24/14
1403160-03 [ST105-30002]	4C24028	20.00/20.00	4.00	20.0	1.00			03/24/14
1403160-05RE1 [ST105-30004]	4C24028	20.00/20.00	4.00	20.0	2.00			03/24/14
1403160-07 [ST105-30005]	4C24028	20.00/20.00	4.00	20.0	1.00			03/24/14
1403160-09 [ST105-30006]	4C24028	20.00/20.00	4.00	20.0	1.00			03/24/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-01 [ST105-30001]	4C27002	25.00/25.00	25.0	25.0	1.00			03/27/14
1403160-03 [ST105-30002]	4C27002	25.00/25.00	25.0	25.0	1.00			03/27/14
1403160-05 [ST105-30004]	4C27002	25.00/25.00	25.0	25.0	1.00			03/27/14
1403160-07 [ST105-30005]	4C27002	25.00/25.00	25.0	25.0	1.00			03/27/14
1403160-09 [ST105-30006]	4C27002	25.00/25.00	25.0	25.0	1.00			03/27/14

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-01 [ST105-30001]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14
1403160-03 [ST105-30002]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14
1403160-05 [ST105-30004]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14
1403160-07 [ST105-30005]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14
1403160-09 [ST105-30006]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-01 [ST105-30001]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-02 [ST105-30001]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-03 [ST105-30002]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-04 [ST105-30002]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-05 [ST105-30004]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-06 [ST105-30004]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-07 [ST105-30005]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-08 [ST105-30005]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-09 [ST105-30006]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14
1403160-10 [ST105-30006]	4D03011	40.00/40.00	40.0	40.0	1.00			04/03/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-03RE1 [ST105-30002]	4D08013	5.00/5.00	5.00	5.00	2.00			04/08/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403160-01 [ST105-30001]	4D10002	100.00/100.00	100	100	1.00			04/10/14
1403160-03 [ST105-30002]	4D10002	100.00/100.00	100	100	1.00			04/10/14
1403160-05 [ST105-30004]	4D10002	100.00/100.00	100	100	1.00			04/10/14
1403160-07 [ST105-30005]	4D10002	100.00/100.00	100	100	1.00			04/10/14
1403160-09 [ST105-30006]	4D10002	100.00/100.00	100	100	1.00			04/10/14

ANALYSIS DATA SHEET

ST105-30001

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-01
Sampled:	03/19/14 14:42	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D10002	04/11/14 14:11
24959-67-9	Bromide	**0.117**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4C21024	03/21/14 21:27
TDS	Total Dissolved Solids	**322**	**20.0**	20.0	20.0	1		SM2540C	4C21005	03/21/14 15:20
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	4C28005	03/28/14 15:24
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/03/14 21:23
16887-00-6	Chloride	**14.0**	**0.170**	0.330	0.500	1		SW9056A	4C21024	03/21/14 21:27
NA	Nitrate/Nitrite as N	**350**	**12.5**	37.5	75.0	50	D	E353.2	4C24028	03/24/14 14:30
16984-48-8	Fluoride	**0.382**	**0.0330**	0.100	0.250	1		SW9056A	4C21024	03/21/14 21:27
471-34-1	Alkalinity, Total (as CACO3)	**172**	**1.00**	1.00	1.00	1		SM2320B	4C27002	03/27/14 14:44
14808-79-8	Sulfate as SO4	**85.7**	**0.330**	1.00	2.50	1		SW9056A	4C21024	03/21/14 21:27

ANALYSIS DATA SHEET

ST105-30001

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-02
Sampled:	03/19/14 14:42	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/03/14 21:46

ANALYSIS DATA SHEET

ST105-30002

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-03
Sampled:	03/20/14 15:14	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D10002	04/11/14 14:12
24959-67-9	Bromide	**0.566**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4C21024	03/21/14 21:44
TDS	Total Dissolved Solids	**605**	**20.0**	20.0	20.0	1		SM2540C	4C21005	03/21/14 15:20
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	4C28005	03/28/14 15:25
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/03/14 22:09
16887-00-6	Chloride	**64.4**	**0.170**	0.330	0.500	1		SW9056A	4C21024	03/21/14 21:44
NA	Nitrate/Nitrite as N	**2.19**	**0.250**	0.750	1.50	1		E353.2	4C24028	03/24/14 13:54
16984-48-8	Fluoride	**0.296**	**0.0330**	0.100	0.250	1		SW9056A	4C21024	03/21/14 21:44
471-34-1	Alkalinity, Total (as CACO3)	**77.0**	**1.00**	1.00	1.00	1		SM2320B	4C27002	03/27/14 15:18
14808-79-8	Sulfate as SO4	**311**	**0.660**	2.00	5.00	2	D	SW9056A	4D08013	04/08/14 15:33

ANALYSIS DATA SHEET

ST105-30002

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-04
Sampled:	03/20/14 15:14	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)	**1.48**	**1.25**	2.50	3.00	1	J	SW9060A	4D03011	04/03/14 22:33

ANALYSIS DATA SHEET

ST105-30004

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-05
Sampled:	03/19/14 11:01	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D10002	04/11/14 14:13
24959-67-9	Bromide	**0.114**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4C21024	03/21/14 22:36
TDS	Total Dissolved Solids	**231**	**20.0**	20.0	20.0	1		SM2540C	4C21005	03/21/14 15:20
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	4C28005	03/28/14 15:26
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/03/14 23:50
16887-00-6	Chloride	**12.2**	**0.170**	0.330	0.500	1		SW9056A	4C21024	03/21/14 22:36
NA	Nitrate/Nitrite as N	**16.6**	**0.500**	1.50	3.00	2	D	E353.2	4C24028	03/24/14 14:24
16984-48-8	Fluoride	**0.397**	**0.0330**	0.100	0.250	1		SW9056A	4C21024	03/21/14 22:36
471-34-1	Alkalinity, Total (as CACO3)	**121**	**1.00**	1.00	1.00	1		SM2320B	4C27002	03/27/14 15:28
14808-79-8	Sulfate as SO4	**26.5**	**0.330**	1.00	2.50	1		SW9056A	4C21024	03/21/14 22:36

ANALYSIS DATA SHEET

ST105-30004

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-06
Sampled:	03/19/14 11:01	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/04/14 00:12

ANALYSIS DATA SHEET

ST105-30005

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-07
Sampled:	03/20/14 11:38	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D10002	04/11/14 14:14
24959-67-9	Bromide	**0.129**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4C21024	03/21/14 22:54
TDS	Total Dissolved Solids	**199**	**20.0**	20.0	20.0	1		SM2540C	4C21005	03/21/14 15:20
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	4C28005	03/28/14 15:27
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/04/14 00:36
16887-00-6	Chloride	**19.0**	**0.170**	0.330	0.500	1		SW9056A	4C21024	03/21/14 22:54
NA	Nitrate/Nitrite as N	**3.54**	**0.250**	0.750	1.50	1		E353.2	4C24028	03/24/14 13:56
16984-48-8	Fluoride	**0.451**	**0.0330**	0.100	0.250	1		SW9056A	4C21024	03/21/14 22:54
471-34-1	Alkalinity, Total (as CACO3)	**112**	**1.00**	1.00	1.00	1		SM2320B	4C27002	03/27/14 15:55
14808-79-8	Sulfate as SO4	**26.3**	**0.330**	1.00	2.50	1		SW9056A	4C21024	03/21/14 22:54

ANALYSIS DATA SHEET

ST105-30005

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-08
Sampled:	03/20/14 11:38	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/04/14 00:59

ANALYSIS DATA SHEET

ST105-30006

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-09
Sampled:	03/20/14 11:38	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**0.400**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D10002	04/11/14 14:15
24959-67-9	Bromide	**0.131**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4C21024	03/21/14 23:11
TDS	Total Dissolved Solids	**160**	**20.0**	20.0	20.0	1		SM2540C	4C21005	03/21/14 15:20
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	4C28005	03/28/14 15:28
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/04/14 01:21
16887-00-6	Chloride	**19.0**	**0.170**	0.330	0.500	1		SW9056A	4C21024	03/21/14 23:11
NA	Nitrate/Nitrite as N	**3.60**	**0.250**	0.750	1.50	1		E353.2	4C24028	03/24/14 13:58
16984-48-8	Fluoride	**0.447**	**0.0330**	0.100	0.250	1		SW9056A	4C21024	03/21/14 23:11
471-34-1	Alkalinity, Total (as CACO3)	**110**	**1.00**	1.00	1.00	1		SM2320B	4C27002	03/27/14 15:45
14808-79-8	Sulfate as SO4	**26.4**	**0.330**	1.00	2.50	1		SW9056A	4C21024	03/21/14 23:11

ANALYSIS DATA SHEET

ST105-30006

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403160-10
Sampled:	03/20/14 11:38	Received:	03/21/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D03011	04/04/14 01:44

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C21005-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4C21005	03/21/14 15:20

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C21005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**820.0**	**20.0**	20.0	20.0	1		SM2540C	4C21005	03/21/14 15:20

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C21005-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**785.0**	**20.0**	20.0	20.0	1		SM2540C	4C21005	03/21/14 15:20

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4C21024-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4C21024	03/21/14 18:32
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4C21024	03/21/14 18:32
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4C21024	03/21/14 18:32
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4C21024	03/21/14 18:32

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C21024-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.54**	**0.0420**	0.125	0.250	1		SW9056A	4C21024	03/21/14 18:50
16887-00-6	Chloride	**4.135**	**0.170**	0.330	0.500	1		SW9056A	4C21024	03/21/14 18:50
16984-48-8	Fluoride	**2.756**	**0.0330**	0.100	0.250	1		SW9056A	4C21024	03/21/14 18:50
14808-79-8	Sulfate as SO4	**21.00**	**0.330**	1.00	2.50	1		SW9056A	4C21024	03/21/14 18:50

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C24028-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4C24028	03/24/14 13:22

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C24028-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**15.24**	**0.500**	1.50	3.00	1		E353.2	4C24028	03/24/14 13:23

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C27002-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4C27002	03/27/14 11:25

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C27002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1049**	**5.00**	5.00	5.00	1		SM2320B	4C27002	03/27/14 11:30

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C28005-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	ND	0.500	1.00	1.50	1	U	E351.2	4C28005	03/28/14 15:18

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C28005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.325**	**0.500**	1.00	1.50	1		E351.2	4C28005	03/28/14 15:19

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D03011-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4D03011	04/03/14 18:02
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4D03011	04/03/14 17:50

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D03011-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**23.97**	**1.25**	2.50	3.00	1		SW9060A	4D03011	04/03/14 18:32
7440-44-0	Total Organic Carbon (dissolved)	**23.97**	**1.25**	2.50	3.00	1		SW9060A	4D03011	04/03/14 18:32

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D08013-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4D08013	04/08/14 13:31

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D08013-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14808-79-8	Sulfate as SO4	**21.13**	**0.330**	1.00	2.50	1		SW9056A	4D08013	04/08/14 13:48

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D10002-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4D10002	04/11/14 14:09

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_006

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.055**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D10002	04/11/14 14:10

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 3L35106

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35106-ICV1	Bromide	14.00	13.66	97.6	mg/L	+/- 10.00%
	Chloride	4.200	4.193	99.8	mg/L	+/- 10.00%
	Fluoride	2.800	2.803	100	mg/L	+/- 10.00%
	Sulfate as SO4	21.00	21.05	100	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 4083002
Sequence: 4C08311

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4C08311-ICV1	Nitrate/Nitrite as N	1.200	1.247	104	mg/L	+/- 10.00%
4C08311-CCV1	Nitrate/Nitrite as N	1.200	1.204	100	mg/L	+/- 10.00%
4C08311-CCV2	Nitrate/Nitrite as N	1.200	1.200	100	mg/L	+/- 10.00%
4C08311-CCV3	Nitrate/Nitrite as N	1.200	1.183	98.6	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 4087002
Sequence: 4C08714

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4C08714-ICV1	Total Kjeldahl Nitrogen	10.00	10.32	103	mg/L	+/- 10.00%
4C08714-CCV1	Total Kjeldahl Nitrogen	10.00	10.54	105	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 4D09806

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D09806-CCV1	Bromide	6.300	5.691	90.3	mg/L	+/- 10.00%
	Chloride	25.00	24.69	98.8	mg/L	+/- 10.00%
	Fluoride	2.500	2.417	96.7	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.25	97.0	mg/L	+/- 10.00%
4D09806-CCV2	Bromide	6.300	5.771	91.6	mg/L	+/- 10.00%
	Chloride	25.00	24.75	99.0	mg/L	+/- 10.00%
	Fluoride	2.500	2.461	98.4	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.43	97.7	mg/L	+/- 10.00%
4D09806-CCV3	Bromide	6.300	5.837	92.7	mg/L	+/- 10.00%
	Chloride	25.00	25.00	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.453	98.1	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.57	98.3	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 4D09812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D09812-CCV1	Sulfate as SO4	25.00	25.34	101	mg/L	+/- 10.00%
4D09812-CCV2	Sulfate as SO4	25.00	24.92	99.7	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: UNASSIGNED
Sequence: 4D09816

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D09816-CCV1	Total Organic Carbon	25.00	22.96	91.8	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	22.96	91.8	mg/L	+/- 20.00%
4D09816-CCV2	Total Organic Carbon	50.00	48.31	96.6	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	48.31	96.6	mg/L	+/- 20.00%
4D09816-CCV3	Total Organic Carbon	25.00	22.40	89.6	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	22.40	89.6	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 4100003
Sequence: 4D10029

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10029-ICV1	Ammonia as N	2.000	2.113	106	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_006
Project: Kirtland AFB (ECOS)
Calibration: 4100003
Sequence: 4D10113

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10113-ICV1	Ammonia as N	2.000	2.091	105	mg/L	+/- 10.00%
4D10113-CCV1	Ammonia as N	2.000	2.074	104	mg/L	+/- 10.00%

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 3351002

Sequence: 4D09806

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D09806-CRL1	Chloride	0.5000	0.4590	91.8	mg/L	75 - 125
	Fluoride	0.05000	0.04500	90.0	mg/L	75 - 125
4D09806-CRL2	Sulfate as SO4	1.000	1.143	114	mg/L	75 - 125
4D09806-CRL3	Bromide	0.6300	0.4730	75.1	mg/L	75 - 125

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 3351002

Sequence: 4D09812

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D09812-CRL2	Sulfate as SO4	1.000	1.039	104	mg/L	75 - 125

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4C21005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C21005-BLK1	Total Dissolved Solids	-45.0	20.0	20.0	mg/L		SM2540C

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4C21024

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C21024-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0310	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4C24028

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C24028-BLK1	Nitrate/Nitrite as N	-0.0321	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4C27002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C27002-BLK1	Alkalinity, Total (as CACO3)	0.00	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4C28005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C28005-BLK1	Total Kjeldahl Nitrogen	-0.0252	0.500	1.50	mg/L	U	E351.2

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D03011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D03011-BLK1	Total Organic Carbon (dissolved)	0.460	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon	0.460	1.25	3.00	mg/L	U	SW9060A

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D08013

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D08013-BLK1	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D10002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10002-BLK1	Ammonia as N	-0.0370	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 3L35106
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35106-ICB1	Bromide	0.000	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.000	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.000	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.000	0.330	2.50	mg/L	U	SW9056A

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4C08311
Calibration: 4083002
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C08311-ICB1	Nitrate/Nitrite as N	-0.03510	0.0500	0.300	mg/L	U	E353.2
4C08311-CCB1	Nitrate/Nitrite as N	-0.0305	0.0500	0.300	mg/L	U	E353.2
4C08311-CCB2	Nitrate/Nitrite as N	-0.0326	0.0500	0.300	mg/L	U	E353.2
4C08311-CCB3	Nitrate/Nitrite as N	-0.0318	0.0500	0.300	mg/L	U	E353.2

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4C08714
Calibration: 4087002
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C08714-ICB1	Total Kjeldahl Nitrogen	0.007370	0.500	1.50	mg/L	U	E351.2
4C08714-CCB1	Total Kjeldahl Nitrogen	0.0446	0.500	1.50	mg/L	U	E351.2

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D09806
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D09806-CCB1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0320	0.330	2.50	mg/L	U	SW9056A
4D09806-CCB2	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0520	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.0560	0.0330	0.250	mg/L	J	SW9056A
	Sulfate as SO4	0.0590	0.330	2.50	mg/L	U	SW9056A
4D09806-CCB3	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D09812
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D09812-CCB1	Sulfate as SO4	0.0410	0.330	2.50	mg/L	U	SW9056A
4D09812-CCB2	Sulfate as SO4	0.0400	0.330	2.50	mg/L	U	SW9056A

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D09816
Calibration: UNASSIGNED
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D09816-CCB1	Total Organic Carbon	0.490	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.490	1.25	3.00	mg/L	U	SW9060A
4D09816-CCB2	Total Organic Carbon	0.490	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.490	1.25	3.00	mg/L	U	SW9060A
4D09816-CCB3	Total Organic Carbon	0.445	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.445	1.25	3.00	mg/L	U	SW9060A

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10029
Calibration: 4100003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10029-ICB1	Ammonia as N	0.0009009	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_006
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10113
Calibration: 4100003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10113-ICB1	Ammonia as N	0.003679	0.100	0.300	mg/L	U	SM4500NH3BG
4D10113-CCB1	Ammonia as N	0.0147	0.100	0.300	mg/L	U	SM4500NH3BG

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C21005	Laboratory ID:	4C21005-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	820.0	84.3	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Dissolved Solids	973.0	785.0	80.7	4.36	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C21024	Laboratory ID:	4C21024-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.54	96.7	80 - 120
Chloride	4.200	4.135	98.5	80 - 120
Fluoride	2.800	2.756	98.4	80 - 120
Sulfate as SO4	21.00	21.00	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C24028	Laboratory ID:	4C24028-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	15.24	103	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C27002	Laboratory ID:	4C27002-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1049	105	80 - 120

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C28005	Laboratory ID:	4C28005-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.325	101	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D03011	Laboratory ID:	4D03011-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	23.97	95.9	80 - 120
Total Organic Carbon (dissolved)	25.00	23.97	95.9	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D08013	Laboratory ID:	4D08013-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Sulfate as SO4	21.00	21.13	101	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D10002	Laboratory ID:	4D10002-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	4.055	81.1	80 - 120

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C21005 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30001	1403160-01	03/21/14 09:00	100.00	100.00
ST105-30002	1403160-03	03/21/14 09:00	100.00	100.00
ST105-30004	1403160-05	03/21/14 09:00	100.00	100.00
ST105-30005	1403160-07	03/21/14 09:00	100.00	100.00
ST105-30006	1403160-09	03/21/14 09:00	100.00	100.00
Blank	4C21005-BLK1	03/21/14 09:00	100.00	100.00
LCS	4C21005-BS1	03/21/14 09:00	20.00	20.00
LCS Dup	4C21005-BSD1	03/21/14 09:00	20.00	20.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C21024 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30001	1403160-01	03/21/14 15:30	5.00	5.00
ST105-30002	1403160-03	03/21/14 15:30	5.00	5.00
ST105-30004	1403160-05	03/21/14 15:30	5.00	5.00
ST105-30005	1403160-07	03/21/14 15:30	5.00	5.00
ST105-30006	1403160-09	03/21/14 15:30	5.00	5.00
Blank	4C21024-BLK1	03/21/14 15:30	5.00	5.00
LCS	4C21024-BS1	03/21/14 15:30	5.00	5.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C24028 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30001	1403160-01RE3	03/24/14 11:18	4.00	20.00
ST105-30002	1403160-03	03/24/14 11:18	4.00	20.00
ST105-30004	1403160-05RE1	03/24/14 11:18	4.00	20.00
ST105-30005	1403160-07	03/24/14 11:18	4.00	20.00
ST105-30006	1403160-09	03/24/14 11:18	4.00	20.00
Blank	4C24028-BLK1	03/24/14 11:18	20.00	20.00
LCS	4C24028-BS1	03/24/14 11:18	2.00	20.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C27002 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30001	1403160-01	03/27/14 08:07	25.00	25.00
ST105-30002	1403160-03	03/27/14 08:07	25.00	25.00
ST105-30004	1403160-05	03/27/14 08:07	25.00	25.00
ST105-30005	1403160-07	03/27/14 08:07	25.00	25.00
ST105-30006	1403160-09	03/27/14 08:07	25.00	25.00
Blank	4C27002-BLK1	03/27/14 08:07	25.00	25.00
LCS	4C27002-BS1	03/27/14 08:07	5.00	25.00

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C28005 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30001	1403160-01	03/28/14 09:31	20.00	20.00
ST105-30002	1403160-03	03/28/14 09:31	20.00	20.00
ST105-30004	1403160-05	03/28/14 09:31	20.00	20.00
ST105-30005	1403160-07	03/28/14 09:31	20.00	20.00
ST105-30006	1403160-09	03/28/14 09:31	20.00	20.00
Blank	4C28005-BLK1	03/28/14 09:31	20.00	20.00
LCS	4C28005-BS1	03/28/14 09:31	20.00	20.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D03011 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30001	1403160-01	04/03/14 10:45	40.00	40.00
ST105-30001	1403160-02	04/03/14 10:45	40.00	40.00
ST105-30002	1403160-03	04/03/14 10:45	40.00	40.00
ST105-30002	1403160-04	04/03/14 10:45	40.00	40.00
ST105-30004	1403160-05	04/03/14 10:45	40.00	40.00
ST105-30004	1403160-06	04/03/14 10:45	40.00	40.00
ST105-30005	1403160-07	04/03/14 10:45	40.00	40.00
ST105-30005	1403160-08	04/03/14 10:45	40.00	40.00
ST105-30006	1403160-09	04/03/14 10:45	40.00	40.00
ST105-30006	1403160-10	04/03/14 10:45	40.00	40.00
Blank	4D03011-BLK1	04/03/14 10:45	40.00	40.00
LCS	4D03011-BS1	04/03/14 10:45	40.00	40.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D08013 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30002	1403160-03RE1	04/08/14 10:20	5.00	5.00
Blank	4D08013-BLK1	04/08/14 10:20	5.00	5.00
LCS	4D08013-BS1	04/08/14 10:20	5.00	5.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D10002 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30001	1403160-01	04/10/14 06:36	100.00	100.00
ST105-30002	1403160-03	04/10/14 06:36	100.00	100.00
ST105-30004	1403160-05	04/10/14 06:36	100.00	100.00
ST105-30005	1403160-07	04/10/14 06:36	100.00	100.00
ST105-30006	1403160-09	04/10/14 06:36	100.00	100.00
Blank	4D10002-BLK1	04/10/14 06:36	100.00	100.00
LCS	4D10002-BS1	04/10/14 06:36	100.00	100.00

ANALYSIS SEQUENCE SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Blank	4C27002-BLK1	032714a-003	03/27/14 11:25
LCS	4C27002-BS1	032714a-002	03/27/14 11:30

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_006

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS Dup	4C21005-BSD1	032114-003	03/21/14 15:20
LCS	4C21005-BS1	032114-002	03/21/14 15:20
Blank	4C21005-BLK1	032114-001	03/21/14 15:20

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35106	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35106-CAL1	121013-007	12/10/13 16:44
Cal Standard	3L35106-CAL2	121013-008	12/10/13 17:02
Cal Standard	3L35106-CAL3	121013-009	12/10/13 17:19
Cal Standard	3L35106-CAL4	121013-010	12/10/13 17:37
Cal Standard	3L35106-CAL5	121013-011	12/10/13 17:54
Cal Standard	3L35106-CAL6	121013-012	12/10/13 18:11
Cal Standard	3L35106-CAL7	121013-013	12/10/13 18:29
Cal Standard	3L35106-CAL8	121013-014	12/10/13 18:46
Initial Cal Check	3L35106-ICV1	121013-015	12/10/13 19:04
Initial Cal Blank	3L35106-ICB1	121013-016	12/10/13 19:21

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4C08311	Instrument:	WC-Lachat
Calibration:	4083002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4C08311-CAL1	M_3-24-2014_01-04-05PM-00	03/24/14 13:06
Cal Standard	4C08311-CAL2	M_3-24-2014_01-04-05PM-00	03/24/14 13:07
Cal Standard	4C08311-CAL3	M_3-24-2014_01-04-05PM-00	03/24/14 13:09
Cal Standard	4C08311-CAL4	M_3-24-2014_01-04-05PM-00	03/24/14 13:10
Cal Standard	4C08311-CAL5	M_3-24-2014_01-04-05PM-00	03/24/14 13:11
Cal Standard	4C08311-CAL6	M_3-24-2014_01-04-05PM-00	03/24/14 13:13
Cal Standard	4C08311-CAL7	M_3-24-2014_01-04-05PM-00	03/24/14 13:14
Cal Standard	4C08311-CAL8	M_3-24-2014_01-04-05PM-00	03/24/14 13:16
Initial Cal Check	4C08311-ICV1	M_3-24-2014_01-04-05PM-00	03/24/14 13:17
Initial Cal Blank	4C08311-ICB1	M_3-24-2014_01-04-05PM-01	03/24/14 13:19
Blank	4C24028-BLK1	M_3-24-2014_01-04-05PM-01	03/24/14 13:22
LCS	4C24028-BS1	M_3-24-2014_01-04-05PM-01	03/24/14 13:23
Calibration Check	4C08311-CCV1	M_3-24-2014_01-04-05PM-02	03/24/14 13:42
Calibration Blank	4C08311-CCB1	M_3-24-2014_01-04-05PM-02	03/24/14 13:43
ST105-30002	1403160-03	M_3-24-2014_01-04-05PM-03	03/24/14 13:54
ST105-30005	1403160-07	M_3-24-2014_01-04-05PM-03	03/24/14 13:56
ST105-30006	1403160-09	M_3-24-2014_01-04-05PM-03	03/24/14 13:58
Calibration Check	4C08311-CCV2	M_3-24-2014_01-04-05PM-03	03/24/14 14:01
Calibration Blank	4C08311-CCB2	M_3-24-2014_01-04-05PM-04	03/24/14 14:02
ST105-30004	1403160-05RE1	M_3-24-2014_01-04-05PM-05	03/24/14 14:24
ST105-30001	1403160-01RE3	M_3-24-2014_01-04-05PM-05	03/24/14 14:30
Calibration Check	4C08311-CCV3	M_3-24-2014_01-04-05PM-06	03/24/14 14:31
Calibration Blank	4C08311-CCB3	M_3-24-2014_01-04-05PM-06	03/24/14 14:33

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4C08714	Instrument:	WC-Lachat
Calibration:	4087002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4C08714-CAL1	M_3-28-2014_03-06-30PM-00	03/28/14 15:08
Cal Standard	4C08714-CAL2	M_3-28-2014_03-06-30PM-00	03/28/14 15:09
Cal Standard	4C08714-CAL3	M_3-28-2014_03-06-30PM-00	03/28/14 15:10
Cal Standard	4C08714-CAL4	M_3-28-2014_03-06-30PM-00	03/28/14 15:11
Cal Standard	4C08714-CAL5	M_3-28-2014_03-06-30PM-00	03/28/14 15:12
Cal Standard	4C08714-CAL6	M_3-28-2014_03-06-30PM-00	03/28/14 15:14
Cal Standard	4C08714-CAL7	M_3-28-2014_03-06-30PM-00	03/28/14 15:15
Initial Cal Check	4C08714-ICV1	M_3-28-2014_03-06-30PM-00	03/28/14 15:16
Initial Cal Blank	4C08714-ICB1	M_3-28-2014_03-06-30PM-00	03/28/14 15:17
Blank	4C28005-BLK1	M_3-28-2014_03-06-30PM-01	03/28/14 15:18
LCS	4C28005-BS1	M_3-28-2014_03-06-30PM-01	03/28/14 15:19
ST105-30001	1403160-01	M_3-28-2014_03-06-30PM-01	03/28/14 15:24
ST105-30002	1403160-03	M_3-28-2014_03-06-30PM-01	03/28/14 15:25
ST105-30004	1403160-05	M_3-28-2014_03-06-30PM-01	03/28/14 15:26
ST105-30005	1403160-07	M_3-28-2014_03-06-30PM-01	03/28/14 15:27
ST105-30006	1403160-09	M_3-28-2014_03-06-30PM-01	03/28/14 15:28
Calibration Check	4C08714-CCV1	M_3-28-2014_03-06-30PM-02	03/28/14 15:31
Calibration Blank	4C08714-CCB1	M_3-28-2014_03-06-30PM-02	03/28/14 15:33

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D09806	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D09806-CCV1	032114-003	03/21/14 17:05
Calibration Blank	4D09806-CCB1	032114-004	03/21/14 17:23
Instrument RL Check	4D09806-CRL1	032114-005	03/21/14 17:40
Instrument RL Check	4D09806-CRL2	032114-006	03/21/14 17:58
Instrument RL Check	4D09806-CRL3	032114-007	03/21/14 18:15
Blank	4C21024-BLK1	032114-008	03/21/14 18:32
LCS	4C21024-BS1	032114-009	03/21/14 18:50
ST105-30001	1403160-01	032114-018	03/21/14 21:27
ST105-30002	1403160-03	032114-019	03/21/14 21:44
Calibration Check	4D09806-CCV2	032114-020	03/21/14 22:01
Calibration Blank	4D09806-CCB2	032114-021	03/21/14 22:19
ST105-30004	1403160-05	032114-022	03/21/14 22:36
ST105-30005	1403160-07	032114-023	03/21/14 22:54
ST105-30006	1403160-09	032114-024	03/21/14 23:11
Calibration Check	4D09806-CCV3	032114-025	03/21/14 23:28
Calibration Blank	4D09806-CCB3	032114-026	03/21/14 23:46

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D09812	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D09812-CCV1	040814-003	04/08/14 12:04
Calibration Blank	4D09812-CCB1	040814-004	04/08/14 12:21
Instrument RL Check	4D09812-CRL2	040814-006	04/08/14 12:56
Blank	4D08013-BLK1	040814-008	04/08/14 13:31
LCS	4D08013-BS1	040814-009	04/08/14 13:48
ST105-30002	1403160-03RE1	040814-015	04/08/14 15:33
Calibration Check	4D09812-CCV2	040814-016	04/08/14 15:50
Calibration Blank	4D09812-CCB2	040814-017	04/08/14 16:08

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D09816	Instrument:	WC-TOC1
Calibration:	UNASSIGNED		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D09816-CCV1		04/03/14 17:13
Calibration Blank	4D09816-CCB1		04/03/14 17:39
Blank	4D03011-BLK1		04/03/14 17:50
Blank	4D03011-BLK1		04/03/14 18:02
LCS	4D03011-BS1		04/03/14 18:32
ST105-30001	1403160-01		04/03/14 21:23
ST105-30001	1403160-02		04/03/14 21:46
ST105-30002	1403160-03		04/03/14 22:09
ST105-30002	1403160-04		04/03/14 22:33
Calibration Check	4D09816-CCV2		04/03/14 23:03
Calibration Blank	4D09816-CCB2		04/03/14 23:27
ST105-30004	1403160-05		04/03/14 23:50
ST105-30004	1403160-06		04/04/14 00:12
ST105-30005	1403160-07		04/04/14 00:36
ST105-30005	1403160-08		04/04/14 00:59
ST105-30006	1403160-09		04/04/14 01:21
ST105-30006	1403160-10		04/04/14 01:44
Calibration Check	4D09816-CCV3		04/04/14 04:18
Calibration Blank	4D09816-CCB3		04/04/14 04:43

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10029	Instrument:	WC-Lachat
Calibration:	4100003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D10029-CAL1	M_4-10-2014_02-41-06PM-00	04/10/14 14:42
Cal Standard	4D10029-CAL2	M_4-10-2014_02-41-06PM-00	04/10/14 14:43
Cal Standard	4D10029-CAL3	M_4-10-2014_02-41-06PM-00	04/10/14 14:44
Cal Standard	4D10029-CAL4	M_4-10-2014_02-41-06PM-00	04/10/14 14:45
Cal Standard	4D10029-CAL5	M_4-10-2014_02-41-06PM-00	04/10/14 14:46
Cal Standard	4D10029-CAL6	M_4-10-2014_02-41-06PM-00	04/10/14 14:47
Cal Standard	4D10029-CAL7	M_4-10-2014_02-41-06PM-00	04/10/14 14:48
Cal Standard	4D10029-CAL8	M_4-10-2014_02-41-06PM-00	04/10/14 14:49
Initial Cal Check	4D10029-ICV1	M_4-10-2014_02-41-06PM-00	04/10/14 14:50
Initial Cal Blank	4D10029-ICB1	M_4-10-2014_02-41-06PM-01	04/10/14 14:51

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10113	Instrument:	WC-Lachat
Calibration:	4100003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D10113-CAL1	M_4-11-2014_01-58-35PM-00	04/11/14 13:59
Cal Standard	4D10113-CAL2	M_4-11-2014_01-58-35PM-00	04/11/14 14:00
Cal Standard	4D10113-CAL3	M_4-11-2014_01-58-35PM-00	04/11/14 14:01
Cal Standard	4D10113-CAL4	M_4-11-2014_01-58-35PM-00	04/11/14 14:02
Cal Standard	4D10113-CAL5	M_4-11-2014_01-58-35PM-00	04/11/14 14:03
Cal Standard	4D10113-CAL6	M_4-11-2014_01-58-35PM-00	04/11/14 14:04
Cal Standard	4D10113-CAL7	M_4-11-2014_01-58-35PM-00	04/11/14 14:05
Cal Standard	4D10113-CAL8	M_4-11-2014_01-58-35PM-00	04/11/14 14:06
Initial Cal Check	4D10113-ICV1	M_4-11-2014_01-58-35PM-00	04/11/14 14:07
Initial Cal Blank	4D10113-ICB1	M_4-11-2014_01-58-35PM-01	04/11/14 14:08
Blank	4D10002-BLK1	M_4-11-2014_01-58-35PM-01	04/11/14 14:09
LCS	4D10002-BS1	M_4-11-2014_01-58-35PM-01	04/11/14 14:10
ST105-30001	1403160-01	M_4-11-2014_01-58-35PM-01	04/11/14 14:11
ST105-30002	1403160-03	M_4-11-2014_01-58-35PM-01	04/11/14 14:12
ST105-30004	1403160-05	M_4-11-2014_01-58-35PM-01	04/11/14 14:13
ST105-30005	1403160-07	M_4-11-2014_01-58-35PM-01	04/11/14 14:14
ST105-30006	1403160-09	M_4-11-2014_01-58-35PM-01	04/11/14 14:15
Calibration Check	4D10113-CCV1	M_4-11-2014_01-58-35PM-02	04/11/14 14:22
Calibration Blank	4D10113-CCB1	M_4-11-2014_01-58-35PM-02	04/11/14 14:23

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	813540	0.1	853290	0.25	905720	0.5	956456	2.5	1018020	5	1028788
Nitrite as N	0.05	965740	0.1	944100	0.25	912864	0.5	952380	2.5	889644.8	5	849190.4
Bromide	0.126	134238.1	0.252	137654.8	0.63	145555.6	1.26	160582.5	6.3	175999.5	12.6	179760.6
Chloride	0.5	386028	1	399602	2.5	397485.6	5	405301.8	25	410491.2	50	411932.8
Fluoride	0.05	638320	0.1	659420	0.25	670580	0.5	671448	2.5	665322.8	5	630216.2
Sulfate as SO4	0.5	365110	1	353321	2.5	332900	5	313738.2	25	308262.3	50	308796.8

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	3351002	Instrument:	WC-IC	
Matrix:	Water	Calibration Dates:	12/10/13 16:44	12/10/13 18:46

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	1017034	25	1032948								
Nitrite as N	12.5	743872.1	25	627085.2								
Bromide	31.5	178666.7	63	182048.9								
Chloride	125	404190.3	250	404326.4								
Fluoride	12.5	~~559804.6~~	25	~~506008.4~~								
Sulfate as SO4	125	300572.3	250	300597.6								

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	953224.6	9.050688	9.2925	2.89029				*
Nitrite as N	860609.6	13.77032	5.41	1.226206				*
Bromide	161813.3	12.41877	7.8425	1.187843	0.9998959		0.995	
Chloride	402419.8	2.039875	4.46125	0.5546317	0.9999818		0.995	
Fluoride	655884.5	2.664565	3.07	2.432736E-02	0.9991903		0.995	
Sulfate as SO4	322912.3	7.675524	5.99	2.923035	0.9999575		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4083002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/24/14 13:06	3/24/14 13:16

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	2	3.9205	1.6	4.038125	1.2	3.985	0.8	4.29	0.4	4.48	0.2	4.816

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4083002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/24/14 13:06	3/24/14 13:16

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	0.1	4.743	0	0								

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4083002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/24/14 13:06	3/24/14 13:16

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate/Nitrite as N	3.784078	41.38505	32.1625	0.9755619	0.9987282		0.99	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4087002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/28/14 15:08	3/28/14 15:15

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	20	0.2162	10	~~0.2589~~	8	~~0.2805~~	5	0.3538	2	0.6095	1	1.029

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4087002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/28/14 15:08	3/28/14 15:15

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	0	0										

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4087002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/28/14 15:08	3/28/14 15:15

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Kjeldahl Nitrogen	0.4417	89.61714	46.846	0.4792653	0.9997097		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4100003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/10/14 14:42	4/10/14 14:49

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	2.712	8	2.77375	2	2.929	1	2.896	0.4	2.905	0.2	2.792

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4100003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/10/14 14:42	4/10/14 14:49

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	2.893	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_006	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4100003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/10/14 14:42	4/10/14 14:49

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.487594	40.52336	31.49375	2.704848	0.9996931		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4C21005

Empirical Laboratories, LLC

Printed: 4/15/2014 11:49:50AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403141-01	D	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403141-03	D	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403141-05	D	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403141-07	D	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403157-01	D	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403160-01	A	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403160-03	A	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403160-05	A	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403160-07	A	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
1403160-09	A	WC_TOTAL_DISS_SOLIDS_25	03/21/2014	100	100					NA	
4C21005-BLK1		QC	03/21/2014	100	100					NA	
4C21005-BS1		QC	03/21/2014	20	20	14B0390		20000		NA	
4C21005-BSD1		QC	03/21/2014	20	20	14B0390		20000		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4C21024

Empirical Laboratories, LLC

Printed: 4/8/2014 1:50:47PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403157-01	E	WC_ANIONS_9056A (Regular)	03/21/2014	5	5					NA	see versions
1403157-02	D	WC_ANIONS_9056A (Regular)	03/21/2014	5	5					NA	see versions
1403160-01	A	WC_ANIONS_9056A (Regular)	03/21/2014	5	5					NA	see versions
1403160-03	A	WC_ANIONS_9056A (Regular)	03/21/2014	5	5					NA	see versions
1403160-05	A	WC_ANIONS_9056A (Regular)	03/21/2014	5	5					NA	see versions
1403160-07	A	WC_ANIONS_9056A (Regular)	03/21/2014	5	5					NA	see versions
1403160-09	A	WC_ANIONS_9056A (Regular)	03/21/2014	5	5					NA	see versions
1403164-07	D	WC_ANIONS_9056A (Regular)	03/21/2014	5	5					NA	Added for BatchQC in: 4C21024
1403164-07	D	WC_ANIONS_300.0 (Short Hol	03/21/2014	5	5					NA	
1403164-07	D	WC_ANIONS_300.0 (Regular)	03/21/2014	5	5					NA	SO4
1403164-11	D	WC_ANIONS_300.0 (Regular)	03/21/2014	5	5					NA	SO4
1403164-11	D	WC_ANIONS_300.0 (Short Hol	03/21/2014	5	5					NA	
4C21024-BLK1		QC	03/21/2014	5	5					NA	
4C21024-BS1		QC	03/21/2014	5	5	14C0301		5000		NA	
4C21024-DUP1		QC	03/21/2014	5	5		1403164-07			NA	
4C21024-MS1		QC	03/21/2014	22.5	25	14C0398	1403164-07	12500		NA	Ran at 5X
4C21024-MSD1		QC	03/21/2014	22.5	25	14C0398	1403164-07	12500		NA	Ran at 5X

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4C24028

Empirical Laboratories, LLC

Printed: 4/8/2014 1:00:59PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403102-01	J	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403102-03	AB	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403102-05	J	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403143-01	J	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403143-03	J	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403143-05	AB	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	MS/MSD
1403143-08	G	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403143-10	G	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403147-01	A	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403147-03	A	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403147-03RE1	A	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	Added 3/24/2014 by RGB
1403152-01	A	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403157-01	F	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403157-02	E	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403160-01	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403160-01RE1	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	Added 3/24/2014 by RGB
1403160-01RE2	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	Added 3/24/2014 by RGB
1403160-01RE3	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	Added 3/24/2014 by RGB
1403160-03	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403160-03RE1	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	Added 3/24/2014 by RGB
1403160-05	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403160-05RE1	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	Added 3/24/2014 by RGB

PREPARATION BENCH SHEET

4C24028

Empirical Laboratories, LLC

Printed: 4/8/2014 1:00:59PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403160-07	C	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
1403160-09	B	WC_NO3NO2_N_353.2	03/24/2014	4	20					NA	
4C24028-BLK1		QC	03/24/2014	20	20					NA	
4C24028-BS1		QC	03/24/2014	2	20	14A0409		2000		NA	
4C24028-MS1		QC	03/24/2014	4	20	14B0358	1403102-03	500		NA	
4C24028-MS2		QC	03/24/2014	4	20	14B0358	1403143-05	500		NA	
4C24028-MS3		QC	03/24/2014	4	20	14B0358	1403102-03	500		NA	
4C24028-MSD1		QC	03/24/2014	4	20	14B0358	1403102-03	500		NA	
4C24028-MSD2		QC	03/24/2014	4	20	14B0358	1403143-05	500		NA	
4C24028-MSD3		QC	03/24/2014	4	20	14B0358	1403102-03	500		NA	

Reagents Used:

Standard	Description
14A0570	NO3/NO2 Carrier (Acid DI)
14B0522	NO2/NO3 Sulfanilimide Color Reagent
14C0133	NO2/NO3 Buffer

PREPARATION BENCH SHEET

4C27002

Empirical Laboratories, LLC **Printed: 4/3/2014 10:36:42AM**

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403142-01	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403142-03	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403142-04	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403142-07	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403142-08	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403143-05	AA	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	MS/MSD
1403151-02	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403151-04	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403151-07	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403160-01	A	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403160-03	A	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403160-05	A	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403160-07	A	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403160-09	A	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403164-07	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
1403164-11	D	WC_ALKALINITY_2320B	03/27/2014	25	25					NA	
4C27002-BLK1		QC	03/27/2014	25	25					NA	
4C27002-BS1		QC	03/27/2014	5	25	13L0375		5000		NA	
4C27002-MS1		QC	03/27/2014	22.5	25	13L0375	1403143-05	2500		NA	
4C27002-MSD1		QC	03/27/2014	22.5	25	13L0375	1403143-05	2500		NA	

Reagents Used:

Standard	Description

Kirtlandecos_006

PREPARATION BENCH SHEET

4C27002

Empirical Laboratories, LLC

Printed: 4/3/2014 10:36:42AM

Instrument:

Matrix: Water

Prepared using: WC - pNone

(No Surrogate)

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

PREPARATION BENCH SHEET

4C28005

Empirical Laboratories, LLC

Printed: 4/10/2014 3:04:46PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403147-01	A	WC_TKN_351.2	03/28/2014	4	20					NA	
1403147-03	A	WC_TKN_351.2	03/28/2014	20	20					NA	
1403152-03	A	WC_TKN_351.2	03/28/2014	4	20					NA	
1403152-03RE1	A	WC_TKN_351.2	03/28/2014	4	20					NA	Added 3/28/2014 by RGB
1403160-01	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403160-03	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403160-05	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403160-07	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403160-09	B	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403203-01	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403203-03	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403203-05	I	WC_TKN_351.2	03/28/2014	20	20					NA	MS/MSD; Outside DoD cert
1403203-07	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403203-09	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403213-05	A	WC_TKN_351.2	03/28/2014	2	20					NA	
4C28005-BLK1		QC	03/28/2014	20	20					NA	
4C28005-BS1		QC	03/28/2014	20	20	14A0452		20000		NA	
4C28005-MS1		QC	03/28/2014	18	20	14A0166	1403203-05	2000		NA	
4C28005-MSD1		QC	03/28/2014	18	20	14A0166	1403203-05	2000		NA	

PREPARATION BENCH SHEET

4C28005

Empirical Laboratories, LLC

Printed: 4/10/2014 3:04:46PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
14A0207	TKN 0.8M NaOH
14A0225	TKN Carrier
14A0402	TKN Salicylate Nitroprusside Reagent
14B0281	TKN Digestion Soln
14B0494	TKN Buffer
14C0665	TKN Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4D03011

Empirical Laboratories, LLC

Printed: 4/15/2014 8:27:38AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403134-01	H	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403134-02	H	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403134-03	H	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403146-01	N	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	water only. Good CCVs!
1403155-01	E	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	water only. Good CCVs!
1403156-01	E	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	water only. Good CCVs!
1403160-01	B	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403160-02	A	WC_TOC_DISS_9060A_QUAD	04/03/2014	40	40					NA	
1403160-03	B	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403160-04	A	WC_TOC_DISS_9060A_QUAD	04/03/2014	40	40					NA	
1403160-05	B	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403160-06	A	WC_TOC_DISS_9060A_QUAD	04/03/2014	40	40					NA	
1403160-07	B	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403160-08	A	WC_TOC_DISS_9060A_QUAD	04/03/2014	40	40					NA	
1403160-09	B	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403160-10	A	WC_TOC_DISS_9060A_QUAD	04/03/2014	40	40					NA	
1403171-01	E	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	water only. Good CCVs!
1403184-01	E	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403184-03	E	WC_TOC_9060A_QUAD	04/03/2014	40	40					NA	
1403184-03	E	WC_TOC_DISS_9060A_QUAD	04/03/2014	40	40					NA	Added for BatchQC in: 4D03011
4D03011-BLK1		QC	04/03/2014	40	40					NA	
4D03011-BS1		QC	04/03/2014	40	40	14C0664		40000		NA	

PREPARATION BENCH SHEET

4D03011

Empirical Laboratories, LLC

Printed: 4/15/2014 8:27:38AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D03011-MS1		QC	04/03/2014	40	40	13F0271	1403184-03	600		NA	
4D03011-MSD1		QC	04/03/2014	40	40	13F0271	1403184-03	600		NA	

Reagents Used:

Standard	Description
14A0545	TOC Phosphoric Acid Reagent
14D0044	TOC PERSULFATE REAGENT

PREPARATION BENCH SHEET

4D08013

Empirical Laboratories, LLC

Printed: 4/9/2014 10:35:14AM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403081-02RE1	F	WC_ANIONS_300.0 (Regular)	04/08/2014	5	5					NA	RR at 5X for Cl
1403081-07RE1	F	WC_ANIONS_300.0 (Regular)	04/08/2014	5	5					NA	RR at 20X for SO4
1403157-01RE1	D	WC_ANIONS_9056A (Regular)	04/08/2014	5	5					NA	RR at 2X for SO4
1403160-03RE1	A	WC_ANIONS_9056A (Regular)	04/08/2014	5	5					NA	RR at 2X for SO4
1404041-01	D	WC_ANIONS_9056A (Regular)	04/08/2014	5	5					NA	see versions
1404041-03	D	WC_ANIONS_9056A (Regular)	04/08/2014	5	5					NA	see versions
1404041-05	D	WC_ANIONS_9056A (Regular)	04/08/2014	5	5					NA	see versions
1404041-07	D	WC_ANIONS_300.0 (Short Hol	04/08/2014	5	5					NA	Added for BatchQC in: 4D08013
1404041-07	D	WC_ANIONS_9056A (Regular)	04/08/2014	5	5					NA	see versions
1404041-07	D	WC_ANIONS_300.0 (Regular)	04/08/2014	5	5					NA	Added for BatchQC in: 4D08013
1404054-04	B	WC_ANIONS_300.0 (Short Hol	04/08/2014	5	5					NA	see versions
4D08013-BLK1		QC	04/08/2014	5	5					NA	
4D08013-BS1		QC	04/08/2014	5	5	14C0301		5000		NA	
4D08013-DUP1		QC	04/08/2014	5	5		1404041-07			NA	
4D08013-MS1		QC	04/08/2014	22.5	25	14C0398	1404041-07	2500		NA	
4D08013-MSD1		QC	04/08/2014	22.5	25	14C0398	1404041-07	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D10002

Empirical Laboratories, LLC

Printed: 4/15/2014 11:55:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403160-01	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403160-03	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403160-05	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403160-07	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403160-09	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403217-07	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1404054-01	-	WC_AMMONIA_PHENATE_45	04/10/2014	10	100					NA	
1404054-03	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1404054-04	-	WC_AMMONIA_PHENATE_45	04/10/2014	10	100					NA	
1404062-01	-	WC_AMMONIA_PHENATE_45	04/10/2014	1	100					NA	
1404063-01	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1404063-02	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1404064-01	A	WC_AMMONIA_PHENATE_45	04/10/2014	10	100					NA	
1404064-03	A	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
4D10002-BLK1		QC	04/10/2014	100	100					NA	
4D10002-BS1		QC	04/10/2014	100	100	14D0086		100000		NA	
4D10002-DUP1		QC	04/10/2014	10	100		1404054-04			NA	
4D10002-MS1		QC	04/10/2014	100	100	14A0483	1404054-03	500		NA	

PREPARATION BENCH SHEET

4D10002

Empirical Laboratories, LLC

Printed: 4/15/2014 11:55:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0477	1N H2SO4
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14C0304	0.04N H2SO4 FOR NH3 simpledist. distillation
14D0092	Borate Buffer
14D0366	0.04N H2SO4 FOR NH3 simpledist. distillation

ANALYTICAL DATA PACKAGE
SDG # KIRTLANDECOS_007

PROJECT NAME: KIRTLAND AFB (ECOS)
PROJECT LOCATION: ALBUQUERQUE, NEW MEXICO

SUBMITTAL TO:
Susan Huang
SHAW E&I, Inc.
4005 Port Chicago Highway
Concord, CA 94520

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Marianne Walker
Tel (615)345-1115
Fax (866)417-0548
Email: mwalker@empirlabs.com

Original Report Date: April 24, 2014
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 353

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

Table of Contents

#	Description	Page No.
1	Cover Page	1
2	Table of Contents	2
3	Case Narrative	3
4	Sample Receipt Information Chain of Custody Forms Sample Receipt Confirmations WorkOrder Summary Sample Delivery Group (SDG) Sheets	8
5	Data for SW6010C Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	28
6	Data for Wet Chemistry Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	80

Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6010C:
The following matrix spikes exceeded criteria:
4D10009-MS1 (1403203-05) for Calcium and Sodium; note – the parent sample concentrations for Calcium and Sodium are greater than 4 times the amount spiked

The following post spikes exceeded criteria:
4D10009-PS1 (1403203-05) for Calcium; note – the parent sample concentration for Calcium is greater than 4 times the amount spiked

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:
The following compounds are qualified with an M to indicate the LOQ was raised for to the level of the reporting limit standard within criteria:
Bromide (0.63mg/L) in 1403203-01, -03, -05, -07, -09, 1403217-01, -03, -05, -07, 1404016-01, -03, and -05

The following blanks have reported results:
4D07018-BLK2 for Ammonia as N; note – associated samples are non-detect for Ammonia

The following matrix spikes exceeded criteria:
4D08002-MSD1 (1404016-05) with a negative bias for Total Kjeldahl Nitrogen

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:
As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated

as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

Lorraine Noronha for

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 03/19/2014)

DoD ELAP, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2014

State of Georgia, Environmental Protection Agency – NELAP
- Expires: 06/30/2014

State of Illinois, Environmental Protection Agency – NELAP, Certificate No.: 003300
- Groundwater
- Solid and Hazardous Waste
- Expires: 09/13/2014

State of Kansas Department of Health and Environment – NELAP, Certificate No.: E-10407
- Aqueous
- Non-aqueous
- Expires: 04/30/2014

State of Kentucky Department of Environmental Protection – NELAP, Certificate No.: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Nevada, Department of Conservation and Natural Resources – NELAP, Certificate No.: TN000042013-1
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

State of New Jersey Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2014

State of North Carolina, Department of Environment and Natural Resources - Certificate No.: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of North Dakota, Department of Health – NELAP, Certificate No.: R-204
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Texas, Commission on Environmental Quality – NELAP, Certificate No.: T104704307-14-10
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of Utah, Department of Health – NELAP, Certificate No.: TN0042013-5
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

Commonwealth of Virginia, Department of General Services – VELAP, Certificate No.: 2633 – Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2014

State of Washington, Department of Ecology – NELAP, Lab ID: C934-14
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2015

Sample Receipt Information

1403203

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-507

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 24 MAR 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: Jennifer Chandler
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119370739

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard X Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab X Archive (mos.)

1. Relinquished By (Signature/Affiliation) Date: 3/25/14 Time: 1700
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Date: 3/26/14 Time: 0850

Comments:

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01 ST105-30003	KAFB0507-GW-ST105-30003-REG	24 MAR 2014	13:12	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
ST105-30003	KAFB0507-GW-ST105-30003-REG	24 MAR 2014	13:12	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30003	KAFB0507-GW-ST105-30003-REG	24 MAR 2014	13:12	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
ST105-30003	KAFB0507-GW-ST105-30003-REG	24 MAR 2014	13:12	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
02 ST105-30003	KAFB0507-GW-ST105-30003-REG	24 MAR 2014	13:12	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

1403203

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-507

Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
03 ST105-30010	KAFB0517-GW-ST105-30010-REG	25 MAR 2014	11:05	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
ST105-30010	KAFB0517-GW-ST105-30010-REG	25 MAR 2014	11:05	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30010	KAFB0517-GW-ST105-30010-REG	25 MAR 2014	11:05	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
ST105-30010	KAFB0517-GW-ST105-30010-REG	25 MAR 2014	11:05	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
ST105-30010	KAFB0517-GW-ST105-30010-REG	25 MAR 2014	11:05	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
04 05 ST105-30011	KAFB0518-GW-ST105-30011-REG	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
ST105-30011	KAFB0518-GW-ST105-30011-REG	25 MAR 2014	14:44	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
ST105-30011	KAFB0518-GW-ST105-30011-REG	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
06 05 ST105-30011	KAFB0518-GW-ST105-30011-REG	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
ST105-30011	KAFB0518-GW-ST105-30011-REG	25 MAR 2014	14:44	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
06 05 ST105-30011-MS	KAFB0518-GW-ST105-30011-MS-MS	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
ST105-30011-MS	KAFB0518-GW-ST105-30011-MS-MS	25 MAR 2014	14:44	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30011-MS	KAFB0518-GW-ST105-30011-MS-MS	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
ST105-30011-MS	KAFB0518-GW-ST105-30011-MS-MS	25 MAR 2014	14:44	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
ST105-30011-MS	KAFB0518-GW-ST105-30011-MS-MS	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
ST105-30011-MS	KAFB0518-GW-ST105-30011-MSD-MSD	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
ST105-30011-MS	KAFB0518-GW-ST105-30011-MSD-MSD	25 MAR 2014	14:44	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
ST105-30011-MS	KAFB0518-GW-ST105-30011-MSD-MSD	25 MAR 2014	14:44	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
ST105-30011-MS	KAFB0518-GW-ST105-30011-MSD-MSD	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
06 ST105-30011-MS	KAFB0518-GW-ST105-30011-MSD-MSD	25 MAR 2014	14:44	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
07 ST105-30020	KAFB0524-GW-ST105-30020-REG	25 MAR 2014	12:15	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite			N		

Kirtlandecos_007

1403203

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-507

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
								by EPA 353.2, Ammonia by SM4500 NH3BG					
07	ST105-30020	KAFB0524-GW-ST105-30020-REG	25 MAR 2014	12:15	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
08	ST105-30020	KAFB0524-GW-ST105-30020-REG	25 MAR 2014	12:15	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
07	ST105-30020	KAFB0524-GW-ST105-30020-REG	25 MAR 2014	12:15	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30020	KAFB0524-GW-ST105-30020-REG	25 MAR 2014	12:15	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
09	ST105-30021	KAFB0525-GW-ST105-30021-REG	25 MAR 2014	16:32	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30021	KAFB0525-GW-ST105-30021-REG	25 MAR 2014	16:32	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30021	KAFB0525-GW-ST105-30021-REG	25 MAR 2014	16:32	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30021	KAFB0525-GW-ST105-30021-REG	25 MAR 2014	16:32	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
10	ST105-30021	KAFB0525-GW-ST105-30021-REG	25 MAR 2014	16:32	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 03/26/14 0850 Workorder# 1403203

1. Tracking # 0739 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: -0.1 °C + *correction factor (+0.1)* = 0.0 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES (NO) NA

4. Were custody seals on outside of cooler? (YES) NO NA

   If yes, how many and where: 2. Front + back

5. Were the seals intact, signed, and dated correctly? (YES) NO NA

6. Were custody papers inside cooler? (YES) NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES (NO) and Intact YES NO (NA)

   Were these signed and dated correctly? YES NO (NA)

8. Packing material used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES) NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES) NO NA

12. Did all container labels and tags agree with custody papers? (YES) NO NA

13. a. Were VOA vials received? YES (NO) NA

    b. Was there any observable headspace present in any VOA vial? YES NO (NA)

14. Was there a Trip Blank in this cooler? YES (NO) NA If multiple coolers, sequence # —

I certify that I unloaded the cooler and answered questions 7-14 (initial) JTG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES) NO NA

    b. Did the bottle labels indicate that the correct preservatives were used (YES) NO NA

16. Was residual chlorine present? YES NO (NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JTG

17. Were custody papers properly filled out (ink, signed, etc)? (YES) NO NA

18. Did you sign the custody papers in the appropriate place? (YES) NO NA

19. Were correct containers used for the analysis requested? (YES) NO NA

20. Was sufficient amount of sample sent in each container? (YES) NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JTG

I certify that I attached a label with the unique LIMS number to each container (initial) JTG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) ☆ No Login 2nd check JTG 3/26/14

21. Were there Non-Conformance issues at login? YES (NO) Was a NCR generated? YES (NO) # _____

Additional Details:

ST 105 1403217

Shaw
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-514

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 27 MAR 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: ~~Jennifer Chandler~~ TN Marianne Walker
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119370740

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) [signature] Date: 3/27/14 Time: 1530
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) [signature] Date: 3/28/14 Time: 850

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30008	KAFB0514-GW-ST105-30008-REG	27 MAR 2014	12:10	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30008	KAFB0514-GW-ST105-30008-REG	27 MAR 2014	12:10	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30008	KAFB0514-GW-ST105-30008-REG	27 MAR 2014	12:10	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
02	ST105-30008	KAFB0514-GW-ST105-30008-REG	27 MAR 2014	12:10	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
01	ST105-30008	KAFB0514-GW-ST105-30008-REG	27 MAR 2014	12:10	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		

1403217

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-514

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
04	ST105-30013	KAFB0520-GW-ST105-30013-REG	26 MAR 2014	10:39	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30013	KAFB0520-GW-ST105-30013-REG	26 MAR 2014	10:39	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30013	KAFB0520-GW-ST105-30013-REG	26 MAR 2014	10:39	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30013	KAFB0520-GW-ST105-30013-REG	26 MAR 2014	10:39	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30013	KAFB0520-GW-ST105-30013-REG	26 MAR 2014	10:39	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
05	ST105-30018	KAFB0522-GW-ST105-30018-REG	26 MAR 2014	14:53	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	~~ST105-30018~~	~~KAFB0522-GW-ST105-30018-REG~~	~~26 MAR 2014~~	~~14:53~~	~~250 mL HDPE~~	~~1~~	~~HNO3<pH 2~~	~~Ca, Mg, K, Na, Fe, and Mn by SW846 6010B~~			~~N~~		
	ST105-30018	KAFB0522-GW-ST105-30018-REG	26 MAR 2014	14:53	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30018	KAFB0522-GW-ST105-30018-REG	26 MAR 2014	14:53	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
06	ST105-30018	KAFB0522-GW-ST105-30018-REG	26 MAR 2014	14:53	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
07	ST105-30038	KAFB0618-GW-ST105-30038-REG	27 MAR 2014	13:47	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30038	KAFB0618-GW-ST105-30038-REG	27 MAR 2014	13:47	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
08	~~ST105-30038~~	~~KAFB0618-GW-ST105-30038-REG~~	~~27 MAR 2014~~	~~13:47~~	~~250 mL HDPE~~	~~1~~	~~H2SO4<pH 2~~	~~Dissolved Organic Carbon by SM 5310C~~			~~N~~		
07	ST105-30038	KAFB0618-GW-ST105-30038-REG	27 MAR 2014	13:47	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30038	KAFB0618-GW-ST105-30038-REG	27 MAR 2014	13:47	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
09	ST105-80001	FIELDQC-BW-ST105-80001-ER	26 MAR 2014	11:15	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
10	ST105-80002	FIELDQC-BW-ST105-80002-ER	27 MAR 2014	12:50	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		

TH 3/28/14

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 03/~~27~~ 28/14 0850 Workorder# 1403217

1. Tracking # Ø74Ø (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 4.7 °C + *correction factor (+0.1)* = 4.8 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

   If yes, how many and where: 2, front + back

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES NO and Intact YES NO NA

   Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

    b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # ____

I certify that I unloaded the cooler and answered questions 7-14 (initial) TH

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

    b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) TH

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) TH

I certify that I attached a label with the unique LIMS number to each container (initial) TH

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) JTG

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO # ____

Additional Details:

1484016

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-616
Page 1 of 2

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 01 APR 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: ~~Jennifer Chandler~~ TN Marianne Walker
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119370772

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Identification:
Non-hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) Roger Shaw Date: 4/1/14 Time: 1600
1. Received By (Signature/Affiliation) Date: Time:
2. Relinquished By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Date: Time:

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30036	KAFB0616-GW-ST105-30036-REG	01 APR 2014	15:31	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30036	KAFB0616-GW-ST105-30036-REG	01 APR 2014	15:31	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30036	KAFB0616-GW-ST105-30036-REG	01 APR 2014	15:31	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
02	ST105-30036	KAFB0616-GW-ST105-30036-REG	01 APR 2014	15:31	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
01	ST105-30036	KAFB0616-GW-ST105-30036-REG	01 APR 2014	15:31	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		

14040 16

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-616

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
04	ST105-30039	KAFB0619-GW-ST105-30039-REG	01 APR 2014	11:12	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30039	KAFB0619-GW-ST105-30039-REG	01 APR 2014	11:12	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30039	KAFB0619-GW-ST105-30039-REG	01 APR 2014	11:12	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30039	KAFB0619-GW-ST105-30039-REG	01 APR 2014	11:12	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30039	KAFB0619-GW-ST105-30039-REG	01 APR 2014	11:12	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
05	ST105-30040	KAFB0619-GW-ST105-30040-FD	01 APR 2014	11:12	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	~~ST105-30040~~	~~KAFB0619-GW-ST105-30040-FD~~	~~01 APR 2014~~	~~11:12~~	~~250 mL HDPE~~	~~1~~	~~None except cool to 4 C~~	~~Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C~~			~~N~~		
	ST105-30040	KAFB0619-GW-ST105-30040-FD	01 APR 2014	11:12	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30040	KAFB0619-GW-ST105-30040-FD	01 APR 2014	11:12	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
06	ST105-30040	KAFB0619-GW-ST105-30040-FD	01 APR 2014	11:12	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

Kirtlandocos_007

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 04/02/14 0845 Workorder# 1404016

1. Tracking # 0772 (last 4 digits, FedEx)

Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: JTG 0.7 °C + correction factor (+0.1) = 0.8 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

If yes, how many and where: 2, front + back

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES NO and Intact YES NO NA

Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # —

I certify that I unloaded the cooler and answered questions 7-14 (initial) JTG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JTG

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JTG

I certify that I attached a label with the unique LIMS number to each container (initial) JTG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) ☆ No Login 2nd Check JTG 4/2/14

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO #

Additional Details:

WORK ORDER

Printed: 4/1/2014 8:26:31AM

1403203

Empirical Laboratories, LLC

Client:	**Shaw Environmental, Inc.**	**Project Manager:**	**Marianne J. Walker**
Project:	**Kirtland AFB (ECOS)**	**Project Number:**	**SHW_Kirtland_ECOS**

Report To:

Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:

Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 04/18/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross — Date Received: 03/26/2014 08:50

Logged In By: Joshua T. Gross — Date Logged In: 03/26/2014 10:28

Samples Received at: **0°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1403203-01 ST105-30003 [Water] Sampled 03/24/2014 13:12 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	04/14/2014 14:00	15	04/07/2014 14:12	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/14/2014 14:00	15	04/21/2014 14:12	
SW9056A	WC_ANIONS_9056A (Regular)	04/14/2014 14:00	15	04/21/2014 14:12	see versions
E353.2	WC_NO3NO2_N_353.2	04/14/2014 14:00	15	04/21/2014 14:12	
E351.2	WC_TKN_351.2	04/14/2014 14:00	15	04/21/2014 14:12	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/14/2014 14:00	15	04/21/2014 14:12	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/14/2014 14:00	15	03/31/2014 14:12	
SW6010C	MET_ICP_LOW6010C_FULL	04/14/2014 14:00	15	09/20/2014 14:12	see versions
1403203-02 ST105-30003 [Water] Sampled 03/24/2014 13:12 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/14/2014 14:00	15	04/21/2014 14:12	

1403203

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Method	Test Code	Due	TAT	Expires	Comments
1403203-03 ST105-30010 [Water] Sampled 03/25/2014 11:05 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	04/14/2014 14:00	15	04/08/2014 12:05	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/14/2014 14:00	15	04/01/2014 12:05	
SW9060A	WC_TOC_9060A_QUAD	04/14/2014 14:00	15	04/22/2014 12:05	
E351.2	WC_TKN_351.2	04/14/2014 14:00	15	04/22/2014 12:05	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	04/14/2014 14:00	15	04/22/2014 12:05	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/14/2014 14:00	15	04/22/2014 12:05	
SW6010C	MET_ICP_LOW6010C_FULL	04/14/2014 14:00	15	09/21/2014 12:05	see versions
SW9056A	WC_ANIONS_9056A (Regular)	04/14/2014 14:00	15	04/22/2014 12:05	see versions
1403203-04 ST105-30010 [Water] Sampled 03/25/2014 11:05 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/14/2014 14:00	15	04/22/2014 12:05	
1403203-05 ST105-30011 [Water] Sampled 03/25/2014 14:44 Mountain 'Client Sample'					**MS/MSD**
E351.2	WC_TKN_351.2	04/14/2014 14:00	15	04/22/2014 15:44	MS/MSD; Outside DoD cert
SW6010C	MET_ICP_LOW6010C_FULL	04/14/2014 14:00	15	09/21/2014 15:44	MS/MSD
SM2320B	WC_ALKALINITY_2320B	04/14/2014 14:00	15	04/08/2014 15:44	MS/MSD
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/14/2014 14:00	15	04/22/2014 15:44	MS/MSD
SW9056A	WC_ANIONS_9056A (Regular)	04/14/2014 14:00	15	04/22/2014 15:44	MS/MSD
SW9060A	WC_TOC_9060A_QUAD	04/14/2014 14:00	15	04/22/2014 15:44	MS/MSD
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/14/2014 14:00	15	04/01/2014 15:44	MS/MSD
E353.2	WC_NO3NO2_N_353.2	04/14/2014 14:00	15	04/22/2014 15:44	MS/MSD
1403203-06 ST105-30011 [Water] Sampled 03/25/2014 14:44 Mountain 'Client Sample'					**MS/MSD, Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/14/2014 14:00	15	04/22/2014 15:44	MS/MSD
1403203-07 ST105-30020 [Water] Sampled 03/25/2014 12:15 Mountain 'Client Sample'					
E351.2	WC_TKN_351.2	04/14/2014 14:00	15	04/22/2014 13:15	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/14/2014 14:00	15	04/22/2014 13:15	
E353.2	WC_NO3NO2_N_353.2	04/14/2014 14:00	15	04/22/2014 13:15	
SW9056A	WC_ANIONS_9056A (Regular)	04/14/2014 14:00	15	04/22/2014 13:15	see versions
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/14/2014 14:00	15	04/22/2014 13:15	
SM2320B	WC_ALKALINITY_2320B	04/14/2014 14:00	15	04/08/2014 13:15	
SW6010C	MET_ICP_LOW6010C_FULL	04/14/2014 14:00	15	09/21/2014 13:15	see versions
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/14/2014 14:00	15	04/01/2014 13:15	

1403203

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Method	Test Code	Due	TAT	Expires	Comments
1403203-08 ST105-30020 [Water] Sampled 03/25/2014 12:15 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/14/2014 14:00	15	04/22/2014 13:15	
1403203-09 ST105-30021 [Water] Sampled 03/25/2014 16:32 Mountain 'Client Sample'					
E353.2	WC_NO3NO2_N_353.2	04/14/2014 14:00	15	04/22/2014 17:32	
E351.2	WC_TKN_351.2	04/14/2014 14:00	15	04/22/2014 17:32	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/14/2014 14:00	15	04/22/2014 17:32	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/14/2014 14:00	15	04/01/2014 17:32	
SW6010C	MET_ICP_LOW6010C_FULL	04/14/2014 14:00	15	09/21/2014 17:32	see versions
SM2320B	WC_ALKALINITY_2320B	04/14/2014 14:00	15	04/08/2014 17:32	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/14/2014 14:00	15	04/22/2014 17:32	
SW9056A	WC_ANIONS_9056A (Regular)	04/14/2014 14:00	15	04/22/2014 17:32	see versions
1403203-10 ST105-30021 [Water] Sampled 03/25/2014 16:32 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/14/2014 14:00	15	04/22/2014 17:32	

Reviewed By

Date

WORK ORDER

Printed: 4/1/2014 8:02:29AM

1403217

Empirical Laboratories, LLC

Client:	**Shaw Environmental, Inc.**	**Project Manager:**	**Marianne J. Walker**
Project:	**Kirtland AFB (ECOS)**	**Project Number:**	**SHW_Kirtland_ECOS**

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 04/18/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Tiana L. Hutchings — Date Received: 03/28/2014 08:50

Logged In By: Tiana L. Hutchings — Date Logged In: 03/28/2014 09:30

Samples Received at: **4.8°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1403217-01 ST105-30008 [Water] Sampled 03/27/2014 12:10 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	04/15/2014 14:00	15	04/10/2014 13:10	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/15/2014 14:00	15	04/24/2014 13:10	
SW9056A	WC_ANIONS_9056A (Regular)	04/15/2014 14:00	15	04/24/2014 13:10	see versions
E353.2	WC_NO3NO2_N_353.2	04/15/2014 14:00	15	04/24/2014 13:10	
E351.2	WC_TKN_351.2	04/15/2014 14:00	15	04/24/2014 13:10	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/15/2014 14:00	15	04/24/2014 13:10	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/15/2014 14:00	15	04/03/2014 13:10	
SW6010C	MET_ICP_LOW6010C_FULL	04/15/2014 14:00	15	09/23/2014 13:10	see versions
1403217-02 ST105-30008 [Water] Sampled 03/27/2014 12:10 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/15/2014 14:00	15	04/24/2014 13:10	

1403217

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Method	Test Code	Due	TAT	Expires	Comments
1403217-03 ST105-30013 [Water] Sampled 03/26/2014 10:39 Mountain 'Client Sample'					
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/15/2014 14:00	15	04/02/2014 11:39	
SW9060A	WC_TOC_9060A_QUAD	04/15/2014 14:00	15	04/23/2014 11:39	
E351.2	WC_TKN_351.2	04/15/2014 14:00	15	04/23/2014 11:39	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	04/15/2014 14:00	15	04/23/2014 11:39	
SW9056A	WC_ANIONS_9056A (Regular)	04/15/2014 14:00	15	04/23/2014 11:39	see versions
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/15/2014 14:00	15	04/23/2014 11:39	
SW6010C	MET_ICP_LOW6010C_FULL	04/15/2014 14:00	15	09/22/2014 11:39	see versions
SM2320B	WC_ALKALINITY_2320B	04/15/2014 14:00	15	04/09/2014 11:39	
1403217-04 ST105-30013 [Water] Sampled 03/26/2014 10:39 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/15/2014 14:00	15	04/23/2014 11:39	
1403217-05 ST105-30018 [Water] Sampled 03/26/2014 14:53 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	04/15/2014 14:00	15	04/09/2014 15:53	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/15/2014 14:00	15	04/23/2014 15:53	
SW9056A	WC_ANIONS_9056A (Regular)	04/15/2014 14:00	15	04/23/2014 15:53	see versions
E353.2	WC_NO3NO2_N_353.2	04/15/2014 14:00	15	04/23/2014 15:53	
E351.2	WC_TKN_351.2	04/15/2014 14:00	15	04/23/2014 15:53	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/15/2014 14:00	15	04/23/2014 15:53	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/15/2014 14:00	15	04/02/2014 15:53	
SW6010C	MET_ICP_LOW6010C_FULL	04/15/2014 14:00	15	09/22/2014 15:53	see versions
1403217-06 ST105-30018 [Water] Sampled 03/26/2014 14:53 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/15/2014 14:00	15	04/23/2014 15:53	
1403217-07 ST105-30038 [Water] Sampled 03/27/2014 13:47 Mountain 'Client Sample'					
SW6010C	MET_ICP_LOW6010C_FULL	04/15/2014 14:00	15	09/23/2014 14:47	see versions
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/15/2014 14:00	15	04/03/2014 14:47	
SW9060A	WC_TOC_9060A_QUAD	04/15/2014 14:00	15	04/24/2014 14:47	
E351.2	WC_TKN_351.2	04/15/2014 14:00	15	04/24/2014 14:47	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	04/15/2014 14:00	15	04/24/2014 14:47	
SW9056A	WC_ANIONS_9056A (Regular)	04/15/2014 14:00	15	04/24/2014 14:47	see versions
SM2320B	WC_ALKALINITY_2320B	04/15/2014 14:00	15	04/10/2014 14:47	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/15/2014 14:00	15	04/24/2014 14:47	

WORK ORDER

Printed: 4/1/2014 8:02:29AM

1403217

Empirical Laboratories, LLC

Client:	**Shaw Environmental, Inc.**	**Project Manager:**	**Marianne J. Walker**
Project:	**Kirtland AFB (ECOS)**	**Project Number:**	**SHW_Kirtland_ECOS**

Method	Test Code	Due	TAT	Expires	Comments
1403217-08 ST105-30038 [Water] Sampled 03/27/2014 13:47 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/15/2014 14:00	15	04/24/2014 14:47	
1403217-09 ST105-80001 [Water] Sampled 03/26/2014 11:15 Mountain 'Client Sample'					
SW6010C	MET_ICP_LOW6010C_FULL	04/15/2014 14:00	15	09/22/2014 12:15	see versions
1403217-10 ST105-80002 [Water] Sampled 03/27/2014 12:50 Mountain 'Client Sample'					
SW6010C	MET_ICP_LOW6010C_FULL	04/15/2014 14:00	15	09/23/2014 13:50	see versions

Reviewed By

Date

WORK ORDER

Printed: 4/3/2014 3:02:25PM

1404016

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 04/23/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross
Date Received: 04/02/2014 08:45
Logged In By: Joshua T. Gross
Date Logged In: 04/02/2014 12:45

Samples Received at: **0.8°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1404016-01 ST105-30036 [Water] Sampled 04/01/2014 15:31 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	04/18/2014 14:00	15	04/15/2014 16:31	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/18/2014 14:00	15	04/29/2014 16:31	
SW9056A	WC_ANIONS_9056A (Regular)	04/18/2014 14:00	15	04/29/2014 16:31	see versions
E353.2	WC_NO3NO2_N_353.2	04/18/2014 14:00	15	04/29/2014 16:31	
E351.2	WC_TKN_351.2	04/18/2014 14:00	15	04/29/2014 16:31	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/18/2014 14:00	15	04/29/2014 16:31	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/18/2014 14:00	15	04/08/2014 16:31	
SW6010C	MET_ICP_LOW6010C_FULL	04/18/2014 14:00	15	09/28/2014 16:31	see versions
1404016-02 ST105-30036 [Water] Sampled 04/01/2014 15:31 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/18/2014 14:00	15	04/29/2014 16:31	

1404016

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Method	Test Code	Due	TAT	Expires	Comments
1404016-03 ST105-30039 [Water] Sampled 04/01/2014 11:12 Mountain 'Client Sample'					
E351.2	WC_TKN_351.2	04/18/2014 14:00	15	04/29/2014 12:12	Outside DoD cert
SW6010C	MET_ICP_LOW6010C_FULL	04/18/2014 14:00	15	09/28/2014 12:12	see versions
SM2320B	WC_ALKALINITY_2320B	04/18/2014 14:00	15	04/15/2014 12:12	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/18/2014 14:00	15	04/29/2014 12:12	
E353.2	WC_NO3NO2_N_353.2	04/18/2014 14:00	15	04/29/2014 12:12	
SW9060A	WC_TOC_9060A_QUAD	04/18/2014 14:00	15	04/29/2014 12:12	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/18/2014 14:00	15	04/08/2014 12:12	
SW9056A	WC_ANIONS_9056A (Regular)	04/18/2014 14:00	15	04/29/2014 12:12	see versions
1404016-04 ST105-30039 [Water] Sampled 04/01/2014 11:12 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/18/2014 14:00	15	04/29/2014 12:12	
1404016-05 ST105-30040 [Water] Sampled 04/01/2014 11:12 Mountain 'Client Sample'					
SW6010C	MET_ICP_LOW6010C_FULL	04/18/2014 14:00	15	09/28/2014 12:12	see versions
SM2320B	WC_ALKALINITY_2320B	04/18/2014 14:00	15	04/15/2014 12:12	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/18/2014 14:00	15	04/29/2014 12:12	
SW9056A	WC_ANIONS_9056A (Regular)	04/18/2014 14:00	15	04/29/2014 12:12	see versions
E353.2	WC_NO3NO2_N_353.2	04/18/2014 14:00	15	04/29/2014 12:12	
E351.2	WC_TKN_351.2	04/18/2014 14:00	15	04/29/2014 12:12	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/18/2014 14:00	15	04/29/2014 12:12	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/18/2014 14:00	15	04/08/2014 12:12	
1404016-06 ST105-30040 [Water] Sampled 04/01/2014 11:12 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/18/2014 14:00	15	04/29/2014 12:12	

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Shaw Environmental, Inc.
PROJECT NAME: Kirtland AFB (ECOS)
SDG #: KirtlandECOS_007

QC LEVEL: Level III
Report Due: 4/23/2014 - 4/23/2014
Client Sample Count: 26

Lab ID	Client ID	Sampled	Received	Matrix	E 351.2	E 353.2	SM 2320B	SM 2540C	SM 4500 NH3BG	SW 6010C	SW 9056A	SW 9060A
1403203-01	ST105-30003	3/24/2014	3/26/2014	Water	X	X	X	X	X	X	X	X
1403203-02	ST105-30003	3/24/2014	3/26/2014	Water								DISS
1403203-03	ST105-30010	3/25/2014	3/26/2014	Water	X	X	X	X	X	X	X	X
1403203-04	ST105-30010	3/25/2014	3/26/2014	Water								DISS
1403203-05	ST105-30011	3/25/2014	3/26/2014	Water	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD
1403203-06	ST105-30011	3/25/2014	3/26/2014	Water								MS/MSD, DISS
1403203-07	ST105-30020	3/25/2014	3/26/2014	Water	X	X	X	X	X	X	X	X
1403203-08	ST105-30020	3/25/2014	3/26/2014	Water								DISS
1403203-09	ST105-30021	3/25/2014	3/26/2014	Water	X	X	X	X	X	X	X	X
1403203-10	ST105-30021	3/25/2014	3/26/2014	Water								DISS
1403217-01	ST105-30008	3/27/2014	3/28/2014	Water	X	X	X	X	X	X	X	X
1403217-02	ST105-30008	3/27/2014	3/28/2014	Water								DISS
1403217-03	ST105-30013	3/26/2014	3/28/2014	Water	X	X	X	X	X	X	X	X
1403217-04	ST105-30013	3/26/2014	3/28/2014	Water								DISS
1403217-05	ST105-30018	3/26/2014	3/28/2014	Water	X	X	X	X	X	X	X	X
1403217-06	ST105-30018	3/26/2014	3/28/2014	Water								DISS
1403217-07	ST105-30038	3/27/2014	3/28/2014	Water	X	X	X	X	X	X	X	X
1403217-08	ST105-30038	3/27/2014	3/28/2014	Water								DISS
1403217-09	ST105-80001	3/26/2014	3/28/2014	Water						X		
1403217-10	ST105-80002	3/27/2014	3/28/2014	Water						X		
1404016-01	ST105-30036	4/1/2014	4/2/2014	Water	X	X	X	X	X	X	X	X
1404016-02	ST105-30036	4/1/2014	4/2/2014	Water								DISS
1404016-03	ST105-30039	4/1/2014	4/2/2014	Water	X	X	X	X	X	X	X	X
1404016-04	ST105-30039	4/1/2014	4/2/2014	Water								DISS
1404016-05	ST105-30040	4/1/2014	4/2/2014	Water	X	X	X	X	X	X	X	X
1404016-06	ST105-30040	4/1/2014	4/2/2014	Water								DISS

Data for SW6010C Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-01 [ST105-30003]	4D07013	100.00/25.00	100	25.0	1.00			04/07/14
1403203-03 [ST105-30010]	4D07013	100.00/25.00	100	25.0	1.00			04/07/14
1403203-07 [ST105-30020]	4D07013	100.00/25.00	100	25.0	1.00			04/07/14
1403203-09 [ST105-30021]	4D07013	100.00/25.00	100	25.0	1.00			04/07/14
1404016-01 [ST105-30036]	4D07013	100.00/25.00	100	25.0	1.00			04/07/14
1404016-03 [ST105-30039]	4D07013	100.00/25.00	100	25.0	1.00			04/07/14
1404016-05 [ST105-30040]	4D07013	100.00/25.00	100	25.0	1.00			04/07/14

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-05 [ST105-30011]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14
1403217-01 [ST105-30008]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14
1403217-03 [ST105-30013]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14
1403217-05 [ST105-30018]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14
1403217-07 [ST105-30038]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14
1403217-09 [ST105-80001]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14
1403217-10 [ST105-80002]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14

ANALYSIS DATA SHEET

ST105-30003

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-01
Sampled:	03/24/14 13:12	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**68300**	**250**	500	1250	1		SW6010C	4D07013	04/17/14 12:07
7439-89-6	Iron	**9.74**	**7.50**	15.0	25.0	1	J	SW6010C	4D07013	04/17/14 12:07
7439-95-4	Magnesium	**11200**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:07
7439-96-5	Manganese	**0.757**	**0.750**	1.50	3.75	1	J	SW6010C	4D07013	04/17/14 12:07
7440-09-7	Potassium	**2360**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:07
7440-23-5	Sodium	**28700**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:07

ANALYSIS DATA SHEET

ST105-30010

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-03
Sampled:	03/25/14 11:05	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**72200**	**250**	500	1250	1		SW6010C	4D07013	04/17/14 12:12
7439-89-6	Iron	**12.4**	**7.50**	15.0	25.0	1	J	SW6010C	4D07013	04/17/14 12:12
7439-95-4	Magnesium	**8040**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:12
7439-96-5	Manganese	**0.784**	**0.750**	1.50	3.75	1	J	SW6010C	4D07013	04/17/14 12:12
7440-09-7	Potassium	**3430**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:12
7440-23-5	Sodium	**32000**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:12

ANALYSIS DATA SHEET

ST105-30011

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-05
Sampled:	03/25/14 14:44	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**40000**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 14:45
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4D10009	04/17/14 14:45
7439-95-4	Magnesium	**4410**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:45
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4D10009	04/17/14 14:45
7440-09-7	Potassium	**2500**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:45
7440-23-5	Sodium	**21600**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:45

ANALYSIS DATA SHEET

ST105-30020

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-07
Sampled:	03/25/14 12:15	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**35000**	**250**	500	1250	1		SW6010C	4D07013	04/17/14 12:16
7439-89-6	Iron	**12.4**	**7.50**	15.0	25.0	1	J	SW6010C	4D07013	04/17/14 12:16
7439-95-4	Magnesium	**5480**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:16
7439-96-5	Manganese	**1.45**	**0.750**	1.50	3.75	1	J	SW6010C	4D07013	04/17/14 12:16
7440-09-7	Potassium	**2150**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:16
7440-23-5	Sodium	**24400**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:16

ANALYSIS DATA SHEET

ST105-30021

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-09
Sampled:	03/25/14 16:32	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**73000**	**250**	500	1250	1		SW6010C	4D07013	04/17/14 12:21
7439-89-6	Iron	**9.60**	**7.50**	15.0	25.0	1	J	SW6010C	4D07013	04/17/14 12:21
7439-95-4	Magnesium	**13200**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:21
7439-96-5	Manganese	**0.863**	**0.750**	1.50	3.75	1	J	SW6010C	4D07013	04/17/14 12:21
7440-09-7	Potassium	**2810**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:21
7440-23-5	Sodium	**27800**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:21

ANALYSIS DATA SHEET

ST105-30008

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-01
Sampled:	03/27/14 12:10	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**88900**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 15:07
7439-89-6	Iron	**10.3**	**7.50**	15.0	25.0	1	J	SW6010C	4D10009	04/17/14 15:07
7439-95-4	Magnesium	**12900**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:07
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4D10009	04/17/14 15:07
7440-09-7	Potassium	**3280**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:07
7440-23-5	Sodium	**26400**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:07

ANALYSIS DATA SHEET

ST105-30013

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-03
Sampled:	03/26/14 10:39	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**47300**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 15:12
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4D10009	04/17/14 15:12
7439-95-4	Magnesium	**7400**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:12
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4D10009	04/17/14 15:12
7440-09-7	Potassium	**2620**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:12
7440-23-5	Sodium	**29200**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:12

ANALYSIS DATA SHEET

ST105-30018

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-05
Sampled:	03/26/14 14:53	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**63600**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 15:16
7439-89-6	Iron	**9.13**	**7.50**	15.0	25.0	1	J	SW6010C	4D10009	04/17/14 15:16
7439-95-4	Magnesium	**10400**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:16
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4D10009	04/17/14 15:16
7440-09-7	Potassium	**2360**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:16
7440-23-5	Sodium	**27100**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:16

ANALYSIS DATA SHEET

ST105-30038

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-07
Sampled:	03/27/14 13:47	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**31600**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 15:21
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4D10009	04/17/14 15:21
7439-95-4	Magnesium	**4840**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:21
7439-96-5	Manganese	**1.01**	**0.750**	1.50	3.75	1	J	SW6010C	4D10009	04/17/14 15:21
7440-09-7	Potassium	**5190**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:21
7440-23-5	Sodium	**52300**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:21

ANALYSIS DATA SHEET

ST105-80001

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-09
Sampled:	03/26/14 11:15	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium		250	500	1250	1	U	SW6010C	4D10009	04/17/14 15:25
7439-89-6	Iron	**162**	**7.50**	15.0	25.0	1		SW6010C	4D10009	04/17/14 15:25
7439-95-4	Magnesium		250	750	1250	1	U	SW6010C	4D10009	04/17/14 15:25
7439-96-5	Manganese	**3.26**	**0.750**	1.50	3.75	1	J	SW6010C	4D10009	04/17/14 15:25
7440-09-7	Potassium		250	750	1250	1	U	SW6010C	4D10009	04/17/14 15:25
7440-23-5	Sodium	**2450**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:25

ANALYSIS DATA SHEET

ST105-80002

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-10
Sampled:	03/27/14 12:50	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium		250	500	1250	1	U	SW6010C	4D10009	04/17/14 15:30
7439-89-6	Iron	**28.2**	**7.50**	15.0	25.0	1		SW6010C	4D10009	04/17/14 15:30
7439-95-4	Magnesium		250	750	1250	1	U	SW6010C	4D10009	04/17/14 15:30
7439-96-5	Manganese	**1.38**	**0.750**	1.50	3.75	1	J	SW6010C	4D10009	04/17/14 15:30
7440-09-7	Potassium		250	750	1250	1	U	SW6010C	4D10009	04/17/14 15:30
7440-23-5	Sodium	**2360**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 15:30

ANALYSIS DATA SHEET

ST105-30036

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-01
Sampled:	04/01/14 15:31	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**74100**	**250**	500	1250	1		SW6010C	4D07013	04/17/14 12:30
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4D07013	04/17/14 12:30
7439-95-4	Magnesium	**16500**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:30
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4D07013	04/17/14 12:30
7440-09-7	Potassium	**2520**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:30
7440-23-5	Sodium	**28200**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:30

ANALYSIS DATA SHEET

ST105-30039

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-03
Sampled:	04/01/14 11:12	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**41900**	**250**	500	1250	1		SW6010C	4D07013	04/17/14 12:47
7439-89-6	Iron	**450**	**7.50**	15.0	25.0	1		SW6010C	4D07013	04/17/14 12:47
7439-95-4	Magnesium	**8330**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:47
7439-96-5	Manganese	**7.19**	**0.750**	1.50	3.75	1		SW6010C	4D07013	04/17/14 12:47
7440-09-7	Potassium	**3670**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:47
7440-23-5	Sodium	**40400**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:47

ANALYSIS DATA SHEET

ST105-30040

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-05
Sampled:	04/01/14 11:12	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**41600**	**250**	500	1250	1		SW6010C	4D07013	04/17/14 12:52
7439-89-6	Iron	**424**	**7.50**	15.0	25.0	1		SW6010C	4D07013	04/17/14 12:52
7439-95-4	Magnesium	**8220**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:52
7439-96-5	Manganese	**6.68**	**0.750**	1.50	3.75	1		SW6010C	4D07013	04/17/14 12:52
7440-09-7	Potassium	**3650**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:52
7440-23-5	Sodium	**39700**	**250**	750	1250	1		SW6010C	4D07013	04/17/14 12:52

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4D07013-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4D07013	04/17/14 11:40
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4D07013	04/17/14 11:40
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4D07013	04/17/14 11:40
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4D07013	04/17/14 11:40
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4D07013	04/17/14 11:40
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4D07013	04/17/14 11:40

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D07013-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**567.1**	**250**	500	1250	1	J	SW6010C	4D07013	04/17/14 11:44
7439-89-6	Iron	**20.12**	**7.50**	15.0	25.0	1	J	SW6010C	4D07013	04/17/14 11:44
7439-95-4	Magnesium	**609.2**	**250**	750	1250	1	J	SW6010C	4D07013	04/17/14 11:44
7439-96-5	Manganese	**9.981**	**0.750**	1.50	3.75	1		SW6010C	4D07013	04/17/14 11:44
7440-09-7	Potassium	**557.7**	**250**	750	1250	1	J	SW6010C	4D07013	04/17/14 11:44
7440-23-5	Sodium	**593.9**	**250**	750	1250	1	J	SW6010C	4D07013	04/17/14 11:44

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10009-BLK1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4D10009	04/17/14 14:35
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4D10009	04/17/14 14:35
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4D10009	04/17/14 14:35
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4D10009	04/17/14 14:35
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4D10009	04/17/14 14:35
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4D10009	04/17/14 14:35

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10009-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**579.1**	**250**	500	1250	1	J	SW6010C	4D10009	04/17/14 14:40
7439-89-6	Iron	**18.07**	**7.50**	15.0	25.0	1	J	SW6010C	4D10009	04/17/14 14:40
7439-95-4	Magnesium	**595.6**	**250**	750	1250	1	J	SW6010C	4D10009	04/17/14 14:40
7439-96-5	Manganese	**9.632**	**0.750**	1.50	3.75	1		SW6010C	4D10009	04/17/14 14:40
7440-09-7	Potassium	**569.4**	**250**	750	1250	1	J	SW6010C	4D10009	04/17/14 14:40
7440-23-5	Sodium	**599.8**	**250**	750	1250	1	J	SW6010C	4D10009	04/17/14 14:40

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10009-DUP1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**41660**	**1250**	2500	6250	5	D	SW6010C	4D10009	04/17/14 15:03
7439-89-6	Iron	ND	37.5	75.0	125	5	U	SW6010C	4D10009	04/17/14 15:03
7439-95-4	Magnesium	**4627**	**1250**	3750	6250	5	JD	SW6010C	4D10009	04/17/14 15:03
7439-96-5	Manganese	ND	3.75	7.50	18.8	5	U	SW6010C	4D10009	04/17/14 15:03
7440-09-7	Potassium	**2479**	**1250**	3750	6250	5	JD	SW6010C	4D10009	04/17/14 15:03
7440-23-5	Sodium	**22290**	**1250**	3750	6250	5	D	SW6010C	4D10009	04/17/14 15:03

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Laboratory ID: 4D10009-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**40120**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 14:50
7439-89-6	Iron	**230.9**	**7.50**	15.0	25.0	1		SW6010C	4D10009	04/17/14 14:50
7439-95-4	Magnesium	**5450**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:50
7439-96-5	Manganese	**111.4**	**0.750**	1.50	3.75	1		SW6010C	4D10009	04/17/14 14:50
7440-09-7	Potassium	**3597**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:50
7440-23-5	Sodium	**22280**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:50

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10009-MSD1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**39940**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 14:54
7439-89-6	Iron	**237.6**	**7.50**	15.0	25.0	1		SW6010C	4D10009	04/17/14 14:54
7439-95-4	Magnesium	**5461**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:54
7439-96-5	Manganese	**113.9**	**0.750**	1.50	3.75	1		SW6010C	4D10009	04/17/14 14:54
7440-09-7	Potassium	**3652**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:54
7440-23-5	Sodium	**22520**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 14:54

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 4107004
Sequence: 4D10710

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10710-ICV1	Calcium	50000	48650	97.3	ug/L	+/- 10.00%
	Iron	10000	10380	104	ug/L	+/- 10.00%
	Magnesium	50000	51270	103	ug/L	+/- 10.00%
	Manganese	1000	1016	102	ug/L	+/- 10.00%
	Potassium	10000	10060	101	ug/L	+/- 10.00%
	Sodium	50000	51310	103	ug/L	+/- 10.00%
4D10710-CCV1	Calcium	50000	50290	101	ug/L	+/- 10.00%
	Iron	10000	10390	104	ug/L	+/- 10.00%
	Magnesium	50000	51920	104	ug/L	+/- 10.00%
	Manganese	1000	1029	103	ug/L	+/- 10.00%
	Potassium	10000	10130	101	ug/L	+/- 10.00%
	Sodium	50000	51900	104	ug/L	+/- 10.00%
4D10710-CCV2	Calcium	50000	50160	100	ug/L	+/- 10.00%
	Iron	10000	10380	104	ug/L	+/- 10.00%
	Magnesium	50000	51780	104	ug/L	+/- 10.00%
	Manganese	1000	1011	101	ug/L	+/- 10.00%
	Potassium	10000	10120	101	ug/L	+/- 10.00%
	Sodium	50000	51850	104	ug/L	+/- 10.00%
4D10710-CCV3	Calcium	50000	50150	100	ug/L	+/- 10.00%
	Iron	10000	10130	101	ug/L	+/- 10.00%
	Magnesium	50000	50560	101	ug/L	+/- 10.00%
	Manganese	1000	1011	101	ug/L	+/- 10.00%
	Potassium	10000	10120	101	ug/L	+/- 10.00%
	Sodium	50000	51570	103	ug/L	+/- 10.00%
4D10710-CCV4	Calcium	50000	50500	101	ug/L	+/- 10.00%
	Iron	10000	10030	100	ug/L	+/- 10.00%
	Magnesium	50000	50600	101	ug/L	+/- 10.00%
	Manganese	1000	1002	100	ug/L	+/- 10.00%
	Potassium	10000	10120	101	ug/L	+/- 10.00%
	Sodium	50000	51420	103	ug/L	+/- 10.00%
4D10710-CCV5	Calcium	50000	50430	101	ug/L	+/- 10.00%
	Iron	10000	10050	100	ug/L	+/- 10.00%
	Magnesium	50000	50610	101	ug/L	+/- 10.00%
	Manganese	1000	1007	101	ug/L	+/- 10.00%
	Potassium	10000	10110	101	ug/L	+/- 10.00%
	Sodium	50000	51360	103	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4107004

Sequence: 4D10710

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D10710-CRL1	Calcium	2000	1910	95.5	ug/L	80 - 120
	Iron	60.00	58.65	97.8	ug/L	80 - 120
	Magnesium	3000	3042	101	ug/L	80 - 120
	Manganese	6.000	5.963	99.4	ug/L	80 - 120
	Potassium	3000	2777	92.6	ug/L	80 - 120
	Sodium	3000	2930	97.7	ug/L	80 - 120

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4D10710
Calibration: 4107004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10710-ICB1	Calcium	-1.520	1000	5000	ug/L	U	SW6010C
	Iron	7.058	30.0	100	ug/L	U	SW6010C
	Magnesium	0.3100	1000	5000	ug/L	U	SW6010C
	Manganese	0.02819	3.00	15.0	ug/L	U	SW6010C
	Potassium	30.38	1000	5000	ug/L	U	SW6010C
	Sodium	12.94	1000	5000	ug/L	U	SW6010C
4D10710-CCB1	Calcium	15.4	1000	5000	ug/L	U	SW6010C
	Iron	9.32	30.0	100	ug/L	U	SW6010C
	Magnesium	20.0	1000	5000	ug/L	U	SW6010C
	Manganese	0.299	3.00	15.0	ug/L	U	SW6010C
	Potassium	7.61	1000	5000	ug/L	U	SW6010C
	Sodium	12.6	1000	5000	ug/L	U	SW6010C
4D07013-BLK1	Calcium	3.86	250	1250	ug/L	U	SW6010C
	Iron	2.08	7.50	25.0	ug/L	U	SW6010C
	Magnesium	6.95	250	1250	ug/L	U	SW6010C
	Manganese	0.138	0.750	3.75	ug/L	U	SW6010C
	Potassium	11.8	250	1250	ug/L	U	SW6010C
	Sodium	7.72	250	1250	ug/L	U	SW6010C
4D10710-CCB2	Calcium	20.8	1000	5000	ug/L	U	SW6010C
	Iron	-0.991	30.0	100	ug/L	U	SW6010C
	Magnesium	4.16	1000	5000	ug/L	U	SW6010C
	Manganese	0.0797	3.00	15.0	ug/L	U	SW6010C
	Potassium	33.2	1000	5000	ug/L	U	SW6010C
	Sodium	34.6	1000	5000	ug/L	U	SW6010C
4D10710-CCB3	Calcium	5.33	1000	5000	ug/L	U	SW6010C
	Iron	-3.15	30.0	100	ug/L	U	SW6010C
	Magnesium	-8.17	1000	5000	ug/L	U	SW6010C
	Manganese	0.0490	3.00	15.0	ug/L	U	SW6010C
	Potassium	-20.8	1000	5000	ug/L	U	SW6010C
	Sodium	39.8	1000	5000	ug/L	U	SW6010C
4D10710-CCB4	Calcium	-3.62	1000	5000	ug/L	U	SW6010C
	Iron	-4.17	30.0	100	ug/L	U	SW6010C
	Magnesium	-0.760	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4D10710
Calibration: 4107004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10710-CCB4	Manganese	0.000410	3.00	15.0	ug/L	U	SW6010C
	Potassium	31.4	1000	5000	ug/L	U	SW6010C
	Sodium	19.8	1000	5000	ug/L	U	SW6010C
4D10009-BLK1	Calcium	3.28	250	1250	ug/L	U	SW6010C
	Iron	-0.398	7.50	25.0	ug/L	U	SW6010C
	Magnesium	1.92	250	1250	ug/L	U	SW6010C
	Manganese	0.0266	0.750	3.75	ug/L	U	SW6010C
	Potassium	-1.96	250	1250	ug/L	U	SW6010C
	Sodium	9.78	250	1250	ug/L	U	SW6010C
4D10710-CCB5	Calcium	4.71	1000	5000	ug/L	U	SW6010C
	Iron	-3.35	30.0	100	ug/L	U	SW6010C
	Magnesium	-3.64	1000	5000	ug/L	U	SW6010C
	Manganese	0.0325	3.00	15.0	ug/L	U	SW6010C
	Potassium	29.0	1000	5000	ug/L	U	SW6010C
	Sodium	39.8	1000	5000	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4107004
Sequence: 4D10710

Lab Sample ID	Analyte	True	Found	%R	Units
4D10710-IFA1	Calcium	500000	459,790.00	92.0	ug/L
	Iron	200000	198,930.00	99.5	ug/L
	Magnesium	500000	494,090.00	98.8	ug/L
	Manganese		-1.22		ug/L
	Potassium		-43.50		ug/L
	Sodium		81.70		ug/L
4D10710-IFB1	Calcium	500000	453,930.00	90.8	ug/L
	Iron	200000	199,570.00	99.8	ug/L
	Magnesium	500000	488,050.00	97.6	ug/L
	Manganese	500.0	501.85	100	ug/L
	Potassium		-37.52		ug/L
	Sodium		39.87		ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

ST105-30011

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D10009

% Solids:

Source Sample Name: **1403203-05**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Calcium	1250	40020	40120	8.20	4x	80 - 120
Iron	250.0	ND	230.9	92.4		80 - 120
Magnesium	1250	4409	5450	83.3		80 - 120
Manganese	125.0	ND	111.4	89.2		80 - 120
Potassium	1250	2496	3597	88.0		80 - 120
Sodium	1250	21570	22280	56.5	4x	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Calcium	1250	39940	-6.20	0.450	4x	20	80 - 120
Iron	250.0	237.6	95.1	2.89		20	80 - 120
Magnesium	1250	5461	84.1	0.192		20	80 - 120
Manganese	125.0	113.9	91.1	2.17		20	80 - 120
Potassium	1250	3652	92.4	1.52		20	80 - 120
Sodium	1250	22520	75.4	1.05	4x	20	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

ST105-30011

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4D10009-PS1
Batch: 4D10009
Lab Source ID: 1403203-05
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Calcium	**161300**	**160100**	**5000**	**24.6**	**80 - 120**
Iron	1027	ND	1000	101	80 - 120
Magnesium	22380	17640	5000	94.8	80 - 120
Manganese	500.8	ND	500.0	99.9	80 - 120
Potassium	15080	9985	5000	102	80 - 120
Sodium	90340	86290	5000	80.9	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D07013	Laboratory ID:	4D07013-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	567.1	94.5	80 - 120
Iron	20.00	20.12	101	80 - 120
Magnesium	600.0	609.2	102	80 - 120
Manganese	10.00	9.981	99.8	80 - 120
Potassium	600.0	557.7	92.9	80 - 120
Sodium	600.0	593.9	99.0	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D10009	Laboratory ID:	4D10009-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	579.1	96.5	80 - 120
Iron	20.00	18.07	90.4	80 - 120
Magnesium	600.0	595.6	99.3	80 - 120
Manganese	10.00	9.632	96.3	80 - 120
Potassium	600.0	569.4	94.9	80 - 120
Sodium	600.0	599.8	100	80 - 120

SERIAL DILUTION

SW6010C

ST105-30011

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Sequence: 4D10710
Preparation: MET_3005A_LOW

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D10009-DUP1
Lab Source ID: 1403203-05
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Calcium	160060	166660	4.12		SW6010C	10.00
Iron	ND	ND			SW6010C	10.00
Magnesium	17636	18509	4.95		SW6010C	10.00
Manganese	ND	ND			SW6010C	10.00
Potassium	9985	9915	-0.701		SW6010C	10.00
Sodium	86293	89165	3.33		SW6010C	10.00

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_007

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_007

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_007

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_007

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_007

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_007

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Calcium	317.933	0.000000				
Calcium	317.933	0.000000				
Calcium	317.933	0.000000				
Iron	261.187	0.000000				
Iron	261.187	0.000000				
Iron	261.187	0.000000				
Magnesium	279.079	0.000000				
Magnesium	279.079	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.61	0.000000				
Manganese	257.61	0.000000				
Manganese	257.61	0.000000				
Potassium	766.49	0.000000				
Potassium	766.49	0.000000				
Potassium	766.49	0.000000				
Sodium	589.592	0.000000				
Sodium	589.592	0.000000				
Sodium	589.592	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc. SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

ICP Instrument ID: ME-ICP Date: 12/27/2013

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Calcium	15	500000	P
Calcium	15	500000	P
Calcium	15	500000	P
Iron	15	500000	P
Iron	15	500000	P
Iron	15	500000	P
Magnesium	15	500000	P
Magnesium	15	500000	P
Magnesium	15	500000	P
Manganese	15	15000	P
Manganese	15	15000	P
Manganese	15	15000	P
Potassium	15	100000	P
Potassium	15	100000	P
Potassium	15	100000	P
Sodium	15	500000	P
Sodium	15	500000	P
Sodium	15	500000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D07013 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30003	1403203-01	04/07/14 08:28	100.00	25.00
ST105-30010	1403203-03	04/07/14 08:28	100.00	25.00
ST105-30020	1403203-07	04/07/14 08:28	100.00	25.00
ST105-30021	1403203-09	04/07/14 08:28	100.00	25.00
ST105-30036	1404016-01	04/07/14 08:28	100.00	25.00
ST105-30039	1404016-03	04/07/14 08:28	100.00	25.00
ST105-30040	1404016-05	04/07/14 08:28	100.00	25.00
Blank	4D07013-BLK1	04/07/14 08:28	100.00	25.00
LCS	4D07013-BS1	04/07/14 08:28	100.00	25.00

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D10009 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30011	1403203-05	04/10/14 08:55	100.00	25.00
ST105-30008	1403217-01	04/10/14 08:55	100.00	25.00
ST105-30013	1403217-03	04/10/14 08:55	100.00	25.00
ST105-30018	1403217-05	04/10/14 08:55	100.00	25.00
ST105-30038	1403217-07	04/10/14 08:55	100.00	25.00
ST105-80001	1403217-09	04/10/14 08:55	100.00	25.00
ST105-80002	1403217-10	04/10/14 08:55	100.00	25.00
Blank	4D10009-BLK1	04/10/14 08:55	100.00	25.00
LCS	4D10009-BS1	04/10/14 08:55	100.00	25.00
ST105-30011	4D10009-DUP1	04/10/14 08:55	100.00	25.00
ST105-30011	4D10009-MS1	04/10/14 08:55	100.00	25.00
ST105-30011	4D10009-MSD1	04/10/14 08:55	100.00	25.00
ST105-30011	4D10009-PS1	04/10/14 08:55	100.00	25.00

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10710	Instrument:	ME-ICP
Calibration:	4107004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D10710-CAL1	4-17-14A-001	04/17/14 09:22
Cal Standard	4D10710-CAL2	4-17-14A-002	04/17/14 09:25
Cal Standard	4D10710-CAL3	4-17-14A-003	04/17/14 09:29
Cal Standard	4D10710-CAL4	4-17-14A-004	04/17/14 09:33
Cal Standard	4D10710-CAL5	4-17-14A-005	04/17/14 09:38
Cal Standard	4D10710-CAL6	4-17-14A-006	04/17/14 09:42
Cal Standard	4D10710-CAL7	4-17-14A-008	04/17/14 09:54
Cal Standard	4D10710-CAL8	4-17-14A-009	04/17/14 09:59
Initial Cal Check	4D10710-ICV1	4-17-14B-001	04/17/14 10:40
Initial Cal Blank	4D10710-ICB1	4-17-14B-002	04/17/14 10:47
Instrument RL Check	4D10710-CRL1	4-17-14B-004	04/17/14 10:57
Interference Check A	4D10710-IFA1	4-17-14B-007	04/17/14 11:14
Interference Check B	4D10710-IFB1	4-17-14B-008	04/17/14 11:20
Calibration Check	4D10710-CCV1	4-17-14B-010	04/17/14 11:28
Calibration Blank	4D10710-CCB1	4-17-14B-011	04/17/14 11:36
Blank	4D07013-BLK1	4-17-14B-012	04/17/14 11:40
LCS	4D07013-BS1	4-17-14B-013	04/17/14 11:44
ST105-30003	1403203-01	4-17-14B-018	04/17/14 12:07
ST105-30010	1403203-03	4-17-14B-019	04/17/14 12:12
ST105-30020	1403203-07	4-17-14B-020	04/17/14 12:16
ST105-30021	1403203-09	4-17-14B-021	04/17/14 12:21
ST105-30036	1404016-01	4-17-14B-023	04/17/14 12:30
Calibration Check	4D10710-CCV2	4-17-14B-024	04/17/14 12:35
Calibration Blank	4D10710-CCB2	4-17-14B-025	04/17/14 12:43
ST105-30039	1404016-03	4-17-14B-026	04/17/14 12:47
ST105-30040	1404016-05	4-17-14B-027	04/17/14 12:52
Calibration Check	4D10710-CCV3	4-17-14B-039	04/17/14 13:48
Calibration Blank	4D10710-CCB3	4-17-14B-040	04/17/14 13:55
Calibration Check	4D10710-CCV4	4-17-14B-044	04/17/14 14:22
Calibration Blank	4D10710-CCB4	4-17-14B-045	04/17/14 14:30
Blank	4D10009-BLK1	4-17-14C-001	04/17/14 14:35
LCS	4D10009-BS1	4-17-14C-002	04/17/14 14:40

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10710	Instrument:	ME-ICP
Calibration:	4107004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
ST105-30011	1403203-05	4-17-14C-003	04/17/14 14:45
ST105-30011	4D10009-MS1	4-17-14C-004	04/17/14 14:50
ST105-30011	4D10009-MSD1	4-17-14C-005	04/17/14 14:54
ST105-30011	4D10009-PS1	4-17-14C-006	04/17/14 14:58
ST105-30011	4D10009-DUP1	4-17-14C-007	04/17/14 15:03
ST105-30008	1403217-01	4-17-14C-008	04/17/14 15:07
ST105-30013	1403217-03	4-17-14C-009	04/17/14 15:12
ST105-30018	1403217-05	4-17-14C-010	04/17/14 15:16
ST105-30038	1403217-07	4-17-14C-011	04/17/14 15:21
ST105-80001	1403217-09	4-17-14C-012	04/17/14 15:25
ST105-80002	1403217-10	4-17-14C-013	04/17/14 15:30
Calibration Check	4D10710-CCV5	4-17-14C-017	04/17/14 15:48
Calibration Blank	4D10710-CCB5	4-17-14C-018	04/17/14 15:56

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4107004	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/17/14 9:22 4/17/14 9:59

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.1816E-05	10000	2.208E-05			500000	2.168E-05		
Antimony	0	0	100	0.0004051	1000	5.1618E-04					10000	5.2144E-04
Arsenic	0	0	100	0.000246	1000	2.8129E-04					10000	2.6872E-04
Barium	0	0	50	0.0086392	1000	0.008387	5000	0.0088492				
Beryllium	0	0	100	0.0024075	1000	0.0024071					10000	0.0023365
Boron	0	0	50	0.0000158	1000	0.0000152					5000	1.5378E-05
Cadmium	0	0	100	0.0143	1000	0.013864					10000	0.013373
Calcium	0	0	1100	7.456364E-05	50000	6.2632E-05					10000	
Chromium	0	0	100	0.0000517	1000	5.075E-05					10000	5.1165E-05
Cobalt	0	0	100	0.0042997	1000	0.0042544					10000	0.0044036
Copper	0	0	100	0.0000858	1000	8.032E-05					10000	8.1778E-05
Iron	0	0	5100	1.683726E-05	10000	1.6628E-05			500000	1.62724E-05	10000	
Lead	0	0	100	0.0010108	1000	0.0010056					10000	0.0010541
Magnesium	0	0	5100		50000	2.7332E-06			500000	2.7282E-06	10000	
Manganese	0	0	100	0.0003229	1000	0.0003066	10000	3.1286E-04			10000	
Molybdenum	0	0	100	0.0030251	1000	0.0032636					10000	0.0032121
Nickel	0	0	100	0.0027261	1000	0.0027401					10000	0.0027878
Potassium	0	0	1000	1.115E-05	10000	1.4198E-05						
Selenium	0	0	100	0.0004012	1000	3.9368E-04					10000	3.7577E-04
Silver	0	0	20	0.0000625	500	5.456E-05	2000	5.7705E-05				
Sodium	0	0	1000		50000	5.046E-05						
Thallium	0	0	100	0.0005528	1000	5.3699E-04					10000	5.5263E-04
Tin	0	0	50	0.0013488	1000	0.0013508					5000	0.0013744
Titanium	0	0	100	0.0001941	1000	1.8842E-04					10000	1.9225E-04
Vanadium	0	0	100	0.000055	1000	5.399E-05					10000	5.4399E-05
Zinc	0	0	100	0.0054278	1000	0.0056196					10000	0.0053319
Strontium	0	0	100	0.001544	1000	0.001515					10000	0.001522
Lithium (outside certification)	0	0	100	0.0000113	1000	1.183E-05					10000	1.1371E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4107004	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/17/14 9:22 4/17/14 9:59

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.341E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.7623E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.4329E-05										
Selenium												
Silver												
Sodium	100000	4.9565E-05	500000	4.8654E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4107004		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	4/17/14 9:22	4/17/14 9:59

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.6394E-05	66.67436	6.42904	190.7855	0.9999998		0.998	
Antimony	3.6068E-04	68.30572	0.7492475	64.21794	0.9999989		0.998	
Arsenic	1.990025E-04	67.06938	1.507468	115.0742	0.9999706		0.998	
Barium	6.46885E-03	66.73062	2.344623	176.854	0.9998823		0.998	
Beryllium	1.787775E-03	66.6928	1.732167	129.2902	0.9999916		0.998	
Boron	1.15945E-05	66.70198	5.294925	142.2543	0.9999927		0.998	
Cadmium	1.038425E-02	66.76632	1.291935	114.8184	0.9999885		0.998	
Calcium	5.015141E-05	67.54672	1.761512	164.6132	0.9999979		0.998	
Chromium	3.840375E-05	66.67436	25.54795	186.6303	0.9999993		0.998	
Cobalt	3.239425E-03	66.69454	0.9315175	117.7745	0.9999888		0.998	
Copper	6.19745E-05	66.77145	2.386613	87.3855	0.9999956		0.998	
Iron	1.243441E-05	66.69305	8.302335	194.1929	0.9999999		0.998	
Lead	7.67625E-04	66.7268	10.88328	193.3898	0.9999808		0.998	
Magnesium	2.055925E-06	66.67068	25.59571	197.7541	0.9999932		0.998	
Manganese	2.3559E-04	66.72755	14.12945	172.8396	0.9999953		0.998	
Molybdenum	0.0023752	66.80612	15.65115	194.7657	0.9999963		0.998	
Nickel	0.0020635	66.67895	77.02929	198.7822	0.9999974		0.998	
Potassium	9.91925E-06	68.29111	1.703935	152.2689	0.9999986		0.998	
Selenium	2.926625E-04	66.76622	3.4948	172.9708	0.9999823		0.998	
Silver	4.369125E-05	67.08412	4.036782	125.4507	0.9997719		0.998	
Sodium	3.716975E-05	66.69617	1.917163	147.2618	0.9999805		0.998	
Thallium	4.10605E-04	66.69111	6.155895	180.68	0.9999926		0.998	
Tin	0.0010185	66.67644	6.515375	188.1342	0.9999873		0.998	
Titanium	1.436925E-04	66.68699	1.672657	157.4488	0.9999951		0.998	
Vanadium	4.084725E-05	66.6744	4.239575	125.3309	0.9999992		0.998	
Zinc	4.094825E-03	66.73062	4.028435	171.7762	0.9999716		0.998	
Strontium	1.14525E-03	66.67539	5.259975	179.1433	0.9999997		0.998	
Lithium (outside certification)	8.62525E-06	66.72227	3.592175	55.18983	0.9999848		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4D07013

Empirical Laboratories, LLC

Printed: 4/18/2014 4:07:31PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403189-01	F	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	Good CCVs!
1403189-02	F	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	Good CCVs!
1403189-03	F	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	Good CCVs!
1403193-06	B	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	TAL list
1403203-01	D	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	see versions
1403203-03	D	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	see versions
1403203-07	D	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	see versions
1403203-09	D	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	see versions
1403205-01	D	MET_ICP_LOW6010C_FULL_I	04/07/2014	100	25					NA	see versions
1404016-01	D	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	see versions
1404016-03	D	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	see versions
1404016-05	D	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	see versions
1404018-02	AH	MET_ICP_LOW6010C_FULL_I	04/07/2014	100	25					NA	Added for BatchQC in: 4D07013
1404018-02	AH	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	MS/MSD;Good CCVs!
1404018-03	O	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	Good CCVs!
1404018-03RE1	O	MET_ICP_LOW6010C_FULL	04/07/2014	100	25					NA	Good CCVs!
1404041-02	A	MET_ICP_LOW6010C_FULL_I	04/07/2014	100	25					NA	see versions
1404041-04	A	MET_ICP_LOW6010C_FULL_I	04/07/2014	100	25					NA	see versions
1404041-06	A	MET_ICP_LOW6010C_FULL_I	04/07/2014	100	25					NA	see versions
1404041-08	A	MET_ICP_LOW6010C_FULL_I	04/07/2014	100	25					NA	see versions
1404041-10	A	MET_ICP_LOW6010C_FULL_I	04/07/2014	100	25					NA	see versions
4D07013-BLK1		QC	04/07/2014	100	25					NA	

PREPARATION BENCH SHEET

4D07013

Empirical Laboratories, LLC

Printed: 4/18/2014 4:07:31PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D07013-BS1		QC	04/07/2014	100	25	14D0064		2000		NA	
4D07013-DUP1		QC	04/07/2014	100	25		1404018-02			NA	
4D07013-MS1		QC	04/07/2014	100	25	14D0066	1404018-02	25		NA	
4D07013-MSD1		QC	04/07/2014	100	25	14D0066	1404018-02	25		NA	
4D07013-PS1		QC	04/07/2014	100	25	14D0066	1404018-02	25		NA	

Reagents Used:

Standard	Description
14A0613	Nitric acid
14A0614	Hydrochloric Acid
14B0029	Metals 50mL Digestion Vessel- DigiTUBE

PREPARATION BENCH SHEET

4D10009

Empirical Laboratories, LLC

Printed: 4/24/2014 4:22:18PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403203-05	J	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	Added for BatchQC in: 4D10009
1403203-05	J	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	MS/MSD
1403217-01	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-03	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-05	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-07	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-09	A	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-10	A	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1404017-02	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404017-04	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404017-06	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404017-08	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404017-10	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404065-01	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1404066-01	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1404066-03	J	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	Added for BatchQC in: 4D10009
1404066-03	J	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	MS/MSD
1404067-02	F	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404067-04	F	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404067-06	F	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
4D10009-BLK1		QC	04/10/2014	100	25					NA	
4D10009-BS1		QC	04/10/2014	100	25	14D0064		2000		NA	

PREPARATION BENCH SHEET

4D10009

Empirical Laboratories, LLC

Printed: 4/24/2014 4:22:18PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D10009-DUP1		QC	04/10/2014	100	25		1403203-05			NA	
4D10009-DUP2		QC	04/10/2014	100	25		1404066-03			NA	
4D10009-MS1		QC	04/10/2014	100	25	14D0066	1403203-05	25		NA	
4D10009-MS2		QC	04/10/2014	100	25	14D0066	1404066-03	25		NA	
4D10009-MSD1		QC	04/10/2014	100	25	14D0066	1403203-05	25		NA	
4D10009-MSD2		QC	04/10/2014	100	25	14D0066	1404066-03	25		NA	
4D10009-PS1		QC	04/10/2014	100	25	14D0066	1403203-05	25		NA	
4D10009-PS2		QC	04/10/2014	100	25	14D0066	1404066-03	25		NA	

Reagents Used:

Standard	Description
14A0613	Nitric acid
14A0614	Hydrochloric Acid
14B0029	Metals 50mL Digestion Vessel- DigiTUBE

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-01 [ST105-30003]	4C27004	100.00/100.00	100	100	1.00			03/27/14
1403203-03 [ST105-30010]	4C27004	100.00/100.00	100	100	1.00			03/27/14
1403203-05 [ST105-30011]	4C27004	100.00/100.00	100	100	1.00			03/27/14
1403203-07 [ST105-30020]	4C27004	100.00/100.00	100	100	1.00			03/27/14
1403203-09 [ST105-30021]	4C27004	100.00/100.00	100	100	1.00			03/27/14

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-01 [ST105-30003]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14
1403203-03 [ST105-30010]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14
1403203-05 [ST105-30011]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14
1403203-07 [ST105-30020]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14
1403203-09 [ST105-30021]	4C28005	20.00/20.00	20.0	20.0	1.00			03/28/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-01 [ST105-30003]	4C31028	20.00/20.00	4.00	20.0	1.00			03/31/14
1403203-03RE1 [ST105-30010]	4C31028	20.00/20.00	4.00	20.0	5.00			03/31/14
1403203-05 [ST105-30011]	4C31028	20.00/20.00	4.00	20.0	1.00			03/31/14
1403203-07 [ST105-30020]	4C31028	20.00/20.00	4.00	20.0	1.00			03/31/14
1403203-09 [ST105-30021]	4C31028	20.00/20.00	4.00	20.0	1.00			03/31/14
1403217-01RE1 [ST105-30008]	4C31028	20.00/20.00	4.00	20.0	5.00			03/31/14
1403217-03RE1 [ST105-30013]	4C31028	20.00/20.00	4.00	20.0	2.00			03/31/14
1403217-05RE1 [ST105-30018]	4C31028	20.00/20.00	4.00	20.0	2.00			03/31/14
1403217-07 [ST105-30038]	4C31028	20.00/20.00	4.00	20.0	1.00			03/31/14

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403217-01 [ST105-30008]	4D02007	100.00/100.00	100	100	1.00			04/02/14
1403217-03 [ST105-30013]	4D02007	100.00/100.00	100	100	1.00			04/02/14
1403217-05 [ST105-30018]	4D02007	100.00/100.00	100	100	1.00			04/02/14
1403217-07 [ST105-30038]	4D02007	100.00/100.00	100	100	1.00			04/02/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-01 [ST105-30003]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14
1403203-03 [ST105-30010]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14
1403203-05 [ST105-30011]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14
1403203-07 [ST105-30020]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14
1403203-09 [ST105-30021]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14
1403217-01 [ST105-30008]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14
1403217-03 [ST105-30013]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14
1403217-05 [ST105-30018]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14
1403217-07 [ST105-30038]	4D02017	5.00/5.00	5.00	5.00	1.00			04/02/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404016-01 [ST105-30036]	4D03010	5.00/5.00	5.00	5.00	1.00			04/03/14
1404016-03 [ST105-30039]	4D03010	5.00/5.00	5.00	5.00	1.00			04/03/14
1404016-05 [ST105-30040]	4D03010	5.00/5.00	5.00	5.00	1.00			04/03/14

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404016-01 [ST105-30036]	4D03020	100.00/100.00	100	100	1.00			04/03/14
1404016-03 [ST105-30039]	4D03020	100.00/100.00	100	100	1.00			04/03/14
1404016-05 [ST105-30040]	4D03020	100.00/100.00	100	100	1.00			04/03/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-01 [ST105-30003]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14
1403203-03 [ST105-30010]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14
1403203-05 [ST105-30011]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14
1403203-07 [ST105-30020]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14
1403203-09 [ST105-30021]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14
1403217-01 [ST105-30008]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14
1403217-03 [ST105-30013]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14
1403217-05 [ST105-30018]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14
1403217-07 [ST105-30038]	4D04004	25.00/25.00	25.0	25.0	1.00			04/04/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-01 [ST105-30003]	4D07018	100.00/100.00	100	100	1.00			04/07/14
1403203-03 [ST105-30010]	4D07018	100.00/100.00	100	100	1.00			04/07/14
1403203-05 [ST105-30011]	4D07018	100.00/100.00	100	100	1.00			04/07/14
1403203-09 [ST105-30021]	4D07018	100.00/100.00	100	100	1.00			04/07/14
1403217-01 [ST105-30008]	4D07018	100.00/100.00	100	100	1.00			04/07/14
1403217-05 [ST105-30018]	4D07018	100.00/100.00	100	100	1.00			04/07/14

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403217-01 [ST105-30008]	4D08002	20.00/20.00	20.0	20.0	1.00			04/08/14
1403217-03 [ST105-30013]	4D08002	20.00/20.00	20.0	20.0	1.00			04/08/14
1403217-05 [ST105-30018]	4D08002	20.00/20.00	20.0	20.0	1.00			04/08/14
1403217-07 [ST105-30038]	4D08002	20.00/20.00	20.0	20.0	1.00			04/08/14
1404016-01 [ST105-30036]	4D08002	20.00/20.00	20.0	20.0	1.00			04/08/14
1404016-03 [ST105-30039]	4D08002	20.00/20.00	20.0	20.0	1.00			04/08/14
1404016-05 [ST105-30040]	4D08002	20.00/20.00	20.0	20.0	1.00			04/08/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-01 [ST105-30003]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-02 [ST105-30003]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-03 [ST105-30010]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-04 [ST105-30010]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-05 [ST105-30011]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-06 [ST105-30011]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-07 [ST105-30020]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-08 [ST105-30020]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-09 [ST105-30021]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14
1403203-10 [ST105-30021]	4D09928	40.00/40.00	40.0	40.0	1.00			04/09/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403217-07 [ST105-30038]	4D10002	100.00/100.00	100	100	1.00			04/10/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403203-07RE1 [ST105-30020]	4D11003	100.00/100.00	100	100	1.00			04/07/14
1403217-03RE1 [ST105-30013]	4D11003	100.00/100.00	100	100	1.00			04/07/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403217-01 [ST105-30008]	4D11009	40.00/40.00	40.0	40.0	1.00			04/11/14
1403217-02 [ST105-30008]	4D11009	40.00/40.00	40.0	40.0	1.00			04/11/14
1403217-03 [ST105-30013]	4D11009	40.00/40.00	40.0	40.0	1.00			04/11/14
1403217-04 [ST105-30013]	4D11009	40.00/40.00	40.0	40.0	1.00			04/11/14
1403217-05 [ST105-30018]	4D11009	40.00/40.00	40.0	40.0	1.00			04/11/14
1403217-06 [ST105-30018]	4D11009	40.00/40.00	40.0	40.0	1.00			04/11/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404016-01 [ST105-30036]	4D14004	25.00/25.00	25.0	25.0	1.00			04/14/14
1404016-03 [ST105-30039]	4D14004	25.00/25.00	25.0	25.0	1.00			04/14/14
1404016-05 [ST105-30040]	4D14004	25.00/25.00	25.0	25.0	1.00			04/14/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404016-01RE1 [ST105-30036]	4D14009	20.00/20.00	4.00	20.0	2.00			04/14/14
1404016-03 [ST105-30039]	4D14009	20.00/20.00	4.00	20.0	1.00			04/14/14
1404016-05 [ST105-30040]	4D14009	20.00/20.00	4.00	20.0	1.00			04/14/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404016-01 [ST105-30036]	4D17002	100.00/100.00	100	100	1.00			04/17/14
1404016-03 [ST105-30039]	4D17002	100.00/100.00	100	100	1.00			04/17/14
1404016-05 [ST105-30040]	4D17002	100.00/100.00	100	100	1.00			04/17/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404016-01RE1 [ST105-30036]	4D17010	5.00/5.00	5.00	5.00	1.00			04/17/14
1404016-03RE1 [ST105-30039]	4D17010	5.00/5.00	5.00	5.00	1.00			04/17/14
1404016-05RE1 [ST105-30040]	4D17010	5.00/5.00	5.00	5.00	1.00			04/17/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1403217-07 [ST105-30038]	4D18013	40.00/40.00	40.0	40.0	1.00			04/18/14
1403217-08 [ST105-30038]	4D18013	40.00/40.00	40.0	40.0	1.00			04/18/14
1404016-01 [ST105-30036]	4D18013	40.00/40.00	40.0	40.0	1.00			04/18/14
1404016-02 [ST105-30036]	4D18013	40.00/40.00	40.0	40.0	1.00			04/18/14
1404016-03 [ST105-30039]	4D18013	40.00/40.00	40.0	40.0	1.00			04/18/14
1404016-04 [ST105-30039]	4D18013	40.00/40.00	40.0	40.0	1.00			04/18/14
1404016-05 [ST105-30040]	4D18013	40.00/40.00	40.0	40.0	1.00			04/18/14
1404016-06 [ST105-30040]	4D18013	40.00/40.00	40.0	40.0	1.00			04/18/14

ANALYSIS DATA SHEET

ST105-30003

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-01
Sampled:	03/24/14 13:12	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D07018	04/10/14 14:53
24959-67-9	Bromide	**0.131**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D02017	04/02/14 17:06
TDS	Total Dissolved Solids	**401**	**20.0**	20.0	20.0	1		SM2540C	4C27004	03/27/14 17:24
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4C28005	03/28/14 15:29
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/09/14 21:12
16887-00-6	Chloride	**14.4**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 17:06
NA	Nitrate/Nitrite as N	**6.18**	**0.250**	0.750	1.50	1		E353.2	4C31028	03/31/14 15:07
16984-48-8	Fluoride	**0.288**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 17:06
471-34-1	Alkalinity, Total (as CACO3)	**246**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 14:19
14808-79-8	Sulfate as SO4	**82.9**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 17:06

ANALYSIS DATA SHEET

ST105-30003

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-02
Sampled:	03/24/14 13:12	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/09/14 21:36

ANALYSIS DATA SHEET

ST105-30010

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-03
Sampled:	03/25/14 11:05	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D07018	04/10/14 14:54
24959-67-9	Bromide	**0.182**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D02017	04/02/14 17:23
TDS	Total Dissolved Solids	**491**	**20.0**	20.0	20.0	1		SM2540C	4C27004	03/27/14 17:24
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4C28005	03/28/14 15:30
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/09/14 21:58
16887-00-6	Chloride	**14.5**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 17:23
NA	Nitrate/Nitrite as N	**40.5**	**1.25**	3.75	7.50	5	D	E353.2	4C31028	04/14/14 14:02
16984-48-8	Fluoride	**0.335**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 17:23
471-34-1	Alkalinity, Total (as CACO3)	**103**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 14:28
14808-79-8	Sulfate as SO4	**29.3**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 17:23

ANALYSIS DATA SHEET

ST105-30010

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-04
Sampled:	03/25/14 11:05	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/09/14 22:21

ANALYSIS DATA SHEET

ST105-30011

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-05
Sampled:	03/25/14 14:44	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D07018	04/10/14 14:55
24959-67-9	Bromide	**0.0550**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D02017	04/02/14 17:41
TDS	Total Dissolved Solids	**279**	**20.0**	20.0	20.0	1		SM2540C	4C27004	03/27/14 17:24
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4C28005	03/28/14 15:34
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/09/14 22:44
16887-00-6	Chloride	**8.24**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 17:41
NA	Nitrate/Nitrite as N	**8.28**	**0.250**	0.750	1.50	1		E353.2	4C31028	03/31/14 15:10
16984-48-8	Fluoride	**0.427**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 17:41
471-34-1	Alkalinity, Total (as CACO3)	**108**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 14:10
14808-79-8	Sulfate as SO4	**28.9**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 17:41

ANALYSIS DATA SHEET

ST105-30011

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-06
Sampled:	03/25/14 14:44	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/10/14 00:50

ANALYSIS DATA SHEET

ST105-30020

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-07
Sampled:	03/25/14 12:15	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D11003	04/11/14 14:30
24959-67-9	Bromide		0.0420	0.125	0.630	1	MU	SW9056A	4D02017	04/02/14 18:50
TDS	Total Dissolved Solids	**245**	**20.0**	20.0	20.0	1		SM2540C	4C27004	03/27/14 17:24
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4C28005	03/28/14 15:37
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/10/14 02:01
16887-00-6	Chloride	**8.18**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 18:50
NA	Nitrate/Nitrite as N	**2.62**	**0.250**	0.750	1.50	1		E353.2	4C31028	03/31/14 15:14
16984-48-8	Fluoride	**0.385**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 18:50
471-34-1	Alkalinity, Total (as CACO3)	**113**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 14:40
14808-79-8	Sulfate as SO4	**26.7**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 18:50

ANALYSIS DATA SHEET

ST105-30020

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-08
Sampled:	03/25/14 12:15	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/10/14 02:25

ANALYSIS DATA SHEET

ST105-30021

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-09
Sampled:	03/25/14 16:32	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D07018	04/10/14 14:59
24959-67-9	Bromide	**0.139**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D02017	04/02/14 19:08
TDS	Total Dissolved Solids	**420**	**20.0**	20.0	20.0	1		SM2540C	4C27004	03/27/14 17:24
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4C28005	03/28/14 15:38
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/10/14 02:47
16887-00-6	Chloride	**16.1**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 19:08
NA	Nitrate/Nitrite as N	**4.66**	**0.250**	0.750	1.50	1		E353.2	4C31028	03/31/14 15:16
16984-48-8	Fluoride	**0.367**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 19:08
471-34-1	Alkalinity, Total (as CACO3)	**175**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 14:53
14808-79-8	Sulfate as SO4	**89.7**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 19:08

ANALYSIS DATA SHEET

ST105-30021

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403203-10
Sampled:	03/25/14 16:32	Received:	03/26/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D09928	04/10/14 03:11

ANALYSIS DATA SHEET

ST105-30008

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-01
Sampled:	03/27/14 12:10	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D07018	04/10/14 15:00
24959-67-9	Bromide	**0.232**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D02017	04/02/14 19:25
TDS	Total Dissolved Solids	**559**	**20.0**	20.0	20.0	1		SM2540C	4D02007	04/02/14 14:27
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4D08002	04/08/14 16:47
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D11009	04/11/14 17:06
16887-00-6	Chloride	**19.9**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 19:25
NA	Nitrate/Nitrite as N	**44.9**	**1.25**	3.75	7.50	5	D	E353.2	4C31028	03/31/14 15:49
16984-48-8	Fluoride	**0.381**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 19:25
471-34-1	Alkalinity, Total (as CACO3)	**119**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 15:12
14808-79-8	Sulfate as SO4	**50.4**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 19:25

ANALYSIS DATA SHEET

ST105-30008

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-02
Sampled:	03/27/14 12:10	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D11009	04/11/14 17:29

ANALYSIS DATA SHEET

ST105-30013

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-03
Sampled:	03/26/14 10:39	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**1.35**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D11003	04/11/14 14:31
24959-67-9	Bromide	**0.121**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D02017	04/02/14 19:43
TDS	Total Dissolved Solids	**321**	**20.0**	20.0	20.0	1		SM2540C	4D02007	04/02/14 14:27
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4D08002	04/08/14 16:48
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D11009	04/11/14 17:52
16887-00-6	Chloride	**14.4**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 19:43
NA	Nitrate/Nitrite as N	**18.9**	**0.500**	1.50	3.00	2	D	E353.2	4C31028	03/31/14 15:51
16984-48-8	Fluoride	**0.331**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 19:43
471-34-1	Alkalinity, Total (as CACO3)	**118**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 15:18
14808-79-8	Sulfate as SO4	**28.2**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 19:43

ANALYSIS DATA SHEET

ST105-30013

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-04
Sampled:	03/26/14 10:39	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D11009	04/11/14 18:16

ANALYSIS DATA SHEET

ST105-30018

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-05
Sampled:	03/26/14 14:53	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D07018	04/10/14 15:02
24959-67-9	Bromide	**0.139**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D02017	04/02/14 20:00
TDS	Total Dissolved Solids	**333**	**20.0**	20.0	20.0	1		SM2540C	4D02007	04/02/14 14:27
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4D08002	04/08/14 16:50
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D11009	04/11/14 18:38
16887-00-6	Chloride	**13.3**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 20:00
NA	Nitrate/Nitrite as N	**12.6**	**0.500**	1.50	3.00	2	D	E353.2	4C31028	03/31/14 15:52
16984-48-8	Fluoride	**0.280**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 20:00
471-34-1	Alkalinity, Total (as CACO3)	**142**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 15:22
14808-79-8	Sulfate as SO4	**59.5**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 20:00

ANALYSIS DATA SHEET

ST105-30018

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-06
Sampled:	03/26/14 14:53	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D11009	04/11/14 19:02

ANALYSIS DATA SHEET

ST105-30038

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-07
Sampled:	03/27/14 13:47	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D10002	04/11/14 14:16
24959-67-9	Bromide	**0.0740**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D02017	04/02/14 20:53
TDS	Total Dissolved Solids	**279**	**20.0**	20.0	20.0	1		SM2540C	4D02007	04/02/14 14:27
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4D08002	04/08/14 16:51
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 17:40
16887-00-6	Chloride	**8.17**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 20:53
NA	Nitrate/Nitrite as N	**5.74**	**0.250**	0.750	1.50	1		E353.2	4C31028	03/31/14 15:27
16984-48-8	Fluoride	**0.569**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 20:53
471-34-1	Alkalinity, Total (as CACO3)	**167**	**1.00**	1.00	1.00	1		SM2320B	4D04004	04/04/14 15:29
14808-79-8	Sulfate as SO4	**26.9**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 20:53

ANALYSIS DATA SHEET

ST105-30038

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1403217-08
Sampled:	03/27/14 13:47	Received:	03/28/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 18:04

ANALYSIS DATA SHEET

ST105-30036

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-01
Sampled:	04/01/14 15:31	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D17002	04/18/14 13:44
24959-67-9	Bromide	**0.621**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D17010	04/17/14 21:21
TDS	Total Dissolved Solids	**380**	**20.0**	20.0	20.0	1		SM2540C	4D03020	04/03/14 17:58
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4D08002	04/08/14 16:52
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 18:27
16887-00-6	Chloride	**56.6**	**0.170**	0.330	0.500	1		SW9056A	4D03010	04/03/14 14:26
NA	Nitrate/Nitrite as N	**17.0**	**0.500**	1.50	3.00	2	D	E353.2	4D14009	04/14/14 14:28
16984-48-8	Fluoride	**0.439**	**0.0330**	0.100	0.250	1		SW9056A	4D03010	04/03/14 14:26
471-34-1	Alkalinity, Total (as CACO3)	**129**	**1.00**	1.00	1.00	1		SM2320B	4D14004	04/14/14 11:40
14808-79-8	Sulfate as SO4	**55.1**	**0.330**	1.00	2.50	1		SW9056A	4D03010	04/03/14 14:26

ANALYSIS DATA SHEET

ST105-30036

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-02
Sampled:	04/01/14 15:31	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 18:50

ANALYSIS DATA SHEET

ST105-30039

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-03
Sampled:	04/01/14 11:12	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D17002	04/18/14 13:46
24959-67-9	Bromide	**0.119**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D17010	04/17/14 21:38
TDS	Total Dissolved Solids	**288**	**20.0**	20.0	20.0	1		SM2540C	4D03020	04/03/14 17:58
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4D08002	04/08/14 16:53
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 19:13
16887-00-6	Chloride	**11.9**	**0.170**	0.330	0.500	1		SW9056A	4D03010	04/03/14 14:43
NA	Nitrate/Nitrite as N	**9.40**	**0.250**	0.750	1.50	1		E353.2	4D14009	04/14/14 14:08
16984-48-8	Fluoride	**0.469**	**0.0330**	0.100	0.250	1		SW9056A	4D03010	04/03/14 14:43
471-34-1	Alkalinity, Total (as CACO3)	**162**	**1.00**	1.00	1.00	1		SM2320B	4D14004	04/14/14 11:55
14808-79-8	Sulfate as SO4	**20.3**	**0.330**	1.00	2.50	1		SW9056A	4D03010	04/03/14 14:43

ANALYSIS DATA SHEET

ST105-30039

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-04
Sampled:	04/01/14 11:12	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 19:37

ANALYSIS DATA SHEET

ST105-30040

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-05
Sampled:	04/01/14 11:12	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D17002	04/18/14 13:47
24959-67-9	Bromide	**0.119**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D17010	04/17/14 21:56
TDS	Total Dissolved Solids	**292**	**20.0**	20.0	20.0	1		SM2540C	4D03020	04/03/14 17:58
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U N	E351.2	4D08002	04/08/14 16:54
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 19:59
16887-00-6	Chloride	**12.8**	**0.170**	0.330	0.500	1		SW9056A	4D03010	04/03/14 15:01
NA	Nitrate/Nitrite as N	**9.39**	**0.250**	0.750	1.50	1		E353.2	4D14009	04/14/14 14:09
16984-48-8	Fluoride	**0.465**	**0.0330**	0.100	0.250	1		SW9056A	4D03010	04/03/14 15:01
471-34-1	Alkalinity, Total (as CACO3)	**159**	**1.00**	1.00	1.00	1		SM2320B	4D14004	04/14/14 12:07
14808-79-8	Sulfate as SO4	**21.1**	**0.330**	1.00	2.50	1		SW9056A	4D03010	04/03/14 15:01

ANALYSIS DATA SHEET

ST105-30040

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404016-06
Sampled:	04/01/14 11:12	Received:	04/02/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 20:22

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C27004-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4C27004	03/27/14 17:24

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C27004-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1080**	**20.0**	20.0	20.0	1		SM2540C	4C27004	03/27/14 17:24

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C27004-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**276.0**	**20.0**	20.0	20.0	1		SM2540C	4C27004	03/27/14 17:24

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C28005-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	ND	0.500	1.00	1.50	1	U	E351.2	4C28005	03/28/14 15:18

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C28005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.325**	**0.500**	1.00	1.50	1		E351.2	4C28005	03/28/14 15:19

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C28005-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**5.062**	**0.556**	1.11	1.67	1		E351.2	4C28005	03/28/14 15:35

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C28005-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**4.156**	**0.556**	1.11	1.67	1		E351.2	4C28005	03/28/14 15:36

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C31028-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4C31028	03/31/14 15:04

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C31028-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**15.11**	**0.500**	1.50	3.00	1		E353.2	4C31028	03/31/14 15:05

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C31028-MS2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**11.01**	**0.500**	1.50	3.00	2	D	E353.2	4C31028	03/31/14 15:46

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4C31028-MSD2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**11.02**	**0.500**	1.50	3.00	2	D	E353.2	4C31028	03/31/14 15:48

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D02007-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4D02007	04/02/14 14:27

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D02007-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**970.0**	**20.0**	20.0	20.0	1		SM2540C	4D02007	04/02/14 14:27

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D02007-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1045**	**20.0**	20.0	20.0	1		SM2540C	4D02007	04/02/14 14:27

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D02017-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4D02017	04/02/14 15:56
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4D02017	04/02/14 15:56
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4D02017	04/02/14 15:56
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4D02017	04/02/14 15:56

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D02017-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.71**	**0.0420**	0.125	0.250	1		SW9056A	4D02017	04/02/14 16:14
16887-00-6	Chloride	**4.259**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 16:14
16984-48-8	Fluoride	**2.780**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 16:14
14808-79-8	Sulfate as SO4	**21.02**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 16:14

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D02017-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4D02017	04/02/14 18:33
16887-00-6	Chloride	**8.180**	**0.170**	0.330	0.500	1		SW9056A	4D02017	04/02/14 18:33
16984-48-8	Fluoride	**0.4220**	**0.0330**	0.100	0.250	1		SW9056A	4D02017	04/02/14 18:33
14808-79-8	Sulfate as SO4	**28.86**	**0.330**	1.00	2.50	1		SW9056A	4D02017	04/02/14 18:33

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D02017-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**6.792**	**0.0467**	0.139	0.278	1		SW9056A	4D02017	04/02/14 17:58
16887-00-6	Chloride	**36.35**	**0.189**	0.367	0.556	1		SW9056A	4D02017	04/02/14 17:58
16984-48-8	Fluoride	**3.154**	**0.0367**	0.111	0.278	1		SW9056A	4D02017	04/02/14 17:58
14808-79-8	Sulfate as SO4	**56.30**	**0.367**	1.11	2.78	1		SW9056A	4D02017	04/02/14 17:58

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D02017-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**6.542**	**0.0467**	0.139	0.278	1		SW9056A	4D02017	04/02/14 18:16
16887-00-6	Chloride	**35.65**	**0.189**	0.367	0.556	1		SW9056A	4D02017	04/02/14 18:16
16984-48-8	Fluoride	**3.144**	**0.0367**	0.111	0.278	1		SW9056A	4D02017	04/02/14 18:16
14808-79-8	Sulfate as SO4	**54.61**	**0.367**	1.11	2.78	1		SW9056A	4D02017	04/02/14 18:16

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D03010-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4D03010	04/03/14 12:59
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4D03010	04/03/14 12:59
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4D03010	04/03/14 12:59
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4D03010	04/03/14 12:59

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D03010-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.64**	**0.0420**	0.125	0.250	1		SW9056A	4D03010	04/03/14 13:16
16887-00-6	Chloride	**4.250**	**0.170**	0.330	0.500	1		SW9056A	4D03010	04/03/14 13:16
16984-48-8	Fluoride	**2.750**	**0.0330**	0.100	0.250	1		SW9056A	4D03010	04/03/14 13:16
14808-79-8	Sulfate as SO4	**21.02**	**0.330**	1.00	2.50	1		SW9056A	4D03010	04/03/14 13:16

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D03020-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4D03020	04/03/14 17:58

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D03020-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**985.0**	**20.0**	20.0	20.0	1		SM2540C	4D03020	04/03/14 17:58

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D03020-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1010**	**20.0**	20.0	20.0	1		SM2540C	4D03020	04/03/14 17:58

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D04004-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4D04004	04/04/14 13:15

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D04004-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1081**	**5.00**	5.00	5.00	1		SM2320B	4D04004	04/04/14 13:27

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D04004-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**222.6**	**1.11**	1.11	1.11	1		SM2320B	4D04004	04/04/14 13:37

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D04004-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**222.6**	**1.11**	1.11	1.11	1		SM2320B	4D04004	04/04/14 13:57

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D07018-BLK2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**0.408**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D07018	04/10/14 15:12

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D07018-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.186**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D07018	04/10/14 14:52

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D07018-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.661**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D07018	04/10/14 14:56

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D07018-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.571**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D07018	04/10/14 14:57

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D08002-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	ND	0.500	1.00	1.50	1	U	E351.2	4D08002	04/08/14 16:44

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D08002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.598**	**0.500**	1.00	1.50	1		E351.2	4D08002	04/08/14 16:45

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D08002-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**4.199**	**0.556**	1.11	1.67	1		E351.2	4D08002	04/08/14 16:55

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D08002-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**4.154**	**0.556**	1.11	1.67	1		E351.2	4D08002	04/08/14 16:56

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D09928-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4D09928	04/09/14 18:45
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4D09928	04/09/14 18:45

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D09928-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**22.63**	**1.25**	2.50	3.00	1		SW9060A	4D09928	04/09/14 19:15
7440-44-0	Total Organic Carbon (dissolved)	**22.63**	**1.25**	2.50	3.00	1		SW9060A	4D09928	04/09/14 19:15

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D09928-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**13.64**	**1.25**	2.50	3.00	1		SW9060A	4D09928	04/09/14 23:08

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D09928-MS2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)	**13.11**	**1.25**	2.50	3.00	1		SW9060A	4D09928	04/10/14 01:14

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D09928-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**13.87**	**1.25**	2.50	3.00	1		SW9060A	4D09928	04/09/14 23:32

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D09928-MSD2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)	**12.92**	**1.25**	2.50	3.00	1		SW9060A	4D09928	04/10/14 01:38

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D10002-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4D10002	04/11/14 14:09

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.055**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D10002	04/11/14 14:10

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D11003-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4D11003	04/11/14 14:28

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D11003-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.610**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D11003	04/11/14 14:29

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4D11009-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4D11009	04/11/14 16:13
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4D11009	04/11/14 16:13

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D11009-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**23.52**	**1.25**	2.50	3.00	1		SW9060A	4D11009	04/11/14 16:41
7440-44-0	Total Organic Carbon (dissolved)	**23.52**	**1.25**	2.50	3.00	1		SW9060A	4D11009	04/11/14 16:41

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D14004-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4D14004	04/14/14 09:41

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D14004-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1059**	**5.00**	5.00	5.00	1		SM2320B	4D14004	04/14/14 09:46

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D14009-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4D14009	04/14/14 13:59

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D14009-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**15.02**	**0.500**	1.50	3.00	1		E353.2	4D14009	04/14/14 14:01

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D17002-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4D17002	04/18/14 13:43

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D17002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.174**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D17002	04/18/14 13:43

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D17002-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.061**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D17002	04/18/14 13:45

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D17010-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4D17010	04/17/14 17:52

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D17010-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.75**	**0.0420**	0.125	0.250	1		SW9056A	4D17010	04/17/14 18:09

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D18013-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 16:49
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4D18013	04/18/14 16:49

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_007

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D18013-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**22.95**	**1.25**	2.50	3.00	1		SW9060A	4D18013	04/18/14 17:16
7440-44-0	Total Organic Carbon (dissolved)	**22.95**	**1.25**	2.50	3.00	1		SW9060A	4D18013	04/18/14 17:16

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 3L35106

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35106-ICV1	Bromide	14.00	13.66	97.6	mg/L	+/- 10.00%
	Chloride	4.200	4.193	99.8	mg/L	+/- 10.00%
	Fluoride	2.800	2.803	100	mg/L	+/- 10.00%
	Sulfate as SO4	21.00	21.05	100	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 4087002
Sequence: 4C08714

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4C08714-ICV1	Total Kjeldahl Nitrogen	10.00	10.32	103	mg/L	+/- 10.00%
4C08714-CCV1	Total Kjeldahl Nitrogen	10.00	10.54	105	mg/L	+/- 10.00%
4C08714-CCV2	Total Kjeldahl Nitrogen	10.00	10.63	106	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 4090001
Sequence: 4C09009

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4C09009-ICV1	Nitrate/Nitrite as N	1.200	1.234	103	mg/L	+/- 10.00%
4C09009-CCV1	Nitrate/Nitrite as N	1.200	1.164	97.0	mg/L	+/- 10.00%
4C09009-CCV2	Nitrate/Nitrite as N	1.200	1.188	99.0	mg/L	+/- 10.00%
4C09009-CCV3	Nitrate/Nitrite as N	1.200	1.171	97.6	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 4098003
Sequence: 4D09814

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D09814-ICV1	Total Kjeldahl Nitrogen	10.00	10.41	104	mg/L	+/- 10.00%
4D09814-CCV1	Total Kjeldahl Nitrogen	10.00	10.24	102	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 4D10004

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10004-CCV1	Bromide	6.300	5.980	94.9	mg/L	+/- 10.00%
	Chloride	25.00	25.10	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.562	102	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.53	102	mg/L	+/- 10.00%
4D10004-CCV2	Bromide	6.300	6.017	95.5	mg/L	+/- 10.00%
	Chloride	25.00	25.07	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.506	100	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.91	99.6	mg/L	+/- 10.00%
4D10004-CCV3	Bromide	6.300	5.961	94.6	mg/L	+/- 10.00%
	Chloride	25.00	25.26	101	mg/L	+/- 10.00%
	Fluoride	2.500	2.574	103	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.96	99.9	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 4100003
Sequence: 4D10029

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10029-ICV1	Ammonia as N	2.000	2.113	106	mg/L	+/- 10.00%
4D10029-CCV1	Ammonia as N	2.000	2.097	105	mg/L	+/- 10.00%
4D10029-CCV2	Ammonia as N	2.000	2.066	103	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: UNASSIGNED
Sequence: 4D10033

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10033-CCV1	Total Organic Carbon	25.00	23.55	94.2	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	23.55	94.2	mg/L	+/- 20.00%
4D10033-CCV2	Total Organic Carbon	50.00	47.56	95.1	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	47.56	95.1	mg/L	+/- 20.00%
4D10033-CCV3	Total Organic Carbon	25.00	21.79	87.2	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	21.79	87.2	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 4101006
Sequence: 4D10113

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10113-ICV1	Ammonia as N	2.000	2.091	105	mg/L	+/- 10.00%
4D10113-CCV1	Ammonia as N	2.000	2.074	104	mg/L	+/- 10.00%
4D10113-CCV2	Ammonia as N	2.000	2.100	105	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 4104001
Sequence: 4D10410

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10410-ICV1	Nitrate/Nitrite as N	1.200	1.246	104	mg/L	+/- 10.00%
4D10410-CCV1	Nitrate/Nitrite as N	1.200	1.230	102	mg/L	+/- 10.00%
4D10410-CCV2	Nitrate/Nitrite as N	1.200	1.218	102	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 4D10606

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10606-CCV1	Chloride	25.00	25.36	101	mg/L	+/- 10.00%
	Fluoride	2.500	2.579	103	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.64	103	mg/L	+/- 10.00%
4D10606-CCV2	Chloride	25.00	25.61	102	mg/L	+/- 10.00%
	Fluoride	2.500	2.547	102	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	26.33	105	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 4108003
Sequence: 4D10809

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10809-ICV1	Ammonia as N	2.000	2.109	105	mg/L	+/- 10.00%
4D10809-CCV1	Ammonia as N	2.000	2.093	105	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: UNASSIGNED
Sequence: 4D11101

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11101-CCV1	Total Organic Carbon	25.00	23.37	93.5	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	23.37	93.5	mg/L	+/- 20.00%
4D11101-CCV2	Total Organic Carbon	50.00	45.57	91.1	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	45.57	91.1	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: UNASSIGNED
Sequence: 4D11107

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11107-CCV1	Total Organic Carbon	25.00	21.83	87.3	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	21.83	87.3	mg/L	+/- 20.00%
4D11107-CCV2	Total Organic Carbon	50.00	46.50	93.0	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	46.50	93.0	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 4D11312

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11312-CCV1	Bromide	6.300	5.899	93.6	mg/L	+/- 10.00%
4D11312-CCV2	Bromide	6.300	5.819	92.4	mg/L	+/- 10.00%

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 3351002

Sequence: 4D10004

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D10004-CRL1	Chloride	0.5000	0.5080	102	mg/L	75 - 125
4D10004-CRL2	Fluoride	0.1000	0.1020	102	mg/L	75 - 125
4D10004-CRL3	Bromide	0.6300	0.5230	83.0	mg/L	75 - 125
	Sulfate as SO4	2.500	3.121	125	mg/L	75 - 125

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 3351002

Sequence: 4D10606

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D10606-CRL1	Chloride	0.5000	0.5120	102	mg/L	75 - 125
4D10606-CRL2	Fluoride	0.1000	0.1020	102	mg/L	75 - 125
4D10606-CRL3	Sulfate as SO4	2.500	3.079	123	mg/L	75 - 125

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 3351002

Sequence: 4D11312

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D11312-CRL3	Bromide	0.6300	0.4830	76.7	mg/L	50 - 150

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4C27004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C27004-BLK1	Total Dissolved Solids	5.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4C28005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C28005-BLK1	Total Kjeldahl Nitrogen	-0.0252	0.500	1.50	mg/L	U	E351.2

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4C31028

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C31028-BLK1	Nitrate/Nitrite as N	-0.0305	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D02007

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D02007-BLK1	Total Dissolved Solids	-2.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D02017

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D02017-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0450	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D03010

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D03010-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0490	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.0200	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0500	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D03020

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D03020-BLK1	Total Dissolved Solids	5.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D04004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D04004-BLK1	Alkalinity, Total (as CACO3)	-0.856	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D07018

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D07018-BLK2	Ammonia as N	0.408	0.100	0.300	mg/L		SM4500NH3BG

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D08002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D08002-BLK1	Total Kjeldahl Nitrogen	0.0710	0.500	1.50	mg/L	U	E351.2

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D09928

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D09928-BLK1	Total Organic Carbon	0.454	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.454	1.25	3.00	mg/L	U	SW9060A

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D10002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10002-BLK1	Ammonia as N	-0.0370	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D11003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11003-BLK1	Ammonia as N	0.0169	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D11009

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11009-BLK1	Total Organic Carbon	0.418	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.418	1.25	3.00	mg/L	U	SW9060A

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D14004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D14004-BLK1	Alkalinity, Total (as CACO3)	-0.430	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D14009

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D14009-BLK1	Nitrate/Nitrite as N	-0.0226	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D17002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D17002-BLK1	Ammonia as N	-0.0275	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D17010

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D17010-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D18013

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D18013-BLK1	Total Organic Carbon	0.457	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.457	1.25	3.00	mg/L	U	SW9060A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 3L35106
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35106-ICB1	Bromide	0.000	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.000	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.000	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.000	0.330	2.50	mg/L	U	SW9056A

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4C08714
Calibration: 4087002
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C08714-ICB1	Total Kjeldahl Nitrogen	0.007370	0.500	1.50	mg/L	U	E351.2
4C08714-CCB1	Total Kjeldahl Nitrogen	0.0446	0.500	1.50	mg/L	U	E351.2
4C08714-CCB2	Total Kjeldahl Nitrogen	0.0328	0.500	1.50	mg/L	U	E351.2

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4C09009
Calibration: 4090001
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4C09009-ICB1	Nitrate/Nitrite as N	-0.03516	0.0500	0.300	mg/L	U	E353.2
4C09009-CCB1	Nitrate/Nitrite as N	-0.0256	0.0500	0.300	mg/L	U	E353.2
4C09009-CCB2	Nitrate/Nitrite as N	-0.0292	0.0500	0.300	mg/L	U	E353.2
4C09009-CCB3	Nitrate/Nitrite as N	-0.0304	0.0500	0.300	mg/L	U	E353.2

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D09814
Calibration: 4098003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D09814-ICB1	Total Kjeldahl Nitrogen	-0.05460	0.500	1.50	mg/L	U	E351.2
4D09814-CCB1	Total Kjeldahl Nitrogen	0.0164	0.500	1.50	mg/L	U	E351.2

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10004
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10004-CCB1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0480	0.330	2.50	mg/L	U	SW9056A
4D10004-CCB2	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4D10004-CCB3	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10029
Calibration: 4100003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10029-ICB1	Ammonia as N	0.0009009	0.100	0.300	mg/L	U	SM4500NH3BG
4D10029-CCB1	Ammonia as N	-0.00825	0.100	0.300	mg/L	U	SM4500NH3BG
4D10029-CCB2	Ammonia as N	-0.000950	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10033
Calibration: UNASSIGNED
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10033-CCB1	Total Organic Carbon	0.469	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.469	1.25	3.00	mg/L	U	SW9060A
4D10033-CCB2	Total Organic Carbon	0.495	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.495	1.25	3.00	mg/L	U	SW9060A
4D10033-CCB3	Total Organic Carbon	0.496	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.496	1.25	3.00	mg/L	U	SW9060A

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10113
Calibration: 4101006
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10113-ICB1	Ammonia as N	0.003679	0.100	0.300	mg/L	U	SM4500NH3BG
4D10113-CCB1	Ammonia as N	0.0147	0.100	0.300	mg/L	U	SM4500NH3BG
4D10113-CCB2	Ammonia as N	0.0106	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10410
Calibration: 4104001
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10410-ICB1	Nitrate/Nitrite as N	-0.02809	0.0500	0.300	mg/L	U	E353.2
4D10410-CCB1	Nitrate/Nitrite as N	-0.0199	0.0500	0.300	mg/L	U	E353.2
4D10410-CCB2	Nitrate/Nitrite as N	-0.0230	0.0500	0.300	mg/L	U	E353.2

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10606
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10606-CCB1	Chloride	0.0590	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.0170	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0450	0.330	2.50	mg/L	U	SW9056A
4D10606-CCB2	Chloride	0.0950	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10809
Calibration: 4108003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10809-ICB1	Ammonia as N	-0.02200	0.100	0.300	mg/L	U	SM4500NH3BG
4D10809-CCB1	Ammonia as N	-0.00186	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11101
Calibration: UNASSIGNED
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11101-CCB1	Total Organic Carbon	0.455	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.455	1.25	3.00	mg/L	U	SW9060A
4D11101-CCB2	Total Organic Carbon	0.478	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.478	1.25	3.00	mg/L	U	SW9060A

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11107
Calibration: UNASSIGNED
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11107-CCB1	Total Organic Carbon	0.466	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.466	1.25	3.00	mg/L	U	SW9060A
4D11107-CCB2	Total Organic Carbon	0.504	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.504	1.25	3.00	mg/L	U	SW9060A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_007
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11312
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11312-CCB1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
4D11312-CCB2	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E351.2

ST105-30011

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4C28005

% Solids:

Source Sample Name: **1403203-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	ND	5.062	91.1		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	4.156	74.8	19.7	N	20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E353.2

ST105-30011

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4C31028

% Solids:

Source Sample Name: **1403203-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate/Nitrite as N	2.500	8.280	11.01	109		90 - 110

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Nitrate/Nitrite as N	2.500	11.02	110	0.0908		20	90 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9056A

ST105-30011

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D02017

% Solids:

Source Sample Name: **1403203-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Bromide	7.000	0.05500	6.792	96.2		80 - 120
Chloride	27.78	8.238	36.35	101		80 - 120
Fluoride	2.778	0.4270	3.154	98.2		80 - 120
Sulfate as SO4	27.78	28.90	56.30	98.7		80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Bromide	7.000	6.542	92.7	3.75		15	80 - 120
Chloride	27.78	35.65	98.7	1.95		15	80 - 120
Fluoride	2.778	3.144	97.8	0.318		15	80 - 120
Sulfate as SO4	27.78	54.61	92.6	3.05		15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SM2320B

ST105-30011

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D04004

% Solids:

Source Sample Name: **1403203-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Alkalinity, Total (as CACO3)	111.1	108.3	222.6	103		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Alkalinity, Total (as CACO3)	111.1	222.6	103	0.00		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SM4500NH3BG

ST105-30011

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D07018

% Solids:

Source Sample Name: **1403203-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Ammonia as N	5.000	ND	4.661	93.2		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Ammonia as N	5.000	4.571	91.4	1.95		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E351.2

ST105-30040

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D08002

% Solids:

Source Sample Name: **1404016-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	ND	4.199	75.6		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	4.154	74.8	1.06	N	20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9060A

ST105-30011

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D09928

% Solids:

Source Sample Name: **1403203-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Organic Carbon	15.00	ND	13.64	90.9		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Organic Carbon	15.00	13.87	92.5	1.67		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9060A

ST105-30011

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D09928

% Solids:

Source Sample Name: **1403203-06**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Organic Carbon (dissolved)	15.00	ND	13.11	87.4		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Organic Carbon (dissolved)	15.00	12.92	86.1	1.46		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SM4500NH3BG

ST105-30036

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D17002

% Solids:

Source Sample Name: **1404016-01**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Ammonia as N	5.000	ND	4.061	81.2		75 - 125

ST105-30011

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4C27004
Preparation: pNone
Source Sample Name: ST105-30011

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4C27004-DUP1
Lab Source ID: 1403203-05
Initial/Final: 100 mL / 100 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	279	276.0	1.08		SM2540C

ST105-30011

DUPLICATES

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4D02017
Preparation: WC_PREP_ANIONS_W
Source Sample Name: ST105-30011

SDG: KirtlandECOS_007
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D02017-DUP1
Lab Source ID: 1403203-05
Initial/Final: 5 mL / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Bromide	10	0.0550 J	0.250 U			SW9056A
Chloride	10	8.24	8.180	0.707		SW9056A
Fluoride	10	0.427	0.4220	1.18		SW9056A
Sulfate as SO4	10	28.9	28.86	0.128		SW9056A

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C27004	Laboratory ID:	4C27004-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	1080	111	80 - 120

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C28005	Laboratory ID:	4C28005-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.325	101	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4C31028	Laboratory ID:	4C31028-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	15.11	102	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D02007	Laboratory ID:	4D02007-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	970.0	99.7	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Dissolved Solids	973.0	1045	107	7.44	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D02017	Laboratory ID:	4D02017-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.71	97.9	80 - 120
Chloride	4.200	4.259	101	80 - 120
Fluoride	2.800	2.780	99.3	80 - 120
Sulfate as SO4	21.00	21.02	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D03010	Laboratory ID:	4D03010-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.64	97.4	80 - 120
Chloride	4.200	4.250	101	80 - 120
Fluoride	2.800	2.750	98.2	80 - 120
Sulfate as SO4	21.00	21.02	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D03020	Laboratory ID:	4D03020-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	985.0	101	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Dissolved Solids	973.0	1010	104	2.51	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D04004	Laboratory ID:	4D04004-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1081	108	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D07018	Laboratory ID:	4D07018-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	4.186	83.7	80 - 120

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D08002	Laboratory ID:	4D08002-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.598	109	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D09928	Laboratory ID:	4D09928-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	22.63	90.5	80 - 120
Total Organic Carbon (dissolved)	25.00	22.63	90.5	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D10002	Laboratory ID:	4D10002-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	4.055	81.1	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D11003	Laboratory ID:	4D11003-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	4.610	92.2	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D11009	Laboratory ID:	4D11009-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	23.52	94.1	80 - 120
Total Organic Carbon (dissolved)	25.00	23.52	94.1	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D14004	Laboratory ID:	4D14004-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1059	106	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D14009	Laboratory ID:	4D14009-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	15.02	101	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D17002	Laboratory ID:	4D17002-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	4.174	83.5	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D17010	Laboratory ID:	4D17010-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.75	98.2	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D18013	Laboratory ID:	4D18013-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	22.95	91.8	80 - 120
Total Organic Carbon (dissolved)	25.00	22.95	91.8	80 - 120

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C27004 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30003	1403203-01	03/27/14 10:05	100.00	100.00
ST105-30010	1403203-03	03/27/14 10:05	100.00	100.00
ST105-30011	1403203-05	03/27/14 10:05	100.00	100.00
ST105-30020	1403203-07	03/27/14 10:05	100.00	100.00
ST105-30021	1403203-09	03/27/14 10:05	100.00	100.00
Blank	4C27004-BLK1	03/27/14 10:05	100.00	100.00
LCS	4C27004-BS1	03/27/14 10:05	20.00	20.00
ST105-30011	4C27004-DUP1	03/27/14 10:05	100.00	100.00

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C28005 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30003	1403203-01	03/28/14 09:31	20.00	20.00
ST105-30010	1403203-03	03/28/14 09:31	20.00	20.00
ST105-30011	1403203-05	03/28/14 09:31	20.00	20.00
ST105-30020	1403203-07	03/28/14 09:31	20.00	20.00
ST105-30021	1403203-09	03/28/14 09:31	20.00	20.00
Blank	4C28005-BLK1	03/28/14 09:31	20.00	20.00
LCS	4C28005-BS1	03/28/14 09:31	20.00	20.00
ST105-30011	4C28005-MS1	03/28/14 09:31	18.00	20.00
ST105-30011	4C28005-MSD1	03/28/14 09:31	18.00	20.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4C31028 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30003	1403203-01	03/31/14 14:35	4.00	20.00
ST105-30010	1403203-03RE1	03/31/14 14:35	4.00	20.00
ST105-30011	1403203-05	03/31/14 14:35	4.00	20.00
ST105-30020	1403203-07	03/31/14 14:35	4.00	20.00
ST105-30021	1403203-09	03/31/14 14:35	4.00	20.00
ST105-30008	1403217-01RE1	03/31/14 14:35	4.00	20.00
ST105-30013	1403217-03RE1	03/31/14 14:35	4.00	20.00
ST105-30018	1403217-05RE1	03/31/14 14:35	4.00	20.00
ST105-30038	1403217-07	03/31/14 14:35	4.00	20.00
Blank	4C31028-BLK1	03/31/14 14:35	20.00	20.00
LCS	4C31028-BS1	03/31/14 14:35	2.00	20.00
ST105-30011	4C31028-MS2	03/31/14 14:35	4.00	20.00
ST105-30011	4C31028-MSD2	03/31/14 14:35	4.00	20.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D02007 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30008	1403217-01	04/02/14 09:23	100.00	100.00
ST105-30013	1403217-03	04/02/14 09:23	100.00	100.00
ST105-30018	1403217-05	04/02/14 09:23	100.00	100.00
ST105-30038	1403217-07	04/02/14 09:23	100.00	100.00
Blank	4D02007-BLK1	04/02/14 09:23	100.00	100.00
LCS	4D02007-BS1	04/02/14 09:23	20.00	20.00
LCS Dup	4D02007-BSD1	04/02/14 09:23	20.00	20.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D02017 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30003	1403203-01	04/02/14 12:45	5.00	5.00
ST105-30010	1403203-03	04/02/14 12:45	5.00	5.00
ST105-30011	1403203-05	04/02/14 12:45	5.00	5.00
ST105-30020	1403203-07	04/02/14 12:45	5.00	5.00
ST105-30021	1403203-09	04/02/14 12:45	5.00	5.00
ST105-30008	1403217-01	04/02/14 12:45	5.00	5.00
ST105-30013	1403217-03	04/02/14 12:45	5.00	5.00
ST105-30018	1403217-05	04/02/14 12:45	5.00	5.00
ST105-30038	1403217-07	04/02/14 12:45	5.00	5.00
Blank	4D02017-BLK1	04/02/14 12:45	5.00	5.00
LCS	4D02017-BS1	04/02/14 12:45	5.00	5.00
ST105-30011	4D02017-DUP1	04/02/14 12:45	5.00	5.00
ST105-30011	4D02017-MS1	04/02/14 12:45	22.50	25.00
ST105-30011	4D02017-MSD1	04/02/14 12:45	22.50	25.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D03010 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30036	1404016-01	04/03/14 09:03	5.00	5.00
ST105-30039	1404016-03	04/03/14 09:03	5.00	5.00
ST105-30040	1404016-05	04/03/14 09:03	5.00	5.00
Blank	4D03010-BLK1	04/03/14 09:03	5.00	5.00
LCS	4D03010-BS1	04/03/14 09:03	5.00	5.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D03020 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30036	1404016-01	04/03/14 14:41	100.00	100.00
ST105-30039	1404016-03	04/03/14 14:41	100.00	100.00
ST105-30040	1404016-05	04/03/14 14:41	100.00	100.00
Blank	4D03020-BLK1	04/03/14 14:41	100.00	100.00
LCS	4D03020-BS1	04/03/14 14:41	20.00	20.00
LCS Dup	4D03020-BSD1	04/03/14 14:41	20.00	20.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D04004 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30003	1403203-01	04/04/14 08:41	25.00	25.00
ST105-30010	1403203-03	04/04/14 08:41	25.00	25.00
ST105-30011	1403203-05	04/04/14 08:41	25.00	25.00
ST105-30020	1403203-07	04/04/14 08:41	25.00	25.00
ST105-30021	1403203-09	04/04/14 08:41	25.00	25.00
ST105-30008	1403217-01	04/04/14 08:41	25.00	25.00
ST105-30013	1403217-03	04/04/14 08:41	25.00	25.00
ST105-30018	1403217-05	04/04/14 08:41	25.00	25.00
ST105-30038	1403217-07	04/04/14 08:41	25.00	25.00
Blank	4D04004-BLK1	04/04/14 08:41	25.00	25.00
LCS	4D04004-BS1	04/04/14 08:41	5.00	25.00
ST105-30011	4D04004-MS1	04/04/14 08:41	22.50	25.00
ST105-30011	4D04004-MSD1	04/04/14 08:41	22.50	25.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D07018 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30003	1403203-01	04/07/14 09:26	100.00	100.00
ST105-30010	1403203-03	04/07/14 09:26	100.00	100.00
ST105-30011	1403203-05	04/07/14 09:26	100.00	100.00
ST105-30021	1403203-09	04/07/14 09:26	100.00	100.00
ST105-30008	1403217-01	04/07/14 09:26	100.00	100.00
ST105-30018	1403217-05	04/07/14 09:26	100.00	100.00
Blank	4D07018-BLK2	04/07/14 09:26	100.00	100.00
LCS	4D07018-BS1	04/07/14 09:26	100.00	100.00
ST105-30011	4D07018-MS1	04/07/14 09:26	100.00	100.00
ST105-30011	4D07018-MSD1	04/07/14 09:26	100.00	100.00

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D08002 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30008	1403217-01	04/08/14 08:02	20.00	20.00
ST105-30013	1403217-03	04/08/14 08:02	20.00	20.00
ST105-30018	1403217-05	04/08/14 08:02	20.00	20.00
ST105-30038	1403217-07	04/08/14 08:02	20.00	20.00
ST105-30036	1404016-01	04/08/14 08:02	20.00	20.00
ST105-30039	1404016-03	04/08/14 08:02	20.00	20.00
ST105-30040	1404016-05	04/08/14 08:02	20.00	20.00
Blank	4D08002-BLK1	04/08/14 08:02	20.00	20.00
LCS	4D08002-BS1	04/08/14 08:02	20.00	20.00
ST105-30040	4D08002-MS1	04/08/14 08:02	18.00	20.00
ST105-30040	4D08002-MSD1	04/08/14 08:02	18.00	20.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D09928 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30003	1403203-01	04/09/14 16:38	40.00	40.00
ST105-30003	1403203-02	04/09/14 16:38	40.00	40.00
ST105-30010	1403203-03	04/09/14 16:38	40.00	40.00
ST105-30010	1403203-04	04/09/14 16:38	40.00	40.00
ST105-30011	1403203-05	04/09/14 16:38	40.00	40.00
ST105-30011	1403203-06	04/09/14 16:38	40.00	40.00
ST105-30020	1403203-07	04/09/14 16:38	40.00	40.00
ST105-30020	1403203-08	04/09/14 16:38	40.00	40.00
ST105-30021	1403203-09	04/09/14 16:38	40.00	40.00
ST105-30021	1403203-10	04/09/14 16:38	40.00	40.00
Blank	4D09928-BLK1	04/09/14 16:38	40.00	40.00
LCS	4D09928-BS1	04/09/14 16:38	40.00	40.00
ST105-30011	4D09928-MS1	04/09/14 16:38	40.00	40.00
ST105-30011	4D09928-MS2	04/09/14 16:38	40.00	40.00
ST105-30011	4D09928-MSD1	04/09/14 16:38	40.00	40.00
ST105-30011	4D09928-MSD2	04/09/14 16:38	40.00	40.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D10002 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30038	1403217-07	04/10/14 06:36	100.00	100.00
Blank	4D10002-BLK1	04/10/14 06:36	100.00	100.00
LCS	4D10002-BS1	04/10/14 06:36	100.00	100.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D11003 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30020	1403203-07RE1	04/07/14 09:26	100.00	100.00
ST105-30013	1403217-03RE1	04/07/14 09:26	100.00	100.00
Blank	4D11003-BLK1	04/11/14 08:39	100.00	100.00
LCS	4D11003-BS1	04/11/14 08:39	100.00	100.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D11009 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30008	1403217-01	04/11/14 13:35	40.00	40.00
ST105-30008	1403217-02	04/11/14 13:35	40.00	40.00
ST105-30013	1403217-03	04/11/14 13:35	40.00	40.00
ST105-30013	1403217-04	04/11/14 13:35	40.00	40.00
ST105-30018	1403217-05	04/11/14 13:35	40.00	40.00
ST105-30018	1403217-06	04/11/14 13:35	40.00	40.00
Blank	4D11009-BLK1	04/11/14 13:35	40.00	40.00
LCS	4D11009-BS1	04/11/14 13:35	40.00	40.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D14004 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30036	1404016-01	04/14/14 08:30	25.00	25.00
ST105-30039	1404016-03	04/14/14 08:30	25.00	25.00
ST105-30040	1404016-05	04/14/14 08:30	25.00	25.00
Blank	4D14004-BLK1	04/14/14 08:30	25.00	25.00
LCS	4D14004-BS1	04/14/14 08:30	5.00	25.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D14009 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30036	1404016-01RE1	04/14/14 11:49	4.00	20.00
ST105-30039	1404016-03	04/14/14 11:49	4.00	20.00
ST105-30040	1404016-05	04/14/14 11:49	4.00	20.00
Blank	4D14009-BLK1	04/14/14 11:49	20.00	20.00
LCS	4D14009-BS1	04/14/14 11:49	2.00	20.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D17002 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30036	1404016-01	04/17/14 08:12	100.00	100.00
ST105-30039	1404016-03	04/17/14 08:12	100.00	100.00
ST105-30040	1404016-05	04/17/14 08:12	100.00	100.00
Blank	4D17002-BLK1	04/17/14 08:12	100.00	100.00
LCS	4D17002-BS1	04/17/14 08:12	100.00	100.00
ST105-30036	4D17002-MS1	04/17/14 08:12	100.00	100.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D17010 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30036	1404016-01RE1	04/17/14 13:32	5.00	5.00
ST105-30039	1404016-03RE1	04/17/14 13:32	5.00	5.00
ST105-30040	1404016-05RE1	04/17/14 13:32	5.00	5.00
Blank	4D17010-BLK1	04/17/14 13:32	5.00	5.00
LCS	4D17010-BS1	04/17/14 13:32	5.00	5.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D18013 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30038	1403217-07	04/18/14 14:13	40.00	40.00
ST105-30038	1403217-08	04/18/14 14:13	40.00	40.00
ST105-30036	1404016-01	04/18/14 14:13	40.00	40.00
ST105-30036	1404016-02	04/18/14 14:13	40.00	40.00
ST105-30039	1404016-03	04/18/14 14:13	40.00	40.00
ST105-30039	1404016-04	04/18/14 14:13	40.00	40.00
ST105-30040	1404016-05	04/18/14 14:13	40.00	40.00
ST105-30040	1404016-06	04/18/14 14:13	40.00	40.00
Blank	4D18013-BLK1	04/18/14 14:13	40.00	40.00
LCS	4D18013-BS1	04/18/14 14:13	40.00	40.00

ANALYSIS SEQUENCE SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Blank	4D04004-BLK1	040414-003	04/04/14 13:15
LCS	4D04004-BS1	040414-002	04/04/14 13:27
ST105-30011	4D04004-MS1	040414-004	04/04/14 13:37
ST105-30011	4D04004-MSD1	040414-005	04/04/14 13:57
Blank	4D14004-BLK1	041414-026	04/14/14 09:41
LCS	4D14004-BS1	041414-002	04/14/14 09:46

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_007

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	4C27004-BS1	032714-002	03/27/14 17:24
ST105-30011	4C27004-DUP1	032714-003	03/27/14 17:24
Blank	4C27004-BLK1	032714-001	03/27/14 17:24
LCS Dup	4D02007-BSD1	040214-003	04/02/14 14:27
LCS	4D02007-BS1	040214-002	04/02/14 14:27
Blank	4D02007-BLK1	040214-001	04/02/14 14:27
LCS Dup	4D03020-BSD1	040314-003	04/03/14 17:58
LCS	4D03020-BS1	040314-002	04/03/14 17:58
Blank	4D03020-BLK1	040314-001	04/03/14 17:58

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35106	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35106-CAL1	121013-007	12/10/13 16:44
Cal Standard	3L35106-CAL2	121013-008	12/10/13 17:02
Cal Standard	3L35106-CAL3	121013-009	12/10/13 17:19
Cal Standard	3L35106-CAL4	121013-010	12/10/13 17:37
Cal Standard	3L35106-CAL5	121013-011	12/10/13 17:54
Cal Standard	3L35106-CAL6	121013-012	12/10/13 18:11
Cal Standard	3L35106-CAL7	121013-013	12/10/13 18:29
Cal Standard	3L35106-CAL8	121013-014	12/10/13 18:46
Initial Cal Check	3L35106-ICV1	121013-015	12/10/13 19:04
Initial Cal Blank	3L35106-ICB1	121013-016	12/10/13 19:21

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4C08714	Instrument:	WC-Lachat
Calibration:	4087002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4C08714-CAL1	M_3-28-2014_03-06-30PM-00	03/28/14 15:08
Cal Standard	4C08714-CAL2	M_3-28-2014_03-06-30PM-00	03/28/14 15:09
Cal Standard	4C08714-CAL3	M_3-28-2014_03-06-30PM-00	03/28/14 15:10
Cal Standard	4C08714-CAL4	M_3-28-2014_03-06-30PM-00	03/28/14 15:11
Cal Standard	4C08714-CAL5	M_3-28-2014_03-06-30PM-00	03/28/14 15:12
Cal Standard	4C08714-CAL6	M_3-28-2014_03-06-30PM-00	03/28/14 15:14
Cal Standard	4C08714-CAL7	M_3-28-2014_03-06-30PM-00	03/28/14 15:15
Initial Cal Check	4C08714-ICV1	M_3-28-2014_03-06-30PM-00	03/28/14 15:16
Initial Cal Blank	4C08714-ICB1	M_3-28-2014_03-06-30PM-00	03/28/14 15:17
Blank	4C28005-BLK1	M_3-28-2014_03-06-30PM-01	03/28/14 15:18
LCS	4C28005-BS1	M_3-28-2014_03-06-30PM-01	03/28/14 15:19
ST105-30003	1403203-01	M_3-28-2014_03-06-30PM-02	03/28/14 15:29
ST105-30010	1403203-03	M_3-28-2014_03-06-30PM-02	03/28/14 15:30
Calibration Check	4C08714-CCV1	M_3-28-2014_03-06-30PM-02	03/28/14 15:31
Calibration Blank	4C08714-CCB1	M_3-28-2014_03-06-30PM-02	03/28/14 15:33
ST105-30011	1403203-05	M_3-28-2014_03-06-30PM-02	03/28/14 15:34
ST105-30011	4C28005-MS1	M_3-28-2014_03-06-30PM-02	03/28/14 15:35
ST105-30011	4C28005-MSD1	M_3-28-2014_03-06-30PM-02	03/28/14 15:36
ST105-30020	1403203-07	M_3-28-2014_03-06-30PM-02	03/28/14 15:37
ST105-30021	1403203-09	M_3-28-2014_03-06-30PM-02	03/28/14 15:38
Calibration Check	4C08714-CCV2	M_3-28-2014_03-06-30PM-03	03/28/14 15:43
Calibration Blank	4C08714-CCB2	M_3-28-2014_03-06-30PM-03	03/28/14 15:44

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4C09009	Instrument:	WC-Lachat
Calibration:	4090001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4C09009-CAL1	M_3-31-2014_02-46-31PM-00	03/31/14 14:48
Cal Standard	4C09009-CAL2	M_3-31-2014_02-46-31PM-00	03/31/14 14:50
Cal Standard	4C09009-CAL3	M_3-31-2014_02-46-31PM-00	03/31/14 14:51
Cal Standard	4C09009-CAL4	M_3-31-2014_02-46-31PM-00	03/31/14 14:52
Cal Standard	4C09009-CAL5	M_3-31-2014_02-46-31PM-00	03/31/14 14:54
Cal Standard	4C09009-CAL6	M_3-31-2014_02-46-31PM-00	03/31/14 14:55
Cal Standard	4C09009-CAL7	M_3-31-2014_02-46-31PM-00	03/31/14 14:57
Cal Standard	4C09009-CAL8	M_3-31-2014_02-46-31PM-00	03/31/14 14:58
Initial Cal Check	4C09009-ICV1	M_3-31-2014_02-46-31PM-00	03/31/14 15:00
Initial Cal Blank	4C09009-ICB1	M_3-31-2014_02-46-31PM-01	03/31/14 15:01
Blank	4C31028-BLK1	M_3-31-2014_02-46-31PM-01	03/31/14 15:04
LCS	4C31028-BS1	M_3-31-2014_02-46-31PM-01	03/31/14 15:05
ST105-30003	1403203-01	M_3-31-2014_02-46-31PM-01	03/31/14 15:07
ST105-30011	1403203-05	M_3-31-2014_02-46-31PM-01	03/31/14 15:10
ST105-30020	1403203-07	M_3-31-2014_02-46-31PM-01	03/31/14 15:14
ST105-30021	1403203-09	M_3-31-2014_02-46-31PM-02	03/31/14 15:16
Calibration Check	4C09009-CCV1	M_3-31-2014_02-46-31PM-02	03/31/14 15:24
Calibration Blank	4C09009-CCB1	M_3-31-2014_02-46-31PM-02	03/31/14 15:26
ST105-30038	1403217-07	M_3-31-2014_02-46-31PM-02	03/31/14 15:27
Calibration Check	4C09009-CCV2	M_3-31-2014_02-46-31PM-03	03/31/14 15:43
Calibration Blank	4C09009-CCB2	M_3-31-2014_02-46-31PM-04	03/31/14 15:45
ST105-30011	4C31028-MS2	M_3-31-2014_02-46-31PM-04	03/31/14 15:46
ST105-30011	4C31028-MSD2	M_3-31-2014_02-46-31PM-04	03/31/14 15:48
ST105-30008	1403217-01RE1	M_3-31-2014_02-46-31PM-04	03/31/14 15:49
ST105-30013	1403217-03RE1	M_3-31-2014_02-46-31PM-04	03/31/14 15:51
ST105-30018	1403217-05RE1	M_3-31-2014_02-46-31PM-04	03/31/14 15:52
Calibration Check	4C09009-CCV3	M_3-31-2014_02-46-31PM-04	03/31/14 15:53
Calibration Blank	4C09009-CCB3	M_3-31-2014_02-46-31PM-04	03/31/14 15:55

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D09814	Instrument:	WC-Lachat
Calibration:	4098003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D09814-CAL1	)M_4-8-2014_04-33-36PM-00	04/08/14 16:34
Cal Standard	4D09814-CAL2	)M_4-8-2014_04-33-36PM-00	04/08/14 16:35
Cal Standard	4D09814-CAL3	)M_4-8-2014_04-33-36PM-00	04/08/14 16:36
Cal Standard	4D09814-CAL4	)M_4-8-2014_04-33-36PM-00	04/08/14 16:37
Cal Standard	4D09814-CAL5	)M_4-8-2014_04-33-36PM-00	04/08/14 16:38
Cal Standard	4D09814-CAL6	)M_4-8-2014_04-33-36PM-00	04/08/14 16:40
Cal Standard	4D09814-CAL7	)M_4-8-2014_04-33-36PM-00	04/08/14 16:41
Initial Cal Check	4D09814-ICV1	)M_4-8-2014_04-33-36PM-00	04/08/14 16:42
Initial Cal Blank	4D09814-ICB1	)M_4-8-2014_04-33-36PM-00	04/08/14 16:43
Blank	4D08002-BLK1	)M_4-8-2014_04-33-36PM-01	04/08/14 16:44
LCS	4D08002-BS1	)M_4-8-2014_04-33-36PM-01	04/08/14 16:45
ST105-30008	1403217-01	)M_4-8-2014_04-33-36PM-01	04/08/14 16:47
ST105-30013	1403217-03	)M_4-8-2014_04-33-36PM-01	04/08/14 16:48
ST105-30018	1403217-05	)M_4-8-2014_04-33-36PM-01	04/08/14 16:50
ST105-30038	1403217-07	)M_4-8-2014_04-33-36PM-01	04/08/14 16:51
ST105-30036	1404016-01	)M_4-8-2014_04-33-36PM-01	04/08/14 16:52
ST105-30039	1404016-03	)M_4-8-2014_04-33-36PM-01	04/08/14 16:53
ST105-30040	1404016-05	)M_4-8-2014_04-33-36PM-01	04/08/14 16:54
ST105-30040	4D08002-MS1	)M_4-8-2014_04-33-36PM-02	04/08/14 16:55
ST105-30040	4D08002-MSD1	)M_4-8-2014_04-33-36PM-02	04/08/14 16:56
Calibration Check	4D09814-CCV1	)M_4-8-2014_04-33-36PM-02	04/08/14 16:57
Calibration Blank	4D09814-CCB1	)M_4-8-2014_04-33-36PM-02	04/08/14 16:59

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10004	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D10004-CCV1	040214-003	04/02/14 14:29
Calibration Blank	4D10004-CCB1	040214-004	04/02/14 14:46
Instrument RL Check	4D10004-CRL1	040214-005	04/02/14 15:04
Instrument RL Check	4D10004-CRL2	040214-006	04/02/14 15:21
Instrument RL Check	4D10004-CRL3	040214-007	04/02/14 15:39
Blank	4D02017-BLK1	040214-008	04/02/14 15:56
LCS	4D02017-BS1	040214-009	04/02/14 16:14
ST105-30003	1403203-01	040214-012	04/02/14 17:06
ST105-30010	1403203-03	040214-013	04/02/14 17:23
ST105-30011	1403203-05	040214-014	04/02/14 17:41
ST105-30011	4D02017-MS1	040214-015	04/02/14 17:58
ST105-30011	4D02017-MSD1	040214-016	04/02/14 18:16
ST105-30011	4D02017-DUP1	040214-017	04/02/14 18:33
ST105-30020	1403203-07	040214-018	04/02/14 18:50
ST105-30021	1403203-09	040214-019	04/02/14 19:08
ST105-30008	1403217-01	040214-020	04/02/14 19:25
ST105-30013	1403217-03	040214-021	04/02/14 19:43
ST105-30018	1403217-05	040214-022	04/02/14 20:00
Calibration Check	4D10004-CCV2	040214-023	04/02/14 20:18
Calibration Blank	4D10004-CCB2	040214-024	04/02/14 20:35
ST105-30038	1403217-07	040214-025	04/02/14 20:53
Calibration Check	4D10004-CCV3	040214-026	04/02/14 21:10
Calibration Blank	4D10004-CCB3	040214-027	04/02/14 21:27

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10029	Instrument:	WC-Lachat
Calibration:	4100003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D10029-CAL1	M_4-10-2014_02-41-06PM-00	04/10/14 14:42
Cal Standard	4D10029-CAL2	M_4-10-2014_02-41-06PM-00	04/10/14 14:43
Cal Standard	4D10029-CAL3	M_4-10-2014_02-41-06PM-00	04/10/14 14:44
Cal Standard	4D10029-CAL4	M_4-10-2014_02-41-06PM-00	04/10/14 14:45
Cal Standard	4D10029-CAL5	M_4-10-2014_02-41-06PM-00	04/10/14 14:46
Cal Standard	4D10029-CAL6	M_4-10-2014_02-41-06PM-00	04/10/14 14:47
Cal Standard	4D10029-CAL7	M_4-10-2014_02-41-06PM-00	04/10/14 14:48
Cal Standard	4D10029-CAL8	M_4-10-2014_02-41-06PM-00	04/10/14 14:49
Initial Cal Check	4D10029-ICV1	M_4-10-2014_02-41-06PM-00	04/10/14 14:50
Initial Cal Blank	4D10029-ICB1	M_4-10-2014_02-41-06PM-01	04/10/14 14:51
LCS	4D07018-BS1	M_4-10-2014_02-41-06PM-01	04/10/14 14:52
ST105-30003	1403203-01	M_4-10-2014_02-41-06PM-01	04/10/14 14:53
ST105-30010	1403203-03	M_4-10-2014_02-41-06PM-01	04/10/14 14:54
ST105-30011	1403203-05	M_4-10-2014_02-41-06PM-01	04/10/14 14:55
ST105-30011	4D07018-MS1	M_4-10-2014_02-41-06PM-01	04/10/14 14:56
ST105-30011	4D07018-MSD1	M_4-10-2014_02-41-06PM-01	04/10/14 14:57
ST105-30021	1403203-09	M_4-10-2014_02-41-06PM-01	04/10/14 14:59
ST105-30008	1403217-01	M_4-10-2014_02-41-06PM-02	04/10/14 15:00
ST105-30018	1403217-05	M_4-10-2014_02-41-06PM-02	04/10/14 15:02
Calibration Check	4D10029-CCV1	M_4-10-2014_02-41-06PM-02	04/10/14 15:05
Calibration Blank	4D10029-CCB1	M_4-10-2014_02-41-06PM-02	04/10/14 15:06
Blank	4D07018-BLK2	M_4-10-2014_02-41-06PM-03	04/10/14 15:12
Calibration Check	4D10029-CCV2	M_4-10-2014_02-41-06PM-03	04/10/14 15:13
Calibration Blank	4D10029-CCB2	M_4-10-2014_02-41-06PM-03	04/10/14 15:13

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10033	Instrument:	WC-TOC1
Calibration:	UNASSIGNED		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D10033-CCV1	4-09-14Q-001	04/09/14 17:58
Calibration Blank	4D10033-CCB1	4-09-14Q-002	04/09/14 18:23
Blank	4D09928-BLK1	4-09-14Q-003	04/09/14 18:45
LCS	4D09928-BS1	4-09-14Q-004	04/09/14 19:15
ST105-30003	1403203-01	4-09-14Q-009	04/09/14 21:12
ST105-30003	1403203-02	4-09-14Q-010	04/09/14 21:36
ST105-30010	1403203-03	4-09-14Q-011	04/09/14 21:58
ST105-30010	1403203-04	4-09-14Q-012	04/09/14 22:21
ST105-30011	1403203-05	4-09-14Q-013	04/09/14 22:44
ST105-30011	4D09928-MS1	4-09-14Q-014	04/09/14 23:08
ST105-30011	4D09928-MSD1	4-09-14Q-015	04/09/14 23:32
Calibration Check	4D10033-CCV2	4-09-14Q-016	04/10/14 00:03
Calibration Blank	4D10033-CCB2	4-09-14Q-017	04/10/14 00:27
ST105-30011	1403203-06	4-09-14Q-018	04/10/14 00:50
ST105-30011	4D09928-MS2	4-09-14Q-019	04/10/14 01:14
ST105-30011	4D09928-MSD2	4-09-14Q-020	04/10/14 01:38
ST105-30020	1403203-07	4-09-14Q-021	04/10/14 02:01
ST105-30020	1403203-08	4-09-14Q-022	04/10/14 02:25
ST105-30021	1403203-09	4-09-14Q-023	04/10/14 02:47
ST105-30021	1403203-10	4-09-14Q-024	04/10/14 03:11
Calibration Check	4D10033-CCV3	4-09-14Q-026	04/10/14 04:00
Calibration Blank	4D10033-CCB3	4-09-14Q-027	04/10/14 04:25

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10113	Instrument:	WC-Lachat
Calibration:	4101006		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D10113-CAL1	M_4-11-2014_01-58-35PM-00	04/11/14 13:59
Cal Standard	4D10113-CAL2	M_4-11-2014_01-58-35PM-00	04/11/14 14:00
Cal Standard	4D10113-CAL3	M_4-11-2014_01-58-35PM-00	04/11/14 14:01
Cal Standard	4D10113-CAL4	M_4-11-2014_01-58-35PM-00	04/11/14 14:02
Cal Standard	4D10113-CAL5	M_4-11-2014_01-58-35PM-00	04/11/14 14:03
Cal Standard	4D10113-CAL6	M_4-11-2014_01-58-35PM-00	04/11/14 14:04
Cal Standard	4D10113-CAL7	M_4-11-2014_01-58-35PM-00	04/11/14 14:05
Cal Standard	4D10113-CAL8	M_4-11-2014_01-58-35PM-00	04/11/14 14:06
Initial Cal Check	4D10113-ICV1	M_4-11-2014_01-58-35PM-00	04/11/14 14:07
Initial Cal Blank	4D10113-ICB1	M_4-11-2014_01-58-35PM-01	04/11/14 14:08
Blank	4D10002-BLK1	M_4-11-2014_01-58-35PM-01	04/11/14 14:09
LCS	4D10002-BS1	M_4-11-2014_01-58-35PM-01	04/11/14 14:10
ST105-30038	1403217-07	M_4-11-2014_01-58-35PM-01	04/11/14 14:16
Calibration Check	4D10113-CCV1	M_4-11-2014_01-58-35PM-02	04/11/14 14:22
Calibration Blank	4D10113-CCB1	M_4-11-2014_01-58-35PM-02	04/11/14 14:23
Blank	4D11003-BLK1	M_4-11-2014_01-58-35PM-03	04/11/14 14:28
LCS	4D11003-BS1	M_4-11-2014_01-58-35PM-03	04/11/14 14:29
ST105-30020	1403203-07RE1	M_4-11-2014_01-58-35PM-03	04/11/14 14:30
ST105-30013	1403217-03RE1	M_4-11-2014_01-58-35PM-03	04/11/14 14:31
Calibration Check	4D10113-CCV2	M_4-11-2014_01-58-35PM-04	04/11/14 14:37
Calibration Blank	4D10113-CCB2	M_4-11-2014_01-58-35PM-04	04/11/14 14:38

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10410	Instrument:	WC-Lachat
Calibration:	4104001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D10410-CAL1	M_4-14-2014_01-41-36PM-00	04/14/14 13:43
Cal Standard	4D10410-CAL2	M_4-14-2014_01-41-36PM-00	04/14/14 13:45
Cal Standard	4D10410-CAL3	M_4-14-2014_01-41-36PM-00	04/14/14 13:46
Cal Standard	4D10410-CAL4	M_4-14-2014_01-41-36PM-00	04/14/14 13:48
Cal Standard	4D10410-CAL5	M_4-14-2014_01-41-36PM-00	04/14/14 13:49
Cal Standard	4D10410-CAL6	M_4-14-2014_01-41-36PM-00	04/14/14 13:50
Cal Standard	4D10410-CAL7	M_4-14-2014_01-41-36PM-00	04/14/14 13:52
Cal Standard	4D10410-CAL8	M_4-14-2014_01-41-36PM-00	04/14/14 13:53
Initial Cal Check	4D10410-ICV1	M_4-14-2014_01-41-36PM-00	04/14/14 13:55
Initial Cal Blank	4D10410-ICB1	M_4-14-2014_01-41-36PM-01	04/14/14 13:56
Blank	4D14009-BLK1	M_4-14-2014_01-41-36PM-01	04/14/14 13:59
LCS	4D14009-BS1	M_4-14-2014_01-41-36PM-01	04/14/14 14:01
ST105-30010	1403203-03RE1	M_4-14-2014_01-41-36PM-01	04/14/14 14:02
ST105-30039	1404016-03	M_4-14-2014_01-41-36PM-01	04/14/14 14:08
ST105-30040	1404016-05	M_4-14-2014_01-41-36PM-01	04/14/14 14:09
Calibration Check	4D10410-CCV1	M_4-14-2014_01-41-36PM-02	04/14/14 14:17
Calibration Blank	4D10410-CCB1	M_4-14-2014_01-41-36PM-02	04/14/14 14:18
ST105-30036	1404016-01RE1	M_4-14-2014_01-41-36PM-03	04/14/14 14:28
Calibration Check	4D10410-CCV2	M_4-14-2014_01-41-36PM-03	04/14/14 14:34
Calibration Blank	4D10410-CCB2	M_4-14-2014_01-41-36PM-03	04/14/14 14:36

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10606	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D10606-CCV1	040314-002	04/03/14 11:32
Calibration Blank	4D10606-CCB1	040314-003	04/03/14 11:49
Instrument RL Check	4D10606-CRL1	040314-004	04/03/14 12:06
Instrument RL Check	4D10606-CRL2	040314-005	04/03/14 12:24
Instrument RL Check	4D10606-CRL3	040314-006	04/03/14 12:41
Blank	4D03010-BLK1	040314-007	04/03/14 12:59
LCS	4D03010-BS1	040314-008	04/03/14 13:16
ST105-30036	1404016-01	040314-012	04/03/14 14:26
ST105-30039	1404016-03	040314-013	04/03/14 14:43
ST105-30040	1404016-05	040314-014	04/03/14 15:01
Calibration Check	4D10606-CCV2	040314-026	04/03/14 18:30
Calibration Blank	4D10606-CCB2	040314-027	04/03/14 18:47

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10809	Instrument:	WC-Lachat
Calibration:	4108003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D10809-CAL1	M_4-18-2014_01-32-13PM-00	04/18/14 13:33
Cal Standard	4D10809-CAL2	M_4-18-2014_01-32-13PM-00	04/18/14 13:34
Cal Standard	4D10809-CAL3	M_4-18-2014_01-32-13PM-00	04/18/14 13:35
Cal Standard	4D10809-CAL4	M_4-18-2014_01-32-13PM-00	04/18/14 13:36
Cal Standard	4D10809-CAL5	M_4-18-2014_01-32-13PM-00	04/18/14 13:37
Cal Standard	4D10809-CAL6	M_4-18-2014_01-32-13PM-00	04/18/14 13:38
Cal Standard	4D10809-CAL7	M_4-18-2014_01-32-13PM-00	04/18/14 13:39
Cal Standard	4D10809-CAL8	M_4-18-2014_01-32-13PM-00	04/18/14 13:40
Initial Cal Check	4D10809-ICV1	M_4-18-2014_01-32-13PM-00	04/18/14 13:41
Initial Cal Blank	4D10809-ICB1	M_4-18-2014_01-32-13PM-01	04/18/14 13:42
Blank	4D17002-BLK1	M_4-18-2014_01-32-13PM-01	04/18/14 13:43
LCS	4D17002-BS1	M_4-18-2014_01-32-13PM-01	04/18/14 13:43
ST105-30036	1404016-01	M_4-18-2014_01-32-13PM-01	04/18/14 13:44
ST105-30036	4D17002-MS1	M_4-18-2014_01-32-13PM-01	04/18/14 13:45
ST105-30039	1404016-03	M_4-18-2014_01-32-13PM-01	04/18/14 13:46
ST105-30040	1404016-05	M_4-18-2014_01-32-13PM-01	04/18/14 13:47
Calibration Check	4D10809-CCV1	M_4-18-2014_01-32-13PM-02	04/18/14 13:56
Calibration Blank	4D10809-CCB1	M_4-18-2014_01-32-13PM-02	04/18/14 13:57

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11101	Instrument:	WC-TOC1
Calibration:	UNASSIGNED		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D11101-CCV1	4-11-14-001	04/11/14 15:26
Calibration Blank	4D11101-CCB1	4-11-14-002	04/11/14 15:51
Blank	4D11009-BLK1	4-11-14-003	04/11/14 16:13
LCS	4D11009-BS1	4-11-14-004	04/11/14 16:41
ST105-30008	1403217-01	4-11-14-005	04/11/14 17:06
ST105-30008	1403217-02	4-11-14-006	04/11/14 17:29
ST105-30013	1403217-03	4-11-14-007	04/11/14 17:52
ST105-30013	1403217-04	4-11-14-008	04/11/14 18:16
ST105-30018	1403217-05	4-11-14-009	04/11/14 18:38
ST105-30018	1403217-06	4-11-14-010	04/11/14 19:02
Calibration Check	4D11101-CCV2	4-11-14-017	04/11/14 21:53
Calibration Blank	4D11101-CCB2	4-11-14-018	04/11/14 22:17

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11107	Instrument:	WC-TOC1
Calibration:	UNASSIGNED		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D11107-CCV1	4-18-14Q-001	04/18/14 16:03
Calibration Blank	4D11107-CCB1	4-18-14Q-002	04/18/14 16:26
Blank	4D18013-BLK1	4-18-14Q-003	04/18/14 16:49
LCS	4D18013-BS1	4-18-14Q-004	04/18/14 17:16
ST105-30038	1403217-07	4-18-14Q-005	04/18/14 17:40
ST105-30038	1403217-08	4-18-14Q-006	04/18/14 18:04
ST105-30036	1404016-01	4-18-14Q-007	04/18/14 18:27
ST105-30036	1404016-02	4-18-14Q-008	04/18/14 18:50
ST105-30039	1404016-03	4-18-14Q-009	04/18/14 19:13
ST105-30039	1404016-04	4-18-14Q-010	04/18/14 19:37
ST105-30040	1404016-05	4-18-14Q-011	04/18/14 19:59
ST105-30040	1404016-06	4-18-14Q-012	04/18/14 20:22
Calibration Check	4D11107-CCV2	4-18-14Q-015	04/18/14 21:39
Calibration Blank	4D11107-CCB2	4-18-14Q-016	04/18/14 22:04

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11312	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D11312-CCV1	041714-003	04/17/14 16:25
Calibration Blank	4D11312-CCB1	041714-004	04/17/14 16:42
Instrument RL Check	4D11312-CRL3	041714-007	04/17/14 17:35
Blank	4D17010-BLK1	041714-008	04/17/14 17:52
LCS	4D17010-BS1	041714-009	04/17/14 18:09
ST105-30036	1404016-01RE1	041714-020	04/17/14 21:21
ST105-30039	1404016-03RE1	041714-021	04/17/14 21:38
ST105-30040	1404016-05RE1	041714-022	04/17/14 21:56
Calibration Check	4D11312-CCV2	041714-023	04/17/14 22:13
Calibration Blank	4D11312-CCB2	041714-024	04/17/14 22:31

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	813540	0.1	853290	0.25	905720	0.5	956456	2.5	1018020	5	1028788
Nitrite as N	0.05	965740	0.1	944100	0.25	912864	0.5	952380	2.5	889644.8	5	849190.4
Bromide	0.126	134238.1	0.252	137654.8	0.63	145555.6	1.26	160582.5	6.3	175999.5	12.6	179760.6
Chloride	0.5	386028	1	399602	2.5	397485.6	5	405301.8	25	410491.2	50	411932.8
Fluoride	0.05	638320	0.1	659420	0.25	670580	0.5	671448	2.5	665322.8	5	630216.2
Sulfate as SO4	0.5	365110	1	353321	2.5	332900	5	313738.2	25	308262.3	50	308796.8

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	1017034	25	1032948								
Nitrite as N	12.5	743872.1	25	627085.2								
Bromide	31.5	178666.7	63	182048.9								
Chloride	125	404190.3	250	404326.4								
Fluoride	12.5	~~559804.6~~	25	~~506008.4~~								
Sulfate as SO4	125	300572.3	250	300597.6								

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	953224.6	9.050688	9.2925	2.89029				*
Nitrite as N	860609.6	13.77032	5.41	1.226206				*
Bromide	161813.3	12.41877	7.8425	1.187843	0.9998959		0.995	
Chloride	402419.8	2.039875	4.46125	0.5546317	0.9999818		0.995	
Fluoride	655884.5	2.664565	3.07	2.432736E-02	0.9991903		0.995	
Sulfate as SO4	322912.3	7.675524	5.99	2.923035	0.9999575		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4087002	Instrument:	WC-Lachat
Matrix:	Water	Calibration Dates:	3/28/14 15:08 3/28/14 15:15

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	20	0.2162	10	~~0.2589~~	8	~~0.2805~~	5	0.3538	2	0.6095	1	1.029

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4087002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/28/14 15:08	3/28/14 15:15

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	0	0										

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4087002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/28/14 15:08	3/28/14 15:15

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Kjeldahl Nitrogen	0.4417	89.61714	46.846	0.4792653	0.9997097		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4090001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/31/14 14:48	3/31/14 14:58

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	2	3.8	1.6	3.964375	1.2	3.779166	0.8	4.20125	0.4	4.425	0.2	4.72

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4090001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/31/14 14:48	3/31/14 14:58

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	0.1	4.569	0	0								

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4090001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	3/31/14 14:48	3/31/14 14:58

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate/Nitrite as N	3.682349	41.49858	31.95625	2.490134	0.997752		0.99	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4098003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/8/14 16:34	4/8/14 16:41

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	20	0.24325	10	~~0.2984~~	8	~~0.321375~~	5	0.3976	2	0.675	1	1.129

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4098003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/8/14 16:34	4/8/14 16:41

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	0	0										

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4098003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/8/14 16:34	4/8/14 16:41

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Kjeldahl Nitrogen	0.48897	88.67785	47.508	1.134799	0.9996858		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4100003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/10/14 14:42	4/10/14 14:49

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	2.712	8	2.77375	2	2.929	1	2.896	0.4	2.905	0.2	2.792

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4100003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/10/14 14:42	4/10/14 14:49

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	2.893	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4100003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/10/14 14:42	4/10/14 14:49

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.487594	40.52336	31.49375	2.704848	0.9996931		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4101006	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/11/14 13:59	4/11/14 14:06

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	2.786	8	2.8275	2	2.9825	1	2.943	0.4	2.855	0.2	2.7995

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4101006	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/11/14 13:59	4/11/14 14:06

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	2.731	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4101006	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/11/14 13:59	4/11/14 14:06

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.490563	40.5411	31.6475	1.799189	0.9997963		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4104001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/14/14 13:43	4/14/14 13:53

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	2	3.566	1.6	3.68	1.2	3.76	0.8	3.84375	0.4	4.105	0.2	4.1815

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4104001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/14/14 13:43	4/14/14 13:53

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	0.1	4.189	0	0								

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4104001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/14/14 13:43	4/14/14 13:53

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate/Nitrite as N	3.415656	40.98892	32.73	4.469332	0.9987609		0.99	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4108003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/18/14 13:33	4/18/14 13:40

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	3.009	8	3.06625	2	3.24	1	3.259	0.4	3.25	0.2	3.14

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4108003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/18/14 13:33	4/18/14 13:40

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	3.238	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_007	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4108003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/18/14 13:33	4/18/14 13:40

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.775281	40.5468	32.36875	1.805413	0.999747		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4C27004

Empirical Laboratories, LLC

Printed: 4/18/2014 3:58:11PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403157-02	D	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
1403184-01	D	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
1403184-03	D	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
1403194-01	H	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
1403194-03	H	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
1403203-01	A	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
1403203-03	A	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
1403203-05	A	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	MS/MSD
1403203-07	A	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
1403203-09	A	WC_TOTAL_DISS_SOLIDS_25	03/27/2014	100	100					NA	
4C27004-BLK1		QC	03/27/2014	100	100					NA	
4C27004-BS1		QC	03/27/2014	20	20	14B0390		20000		NA	
4C27004-DUP1		QC	03/27/2014	100	100		1403203-05			NA	

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

4C28005

Empirical Laboratories, LLC

Printed: 4/10/2014 3:04:46PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403147-01	A	WC_TKN_351.2	03/28/2014	4	20					NA	
1403147-03	A	WC_TKN_351.2	03/28/2014	20	20					NA	
1403152-03	A	WC_TKN_351.2	03/28/2014	4	20					NA	
1403152-03RE1	A	WC_TKN_351.2	03/28/2014	4	20					NA	Added 3/28/2014 by RGB
1403160-01	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403160-03	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403160-05	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403160-07	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403160-09	B	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403203-01	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403203-03	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403203-05	I	WC_TKN_351.2	03/28/2014	20	20					NA	MS/MSD; Outside DoD cert
1403203-07	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403203-09	C	WC_TKN_351.2	03/28/2014	20	20					NA	Outside DoD cert
1403213-05	A	WC_TKN_351.2	03/28/2014	2	20					NA	
4C28005-BLK1		QC	03/28/2014	20	20					NA	
4C28005-BS1		QC	03/28/2014	20	20	14A0452		20000		NA	
4C28005-MS1		QC	03/28/2014	18	20	14A0166	1403203-05	2000		NA	
4C28005-MSD1		QC	03/28/2014	18	20	14A0166	1403203-05	2000		NA	

Kirtlandecos_007

PREPARATION BENCH SHEET

4C28005

Empirical Laboratories, LLC

Printed: 4/10/2014 3:04:46PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
14A0207	TKN 0.8M NaOH
14A0225	TKN Carrier
14A0402	TKN Salicylate Nitroprusside Reagent
14B0281	TKN Digestion Soln
14B0494	TKN Buffer
14C0665	TKN Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4C31028

Empirical Laboratories, LLC **Printed: 4/22/2014 3:01:32PM**

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403203-01	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403203-03	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403203-03RE1	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	Added 4/14/2014 by RGB
1403203-05	I	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	MS/MSD
1403203-07	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403203-09	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403213-01	A	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403214-01	K	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403217-01	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403217-01RE1	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	Added 3/31/2014 by RGB
1403217-03	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403217-03RE1	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	Added 3/31/2014 by RGB
1403217-05	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
1403217-05RE1	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	Added 3/31/2014 by RGB
1403217-07	C	WC_NO3NO2_N_353.2	03/31/2014	4	20					NA	
4C31028-BLK1		QC	03/31/2014	20	20					NA	
4C31028-BS1		QC	03/31/2014	2	20	14A0409		2000		NA	
4C31028-MS1		QC	03/31/2014	4	20	14B0358	1403203-05	500		NA	
4C31028-MS2		QC	03/31/2014	4	20	14B0358	1403203-05	500		NA	Added 3/31/2014 by RGB
4C31028-MSD1		QC	03/31/2014	4	20	14B0358	1403203-05	500		NA	
4C31028-MSD2		QC	03/31/2014	4	20	14B0358	1403203-05	500		NA	Added 3/31/2014 by RGB

PREPARATION BENCH SHEET

4C31028

Empirical Laboratories, LLC

Printed: 4/22/2014 3:01:32PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
14A0570	NO3/NO2 Carrier (Acid DI)
14B0522	NO2/NO3 Sulfanilimide Color Reagent
14C0133	NO2/NO3 Buffer

PREPARATION BENCH SHEET

4D02007

Empirical Laboratories, LLC

Printed: 4/24/2014 4:37:21PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403217-01	A	WC_TOTAL_DISS_SOLIDS_25	04/02/2014	100	100					NA	
1403217-03	A	WC_TOTAL_DISS_SOLIDS_25	04/02/2014	100	100					NA	
1403217-05	A	WC_TOTAL_DISS_SOLIDS_25	04/02/2014	100	100					NA	
1403217-07	A	WC_TOTAL_DISS_SOLIDS_25	04/02/2014	100	100					NA	
4D02007-BLK1		QC	04/02/2014	100	100					NA	
4D02007-BS1		QC	04/02/2014	20	20	14B0390		20000		NA	
4D02007-BSD1		QC	04/02/2014	20	20	14B0390		20000		NA	

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

4D02017

Empirical Laboratories, LLC

Printed: 4/24/2014 4:38:07PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403203-01	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	see versions
1403203-03	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	see versions
1403203-05	A	WC_ANIONS_300.0 (Short Hol	04/02/2014	5	5					NA	Added for BatchQC in: 4D02017
1403203-05	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	MS/MSD
1403203-07	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	see versions
1403203-09	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	see versions
1403217-01	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	see versions
1403217-03	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	see versions
1403217-05	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	see versions
1403217-07	A	WC_ANIONS_9056A (Regular)	04/02/2014	5	5					NA	see versions
1404009-01	A	WC_ANIONS_300.0 (Short Hol	04/02/2014	5	5					NA	see version
1404009-02	A	WC_ANIONS_300.0 (Short Hol	04/02/2014	5	5					NA	see version
4D02017-BLK1		QC	04/02/2014	5	5					NA	
4D02017-BS1		QC	04/02/2014	5	5	14C0301		5000		NA	
4D02017-DUP1		QC	04/02/2014	5	5		1403203-05			NA	
4D02017-MS1		QC	04/02/2014	22.5	25	14C0398	1403203-05	2500		NA	
4D02017-MSD1		QC	04/02/2014	22.5	25	14C0398	1403203-05	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D03010

Empirical Laboratories, LLC

Printed: 4/22/2014 2:00:56PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404016-01	A	WC_ANIONS_9056A (Regular)	04/03/2014	5	5					NA	see versions
1404016-03	A	WC_ANIONS_9056A (Regular)	04/03/2014	5	5					NA	see versions
1404016-05	A	WC_ANIONS_9056A (Regular)	04/03/2014	5	5					NA	see versions
1404017-01	D	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	Added for BatchQC in: 4D03010
1404017-01	D	WC_ANIONS_300.0 (Short Hol	04/03/2014	5	5					NA	Added for BatchQC in: 4D03010
1404017-01	D	WC_ANIONS_9056A (Regular)	04/03/2014	5	5					NA	see versions
1404017-03	D	WC_ANIONS_9056A (Regular)	04/03/2014	5	5					NA	see versions
1404017-05	D	WC_ANIONS_9056A (Regular)	04/03/2014	5	5					NA	see versions
1404017-07	D	WC_ANIONS_9056A (Regular)	04/03/2014	5	5					NA	see versions
1404019-01	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-02	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-03	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-04	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-05	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-06	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-07	A	WC_ANIONS_300.0 (Short Hol	04/03/2014	5	5					NA	Added for BatchQC in: 4D03010
1404019-07	A	WC_ANIONS_9056A (Regular)	04/03/2014	5	5					NA	Added for BatchQC in: 4D03010
1404019-07	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-08	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-09	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404019-10	A	WC_ANIONS_300.0 (Regular)	04/03/2014	5	5					NA	F- only
1404021-03	-	WC_ANIONS_300.0 (Short Hol	04/03/2014	5	5					NA	see versions

PREPARATION BENCH SHEET

4D03010

Empirical Laboratories, LLC

Printed: 4/22/2014 2:00:56PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404021-07	-	WC_ANIONS_300.0 (Short Hol	04/03/2014	5	5					NA	see versions
1404021-08	-	WC_ANIONS_300.0 (Short Hol	04/03/2014	5	5					NA	see versions
4D03010-BLK1		QC	04/03/2014	5	5					NA	
4D03010-BS1		QC	04/03/2014	5	5	14C0301		5000		NA	
4D03010-DUP1		QC	04/03/2014	5	5		1404017-01			NA	
4D03010-DUP2		QC	04/03/2014	5	5		1404019-07			NA	
4D03010-MS1		QC	04/03/2014	22.5	25	14C0398	1404017-01	2500		NA	
4D03010-MS2		QC	04/03/2014	22.5	25	14C0398	1404019-07	2500		NA	
4D03010-MSD1		QC	04/03/2014	22.5	25	14C0398	1404017-01	2500		NA	
4D03010-MSD2		QC	04/03/2014	22.5	25	14C0398	1404019-07	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D03020

Empirical Laboratories, LLC

Printed: 4/24/2014 4:38:31PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404016-01	A	WC_TOTAL_DISS_SOLIDS_25	04/03/2014	100	100					NA	
1404016-03	A	WC_TOTAL_DISS_SOLIDS_25	04/03/2014	100	100					NA	
1404016-05	A	WC_TOTAL_DISS_SOLIDS_25	04/03/2014	100	100					NA	
4D03020-BLK1		QC	04/03/2014	100	100					NA	
4D03020-BS1		QC	04/03/2014	20	20	14B0390		20000		NA	
4D03020-BSD1		QC	04/03/2014	20	20	14B0390		20000		NA	

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

Kirtlandecos_007

PREPARATION BENCH SHEET

4D04004

Empirical Laboratories, LLC

Printed: 4/22/2014 3:02:52PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403203-01	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1403203-03	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1403203-05	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	MS/MSD
1403203-07	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1403203-09	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1403214-01	C	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1403217-01	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1403217-03	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1403217-05	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1403217-07	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1404009-01	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
1404009-02	A	WC_ALKALINITY_2320B	04/04/2014	25	25					NA	
4D04004-BLK1		QC	04/04/2014	25	25					NA	
4D04004-BS1		QC	04/04/2014	5	25	13L0375		5000		NA	
4D04004-MS1		QC	04/04/2014	22.5	25	13L0375	1403203-05	2500		NA	
4D04004-MSD1		QC	04/04/2014	22.5	25	13L0375	1403203-05	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D07018

Empirical Laboratories, LLC

Printed: 4/24/2014 4:38:56PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403203-01	B	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1403203-03	B	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1403203-05	D	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	MS/MSD
1403203-07	B	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1403203-09	B	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1403217-01	C	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1403217-03	C	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1403217-05	C	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1404021-01	A	WC_AMMONIA_PHENATE_45	04/07/2014	10	100					NA	
1404021-03	A	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1404021-07	A	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1404021-08	A	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1404021-09	A	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
1404024-01	A	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	
4D07018-BLK1		QC	04/07/2014	100	100					NA	
4D07018-BLK2		QC	04/07/2014	100	100					NA	Added 4/10/2014 by RGB
4D07018-BS1		QC	04/07/2014	100	100	14D0086		100000		NA	
4D07018-MS1		QC	04/07/2014	100	100	14A0483	1403203-05	500		NA	
4D07018-MSD1		QC	04/07/2014	100	100	14A0483	1403203-05	500		NA	

Kirtlandecos_007

PREPARATION BENCH SHEET

4D07018

Empirical Laboratories, LLC

Printed: 4/24/2014 4:38:56PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0477	1N H2SO4
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14C0659	NH3 Sodium Phenolate Reagent
14D0092	Borate Buffer
14D0364	NH3 Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14D0373	NH3 Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4D08002

Empirical Laboratories, LLC

Printed: 4/10/2014 3:08:59PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403085-01	A	WC_TKN_351.2	04/08/2014	4	20					NA	
1403217-01	C	WC_TKN_351.2	04/08/2014	20	20					NA	Outside DoD cert
1403217-03	C	WC_TKN_351.2	04/08/2014	20	20					NA	Outside DoD cert
1403217-05	C	WC_TKN_351.2	04/08/2014	20	20					NA	Outside DoD cert
1403217-07	C	WC_TKN_351.2	04/08/2014	20	20					NA	Outside DoD cert
1404016-01	C	WC_TKN_351.2	04/08/2014	20	20					NA	Outside DoD cert
1404016-03	C	WC_TKN_351.2	04/08/2014	20	20					NA	Outside DoD cert
1404016-05	C	WC_TKN_351.2	04/08/2014	20	20					NA	Outside DoD cert
1404021-01	A	WC_TKN_351.2	04/08/2014	4	20					NA	
1404021-03	A	WC_TKN_351.2	04/08/2014	20	20					NA	
1404021-07	A	WC_TKN_351.2	04/08/2014	20	20					NA	
1404021-08	A	WC_TKN_351.2	04/08/2014	20	20					NA	
1404024-03	A	WC_TKN_351.2	04/08/2014	2	20					NA	
4D08002-BLK1		QC	04/08/2014	20	20					NA	
4D08002-BS1		QC	04/08/2014	20	20	14A0452		20000		NA	
4D08002-MS1		QC	04/08/2014	18	20	14A0166	1404016-05	2000		NA	
4D08002-MSD1		QC	04/08/2014	18	20	14A0166	1404016-05	2000		NA	

PREPARATION BENCH SHEET

4D08002

Empirical Laboratories, LLC

Printed: 4/10/2014 3:08:59PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
14A0207	TKN 0.8M NaOH
14A0225	TKN Carrier
14B0281	TKN Digestion Soln
14B0494	TKN Buffer
14D0237	TKN Salicylate Nitroprusside Reagent
14D0238	TKN Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4D09928

Empirical Laboratories, LLC

Printed: 4/22/2014 10:05:45AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403189-02	E	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	water only. Good CCVs!
1403189-03	E	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	water only. Good CCVs!
1403194-01	E	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	
1403194-03	E	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	
1403203-01	C	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	
1403203-02	A	WC_TOC_DISS_9060A_QUAD	04/09/2014	40	40					NA	
1403203-03	C	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	
1403203-04	A	WC_TOC_DISS_9060A_QUAD	04/09/2014	40	40					NA	
1403203-05	I	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	MS/MSD
1403203-05	I	WC_TOC_DISS_9060A_QUAD	04/09/2014	40	40					NA	Added for BatchQC in: 4D09928
1403203-06	C	WC_TOC_DISS_9060A_QUAD	04/09/2014	40	40					NA	MS/MSD
1403203-06	C	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	Added for BatchQC in: 4D09928
1403203-07	C	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	
1403203-08	A	WC_TOC_DISS_9060A_QUAD	04/09/2014	40	40					NA	
1403203-09	C	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	
1403203-10	A	WC_TOC_DISS_9060A_QUAD	04/09/2014	40	40					NA	
1403214-01	K	WC_TOC_9060A_QUAD	04/09/2014	40	40					NA	
4D09928-BLK1		QC	04/09/2014	40	40					NA	
4D09928-BS1		QC	04/09/2014	40	40	14C0664		40000		NA	
4D09928-MS1		QC	04/09/2014	40	40	13F0271	1403203-05	600		NA	
4D09928-MS2		QC	04/09/2014	40	40	13F0271	1403203-06	600		NA	
4D09928-MSD1		QC	04/09/2014	40	40	13F0271	1403203-05	600		NA	

PREPARATION BENCH SHEET

4D09928

Empirical Laboratories, LLC

Printed: 4/22/2014 10:05:45AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D09928-MSD2		QC	04/09/2014	40	40	13F0271	1403203-06	600		NA	

Reagents Used:

Standard	Description
14D0044	TOC PERSULFATE REAGENT
14D0319	TOC Phosphoric Acid Reagent

PREPARATION BENCH SHEET

4D10002

Empirical Laboratories, LLC

Printed: 4/15/2014 11:55:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403160-01	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403160-03	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403160-05	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403160-07	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403160-09	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1403217-07	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1404054-01	-	WC_AMMONIA_PHENATE_45	04/10/2014	10	100					NA	
1404054-03	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1404054-04	-	WC_AMMONIA_PHENATE_45	04/10/2014	10	100					NA	
1404062-01	-	WC_AMMONIA_PHENATE_45	04/10/2014	1	100					NA	
1404063-01	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1404063-02	-	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
1404064-01	A	WC_AMMONIA_PHENATE_45	04/10/2014	10	100					NA	
1404064-03	A	WC_AMMONIA_PHENATE_45	04/10/2014	100	100					NA	
4D10002-BLK1		QC	04/10/2014	100	100					NA	
4D10002-BS1		QC	04/10/2014	100	100	14D0086		100000		NA	
4D10002-DUP1		QC	04/10/2014	10	100		1404054-04			NA	
4D10002-MS1		QC	04/10/2014	100	100	14A0483	1404054-03	500		NA	

PREPARATION BENCH SHEET

4D10002

Empirical Laboratories, LLC

Printed: 4/15/2014 11:55:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0477	1N H2SO4
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14C0304	0.04N H2SO4 FOR NH3 simpledist. distillation
14D0092	Borate Buffer
14D0366	0.04N H2SO4 FOR NH3 simpledist. distillation

PREPARATION BENCH SHEET

4D11003

Empirical Laboratories, LLC

Printed: 4/24/2014 4:39:19PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403203-07RE1	B	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	From 4D07018 by RGB on 04/11/2014
1403217-03RE1	C	WC_AMMONIA_PHENATE_45	04/07/2014	100	100					NA	From 4D07018 by RGB on 04/11/2014
1404070-01	A	WC_AMMONIA_PHENATE_45	04/11/2014	100	100					NA	
1404070-01RE1	A	WC_AMMONIA_PHENATE_45	04/11/2014	100	100					NA	Added 4/11/2014 by DXR
1404075-01	A	WC_AMMONIA_PHENATE_45	04/11/2014	100	100					NA	
1404075-03	A	WC_AMMONIA_PHENATE_45	04/11/2014	10	100					NA	
4D11003-BLK1		QC	04/11/2014	100	100					NA	
4D11003-BS1		QC	04/11/2014	100	100	14D0086		100000		NA	
4D11003-DUP1		QC	04/11/2014	10	100		1404075-03			NA	
4D11003-MS1		QC	04/11/2014	100	100	14A0483	1404075-01	500		NA	

Reagents Used:

Standard	Description
13J0477	1N H2SO4
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14D0092	Borate Buffer
14D0366	0.04N H2SO4 FOR NH3 simpledist. distillation

PREPARATION BENCH SHEET

4D11009

Empirical Laboratories, LLC

Printed: 4/24/2014 1:00:24PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403217-01	C	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403217-02	A	WC_TOC_DISS_9060A_QUAD	04/11/2014	40	40					NA	
1403217-03	C	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403217-04	A	WC_TOC_DISS_9060A_QUAD	04/11/2014	40	40					NA	
1403217-05	C	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403217-06	A	WC_TOC_DISS_9060A_QUAD	04/11/2014	40	40					NA	
1403226-02	L	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	MS/MSD
1403226-02	L	WC_TOC_DISS_9060A_QUAD	04/11/2014	40	40					NA	Added for BatchQC in: 4D11009
1403226-04	D	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403231-01	G	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403231-02	G	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403236-01	G	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403236-02	G	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403236-03	G	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403236-04	G	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403236-05	G	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403236-06	G	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	
1403236-07	U	WC_TOC_9060A_QUAD	04/11/2014	40	40					NA	MS/MSD
1403236-07	U	WC_TOC_DISS_9060A_QUAD	04/11/2014	40	40					NA	Added for BatchQC in: 4D11009
4D11009-BLK1		QC	04/11/2014	40	40					NA	
4D11009-BS1		QC	04/11/2014	40	40	14D0318		40000		NA	
4D11009-MS1		QC	04/11/2014	40	40	13F0271	1403226-02	600		NA	

PREPARATION BENCH SHEET

4D11009

Empirical Laboratories, LLC

Printed: 4/24/2014 1:00:24PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D11009-MS2		QC	04/11/2014	40	40	13F0271	1403236-07	600		NA	
4D11009-MSD1		QC	04/11/2014	40	40	13F0271	1403226-02	600		NA	
4D11009-MSD2		QC	04/11/2014	40	40	13F0271	1403236-07	600		NA	

Reagents Used:

Standard	Description
14D0044	TOC PERSULFATE REAGENT
14D0319	TOC Phosphoric Acid Reagent

PREPARATION BENCH SHEET

4D14004

Empirical Laboratories, LLC

Printed: 4/24/2014 4:39:38PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404016-01	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404016-03	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404016-05	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404065-01	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404066-01	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404066-03	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	MS/MSD
1404068-01	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404068-03	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404068-05	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-01	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-03	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-05	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-07	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-09	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-11	AA	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	MS/MSD
1404084-13	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404085-01	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
4D14004-BLK1		QC	04/14/2014	25	25					NA	
4D14004-BS1		QC	04/14/2014	5	25	13L0375		5000		NA	
4D14004-MS1		QC	04/14/2014	22.5	25	13L0375	1404066-03	2500		NA	
4D14004-MS2		QC	04/14/2014	22.5	25	13L0375	1404084-11	2500		NA	
4D14004-MSD1		QC	04/14/2014	22.5	25	13L0375	1404066-03	2500		NA	

PREPARATION BENCH SHEET

4D14004

Empirical Laboratories, LLC

Printed: 4/24/2014 4:39:38PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D14004-MSD2		QC	04/14/2014	22.5	25	13L0375	1404084-11	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D14009

Empirical Laboratories, LLC

Printed: 4/24/2014 4:40:04PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404016-01	C	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404016-01RE1	C	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	Added 4/14/2014 by RGB
1404016-03	C	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404016-05	C	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404017-01	E	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404017-03	E	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404017-05	E	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404017-07	E	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404021-01	A	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404021-03	A	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404021-03RE1	A	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	Added 4/14/2014 by RGB
1404024-01	A	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404055-01	A	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404056-01	A	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
1404075-01	A	WC_NO3NO2_N_353.2	04/14/2014	4	20					NA	
4D14009-BLK1		QC	04/14/2014	20	20					NA	
4D14009-BS1		QC	04/14/2014	2	20	14A0409		2000		NA	
4D14009-MS1		QC	04/14/2014	4	20	14B0358	1404017-01	500		NA	
4D14009-MSD1		QC	04/14/2014	4	20	14B0358	1404017-01	500		NA	

PREPARATION BENCH SHEET

4D14009

Empirical Laboratories, LLC

Printed: 4/24/2014 4:40:04PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
14A0570	NO3/NO2 Carrier (Acid DI)
14B0522	NO2/NO3 Sulfanilimide Color Reagent
14C0133	NO2/NO3 Buffer

PREPARATION BENCH SHEET

4D17002

Empirical Laboratories, LLC

Printed: 4/24/2014 4:40:24PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404016-01	B	WC_AMMONIA_PHENATE_45	04/17/2014	100	100					NA	
1404016-03	B	WC_AMMONIA_PHENATE_45	04/17/2014	100	100					NA	
1404016-05	B	WC_AMMONIA_PHENATE_45	04/17/2014	100	100					NA	
1404071-01	A	WC_AMMONIA_PHENATE_45	04/17/2014	10	100					NA	
1404071-03	A	WC_AMMONIA_PHENATE_45	04/17/2014	100	100					NA	
1404071-07	A	WC_AMMONIA_PHENATE_45	04/17/2014	10	100					NA	
1404086-01	D	WC_AMMONIA_PHENATE_45	04/17/2014	100	100					NA	
1404100-01	A	WC_AMMONIA_PHENATE_45	04/17/2014	10	100					NA	
1404100-03	A	WC_AMMONIA_PHENATE_45	04/17/2014	100	100					NA	
1404100-04	A	WC_AMMONIA_PHENATE_45	04/17/2014	10	100					NA	
1404101-01	C	WC_AMMONIA_PHENATE_45	04/17/2014	100	100					NA	
1404104-01	A	WC_AMMONIA_PHENATE_45	04/17/2014	10	100					NA	
1404104-03	A	WC_AMMONIA_PHENATE_45	04/17/2014	100	100					NA	
1404104-04	A	WC_AMMONIA_PHENATE_45	04/17/2014	10	100					NA	
4D17002-BLK1		QC	04/17/2014	100	100					NA	
4D17002-BS1		QC	04/17/2014	100	100	14D0086		100000		NA	
4D17002-DUP1		QC	04/17/2014	10	100		1404071-01			NA	
4D17002-MS1		QC	04/17/2014	100	100	14A0483	1404016-01	500		NA	

PREPARATION BENCH SHEET

4D17002

Empirical Laboratories, LLC

Printed: 4/24/2014 4:40:24PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0477	1N H2SO4
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14D0092	Borate Buffer
14D0364	NH3 Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14D0366	0.04N H2SO4 FOR NH3 simpledist. distillation
14D0570	Sodium Hypochlorite 5%
14D0571	NH3 Sodium Phenolate Reagent

PREPARATION BENCH SHEET

4D17010

Empirical Laboratories, LLC

Printed: 4/24/2014 4:40:46PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404016-01RE1	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	RR for Br
1404016-03RE1	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	RR for Br
1404016-05RE1	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	RR for Br
1404108-01	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	see versions
1404108-03	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	see versions
1404108-05	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	see versions
1404111-01	I	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	Cl, SO4
1404111-03	I	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	Cl, SO4
1404111-05	I	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	Cl, SO4
1404111-07	I	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	Cl, SO4
1404114-08	A	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	see versions
1404116-01	F	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	
1404116-01	F	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	
1404116-02	F	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	
1404116-02	F	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	
1404116-03	R	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	Added for BatchQC in: 4D17010
1404116-03	R	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	MS/MSD
1404116-03	R	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	MS/MSD
1404116-04	F	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	
1404116-04	F	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	
1404116-05	F	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	
1404116-05	F	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	

PREPARATION BENCH SHEET

4D17010

Empirical Laboratories, LLC

Printed: 4/24/2014 4:40:46PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404117-01	R	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	MS/MSD
1404117-01	R	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	Added for BatchQC in: 4D17010
1404117-01	R	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	MS/MSD
4D17010-BLK1		QC	04/17/2014	5	5					NA	
4D17010-BS1		QC	04/17/2014	5	5	14D0348		5000		NA	
4D17010-DUP1		QC	04/17/2014	5	5		1404116-03			NA	
4D17010-DUP2		QC	04/17/2014	5	5		1404117-01			NA	
4D17010-MS1		QC	04/17/2014	22.5	25	14C0398	1404116-03	2500		NA	
4D17010-MS2		QC	04/17/2014	22.5	25	14C0398	1404117-01	2500		NA	
4D17010-MSD1		QC	04/17/2014	22.5	25	14C0398	1404116-03	2500		NA	
4D17010-MSD2		QC	04/17/2014	22.5	25	14C0398	1404117-01	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D18013

Empirical Laboratories, LLC

Printed: 4/24/2014 4:41:07PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403217-07	C	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1403217-08	A	WC_TOC_DISS_9060A_QUAD	04/18/2014	40	40					NA	
1404016-01	C	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404016-02	A	WC_TOC_DISS_9060A_QUAD	04/18/2014	40	40					NA	
1404016-03	C	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404016-04	A	WC_TOC_DISS_9060A_QUAD	04/18/2014	40	40					NA	
1404016-05	C	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404016-06	A	WC_TOC_DISS_9060A_QUAD	04/18/2014	40	40					NA	
1404109-01	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404109-02	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404109-03	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404109-04	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404109-05	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404109-06	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404109-07	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404110-02	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404110-02RE1	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	Added 4/21/2014 by RGB
1404110-04	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404110-04RE1	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	Added 4/21/2014 by RGB
1404110-05	G	WC_TOC_9060A_QUAD	04/18/2014	40	40					NA	
1404110-05	G	WC_TOC_DISS_9060A_QUAD	04/18/2014	40	40					NA	Added for BatchQC in: 4D18013
4D18013-BLK1		QC	04/18/2014	40	40					NA	

PREPARATION BENCH SHEET

4D18013

Empirical Laboratories, LLC

Printed: 4/24/2014 4:41:07PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D18013-BS1		QC	04/18/2014	40	40	14D0318		40000		NA	
4D18013-MS1		QC	04/18/2014	40	40	13F0271	1404110-05	600		NA	
4D18013-MSD1		QC	04/18/2014	40	40	13F0271	1404110-05	600		NA	

Reagents Used:

Standard	Description

ANALYTICAL DATA PACKAGE
SDG # KIRTLANDECOS_009

PROJECT NAME: KIRTLAND AFB (ECOS)
PROJECT LOCATION: ALBUQUERQUE, NEW MEXICO

SUBMITTAL TO:
Susan Huang
SHAW E&I, Inc.
4005 Port Chicago Highway
Concord, CA 94520

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Marianne Walker
Tel (615)345-1115
Fax (866)417-0548
Email: mwalker@empirlabs.com

Original Report Date: May 5, 2014
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 224

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

Table of Contents

#	Description	Page No.
1	Cover Page	1
2	Table of Contents	2
3	Case Narrative	3
4	Sample Receipt Information Chain of Custody Forms Sample Receipt Confirmations WorkOrder Summary Sample Delivery Group (SDG) Sheets	9
11	Data for SW6010C Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	22
12	Data for Wet Chemistry Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	71

Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6010C:
The following matrix spikes exceeded criteria:
4D10009-MS2/MSD2 (1404066-03) for Calcium, Magnesium, and Sodium; note – the parent sample concentrations for Calcium, Magnesium, and Sodium are greater than 4 times the amount spiked and the compounds are within criteria in the associated batch spike

The following post spikes exceeded criteria:
4D10009-PS2 (1404066-03) for Calcium; note – the parent sample concentration for Calcium is greater than 4 times the amount spiked

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:
The following compounds are qualified with an M to indicate that the LOQ was raised to the level of the reporting limit standard within criteria:
Bromide (0.63mg/L) for 1404065-01, 1404066-01, -03, and 1404085-01

The following initial calibration verifications exceeded criteria:
4D11310-ICV1 with a positive bias for Total Kjeldahl Nitrogen; note – no positive results were detected in the associated samples

The following matrix spikes exceeded criteria:
4D16014-MS1/MSD1 (1404066-03) with a negative bias and exceeded relative percent difference criteria for Total Kjeldahl Nitrogen; note – the associated batch spike is within criteria

The following duplicates exceeded relative percent difference criteria:
4D08014-DUP1 (1404066-03) for Total Dissolved Solids
3D15005-DUP2 (1404066-03) for Chloride

The following batch spikes exceeded criteria:
4D16012-BS1/BSD1 with a positive bias and exceeded relative percent difference criteria for Total Dissolved Solids; note – the exceedence was minimal and no holding time remained so associated sample 1404085-01 was not re-analyzed

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:
As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated

as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

_____

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 03/19/2014)

DoD ELAP, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2014

State of Georgia, Environmental Protection Agency – NELAP
- Expires: 06/30/2014

State of Illinois, Environmental Protection Agency – NELAP, Certificate No.: 003300
- Groundwater
- Solid and Hazardous Waste
- Expires: 09/13/2014

State of Kansas Department of Health and Environment – NELAP, Certificate No.: E-10407
- Aqueous
- Non-aqueous
- Expires: 04/30/2014

State of Kentucky Department of Environmental Protection – NELAP, Certificate No.: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Nevada, Department of Conservation and Natural Resources – NELAP, Certificate No.: TN000042013-1
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

State of New Jersey Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2014

State of North Carolina, Department of Environment and Natural Resources - Certificate No.: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of North Dakota, Department of Health – NELAP, Certificate No.: R-204
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Texas, Commission on Environmental Quality – NELAP, Certificate No.: T104704307-14-10
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of Utah, Department of Health – NELAP, Certificate No.: TN0042013-5
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

Commonwealth of Virginia, Department of General Services – VELAP, Certificate No.: 2633 – Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2014

State of Washington, Department of Ecology – NELAP, Lab ID: C934-14
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2015

Sample Receipt Information

ST-105

1404065

Shaw
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-612

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 08 APR 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: ~~Jennifer Chandler~~ Marianne Walker
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119370875

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) Nagi Bhom — Date: 4/8/14 Time: 1500
2. Relinquished By (Signature/Affiliation) — Date: Time:
3. Relinquished By (Signature/Affiliation) — Date: Time:

1. Received By (Signature/Affiliation) — Date: Time:
2. Received By (Signature/Affiliation) — Date: Time:
3. Received By (Signature/Affiliation) J Jones — Date: 4/9/14 Time: 0845

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30031	KAFB0611-GW-ST105-30031-REG	08 APR 2014	11:13	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30031	KAFB0611-GW-ST105-30031-REG	08 APR 2014	11:13	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30031	KAFB0611-GW-ST105-30031-REG	08 APR 2014	11:13	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30031	KAFB0611-GW-ST105-30031-REG	08 APR 2014	11:13	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
02	ST105-30031	KAFB0611-GW-ST105-30031-REG	08 APR 2014	11:13	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

KirtlandEcos_009

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 04/09/14 0845 Workorder# 1404065

1. Tracking # 0875 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: -0.8 °C + *correction factor (+0.1)* = -0.7 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES (NO) NA

4. Were custody seals on outside of cooler? (YES) NO NA

   If yes, how many and where: 2, front + back

5. Were the seals intact, signed, and dated correctly? (YES) NO NA

6. Were custody papers inside cooler? (YES) NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES (NO) and intact YES NO (NA)

   Were these signed and dated correctly? YES NO (NA)

8. Packing material used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES) NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES) NO NA

12. Did all container labels and tags agree with custody papers? (YES) NO NA

13. a. Were VOA vials received? YES (NO) NA

    b. Was there any observable headspace present in any VOA vial? YES NO (NA)

14. Was there a Trip Blank in this cooler? YES (NO) NA If multiple coolers, sequence # —

I certify that I unloaded the cooler and answered questions 7-14 (initial) JTG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES) NO NA

    b. Did the bottle labels indicate that the correct preservatives were used (YES) NO NA

16. Was residual chlorine present? YES NO (NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JTG

17. Were custody papers properly filled out (ink, signed, etc)? (YES) NO NA

18. Did you sign the custody papers in the appropriate place? (YES) NO NA

19. Were correct containers used for the analysis requested? (YES) NO NA

20. Was sufficient amount of sample sent in each container? (YES) NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JTG

I certify that I attached a label with the unique LIMS number to each container (initial) JTG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) ☆ No Login 2nd Check JTG 4/9/14

21. Were there Non-Conformance issues at login? YES (NO) Was a NCR generated? YES (NO) #

Additional Details:

ST 105

1404066

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-611

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 08 APR 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: ~~Jennifer Chandler~~ Marianne Walker
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119370875

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) [signature] Shaw — Date: 4/8/14 Time: 1500
1. Received By (Signature/Affiliation) — Date: Time:
2. Relinquished By (Signature/Affiliation) — Date: Time:
2. Received By (Signature/Affiliation) — Date: Time:
3. Relinquished By (Signature/Affiliation) — Date: Time:
3. Received By (Signature/Affiliation) [signature] — Date: 4/9/14 Time: 0845

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30032	KAFB0612-GW-ST105-30032-REG	08 APR 2014	14:47	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30032	KAFB0612-GW-ST105-30032-REG	08 APR 2014	14:47	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30032	KAFB0612-GW-ST105-30032-REG	08 APR 2014	14:47	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	~~ST105-30032~~	~~KAFB0612-GW-ST105-30032-REG~~	~~08 APR 2014~~	~~14:47~~	~~250 mL HDPE~~	~~1~~	~~H2SO4<pH 2~~	~~TKN by EPA 351.2, Nitrate plus Nitrite~~ by EPA 353.2, Ammonia by SM4500 NH3BG			N		
02	ST105-30032	KAFB0612-GW-ST105-30032-REG	08 APR 2014	14:47	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

1404066

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-611

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
03	ST105-30034	KAFB0614-GW-ST105-30034-REG	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
04	ST105-30034	KAFB0614-GW-ST105-30034-REG	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30034	KAFB0614-GW-ST105-30034-REG	08 APR 2014	11:16	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30034	KAFB0614-GW-ST105-30034-REG	08 APR 2014	11:16	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30034	KAFB0614-GW-ST105-30034-REG	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30034-MS	KAFB0614-GW-ST105-30034-MS-MS	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30034-MS	KAFB0614-GW-ST105-30034-MS-MS	08 APR 2014	11:16	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30034-MS	KAFB0614-GW-ST105-30034-MS-MS	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
04	ST105-30034-MS	KAFB0614-GW-ST105-30034-MS-MS	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30034-MS	KAFB0614-GW-ST105-30034-MS-MS	08 APR 2014	11:16	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30034-MS	KAFB0614-GW-ST105-30034-MSD-MSD	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30034-MS	KAFB0614-GW-ST105-30034-MSD-MSD	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30034-MS	KAFB0614-GW-ST105-30034-MSD-MSD	08 APR 2014	11:16	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30034-MS	KAFB0614-GW-ST105-30034-MSD-MSD	08 APR 2014	11:16	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
04	ST105-30034-MS	KAFB0614-GW-ST105-30034-MSD-MSD	08 APR 2014	11:16	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 04/09/14 0845 Workorder# 1404066

1. Tracking # 0875 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: -0.8 °C + correction factor (+0.1) = -0.7 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES (NO) NA

4. Were custody seals on outside of cooler? (YES) NO NA

   If yes, how many and where: 2. front + back

5. Were the seals intact, signed, and dated correctly? (YES) NO NA

6. Were custody papers inside cooler? (YES) NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES (NO) and Intact YES NO (NA)

   Were these signed and dated correctly? YES NO (NA)

8. Packing material used: (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES) NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES) NO NA

12. Did all container labels and tags agree with custody papers? (YES) NO NA

13. a. Were VOA vials received? YES (NO) NA

    b. Was there any observable headspace present in any VOA vial? YES NO (NA)

14. Was there a Trip Blank in this cooler? YES (NO) NA If multiple coolers, sequence # —

I certify that I unloaded the cooler and answered questions 7-14 (initial) JTG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES) NO NA

    b. Did the bottle labels indicate that the correct preservatives were used (YES) NO NA

16. Was residual chlorine present? YES NO (NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JTG

17. Were custody papers properly filled out (ink, signed, etc)? (YES) NO NA

18. Did you sign the custody papers in the appropriate place? (YES) NO NA

19. Were correct containers used for the analysis requested? (YES) NO NA

20. Was sufficient amount of sample sent in each container? (YES) NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JTG

I certify that I attached a label with the unique LIMS number to each container (initial) JTG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) ★ No Login 2nd Check JTG 4/9/14

21. Were there Non-Conformance issues at login? YES (NO) Was a NCR generated? YES (NO) # _____

Additional Details:

ST-105

140408S

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-613

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 10 APR 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: Jennifer Chandler
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119370886

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) T Nagar/Shaw — Date: 4/10/14 Time: 1500
1. Received By (Signature/Affiliation) — Date: Time:
2. Relinquished By (Signature/Affiliation) — Date: Time:
2. Received By (Signature/Affiliation) — Date: Time:
3. Relinquished By (Signature/Affiliation) — Date: Time:
3. Received By (Signature/Affiliation) — Date: 4/11/14 Time: 0850

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30033	KAFB0613-GW-ST105-30033-REG	09 APR 2014	12:49	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30033	KAFB0613-GW-ST105-30033-REG	09 APR 2014	12:49	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30033	KAFB0613-GW-ST105-30033-REG	09 APR 2014	12:49	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30033	KAFB0613-GW-ST105-30033-REG	09 APR 2014	12:49	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
02	ST105-30033	KAFB0613-GW-ST105-30033-REG	09 APR 2014	12:49	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 04/11/14 0850 Workorder# 1404085

1. Tracking # 0886 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 5.6 °C + correction factor (+0.1) = 5.7 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

   If yes, how many and where: 2, front + back

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES NO and Intact YES NO NA

   Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

    b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # —

I certify that I unloaded the cooler and answered questions 7-14 (initial) JTG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

    b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JTG

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JTG

I certify that I attached a label with the unique LIMS number to each container (initial) JTG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) JTG

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO #_____

Additional Details:

WORK ORDER

Printed: 4/15/2014 11:41:07AM

1404065

Empirical Laboratories, LLC

Client:	**Shaw Environmental, Inc.**	**Project Manager:**	**Marianne J. Walker**
Project:	**Kirtland AFB (ECOS)**	**Project Number:**	**SHW_Kirtland_ECOS**

Report To:

Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:

Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 05/02/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross — Date Received: 04/09/2014 08:45

Logged In By: Joshua T. Gross — Date Logged In: 04/09/2014 10:28

Samples Received at: **-0.7°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1404065-01 ST105-30031 [Water] Sampled 04/08/2014 11:13 Mountain 'Client Sample'					
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/28/2014 14:00	15	04/15/2014 12:13	
SW9060A	WC_TOC_9060A_QUAD	04/28/2014 14:00	15	05/06/2014 12:13	
E351.2	WC_TKN_351.2	04/28/2014 14:00	15	05/06/2014 12:13	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	04/28/2014 14:00	15	05/06/2014 12:13	
SW9056A	WC_ANIONS_9056A (Regular)	04/28/2014 14:00	15	05/06/2014 12:13	see versions
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/28/2014 14:00	15	05/06/2014 12:13	
SM2320B	WC_ALKALINITY_2320B	04/28/2014 14:00	15	04/22/2014 12:13	
SW6010C	MET_ICP_LOW6010C_FULL	04/28/2014 14:00	15	10/05/2014 12:13	see versions
1404065-02 ST105-30031 [Water] Sampled 04/08/2014 11:13 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/28/2014 14:00	15	05/06/2014 12:13	

Reviewed By _____ Date _____

WORK ORDER

Printed: 4/15/2014 11:40:08AM

1404066

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 05/02/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross
Date Received: 04/09/2014 08:45
Logged In By: Joshua T. Gross
Date Logged In: 04/09/2014 10:40

Samples Received at: **-0.7°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1404066-01 ST105-30032 [Water] Sampled 04/08/2014 14:47 Mountain 'Client Sample'					
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/28/2014 14:00	15	04/15/2014 15:47	
SM2320B	WC_ALKALINITY_2320B	04/28/2014 14:00	15	04/22/2014 15:47	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/28/2014 14:00	15	05/06/2014 15:47	
SW9056A	WC_ANIONS_9056A (Regular)	04/28/2014 14:00	15	05/06/2014 15:47	see versions
E353.2	WC_NO3NO2_N_353.2	04/28/2014 14:00	15	05/06/2014 15:47	
E351.2	WC_TKN_351.2	04/28/2014 14:00	15	05/06/2014 15:47	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/28/2014 14:00	15	05/06/2014 15:47	
SW6010C	MET_ICP_LOW6010C_FULL	04/28/2014 14:00	15	10/05/2014 15:47	see versions
1404066-02 ST105-30032 [Water] Sampled 04/08/2014 14:47 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/28/2014 14:00	15	05/06/2014 15:47	

1404066

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Method	Test Code	Due	TAT	Expires	Comments
1404066-03 ST105-30034 [Water] Sampled 04/08/2014 11:16 Eastern 'Client Sample'					**MS/MSD**
SM2320B	WC_ALKALINITY_2320B	04/28/2014 14:00	15	04/22/2014 10:16	MS/MSD
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/28/2014 14:00	15	05/06/2014 10:16	MS/MSD
SW9056A	WC_ANIONS_9056A (Regular)	04/28/2014 14:00	15	05/06/2014 10:16	MS/MSD
E353.2	WC_NO3NO2_N_353.2	04/28/2014 14:00	15	05/06/2014 10:16	MS/MSD
E351.2	WC_TKN_351.2	04/28/2014 14:00	15	05/06/2014 10:16	MS/MSD; Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	04/28/2014 14:00	15	05/06/2014 10:16	MS/MSD
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/28/2014 14:00	15	04/15/2014 10:16	MS/MSD
SW6010C	MET_ICP_LOW6010C_FULL	04/28/2014 14:00	15	10/05/2014 10:16	MS/MSD
1404066-04 ST105-30034 [Water] Sampled 04/08/2014 11:16 Mountain 'Client Sample'					**MS/MSD**
SW9060A	WC_TOC_DISS_9060A_QUAD	04/28/2014 14:00	15	05/06/2014 12:16	MS/MSD

Reviewed By

Date

WORK ORDER

Printed: 4/15/2014 11:38:48AM

1404085

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 05/02/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross
Date Received: 04/11/2014 08:50
Logged In By: Joshua T. Gross
Date Logged In: 04/11/2014 12:30

Samples Received at: **5.7°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1404085-01 ST105-30033 [Water] Sampled 04/09/2014 12:49 Mountain 'Client Sample'					
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	04/29/2014 14:00	15	04/16/2014 13:49	
SW9060A	WC_TOC_9060A_QUAD	04/29/2014 14:00	15	05/07/2014 13:49	
E351.2	WC_TKN_351.2	04/29/2014 14:00	15	05/07/2014 13:49	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	04/29/2014 14:00	15	05/07/2014 13:49	
SW9056A	WC_ANIONS_9056A (Regular)	04/29/2014 14:00	15	05/07/2014 13:49	see versions
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	04/29/2014 14:00	15	05/07/2014 13:49	
SM2320B	WC_ALKALINITY_2320B	04/29/2014 14:00	15	04/23/2014 13:49	
SW6010C	MET_ICP_LOW6010C_FULL	04/29/2014 14:00	15	10/06/2014 13:49	see versions
1404085-02 ST105-30033 [Water] Sampled 04/09/2014 12:49 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	04/29/2014 14:00	15	05/07/2014 13:49	

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Shaw Environmental, Inc.
PROJECT NAME: Kirtland AFB (ECOS)
SDG #: DRAFT KirtlandECOS_009

QC LEVEL: Level III
Report Due: 4/30/2014 - 5/2/2014
Client Sample Count: 8

Lab ID	Client ID	Sampled	Received	Matrix	E 351.2	E 353.2	SM 2320B	SM 2540C	SM 4500 NH3BG	SW 6010C	SW 9056A	SW 9060A
1404065-01	ST105-30031	4/8/2014	4/9/2014	Water	X	X	X	X	X	X	X	X
1404065-02	ST105-30031	4/8/2014	4/9/2014	Water								DISS
1404066-01	ST105-30032	4/8/2014	4/9/2014	Water	X	X	X	X	X	X	X	X
1404066-02	ST105-30032	4/8/2014	4/9/2014	Water								DISS
1404066-03	ST105-30034	4/8/2014	4/9/2014	Water	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD
1404066-04	ST105-30034	4/8/2014	4/9/2014	Water								MS/MSD DISS
1404085-01	ST105-30033	4/9/2014	4/11/2014	Water	X	X	X	X	X	X	X	X
1404085-02	ST105-30033	4/9/2014	4/11/2014	Water								DISS

Data for SW6010C Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404065-01 [ST105-30031]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14
1404066-01 [ST105-30032]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14
1404066-03 [ST105-30034]	4D10009	100.00/25.00	100	25.0	1.00			04/10/14

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404085-01 [ST105-30033]	4D18003	100.00/25.00	100	25.0	1.00			04/18/14

ANALYSIS DATA SHEET

ST105-30031

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404065-01
Sampled:	04/08/14 11:13	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**46000**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 16:09
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4D10009	04/17/14 16:09
7439-95-4	Magnesium	**9830**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:09
7439-96-5	Manganese	**3.53**	**0.750**	1.50	3.75	1	J	SW6010C	4D10009	04/17/14 16:09
7440-09-7	Potassium	**4020**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:09
7440-23-5	Sodium	**26600**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:09

ANALYSIS DATA SHEET

ST105-30032

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404066-01
Sampled:	04/08/14 14:47	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**88000**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 16:14
7439-89-6	Iron	**38.6**	**7.50**	15.0	25.0	1		SW6010C	4D10009	04/17/14 16:14
7439-95-4	Magnesium	**16500**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:14
7439-96-5	Manganese	**1.17**	**0.750**	1.50	3.75	1	J	SW6010C	4D10009	04/17/14 16:14
7440-09-7	Potassium	**2070**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:14
7440-23-5	Sodium	**26700**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:14

ANALYSIS DATA SHEET

ST105-30034

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404066-03
Sampled:	04/08/14 11:16	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**66000**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 16:18
7439-89-6	Iron	**18.1**	**7.50**	15.0	25.0	1	J	SW6010C	4D10009	04/17/14 16:18
7439-95-4	Magnesium	**13900**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:18
7439-96-5	Manganese	**1.14**	**0.750**	1.50	3.75	1	J	SW6010C	4D10009	04/17/14 16:18
7440-09-7	Potassium	**2660**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:18
7440-23-5	Sodium	**25100**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:18

ANALYSIS DATA SHEET

ST105-30033

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404085-01
Sampled:	04/09/14 12:49	Received:	04/11/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**47200**	**250**	500	1250	1		SW6010C	4D18003	04/23/14 15:34
7439-89-6	Iron	**20.5**	**7.50**	15.0	25.0	1	J	SW6010C	4D18003	04/23/14 15:34
7439-95-4	Magnesium	**9840**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 15:34
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4D18003	04/23/14 15:34
7440-09-7	Potassium	**3450**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 15:34
7440-23-5	Sodium	**34800**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 15:34

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D10009-BLK1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4D10009	04/17/14 14:35
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4D10009	04/17/14 14:35
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4D10009	04/17/14 14:35
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4D10009	04/17/14 14:35
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4D10009	04/17/14 14:35
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4D10009	04/17/14 14:35

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10009-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**579.1**	**250**	500	1250	1	J	SW6010C	4D10009	04/17/14 14:40
7439-89-6	Iron	**18.07**	**7.50**	15.0	25.0	1	J	SW6010C	4D10009	04/17/14 14:40
7439-95-4	Magnesium	**595.6**	**250**	750	1250	1	J	SW6010C	4D10009	04/17/14 14:40
7439-96-5	Manganese	**9.632**	**0.750**	1.50	3.75	1		SW6010C	4D10009	04/17/14 14:40
7440-09-7	Potassium	**569.4**	**250**	750	1250	1	J	SW6010C	4D10009	04/17/14 14:40
7440-23-5	Sodium	**599.8**	**250**	750	1250	1	J	SW6010C	4D10009	04/17/14 14:40

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10009-DUP2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**72530**	**1250**	2500	6250	5	D	SW6010C	4D10009	04/17/14 16:36
7439-89-6	Iron	ND	37.5	75.0	125	5	U	SW6010C	4D10009	04/17/14 16:36
7439-95-4	Magnesium	**14770**	**1250**	3750	6250	5	D	SW6010C	4D10009	04/17/14 16:36
7439-96-5	Manganese	ND	3.75	7.50	18.8	5	U	SW6010C	4D10009	04/17/14 16:36
7440-09-7	Potassium	**2637**	**1250**	3750	6250	5	JD	SW6010C	4D10009	04/17/14 16:36
7440-23-5	Sodium	**26100**	**1250**	3750	6250	5	D	SW6010C	4D10009	04/17/14 16:36

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D10009-MS2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**69160**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 16:23
7439-89-6	Iron	**256.3**	**7.50**	15.0	25.0	1		SW6010C	4D10009	04/17/14 16:23
7439-95-4	Magnesium	**15020**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:23
7439-96-5	Manganese	**116.5**	**0.750**	1.50	3.75	1		SW6010C	4D10009	04/17/14 16:23
7440-09-7	Potassium	**3844**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:23
7440-23-5	Sodium	**25970**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:23

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4D10009-MSD2
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**68220**	**250**	500	1250	1		SW6010C	4D10009	04/17/14 16:27
7439-89-6	Iron	**259.6**	**7.50**	15.0	25.0	1		SW6010C	4D10009	04/17/14 16:27
7439-95-4	Magnesium	**14820**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:27
7439-96-5	Manganese	**114.6**	**0.750**	1.50	3.75	1		SW6010C	4D10009	04/17/14 16:27
7440-09-7	Potassium	**3770**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:27
7440-23-5	Sodium	**25480**	**250**	750	1250	1		SW6010C	4D10009	04/17/14 16:27

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4D18003-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4D18003	04/23/14 15:16
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4D18003	04/23/14 15:16
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4D18003	04/23/14 15:16
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4D18003	04/23/14 15:16
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4D18003	04/23/14 15:16
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4D18003	04/23/14 15:16

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D18003-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**579.1**	**250**	500	1250	1	J	SW6010C	4D18003	04/23/14 15:29
7439-89-6	Iron	**20.76**	**7.50**	15.0	25.0	1	J	SW6010C	4D18003	04/23/14 15:29
7439-95-4	Magnesium	**625.0**	**250**	750	1250	1	J	SW6010C	4D18003	04/23/14 15:29
7439-96-5	Manganese	**9.430**	**0.750**	1.50	3.75	1		SW6010C	4D18003	04/23/14 15:29
7440-09-7	Potassium	**581.0**	**250**	750	1250	1	J	SW6010C	4D18003	04/23/14 15:29
7440-23-5	Sodium	**599.4**	**250**	750	1250	1	J	SW6010C	4D18003	04/23/14 15:29

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 4107004
Sequence: 4D10710

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10710-ICV1	Calcium	50000	48650	97.3	ug/L	+/- 10.00%
	Iron	10000	10380	104	ug/L	+/- 10.00%
	Magnesium	50000	51270	103	ug/L	+/- 10.00%
	Manganese	1000	1016	102	ug/L	+/- 10.00%
	Potassium	10000	10060	101	ug/L	+/- 10.00%
	Sodium	50000	51310	103	ug/L	+/- 10.00%
4D10710-CCV1	Calcium	50000	50290	101	ug/L	+/- 10.00%
	Iron	10000	10390	104	ug/L	+/- 10.00%
	Magnesium	50000	51920	104	ug/L	+/- 10.00%
	Manganese	1000	1029	103	ug/L	+/- 10.00%
	Potassium	10000	10130	101	ug/L	+/- 10.00%
	Sodium	50000	51900	104	ug/L	+/- 10.00%
4D10710-CCV4	Calcium	50000	50500	101	ug/L	+/- 10.00%
	Iron	10000	10030	100	ug/L	+/- 10.00%
	Magnesium	50000	50600	101	ug/L	+/- 10.00%
	Manganese	1000	1002	100	ug/L	+/- 10.00%
	Potassium	10000	10120	101	ug/L	+/- 10.00%
	Sodium	50000	51420	103	ug/L	+/- 10.00%
4D10710-CCV5	Calcium	50000	50430	101	ug/L	+/- 10.00%
	Iron	10000	10050	100	ug/L	+/- 10.00%
	Magnesium	50000	50610	101	ug/L	+/- 10.00%
	Manganese	1000	1007	101	ug/L	+/- 10.00%
	Potassium	10000	10110	101	ug/L	+/- 10.00%
	Sodium	50000	51360	103	ug/L	+/- 10.00%
4D10710-CCV6	Calcium	50000	50120	100	ug/L	+/- 10.00%
	Iron	10000	10120	101	ug/L	+/- 10.00%
	Magnesium	50000	50740	101	ug/L	+/- 10.00%
	Manganese	1000	997.4	99.7	ug/L	+/- 10.00%
	Potassium	10000	10050	100	ug/L	+/- 10.00%
	Sodium	50000	51300	103	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 4114006
Sequence: 4D11411

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11411-ICV1	Calcium	50000	49240	98.5	ug/L	+/- 10.00%
	Iron	10000	10140	101	ug/L	+/- 10.00%
	Magnesium	50000	51800	104	ug/L	+/- 10.00%
	Manganese	1000	1010	101	ug/L	+/- 10.00%
	Potassium	10000	9956	99.6	ug/L	+/- 10.00%
	Sodium	50000	50730	101	ug/L	+/- 10.00%
4D11411-CCV1	Calcium	50000	49480	99.0	ug/L	+/- 10.00%
	Iron	10000	10140	101	ug/L	+/- 10.00%
	Magnesium	50000	51910	104	ug/L	+/- 10.00%
	Manganese	1000	1007	101	ug/L	+/- 10.00%
	Potassium	10000	9990	99.9	ug/L	+/- 10.00%
	Sodium	50000	51090	102	ug/L	+/- 10.00%
4D11411-CCV4	Calcium	50000	49500	99.0	ug/L	+/- 10.00%
	Iron	10000	10420	104	ug/L	+/- 10.00%
	Magnesium	50000	51860	104	ug/L	+/- 10.00%
	Manganese	1000	986.0	98.6	ug/L	+/- 10.00%
	Potassium	10000	10050	101	ug/L	+/- 10.00%
	Sodium	50000	51020	102	ug/L	+/- 10.00%
4D11411-CCV5	Calcium	50000	48650	97.3	ug/L	+/- 10.00%
	Iron	10000	10300	103	ug/L	+/- 10.00%
	Magnesium	50000	51080	102	ug/L	+/- 10.00%
	Manganese	1000	918.7	91.9	ug/L	+/- 10.00%
	Potassium	10000	9940	99.4	ug/L	+/- 10.00%
	Sodium	50000	50570	101	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4107004

Sequence: 4D10710

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D10710-CRL1	Calcium	2000	1910	95.5	ug/L	80 - 120
	Iron	60.00	58.65	97.8	ug/L	80 - 120
	Magnesium	3000	3042	101	ug/L	80 - 120
	Manganese	6.000	5.963	99.4	ug/L	80 - 120
	Potassium	3000	2777	92.6	ug/L	80 - 120
	Sodium	3000	2930	97.7	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4114006

Sequence: 4D11411

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D11411-CRL1	Calcium	2000	2052	103	ug/L	80 - 120
	Iron	60.00	67.89	113	ug/L	80 - 120
	Magnesium	3000	3292	110	ug/L	80 - 120
	Manganese	6.000	6.287	105	ug/L	80 - 120
	Potassium	3000	3025	101	ug/L	80 - 120
	Sodium	3000	3151	105	ug/L	80 - 120

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4D10710
Calibration: 4107004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10710-ICB1	Calcium	-1.520	1000	5000	ug/L	U	SW6010C
	Iron	7.058	30.0	100	ug/L	U	SW6010C
	Magnesium	0.3100	1000	5000	ug/L	U	SW6010C
	Manganese	0.02819	3.00	15.0	ug/L	U	SW6010C
	Potassium	30.38	1000	5000	ug/L	U	SW6010C
	Sodium	12.94	1000	5000	ug/L	U	SW6010C
4D10710-CCB1	Calcium	15.4	1000	5000	ug/L	U	SW6010C
	Iron	9.32	30.0	100	ug/L	U	SW6010C
	Magnesium	20.0	1000	5000	ug/L	U	SW6010C
	Manganese	0.299	3.00	15.0	ug/L	U	SW6010C
	Potassium	7.61	1000	5000	ug/L	U	SW6010C
	Sodium	12.6	1000	5000	ug/L	U	SW6010C
4D10710-CCB4	Calcium	-3.62	1000	5000	ug/L	U	SW6010C
	Iron	-4.17	30.0	100	ug/L	U	SW6010C
	Magnesium	-0.760	1000	5000	ug/L	U	SW6010C
	Manganese	0.000410	3.00	15.0	ug/L	U	SW6010C
	Potassium	31.4	1000	5000	ug/L	U	SW6010C
	Sodium	19.8	1000	5000	ug/L	U	SW6010C
4D10009-BLK1	Calcium	3.28	250	1250	ug/L	U	SW6010C
	Iron	-0.398	7.50	25.0	ug/L	U	SW6010C
	Magnesium	1.92	250	1250	ug/L	U	SW6010C
	Manganese	0.0266	0.750	3.75	ug/L	U	SW6010C
	Potassium	-1.96	250	1250	ug/L	U	SW6010C
	Sodium	9.78	250	1250	ug/L	U	SW6010C
4D10710-CCB5	Calcium	4.71	1000	5000	ug/L	U	SW6010C
	Iron	-3.35	30.0	100	ug/L	U	SW6010C
	Magnesium	-3.64	1000	5000	ug/L	U	SW6010C
	Manganese	0.0325	3.00	15.0	ug/L	U	SW6010C
	Potassium	29.0	1000	5000	ug/L	U	SW6010C
	Sodium	39.8	1000	5000	ug/L	U	SW6010C
4D10710-CCB6	Calcium	23.2	1000	5000	ug/L	U	SW6010C
	Iron	-2.92	30.0	100	ug/L	U	SW6010C
	Magnesium	0.460	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4D10710
Calibration: 4107004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10710-CCB6	Manganese	0.0342	3.00	15.0	ug/L	U	SW6010C
	Potassium	32.5	1000	5000	ug/L	U	SW6010C
	Sodium	45.0	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4D11411
Calibration: 4114006

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11411-ICB1	Calcium	0.06000	1000	5000	ug/L	U	SW6010C
	Iron	7.907	30.0	100	ug/L	U	SW6010C
	Magnesium	-6.260	1000	5000	ug/L	U	SW6010C
	Manganese	0.01964	3.00	15.0	ug/L	U	SW6010C
	Potassium	31.14	1000	5000	ug/L	U	SW6010C
	Sodium	14.23	1000	5000	ug/L	U	SW6010C
4D11411-CCB1	Calcium	8.27	1000	5000	ug/L	U	SW6010C
	Iron	8.89	30.0	100	ug/L	U	SW6010C
	Magnesium	13.3	1000	5000	ug/L	U	SW6010C
	Manganese	0.0513	3.00	15.0	ug/L	U	SW6010C
	Potassium	37.8	1000	5000	ug/L	U	SW6010C
	Sodium	7.56	1000	5000	ug/L	U	SW6010C
4D11411-CCB4	Calcium	2.62	1000	5000	ug/L	U	SW6010C
	Iron	7.07	30.0	100	ug/L	U	SW6010C
	Magnesium	0.470	1000	5000	ug/L	U	SW6010C
	Manganese	0.0909	3.00	15.0	ug/L	U	SW6010C
	Potassium	33.4	1000	5000	ug/L	U	SW6010C
	Sodium	31.3	1000	5000	ug/L	U	SW6010C
4D18003-BLK1	Calcium	2.42	250	1250	ug/L	U	SW6010C
	Iron	1.46	7.50	25.0	ug/L	U	SW6010C
	Magnesium	-1.24	250	1250	ug/L	U	SW6010C
	Manganese	0.0520	0.750	3.75	ug/L	U	SW6010C
	Potassium	6.79	250	1250	ug/L	U	SW6010C
	Sodium	10.9	250	1250	ug/L	U	SW6010C
4D11411-CCB5	Calcium	11.9	1000	5000	ug/L	U	SW6010C
	Iron	0.251	30.0	100	ug/L	U	SW6010C
	Magnesium	-2.88	1000	5000	ug/L	U	SW6010C
	Manganese	0.0571	3.00	15.0	ug/L	U	SW6010C
	Potassium	2.53	1000	5000	ug/L	U	SW6010C
	Sodium	22.3	1000	5000	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4107004
Sequence: 4D10710

Lab Sample ID	Analyte	True	Found	%R	Units
4D10710-IFA1	Calcium	500000	459,790.00	92.0	ug/L
	Iron	200000	198,930.00	99.5	ug/L
	Magnesium	500000	494,090.00	98.8	ug/L
	Manganese		-1.22		ug/L
	Potassium		-43.50		ug/L
	Sodium		81.70		ug/L
4D10710-IFB1	Calcium	500000	453,930.00	90.8	ug/L
	Iron	200000	199,570.00	99.8	ug/L
	Magnesium	500000	488,050.00	97.6	ug/L
	Manganese	500.0	501.85	100	ug/L
	Potassium		-37.52		ug/L
	Sodium		39.87		ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4114006
Sequence: 4D11411

Lab Sample ID	Analyte	True	Found	%R	Units
4D11411-IFA1	Calcium	500000	449,330.00	89.9	ug/L
	Iron	200000	192,850.00	96.4	ug/L
	Magnesium	500000	487,680.00	97.5	ug/L
	Manganese		-1.13		ug/L
	Potassium		40.59		ug/L
	Sodium		44.16		ug/L
4D11411-IFB1	Calcium	500000	448,920.00	89.8	ug/L
	Iron	200000	192,920.00	96.5	ug/L
	Magnesium	500000	485,120.00	97.0	ug/L
	Manganese	500.0	490.88	98.2	ug/L
	Potassium		3.30		ug/L
	Sodium		44.37		ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

ST105-30034

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D10009

% Solids:

Source Sample Name: **1404066-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Calcium	1250	66040	69160	250	4x	80 - 120
Iron	250.0	18.13	256.3	95.3		80 - 120
Magnesium	1250	13890	15020	90.2		80 - 120
Manganese	125.0	1.141	116.5	92.3		80 - 120
Potassium	1250	2656	3844	95.1		80 - 120
Sodium	1250	25120	25970	67.6	4x	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Calcium	1250	68220	175	1.37	4x	20	80 - 120
Iron	250.0	259.6	96.6	1.31		20	80 - 120
Magnesium	1250	14820	73.9	1.36	4x	20	80 - 120
Manganese	125.0	114.6	90.7	1.65		20	80 - 120
Potassium	1250	3770	89.2	1.94		20	80 - 120
Sodium	1250	25480	28.8	1.89	4x	20	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

ST105-30034

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4D10009-PS2
Batch: 4D10009
Lab Source ID: 1404066-03
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Calcium	**274600**	**264100**	**5000**	**210**	**80 - 120**
Iron	1087	72.53	1000	101	80 - 120
Magnesium	59860	55560	5000	85.9	80 - 120
Manganese	503.0	4.565	500.0	99.7	80 - 120
Potassium	15740	10620	5000	102	80 - 120
Sodium	105000	100500	5000	89.8	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D10009	Laboratory ID:	4D10009-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	579.1	96.5	80 - 120
Iron	20.00	18.07	90.4	80 - 120
Magnesium	600.0	595.6	99.3	80 - 120
Manganese	10.00	9.632	96.3	80 - 120
Potassium	600.0	569.4	94.9	80 - 120
Sodium	600.0	599.8	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D18003	Laboratory ID:	4D18003-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	579.1	96.5	80 - 120
Iron	20.00	20.76	104	80 - 120
Magnesium	600.0	625.0	104	80 - 120
Manganese	10.00	9.430	94.3	80 - 120
Potassium	600.0	581.0	96.8	80 - 120
Sodium	600.0	599.4	99.9	80 - 120

SERIAL DILUTION

SW6010C

ST105-30034

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Sequence: 4D10710
Preparation: MET_3005A_LOW

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D10009-DUP2
Lab Source ID: 1404066-03
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Calcium	264140	290120	9.84		SW6010C	10.00
Iron	72.527	ND			SW6010C	10.00
Magnesium	55565	59085	6.33		SW6010C	10.00
Manganese	4.5653	ND			SW6010C	10.00
Potassium	10624	10548	-0.715		SW6010C	10.00
Sodium	100500	104410	3.89		SW6010C	10.00

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_009

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_009

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_009

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_009

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_009

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_009

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Calcium	317.933	0.000000				
Calcium	317.933	0.000000				
Calcium	317.933	0.000000				
Iron	261.187	0.000000				
Iron	261.187	0.000000				
Iron	261.187	0.000000				
Magnesium	279.079	0.000000				
Magnesium	279.079	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.61	0.000000				
Manganese	257.61	0.000000				
Manganese	257.61	0.000000				
Potassium	766.49	0.000000				
Potassium	766.49	0.000000				
Potassium	766.49	0.000000				
Sodium	589.592	0.000000				
Sodium	589.592	0.000000				
Sodium	589.592	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc. SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

ICP Instrument ID: ME-ICP Date: 12/27/2013

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Calcium	15	500000	P
Calcium	15	500000	P
Calcium	15	500000	P
Iron	15	500000	P
Iron	15	500000	P
Iron	15	500000	P
Magnesium	15	500000	P
Magnesium	15	500000	P
Magnesium	15	500000	P
Manganese	15	15000	P
Manganese	15	15000	P
Manganese	15	15000	P
Potassium	15	100000	P
Potassium	15	100000	P
Potassium	15	100000	P
Sodium	15	500000	P
Sodium	15	500000	P
Sodium	15	500000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D10009 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30031	1404065-01	04/10/14 08:55	100.00	25.00
ST105-30032	1404066-01	04/10/14 08:55	100.00	25.00
ST105-30034	1404066-03	04/10/14 08:55	100.00	25.00
Blank	4D10009-BLK1	04/10/14 08:55	100.00	25.00
LCS	4D10009-BS1	04/10/14 08:55	100.00	25.00
ST105-30034	4D10009-DUP2	04/10/14 08:55	100.00	25.00
ST105-30034	4D10009-MS2	04/10/14 08:55	100.00	25.00
ST105-30034	4D10009-MSD2	04/10/14 08:55	100.00	25.00
ST105-30034	4D10009-PS2	04/10/14 08:55	100.00	25.00

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D18003 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30033	1404085-01	04/18/14 07:38	100.00	25.00
Blank	4D18003-BLK1	04/18/14 07:38	100.00	25.00
LCS	4D18003-BS1	04/18/14 07:38	100.00	25.00

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10710	Instrument:	ME-ICP
Calibration:	4107004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D10710-CAL1	4-17-14A-001	04/17/14 09:22
Cal Standard	4D10710-CAL2	4-17-14A-002	04/17/14 09:25
Cal Standard	4D10710-CAL3	4-17-14A-003	04/17/14 09:29
Cal Standard	4D10710-CAL4	4-17-14A-004	04/17/14 09:33
Cal Standard	4D10710-CAL5	4-17-14A-005	04/17/14 09:38
Cal Standard	4D10710-CAL6	4-17-14A-006	04/17/14 09:42
Cal Standard	4D10710-CAL7	4-17-14A-008	04/17/14 09:54
Cal Standard	4D10710-CAL8	4-17-14A-009	04/17/14 09:59
Initial Cal Check	4D10710-ICV1	4-17-14B-001	04/17/14 10:40
Initial Cal Blank	4D10710-ICB1	4-17-14B-002	04/17/14 10:47
Instrument RL Check	4D10710-CRL1	4-17-14B-004	04/17/14 10:57
Interference Check A	4D10710-IFA1	4-17-14B-007	04/17/14 11:14
Interference Check B	4D10710-IFB1	4-17-14B-008	04/17/14 11:20
Calibration Check	4D10710-CCV1	4-17-14B-010	04/17/14 11:28
Calibration Blank	4D10710-CCB1	4-17-14B-011	04/17/14 11:36
Calibration Check	4D10710-CCV4	4-17-14B-044	04/17/14 14:22
Calibration Blank	4D10710-CCB4	4-17-14B-045	04/17/14 14:30
Blank	4D10009-BLK1	4-17-14C-001	04/17/14 14:35
LCS	4D10009-BS1	4-17-14C-002	04/17/14 14:40
Calibration Check	4D10710-CCV5	4-17-14C-017	04/17/14 15:48
Calibration Blank	4D10710-CCB5	4-17-14C-018	04/17/14 15:56
ST105-30031	1404065-01	4-17-14C-021	04/17/14 16:09
ST105-30032	1404066-01	4-17-14C-022	04/17/14 16:14
ST105-30034	1404066-03	4-17-14C-023	04/17/14 16:18
ST105-30034	4D10009-MS2	4-17-14C-024	04/17/14 16:23
ST105-30034	4D10009-MSD2	4-17-14C-025	04/17/14 16:27
ST105-30034	4D10009-PS2	4-17-14C-026	04/17/14 16:32
ST105-30034	4D10009-DUP2	4-17-14C-027	04/17/14 16:36
Calibration Check	4D10710-CCV6	4-17-14C-031	04/17/14 16:55
Calibration Blank	4D10710-CCB6	4-17-14C-032	04/17/14 17:03

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11411	Instrument:	ME-ICP
Calibration:	4114006		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11411-CAL1	04-23-14A-001	04/23/14 10:27
Cal Standard	4D11411-CAL2	04-23-14A-002	04/23/14 10:31
Cal Standard	4D11411-CAL3	04-23-14A-003	04/23/14 10:35
Cal Standard	4D11411-CAL4	04-23-14A-004	04/23/14 10:39
Cal Standard	4D11411-CAL5	04-23-14A-005	04/23/14 10:44
Cal Standard	4D11411-CAL6	04-23-14A-006	04/23/14 10:48
Cal Standard	4D11411-CAL7	04-23-14A-007	04/23/14 10:54
Cal Standard	4D11411-CAL8	04-23-14A-008	04/23/14 10:59
Initial Cal Check	4D11411-ICV1	04-23-14B-001	04/23/14 11:29
Initial Cal Blank	4D11411-ICB1	04-23-14B-002	04/23/14 11:36
Instrument RL Check	4D11411-CRL1	04-23-14B-003	04/23/14 11:41
Interference Check A	4D11411-IFA1	04-23-14B-005	04/23/14 11:50
Interference Check B	4D11411-IFB1	04-23-14B-006	04/23/14 11:56
Calibration Check	4D11411-CCV1	04-23-14B-008	04/23/14 12:05
Calibration Blank	4D11411-CCB1	04-23-14B-009	04/23/14 12:12
Calibration Check	4D11411-CCV4	04-23-14B-045	04/23/14 15:01
Calibration Blank	4D11411-CCB4	04-23-14B-046	04/23/14 15:08
Blank	4D18003-BLK1	04-23-14C-001	04/23/14 15:16
LCS	4D18003-BS1	04-23-14C-004	04/23/14 15:29
ST105-30033	1404085-01	04-23-14C-005	04/23/14 15:34
Calibration Check	4D11411-CCV5	04-23-14C-019	04/23/14 16:38
Calibration Blank	4D11411-CCB5	04-23-14C-020	04/23/14 16:46

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4107004	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/17/14 9:22 4/17/14 9:59

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.1816E-05	10000	2.208E-05			500000	2.168E-05		
Antimony	0	0	100	0.0004051	1000	5.1618E-04					10000	5.2144E-04
Arsenic	0	0	100	0.000246	1000	2.8129E-04					10000	2.6872E-04
Barium	0	0	50	0.0086392	1000	0.008387	5000	0.0088492				
Beryllium	0	0	100	0.0024075	1000	0.0024071					10000	0.0023365
Boron	0	0	50	0.0000158	1000	0.0000152					5000	1.5378E-05
Cadmium	0	0	100	0.0143	1000	0.013864					10000	0.013373
Calcium	0	0	1100	7.456364E-05	50000	6.2632E-05					10000	
Chromium	0	0	100	0.0000517	1000	5.075E-05					10000	5.1165E-05
Cobalt	0	0	100	0.0042997	1000	0.0042544					10000	0.0044036
Copper	0	0	100	0.0000858	1000	8.032E-05					10000	8.1778E-05
Iron	0	0	5100	1.683726E-05	10000	1.6628E-05			500000	1.62724E-05	10000	
Lead	0	0	100	0.0010108	1000	0.0010056					10000	0.0010541
Magnesium	0	0	5100		50000	2.7332E-06			500000	2.7282E-06	10000	
Manganese	0	0	100	0.0003229	1000	0.0003066	10000	3.1286E-04			10000	
Molybdenum	0	0	100	0.0030251	1000	0.0032636					10000	0.0032121
Nickel	0	0	100	0.0027261	1000	0.0027401					10000	0.0027878
Potassium	0	0	1000	1.115E-05	10000	1.4198E-05						
Selenium	0	0	100	0.0004012	1000	3.9368E-04					10000	3.7577E-04
Silver	0	0	20	0.0000625	500	5.456E-05	2000	5.7705E-05				
Sodium	0	0	1000		50000	5.046E-05						
Thallium	0	0	100	0.0005528	1000	5.3699E-04					10000	5.5263E-04
Tin	0	0	50	0.0013488	1000	0.0013508					5000	0.0013744
Titanium	0	0	100	0.0001941	1000	1.8842E-04					10000	1.9225E-04
Vanadium	0	0	100	0.000055	1000	5.399E-05					10000	5.4399E-05
Zinc	0	0	100	0.0054278	1000	0.0056196					10000	0.0053319
Strontium	0	0	100	0.001544	1000	0.001515					10000	0.001522
Lithium (outside certification)	0	0	100	0.0000113	1000	1.183E-05					10000	1.1371E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4107004	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/17/14 9:22 4/17/14 9:59

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.341E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.7623E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.4329E-05										
Selenium												
Silver												
Sodium	100000	4.9565E-05	500000	4.8654E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4107004		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	4/17/14 9:22	4/17/14 9:59

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.6394E-05	66.67436	6.42904	190.7855	0.9999998		0.998	
Antimony	3.6068E-04	68.30572	0.7492475	64.21794	0.9999989		0.998	
Arsenic	1.990025E-04	67.06938	1.507468	115.0742	0.9999706		0.998	
Barium	6.46885E-03	66.73062	2.344623	176.854	0.9998823		0.998	
Beryllium	1.787775E-03	66.6928	1.732167	129.2902	0.9999916		0.998	
Boron	1.15945E-05	66.70198	5.294925	142.2543	0.9999927		0.998	
Cadmium	1.038425E-02	66.76632	1.291935	114.8184	0.9999885		0.998	
Calcium	5.015141E-05	67.54672	1.761512	164.6132	0.9999979		0.998	
Chromium	3.840375E-05	66.67436	25.54795	186.6303	0.9999993		0.998	
Cobalt	3.239425E-03	66.69454	0.9315175	117.7745	0.9999888		0.998	
Copper	6.19745E-05	66.77145	2.386613	87.3855	0.9999956		0.998	
Iron	1.243441E-05	66.69305	8.302335	194.1929	0.9999999		0.998	
Lead	7.67625E-04	66.7268	10.88328	193.3898	0.9999808		0.998	
Magnesium	2.055925E-06	66.67068	25.59571	197.7541	0.9999932		0.998	
Manganese	2.3559E-04	66.72755	14.12945	172.8396	0.9999953		0.998	
Molybdenum	0.0023752	66.80612	15.65115	194.7657	0.9999963		0.998	
Nickel	0.0020635	66.67895	77.02929	198.7822	0.9999974		0.998	
Potassium	9.91925E-06	68.29111	1.703935	152.2689	0.9999986		0.998	
Selenium	2.926625E-04	66.76622	3.4948	172.9708	0.9999823		0.998	
Silver	4.369125E-05	67.08412	4.036782	125.4507	0.9997719		0.998	
Sodium	3.716975E-05	66.69617	1.917163	147.2618	0.9999805		0.998	
Thallium	4.10605E-04	66.69111	6.155895	180.68	0.9999926		0.998	
Tin	0.0010185	66.67644	6.515375	188.1342	0.9999873		0.998	
Titanium	1.436925E-04	66.68699	1.672657	157.4488	0.9999951		0.998	
Vanadium	4.084725E-05	66.6744	4.239575	125.3309	0.9999992		0.998	
Zinc	4.094825E-03	66.73062	4.028435	171.7762	0.9999716		0.998	
Strontium	1.14525E-03	66.67539	5.259975	179.1433	0.9999997		0.998	
Lithium (outside certification)	8.62525E-06	66.72227	3.592175	55.18983	0.9999848		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4114006	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/23/14 10:27 4/23/14 10:59

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	1.5724E-05	10000	1.5974E-05			500000	1.54366E-05		
Antimony	0	0	100	0.0007175	1000	0.0007973					10000	8.0807E-04
Arsenic	0	0	100	0.00039	1000	4.4368E-04					10000	4.3252E-04
Barium	0	0	50	0.0134462	1000	0.013036	5000	0.013789				
Beryllium	0	0	100	0.0025169	1000	0.0025357					10000	0.0024531
Boron	0	0	50	0.0000156	1000	1.531E-05					5000	1.5006E-05
Cadmium	0	0	100	0.022989	1000	0.022255					10000	0.021905
Calcium	0	0	1100	7.556364E-05	50000	6.5278E-05					10000	
Chromium	0	0	100	0.0000531	1000	5.282E-05					10000	5.1983E-05
Cobalt	0	0	100	0.0050784	1000	0.005046					10000	0.0051885
Copper	0	0	100	0.0000664	1000	6.051E-05					10000	5.8442E-05
Iron	0	0	5100	1.383137E-05	10000	1.344E-05			500000	1.29816E-05	10000	
Lead	0	0	100	0.0015056	1000	0.0015249					10000	0.0016161
Magnesium	0	0	5100		50000	2.4532E-06			500000	2.345E-06	10000	
Manganese	0	0	100	0.000317	1000	3.1256E-04	10000	3.1511E-04			10000	
Molybdenum	0	0	100	0.0036729	1000	0.003885					10000	0.0038318
Nickel	0	0	100	0.0042417	1000	0.0042533					10000	0.0043607
Potassium	0	0	1000	0.0000108	10000	1.4443E-05						
Selenium	0	0	100	0.0005869	1000	5.7995E-04					10000	5.6066E-04
Silver	0	0	20	0.000063	500	5.722E-05	2000	6.055E-05				
Sodium	0	0	1000		50000	5.204E-05						
Thallium	0	0	100	0.0008626	1000	8.5838E-04					10000	0.000891
Tin	0	0	50	0.0013122	1000	0.0013689					5000	1.40834E-03
Titanium	0	0	100	0.0001459	1000	0.0001417					10000	1.4057E-04
Vanadium	0	0	100	0.0000552	1000	5.578E-05					10000	5.4037E-05
Zinc	0	0	100	0.0086936	1000	0.0089838					10000	0.0087431
Strontium	0	0	100	0.001309	1000	0.001342					10000	0.001334
Lithium (outside certification)	0	0	100	0.0000109	1000	1.139E-05					10000	1.0821E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4114006	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/23/14 10:27 4/23/14 10:59

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.6368E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.459E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.4723E-05										
Selenium												
Silver												
Sodium	100000	5.0988E-05	500000	5.0826E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4114006		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	4/23/14 10:27	4/23/14 10:59

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.178365E-05	66.6927	2.472902	153.1359	0.9999995		0.998	
Antimony	5.807175E-04	67.02861	1.851735	149.8613	0.9999997		0.998	
Arsenic	3.1655E-04	67.06583	1.05976	135.6328	0.999989		0.998	
Barium	0.0100678	66.73674	1.306615	162.735	0.9998715		0.998	
Beryllium	1.876425E-03	66.69328	5.434165	188.1156	0.9999894		0.998	
Boron	1.1479E-05	66.70014	3.652538	163.1133	0.9999843		0.998	
Cadmium	1.678725E-02	66.72095	3.079505	164.1162	0.999998		0.998	
Calcium	5.180241E-05	67.25885	2.167898	157.9674	0.9999968		0.998	
Chromium	3.947575E-05	66.6775	43.403	196.7726	0.9999977		0.998	
Cobalt	3.828225E-03	66.6857	0.9760975	132.6531	0.9999927		0.998	
Copper	4.6338E-05	67.06251	1.334847	63.25142	0.9999938		0.998	
Iron	1.006324E-05	66.75595	51.46627	199.0612	0.9999996		0.998	
Lead	1.16165E-03	66.79561	88.65751	199.03	0.9999712		0.998	
Magnesium	1.8143E-06	66.72926	13.27547	194.4568	0.9999102		0.998	
Manganese	2.361675E-04	66.67112	36.48298	194.8282	0.9999993		0.998	
Molybdenum	2.847425E-03	66.74172	10.16156	194.3311	0.9999974		0.998	
Nickel	3.213925E-03	66.6875	109.7289	199.1521	0.9999944		0.998	
Potassium	9.9915E-06	69.02405	2.363975	136.6744	0.9999998		0.998	
Selenium	4.318775E-04	66.71619	3.51985	169.2658	0.9999911		0.998	
Silver	4.51925E-05	66.8724	7.020495	176.471	0.9997746		0.998	
Sodium	3.84635E-05	66.68135	2.038785	127.0377	0.9999944		0.998	
Thallium	6.52995E-04	66.70356	4.67922	185.3544	0.9999882		0.998	
Tin	1.02236E-03	66.77829	0.4181175	39.19576	0.999971		0.998	
Titanium	1.070425E-04	66.70108	4.157495	189.0223	0.9999997		0.998	
Vanadium	4.125425E-05	66.68981	2.576005	149.3871	0.9999906		0.998	
Zinc	6.605125E-03	66.69428	16.29836	192.6627	0.9999922		0.998	
Strontium	9.9625E-04	66.6816	2.49245	152.2808	0.9999994		0.998	
Lithium (outside certification)	8.27775E-06	66.73597	11.58107	187.2301	0.9999738		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4D10009

Empirical Laboratories, LLC

Printed: 4/24/2014 4:22:18PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403203-05	J	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	Added for BatchQC in: 4D10009
1403203-05	J	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	MS/MSD
1403217-01	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-03	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-05	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-07	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-09	A	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1403217-10	A	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1404017-02	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404017-04	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404017-06	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404017-08	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404017-10	A	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404065-01	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1404066-01	D	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	see versions
1404066-03	J	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	Added for BatchQC in: 4D10009
1404066-03	J	MET_ICP_LOW6010C_FULL	04/10/2014	100	25					NA	MS/MSD
1404067-02	F	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404067-04	F	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
1404067-06	F	MET_ICP_LOW6010C_FULL_I	04/10/2014	100	25					NA	see versions
4D10009-BLK1		QC	04/10/2014	100	25					NA	
4D10009-BS1		QC	04/10/2014	100	25	14D0064		2000		NA	

PREPARATION BENCH SHEET

4D10009

Empirical Laboratories, LLC

Printed: 4/24/2014 4:22:18PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D10009-DUP1		QC	04/10/2014	100	25		1403203-05			NA	
4D10009-DUP2		QC	04/10/2014	100	25		1404066-03			NA	
4D10009-MS1		QC	04/10/2014	100	25	14D0066	1403203-05	25		NA	
4D10009-MS2		QC	04/10/2014	100	25	14D0066	1404066-03	25		NA	
4D10009-MSD1		QC	04/10/2014	100	25	14D0066	1403203-05	25		NA	
4D10009-MSD2		QC	04/10/2014	100	25	14D0066	1404066-03	25		NA	
4D10009-PS1		QC	04/10/2014	100	25	14D0066	1403203-05	25		NA	
4D10009-PS2		QC	04/10/2014	100	25	14D0066	1404066-03	25		NA	

Reagents Used:

Standard	Description
14A0613	Nitric acid
14A0614	Hydrochloric Acid
14B0029	Metals 50mL Digestion Vessel- DigiTUBE

PREPARATION BENCH SHEET

4D18003

Empirical Laboratories, LLC

Printed: 5/1/2014 2:19:01PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404001-02	-	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	
1404085-01	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
1404107-01	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404107-02	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404107-03	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404107-04	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404107-05	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404108-01	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
1404108-03	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
1404108-05	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
1404108-07	A	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
4D18003-BLK1		QC	04/18/2014	100	25					NA	
4D18003-BS1		QC	04/18/2014	100	25	14D0064		2000		NA	
4D18003-DUP1		QC	04/18/2014	100	25		1404108-01			NA	
4D18003-DUP2		QC	04/18/2014	100	25		1404108-03			NA	
4D18003-MRL1		QC	04/18/2014	100	25	14B0290		250		NA	
4D18003-MRL2		QC	04/18/2014	100	25	14B0291		250		NA	
4D18003-MS1		QC	04/18/2014	100	25	14D0674	1404108-01	25		NA	
4D18003-PS1		QC	04/18/2014	100	25	14D0674	1404108-01	25		NA	

PREPARATION BENCH SHEET

4D18003

Empirical Laboratories, LLC

Printed: 5/1/2014 2:19:01PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
14A0613	Nitric acid
14A0614	Hydrochloric Acid
14B0029	Metals 50mL Digestion Vessel- DigiTUBE

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404065-01 [ST105-30031]	4D08014	100.00/100.00	100	100	1.00			04/09/14
1404066-01 [ST105-30032]	4D08014	100.00/100.00	100	100	1.00			04/09/14
1404066-03 [ST105-30034]	4D08014	100.00/100.00	100	100	1.00			04/09/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404065-01 [ST105-30031]	4D14004	25.00/25.00	25.0	25.0	1.00			04/14/14
1404066-01 [ST105-30032]	4D14004	25.00/25.00	25.0	25.0	1.00			04/14/14
1404066-03 [ST105-30034]	4D14004	25.00/25.00	25.0	25.0	1.00			04/14/14
1404085-01 [ST105-30033]	4D14004	25.00/25.00	25.0	25.0	1.00			04/14/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404065-01 [ST105-30031]	4D15005	5.00/5.00	5.00	5.00	1.00			04/15/14
1404066-01 [ST105-30032]	4D15005	5.00/5.00	5.00	5.00	1.00			04/15/14
1404066-03 [ST105-30034]	4D15005	5.00/5.00	5.00	5.00	1.00			04/15/14
1404085-01 [ST105-30033]	4D15005	5.00/5.00	5.00	5.00	1.00			04/15/14

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404085-01 [ST105-30033]	4D16012	100.00/100.00	100	100	1.00			04/16/14

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404065-01 [ST105-30031]	4D16014	20.00/20.00	20.0	20.0	1.00			04/16/14
1404066-01 [ST105-30032]	4D16014	20.00/20.00	20.0	20.0	1.00			04/16/14
1404066-03 [ST105-30034]	4D16014	20.00/20.00	20.0	20.0	1.00			04/16/14
1404085-01 [ST105-30033]	4D16014	20.00/20.00	20.0	20.0	1.00			04/16/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404065-01 [ST105-30031]	4D23005	100.00/100.00	100	100	1.00			04/23/14
1404066-01 [ST105-30032]	4D23005	100.00/100.00	100	100	1.00			04/23/14
1404066-03 [ST105-30034]	4D23005	100.00/100.00	100	100	1.00			04/23/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404085-01 [ST105-30033]	4D28004	100.00/100.00	100	100	1.00			04/28/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404065-01RE1 [ST105-30031]	4D28013	20.00/20.00	4.00	20.0	2.00			04/28/14
1404066-01RE1 [ST105-30032]	4D28013	20.00/20.00	4.00	20.0	5.00			04/28/14
1404066-03RE1 [ST105-30034]	4D28013	20.00/20.00	4.00	20.0	5.00			04/28/14
1404085-01RE1 [ST105-30033]	4D28013	20.00/20.00	4.00	20.0	2.00			04/28/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404065-01 [ST105-30031]	4D28016	40.00/40.00	40.0	40.0	1.00			04/28/14
1404065-02 [ST105-30031]	4D28016	40.00/40.00	40.0	40.0	1.00			04/28/14
1404066-01 [ST105-30032]	4D28016	40.00/40.00	40.0	40.0	1.00			04/28/14
1404066-02 [ST105-30032]	4D28016	40.00/40.00	40.0	40.0	1.00			04/28/14
1404066-03 [ST105-30034]	4D28016	40.00/40.00	40.0	40.0	1.00			04/28/14
1404066-04 [ST105-30034]	4D28016	40.00/40.00	40.0	40.0	1.00			04/28/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404085-01 [ST105-30033]	4D29020	40.00/40.00	40.0	40.0	1.00			04/29/14
1404085-02 [ST105-30033]	4D29020	40.00/40.00	40.0	40.0	1.00			04/29/14

ANALYSIS DATA SHEET

ST105-30031

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404065-01
Sampled:	04/08/14 11:13	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D23005	04/24/14 10:41
24959-67-9	Bromide	**0.0980**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D15005	04/15/14 15:41
TDS	Total Dissolved Solids	**259**	**20.0**	20.0	20.0	1		SM2540C	4D08014	04/09/14 16:07
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	XU N*	E351.2	4D16014	04/23/14 17:30
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D28016	04/28/14 18:18
16887-00-6	Chloride	**7.95**	**0.170**	0.330	0.500	1		SW9056A	4D15005	04/15/14 15:41
NA	Nitrate/Nitrite as N	**13.2**	**0.500**	1.50	3.00	2	D	E353.2	4D28013	04/28/14 14:12
16984-48-8	Fluoride	**0.543**	**0.0330**	0.100	0.250	1		SW9056A	4D15005	04/15/14 15:41
471-34-1	Alkalinity, Total (as CACO3)	**145**	**1.00**	1.00	1.00	1		SM2320B	4D14004	04/14/14 12:16
14808-79-8	Sulfate as SO4	**22.2**	**0.330**	1.00	2.50	1		SW9056A	4D15005	04/15/14 15:41

ANALYSIS DATA SHEET

ST105-30031

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404065-02
Sampled:	04/08/14 11:13	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D28016	04/28/14 18:42

ANALYSIS DATA SHEET

ST105-30032

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404066-01
Sampled:	04/08/14 14:47	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D23005	04/24/14 10:42
24959-67-9	Bromide	**0.370**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D15005	04/15/14 15:59
TDS	Total Dissolved Solids	**460**	**20.0**	20.0	20.0	1		SM2540C	4D08014	04/09/14 16:07
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	XU N*	E351.2	4D16014	04/23/14 17:31
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D28016	04/28/14 19:05
16887-00-6	Chloride	**24.0**	**0.170**	0.330	0.500	1		SW9056A	4D15005	04/15/14 15:59
NA	Nitrate/Nitrite as N	**29.0**	**1.25**	3.75	7.50	5	D	E353.2	4D28013	04/28/14 14:13
16984-48-8	Fluoride	**0.297**	**0.0330**	0.100	0.250	1		SW9056A	4D15005	04/15/14 15:59
471-34-1	Alkalinity, Total (as CACO3)	**124**	**1.00**	1.00	1.00	1		SM2320B	4D14004	04/14/14 12:24
14808-79-8	Sulfate as SO4	**114**	**0.330**	1.00	2.50	1		SW9056A	4D15005	04/15/14 15:59

ANALYSIS DATA SHEET

ST105-30032

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404066-02
Sampled:	04/08/14 14:47	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D28016	04/28/14 19:28

ANALYSIS DATA SHEET

ST105-30034

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404066-03
Sampled:	04/08/14 11:16	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D23005	04/24/14 10:43
24959-67-9	Bromide	**0.297**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D15005	04/15/14 16:16
TDS	Total Dissolved Solids	**344**	**20.0**	20.0	20.0	1	*	SM2540C	4D08014	04/09/14 16:07
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	XU N*	E351.2	4D16014	04/23/14 17:32
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D28016	04/28/14 19:51
16887-00-6	Chloride	**24.7**	**0.170**	0.330	0.500	1	*	SW9056A	4D15005	04/15/14 16:16
NA	Nitrate/Nitrite as N	**23.1**	**1.25**	3.75	7.50	5	D	E353.2	4D28013	04/28/14 14:15
16984-48-8	Fluoride	**0.378**	**0.0330**	0.100	0.250	1		SW9056A	4D15005	04/15/14 16:16
471-34-1	Alkalinity, Total (as CACO3)	**143**	**1.00**	1.00	1.00	1		SM2320B	4D14004	04/14/14 10:35
14808-79-8	Sulfate as SO4	**41.3**	**0.330**	1.00	2.50	1		SW9056A	4D15005	04/15/14 16:16

ANALYSIS DATA SHEET

ST105-30034

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404066-04
Sampled:	04/08/14 11:16	Received:	04/09/14 08:45

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D28016	04/28/14 21:05

ANALYSIS DATA SHEET

ST105-30033

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404085-01
Sampled:	04/09/14 12:49	Received:	04/11/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4D28004	04/29/14 13:02
24959-67-9	Bromide	**0.157**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D15005	04/15/14 21:47
TDS	Total Dissolved Solids	**363**	**20.0**	20.0	20.0	1	Q	SM2540C	4D16012	04/16/14 16:02
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	XU N*	E351.2	4D16014	04/23/14 17:39
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4D29020	04/30/14 17:25
16887-00-6	Chloride	**14.6**	**0.170**	0.330	0.500	1		SW9056A	4D15005	04/15/14 21:47
NA	Nitrate/Nitrite as N	**15.8**	**0.500**	1.50	3.00	2	D	E353.2	4D28013	04/28/14 14:19
16984-48-8	Fluoride	**0.489**	**0.0330**	0.100	0.250	1		SW9056A	4D15005	04/15/14 21:47
471-34-1	Alkalinity, Total (as CACO3)	**153**	**1.00**	1.00	1.00	1		SM2320B	4D14004	04/14/14 15:24
14808-79-8	Sulfate as SO4	**18.1**	**0.330**	1.00	2.50	1		SW9056A	4D15005	04/15/14 21:47

ANALYSIS DATA SHEET

ST105-30033

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404085-02
Sampled:	04/09/14 12:49	Received:	04/11/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4D29020	04/30/14 17:49

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D08014-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4D08014	04/09/14 16:07

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D08014-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**910.0**	**20.0**	20.0	20.0	1		SM2540C	4D08014	04/09/14 16:07

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D08014-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**374.0**	**20.0**	20.0	20.0	1		SM2540C	4D08014	04/09/14 16:07

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D14004-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4D14004	04/14/14 09:41

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D14004-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1059**	**5.00**	5.00	5.00	1		SM2320B	4D14004	04/14/14 09:46

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D14004-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**263.9**	**1.11**	1.11	1.11	1		SM2320B	4D14004	04/14/14 10:00

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D14004-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**262.0**	**1.11**	1.11	1.11	1		SM2320B	4D14004	04/14/14 10:24

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D15005-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4D15005	04/15/14 13:05
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4D15005	04/15/14 13:05
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4D15005	04/15/14 13:05
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4D15005	04/15/14 13:05

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D15005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.63**	**0.0420**	0.125	0.250	1		SW9056A	4D15005	04/15/14 13:22
16887-00-6	Chloride	**4.158**	**0.170**	0.330	0.500	1		SW9056A	4D15005	04/15/14 13:22
16984-48-8	Fluoride	**2.768**	**0.0330**	0.100	0.250	1		SW9056A	4D15005	04/15/14 13:22
14808-79-8	Sulfate as SO4	**20.81**	**0.330**	1.00	2.50	1		SW9056A	4D15005	04/15/14 13:22

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D15005-DUP2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**0.3180**	**0.0420**	0.125	0.250	1		SW9056A	4D15005	04/15/14 17:08
16887-00-6	Chloride	**31.53**	**0.170**	0.330	0.500	1		SW9056A	4D15005	04/15/14 17:08
16984-48-8	Fluoride	**0.3850**	**0.0330**	0.100	0.250	1		SW9056A	4D15005	04/15/14 17:08
14808-79-8	Sulfate as SO4	**41.86**	**0.330**	1.00	2.50	1		SW9056A	4D15005	04/15/14 17:08

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D15005-MS2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**6.868**	**0.0467**	0.139	0.278	1		SW9056A	4D15005	04/15/14 16:34
16887-00-6	Chloride	**51.91**	**0.189**	0.367	0.556	1		SW9056A	4D15005	04/15/14 16:34
16984-48-8	Fluoride	**3.059**	**0.0367**	0.111	0.278	1		SW9056A	4D15005	04/15/14 16:34
14808-79-8	Sulfate as SO4	**66.97**	**0.367**	1.11	2.78	1		SW9056A	4D15005	04/15/14 16:34

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids: 0.00

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D15005-MSD2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**7.003**	**0.0467**	0.139	0.278	1		SW9056A	4D15005	04/15/14 16:51
16887-00-6	Chloride	**52.85**	**0.189**	0.367	0.556	1		SW9056A	4D15005	04/15/14 16:51
16984-48-8	Fluoride	**3.096**	**0.0367**	0.111	0.278	1		SW9056A	4D15005	04/15/14 16:51
14808-79-8	Sulfate as SO4	**68.35**	**0.367**	1.11	2.78	1		SW9056A	4D15005	04/15/14 16:51

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D16012-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	QU	SM2540C	4D16012	04/16/14 16:02

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D16012-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1180**	**20.0**	20.0	20.0	1		SM2540C	4D16012	04/16/14 16:02

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D16012-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**960.0**	**20.0**	20.0	20.0	1		SM2540C	4D16012	04/16/14 16:02

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D16014-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**0.650**	**0.500**	1.00	1.50	1	XJ	E351.2	4D16014	04/23/14 17:21

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D16014-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.603**	**0.500**	1.00	1.50	1	X	E351.2	4D16014	04/23/14 17:28

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D16014-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**1.138**	**0.556**	1.11	1.67	1	XJ	E351.2	4D16014	04/23/14 17:33

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D16014-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**2.436**	**0.556**	1.11	1.67	1	X	E351.2	4D16014	04/23/14 17:34

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D23005-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4D23005	04/24/14 10:39

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D23005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.472**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D23005	04/24/14 10:40

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D23005-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.168**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D23005	04/24/14 10:44

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D23005-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.588**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D23005	04/24/14 10:45

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D28004-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4D28004	04/29/14 12:52

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28004-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.492**	**0.100**	0.150	0.300	1		SM4500NH3BG	4D28004	04/29/14 12:53

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D28013-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4D28013	04/28/14 13:31

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28013-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**14.74**	**0.500**	1.50	3.00	1		E353.2	4D28013	04/28/14 13:33

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28013-MS3

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**35.35**	**1.25**	3.75	7.50	1		E353.2	4D28013	04/28/14 14:16

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids: 0.00

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D28013-MSD3

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**35.30**	**1.25**	3.75	7.50	1		E353.2	4D28013	04/28/14 14:18

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D28016-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4D28016	04/28/14 17:24
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4D28016	04/28/14 17:24

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28016-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**24.06**	**1.25**	2.50	3.00	1		SW9060A	4D28016	04/28/14 17:53
7440-44-0	Total Organic Carbon (dissolved)	**24.06**	**1.25**	2.50	3.00	1		SW9060A	4D28016	04/28/14 17:53

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28016-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**14.26**	**1.25**	2.50	3.00	1		SW9060A	4D28016	04/28/14 20:17

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28016-MS2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)	**13.95**	**1.25**	2.50	3.00	1		SW9060A	4D28016	04/28/14 21:31

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28016-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**14.48**	**1.25**	2.50	3.00	1		SW9060A	4D28016	04/28/14 20:42

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28016-MSD2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)	**14.32**	**1.25**	2.50	3.00	1		SW9060A	4D28016	04/28/14 21:58

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D29020-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4D29020	04/30/14 16:33
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4D29020	04/30/14 16:33

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_009

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D29020-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**23.32**	**1.25**	2.50	3.00	1		SW9060A	4D29020	04/30/14 17:00
7440-44-0	Total Organic Carbon (dissolved)	**23.32**	**1.25**	2.50	3.00	1		SW9060A	4D29020	04/30/14 17:00

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 3L35106

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35106-ICV1	Bromide	14.00	13.66	97.6	mg/L	+/- 10.00%
	Chloride	4.200	4.193	99.8	mg/L	+/- 10.00%
	Fluoride	2.800	2.803	100	mg/L	+/- 10.00%
	Sulfate as SO4	21.00	21.05	100	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 4D10601

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D10601-CCV1	Bromide	6.300	5.965	94.7	mg/L	+/- 10.00%
	Chloride	25.00	24.81	99.3	mg/L	+/- 10.00%
	Fluoride	2.500	2.503	100	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.99	99.9	mg/L	+/- 10.00%
4D10601-CCV2	Bromide	6.300	6.027	95.7	mg/L	+/- 10.00%
	Chloride	25.00	25.22	101	mg/L	+/- 10.00%
	Fluoride	2.500	2.571	103	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.07	100	mg/L	+/- 10.00%
4D10601-CCV3	Bromide	6.300	5.980	94.9	mg/L	+/- 10.00%
	Chloride	25.00	25.25	101	mg/L	+/- 10.00%
	Fluoride	2.500	2.569	103	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.18	101	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 4113003
Sequence: 4D11310

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11310-ICV1	Total Kjeldahl Nitrogen	10.00	11.82	118	mg/Kg	+/- 10.00%
4D11310-CCV1	Total Kjeldahl Nitrogen	10.00	10.75	108	mg/Kg	+/- 10.00%
4D11310-CCV2	Total Kjeldahl Nitrogen	10.00	10.99	110	mg/Kg	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 4114003
Sequence: 4D11407

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11407-ICV1	Ammonia as N	2.000	2.179	109	mg/L	+/- 10.00%
4D11407-CCV1	Ammonia as N	2.000	2.057	103	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 4118004
Sequence: 4D11809

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11809-ICV1	Nitrate/Nitrite as N	1.200	1.269	106	mg/L	+/- 10.00%
4D11809-CCV1	Nitrate/Nitrite as N	1.200	1.256	105	mg/L	+/- 10.00%
4D11809-CCV2	Nitrate/Nitrite as N	1.200	1.252	104	mg/L	+/- 10.00%
4D11809-CCV3	Nitrate/Nitrite as N	1.200	1.246	104	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 4119002
Sequence: 4D11908

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11908-ICV1	Ammonia as N	2.000	2.002	100	mg/L	+/- 10.00%
4D11908-CCV1	Ammonia as N	2.000	2.073	104	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 4119004
Sequence: 4D11913

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11913-CCV1	Total Organic Carbon	25.00	24.89	99.6	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	24.89	99.6	mg/L	+/- 20.00%
4D11913-CCV2	Total Organic Carbon	50.00	45.01	90.0	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	45.01	90.0	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Calibration: 4119004
Sequence: 4E12109

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12109-CCV1	Total Organic Carbon	25.00	23.24	93.0	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	23.24	93.0	mg/L	+/- 20.00%
4E12109-CCV2	Total Organic Carbon	50.00	48.03	96.1	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	48.03	96.1	mg/L	+/- 20.00%

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 3351002

Sequence: 4D10601

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D10601-CRL1	Chloride	0.5000	0.4950	99.0	mg/L	75 - 125
4D10601-CRL2	Fluoride	0.1000	0.09300	93.0	mg/L	75 - 125
	Sulfate as SO4	1.000	1.102	110	mg/L	75 - 125
4D10601-CRL3	Bromide	0.6300	0.5470	86.8	mg/L	75 - 125

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D08014

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D08014-BLK1	Total Dissolved Solids	-4.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D14004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D14004-BLK1	Alkalinity, Total (as CACO3)	-0.430	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D15005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D15005-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.0140	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D16012

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D16012-BLK1	Total Dissolved Solids	-3.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D16014

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D16014-BLK1	Total Kjeldahl Nitrogen	0.650	0.500	1.50	mg/L	J	E351.2

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D23005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D23005-BLK1	Ammonia as N	-0.0283	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D28004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D28004-BLK1	Ammonia as N	-0.00314	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D28013

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D28013-BLK1	Nitrate/Nitrite as N	-0.0240	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D28016

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D28016-BLK1	Total Organic Carbon	0.504	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.504	1.25	3.00	mg/L	U	SW9060A

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D29020

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D29020-BLK1	Total Organic Carbon	0.426	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.426	1.25	3.00	mg/L	U	SW9060A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 3L35106
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35106-ICB1	Bromide	0.000	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.000	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.000	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.000	0.330	2.50	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D10601
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D10601-CCB1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.0140	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0320	0.330	2.50	mg/L	U	SW9056A
4D10601-CCB2	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4D10601-CCB3	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0200	0.330	2.50	mg/L	U	SW9056A

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11310
Calibration: 4113003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11310-ICB1	Total Kjeldahl Nitrogen	-0.2793	0.500	2.00	mg/Kg	U	E351.2
4D11310-CCB1	Total Kjeldahl Nitrogen	-0.107	0.500	2.00	mg/Kg	U	E351.2
4D11310-CCB2	Total Kjeldahl Nitrogen	-0.207	0.500	2.00	mg/Kg	U	E351.2

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11407
Calibration: 4114003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11407-ICB1	Ammonia as N	-0.006042	0.100	0.300	mg/L	U	SM4500NH3BG
4D11407-CCB1	Ammonia as N	0.000164	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11809
Calibration: 4118004
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11809-ICB1	Nitrate/Nitrite as N	-0.02707	0.0500	0.300	mg/L	U	E353.2
4D11809-CCB1	Nitrate/Nitrite as N	-0.0220	0.0500	0.300	mg/L	U	E353.2
4D11809-CCB2	Nitrate/Nitrite as N	-0.0174	0.0500	0.300	mg/L	U	E353.2
4D11809-CCB3	Nitrate/Nitrite as N	-0.0227	0.0500	0.300	mg/L	U	E353.2

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11908
Calibration: 4119002
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11908-ICB1	Ammonia as N	0.002909	0.100	0.300	mg/L	U	SM4500NH3BG
4D11908-CCB1	Ammonia as N	0.00325	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11913
Calibration: 4119004
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11913-CCB1	Total Organic Carbon	0.486	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.486	1.25	3.00	mg/L	U	SW9060A
4D11913-CCB2	Total Organic Carbon	0.501	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.501	1.25	3.00	mg/L	U	SW9060A

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_009
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E12109
Calibration: 4119004
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12109-CCB1	Total Organic Carbon	0.456	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.456	1.25	3.00	mg/L	U	SW9060A
4E12109-CCB2	Total Organic Carbon	0.576	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.576	1.25	3.00	mg/L	U	SW9060A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SM2320B

ST105-30034

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D14004

% Solids:

Source Sample Name: **1404066-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Alkalinity, Total (as CACO3)	111.1	143.4	263.9	108		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Alkalinity, Total (as CACO3)	111.1	262.0	107	0.723		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9056A

ST105-30034

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D15005

% Solids:

Source Sample Name: **1404066-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Bromide	7.000	0.2970	6.868	93.9		80 - 120
Chloride	27.78	24.67	51.91	98.1		80 - 120
Fluoride	2.778	0.3780	3.059	96.5		80 - 120
Sulfate as SO4	27.78	41.34	66.97	92.3		80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Bromide	7.000	7.003	95.8	1.95		15	80 - 120
Chloride	27.78	52.85	101	1.80		15	80 - 120
Fluoride	2.778	3.096	97.8	1.19		15	80 - 120
Sulfate as SO4	27.78	68.35	97.2	2.03		15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E351.2

ST105-30034

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D16014

% Solids:

Source Sample Name: **1404066-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	ND	1.138	20.5	N	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	2.436	43.8	72.6	N *	20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SM4500NH3BG

ST105-30034

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D23005

% Solids:

Source Sample Name: **1404066-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Ammonia as N	5.000	ND	4.168	83.4		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Ammonia as N	5.000	4.588	91.8	9.59		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E353.2

ST105-30034

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D28013

% Solids:

Source Sample Name: **1404066-03RE1**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate/Nitrite as N	12.50	23.10	35.35	98.0		90 - 110

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS	
						RPD	REC.
Nitrate/Nitrite as N	12.50	35.30	97.6	0.142		20	90 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9060A

ST105-30034

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D28016

% Solids:

Source Sample Name: **1404066-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Organic Carbon	15.00	ND	14.26	95.1		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Organic Carbon	15.00	14.48	96.5	1.53		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9060A

ST105-30034

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D28016

% Solids:

Source Sample Name: **1404066-04**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Organic Carbon (dissolved)	15.00	ND	13.95	93.0		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Organic Carbon (dissolved)	15.00	14.32	95.5	2.62		20	75 - 125

ST105-30034

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4D08014
Preparation: pNone
Source Sample Name: ST105-30034

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D08014-DUP1
Lab Source ID: 1404066-03
Initial/Final: 100 mL / 100 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	344	374.0	8.36	*	SM2540C

ST105-30034

DUPLICATES

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4D15005
Preparation: WC_PREP_ANIONS_W
Source Sample Name: ST105-30034

SDG: KirtlandECOS_009
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D15005-DUP2
Lab Source ID: 1404066-03
Initial/Final: 5 mL / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Bromide	10	0.297 J	0.3180	6.83		SW9056A
Chloride	10	24.7	31.53	24.4	*	SW9056A
Fluoride	10	0.378	0.3850	1.83		SW9056A
Sulfate as SO4	10	41.3	41.86	1.26		SW9056A

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D08014	Laboratory ID:	4D08014-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	910.0	93.5	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D14004	Laboratory ID:	4D14004-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1059	106	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D15005	Laboratory ID:	4D15005-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.63	97.3	80 - 120
Chloride	4.200	4.158	99.0	80 - 120
Fluoride	2.800	2.768	98.9	80 - 120
Sulfate as SO4	21.00	20.81	99.1	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D16012	Laboratory ID:	4D16012-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	**973.0**	**1180**	**121**	**80 - 120**

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Dissolved Solids	973.0	960.0	98.7	20.6 *	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D16014	Laboratory ID:	4D16014-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.603	109	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D23005	Laboratory ID:	4D23005-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	4.472	89.4	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D28004	Laboratory ID:	4D28004-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	4.492	89.8	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D28013	Laboratory ID:	4D28013-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	14.74	99.6	90 - 110

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D28016	Laboratory ID:	4D28016-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	24.06	96.2	80 - 120
Total Organic Carbon (dissolved)	25.00	24.06	96.2	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D29020	Laboratory ID:	4D29020-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	23.32	93.3	80 - 120
Total Organic Carbon (dissolved)	25.00	23.32	93.3	80 - 120

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D08014 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30031	1404065-01	04/09/14 10:42	100.00	100.00
ST105-30032	1404066-01	04/09/14 10:42	100.00	100.00
ST105-30034	1404066-03	04/09/14 10:42	100.00	100.00
Blank	4D08014-BLK1	04/09/14 10:42	100.00	100.00
LCS	4D08014-BS1	04/09/14 10:42	20.00	20.00
ST105-30034	4D08014-DUP1	04/09/14 10:42	100.00	100.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D14004 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30031	1404065-01	04/14/14 08:30	25.00	25.00
ST105-30032	1404066-01	04/14/14 08:30	25.00	25.00
ST105-30034	1404066-03	04/14/14 08:30	25.00	25.00
ST105-30033	1404085-01	04/14/14 08:30	25.00	25.00
Blank	4D14004-BLK1	04/14/14 08:30	25.00	25.00
LCS	4D14004-BS1	04/14/14 08:30	5.00	25.00
ST105-30034	4D14004-MS1	04/14/14 08:30	22.50	25.00
ST105-30034	4D14004-MSD1	04/14/14 08:30	22.50	25.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D15005 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30031	1404065-01	04/15/14 09:52	5.00	5.00
ST105-30032	1404066-01	04/15/14 09:52	5.00	5.00
ST105-30034	1404066-03	04/15/14 09:52	5.00	5.00
ST105-30033	1404085-01	04/15/14 09:52	5.00	5.00
Blank	4D15005-BLK1	04/15/14 09:52	5.00	5.00
LCS	4D15005-BS1	04/15/14 09:52	5.00	5.00
ST105-30034	4D15005-DUP2	04/15/14 09:52	5.00	5.00
ST105-30034	4D15005-MS2	04/15/14 09:52	22.50	25.00
ST105-30034	4D15005-MSD2	04/15/14 09:52	22.50	25.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D16012 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30033	1404085-01	04/16/14 10:28	100.00	100.00
Blank	4D16012-BLK1	04/16/14 10:28	100.00	100.00
LCS	4D16012-BS1	04/16/14 10:28	20.00	20.00
LCS Dup	4D16012-BSD1	04/16/14 10:28	20.00	20.00

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D16014 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30031	1404065-01	04/16/14 10:52	20.00	20.00
ST105-30032	1404066-01	04/16/14 10:52	20.00	20.00
ST105-30034	1404066-03	04/16/14 10:52	20.00	20.00
ST105-30033	1404085-01	04/16/14 10:52	20.00	20.00
Blank	4D16014-BLK1	04/16/14 10:52	20.00	20.00
LCS	4D16014-BS1	04/16/14 10:52	20.00	20.00
ST105-30034	4D16014-MS1	04/16/14 10:52	18.00	20.00
ST105-30034	4D16014-MSD1	04/16/14 10:52	18.00	20.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D23005 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30031	1404065-01	04/23/14 07:25	100.00	100.00
ST105-30032	1404066-01	04/23/14 07:25	100.00	100.00
ST105-30034	1404066-03	04/23/14 07:25	100.00	100.00
Blank	4D23005-BLK1	04/23/14 07:25	100.00	100.00
LCS	4D23005-BS1	04/23/14 07:25	100.00	100.00
ST105-30034	4D23005-MS1	04/23/14 07:25	100.00	100.00
ST105-30034	4D23005-MSD1	04/23/14 07:25	100.00	100.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D28004 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30033	1404085-01	04/28/14 08:34	100.00	100.00
Blank	4D28004-BLK1	04/28/14 08:34	100.00	100.00
LCS	4D28004-BS1	04/28/14 08:34	100.00	100.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D28013 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30031	1404065-01RE1	04/28/14 11:32	4.00	20.00
ST105-30032	1404066-01RE1	04/28/14 11:32	4.00	20.00
ST105-30034	1404066-03RE1	04/28/14 11:32	4.00	20.00
ST105-30033	1404085-01RE1	04/28/14 11:32	4.00	20.00
Blank	4D28013-BLK1	04/28/14 11:32	20.00	20.00
LCS	4D28013-BS1	04/28/14 11:32	2.00	20.00
ST105-30034	4D28013-MS3	04/28/14 11:32	0.80	20.00
ST105-30034	4D28013-MSD3	04/28/14 11:32	0.80	20.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D28016 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30031	1404065-01	04/28/14 15:19	40.00	40.00
ST105-30031	1404065-02	04/28/14 15:19	40.00	40.00
ST105-30032	1404066-01	04/28/14 15:19	40.00	40.00
ST105-30032	1404066-02	04/28/14 15:19	40.00	40.00
ST105-30034	1404066-03	04/28/14 15:19	40.00	40.00
ST105-30034	1404066-04	04/28/14 15:19	40.00	40.00
Blank	4D28016-BLK1	04/28/14 15:19	40.00	40.00
LCS	4D28016-BS1	04/28/14 15:19	40.00	40.00
ST105-30034	4D28016-MS1	04/28/14 15:19	40.00	40.00
ST105-30034	4D28016-MS2	04/28/14 15:19	40.00	40.00
ST105-30034	4D28016-MSD1	04/28/14 15:19	40.00	40.00
ST105-30034	4D28016-MSD2	04/28/14 15:19	40.00	40.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D29020 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30033	1404085-01	04/29/14 15:40	40.00	40.00
ST105-30033	1404085-02	04/29/14 15:40	40.00	40.00
Blank	4D29020-BLK1	04/29/14 15:40	40.00	40.00
LCS	4D29020-BS1	04/29/14 15:40	40.00	40.00

ANALYSIS SEQUENCE SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Blank	4D14004-BLK1	041414-026	04/14/14 09:41
LCS	4D14004-BS1	041414-002	04/14/14 09:46
ST105-30034	4D14004-MS1	041414-004	04/14/14 10:00
ST105-30034	4D14004-MSD1	041414-005	04/14/14 10:24

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_009

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	4D08014-BS1	040914-002	04/09/14 16:07
ST105-30034	4D08014-DUP1	040914-003	04/09/14 16:07
Blank	4D08014-BLK1	040914-001	04/09/14 16:07
LCS Dup	4D16012-BSD1	041614-003	04/16/14 16:02
LCS	4D16012-BS1	041614-002	04/16/14 16:02
Blank	4D16012-BLK1	041614-001	04/16/14 16:02

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35106	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35106-CAL1	121013-007	12/10/13 16:44
Cal Standard	3L35106-CAL2	121013-008	12/10/13 17:02
Cal Standard	3L35106-CAL3	121013-009	12/10/13 17:19
Cal Standard	3L35106-CAL4	121013-010	12/10/13 17:37
Cal Standard	3L35106-CAL5	121013-011	12/10/13 17:54
Cal Standard	3L35106-CAL6	121013-012	12/10/13 18:11
Cal Standard	3L35106-CAL7	121013-013	12/10/13 18:29
Cal Standard	3L35106-CAL8	121013-014	12/10/13 18:46
Initial Cal Check	3L35106-ICV1	121013-015	12/10/13 19:04
Initial Cal Blank	3L35106-ICB1	121013-016	12/10/13 19:21

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D10601	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D10601-CCV1	041514-003	04/15/14 11:38
Calibration Blank	4D10601-CCB1	041514-004	04/15/14 11:55
Instrument RL Check	4D10601-CRL1	041514-005	04/15/14 12:13
Instrument RL Check	4D10601-CRL2	041514-006	04/15/14 12:30
Instrument RL Check	4D10601-CRL3	041514-007	04/15/14 12:47
Blank	4D15005-BLK1	041514-008	04/15/14 13:05
LCS	4D15005-BS1	041514-009	04/15/14 13:22
ST105-30031	1404065-01	041514-017	04/15/14 15:41
ST105-30032	1404066-01	041514-018	04/15/14 15:59
ST105-30034	1404066-03	041514-019	04/15/14 16:16
ST105-30034	4D15005-MS2	041514-020	04/15/14 16:34
ST105-30034	4D15005-MSD2	041514-021	04/15/14 16:51
ST105-30034	4D15005-DUP2	041514-022	04/15/14 17:08
Calibration Check	4D10601-CCV2	041514-024	04/15/14 17:43
Calibration Blank	4D10601-CCB2	041514-025	04/15/14 18:01
ST105-30033	1404085-01	041514-038	04/15/14 21:47
Calibration Check	4D10601-CCV3	041514-039	04/15/14 22:04
Calibration Blank	4D10601-CCB3	041514-040	04/15/14 22:22

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11310	Instrument:	WC-Lachat
Calibration:	4113003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11310-CAL1	M_4-23-2014_05-11-36PM-00	04/23/14 17:12
Cal Standard	4D11310-CAL2	M_4-23-2014_05-11-36PM-00	04/23/14 17:13
Cal Standard	4D11310-CAL3	M_4-23-2014_05-11-36PM-00	04/23/14 17:14
Cal Standard	4D11310-CAL5	M_4-23-2014_05-11-36PM-00	04/23/14 17:15
Cal Standard	4D11310-CAL6	M_4-23-2014_05-11-36PM-00	04/23/14 17:16
Cal Standard	4D11310-CAL7	M_4-23-2014_05-11-36PM-00	04/23/14 17:18
Initial Cal Check	4D11310-ICV1	M_4-23-2014_05-11-36PM-00	04/23/14 17:19
Initial Cal Blank	4D11310-ICB1	M_4-23-2014_05-11-36PM-00	04/23/14 17:20
Blank	4D16014-BLK1	M_4-23-2014_05-11-36PM-00	04/23/14 17:21
LCS	4D16014-BS1	M_4-23-2014_05-11-36PM-01	04/23/14 17:28
ST105-30031	1404065-01	M_4-23-2014_05-11-36PM-01	04/23/14 17:30
ST105-30032	1404066-01	M_4-23-2014_05-11-36PM-01	04/23/14 17:31
ST105-30034	1404066-03	M_4-23-2014_05-11-36PM-01	04/23/14 17:32
ST105-30034	4D16014-MS1	M_4-23-2014_05-11-36PM-02	04/23/14 17:33
ST105-30034	4D16014-MSD1	M_4-23-2014_05-11-36PM-02	04/23/14 17:34
Calibration Check	4D11310-CCV1	M_4-23-2014_05-11-36PM-02	04/23/14 17:35
Calibration Blank	4D11310-CCB1	M_4-23-2014_05-11-36PM-02	04/23/14 17:37
ST105-30033	1404085-01	M_4-23-2014_05-11-36PM-02	04/23/14 17:39
Calibration Check	4D11310-CCV2	M_4-23-2014_05-11-36PM-02	04/23/14 17:41
Calibration Blank	4D11310-CCB2	M_4-23-2014_05-11-36PM-02	04/23/14 17:42

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11407	Instrument:	WC-Lachat
Calibration:	4114003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11407-CAL1	M_4-24-2014_10-28-28AM-00	04/24/14 10:29
Cal Standard	4D11407-CAL2	M_4-24-2014_10-28-28AM-00	04/24/14 10:30
Cal Standard	4D11407-CAL3	M_4-24-2014_10-28-28AM-00	04/24/14 10:31
Cal Standard	4D11407-CAL4	M_4-24-2014_10-28-28AM-00	04/24/14 10:32
Cal Standard	4D11407-CAL5	M_4-24-2014_10-28-28AM-00	04/24/14 10:33
Cal Standard	4D11407-CAL6	M_4-24-2014_10-28-28AM-00	04/24/14 10:34
Cal Standard	4D11407-CAL7	M_4-24-2014_10-28-28AM-00	04/24/14 10:35
Cal Standard	4D11407-CAL8	M_4-24-2014_10-28-28AM-00	04/24/14 10:36
Initial Cal Check	4D11407-ICV1	M_4-24-2014_10-28-28AM-00	04/24/14 10:37
Initial Cal Blank	4D11407-ICB1	M_4-24-2014_10-28-28AM-01	04/24/14 10:38
Blank	4D23005-BLK1	M_4-24-2014_10-28-28AM-01	04/24/14 10:39
LCS	4D23005-BS1	M_4-24-2014_10-28-28AM-01	04/24/14 10:40
ST105-30031	1404065-01	M_4-24-2014_10-28-28AM-01	04/24/14 10:41
ST105-30032	1404066-01	M_4-24-2014_10-28-28AM-01	04/24/14 10:42
ST105-30034	1404066-03	M_4-24-2014_10-28-28AM-01	04/24/14 10:43
ST105-30034	4D23005-MS1	M_4-24-2014_10-28-28AM-01	04/24/14 10:44
ST105-30034	4D23005-MSD1	M_4-24-2014_10-28-28AM-01	04/24/14 10:45
Calibration Check	4D11407-CCV1	M_4-24-2014_10-28-28AM-02	04/24/14 10:52
Calibration Blank	4D11407-CCB1	M_4-24-2014_10-28-28AM-02	04/24/14 10:53

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11809	Instrument:	WC-Lachat
Calibration:	4118004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11809-CAL1	M_4-28-2014_01-13-35PM-00	04/28/14 13:15
Cal Standard	4D11809-CAL2	M_4-28-2014_01-13-35PM-00	04/28/14 13:17
Cal Standard	4D11809-CAL3	M_4-28-2014_01-13-35PM-00	04/28/14 13:18
Cal Standard	4D11809-CAL4	M_4-28-2014_01-13-35PM-00	04/28/14 13:20
Cal Standard	4D11809-CAL5	M_4-28-2014_01-13-35PM-00	04/28/14 13:21
Cal Standard	4D11809-CAL6	M_4-28-2014_01-13-35PM-00	04/28/14 13:22
Cal Standard	4D11809-CAL7	M_4-28-2014_01-13-35PM-00	04/28/14 13:24
Cal Standard	4D11809-CAL8	M_4-28-2014_01-13-35PM-00	04/28/14 13:25
Initial Cal Check	4D11809-ICV1	M_4-28-2014_01-13-35PM-00	04/28/14 13:27
Initial Cal Blank	4D11809-ICB1	M_4-28-2014_01-13-35PM-01	04/28/14 13:28
Blank	4D28013-BLK1	M_4-28-2014_01-13-35PM-01	04/28/14 13:31
LCS	4D28013-BS1	M_4-28-2014_01-13-35PM-01	04/28/14 13:33
Calibration Check	4D11809-CCV1	M_4-28-2014_01-13-35PM-02	04/28/14 13:51
Calibration Blank	4D11809-CCB1	M_4-28-2014_01-13-35PM-02	04/28/14 13:53
Calibration Check	4D11809-CCV2	M_4-28-2014_01-13-35PM-03	04/28/14 14:09
Calibration Blank	4D11809-CCB2	M_4-28-2014_01-13-35PM-03	04/28/14 14:10
ST105-30031	1404065-01RE1	M_4-28-2014_01-13-35PM-04	04/28/14 14:12
ST105-30032	1404066-01RE1	M_4-28-2014_01-13-35PM-04	04/28/14 14:13
ST105-30034	1404066-03RE1	M_4-28-2014_01-13-35PM-04	04/28/14 14:15
ST105-30034	4D28013-MS3	M_4-28-2014_01-13-35PM-04	04/28/14 14:16
ST105-30034	4D28013-MSD3	M_4-28-2014_01-13-35PM-04	04/28/14 14:18
ST105-30033	1404085-01RE1	M_4-28-2014_01-13-35PM-04	04/28/14 14:19
Calibration Check	4D11809-CCV3	M_4-28-2014_01-13-35PM-04	04/28/14 14:23
Calibration Blank	4D11809-CCB3	M_4-28-2014_01-13-35PM-04	04/28/14 14:25

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11908	Instrument:	WC-Lachat
Calibration:	4119002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11908-CAL1	M_4-29-2014_12-41-29PM-00	04/29/14 12:42
Cal Standard	4D11908-CAL2	M_4-29-2014_12-41-29PM-00	04/29/14 12:43
Cal Standard	4D11908-CAL3	M_4-29-2014_12-41-29PM-00	04/29/14 12:44
Cal Standard	4D11908-CAL4	M_4-29-2014_12-41-29PM-00	04/29/14 12:45
Cal Standard	4D11908-CAL5	M_4-29-2014_12-41-29PM-00	04/29/14 12:46
Cal Standard	4D11908-CAL6	M_4-29-2014_12-41-29PM-00	04/29/14 12:47
Cal Standard	4D11908-CAL7	M_4-29-2014_12-41-29PM-00	04/29/14 12:48
Cal Standard	4D11908-CAL8	M_4-29-2014_12-41-29PM-00	04/29/14 12:49
Initial Cal Check	4D11908-ICV1	M_4-29-2014_12-41-29PM-00	04/29/14 12:50
Initial Cal Blank	4D11908-ICB1	M_4-29-2014_12-41-29PM-01	04/29/14 12:51
Blank	4D28004-BLK1	M_4-29-2014_12-41-29PM-01	04/29/14 12:52
LCS	4D28004-BS1	M_4-29-2014_12-41-29PM-01	04/29/14 12:53
ST105-30033	1404085-01	M_4-29-2014_12-41-29PM-02	04/29/14 13:02
Calibration Check	4D11908-CCV1	M_4-29-2014_12-41-29PM-02	04/29/14 13:05
Calibration Blank	4D11908-CCB1	M_4-29-2014_12-41-29PM-02	04/29/14 13:06

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11913	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D11913-CCV1	4-28-14Q-001	04/28/14 16:35
Calibration Blank	4D11913-CCB1	4-28-14Q-002	04/28/14 17:01
Blank	4D28016-BLK1	4-28-14Q-003	04/28/14 17:24
LCS	4D28016-BS1	4-28-14Q-004	04/28/14 17:53
ST105-30031	1404065-01	4-28-14Q-005	04/28/14 18:18
ST105-30031	1404065-02	4-28-14Q-006	04/28/14 18:42
ST105-30032	1404066-01	4-28-14Q-007	04/28/14 19:05
ST105-30032	1404066-02	4-28-14Q-008	04/28/14 19:28
ST105-30034	1404066-03	4-28-14Q-009	04/28/14 19:51
ST105-30034	4D28016-MS1	4-28-14Q-010	04/28/14 20:17
ST105-30034	4D28016-MSD1	4-28-14Q-011	04/28/14 20:42
ST105-30034	1404066-04	4-28-14Q-012	04/28/14 21:05
ST105-30034	4D28016-MS2	4-28-14Q-013	04/28/14 21:31
ST105-30034	4D28016-MSD2	4-28-14Q-014	04/28/14 21:58
Calibration Check	4D11913-CCV2	4-28-14Q-015	04/28/14 22:27
Calibration Blank	4D11913-CCB2	4-28-14Q-016	04/28/14 22:51

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12109	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4E12109-CCV1	4-30-14Q-001	04/30/14 15:45
Calibration Blank	4E12109-CCB1	4-30-14Q-002	04/30/14 16:10
Blank	4D29020-BLK1	4-30-14Q-003	04/30/14 16:33
LCS	4D29020-BS1	4-30-14Q-004	04/30/14 17:00
ST105-30033	1404085-01	4-30-14Q-005	04/30/14 17:25
ST105-30033	1404085-02	4-30-14Q-006	04/30/14 17:49
Calibration Check	4E12109-CCV2	4-30-14Q-017	04/30/14 22:41
Calibration Blank	4E12109-CCB2	4-30-14Q-018	04/30/14 23:06

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	813540	0.1	853290	0.25	905720	0.5	956456	2.5	1018020	5	1028788
Nitrite as N	0.05	965740	0.1	944100	0.25	912864	0.5	952380	2.5	889644.8	5	849190.4
Bromide	0.126	134238.1	0.252	137654.8	0.63	145555.6	1.26	160582.5	6.3	175999.5	12.6	179760.6
Chloride	0.5	386028	1	399602	2.5	397485.6	5	405301.8	25	410491.2	50	411932.8
Fluoride	0.05	638320	0.1	659420	0.25	670580	0.5	671448	2.5	665322.8	5	630216.2
Sulfate as SO4	0.5	365110	1	353321	2.5	332900	5	313738.2	25	308262.3	50	308796.8

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	1017034	25	1032948								
Nitrite as N	12.5	743872.1	25	627085.2								
Bromide	31.5	178666.7	63	182048.9								
Chloride	125	404190.3	250	404326.4								
Fluoride	12.5	~~559804.6~~	25	~~506008.4~~								
Sulfate as SO4	125	300572.3	250	300597.6								

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	953224.6	9.050688	9.2925	2.89029				*
Nitrite as N	860609.6	13.77032	5.41	1.226206				*
Bromide	161813.3	12.41877	7.8425	1.187843	0.9998959		0.995	
Chloride	402419.8	2.039875	4.46125	0.5546317	0.9999818		0.995	
Fluoride	655884.5	2.664565	3.07	2.432736E-02	0.9991903		0.995	
Sulfate as SO4	322912.3	7.675524	5.99	2.923035	0.9999575		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4113003	Instrument:	WC-Lachat	
Matrix:	Solid	Calibration Dates:	4/23/14 17:12	4/23/14 17:18

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/Kg	RF	mg/Kg	RF	mg/Kg	RF	mg/Kg	RF	mg/Kg	RF	mg/Kg	RF
Total Kjeldahl Nitrogen	20	0.2165	10	~~0.2781~~	8	~~0.2975~~	2	0.6755	1	1.247	0	0

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4113003	Instrument:	WC-Lachat	
Matrix:	Solid	Calibration Dates:	4/23/14 17:12	4/23/14 17:18

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Kjeldahl Nitrogen	0.53475	103.2393	46.7025	0.840387	0.999415		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4114003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/24/14 10:29	4/24/14 10:36

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	2.689	8	2.7275	2	2.864	1	2.941	0.4	2.965	0.2	2.8515

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4114003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/24/14 10:29	4/24/14 10:36

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	2.861	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4114003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/24/14 10:29	4/24/14 10:36

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.487375	40.58395	31.85375	1.149837	0.9998215		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4118004	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/28/14 13:15	4/28/14 13:25

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	2	3.7975	1.6	3.874375	1.2	3.924167	0.8	4	0.4	4.21	0.2	4.321

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4118004	Instrument:	WC-Lachat
Matrix:	Water	Calibration Dates:	4/28/14 13:15 4/28/14 13:25

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	0.1	4.204	0	0								

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4118004	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/28/14 13:15	4/28/14 13:25

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate/Nitrite as N	3.54138	40.7369	32.1125	1.451058	0.9995354		0.99	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/29/14 12:42	4/29/14 12:49

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	2.712	8	2.80625	2	2.915	1	2.905	0.4	2.9225	0.2	2.908

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/29/14 12:42	4/29/14 12:49

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	2.863	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_009	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119002	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/29/14 12:42	4/29/14 12:49

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.503969	40.50759	33.40125	8.902057	0.9994924		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4D08014

Empirical Laboratories, LLC

Printed: 4/25/2014 11:09:46AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404017-01	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404017-03	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404017-05	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404017-07	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404041-01	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404041-03	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404041-05	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404041-07	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404065-01	A	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404066-01	A	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404066-03	A	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	MS/MSD
1404067-01	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404067-03	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
1404067-05	D	WC_TOTAL_DISS_SOLIDS_25	04/09/2014	100	100					NA	
4D08014-BLK1		QC	04/09/2014	100	100					NA	
4D08014-BS1		QC	04/09/2014	20	20	14B0390		20000		NA	
4D08014-DUP1		QC	04/09/2014	100	100		1404066-03			NA	

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

4D14004

Empirical Laboratories, LLC

Printed: 4/24/2014 4:39:38PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404016-01	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404016-03	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404016-05	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404065-01	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404066-01	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
1404066-03	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	MS/MSD
1404068-01	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404068-03	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404068-05	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-01	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-03	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-05	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-07	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-09	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404084-11	AA	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	MS/MSD
1404084-13	I	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	carb/bicarb
1404085-01	A	WC_ALKALINITY_2320B	04/14/2014	25	25					NA	
4D14004-BLK1		QC	04/14/2014	25	25					NA	
4D14004-BS1		QC	04/14/2014	5	25	13L0375		5000		NA	
4D14004-MS1		QC	04/14/2014	22.5	25	13L0375	1404066-03	2500		NA	
4D14004-MS2		QC	04/14/2014	22.5	25	13L0375	1404084-11	2500		NA	
4D14004-MSD1		QC	04/14/2014	22.5	25	13L0375	1404066-03	2500		NA	

PREPARATION BENCH SHEET

4D14004

Empirical Laboratories, LLC

Printed: 4/24/2014 4:39:38PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D14004-MSD2		QC	04/14/2014	22.5	25	13L0375	1404084-11	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D15005

Empirical Laboratories, LLC

Printed: 4/18/2014 4:44:09PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1403165-10RE1	A	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	SO4 only; RR at 5X
1403165-16RE1	A	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	MS/MSD; SO4 only; RR at 5X
1403165-16RE1	A	WC_ANIONS_300.0 (Short Hol	04/15/2014	5	5					NA	Added for BatchQC in: 4D15005
1403165-16RE1	A	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	Added for BatchQC in: 4D15005
1404065-01	A	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	see versions
1404066-01	A	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	see versions
1404066-03	A	WC_ANIONS_300.0 (Short Hol	04/15/2014	5	5					NA	Added for BatchQC in: 4D15005
1404066-03	A	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	MS/MSD
1404066-03	A	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	Added for BatchQC in: 4D15005
1404067-01	D	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	see versions
1404067-03	D	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	see versions
1404067-05	D	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	see versions
1404084-01	I	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	Cl, SO4
1404084-03	I	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	Cl, SO4
1404084-05	I	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	Cl, SO4
1404084-07	I	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	Cl, SO4
1404084-09	I	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	Cl, SO4
1404084-11	AA	WC_ANIONS_300.0 (Short Hol	04/15/2014	5	5					NA	Added for BatchQC in: 4D15005
1404084-11	AA	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	Added for BatchQC in: 4D15005
1404084-11	AA	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	MS/MSD
1404084-13	I	WC_ANIONS_300.0 (Regular)	04/15/2014	5	5					NA	Cl, SO4
1404085-01	A	WC_ANIONS_9056A (Regular)	04/15/2014	5	5					NA	see versions

PREPARATION BENCH SHEET

4D15005

Empirical Laboratories, LLC

Printed: 4/18/2014 4:44:09PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404100-04	B	WC_ANIONS_300.0 (Short Hol	04/15/2014	5	5					NA	see versions
4D15005-BLK1		QC	04/15/2014	5	5					NA	
4D15005-BS1		QC	04/15/2014	5	5	14D0348		5000		NA	
4D15005-DUP1		QC	04/15/2014	5	5		1403165-16RE1			NA	5x
4D15005-DUP2		QC	04/15/2014	5	5		1404066-03			NA	
4D15005-DUP3		QC	04/15/2014	5	5		1404084-11			NA	
4D15005-MS1		QC	04/15/2014	22.5	25	14C0398	1403165-16RE1	12500		NA	5x
4D15005-MS2		QC	04/15/2014	22.5	25	14C0398	1404066-03	2500		NA	
4D15005-MS3		QC	04/15/2014	22.5	25	14C0398	1404084-11	2500		NA	
4D15005-MSD1		QC	04/15/2014	22.5	25	14C0398	1403165-16RE1	12500		NA	5x
4D15005-MSD2		QC	04/15/2014	22.5	25	14C0398	1404066-03	2500		NA	
4D15005-MSD3		QC	04/15/2014	22.5	25	14C0398	1404084-11	2500		NA	

Reagents Used:

Standard	Description

From 4D01012 on 4/15/2014 by KBG

PREPARATION BENCH SHEET

4D16012

Empirical Laboratories, LLC

Printed: 5/3/2014 12:42:34PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404085-01	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404101-01	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404108-01	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404108-03	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404108-05	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404110-02	F	WC_TOTAL_DISS_SOLIDS_25	04/17/2014	100	100					NA	
1404110-04	F	WC_TOTAL_DISS_SOLIDS_25	04/17/2014	100	100					NA	
1404110-05	F	WC_TOTAL_DISS_SOLIDS_25	04/17/2014	100	100					NA	
4D16012-BLK1		QC	04/16/2014	100	100					NA	
4D16012-BS1		QC	04/16/2014	20	20	14B0390		20000		NA	
4D16012-BSD1		QC	04/16/2014	20	20	14B0390		20000		NA	

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

4D16014

Empirical Laboratories, LLC

Printed: 5/3/2014 12:43:24PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404001-02	A	WC_TKN_351.2	04/16/2014	20	20					NA	
1404065-01	B	WC_TKN_351.2	04/16/2014	20	20					NA	Outside DoD cert
1404066-01	B	WC_TKN_351.2	04/16/2014	20	20					NA	Outside DoD cert
1404066-03	D	WC_TKN_351.2	04/16/2014	20	20					NA	MS/MSD; Outside DoD cert
1404075-05	A	WC_TKN_351.2	04/16/2014	2	20					NA	
1404085-01	B	WC_TKN_351.2	04/16/2014	20	20					NA	Outside DoD cert
1404101-01	C	WC_TKN_351.2	04/16/2014	20	20					NA	
4D16014-BLK1		QC	04/16/2014	20	20					NA	
4D16014-BS1		QC	04/16/2014	20	20	14A0452		20000		NA	
4D16014-MRL1		QC	04/16/2014	20	20	14B0093		20000		NA	
4D16014-MRL2		QC	04/16/2014	20	20	14B0094		20000		NA	
4D16014-MS1		QC	04/16/2014	18	20	14A0166	1404066-03	2000		NA	
4D16014-MSD1		QC	04/16/2014	18	20	14A0166	1404066-03	2000		NA	

Reagents Used:

Standard	Description
14A0225	TKN Carrier
14D0237	TKN Salicylate Nitroprusside Reagent
14D0549	TKN Buffer
14D0550	TKN Sodium Hypochlorite Reagent
14D0663	TKN 0.8M NaOH
14D0724	TKN Digestion Soln

PREPARATION BENCH SHEET

4D16014

Empirical Laboratories, LLC

Printed: 5/3/2014 12:43:24PM

Instrument:

Matrix: Water

Prepared using: WC - pNone

(No Surrogate)

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

PREPARATION BENCH SHEET

4D23005

Empirical Laboratories, LLC

Printed: 5/3/2014 11:45:50AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404065-01	B	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404066-01	B	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404066-03	D	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	MS/MSD
1404068-01	J	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404068-03	J	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404068-05	J	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404114-01	A	WC_AMMONIA_PHENATE_45	04/23/2014	10	100					NA	
1404114-03	A	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404114-07	A	WC_AMMONIA_PHENATE_45	04/23/2014	10	100					NA	
1404115-01	A	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404120-04	H	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404123-01	B	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404123-02	B	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
1404132-01	H	WC_AMMONIA_PHENATE_45	04/23/2014	100	100					NA	
4D23005-BLK1		QC	04/23/2014	100	100					NA	
4D23005-BS1		QC	04/23/2014	100	100	14D0086		100000		NA	
4D23005-MS1		QC	04/23/2014	100	100	14A0483	1404066-03	500		NA	
4D23005-MSD1		QC	04/23/2014	100	100	14A0483	1404066-03	500		NA	

PREPARATION BENCH SHEET

4D23005

Empirical Laboratories, LLC

Printed: 5/3/2014 11:45:50AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0477	1N H2SO4
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14D0092	Borate Buffer
14D0364	NH3 Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14D0366	0.04N H2SO4 FOR NH3 simpledist. distillation
14D0571	NH3 Sodium Phenolate Reagent
14D0775	NH3 Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4D28004

Empirical Laboratories, LLC

Printed: 5/3/2014 11:46:48AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404084-01	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404084-03	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404084-05	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404084-07	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404084-09	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404084-11	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	MS/MSD
1404084-13	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404085-01	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404139-01	A	WC_AMMONIA_PHENATE_45	04/28/2014	10	100					NA	
1404139-03	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404139-04	A	WC_AMMONIA_PHENATE_45	04/28/2014	10	100					NA	
1404140-01	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404140-02	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
1404151-02	A	WC_AMMONIA_PHENATE_45	04/28/2014	100	100					NA	
4D28004-BLK1		QC	04/28/2014	100	100					NA	
4D28004-BS1		QC	04/28/2014	100	100	14D0086		100000		NA	
4D28004-MS1		QC	04/28/2014	100	100	14A0483	1404084-11	500		NA	
4D28004-MSD1		QC	04/28/2014	100	100	14A0483	1404084-11	500		NA	

PREPARATION BENCH SHEET

4D28004

Empirical Laboratories, LLC

Printed: 5/3/2014 11:46:48AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0477	1N H2SO4
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14D0092	Borate Buffer
14D0364	NH3 Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14D0366	0.04N H2SO4 FOR NH3 simpledist. distillation
14D0571	NH3 Sodium Phenolate Reagent
14D0879	NH3 Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4D28013

Empirical Laboratories, LLC

Printed: 5/3/2014 11:47:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404065-01	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404065-01RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404066-01	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404066-01RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404066-03	D	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	MS/MSD
1404066-03RE1	D	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	MS/MSD
1404068-01	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404068-03	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404068-05	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-01	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-03	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-05	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-07	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-09	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-11	AD	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	MS/MSD
1404084-13	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404085-01	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404085-01RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404108-01	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404108-03	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404108-03RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404108-03RE2	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB

PREPARATION BENCH SHEET

4D28013

Empirical Laboratories, LLC

Printed: 5/3/2014 11:47:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404108-05	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404108-05RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404160-01	A	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
4D28013-BLK1		QC	04/28/2014	20	20					NA	
4D28013-BS1		QC	04/28/2014	2	20	14A0409		2000		NA	
4D28013-MS1		QC	04/28/2014	4	20	14B0358	1404066-03	500		NA	
4D28013-MS2		QC	04/28/2014	4	20	14B0358	1404084-11	500		NA	
4D28013-MS3		QC	04/28/2014	0.8	20	14B0358	1404066-03RE1	500		NA	
4D28013-MSD1		QC	04/28/2014	4	20	14B0358	1404066-03	500		NA	
4D28013-MSD2		QC	04/28/2014	4	20	14B0358	1404084-11	500		NA	
4D28013-MSD3		QC	04/28/2014	0.8	20	14B0358	1404066-03RE1	500		NA	

Reagents Used:

Standard	Description
14A0570	NO3/NO2 Carrier (Acid DI)
14C0133	NO2/NO3 Buffer
14D0740	NO2/NO3 Sulfanilimide Color Reagent

PREPARATION BENCH SHEET

4D28016

Empirical Laboratories, LLC

Printed: 5/3/2014 12:44:46PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404065-01	C	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	
1404065-02	A	WC_TOC_DISS_9060A_QUAD	04/28/2014	40	40					NA	
1404066-01	C	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	
1404066-02	A	WC_TOC_DISS_9060A_QUAD	04/28/2014	40	40					NA	
1404066-03	I	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	MS/MSD
1404066-03	I	WC_TOC_DISS_9060A_QUAD	04/28/2014	40	40					NA	Added for BatchQC in: 4D28016
1404066-04	C	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	Added for BatchQC in: 4D28016
1404066-04	C	WC_TOC_DISS_9060A_QUAD	04/28/2014	40	40					NA	MS/MSD
1404116-01	G	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	
1404116-02	G	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	
1404116-03	U	WC_TOC_DISS_9060A_QUAD	04/28/2014	40	40					NA	Added for BatchQC in: 4D28016
1404116-03	U	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	MS/MSD
1404116-04	G	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	
1404116-05	G	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	
1404117-01	U	WC_TOC_9060A_QUAD	04/28/2014	40	40					NA	MS/MSD
1404117-01	U	WC_TOC_DISS_9060A_QUAD	04/28/2014	40	40					NA	Added for BatchQC in: 4D28016
4D28016-BLK1		QC	04/28/2014	40	40					NA	
4D28016-BS1		QC	04/28/2014	40	40	14D0680		40000		NA	
4D28016-MS1		QC	04/28/2014	40	40	13F0271	1404066-03	600		NA	
4D28016-MS2		QC	04/28/2014	40	40	13F0271	1404066-04	600		NA	
4D28016-MS3		QC	04/28/2014	40	40	13F0271	1404116-03	600		NA	
4D28016-MS4		QC	04/28/2014	40	40	13F0271	1404117-01	600		NA	

PREPARATION BENCH SHEET

4D28016

Empirical Laboratories, LLC

Printed: 5/3/2014 12:44:46PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D28016-MSD1		QC	04/28/2014	40	40	13F0271	1404066-03	600		NA	
4D28016-MSD2		QC	04/28/2014	40	40	13F0271	1404066-04	600		NA	
4D28016-MSD3		QC	04/28/2014	40	40	13F0271	1404116-03	600		NA	
4D28016-MSD4		QC	04/28/2014	40	40	13F0271	1404117-01	600		NA	

Reagents Used:

Standard	Description
14D0319	TOC Phosphoric Acid Reagent
14D0581	TOC PERSULFATE REAGENT

PREPARATION BENCH SHEET

4D29020

Empirical Laboratories, LLC

Printed: 5/3/2014 12:45:34PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404085-01	C	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404085-02	A	WC_TOC_DISS_9060A_QUAD	04/29/2014	40	40					NA	
1404124-01	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404124-02	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404124-03	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404125-01	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404125-05	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404126-01	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-01	S	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	MS/MSD
1404141-01	S	WC_TOC_DISS_9060A_QUAD	04/29/2014	40	40					NA	Added for BatchQC in: 4D29020
1404141-02	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-03	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-04	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-05	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-06	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-07	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-08	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-09	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
1404141-10	G	WC_TOC_9060A_QUAD	04/29/2014	40	40					NA	
4D29020-BLK1		QC	04/29/2014	40	40					NA	
4D29020-BS1		QC	04/29/2014	40	40	14D0680		40000		NA	
4D29020-MS1		QC	04/29/2014	40	40	13F0271	1404141-01	600		NA	

PREPARATION BENCH SHEET

4D29020

Empirical Laboratories, LLC

Printed: 5/3/2014 12:45:34PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D29020-MSD1		QC	04/29/2014	40	40	13F0271	1404141-01	600		NA	

Reagents Used:

Standard	Description
14D0319	TOC Phosphoric Acid Reagent
14D0581	TOC PERSULFATE REAGENT

ANALYTICAL DATA PACKAGE
SDG # KIRTLANDECOS_011

PROJECT NAME: KIRTLAND AFB (ECOS)
PROJECT LOCATION: ALBUQUERQUE, NEW MEXICO

SUBMITTAL TO:
Susan Huang
SHAW E&I, Inc.
4005 Port Chicago Highway
Concord, CA 94520

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Marianne Walker
Tel (615)345-1115
Fax (866)417-0548
Email: mwalker@empirlabs.com

Original Report Date: May 7, 2014
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 148

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

Table of Contents

#	Description	Page No.
1	Cover Page	1
2	Table of Contents	2
3	Case Narrative	3
4	Sample Receipt Information Chain of Custody Forms Sample Receipt Confirmations WorkOrder Summary Sample Delivery Group (SDG) Sheets	8
5	Data for SW6010C Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	15
6	Data for Wet Chemistry Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	49

Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6010C:
The following matrix spikes/post spikes exceeded criteria:
4D18003-MS1/PS1 (1404108-01) for Calcium and Sodium; note – the parent sample concentrations for Calcium and Sodium are greater than 4 times the amount spiked and the associated batch spike is within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:
The following compounds are qualified with an M to indicate that the LOQ was raised to the level of the reporting limit standard within criteria:
Bromide (0.63mg/L) for 1404108-01, -03, and -05

The following batch spikes exceeded criteria:
4D16012-BS1/BSD1 with a positive bias and exceeded relative percent difference criteria for Total Dissolved Solids; note – since the exceedences was minimal and the holding time had been exceeded upon discovery, the associated samples were not re-extracted
4D29011-BS1/BSD1 exceeded relative percent difference criteria for Total Kjeldahl Nitrogen; note – no positive results were detected in the associated samples

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:
As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated

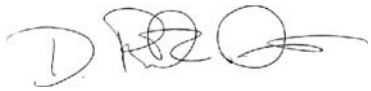
as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.



Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 03/19/2014)

DoD ELAP, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2014

State of Georgia, Environmental Protection Agency – NELAP
- Expires: 06/30/2014

State of Illinois, Environmental Protection Agency – NELAP, Certificate No.: 003300
- Groundwater
- Solid and Hazardous Waste
- Expires: 09/13/2014

State of Kansas Department of Health and Environment – NELAP, Certificate No.: E-10407
- Aqueous
- Non-aqueous
- Expires: 04/30/2014

State of Kentucky Department of Environmental Protection – NELAP, Certificate No.: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Nevada, Department of Conservation and Natural Resources – NELAP, Certificate No.: TN000042013-1
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

State of New Jersey Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2014

State of North Carolina, Department of Environment and Natural Resources - Certificate No.: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of North Dakota, Department of Health – NELAP, Certificate No.: R-204
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Texas, Commission on Environmental Quality – NELAP, Certificate No.: T104704307-14-10
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of Utah, Department of Health – NELAP, Certificate No.: TN0042013-5
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

Commonwealth of Virginia, Department of General Services – VELAP, Certificate No.: 2633 – Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2014

State of Washington, Department of Ecology – NELAP, Lab ID: C934-14
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2015

Sample Receipt Information

ST 105-0

1404108

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-615

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 15 APR 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: Jennifer Chandler
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119370956

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard X Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab X Archive (mos.)

1. Relinquished By (Signature/Affiliation) Date: 4/15/14 Time: 1600
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Date: 4/16/14 Time: 0850

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30035	KAFB0615-GW-ST105-30035-REG	14 APR 2014	13:33	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30035	KAFB0615-GW-ST105-30035-REG	14 APR 2014	13:33	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30035	KAFB0615-GW-ST105-30035-REG	14 APR 2014	13:33	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
02	ST105-30035	KAFB0615-GW-ST105-30035-REG	14 APR 2014	13:33	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
01	ST105-30035	KAFB0615-GW-ST105-30035-REG	14 APR 2014	13:33	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		

Kirtlandecos_011

1404108

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-615

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
04	ST105-30044	KAFB0623-GW-ST105-30044-REG	15 APR 2014	10:55	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30044	KAFB0623-GW-ST105-30044-REG	15 APR 2014	10:55	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30044	KAFB0623-GW-ST105-30044-REG	15 APR 2014	10:55	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30044	KAFB0623-GW-ST105-30044-REG	15 APR 2014	10:55	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30044	KAFB0623-GW-ST105-30044-REG	15 APR 2014	10:55	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
05	ST105-30046	KAFB0904-GW-ST105-30046-REG	15 APR 2014	14:43	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	~~ST105-30046~~	~~KAFB0904-GW-ST105-30046-REG~~	~~15 APR 2014~~	~~14:43~~	~~250 mL HDPE~~	~~1~~	~~None except cool to 4 C~~	~~Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C~~			~~N~~		
06	ST105-30046	KAFB0904-GW-ST105-30046-REG	15 APR 2014	14:43	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
05	ST105-30046	KAFB0904-GW-ST105-30046-REG	15 APR 2014	14:43	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30046	KAFB0904-GW-ST105-30046-REG	15 APR 2014	14:43	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
07	ST105-80003	FIELDQC-BW-ST105-80003-ER	14 APR 2014	15:45	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 04/16/14 0850 Workorder# 1404108

1. Tracking # 0956 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: -0.1 °C + correction factor (+0.1) = +0.0 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES (NO) NA

4. Were custody seals on outside of cooler? (YES) NO NA

   If yes, how many and where: 2. Front + back

5. Were the seals intact, signed, and dated correctly? (YES) NO NA

6. Were custody papers inside cooler? (YES) NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES (NO) and Intact YES NO (NA)

   Were these signed and dated correctly? YES NO (NA)

8. Packing material used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES) NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES) NO NA

12. Did all container labels and tags agree with custody papers? (YES) NO NA

13. a. Were VOA vials received? YES (NO) NA

    b. Was there any observable headspace present in any VOA vial? YES NO (NA)

14. Was there a Trip Blank in this cooler? YES (NO) NA If multiple coolers, sequence #____

I certify that I unloaded the cooler and answered questions 7-14 (initial) JTG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES) NO NA

    b. Did the bottle labels indicate that the correct preservatives were used (YES) NO NA

16. Was residual chlorine present? YES NO (NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JTG

17. Were custody papers properly filled out (ink, signed, etc)? (YES) NO NA

18. Did you sign the custody papers in the appropriate place? (YES) NO NA

19. Were correct containers used for the analysis requested? (YES) NO NA

20. Was sufficient amount of sample sent in each container? (YES) NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JTG

I certify that I attached a label with the unique LIMS number to each container (initial) JTG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) ____

21. Were there Non-Conformance issues at login? YES (NO) Was a NCR generated? YES (NO #____)

Additional Details:

WORK ORDER

Printed: 4/21/2014 2:37:50PM

1404108

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 05/07/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross
Date Received: 04/16/2014 08:50
Logged In By: Joshua T. Gross
Date Logged In: 04/16/2014 11:28

Samples Received at: **0°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1404108-01 ST105-30035 [Water] Sampled 04/14/2014 13:33 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	05/02/2014 14:00	15	04/28/2014 14:33	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/02/2014 14:00	15	05/12/2014 14:33	
SW9056A	WC_ANIONS_9056A (Regular)	05/02/2014 14:00	15	05/12/2014 14:33	see versions
E353.2	WC_NO3NO2_N_353.2	05/02/2014 14:00	15	05/12/2014 14:33	
E351.2	WC_TKN_351.2	05/02/2014 14:00	15	05/12/2014 14:33	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	05/02/2014 14:00	15	05/12/2014 14:33	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/02/2014 14:00	15	04/21/2014 14:33	
SW6010C	MET_ICP_LOW6010C_FULL	05/02/2014 14:00	15	10/11/2014 14:33	see versions
1404108-02 ST105-30035 [Water] Sampled 04/14/2014 13:33 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/02/2014 14:00	15	05/12/2014 14:33	

1404108

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Method	Test Code	Due	TAT	Expires	Comments
1404108-03 ST105-30044 [Water] Sampled 04/15/2014 10:55 Mountain 'Client Sample'					
E351.2	WC_TKN_351.2	05/02/2014 14:00	15	05/13/2014 11:55	Outside DoD cert
SW6010C	MET_ICP_LOW6010C_FULL	05/02/2014 14:00	15	10/12/2014 11:55	see versions
SM2320B	WC_ALKALINITY_2320B	05/02/2014 14:00	15	04/29/2014 11:55	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/02/2014 14:00	15	05/13/2014 11:55	
E353.2	WC_NO3NO2_N_353.2	05/02/2014 14:00	15	05/13/2014 11:55	
SW9060A	WC_TOC_9060A_QUAD	05/02/2014 14:00	15	05/13/2014 11:55	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/02/2014 14:00	15	04/22/2014 11:55	
SW9056A	WC_ANIONS_9056A (Regular)	05/02/2014 14:00	15	05/13/2014 11:55	see versions
1404108-04 ST105-30044 [Water] Sampled 04/15/2014 10:55 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/02/2014 14:00	15	05/13/2014 11:55	
1404108-05 ST105-30046 [Water] Sampled 04/15/2014 14:43 Mountain 'Client Sample'					
SW6010C	MET_ICP_LOW6010C_FULL	05/02/2014 14:00	15	10/12/2014 15:43	see versions
SM2320B	WC_ALKALINITY_2320B	05/02/2014 14:00	15	04/29/2014 15:43	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/02/2014 14:00	15	05/13/2014 15:43	
SW9056A	WC_ANIONS_9056A (Regular)	05/02/2014 14:00	15	05/13/2014 15:43	see versions
E353.2	WC_NO3NO2_N_353.2	05/02/2014 14:00	15	05/13/2014 15:43	
E351.2	WC_TKN_351.2	05/02/2014 14:00	15	05/13/2014 15:43	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	05/02/2014 14:00	15	05/13/2014 15:43	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/02/2014 14:00	15	04/22/2014 15:43	
1404108-06 ST105-30046 [Water] Sampled 04/15/2014 14:43 Mountain 'Client Sample'					**Field Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/02/2014 14:00	15	05/13/2014 15:43	
1404108-07 ST105-80003 [Water] Sampled 04/14/2014 15:45 Mountain 'Client Sample'					
SW6010C	MET_ICP_LOW6010C_FULL	05/02/2014 14:00	15	10/11/2014 16:45	see versions

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Shaw Environmental, Inc.
PROJECT NAME: Kirtland AFB (ECOS)
SDG #: KirtlandECOS_011

QC LEVEL: Level III
Report Due: 5/7/2014 - 5/7/2014
Client Sample Count: 7

Sampled	Received	Lab ID	Client ID	Matrix	E 351.2	E 353.2	SM 2320B	SM 2540C	SM 4500N H3BG	SW 6010C	SW 9056A	SW 9060A
4/14/2014	4/16/2014	1404108-01	ST105-30035	Water	X	X	X	X	X	X	X	X
4/14/2014	4/16/2014	1404108-02	ST105-30035	Water								DISS
4/15/2014	4/16/2014	1404108-03	ST105-30044	Water	X	X	X	X	X	X	X	X
4/15/2014	4/16/2014	1404108-04	ST105-30044	Water								DISS
4/15/2014	4/16/2014	1404108-05	ST105-30046	Water	X	X	X	X	X	X	X	X
4/15/2014	4/16/2014	1404108-06	ST105-30046	Water								DISS
4/14/2014	4/16/2014	1404108-07	ST105-80003	Water						X		

Data for SW6010C Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404108-01 [ST105-30035]	4D18003	100.00/25.00	100	25.0	1.00			04/18/14
1404108-03 [ST105-30044]	4D18003	100.00/25.00	100	25.0	1.00			04/18/14
1404108-05 [ST105-30046]	4D18003	100.00/25.00	100	25.0	1.00			04/18/14
1404108-07 [ST105-80003]	4D18003	100.00/25.00	100	25.0	1.00			04/18/14

ANALYSIS DATA SHEET

ST105-30035

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-01
Sampled:	04/14/14 13:33	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**95400**	**250**	500	1250	1		SW6010C	4D18003	04/23/14 16:01
7439-89-6	Iron	**21.6**	**7.50**	15.0	25.0	1	J	SW6010C	4D18003	04/23/14 16:01
7439-95-4	Magnesium	**29400**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:01
7439-96-5	Manganese	**2.11**	**0.750**	1.50	3.75	1	J	SW6010C	4D18003	04/23/14 16:01
7440-09-7	Potassium	**7060**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:01
7440-23-5	Sodium	**44000**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:01

ANALYSIS DATA SHEET

ST105-30044

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-03
Sampled:	04/15/14 10:55	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**103000**	**250**	500	1250	1		SW6010C	4D18003	04/23/14 16:19
7439-89-6	Iron	**10.5**	**7.50**	15.0	25.0	1	J	SW6010C	4D18003	04/23/14 16:19
7439-95-4	Magnesium	**22400**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:19
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4D18003	04/23/14 16:19
7440-09-7	Potassium	**2710**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:19
7440-23-5	Sodium	**24200**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:19

ANALYSIS DATA SHEET

ST105-30046

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-05
Sampled:	04/15/14 14:43	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**63000**	**250**	500	1250	1		SW6010C	4D18003	04/23/14 16:29
7439-89-6	Iron	**161**	**7.50**	15.0	25.0	1		SW6010C	4D18003	04/23/14 16:29
7439-95-4	Magnesium	**13000**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:29
7439-96-5	Manganese	**4.50**	**0.750**	1.50	3.75	1		SW6010C	4D18003	04/23/14 16:29
7440-09-7	Potassium	**5070**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:29
7440-23-5	Sodium	**21000**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:29

ANALYSIS DATA SHEET

ST105-80003

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-07
Sampled:	04/14/14 15:45	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium		250	500	1250	1	U	SW6010C	4D18003	04/23/14 16:33
7439-89-6	Iron	**24.3**	**7.50**	15.0	25.0	1	J	SW6010C	4D18003	04/23/14 16:33
7439-95-4	Magnesium		250	750	1250	1	U	SW6010C	4D18003	04/23/14 16:33
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4D18003	04/23/14 16:33
7440-09-7	Potassium		250	750	1250	1	U	SW6010C	4D18003	04/23/14 16:33
7440-23-5	Sodium	**585**	**250**	750	1250	1	J	SW6010C	4D18003	04/23/14 16:33

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D18003-BLK1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4D18003	04/23/14 15:16
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4D18003	04/23/14 15:16
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4D18003	04/23/14 15:16
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4D18003	04/23/14 15:16
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4D18003	04/23/14 15:16
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4D18003	04/23/14 15:16

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D18003-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**579.1**	**250**	500	1250	1	J	SW6010C	4D18003	04/23/14 15:29
7439-89-6	Iron	**20.76**	**7.50**	15.0	25.0	1	J	SW6010C	4D18003	04/23/14 15:29
7439-95-4	Magnesium	**625.0**	**250**	750	1250	1	J	SW6010C	4D18003	04/23/14 15:29
7439-96-5	Manganese	**9.430**	**0.750**	1.50	3.75	1		SW6010C	4D18003	04/23/14 15:29
7440-09-7	Potassium	**581.0**	**250**	750	1250	1	J	SW6010C	4D18003	04/23/14 15:29
7440-23-5	Sodium	**599.4**	**250**	750	1250	1	J	SW6010C	4D18003	04/23/14 15:29

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D18003-DUP1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**100400**	**1250**	2500	6250	5	D	SW6010C	4D18003	04/23/14 16:15
7439-89-6	Iron	ND	37.5	75.0	125	5	U	SW6010C	4D18003	04/23/14 16:15
7439-95-4	Magnesium	**30940**	**1250**	3750	6250	5	D	SW6010C	4D18003	04/23/14 16:15
7439-96-5	Manganese	ND	3.75	7.50	18.8	5	U	SW6010C	4D18003	04/23/14 16:15
7440-09-7	Potassium	**6986**	**1250**	3750	6250	5	D	SW6010C	4D18003	04/23/14 16:15
7440-23-5	Sodium	**45710**	**1250**	3750	6250	5	D	SW6010C	4D18003	04/23/14 16:15

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D18003-DUP2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**107400**	**250**	500	1250	1		SW6010C	4D18003	04/23/14 16:24
7439-89-6	Iron	**11.89**	**7.50**	15.0	25.0	1	J	SW6010C	4D18003	04/23/14 16:24
7439-95-4	Magnesium	**23350**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:24
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4D18003	04/23/14 16:24
7440-09-7	Potassium	**2776**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:24
7440-23-5	Sodium	**24850**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:24

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D18003-MS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**97000**	**250**	500	1250	1		SW6010C	4D18003	04/23/14 16:06
7439-89-6	Iron	**270.2**	**7.50**	15.0	25.0	1		SW6010C	4D18003	04/23/14 16:06
7439-95-4	Magnesium	**30660**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:06
7439-96-5	Manganese	**119.9**	**0.750**	1.50	3.75	1		SW6010C	4D18003	04/23/14 16:06
7440-09-7	Potassium	**8253**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:06
7440-23-5	Sodium	**44350**	**250**	750	1250	1		SW6010C	4D18003	04/23/14 16:06

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Calibration: 4114006
Sequence: 4D11411

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11411-ICV1	Calcium	50000	49240	98.5	ug/L	+/- 10.00%
	Iron	10000	10140	101	ug/L	+/- 10.00%
	Magnesium	50000	51800	104	ug/L	+/- 10.00%
	Manganese	1000	1010	101	ug/L	+/- 10.00%
	Potassium	10000	9956	99.6	ug/L	+/- 10.00%
	Sodium	50000	50730	101	ug/L	+/- 10.00%
4D11411-CCV1	Calcium	50000	49480	99.0	ug/L	+/- 10.00%
	Iron	10000	10140	101	ug/L	+/- 10.00%
	Magnesium	50000	51910	104	ug/L	+/- 10.00%
	Manganese	1000	1007	101	ug/L	+/- 10.00%
	Potassium	10000	9990	99.9	ug/L	+/- 10.00%
	Sodium	50000	51090	102	ug/L	+/- 10.00%
4D11411-CCV4	Calcium	50000	49500	99.0	ug/L	+/- 10.00%
	Iron	10000	10420	104	ug/L	+/- 10.00%
	Magnesium	50000	51860	104	ug/L	+/- 10.00%
	Manganese	1000	986.0	98.6	ug/L	+/- 10.00%
	Potassium	10000	10050	101	ug/L	+/- 10.00%
	Sodium	50000	51020	102	ug/L	+/- 10.00%
4D11411-CCV5	Calcium	50000	48650	97.3	ug/L	+/- 10.00%
	Iron	10000	10300	103	ug/L	+/- 10.00%
	Magnesium	50000	51080	102	ug/L	+/- 10.00%
	Manganese	1000	918.7	91.9	ug/L	+/- 10.00%
	Potassium	10000	9940	99.4	ug/L	+/- 10.00%
	Sodium	50000	50570	101	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4114006

Sequence: 4D11411

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D11411-CRL1	Calcium	2000	2052	103	ug/L	80 - 120
	Iron	60.00	67.89	113	ug/L	80 - 120
	Magnesium	3000	3292	110	ug/L	80 - 120
	Manganese	6.000	6.287	105	ug/L	80 - 120
	Potassium	3000	3025	101	ug/L	80 - 120
	Sodium	3000	3151	105	ug/L	80 - 120

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4D11411
Calibration: 4114006

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11411-ICB1	Calcium	0.06000	1000	5000	ug/L	U	SW6010C
	Iron	7.907	30.0	100	ug/L	U	SW6010C
	Magnesium	-6.260	1000	5000	ug/L	U	SW6010C
	Manganese	0.01964	3.00	15.0	ug/L	U	SW6010C
	Potassium	31.14	1000	5000	ug/L	U	SW6010C
	Sodium	14.23	1000	5000	ug/L	U	SW6010C
4D11411-CCB1	Calcium	8.27	1000	5000	ug/L	U	SW6010C
	Iron	8.89	30.0	100	ug/L	U	SW6010C
	Magnesium	13.3	1000	5000	ug/L	U	SW6010C
	Manganese	0.0513	3.00	15.0	ug/L	U	SW6010C
	Potassium	37.8	1000	5000	ug/L	U	SW6010C
	Sodium	7.56	1000	5000	ug/L	U	SW6010C
4D11411-CCB4	Calcium	2.62	1000	5000	ug/L	U	SW6010C
	Iron	7.07	30.0	100	ug/L	U	SW6010C
	Magnesium	0.470	1000	5000	ug/L	U	SW6010C
	Manganese	0.0909	3.00	15.0	ug/L	U	SW6010C
	Potassium	33.4	1000	5000	ug/L	U	SW6010C
	Sodium	31.3	1000	5000	ug/L	U	SW6010C
4D18003-BLK1	Calcium	2.42	250	1250	ug/L	U	SW6010C
	Iron	1.46	7.50	25.0	ug/L	U	SW6010C
	Magnesium	-1.24	250	1250	ug/L	U	SW6010C
	Manganese	0.0520	0.750	3.75	ug/L	U	SW6010C
	Potassium	6.79	250	1250	ug/L	U	SW6010C
	Sodium	10.9	250	1250	ug/L	U	SW6010C
4D11411-CCB5	Calcium	11.9	1000	5000	ug/L	U	SW6010C
	Iron	0.251	30.0	100	ug/L	U	SW6010C
	Magnesium	-2.88	1000	5000	ug/L	U	SW6010C
	Manganese	0.0571	3.00	15.0	ug/L	U	SW6010C
	Potassium	2.53	1000	5000	ug/L	U	SW6010C
	Sodium	22.3	1000	5000	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4114006
Sequence: 4D11411

Lab Sample ID	Analyte	True	Found	%R	Units
4D11411-IFA1	Calcium	500000	449,330.00	89.9	ug/L
	Iron	200000	192,850.00	96.4	ug/L
	Magnesium	500000	487,680.00	97.5	ug/L
	Manganese		-1.13		ug/L
	Potassium		40.59		ug/L
	Sodium		44.16		ug/L
4D11411-IFB1	Calcium	500000	448,920.00	89.8	ug/L
	Iron	200000	192,920.00	96.5	ug/L
	Magnesium	500000	485,120.00	97.0	ug/L
	Manganese	500.0	490.88	98.2	ug/L
	Potassium		3.30		ug/L
	Sodium		44.37		ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

ST105-30035

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4D18003

% Solids:

Source Sample Name: **1404108-01**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Calcium	1250	95450	97000	124	4x	80 - 120
Iron	250.0	21.55	270.2	99.5		80 - 120
Magnesium	1250	29360	30660	103		80 - 120
Manganese	125.0	2.110	119.9	94.3		80 - 120
Potassium	1250	7065	8253	95.1		80 - 120
Sodium	1250	43960	44350	31.4	4x	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

ST105-30035

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4D18003-PS1
Batch: 4D18003
Lab Source ID: 1404108-01
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Calcium	**380100**	**381800**	**5000**	**-34.6**	**80 - 120**
Iron	1149	86.20	1000	106	80 - 120
Magnesium	121500	117500	5000	81.6	80 - 120
Manganese	515.9	8.438	500.0	101	80 - 120
Potassium	33260	28260	5000	100	80 - 120
Sodium	**178100**	**175800**	**5000**	**45.2**	**80 - 120**

ST105-30044

DUPLICATES

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4D18003
Preparation: MET_3005A_LOW
Source Sample Name: ST105-30044

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D18003-DUP2
Lab Source ID: 1404108-03
Initial/Final: 100 mL / 25 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Calcium	20	103000	107400	4.49		SW6010C
Iron	20	10.5 J	11.89 J	12.7		SW6010C
Magnesium	20	22400	23350	4.03		SW6010C
Manganese	20	3.75 U	3.75 U			SW6010C
Potassium	20	2710	2776	2.37		SW6010C
Sodium	20	24200	24850	2.58		SW6010C

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D18003	Laboratory ID:	4D18003-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	579.1	96.5	80 - 120
Iron	20.00	20.76	104	80 - 120
Magnesium	600.0	625.0	104	80 - 120
Manganese	10.00	9.430	94.3	80 - 120
Potassium	600.0	581.0	96.8	80 - 120
Sodium	600.0	599.4	99.9	80 - 120

SERIAL DILUTION

SW6010C

ST105-30035

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Sequence: 4D11411
Preparation: MET_3005A_LOW

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D18003-DUP1
Lab Source ID: 1404108-01
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Calcium	381800	401450	5.15		SW6010C	10.00
Iron	86.202	ND			SW6010C	10.00
Magnesium	117460	123760	5.36		SW6010C	10.00
Manganese	8.4384	ND			SW6010C	10.00
Potassium	28259	27944	-1.11		SW6010C	10.00
Sodium	175840	182830	3.97		SW6010C	10.00

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_011

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_011

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_011

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_011

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_011

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_011

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Calcium	317.933	0.000000				
Iron	261.187	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.61	0.000000				
Potassium	766.49	0.000000				
Sodium	589.592	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc. SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

ICP Instrument ID: ME-ICP Date: 12/27/2013

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Calcium	15	500000	P
Iron	15	500000	P
Magnesium	15	500000	P
Manganese	15	15000	P
Potassium	15	100000	P
Sodium	15	500000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D18003 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30035	1404108-01	04/18/14 07:38	100.00	25.00
ST105-30044	1404108-03	04/18/14 07:38	100.00	25.00
ST105-30046	1404108-05	04/18/14 07:38	100.00	25.00
ST105-80003	1404108-07	04/18/14 07:38	100.00	25.00
Blank	4D18003-BLK1	04/18/14 07:38	100.00	25.00
LCS	4D18003-BS1	04/18/14 07:38	100.00	25.00
ST105-30035	4D18003-DUP1	04/18/14 07:38	100.00	25.00
ST105-30044	4D18003-DUP2	04/18/14 07:38	100.00	25.00
ST105-30035	4D18003-MS1	04/18/14 07:38	100.00	25.00
ST105-30035	4D18003-PS1	04/18/14 07:38	100.00	25.00

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11411	Instrument:	ME-ICP
Calibration:	4114006		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11411-CAL1	04-23-14A-001	04/23/14 10:27
Cal Standard	4D11411-CAL2	04-23-14A-002	04/23/14 10:31
Cal Standard	4D11411-CAL3	04-23-14A-003	04/23/14 10:35
Cal Standard	4D11411-CAL4	04-23-14A-004	04/23/14 10:39
Cal Standard	4D11411-CAL5	04-23-14A-005	04/23/14 10:44
Cal Standard	4D11411-CAL6	04-23-14A-006	04/23/14 10:48
Cal Standard	4D11411-CAL7	04-23-14A-007	04/23/14 10:54
Cal Standard	4D11411-CAL8	04-23-14A-008	04/23/14 10:59
Initial Cal Check	4D11411-ICV1	04-23-14B-001	04/23/14 11:29
Initial Cal Blank	4D11411-ICB1	04-23-14B-002	04/23/14 11:36
Instrument RL Check	4D11411-CRL1	04-23-14B-003	04/23/14 11:41
Interference Check A	4D11411-IFA1	04-23-14B-005	04/23/14 11:50
Interference Check B	4D11411-IFB1	04-23-14B-006	04/23/14 11:56
Calibration Check	4D11411-CCV1	04-23-14B-008	04/23/14 12:05
Calibration Blank	4D11411-CCB1	04-23-14B-009	04/23/14 12:12
Calibration Check	4D11411-CCV4	04-23-14B-045	04/23/14 15:01
Calibration Blank	4D11411-CCB4	04-23-14B-046	04/23/14 15:08
Blank	4D18003-BLK1	04-23-14C-001	04/23/14 15:16
LCS	4D18003-BS1	04-23-14C-004	04/23/14 15:29
ST105-30035	1404108-01	04-23-14C-011	04/23/14 16:01
ST105-30035	4D18003-MS1	04-23-14C-012	04/23/14 16:06
ST105-30035	4D18003-PS1	04-23-14C-013	04/23/14 16:10
ST105-30035	4D18003-DUP1	04-23-14C-014	04/23/14 16:15
ST105-30044	1404108-03	04-23-14C-015	04/23/14 16:19
ST105-30044	4D18003-DUP2	04-23-14C-016	04/23/14 16:24
ST105-30046	1404108-05	04-23-14C-017	04/23/14 16:29
ST105-80003	1404108-07	04-23-14C-018	04/23/14 16:33
Calibration Check	4D11411-CCV5	04-23-14C-019	04/23/14 16:38
Calibration Blank	4D11411-CCB5	04-23-14C-020	04/23/14 16:46

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4114006	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/23/14 10:27 4/23/14 10:59

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	1.5724E-05	10000	1.5974E-05			500000	1.54366E-05		
Antimony	0	0	100	0.0007175	1000	0.0007973					10000	8.0807E-04
Arsenic	0	0	100	0.00039	1000	4.4368E-04					10000	4.3252E-04
Barium	0	0	50	0.0134462	1000	0.013036	5000	0.013789				
Beryllium	0	0	100	0.0025169	1000	0.0025357					10000	0.0024531
Boron	0	0	50	0.0000156	1000	1.531E-05					5000	1.5006E-05
Cadmium	0	0	100	0.022989	1000	0.022255					10000	0.021905
Calcium	0	0	1100	7.556364E-05	50000	6.5278E-05					10000	
Chromium	0	0	100	0.0000531	1000	5.282E-05					10000	5.1983E-05
Cobalt	0	0	100	0.0050784	1000	0.005046					10000	0.0051885
Copper	0	0	100	0.0000664	1000	6.051E-05					10000	5.8442E-05
Iron	0	0	5100	1.383137E-05	10000	1.344E-05			500000	1.29816E-05	10000	
Lead	0	0	100	0.0015056	1000	0.0015249					10000	0.0016161
Magnesium	0	0	5100		50000	2.4532E-06			500000	2.345E-06	10000	
Manganese	0	0	100	0.000317	1000	3.1256E-04	10000	3.1511E-04			10000	
Molybdenum	0	0	100	0.0036729	1000	0.003885					10000	0.0038318
Nickel	0	0	100	0.0042417	1000	0.0042533					10000	0.0043607
Potassium	0	0	1000	0.0000108	10000	1.4443E-05						
Selenium	0	0	100	0.0005869	1000	5.7995E-04					10000	5.6066E-04
Silver	0	0	20	0.000063	500	5.722E-05	2000	6.055E-05				
Sodium	0	0	1000		50000	5.204E-05						
Thallium	0	0	100	0.0008626	1000	8.5838E-04					10000	0.000891
Tin	0	0	50	0.0013122	1000	0.0013689					5000	1.40834E-03
Titanium	0	0	100	0.0001459	1000	0.0001417					10000	1.4057E-04
Vanadium	0	0	100	0.0000552	1000	5.578E-05					10000	5.4037E-05
Zinc	0	0	100	0.0086936	1000	0.0089838					10000	0.0087431
Strontium	0	0	100	0.001309	1000	0.001342					10000	0.001334
Lithium (outside certification)	0	0	100	0.0000109	1000	1.139E-05					10000	1.0821E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4114006	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/23/14 10:27 4/23/14 10:59

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.6368E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.459E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.4723E-05										
Selenium												
Silver												
Sodium	100000	5.0988E-05	500000	5.0826E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4114006		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	4/23/14 10:27	4/23/14 10:59

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.178365E-05	66.6927	2.472902	153.1359	0.9999995		0.998	
Antimony	5.807175E-04	67.02861	1.851735	149.8613	0.9999997		0.998	
Arsenic	3.1655E-04	67.06583	1.05976	135.6328	0.999989		0.998	
Barium	0.0100678	66.73674	1.306615	162.735	0.9998715		0.998	
Beryllium	1.876425E-03	66.69328	5.434165	188.1156	0.9999894		0.998	
Boron	1.1479E-05	66.70014	3.652538	163.1133	0.9999843		0.998	
Cadmium	1.678725E-02	66.72095	3.079505	164.1162	0.999998		0.998	
Calcium	5.180241E-05	67.25885	2.167898	157.9674	0.9999968		0.998	
Chromium	3.947575E-05	66.6775	43.403	196.7726	0.9999977		0.998	
Cobalt	3.828225E-03	66.6857	0.9760975	132.6531	0.9999927		0.998	
Copper	4.6338E-05	67.06251	1.334847	63.25142	0.9999938		0.998	
Iron	1.006324E-05	66.75595	51.46627	199.0612	0.9999996		0.998	
Lead	1.16165E-03	66.79561	88.65751	199.03	0.9999712		0.998	
Magnesium	1.8143E-06	66.72926	13.27547	194.4568	0.9999102		0.998	
Manganese	2.361675E-04	66.67112	36.48298	194.8282	0.9999993		0.998	
Molybdenum	2.847425E-03	66.74172	10.16156	194.3311	0.9999974		0.998	
Nickel	3.213925E-03	66.6875	109.7289	199.1521	0.9999944		0.998	
Potassium	9.9915E-06	69.02405	2.363975	136.6744	0.9999998		0.998	
Selenium	4.318775E-04	66.71619	3.51985	169.2658	0.9999911		0.998	
Silver	4.51925E-05	66.8724	7.020495	176.471	0.9997746		0.998	
Sodium	3.84635E-05	66.68135	2.038785	127.0377	0.9999944		0.998	
Thallium	6.52995E-04	66.70356	4.67922	185.3544	0.9999882		0.998	
Tin	1.02236E-03	66.77829	0.4181175	39.19576	0.999971		0.998	
Titanium	1.070425E-04	66.70108	4.157495	189.0223	0.9999997		0.998	
Vanadium	4.125425E-05	66.68981	2.576005	149.3871	0.9999906		0.998	
Zinc	6.605125E-03	66.69428	16.29836	192.6627	0.9999922		0.998	
Strontium	9.9625E-04	66.6816	2.49245	152.2808	0.9999994		0.998	
Lithium (outside certification)	8.27775E-06	66.73597	11.58107	187.2301	0.9999738		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4D18003

Empirical Laboratories, LLC

Printed: 5/1/2014 2:19:01PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404001-02	-	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	
1404085-01	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
1404107-01	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404107-02	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404107-03	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404107-04	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404107-05	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	MS/Dup / Versions
1404108-01	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
1404108-03	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
1404108-05	D	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
1404108-07	A	MET_ICP_LOW6010C_FULL	04/18/2014	100	25					NA	see versions
4D18003-BLK1		QC	04/18/2014	100	25					NA	
4D18003-BS1		QC	04/18/2014	100	25	14D0064		2000		NA	
4D18003-DUP1		QC	04/18/2014	100	25		1404108-01			NA	
4D18003-DUP2		QC	04/18/2014	100	25		1404108-03			NA	
4D18003-MRL1		QC	04/18/2014	100	25	14B0290		250		NA	
4D18003-MRL2		QC	04/18/2014	100	25	14B0291		250		NA	
4D18003-MS1		QC	04/18/2014	100	25	14D0674	1404108-01	25		NA	
4D18003-PS1		QC	04/18/2014	100	25	14D0674	1404108-01	25		NA	

PREPARATION BENCH SHEET

4D18003

Empirical Laboratories, LLC

Printed: 5/1/2014 2:19:01PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
14A0613	Nitric acid
14A0614	Hydrochloric Acid
14B0029	Metals 50mL Digestion Vessel- DigiTUBE

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404108-01 [ST105-30035]	4D16012	100.00/100.00	100	100	1.00			04/16/14
1404108-03 [ST105-30044]	4D16012	100.00/100.00	100	100	1.00			04/16/14
1404108-05 [ST105-30046]	4D16012	100.00/100.00	100	100	1.00			04/16/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404108-01 [ST105-30035]	4D17010	5.00/5.00	5.00	5.00	1.00			04/17/14
1404108-03 [ST105-30044]	4D17010	5.00/5.00	5.00	5.00	1.00			04/17/14
1404108-05 [ST105-30046]	4D17010	5.00/5.00	5.00	5.00	1.00			04/17/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404108-01 [ST105-30035]	4D28001	25.00/25.00	25.0	25.0	1.00			04/28/14
1404108-03 [ST105-30044]	4D28001	25.00/25.00	25.0	25.0	1.00			04/28/14
1404108-05 [ST105-30046]	4D28001	25.00/25.00	25.0	25.0	1.00			04/28/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404108-01 [ST105-30035]	4D28013	20.00/20.00	4.00	20.0	1.00			04/28/14
1404108-03RE2 [ST105-30044]	4D28013	20.00/20.00	4.00	20.0	10.00			04/28/14
1404108-05RE1 [ST105-30046]	4D28013	20.00/20.00	4.00	20.0	5.00			04/28/14

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404108-01 [ST105-30035]	4D29011	20.00/20.00	20.0	20.0	1.00			04/29/14
1404108-03 [ST105-30044]	4D29011	20.00/20.00	20.0	20.0	1.00			04/29/14
1404108-05 [ST105-30046]	4D29011	20.00/20.00	20.0	20.0	1.00			04/29/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404108-01 [ST105-30035]	4E01011	100.00/100.00	100	100	1.00			05/01/14
1404108-03 [ST105-30044]	4E01011	100.00/100.00	100	100	1.00			05/01/14
1404108-05 [ST105-30046]	4E01011	100.00/100.00	100	100	1.00			05/01/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404108-01 [ST105-30035]	4E01024	40.00/40.00	40.0	40.0	1.00			05/01/14
1404108-02 [ST105-30035]	4E01024	40.00/40.00	40.0	40.0	1.00			05/01/14
1404108-03 [ST105-30044]	4E01024	40.00/40.00	40.0	40.0	1.00			05/01/14
1404108-04 [ST105-30044]	4E01024	40.00/40.00	40.0	40.0	1.00			05/01/14
1404108-05 [ST105-30046]	4E01024	40.00/40.00	40.0	40.0	1.00			05/01/14
1404108-06 [ST105-30046]	4E01024	40.00/40.00	40.0	40.0	1.00			05/01/14

ANALYSIS DATA SHEET

ST105-30035

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-01
Sampled:	04/14/14 13:33	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E01011	05/02/14 16:59
24959-67-9	Bromide	**0.590**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D17010	04/17/14 23:58
TDS	Total Dissolved Solids	**688**	**20.0**	20.0	20.0	1	Q	SM2540C	4D16012	04/16/14 16:02
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	UQ	E351.2	4D29011	04/30/14 15:13
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 18:00
16887-00-6	Chloride	**56.4**	**0.170**	0.330	0.500	1		SW9056A	4D17010	04/17/14 23:58
NA	Nitrate/Nitrite as N	**7.63**	**0.250**	0.750	1.50	1		E353.2	4D28013	04/28/14 14:03
16984-48-8	Fluoride	**2.38**	**0.0330**	0.100	0.250	1		SW9056A	4D17010	04/17/14 23:58
471-34-1	Alkalinity, Total (as CACO3)	**108**	**1.00**	1.00	1.00	1		SM2320B	4D28001	04/28/14 14:15
14808-79-8	Sulfate as SO4	**247**	**0.330**	1.00	2.50	1		SW9056A	4D17010	04/17/14 23:58

ANALYSIS DATA SHEET

ST105-30035

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-02
Sampled:	04/14/14 13:33	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 18:23

ANALYSIS DATA SHEET

ST105-30044

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-03
Sampled:	04/15/14 10:55	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E01011	05/02/14 17:00
24959-67-9	Bromide	**0.366**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D17010	04/18/14 00:15
TDS	Total Dissolved Solids	**658**	**20.0**	20.0	20.0	1	Q	SM2540C	4D16012	04/16/14 16:02
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	UQ	E351.2	4D29011	04/30/14 15:14
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 18:46
16887-00-6	Chloride	**27.2**	**0.170**	0.330	0.500	1		SW9056A	4D17010	04/18/14 00:15
NA	Nitrate/Nitrite as N	**63.2**	**2.50**	7.50	15.0	10	D	E353.2	4D28013	04/28/14 14:41
16984-48-8	Fluoride	**0.300**	**0.0330**	0.100	0.250	1		SW9056A	4D17010	04/18/14 00:15
471-34-1	Alkalinity, Total (as CACO3)	**118**	**1.00**	1.00	1.00	1		SM2320B	4D28001	04/28/14 14:22
14808-79-8	Sulfate as SO4	**74.3**	**0.330**	1.00	2.50	1		SW9056A	4D17010	04/18/14 00:15

ANALYSIS DATA SHEET

ST105-30044

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-04
Sampled:	04/15/14 10:55	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 19:09

ANALYSIS DATA SHEET

ST105-30046

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-05
Sampled:	04/15/14 14:43	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E01011	05/02/14 17:01
24959-67-9	Bromide	**0.171**	**0.0420**	0.125	0.630	1	MJ	SW9056A	4D17010	04/18/14 00:32
TDS	Total Dissolved Solids	**373**	**20.0**	20.0	20.0	1	Q	SM2540C	4D16012	04/16/14 16:02
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	UQ	E351.2	4D29011	04/30/14 15:15
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 19:32
16887-00-6	Chloride	**14.2**	**0.170**	0.330	0.500	1		SW9056A	4D17010	04/18/14 00:32
NA	Nitrate/Nitrite as N	**26.6**	**1.25**	3.75	7.50	5	D	E353.2	4D28013	04/28/14 14:22
16984-48-8	Fluoride	**0.408**	**0.0330**	0.100	0.250	1		SW9056A	4D17010	04/18/14 00:32
471-34-1	Alkalinity, Total (as CACO3)	**134**	**1.00**	1.00	1.00	1		SM2320B	4D28001	04/28/14 14:38
14808-79-8	Sulfate as SO4	**24.7**	**0.330**	1.00	2.50	1		SW9056A	4D17010	04/18/14 00:32

ANALYSIS DATA SHEET

ST105-30046

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404108-06
Sampled:	04/15/14 14:43	Received:	04/16/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 19:55

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D16012-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	QU	SM2540C	4D16012	04/16/14 16:02

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D16012-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1180**	**20.0**	20.0	20.0	1		SM2540C	4D16012	04/16/14 16:02

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D16012-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**960.0**	**20.0**	20.0	20.0	1		SM2540C	4D16012	04/16/14 16:02

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4D17010-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4D17010	04/17/14 17:52
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4D17010	04/17/14 17:52
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4D17010	04/17/14 17:52
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4D17010	04/17/14 17:52

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D17010-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.75**	**0.0420**	0.125	0.250	1		SW9056A	4D17010	04/17/14 18:09
16887-00-6	Chloride	**4.216**	**0.170**	0.330	0.500	1		SW9056A	4D17010	04/17/14 18:09
16984-48-8	Fluoride	**2.814**	**0.0330**	0.100	0.250	1		SW9056A	4D17010	04/17/14 18:09
14808-79-8	Sulfate as SO4	**21.39**	**0.330**	1.00	2.50	1		SW9056A	4D17010	04/17/14 18:09

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28001-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4D28001	04/28/14 11:15

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D28001-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**989.4**	**5.00**	5.00	5.00	1		SM2320B	4D28001	04/28/14 11:17

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D28013-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4D28013	04/28/14 13:31

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D28013-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**14.74**	**0.500**	1.50	3.00	1		E353.2	4D28013	04/28/14 13:33

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D29011-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	ND	0.500	1.00	1.50	1	UQ	E351.2	4D29011	04/30/14 15:10

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D29011-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.835**	**0.500**	1.00	1.50	1		E351.2	4D29011	04/30/14 15:11

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4D29011-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**2.953**	**0.500**	1.00	1.50	1		E351.2	4D29011	04/30/14 15:12

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E01011-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4E01011	05/02/14 16:57

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E01011-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.148**	**0.100**	0.150	0.300	1		SM4500NH3BG	4E01011	05/02/14 16:58

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E01024-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 17:08
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 17:08

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_011

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E01024-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**22.90**	**1.25**	2.50	3.00	1		SW9060A	4E01024	05/01/14 17:35
7440-44-0	Total Organic Carbon (dissolved)	**22.90**	**1.25**	2.50	3.00	1		SW9060A	4E01024	05/01/14 17:35

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 3L35106

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
3L35106-ICV1	Bromide	14.00	13.66	97.6	mg/L	+/- 10.00%
	Chloride	4.200	4.193	99.8	mg/L	+/- 10.00%
	Fluoride	2.800	2.803	100	mg/L	+/- 10.00%
	Sulfate as SO4	21.00	21.05	100	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Calibration: 3351002
Sequence: 4D11312

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11312-CCV1	Bromide	6.300	5.899	93.6	mg/L	+/- 10.00%
	Chloride	25.00	25.28	101	mg/L	+/- 10.00%
	Fluoride	2.500	2.558	102	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.37	101	mg/L	+/- 10.00%
4D11312-CCV2	Bromide	6.300	5.819	92.4	mg/L	+/- 10.00%
	Chloride	25.00	25.12	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.490	99.6	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.68	98.7	mg/L	+/- 10.00%
4D11312-CCV3	Bromide	6.300	5.841	92.7	mg/L	+/- 10.00%
	Chloride	25.00	25.46	102	mg/L	+/- 10.00%
	Fluoride	2.500	2.513	101	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.97	99.9	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Calibration: 4118004
Sequence: 4D11809

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D11809-ICV1	Nitrate/Nitrite as N	1.200	1.269	106	mg/L	+/- 10.00%
4D11809-CCV1	Nitrate/Nitrite as N	1.200	1.256	105	mg/L	+/- 10.00%
4D11809-CCV2	Nitrate/Nitrite as N	1.200	1.252	104	mg/L	+/- 10.00%
4D11809-CCV3	Nitrate/Nitrite as N	1.200	1.246	104	mg/L	+/- 10.00%
4D11809-CCV4	Nitrate/Nitrite as N	1.200	1.252	104	mg/L	+/- 10.00%
4D11809-CCV5	Nitrate/Nitrite as N	1.200	1.253	104	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Calibration: 4120006
Sequence: 4D12017

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4D12017-ICV1	Total Kjeldahl Nitrogen	10.00	10.59	106	mg/L	+/- 10.00%
4D12017-CCV1	Total Kjeldahl Nitrogen	5.000	4.661	93.2	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Calibration: 4119004
Sequence: 4E12211

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12211-CCV1	Total Organic Carbon	25.00	22.93	91.7	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	22.93	91.7	mg/L	+/- 20.00%
4E12211-CCV2	Total Organic Carbon	50.00	46.48	93.0	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	46.48	93.0	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_011
Project: Kirtland AFB (ECOS)
Calibration: 4122004
Sequence: 4E12216

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12216-ICV1	Ammonia as N	2.000	2.125	106	mg/L	+/- 10.00%
4E12216-CCV2	Ammonia as N	2.000	2.098	105	mg/L	+/- 10.00%
4E12216-CCV3	Ammonia as N	2.000	1.800	90.0	mg/L	+/- 10.00%

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 3351002

Sequence: 4D11312

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4D11312-CRL1	Chloride	0.5000	0.4820	96.4	mg/L	50 - 150
4D11312-CRL2	Fluoride	0.1000	0.09500	95.0	mg/L	50 - 150
4D11312-CRL3	Bromide	0.6300	0.4830	76.7	mg/L	50 - 150
	Sulfate as SO4	2.500	3.078	123	mg/L	50 - 150

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D16012

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D16012-BLK1	Total Dissolved Solids	-3.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D17010

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D17010-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0550	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D28001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D28001-BLK1	Alkalinity, Total (as CACO3)	-0.816	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D28013

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D28013-BLK1	Nitrate/Nitrite as N	-0.0240	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D29011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D29011-BLK1	Total Kjeldahl Nitrogen	0.278	0.500	1.50	mg/L	U	E351.2

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E01011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E01011-BLK1	Ammonia as N	-0.0744	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E01024

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E01024-BLK1	Total Organic Carbon	0.502	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.502	1.25	3.00	mg/L	U	SW9060A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 3L35106
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
3L35106-ICB1	Bromide	0.000	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.000	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.000	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.000	0.330	2.50	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11312
Calibration: 3351002
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11312-CCB1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0630	0.330	2.50	mg/L	U	SW9056A
4D11312-CCB2	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00700	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4D11312-CCB3	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00700	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0200	0.330	2.50	mg/L	U	SW9056A

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D11809
Calibration: 4118004
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D11809-ICB1	Nitrate/Nitrite as N	-0.02707	0.0500	0.300	mg/L	U	E353.2
4D11809-CCB1	Nitrate/Nitrite as N	-0.0220	0.0500	0.300	mg/L	U	E353.2
4D11809-CCB2	Nitrate/Nitrite as N	-0.0174	0.0500	0.300	mg/L	U	E353.2
4D11809-CCB3	Nitrate/Nitrite as N	-0.0227	0.0500	0.300	mg/L	U	E353.2
4D11809-CCB4	Nitrate/Nitrite as N	-0.0235	0.0500	0.300	mg/L	U	E353.2
4D11809-CCB5	Nitrate/Nitrite as N	-0.0230	0.0500	0.300	mg/L	U	E353.2

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4D12017
Calibration: 4120006
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D12017-ICB1	Total Kjeldahl Nitrogen	-0.2744	0.500	1.50	mg/L	U	E351.2
4D12017-CCB1	Total Kjeldahl Nitrogen	-0.0726	0.500	1.50	mg/L	U	E351.2

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E12211
Calibration: 4119004
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12211-CCB1	Total Organic Carbon	0.490	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.490	1.25	3.00	mg/L	U	SW9060A
4E12211-CCB2	Total Organic Carbon	0.510	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.510	1.25	3.00	mg/L	U	SW9060A

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_011
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E12216
Calibration: 4122004
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12216-ICB1	Ammonia as N	-0.004807	0.100	0.300	mg/L	U	SM4500NH3BG
4E12216-CCB2	Ammonia as N	-0.00533	0.100	0.300	mg/L	U	SM4500NH3BG
4E12216-CCB3	Ammonia as N	-0.00767	0.100	0.300	mg/L	U	SM4500NH3BG

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D16012	Laboratory ID:	4D16012-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	**973.0**	**1180**	**121**	**80 - 120**

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Dissolved Solids	973.0	960.0	98.7	20.6 *	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D17010	Laboratory ID:	4D17010-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.75	98.2	80 - 120
Chloride	4.200	4.216	100	80 - 120
Fluoride	2.800	2.814	100	80 - 120
Sulfate as SO4	21.00	21.39	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D28001	Laboratory ID:	4D28001-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	989.4	98.9	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D28013	Laboratory ID:	4D28013-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	14.74	99.6	90 - 110

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D29011	Laboratory ID:	4D29011-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.835	116	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	2.953	89.5	26.0 *	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E01011	Laboratory ID:	4E01011-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	5.000	4.148	83.0	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E01024	Laboratory ID:	4E01024-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	22.90	91.6	80 - 120
Total Organic Carbon (dissolved)	25.00	22.90	91.6	80 - 120

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D16012 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30035	1404108-01	04/16/14 10:28	100.00	100.00
ST105-30044	1404108-03	04/16/14 10:28	100.00	100.00
ST105-30046	1404108-05	04/16/14 10:28	100.00	100.00
Blank	4D16012-BLK1	04/16/14 10:28	100.00	100.00
LCS	4D16012-BS1	04/16/14 10:28	20.00	20.00
LCS Dup	4D16012-BSD1	04/16/14 10:28	20.00	20.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D17010 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30035	1404108-01	04/17/14 13:32	5.00	5.00
ST105-30044	1404108-03	04/17/14 13:32	5.00	5.00
ST105-30046	1404108-05	04/17/14 13:32	5.00	5.00
Blank	4D17010-BLK1	04/17/14 13:32	5.00	5.00
LCS	4D17010-BS1	04/17/14 13:32	5.00	5.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D28001 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30035	1404108-01	04/28/14 08:06	25.00	25.00
ST105-30044	1404108-03	04/28/14 08:06	25.00	25.00
ST105-30046	1404108-05	04/28/14 08:06	25.00	25.00
Blank	4D28001-BLK1	04/28/14 08:06	25.00	25.00
LCS	4D28001-BS1	04/28/14 08:06	5.00	25.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D28013 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30035	1404108-01	04/28/14 11:32	4.00	20.00
ST105-30044	1404108-03RE2	04/28/14 11:32	4.00	20.00
ST105-30046	1404108-05RE1	04/28/14 11:32	4.00	20.00
Blank	4D28013-BLK1	04/28/14 11:32	20.00	20.00
LCS	4D28013-BS1	04/28/14 11:32	2.00	20.00

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D29011 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30035	1404108-01	04/29/14 08:42	20.00	20.00
ST105-30044	1404108-03	04/29/14 08:42	20.00	20.00
ST105-30046	1404108-05	04/29/14 08:42	20.00	20.00
Blank	4D29011-BLK1	04/29/14 08:42	20.00	20.00
LCS	4D29011-BS1	04/29/14 08:42	20.00	20.00
LCS Dup	4D29011-BSD1	04/29/14 08:42	20.00	20.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E01011 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30035	1404108-01	05/01/14 08:18	100.00	100.00
ST105-30044	1404108-03	05/01/14 08:18	100.00	100.00
ST105-30046	1404108-05	05/01/14 08:18	100.00	100.00
Blank	4E01011-BLK1	05/01/14 08:18	100.00	100.00
LCS	4E01011-BS1	05/01/14 08:18	100.00	100.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E01024 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30035	1404108-01	05/01/14 14:20	40.00	40.00
ST105-30035	1404108-02	05/01/14 14:20	40.00	40.00
ST105-30044	1404108-03	05/01/14 14:20	40.00	40.00
ST105-30044	1404108-04	05/01/14 14:20	40.00	40.00
ST105-30046	1404108-05	05/01/14 14:20	40.00	40.00
ST105-30046	1404108-06	05/01/14 14:20	40.00	40.00
Blank	4E01024-BLK1	05/01/14 14:20	40.00	40.00
LCS	4E01024-BS1	05/01/14 14:20	40.00	40.00

ANALYSIS SEQUENCE SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Blank	4D28001-BLK1	042814-003	04/28/14 11:15
LCS	4D28001-BS1	042814-002	04/28/14 11:17

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_011

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS Dup	4D16012-BSD1	041614-003	04/16/14 16:02
LCS	4D16012-BS1	041614-002	04/16/14 16:02
Blank	4D16012-BLK1	041614-001	04/16/14 16:02

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	3L35106	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	3L35106-CAL1	121013-007	12/10/13 16:44
Cal Standard	3L35106-CAL2	121013-008	12/10/13 17:02
Cal Standard	3L35106-CAL3	121013-009	12/10/13 17:19
Cal Standard	3L35106-CAL4	121013-010	12/10/13 17:37
Cal Standard	3L35106-CAL5	121013-011	12/10/13 17:54
Cal Standard	3L35106-CAL6	121013-012	12/10/13 18:11
Cal Standard	3L35106-CAL7	121013-013	12/10/13 18:29
Cal Standard	3L35106-CAL8	121013-014	12/10/13 18:46
Initial Cal Check	3L35106-ICV1	121013-015	12/10/13 19:04
Initial Cal Blank	3L35106-ICB1	121013-016	12/10/13 19:21

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11312	Instrument:	WC-IC
Calibration:	3351002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4D11312-CCV1	041714-003	04/17/14 16:25
Calibration Blank	4D11312-CCB1	041714-004	04/17/14 16:42
Instrument RL Check	4D11312-CRL1	041714-005	04/17/14 17:00
Instrument RL Check	4D11312-CRL2	041714-006	04/17/14 17:17
Instrument RL Check	4D11312-CRL3	041714-007	04/17/14 17:35
Blank	4D17010-BLK1	041714-008	04/17/14 17:52
LCS	4D17010-BS1	041714-009	04/17/14 18:09
Calibration Check	4D11312-CCV2	041714-023	04/17/14 22:13
Calibration Blank	4D11312-CCB2	041714-024	04/17/14 22:31
ST105-30035	1404108-01	041714-029	04/17/14 23:58
ST105-30044	1404108-03	041714-030	04/18/14 00:15
ST105-30046	1404108-05	041714-031	04/18/14 00:32
Calibration Check	4D11312-CCV3	041714-036	04/18/14 02:00
Calibration Blank	4D11312-CCB3	041714-037	04/18/14 02:17

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11809	Instrument:	WC-Lachat
Calibration:	4118004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11809-CAL1	M_4-28-2014_01-13-35PM-00	04/28/14 13:15
Cal Standard	4D11809-CAL2	M_4-28-2014_01-13-35PM-00	04/28/14 13:17
Cal Standard	4D11809-CAL3	M_4-28-2014_01-13-35PM-00	04/28/14 13:18
Cal Standard	4D11809-CAL4	M_4-28-2014_01-13-35PM-00	04/28/14 13:20
Cal Standard	4D11809-CAL5	M_4-28-2014_01-13-35PM-00	04/28/14 13:21
Cal Standard	4D11809-CAL6	M_4-28-2014_01-13-35PM-00	04/28/14 13:22
Cal Standard	4D11809-CAL7	M_4-28-2014_01-13-35PM-00	04/28/14 13:24
Cal Standard	4D11809-CAL8	M_4-28-2014_01-13-35PM-00	04/28/14 13:25
Initial Cal Check	4D11809-ICV1	M_4-28-2014_01-13-35PM-00	04/28/14 13:27
Initial Cal Blank	4D11809-ICB1	M_4-28-2014_01-13-35PM-01	04/28/14 13:28
Blank	4D28013-BLK1	M_4-28-2014_01-13-35PM-01	04/28/14 13:31
LCS	4D28013-BS1	M_4-28-2014_01-13-35PM-01	04/28/14 13:33
Calibration Check	4D11809-CCV1	M_4-28-2014_01-13-35PM-02	04/28/14 13:51
Calibration Blank	4D11809-CCB1	M_4-28-2014_01-13-35PM-02	04/28/14 13:53
ST105-30035	1404108-01	M_4-28-2014_01-13-35PM-03	04/28/14 14:03
Calibration Check	4D11809-CCV2	M_4-28-2014_01-13-35PM-03	04/28/14 14:09
Calibration Blank	4D11809-CCB2	M_4-28-2014_01-13-35PM-03	04/28/14 14:10
ST105-30046	1404108-05RE1	M_4-28-2014_01-13-35PM-04	04/28/14 14:22
Calibration Check	4D11809-CCV3	M_4-28-2014_01-13-35PM-04	04/28/14 14:23
Calibration Blank	4D11809-CCB3	M_4-28-2014_01-13-35PM-04	04/28/14 14:25
Calibration Check	4D11809-CCV4	M_4-28-2014_02-36-08PM-00	04/28/14 14:38
Calibration Blank	4D11809-CCB4	M_4-28-2014_02-36-08PM-00	04/28/14 14:39
ST105-30044	1404108-03RE2	M_4-28-2014_02-36-08PM-00	04/28/14 14:41
Calibration Check	4D11809-CCV5	M_4-28-2014_02-36-08PM-00	04/28/14 14:42
Calibration Blank	4D11809-CCB5	M_4-28-2014_02-36-08PM-00	04/28/14 14:44

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11915	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11915-CAL1		02/14/14 16:20
Cal Standard	4D11915-CAL2		02/14/14 16:42
Cal Standard	4D11915-CAL3		02/14/14 17:03
Cal Standard	4D11915-CAL4		02/14/14 17:25
Cal Standard	4D11915-CAL5		02/14/14 17:48
Cal Standard	4D11915-CAL6		02/14/14 18:13
Cal Standard	4D11915-CAL7		02/14/14 18:42
Cal Standard	4D11915-CAL8		02/14/14 19:18

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D12017	Instrument:	WC-Lachat
Calibration:	4120006		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D12017-CAL1	M_4-30-2014_02-58-20PM-00	04/30/14 15:00
Cal Standard	4D12017-CAL2	M_4-30-2014_02-58-20PM-00	04/30/14 15:01
Cal Standard	4D12017-CAL3	M_4-30-2014_02-58-20PM-00	04/30/14 15:02
Cal Standard	4D12017-CAL4	M_4-30-2014_02-58-20PM-00	04/30/14 15:03
Cal Standard	4D12017-CAL5	M_4-30-2014_02-58-20PM-00	04/30/14 15:04
Cal Standard	4D12017-CAL6	M_4-30-2014_02-58-20PM-00	04/30/14 15:05
Cal Standard	4D12017-CAL7	M_4-30-2014_02-58-20PM-00	04/30/14 15:06
Initial Cal Check	4D12017-ICV1	M_4-30-2014_02-58-20PM-00	04/30/14 15:08
Initial Cal Blank	4D12017-ICB1	M_4-30-2014_02-58-20PM-00	04/30/14 15:09
Blank	4D29011-BLK1	M_4-30-2014_02-58-20PM-01	04/30/14 15:10
LCS	4D29011-BS1	M_4-30-2014_02-58-20PM-01	04/30/14 15:11
LCS Dup	4D29011-BSD1	M_4-30-2014_02-58-20PM-01	04/30/14 15:12
ST105-30035	1404108-01	M_4-30-2014_02-58-20PM-01	04/30/14 15:13
ST105-30044	1404108-03	M_4-30-2014_02-58-20PM-01	04/30/14 15:14
ST105-30046	1404108-05	M_4-30-2014_02-58-20PM-01	04/30/14 15:15
Calibration Check	4D12017-CCV1	M_4-30-2014_02-58-20PM-02	04/30/14 15:23
Calibration Blank	4D12017-CCB1	M_4-30-2014_02-58-20PM-02	04/30/14 15:24

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12211	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4E12211-CCV1	5-01-14Q-001	05/01/14 16:22
Calibration Blank	4E12211-CCB1	5-01-14Q-002	05/01/14 16:45
Blank	4E01024-BLK1	5-01-14Q-003	05/01/14 17:08
LCS	4E01024-BS1	5-01-14Q-004	05/01/14 17:35
ST105-30035	1404108-01	5-01-14Q-005	05/01/14 18:00
ST105-30035	1404108-02	5-01-14Q-006	05/01/14 18:23
ST105-30044	1404108-03	5-01-14Q-007	05/01/14 18:46
ST105-30044	1404108-04	5-01-14Q-008	05/01/14 19:09
ST105-30046	1404108-05	5-01-14Q-009	05/01/14 19:32
ST105-30046	1404108-06	5-01-14Q-010	05/01/14 19:55
Calibration Check	4E12211-CCV2	5-01-14Q-017	05/01/14 23:28
Calibration Blank	4E12211-CCB2	5-01-14Q-018	05/01/14 23:53

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12216	Instrument:	WC-Lachat
Calibration:	4122004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E12216-CAL1	)M_5-2-2014_04-26-15PM-00	05/02/14 16:27
Cal Standard	4E12216-CAL2	)M_5-2-2014_04-26-15PM-00	05/02/14 16:28
Cal Standard	4E12216-CAL3	)M_5-2-2014_04-26-15PM-00	05/02/14 16:29
Cal Standard	4E12216-CAL4	)M_5-2-2014_04-26-15PM-00	05/02/14 16:30
Cal Standard	4E12216-CAL5	)M_5-2-2014_04-26-15PM-00	05/02/14 16:31
Cal Standard	4E12216-CAL6	)M_5-2-2014_04-26-15PM-00	05/02/14 16:32
Cal Standard	4E12216-CAL7	)M_5-2-2014_04-26-15PM-00	05/02/14 16:33
Cal Standard	4E12216-CAL8	)M_5-2-2014_04-26-15PM-00	05/02/14 16:34
Initial Cal Check	4E12216-ICV1	)M_5-2-2014_04-26-15PM-00	05/02/14 16:35
Initial Cal Blank	4E12216-ICB1	)M_5-2-2014_04-26-15PM-01	05/02/14 16:36
Calibration Check	4E12216-CCV2	)M_5-2-2014_04-26-15PM-03	05/02/14 16:56
Calibration Blank	4E12216-CCB2	)M_5-2-2014_04-26-15PM-03	05/02/14 16:57
Blank	4E01011-BLK1	)M_5-2-2014_04-26-15PM-03	05/02/14 16:57
LCS	4E01011-BS1	)M_5-2-2014_04-26-15PM-03	05/02/14 16:58
ST105-30035	1404108-01	)M_5-2-2014_04-26-15PM-03	05/02/14 16:59
ST105-30044	1404108-03	)M_5-2-2014_04-26-15PM-03	05/02/14 17:00
ST105-30046	1404108-05	)M_5-2-2014_04-26-15PM-03	05/02/14 17:01
Calibration Check	4E12216-CCV3	)M_5-2-2014_04-26-15PM-04	05/02/14 17:09
Calibration Blank	4E12216-CCB3	)M_5-2-2014_04-26-15PM-04	05/02/14 17:10

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	813540	0.1	853290	0.25	905720	0.5	956456	2.5	1018020	5	1028788
Nitrite as N	0.05	965740	0.1	944100	0.25	912864	0.5	952380	2.5	889644.8	5	849190.4
Bromide	0.126	134238.1	0.252	137654.8	0.63	145555.6	1.26	160582.5	6.3	175999.5	12.6	179760.6
Chloride	0.5	386028	1	399602	2.5	397485.6	5	405301.8	25	410491.2	50	411932.8
Fluoride	0.05	638320	0.1	659420	0.25	670580	0.5	671448	2.5	665322.8	5	630216.2
Sulfate as SO4	0.5	365110	1	353321	2.5	332900	5	313738.2	25	308262.3	50	308796.8

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	3351002	Instrument:	WC-IC
Matrix:	Water	Calibration Dates:	12/10/13 16:44 12/10/13 18:46

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	1017034	25	1032948								
Nitrite as N	12.5	743872.1	25	627085.2								
Bromide	31.5	178666.7	63	182048.9								
Chloride	125	404190.3	250	404326.4								
Fluoride	12.5	~~559804.6~~	25	~~506008.4~~								
Sulfate as SO4	125	300572.3	250	300597.6								

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011		
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)		
Calibration:	3351002	Instrument:	WC-IC		
Matrix:	Water	Calibration Dates:	12/10/13 16:44	12/10/13 18:46	

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	953224.6	9.050688	9.2925	2.89029				*
Nitrite as N	860609.6	13.77032	5.41	1.226206				*
Bromide	161813.3	12.41877	7.8425	1.187843	0.9998959		0.995	
Chloride	402419.8	2.039875	4.46125	0.5546317	0.9999818		0.995	
Fluoride	655884.5	2.664565	3.07	2.432736E-02	0.9991903		0.995	
Sulfate as SO4	322912.3	7.675524	5.99	2.923035	0.9999575		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4118004	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/28/14 13:15	4/28/14 13:25

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	2	3.7975	1.6	3.874375	1.2	3.924167	0.8	4	0.4	4.21	0.2	4.321

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4118004	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/28/14 13:15	4/28/14 13:25

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	0.1	4.204	0	0								

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4118004	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/28/14 13:15	4/28/14 13:25

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate/Nitrite as N	3.54138	40.7369	32.1125	1.451058	0.9995354		0.99	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119004	Instrument:	WC-TOC1	
Matrix:	Water	Calibration Dates:	2/14/14 16:20	2/14/14 19:18

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Organic Carbon	0	0	1	19.74	2.5	15.292	5	13.902	10	13.68	25	13.992
Total Organic Carbon	0	0	1	19.74	2.5	15.292	5	13.902	10	13.68	25	13.992

INITIAL CALIBRATION DATA (Continued)

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4119004	Instrument:	WC-TOC1
Matrix:	Water	Calibration Dates:	2/14/14 16:20 2/14/14 19:18

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Organic Carbon	50	14.424	100	15.05								
Total Organic Carbon	50	14.424	100	15.05								

INITIAL CALIBRATION DATA (Continued)

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119004	Instrument:	WC-TOC1	
Matrix:	Water	Calibration Dates:	2/14/14 16:20	2/14/14 19:18

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Organic Carbon	13.26	43.00536			0.9992826		0.995	
Total Organic Carbon	13.26	43.00536			0.9992826		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4120006	Instrument:	WC-Lachat
Matrix:	Water	Calibration Dates:	4/30/14 15:00 4/30/14 15:06

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	20	0.2027	10	~~0.2734~~	8	~~0.313875~~	5	0.3526	2	0.7185	1	1.339

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4120006	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/30/14 15:00	4/30/14 15:06

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	0	0										

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4120006	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	4/30/14 15:00	4/30/14 15:06

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Kjeldahl Nitrogen	0.52256	100.7732	47.092	0.7284281	0.9976646		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4122004	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/2/14 16:27	5/2/14 16:34

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	2.645	8	2.80125	2	2.934	1	2.982	0.4	2.99	0.2	2.9665

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4122004	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/2/14 16:27	5/2/14 16:34

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	3.003	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_011	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4122004	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/2/14 16:27	5/2/14 16:34

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.540219	40.69469	31.28875	1.633293	0.9986695		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4D16012

Empirical Laboratories, LLC

Printed: 5/3/2014 12:42:34PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404085-01	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404101-01	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404108-01	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404108-03	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404108-05	A	WC_TOTAL_DISS_SOLIDS_25	04/16/2014	100	100					NA	
1404110-02	F	WC_TOTAL_DISS_SOLIDS_25	04/17/2014	100	100					NA	
1404110-04	F	WC_TOTAL_DISS_SOLIDS_25	04/17/2014	100	100					NA	
1404110-05	F	WC_TOTAL_DISS_SOLIDS_25	04/17/2014	100	100					NA	
4D16012-BLK1		QC	04/16/2014	100	100					NA	
4D16012-BS1		QC	04/16/2014	20	20	14B0390		20000		NA	
4D16012-BSD1		QC	04/16/2014	20	20	14B0390		20000		NA	

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

4D17010

Empirical Laboratories, LLC

Printed: 4/24/2014 4:40:46PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404016-01RE1	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	RR for Br
1404016-03RE1	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	RR for Br
1404016-05RE1	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	RR for Br
1404108-01	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	see versions
1404108-03	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	see versions
1404108-05	A	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	see versions
1404111-01	I	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	Cl, SO4
1404111-03	I	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	Cl, SO4
1404111-05	I	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	Cl, SO4
1404111-07	I	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	Cl, SO4
1404114-08	A	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	see versions
1404116-01	F	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	
1404116-01	F	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	
1404116-02	F	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	
1404116-02	F	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	
1404116-03	R	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	Added for BatchQC in: 4D17010
1404116-03	R	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	MS/MSD
1404116-03	R	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	MS/MSD
1404116-04	F	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	
1404116-04	F	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	
1404116-05	F	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	
1404116-05	F	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	

PREPARATION BENCH SHEET

4D17010

Empirical Laboratories, LLC

Printed: 4/24/2014 4:40:46PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404117-01	R	WC_ANIONS_300.0 (Short Hol	04/17/2014	5	5					NA	MS/MSD
1404117-01	R	WC_ANIONS_9056A (Regular)	04/17/2014	5	5					NA	Added for BatchQC in: 4D17010
1404117-01	R	WC_ANIONS_300.0 (Regular)	04/17/2014	5	5					NA	MS/MSD
4D17010-BLK1		QC	04/17/2014	5	5					NA	
4D17010-BS1		QC	04/17/2014	5	5	14D0348		5000		NA	
4D17010-DUP1		QC	04/17/2014	5	5		1404116-03			NA	
4D17010-DUP2		QC	04/17/2014	5	5		1404117-01			NA	
4D17010-MS1		QC	04/17/2014	22.5	25	14C0398	1404116-03	2500		NA	
4D17010-MS2		QC	04/17/2014	22.5	25	14C0398	1404117-01	2500		NA	
4D17010-MSD1		QC	04/17/2014	22.5	25	14C0398	1404116-03	2500		NA	
4D17010-MSD2		QC	04/17/2014	22.5	25	14C0398	1404117-01	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D28001

Empirical Laboratories, LLC

Printed: 5/7/2014 9:56:32AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404108-01	A	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404108-03	A	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404108-05	A	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404110-02	F	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404110-04	F	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404110-05	F	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404111-01	I	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	carb/bicarb
1404111-03	I	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	carb/bicarb
1404111-05	I	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	carb/bicarb
1404111-07	I	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	carb/bicarb
1404119-02	D	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404119-05	D	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404119-07	D	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404128-01	I	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	carb/bicarb
1404128-07	AA	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	MS/MSD; carb/bicarb
1404128-09	I	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	carb/bicarb
1404128-11	I	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	carb/bicarb
1404141-01	P	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	MS/MSD
1404141-02	F	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
1404141-03	F	WC_ALKALINITY_2320B	04/28/2014	25	25					NA	
4D28001-BLK1		QC	04/28/2014	25	25					NA	
4D28001-BS1		QC	04/28/2014	5	25	13L0375		5000		NA	

PREPARATION BENCH SHEET

4D28001

Empirical Laboratories, LLC

Printed: 5/7/2014 9:56:32AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4D28001-MS1		QC	04/28/2014	22.5	25	13L0375	1404128-07	2500		NA	
4D28001-MS2		QC	04/28/2014	22.5	25	13L0375	1404141-01	2500		NA	
4D28001-MSD1		QC	04/28/2014	22.5	25	13L0375	1404128-07	2500		NA	
4D28001-MSD2		QC	04/28/2014	22.5	25	13L0375	1404141-01	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4D28013

Empirical Laboratories, LLC

Printed: 5/3/2014 11:47:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404065-01	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404065-01RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404066-01	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404066-01RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404066-03	D	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	MS/MSD
1404066-03RE1	D	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	MS/MSD
1404068-01	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404068-03	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404068-05	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-01	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-03	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-05	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-07	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-09	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404084-11	AD	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	MS/MSD
1404084-13	J	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404085-01	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404085-01RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404108-01	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404108-03	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404108-03RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404108-03RE2	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB

PREPARATION BENCH SHEET

4D28013

Empirical Laboratories, LLC

Printed: 5/3/2014 11:47:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404108-05	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
1404108-05RE1	C	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	Added 4/28/2014 by RGB
1404160-01	A	WC_NO3NO2_N_353.2	04/28/2014	4	20					NA	
4D28013-BLK1		QC	04/28/2014	20	20					NA	
4D28013-BS1		QC	04/28/2014	2	20	14A0409		2000		NA	
4D28013-MS1		QC	04/28/2014	4	20	14B0358	1404066-03	500		NA	
4D28013-MS2		QC	04/28/2014	4	20	14B0358	1404084-11	500		NA	
4D28013-MS3		QC	04/28/2014	0.8	20	14B0358	1404066-03RE1	500		NA	
4D28013-MSD1		QC	04/28/2014	4	20	14B0358	1404066-03	500		NA	
4D28013-MSD2		QC	04/28/2014	4	20	14B0358	1404084-11	500		NA	
4D28013-MSD3		QC	04/28/2014	0.8	20	14B0358	1404066-03RE1	500		NA	

Reagents Used:

Standard	Description
14A0570	NO3/NO2 Carrier (Acid DI)
14C0133	NO2/NO3 Buffer
14D0740	NO2/NO3 Sulfanilimide Color Reagent

PREPARATION BENCH SHEET

4D29011

Empirical Laboratories, LLC

Printed: 5/7/2014 12:55:54PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404108-01	B	WC_TKN_351.2	04/29/2014	20	20					NA	Outside DoD cert
1404108-03	B	WC_TKN_351.2	04/29/2014	20	20					NA	Outside DoD cert
1404108-05	B	WC_TKN_351.2	04/29/2014	20	20					NA	Outside DoD cert
1404114-01	A	WC_TKN_351.2	04/29/2014	4	20					NA	
1404114-03	A	WC_TKN_351.2	04/29/2014	20	20					NA	
1404115-03	A	WC_TKN_351.2	04/29/2014	4	20					NA	
1404160-05	A	WC_TKN_351.2	04/29/2014	2	20					NA	
1404184-01	C	WC_TKN_351.2	04/29/2014	20	20					NA	
1404184-03	C	WC_TKN_351.2	04/29/2014	20	20					NA	
4D29011-BLK1		QC	04/29/2014	20	20					NA	
4D29011-BS1		QC	04/29/2014	20	20	14A0452		20000		NA	
4D29011-BSD1		QC	04/29/2014	20	20	14A0452		20000		NA	

Reagents Used:

Standard	Description
14D0549	TKN Buffer
14D0663	TKN 0.8M NaOH
14D0724	TKN Digestion Soln
14D0899	TKN Carrier
14D0952	TKN Salicylate Nitroprusside Reagent
14D0954	TKN Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4E01011

Empirical Laboratories, LLC

Printed: 5/7/2014 12:57:06PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404108-01	B	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404108-03	B	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404108-05	B	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404111-01	J	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404111-03	J	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404111-05	J	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404111-07	J	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404143-01	A	WC_AMMONIA_PHENATE_45	05/01/2014	10	100					NA	
1404143-03	A	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404143-04	A	WC_AMMONIA_PHENATE_45	05/01/2014	10	100					NA	
1404156-01	A	WC_AMMONIA_PHENATE_45	05/01/2014	10	100					NA	
1404156-03	A	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404156-07	A	WC_AMMONIA_PHENATE_45	05/01/2014	10	100					NA	
1404160-01	A	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
1404160-03	B	WC_AMMONIA_PHENATE_45	05/01/2014	10	100					NA	
1404192-01	B	WC_AMMONIA_PHENATE_45	05/01/2014	100	100					NA	
4E01011-BLK1		QC	05/01/2014	100	100					NA	
4E01011-BS1		QC	05/01/2014	100	100	14D0086		100000		NA	

PREPARATION BENCH SHEET

4E01011

Empirical Laboratories, LLC

Printed: 5/7/2014 12:57:06PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0477	1N H2SO4
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14D0092	Borate Buffer
14D0364	NH3 Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14D0366	0.04N H2SO4 FOR NH3 simpledist. distillation
14E0040	0.04N H2SO4 FOR NH3 simpledist. distillation
14E0073	NH3 Sodium Phenolate Reagent
14E0074	NH3 Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4E01024

Empirical Laboratories, LLC

Printed: 5/7/2014 12:58:15PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404108-01	C	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404108-02	A	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	
1404108-03	C	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404108-04	A	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	
1404108-05	C	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404108-06	A	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	
1404119-02	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404119-05	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404119-05RE1	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	Added 5/2/2014 by RGB
1404119-07	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404119-07RE1	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	Added 5/2/2014 by RGB
1404142-01	U	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	Added for BatchQC in: 4E01024
1404142-01	U	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	MS/MSD
1404142-02	G	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404142-03	G	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404173-01	H	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404173-02	H	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404173-03	I	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404173-04	V	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	Added for BatchQC in: 4E01024
1404173-04	V	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	MS/MSD
1404173-05	I	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404205-01	C	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	

Kirtlandecos_011

PREPARATION BENCH SHEET

4E01024

Empirical Laboratories, LLC

Printed: 5/7/2014 12:58:15PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404205-02	A	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	Filtered
4E01024-BLK1		QC	05/01/2014	40	40					NA	
4E01024-BS1		QC	05/01/2014	40	40	14D0680		40000		NA	
4E01024-MS1		QC	05/01/2014	40	40	13F0271	1404142-01	600		NA	
4E01024-MS2		QC	05/01/2014	40	40	13F0271	1404173-04	600		NA	
4E01024-MSD1		QC	05/01/2014	40	40	13F0271	1404142-01	600		NA	
4E01024-MSD2		QC	05/01/2014	40	40	13F0271	1404173-04	600		NA	

Reagents Used:

Standard	Description
14D0319	TOC Phosphoric Acid Reagent
14D0959	TOC PERSULFATE REAGENT

ANALYTICAL DATA PACKAGE
SDG # KIRTLANDECOS_014

PROJECT NAME: KIRTLAND AFB (ECOS)
PROJECT LOCATION: ALBUQUERQUE, NEW MEXICO

SUBMITTAL TO:
Susan Huang
SHAW E&I, Inc.
4005 Port Chicago Highway
Concord, CA 94520

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Marianne Walker
Tel (615)345-1115
Fax (866)417-0548
Email: mwalker@empirlabs.com

Original Report Date: May 27, 2014
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 245

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

Table of Contents

#	Description	Page #
1	Cover Page	1
2	Table of Contents	2
3	Case Narrative	3
4	Sample Receipt Information Chain of Custody Forms Sample Receipt Confirmations WorkOrder Summary Sample Delivery Group (SDG) Sheets	9
5	Data for SW6010C Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	20
6	Data for Wet Chemistry Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	64

Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. No samples in this SDG were subcontracted.

The following issues were discovered with the COC and/or samples upon log-in:

1. The client requested filtering for sample ST105-3029 5/1/14 @ 1315, the container received was preserved with H2SO4.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6010C:
No anomalies or deviations are noted.

Wet Chemistry:
The following compounds are qualified with an M to indicate that the DL, LOD, and LOQ were raised:
TKN for 1404205-01, 1405013-01, -03, -05, -07, and -09; note - the TKN results are suppressed with negative concentrations more negative than the LOQ. A matrix spike/matrix spike duplicate recovered at 39.5 and 33.0% which also indicates a negative bias. The detection limits have been increased due to this negative bias.

The following matrix spikes exceeded criteria:
4E08007-MS1/MSD1 (1405013-09RE1) with a negative bias for TKN

The following batch spikes exceeded criteria:
4E08007-BSD1 with a positive bias for TKN; note – the associated batch spike is within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 05/13/2014)

DoD ELAP, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2014

State of Georgia, Environmental Protection Agency – NELAP
- Expires: 06/30/2014

State of Illinois, Environmental Protection Agency – NELAP, Certificate No.: 003300
- Groundwater
- Solid and Hazardous Waste
- Expires: 09/13/2014

State of Kentucky Department of Environmental Protection – NELAP, Certificate No.: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Nevada, Department of Conservation and Natural Resources – NELAP, Certificate No.: TN000042013-1
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

State of New Jersey Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2014

State of North Carolina, Department of Environment and Natural Resources - Certificate No.: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of North Dakota, Department of Health – NELAP, Certificate No.: R-204
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Texas, Commission on Environmental Quality – NELAP, Certificate No.: T104704307-14-10
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of Utah, Department of Health – NELAP, Certificate No.: TN0042013-5
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

Commonwealth of Virginia, Department of General Services – VELAP, Certificate No.: 2633 – Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2014

State of Washington, Department of Ecology – NELAP, Lab ID: C934-14
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2015

Sample Receipt Information

~~140402~~ 1404205

JTG

Shaw® Shaw E & I

FS003.1_0

Ref. Document # 150577-TSA2

Page 1 of 1

Form 3. Shaw E & I Chain of Custody Form

Project Number: 150577

Project Name / Location: ECOS

Purchase Order #: PO 1101623

Shipment Date: 4/29/14

Waybill/Airbill Number: 5651 19371301

Lab Destination: Empirical Lab Inc.

Lab Contact Name / ph. #: ~~PO 1101623~~ TN Marianna Walker

Susan Huang

Project Contact: 925 288 2099 (Name & phone #)

Send Report To: Susan Huang

Phone/Fax Number:

Address: 4005 Port Chicago Highway

City: Concord CA 94520

Sampler's Name(s): Tim Nager

Sample ID Number	Sample Description	Collection Information Date	Time	G/C	Matrix	# of containers	Container type	Preservative HCL	NaOH	HNO_3	H_2SO_4	Ice		Analyses Requested: Bromide, chloride, fluoride, sulfate by EPA 300	Alkalinity by SM2320B	TDS by SM2540C	CA Hg LVL, Fe, Hg by SW846 6010B	TKN by EPA 351.2, Nitrate + Nitrite by EPA 353.2	Ammonia by SM4500 NH3	Total Organic Carbon by SM5310C	Dissolved Organic Carbon by SM5310C		Turn Around Time Requested
01 ST105-30047	~~KATB~~ TSA-2-GW-ST105-30047-REG	4/28/14	1529	C	GW	1	HDPE					X		X			X						
"	"	"	"	"	"	1	"			X							X						
"	"	"	"	"	"	1	"				X							X					
"	"	"	"	"	"	1	"				X									X			
02 "	"	"	"	"	"	1	"				X										X		

Special Instructions:

QC/Data Package Level Required: I II III IV/Project Specific:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
TN Nager/Shaw	4/29/14	1600	[signature]	4/30/14	0850
			[signature]	4/30/14	0850

G/C Codes

C = Composite G = Grab

Matrix Codes

DW = Drinking Water SO = Soil

GW = Ground Water SL = Sludge

WW = Waste Water CP = Chip Samples

SW = Surface Water WP = Wipe Samples

LIQ = Other Liquid SOL = Other Solid

AS = Air Sample SED = Sediment

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 04/30/14 0850 Workorder# 1404205

1. Tracking # 1301 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 1.0 °C + *correction factor (+0.1)* = 1.1 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

   If yes, how many and where: 2, front + back

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES NO and Intact YES NO NA

   Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

    b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (initial) TH

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

    b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) TH

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) TH

I certify that I attached a label with the unique LIMS number to each container (initial) TH

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) JTG

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO #

Additional Details:

ST105 1405013

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-622

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 01 MAY 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: ~~Jennifer Chandler~~ Marianne Walker
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119371389

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:

Non-hazard ✓ Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:

Return to Client Disposal by Lab ✓ Archive (mos.)

1. Relinquished By (Signature/Affiliation) Shaw Date: 5/1/14 Time: 1600
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Date: 5/2/14 Time: 0840

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30029	GCMP-GW-ST105-30029-REG	01 MAY 2014	13:15	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30029	GCMP-GW-ST105-30029-REG	01 MAY 2014	13:15	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30029	GCMP-GW-ST105-30029-REG	01 MAY 2014	13:15	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30029	GCMP-GW-ST105-30029-REG	01 MAY 2014	13:15	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
02	ST105-30029	GCMP-GW-ST105-30029-REG	01 MAY 2014	13:15	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C *Filter in Lab			N		

KirtlandECOS_014

12

1405013

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-622

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
04	ST105-30043	KAFB0622-GW-ST105-30043-REG	01 MAY 2014	10:51	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30043	KAFB0622-GW-ST105-30043-REG	01 MAY 2014	10:51	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30043	KAFB0622-GW-ST105-30043-REG	01 MAY 2014	10:51	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30043	KAFB0622-GW-ST105-30043-REG	01 MAY 2014	10:51	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30043	KAFB0622-GW-ST105-30043-REG	01 MAY 2014	10:51	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
05	ST105-30048	TJA-4-GW-ST105-30048-REG	30 APR 2014	12:18	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	~~ST105-30048~~	~~TJA-4-GW-ST105-30048-REG~~	~~30 APR 2014~~	~~12:18~~	~~250 mL HDPE~~	~~1~~	~~None except cool to 4 C~~	~~Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C~~			~~N~~		
	ST105-30048	TJA-4-GW-ST105-30048-REG	30 APR 2014	12:18	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30048	TJA-4-GW-ST105-30048-REG	30 APR 2014	12:18	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
06	ST105-30048	TJA-4-GW-ST105-30048-REG	30 APR 2014	12:18	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
07	ST105-30049	TJA-4-GW-ST105-30049-FD	30 APR 2014	12:18	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	~~ST105-30049~~	~~TJA-4-GW-ST105-30049-FD~~	~~30 APR 2014~~	~~12:18~~	~~250 mL HDPE~~	~~1~~	~~None except cool to 4 C~~	~~Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C~~			~~N~~		
08	ST105-30049	TJA-4-GW-ST105-30049-FD	30 APR 2014	12:18	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
07	ST105-30049	TJA-4-GW-ST105-30049-FD	30 APR 2014	12:18	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30049	TJA-4-GW-ST105-30049-FD	30 APR 2014	12:18	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
09	ST105-30050	TJA-5-GW-ST105-30050-REG	30 APR 2014	15:11	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30050	TJA-5-GW-ST105-30050-REG	30 APR 2014	15:11	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30050	TJA-5-GW-ST105-30050-REG	30 APR 2014	15:11	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	~~ST105-30050~~	~~TJA-5-GW-ST105-30050-REG~~	~~30 APR 2014~~	~~15:11~~	~~250 mL HDPE~~	~~1~~	~~H2SO4<pH 2~~	~~Total Organic Carbon by SM 5310C~~			~~N~~		
10	ST105-30050	TJA-5-GW-ST105-30050-REG	30 APR 2014	15:11	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 05/02/14 0840 Workorder# 1405013

1. Tracking # 1389 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 1.8 °C + *correction factor (+0.1)* = 1.9 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

   If yes, how many and where: 2. front + back

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES NO and Intact YES NO NA

   Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

    b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # —

I certify that I unloaded the cooler and answered questions 7-14 (initial) JTG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

    b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JTG

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JTG

I certify that I attached a label with the unique LIMS number to each container (initial) JTG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) _____

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO # _____

Additional Details:

WORK ORDER

Printed: 5/5/2014 7:14:44PM

1404205

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland_ECOS

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 05/21/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Tiana L. Hutchings
Date Received: 04/30/2014 08:50
Logged In By: Tiana L. Hutchings
Date Logged In: 04/30/2014 11:31

Samples Received at: **1.1°C**
Custody Seals Yes Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confirme Yes

Method	Test Code	Due	TAT	Expires	Comments
1404205-01 ST105-30047 [Water] Sampled 04/28/2014 15:29 Mountain 'Client Sample'					
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/16/2014 14:00	15	05/05/2014 16:29	
SW9060A	WC_TOC_9060A_QUAD	05/16/2014 14:00	15	05/26/2014 16:29	
E351.2	WC_TKN_351.2	05/16/2014 14:00	15	05/26/2014 16:29	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	05/16/2014 14:00	15	05/26/2014 16:29	
SW9056A	WC_ANIONS_9056A (Regular)	05/16/2014 14:00	15	05/26/2014 16:29	see versions
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/16/2014 14:00	15	05/26/2014 16:29	
SM2320B	WC_ALKALINITY_2320B	05/16/2014 14:00	15	05/12/2014 16:29	
SW6010C	MET_ICP_LOW6010C_FULL	05/16/2014 14:00	15	10/25/2014 16:29	see versions
1404205-02 ST105-30047 [Water] Sampled 04/28/2014 15:29 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/16/2014 14:00	15	05/26/2014 16:29	Filtered

Reviewed By

Date

WORK ORDER

Printed: 5/5/2014 7:15:56PM

1405013

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 05/26/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross
Date Received: 05/02/2014 08:40
Logged In By: Joshua T. Gross
Date Logged In: 05/02/2014 14:56

Samples Received at: **1.9°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1405013-01 ST105-30029 [Water] Sampled 05/01/2014 13:15 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	05/20/2014 14:00	15	05/15/2014 14:15	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/20/2014 14:00	15	05/29/2014 14:15	
SW9056A	WC_ANIONS_9056A (Regular)	05/20/2014 14:00	15	05/29/2014 14:15	see versions
E353.2	WC_NO3NO2_N_353.2	05/20/2014 14:00	15	05/29/2014 14:15	
E351.2	WC_TKN_351.2	05/20/2014 14:00	15	05/29/2014 14:15	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	05/20/2014 14:00	15	05/29/2014 14:15	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/20/2014 14:00	15	05/08/2014 14:15	
SW6010C	MET_ICP_LOW6010C_FULL	05/20/2014 14:00	15	10/28/2014 14:15	see versions
1405013-02 ST105-30029 [Water] Sampled 05/01/2014 13:15 Mountain 'Client Sample'					**Filter in Lab**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/20/2014 14:00	15	05/29/2014 14:15	Filter in lab using unpreserved container from -01. Do not filter prese

1405013

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland

Method	Test Code	Due	TAT	Expires	Comments
1405013-03 ST105-30043 [Water] Sampled 05/01/2014 10:51 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	05/20/2014 14:00	15	05/15/2014 11:51	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/20/2014 14:00	15	05/08/2014 11:51	
SW9060A	WC_TOC_9060A_QUAD	05/20/2014 14:00	15	05/29/2014 11:51	
E351.2	WC_TKN_351.2	05/20/2014 14:00	15	05/29/2014 11:51	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	05/20/2014 14:00	15	05/29/2014 11:51	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/20/2014 14:00	15	05/29/2014 11:51	
SW6010C	MET_ICP_LOW6010C_FULL	05/20/2014 14:00	15	10/28/2014 11:51	see versions
SW9056A	WC_ANIONS_9056A (Regular)	05/20/2014 14:00	15	05/29/2014 11:51	see versions
1405013-04 ST105-30043 [Water] Sampled 05/01/2014 13:15 Mountain 'Client Sample'					**Filter in Lab**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/20/2014 14:00	15	05/29/2014 14:15	
1405013-05 ST105-30048 [Water] Sampled 04/30/2014 12:18 Mountain 'Client Sample'					
E351.2	WC_TKN_351.2	05/20/2014 14:00	15	05/28/2014 13:18	Outside DoD cert
SW6010C	MET_ICP_LOW6010C_FULL	05/20/2014 14:00	15	10/27/2014 13:18	see versions
SM2320B	WC_ALKALINITY_2320B	05/20/2014 14:00	15	05/14/2014 13:18	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/20/2014 14:00	15	05/28/2014 13:18	
SW9056A	WC_ANIONS_9056A (Regular)	05/20/2014 14:00	15	05/28/2014 13:18	see versions
SW9060A	WC_TOC_9060A_QUAD	05/20/2014 14:00	15	05/28/2014 13:18	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/20/2014 14:00	15	05/07/2014 13:18	
E353.2	WC_NO3NO2_N_353.2	05/20/2014 14:00	15	05/28/2014 13:18	
1405013-06 ST105-30048 [Water] Sampled 05/01/2014 12:18 Mountain 'Client Sample'					**Filter in Lab**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/20/2014 14:00	15	05/29/2014 13:18	
1405013-07 ST105-30049 [Water] Sampled 04/30/2014 12:18 Mountain 'Field Duplicate'					
E351.2	WC_TKN_351.2	05/20/2014 14:00	15	05/28/2014 13:18	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	05/20/2014 14:00	15	05/28/2014 13:18	
E353.2	WC_NO3NO2_N_353.2	05/20/2014 14:00	15	05/28/2014 13:18	
SW9056A	WC_ANIONS_9056A (Regular)	05/20/2014 14:00	15	05/28/2014 13:18	see versions
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/20/2014 14:00	15	05/28/2014 13:18	
SM2320B	WC_ALKALINITY_2320B	05/20/2014 14:00	15	05/14/2014 13:18	
SW6010C	MET_ICP_LOW6010C_FULL	05/20/2014 14:00	15	10/27/2014 13:18	see versions
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/20/2014 14:00	15	05/07/2014 13:18	

1405013

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland

Method	Test Code	Due	TAT	Expires	Comments
1405013-08 ST105-30049 [Water] Sampled 05/01/2014 12:18 Mountain 'Client Sample'					**Filter in Lab**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/20/2014 14:00	15	05/29/2014 13:18	
1405013-09 ST105-30050 [Water] Sampled 04/30/2014 15:11 Mountain 'Client Sample'					
E353.2	WC_NO3NO2_N_353.2	05/20/2014 14:00	15	05/28/2014 16:11	
E351.2	WC_TKN_351.2	05/20/2014 14:00	15	05/28/2014 16:11	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	05/20/2014 14:00	15	05/28/2014 16:11	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/20/2014 14:00	15	05/07/2014 16:11	
SW6010C	MET_ICP_LOW6010C_FULL	05/20/2014 14:00	15	10/27/2014 16:11	see versions
SM2320B	WC_ALKALINITY_2320B	05/20/2014 14:00	15	05/14/2014 16:11	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/20/2014 14:00	15	05/28/2014 16:11	
SW9056A	WC_ANIONS_9056A (Regular)	05/20/2014 14:00	15	05/28/2014 16:11	see versions
1405013-10 ST105-30050 [Water] Sampled 04/30/2014 15:11 Mountain 'Client Sample'					**Filter in Lab**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/20/2014 14:00	15	05/28/2014 16:11	

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Shaw Environmental, Inc.
PROJECT NAME: Kirtland AFB (ECOS)
SDG #: KirtlandECOS_014

QC LEVEL: Level III
Report Due: 5/21/2014 - 5/23/2014
Client Sample Count: 11

Lab ID	Client ID	Sampled	Received	Matrix	E 351.2	E 353.2	SM 2320B	SM 2540C	SM 4500 NH3BG	SW 6010C	SW 9056A	SW 9060A
1404205-01	ST105-30047	4/28/2014	4/30/2014	Water	X	X	X	X	X	X	X	X
1404205-02	ST105-30047	4/28/2014	4/30/2014	Water								DISS
1405013-01	ST105-30029	5/1/2014	5/2/2014	Water	X	X	X	X	X	X	X	X
1405013-02	ST105-30029	5/1/2014	5/2/2014	Water								DISS
1405013-03	ST105-30043	5/1/2014	5/2/2014	Water	X	X	X	X	X	X	X	X
1405013-04	ST105-30043	5/1/2014	5/2/2014	Water								DISS
1405013-05	ST105-30048	4/30/2014	5/2/2014	Water	X	X	X	X	X	X	X	X
1405013-06	ST105-30048	5/1/2014	5/2/2014	Water								DISS
1405013-07	ST105-30049	4/30/2014	5/2/2014	Water	X	X	X	X	X	X	X	X
1405013-08	ST105-30049	5/1/2014	5/2/2014	Water								DISS
1405013-09	ST105-30050	4/30/2014	5/2/2014	Water	X	X	X	X	X	X	X	X
1405013-10	ST105-30050	4/30/2014	5/2/2014	Water								DISS

Data for SW6010C Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404205-01 [ST105-30047]	4E06002	100.00/25.00	100	25.0	1.00			05/06/14

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405013-01 [ST105-30029]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14
1405013-03 [ST105-30043]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14
1405013-05 [ST105-30048]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14
1405013-07 [ST105-30049]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14
1405013-09 [ST105-30050]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14

ANALYSIS DATA SHEET

ST105-30047

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404205-01
Sampled:	04/28/14 15:29	Received:	04/30/14 08:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**75300**	**250**	500	1250	1		SW6010C	4E06002	05/07/14 15:51
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4E06002	05/07/14 15:51
7439-95-4	Magnesium	**11700**	**250**	750	1250	1		SW6010C	4E06002	05/07/14 15:51
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4E06002	05/07/14 15:51
7440-09-7	Potassium	**1820**	**250**	750	1250	1		SW6010C	4E06002	05/07/14 15:51
7440-23-5	Sodium	**22400**	**250**	750	1250	1		SW6010C	4E06002	05/07/14 15:51

ANALYSIS DATA SHEET

ST105-30029

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-01
Sampled:	05/01/14 13:15	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**34200**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:13
7439-89-6	Iron	**23.3**	**7.50**	15.0	25.0	1	J	SW6010C	4E14023	05/20/14 14:13
7439-95-4	Magnesium	**6120**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:13
7439-96-5	Manganese	**3.00**	**0.750**	1.50	3.75	1	J	SW6010C	4E14023	05/20/14 14:13
7440-09-7	Potassium	**1970**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:13
7440-23-5	Sodium	**21400**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:13

ANALYSIS DATA SHEET

ST105-30043

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-03
Sampled:	05/01/14 10:51	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**43600**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:17
7439-89-6	Iron	**164**	**7.50**	15.0	25.0	1		SW6010C	4E14023	05/20/14 14:17
7439-95-4	Magnesium	**9480**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:17
7439-96-5	Manganese	**5.53**	**0.750**	1.50	3.75	1		SW6010C	4E14023	05/20/14 14:17
7440-09-7	Potassium	**2290**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:17
7440-23-5	Sodium	**32800**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:17

ANALYSIS DATA SHEET

ST105-30048

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-05
Sampled:	04/30/14 12:18	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**64300**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:22
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4E14023	05/20/14 14:22
7439-95-4	Magnesium	**12800**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:22
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4E14023	05/20/14 14:22
7440-09-7	Potassium	**3150**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:22
7440-23-5	Sodium	**24500**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:22

ANALYSIS DATA SHEET

ST105-30049

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-07
Sampled:	04/30/14 12:18	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**65800**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:26
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4E14023	05/20/14 14:26
7439-95-4	Magnesium	**13000**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:26
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4E14023	05/20/14 14:26
7440-09-7	Potassium	**3220**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:26
7440-23-5	Sodium	**25000**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:26

ANALYSIS DATA SHEET

ST105-30050

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-09
Sampled:	04/30/14 15:11	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**79300**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:31
7439-89-6	Iron	**46.0**	**7.50**	15.0	25.0	1		SW6010C	4E14023	05/20/14 14:31
7439-95-4	Magnesium	**14400**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:31
7439-96-5	Manganese	**1.72**	**0.750**	1.50	3.75	1	J	SW6010C	4E14023	05/20/14 14:31
7440-09-7	Potassium	**2000**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:31
7440-23-5	Sodium	**23100**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:31

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4E06002-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4E06002	05/07/14 13:51
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4E06002	05/07/14 13:51
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4E06002	05/07/14 13:51
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4E06002	05/07/14 13:51
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4E06002	05/07/14 13:51
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4E06002	05/07/14 13:51

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E06002-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**560.7**	**250**	500	1250	1	J	SW6010C	4E06002	05/07/14 13:55
7439-89-6	Iron	**19.53**	**7.50**	15.0	25.0	1	J	SW6010C	4E06002	05/07/14 13:55
7439-95-4	Magnesium	**594.8**	**250**	750	1250	1	J	SW6010C	4E06002	05/07/14 13:55
7439-96-5	Manganese	**10.17**	**0.750**	1.50	3.75	1		SW6010C	4E06002	05/07/14 13:55
7440-09-7	Potassium	**538.4**	**250**	750	1250	1	J	SW6010C	4E06002	05/07/14 13:55
7440-23-5	Sodium	**563.3**	**250**	750	1250	1	J	SW6010C	4E06002	05/07/14 13:55

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4E14023-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4E14023	05/20/14 14:03
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4E14023	05/20/14 14:03
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4E14023	05/20/14 14:03
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4E14023	05/20/14 14:03
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4E14023	05/20/14 14:03
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4E14023	05/20/14 14:03

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E14023-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**542.4**	**250**	500	1250	1	J	SW6010C	4E14023	05/20/14 14:07
7439-89-6	Iron	**19.94**	**7.50**	15.0	25.0	1	J	SW6010C	4E14023	05/20/14 14:07
7439-95-4	Magnesium	**561.5**	**250**	750	1250	1	J	SW6010C	4E14023	05/20/14 14:07
7439-96-5	Manganese	**9.756**	**0.750**	1.50	3.75	1		SW6010C	4E14023	05/20/14 14:07
7440-09-7	Potassium	**525.5**	**250**	750	1250	1	J	SW6010C	4E14023	05/20/14 14:07
7440-23-5	Sodium	**545.1**	**250**	750	1250	1	J	SW6010C	4E14023	05/20/14 14:07

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4128001
Sequence: 4E12803

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12803-ICV1	Calcium	50000	50400	101	ug/L	+/- 10.00%
	Iron	10000	10260	103	ug/L	+/- 10.00%
	Magnesium	50000	50790	102	ug/L	+/- 10.00%
	Manganese	1000	1052	105	ug/L	+/- 10.00%
	Potassium	10000	9998	100	ug/L	+/- 10.00%
	Sodium	50000	50330	101	ug/L	+/- 10.00%
4E12803-CCV1	Calcium	50000	50790	102	ug/L	+/- 10.00%
	Iron	10000	10450	104	ug/L	+/- 10.00%
	Magnesium	50000	51320	103	ug/L	+/- 10.00%
	Manganese	1000	1040	104	ug/L	+/- 10.00%
	Potassium	10000	9954	99.5	ug/L	+/- 10.00%
	Sodium	50000	50760	102	ug/L	+/- 10.00%
4E12803-CCV3	Calcium	50000	50550	101	ug/L	+/- 10.00%
	Iron	10000	10600	106	ug/L	+/- 10.00%
	Magnesium	50000	51920	104	ug/L	+/- 10.00%
	Manganese	1000	1065	106	ug/L	+/- 10.00%
	Potassium	10000	9895	99.0	ug/L	+/- 10.00%
	Sodium	50000	50700	101	ug/L	+/- 10.00%
4E12803-CCV4	Calcium	50000	50370	101	ug/L	+/- 10.00%
	Iron	10000	10720	107	ug/L	+/- 10.00%
	Magnesium	50000	52190	104	ug/L	+/- 10.00%
	Manganese	1000	1076	108	ug/L	+/- 10.00%
	Potassium	10000	9864	98.6	ug/L	+/- 10.00%
	Sodium	50000	50680	101	ug/L	+/- 10.00%
4E12803-CCV5	Calcium	50000	49660	99.3	ug/L	+/- 10.00%
	Iron	10000	10690	107	ug/L	+/- 10.00%
	Magnesium	50000	51650	103	ug/L	+/- 10.00%
	Manganese	1000	1067	107	ug/L	+/- 10.00%
	Potassium	10000	9800	98.0	ug/L	+/- 10.00%
	Sodium	50000	50400	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4140002
Sequence: 4E14039

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E14039-ICV1	Calcium	50000	49940	99.9	ug/L	+/- 10.00%
	Iron	10000	10750	108	ug/L	+/- 10.00%
	Magnesium	50000	49840	99.7	ug/L	+/- 10.00%
	Manganese	1000	1069	107	ug/L	+/- 10.00%
	Potassium	10000	10060	101	ug/L	+/- 10.00%
	Sodium	50000	50630	101	ug/L	+/- 10.00%
4E14039-CCV1	Calcium	50000	50050	100	ug/L	+/- 10.00%
	Iron	10000	10480	105	ug/L	+/- 10.00%
	Magnesium	50000	49680	99.4	ug/L	+/- 10.00%
	Manganese	1000	1060	106	ug/L	+/- 10.00%
	Potassium	10000	10060	101	ug/L	+/- 10.00%
	Sodium	50000	50620	101	ug/L	+/- 10.00%
4E14039-CCV3	Calcium	50000	49260	98.5	ug/L	+/- 10.00%
	Iron	10000	10410	104	ug/L	+/- 10.00%
	Magnesium	50000	49080	98.2	ug/L	+/- 10.00%
	Manganese	1000	1055	105	ug/L	+/- 10.00%
	Potassium	10000	9966	99.7	ug/L	+/- 10.00%
	Sodium	50000	50210	100	ug/L	+/- 10.00%
4E14039-CCV4	Calcium	50000	49900	99.8	ug/L	+/- 10.00%
	Iron	10000	10340	103	ug/L	+/- 10.00%
	Magnesium	50000	49460	98.9	ug/L	+/- 10.00%
	Manganese	1000	1046	105	ug/L	+/- 10.00%
	Potassium	10000	9973	99.7	ug/L	+/- 10.00%
	Sodium	50000	50180	100	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4128001

Sequence: 4E12803

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4E12803-CRL1	Calcium	2000	1959	98.0	ug/L	80 - 120
	Iron	60.00	65.39	109	ug/L	80 - 120
	Magnesium	3000	3042	101	ug/L	80 - 120
	Manganese	6.000	6.136	102	ug/L	80 - 120
	Potassium	3000	2816	93.9	ug/L	80 - 120
	Sodium	3000	2937	97.9	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4140002

Sequence: 4E14039

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4E14039-CRL1	Calcium	2000	1955	97.7	ug/L	80 - 120
	Iron	60.00	59.86	99.8	ug/L	80 - 120
	Magnesium	3000	2966	98.9	ug/L	80 - 120
	Manganese	6.000	6.086	101	ug/L	80 - 120
	Potassium	3000	2773	92.4	ug/L	80 - 120
	Sodium	3000	2897	96.6	ug/L	80 - 120

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4E12803
Calibration: 4128001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12803-ICB1	Calcium	-1.860	1000	5000	ug/L	U	SW6010C
	Iron	8.534	30.0	100	ug/L	U	SW6010C
	Magnesium	7.760	1000	5000	ug/L	U	SW6010C
	Manganese	0.002780	3.00	15.0	ug/L	U	SW6010C
	Potassium	2.640	1000	5000	ug/L	U	SW6010C
	Sodium	10.13	1000	5000	ug/L	U	SW6010C
4E12803-CCB1	Calcium	0.110	1000	5000	ug/L	U	SW6010C
	Iron	7.54	30.0	100	ug/L	U	SW6010C
	Magnesium	3.61	1000	5000	ug/L	U	SW6010C
	Manganese	0.000600	3.00	15.0	ug/L	U	SW6010C
	Potassium	14.4	1000	5000	ug/L	U	SW6010C
	Sodium	2.86	1000	5000	ug/L	U	SW6010C
4E12803-CCB3	Calcium	-1.18	1000	5000	ug/L	U	SW6010C
	Iron	1.25	30.0	100	ug/L	U	SW6010C
	Magnesium	2.61	1000	5000	ug/L	U	SW6010C
	Manganese	0.0225	3.00	15.0	ug/L	U	SW6010C
	Potassium	15.2	1000	5000	ug/L	U	SW6010C
	Sodium	7.60	1000	5000	ug/L	U	SW6010C
4E06002-BLK1	Calcium	0.860	250	1250	ug/L	U	SW6010C
	Iron	0.225	7.50	25.0	ug/L	U	SW6010C
	Magnesium	1.16	250	1250	ug/L	U	SW6010C
	Manganese	0.0504	0.750	3.75	ug/L	U	SW6010C
	Potassium	8.08	250	1250	ug/L	U	SW6010C
	Sodium	5.84	250	1250	ug/L	U	SW6010C
4E12803-CCB4	Calcium	-1.29	1000	5000	ug/L	U	SW6010C
	Iron	1.32	30.0	100	ug/L	U	SW6010C
	Magnesium	2.63	1000	5000	ug/L	U	SW6010C
	Manganese	0.0275	3.00	15.0	ug/L	U	SW6010C
	Potassium	10.3	1000	5000	ug/L	U	SW6010C
	Sodium	5.47	1000	5000	ug/L	U	SW6010C
4E12803-CCB5	Calcium	8.52	1000	5000	ug/L	U	SW6010C
	Iron	3.20	30.0	100	ug/L	U	SW6010C
	Magnesium	3.94	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4E12803
Calibration: 4128001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12803-CCB5	Manganese	0.0868	3.00	15.0	ug/L	U	SW6010C
	Potassium	25.5	1000	5000	ug/L	U	SW6010C
	Sodium	19.8	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4E14039
Calibration: 4140002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14039-ICB1	Calcium	-1.680	1000	5000	ug/L	U	SW6010C
	Iron	4.650	30.0	100	ug/L	U	SW6010C
	Magnesium	3.050	1000	5000	ug/L	U	SW6010C
	Manganese	0.006620	3.00	15.0	ug/L	U	SW6010C
	Potassium	-15.96	1000	5000	ug/L	U	SW6010C
	Sodium	-19.74	1000	5000	ug/L	U	SW6010C
4E14039-CCB1	Calcium	-1.90	1000	5000	ug/L	U	SW6010C
	Iron	5.52	30.0	100	ug/L	U	SW6010C
	Magnesium	11.3	1000	5000	ug/L	U	SW6010C
	Manganese	0.00815	3.00	15.0	ug/L	U	SW6010C
	Potassium	-17.2	1000	5000	ug/L	U	SW6010C
	Sodium	-19.9	1000	5000	ug/L	U	SW6010C
4E14039-CCB3	Calcium	1.18	1000	5000	ug/L	U	SW6010C
	Iron	2.71	30.0	100	ug/L	U	SW6010C
	Magnesium	5.18	1000	5000	ug/L	U	SW6010C
	Manganese	0.0747	3.00	15.0	ug/L	U	SW6010C
	Potassium	-1.24	1000	5000	ug/L	U	SW6010C
	Sodium	-26.8	1000	5000	ug/L	U	SW6010C
4E14023-BLK1	Calcium	0.435	250	1250	ug/L	U	SW6010C
	Iron	-0.0413	7.50	25.0	ug/L	U	SW6010C
	Magnesium	2.47	250	1250	ug/L	U	SW6010C
	Manganese	0.0383	0.750	3.75	ug/L	U	SW6010C
	Potassium	2.56	250	1250	ug/L	U	SW6010C
	Sodium	-3.08	250	1250	ug/L	U	SW6010C
4E14039-CCB4	Calcium	2.76	1000	5000	ug/L	U	SW6010C
	Iron	-1.64	30.0	100	ug/L	U	SW6010C
	Magnesium	5.24	1000	5000	ug/L	U	SW6010C
	Manganese	0.0416	3.00	15.0	ug/L	U	SW6010C
	Potassium	-9.19	1000	5000	ug/L	U	SW6010C
	Sodium	-16.3	1000	5000	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4128001
Sequence: 4E12803

Lab Sample ID	Analyte	True	Found	%R	Units
4E12803-IFA1	Calcium	500000	467,940.00	93.6	ug/L
	Iron	200000	197,040.00	98.5	ug/L
	Magnesium	500000	491,300.00	98.3	ug/L
	Manganese		-0.96		ug/L
	Potassium		-60.41		ug/L
	Sodium		38.53		ug/L
4E12803-IFB1	Calcium	500000	464,280.00	92.9	ug/L
	Iron	200000	198,380.00	99.2	ug/L
	Magnesium	500000	486,590.00	97.3	ug/L
	Manganese	500.0	509.30	102	ug/L
	Potassium		-56.13		ug/L
	Sodium		83.35		ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4140002
Sequence: 4E14039

Lab Sample ID	Analyte	True	Found	%R	Units
4E14039-IFA1	Calcium	500000	463,400.00	92.7	ug/L
	Iron	200000	202,910.00	101	ug/L
	Magnesium	500000	473,980.00	94.8	ug/L
	Manganese		-1.26		ug/L
	Potassium		-79.16		ug/L
	Sodium		27.01		ug/L
4E14039-IFB1	Calcium	500000	453,510.00	90.7	ug/L
	Iron	200000	205,040.00	103	ug/L
	Magnesium	500000	476,420.00	95.3	ug/L
	Manganese	500.0	520.29	104	ug/L
	Potassium		-96.36		ug/L
	Sodium		32.63		ug/L

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E06002	Laboratory ID:	4E06002-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	560.7	93.4	80 - 120
Iron	20.00	19.53	97.6	80 - 120
Magnesium	600.0	594.8	99.1	80 - 120
Manganese	10.00	10.17	102	80 - 120
Potassium	600.0	538.4	89.7	80 - 120
Sodium	600.0	563.3	93.9	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E14023	Laboratory ID:	4E14023-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	542.4	90.4	80 - 120
Iron	20.00	19.94	99.7	80 - 120
Magnesium	600.0	561.5	93.6	80 - 120
Manganese	10.00	9.756	97.6	80 - 120
Potassium	600.0	525.5	87.6	80 - 120
Sodium	600.0	545.1	90.8	80 - 120

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_014

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_014

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_014

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_014

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_014

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_014

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Calcium	317.933	0.000000				
Calcium	317.933	0.000000				
Iron	261.187	0.000000				
Iron	261.187	0.000000				
Magnesium	279.079	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.61	0.000000				
Manganese	257.61	0.000000				
Potassium	766.49	0.000000				
Potassium	766.49	0.000000				
Sodium	589.592	0.000000				
Sodium	589.592	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc. SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

ICP Instrument ID: ME-ICP Date: 12/27/2013

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Calcium	15	500000	P
Calcium	15	500000	P
Iron	15	500000	P
Iron	15	500000	P
Magnesium	15	500000	P
Magnesium	15	500000	P
Manganese	15	15000	P
Manganese	15	15000	P
Potassium	15	100000	P
Potassium	15	100000	P
Sodium	15	500000	P
Sodium	15	500000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E06002 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30047	1404205-01	05/06/14 08:06	100.00	25.00
Blank	4E06002-BLK1	05/06/14 08:06	100.00	25.00
LCS	4E06002-BS1	05/06/14 08:06	100.00	25.00

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E14023 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30029	1405013-01	05/15/14 13:00	100.00	25.00
ST105-30043	1405013-03	05/15/14 13:00	100.00	25.00
ST105-30048	1405013-05	05/15/14 13:00	100.00	25.00
ST105-30049	1405013-07	05/15/14 13:00	100.00	25.00
ST105-30050	1405013-09	05/15/14 13:00	100.00	25.00
Blank	4E14023-BLK1	05/14/14 13:00	100.00	25.00
LCS	4E14023-BS1	05/14/14 13:00	100.00	25.00

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12803	Instrument:	ME-ICP
Calibration:	4128001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E12803-CAL1	5-07-14A-001	05/07/14 09:23
Cal Standard	4E12803-CAL2	5-07-14A-002	05/07/14 09:27
Cal Standard	4E12803-CAL3	5-07-14A-003	05/07/14 09:30
Cal Standard	4E12803-CAL4	5-07-14A-004	05/07/14 09:35
Cal Standard	4E12803-CAL5	5-07-14A-005	05/07/14 09:39
Cal Standard	4E12803-CAL6	5-07-14A-006	05/07/14 09:44
Cal Standard	4E12803-CAL7	5-07-14A-007	05/07/14 09:49
Cal Standard	4E12803-CAL8	5-07-14A-008	05/07/14 09:53
Initial Cal Check	4E12803-ICV1	5-07-14B-001	05/07/14 10:22
Initial Cal Blank	4E12803-ICB1	5-07-14B-002	05/07/14 10:30
Instrument RL Check	4E12803-CRL1	5-07-14B-004	05/07/14 10:41
Interference Check A	4E12803-IFA1	5-07-14B-006	05/07/14 10:50
Interference Check B	4E12803-IFB1	5-07-14B-007	05/07/14 10:55
Calibration Check	4E12803-CCV1	5-07-14B-009	05/07/14 11:04
Calibration Blank	4E12803-CCB1	5-07-14B-010	05/07/14 11:11
Calibration Check	4E12803-CCV3	5-07-14B-043	05/07/14 13:39
Calibration Blank	4E12803-CCB3	5-07-14B-044	05/07/14 13:46
Blank	4E06002-BLK1	5-07-14B-045	05/07/14 13:51
LCS	4E06002-BS1	5-07-14B-046	05/07/14 13:55
Calibration Check	4E12803-CCV4	5-07-14B-061	05/07/14 15:02
Calibration Blank	4E12803-CCB4	5-07-14B-062	05/07/14 15:09
ST105-30047	1404205-01	5-07-14C-009	05/07/14 15:51
Calibration Check	4E12803-CCV5	5-07-14C-010	05/07/14 15:56
Calibration Blank	4E12803-CCB5	5-07-14C-011	05/07/14 16:04

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E14039	Instrument:	ME-ICP
Calibration:	4140002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E14039-CAL1	5-20-14A-001	05/20/14 09:07
Cal Standard	4E14039-CAL2	5-20-14A-002	05/20/14 09:11
Cal Standard	4E14039-CAL3	5-20-14A-003	05/20/14 09:16
Cal Standard	4E14039-CAL4	5-20-14A-004	05/20/14 09:20
Cal Standard	4E14039-CAL5	5-20-14A-005	05/20/14 09:24
Cal Standard	4E14039-CAL6	5-20-14A-006	05/20/14 09:29
Cal Standard	4E14039-CAL7	5-20-14A-007	05/20/14 09:34
Cal Standard	4E14039-CAL8	5-20-14A-008	05/20/14 09:39
Initial Cal Check	4E14039-ICV1	5-20-14B-001	05/20/14 10:28
Initial Cal Blank	4E14039-ICB1	5-20-14B-002	05/20/14 10:36
Instrument RL Check	4E14039-CRL1	5-20-14B-004	05/20/14 10:47
Interference Check A	4E14039-IFA1	5-20-14B-006	05/20/14 10:56
Interference Check B	4E14039-IFB1	5-20-14B-007	05/20/14 11:02
Calibration Check	4E14039-CCV1	5-20-14B-009	05/20/14 11:11
Calibration Blank	4E14039-CCB1	5-20-14B-010	05/20/14 11:19
Calibration Check	4E14039-CCV3	5-20-14C-015	05/20/14 13:51
Calibration Blank	4E14039-CCB3	5-20-14C-016	05/20/14 13:59
Blank	4E14023-BLK1	5-20-14C-017	05/20/14 14:03
LCS	4E14023-BS1	5-20-14C-018	05/20/14 14:07
ST105-30029	1405013-01	5-20-14C-019	05/20/14 14:13
ST105-30043	1405013-03	5-20-14C-020	05/20/14 14:17
ST105-30048	1405013-05	5-20-14C-021	05/20/14 14:22
ST105-30049	1405013-07	5-20-14C-022	05/20/14 14:26
ST105-30050	1405013-09	5-20-14C-023	05/20/14 14:31
Calibration Check	4E14039-CCV4	5-20-14C-032	05/20/14 15:12
Calibration Blank	4E14039-CCB4	5-20-14C-033	05/20/14 15:20

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4128001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	5/7/14 9:23 5/7/14 9:53

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.1074E-05	10000	2.1332E-05			500000	2.1096E-05		
Antimony	0	0	100	0.0003776	1000	5.5108E-04					10000	5.6365E-04
Arsenic	0	0	100	0.0002756	1000	3.1564E-04					10000	3.0724E-04
Barium	0	0	50	0.0090234	1000	0.0087075	5000	8.780001E-03				
Beryllium	0	0	100	0.0024482	1000	0.0024698					10000	0.0024048
Boron	0	0	50	0.0000154	1000	1.437E-05					5000	1.4884E-05
Cadmium	0	0	100	0.015803	1000	0.015448					10000	0.015329
Calcium	0	0	1100	7.271818E-05	50000	6.2052E-05					10000	
Chromium	0	0	100	0.0000518	1000	5.031E-05					10000	5.1006E-05
Cobalt	0	0	100	0.0042696	1000	0.0042343					10000	0.0043962
Copper	0	0	100	0.0000771	1000	7.199E-05					10000	7.433999E-05
Iron	0	0	5100	1.667843E-05	10000	1.629E-05			500000	1.61694E-05	10000	
Lead	0	0	100	0.0010095	1000	0.0010308					10000	0.0010825
Magnesium	0	0	5100		50000	2.6516E-06			500000	2.6454E-06	10000	
Manganese	0	0	100	0.0003009	1000	2.8321E-04	10000	2.8201E-04			10000	
Molybdenum	0	0	100	0.0030431	1000	0.003248					10000	0.0032082
Nickel	0	0	100	0.0028371	1000	0.0028679					10000	0.0029433
Potassium	0	0	1000	1.014E-05	10000	1.3936E-05						
Selenium	0	0	100	0.0004169	1000	4.0877E-04					10000	3.9325E-04
Silver	0	0	20	0.000062	500	5.354E-05	2000	5.5595E-05				
Sodium	0	0	1000		50000	5.058E-05						
Thallium	0	0	100	0.0005846	1000	5.8617E-04					10000	6.0885E-04
Tin	0	0	50	0.0012888	1000	0.0013353					5000	1.37078E-03
Titanium	0	0	100	0.0001882	1000	1.8362E-04					10000	1.8579E-04
Vanadium	0	0	100	0.0000526	1000	0.0000511					10000	5.2254E-05
Zinc	0	0	100	0.0060674	1000	0.0063326					10000	0.0061699
Strontium	0	0	100	0.001249	1000	0.001284					10000	0.001292
Lithium (outside certification)	0	0	100	0.0000109	1000	1.103E-05					10000	1.0527E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4128001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	5/7/14 9:23 5/7/14 9:53

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.1126E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.6119E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.4337E-05										
Selenium												
Silver												
Sodium	100000	5.0209E-05	500000	4.9758E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4128001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	5/7/14 9:23 5/7/14 9:53

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.58755E-05	66.67073	5.341285	171.1342	0.9999999		0.998	
Antimony	3.730825E-04	70.44333	1.049328	84.74972	0.9999995		0.998	
Arsenic	2.2462E-04	67.10701	2.510175	147.4915	0.9999874		0.998	
Barium	6.627725E-03	66.69783	1.751388	160.0947	0.9999964		0.998	
Beryllium	0.0018307	66.68301	3.045325	151.0269	0.9999931		0.998	
Boron	1.11635E-05	66.77299	2.528898	154.3611	0.9999435		0.998	
Cadmium	0.011645	66.68908	1.751595	156.8435	0.9999996		0.998	
Calcium	4.897405E-05	67.52627	4.154097	162.7174	0.9999981		0.998	
Chromium	3.8279E-05	66.68563	25.97471	196.6664	0.9999979		0.998	
Cobalt	3.225025E-03	66.7015	2.919932	174.8662	0.9999869		0.998	
Copper	5.58575E-05	66.77142	1.786297	146.846	0.9999884		0.998	
Iron	1.228446E-05	66.69009	1.65327	152.726	0.9999999		0.998	
Lead	0.0007807	66.78218	38.16132	197.4058	0.9999799		0.998	
Magnesium	1.977225E-06	66.6725	58.33184	198.9059	0.999992		0.998	
Manganese	2.1653E-04	66.78586	32.40826	194.6078	0.9999997		0.998	
Molybdenum	2.374825E-03	66.77123	22.90258	196.2993	0.9999976		0.998	
Nickel	2.162075E-03	66.69859	37.18229	198.049	0.9999942		0.998	
Potassium	9.60325E-06	69.51415	1.508205	133.2365	1		0.998	
Selenium	3.0473E-04	66.74436	2.057898	158.6735	0.9999882		0.998	
Silver	4.278375E-05	67.19639	3.19233	163.1227	0.9998872		0.998	
Sodium	3.763675E-05	66.67265	1.563753	133.564	0.9999956		0.998	
Thallium	4.44905E-04	66.71317	4.100762	168.192	0.9999881		0.998	
Tin	9.987199E-04	66.75135	1.392455	132.4883	0.9999745		0.998	
Titanium	1.394025E-04	66.68017	5.638302	188.4323	0.999998		0.998	
Vanadium	3.89885E-05	66.68696	1.113378	77.08849	0.9999946		0.998	
Zinc	4.642475E-03	66.70815	303.8636	199.6371	0.9999926		0.998	
Strontium	9.5625E-04	66.69526	1.01255	148.1771	0.9999998		0.998	
Lithium (outside certification)	8.11425E-06	66.71842	11.61073	184.3816	0.9999801		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4140002		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	5/20/14 9:07	5/20/14 9:39

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.2094E-05	10000	2.2066E-05			500000	2.1608E-05		
Antimony	0	0	100	0.0004209	1000	5.7229E-04					10000	5.6849E-04
Arsenic	0	0	100	0.0002846	1000	3.0763E-04					10000	3.0368E-04
Barium	0	0	50	0.0095238	1000	0.0091023	5000	0.0090782				
Beryllium	0	0	100	0.0025401	1000	0.0025157					10000	0.0024324
Boron	0	0	50	0.0000152	1000	1.412E-05					5000	1.4378E-05
Cadmium	0	0	100	0.016292	1000	0.014983					10000	0.014985
Calcium	0	0	1100	6.795454E-05	50000	5.9688E-05					10000	
Chromium	0	0	100	0.0000529	1000	5.094E-05					10000	5.0169E-05
Cobalt	0	0	100	0.0045274	1000	0.0044905					10000	0.0045353
Copper	0	0	100	0.0000815	1000	7.563E-05					10000	7.7257E-05
Iron	0	0	5100	7.337255E-06	10000	6.791E-06			500000	6.6718E-06	10000	
Lead	0	0	100	0.0010655	1000	0.0010613					10000	0.0010905
Magnesium	0	0	5100		50000	2.6294E-06			500000	2.654E-06	10000	
Manganese	0	0	100	0.0002966	1000	2.7983E-04	10000	2.7177E-04			10000	
Molybdenum	0	0	100	0.0033406	1000	0.0035272					10000	0.0034202
Nickel	0	0	100	0.0015295	1000	0.0014868					10000	0.0014936
Potassium	0	0	1000	1.137E-05	10000	1.3718E-05						
Selenium	0	0	100	0.0004254	1000	4.0757E-04					10000	3.9413E-04
Silver	0	0	20	0.000062	500	5.382E-05	2000	5.546E-05				
Sodium	0	0	1000		50000	5.0014E-05						
Thallium	0	0	100	0.0006058	1000	0.000586					10000	6.0312E-04
Tin	0	0	50	0.0013816	1000	0.0014063					5000	1.41366E-03
Titanium	0	0	100	0.0002037	1000	1.9655E-04					10000	1.9583E-04
Vanadium	0	0	100	0.0000518	1000	5.028E-05					10000	5.1134E-05
Zinc	0	0	100	0.0060263	1000	0.00606					10000	0.005817
Strontium	0	0	100	0.001406	1000	0.001392					10000	0.001369
Lithium (outside certification)	0	0	100	0.0000116	1000	1.163E-05					10000	1.0858E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4140002	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	5/20/14 9:07 5/20/14 9:39

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	5.9314E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.6493E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.3813E-05										
Selenium												
Silver												
Sodium	100000	4.9239E-05	500000	4.8628E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4140002		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	5/20/14 9:07	5/20/14 9:39

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.6442E-05	66.68044	3.932528	188.5367	0.9999998		0.998	
Antimony	3.9042E-04	69.06808	0.652895	64.87862	0.9999904		0.998	
Arsenic	2.239775E-04	66.81766	2.744043	174.3583	0.9999966		0.998	
Barium	6.926075E-03	66.73209	1.7755	161.5242	0.9999998		0.998	
Beryllium	1.87205E-03	66.71215	2.66128	138.6032	0.9999894		0.998	
Boron	1.09245E-05	66.79981	4.038822	133.7193	0.9999822		0.998	
Cadmium	0.011565	66.87952	1.712675	158.7161	0.9999993		0.998	
Calcium	4.673914E-05	67.21045	2.69755	116.9931	0.9999997		0.998	
Chromium	3.850225E-05	66.73349	41.81169	194.4898	0.9999981		0.998	
Cobalt	0.0033883	66.66916	1.660895	158.7462	0.999999		0.998	
Copper	5.859675E-05	66.80028	2.178367	92.61323	0.9999939		0.998	
Iron	5.200014E-06	66.89907	19.47847	191.7011	0.9999993		0.998	
Lead	8.04325E-04	66.68593	29.29576	197.4445	0.9999934		0.998	
Magnesium	1.983175E-06	66.66883	46.71067	197.9846	0.9999993		0.998	
Manganese	2.1205E-04	66.84485	49.49535	193.6551	0.9999928		0.998	
Molybdenum	0.002572	66.7329	19.61844	196.787	0.9999895		0.998	
Nickel	1.127475E-03	66.68736	11.21794	195.5843	0.9999996		0.998	
Potassium	9.72525E-06	67.6715	3.341342	158.008	0.9999992		0.998	
Selenium	3.06775E-04	66.79726	2.55282	173.7613	0.9999921		0.998	
Silver	4.282E-05	67.17545	3.561367	143.0522	0.9999258		0.998	
Sodium	3.697025E-05	66.68431	71.97434	198.04	0.9999907		0.998	
Thallium	4.4873E-04	66.69531	8.204937	189.8052	0.9999922		0.998	
Tin	1.05039E-03	66.67945	3.594012	180.0311	0.9999992		0.998	
Titanium	1.4902E-04	66.70928	3.144858	180.2321	1		0.998	
Vanadium	3.83035E-05	66.68645	4.749225	148.494	0.9999968		0.998	
Zinc	4.475825E-03	66.70991	3.087215	164.4915	0.9999838		0.998	
Strontium	1.04175E-03	66.68274	1.990025	147.0046	0.9999973		0.998	
Lithium (outside certification)	8.522E-06	66.7982	13.31515	177.1947	0.9999555		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4E06002

Empirical Laboratories, LLC

Printed: 5/9/2014 12:25:41PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404127-04	A	MET_ICP_LOW6010C_FULL_I	05/06/2014	100	25					NA	May need to sub - Do not use for batch QC.
1404127-05	D	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	May need to sub - Do not use for batch QC.
1404149-03	F	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	see versions
1404149-05	F	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	see versions
1404182-01	A	MET_ICP_LOW6010C_FULL_I	05/06/2014	100	25					NA	Added for BatchQC in: 4E06002
1404182-01	A	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	MS/MSD
1404182-03	B	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-05	A	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-07	B	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-09	B	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-11	A	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-12	B	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-15	A	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-17	A	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-19	A	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-21	A	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404182-23	A	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	
1404203-01	G	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	see versions
1404203-02	A	MET_ICP_LOW6010C_FULL_I	05/06/2014	100	25					NA	see versions
1404205-01	D	MET_ICP_LOW6010C_FULL	05/06/2014	100	25					NA	see versions
4E06002-BLK1		QC	05/06/2014	100	25					NA	
4E06002-BS1		QC	05/06/2014	100	25	14D0673		2000		NA	

PREPARATION BENCH SHEET

4E06002

Empirical Laboratories, LLC

Printed: 5/9/2014 12:25:41PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E06002-DUP1		QC	05/06/2014	100	25		1404182-01			NA	
4E06002-MS1		QC	05/06/2014	100	25	14D0674	1404182-01	25		NA	
4E06002-MSD1		QC	05/06/2014	100	25	14D0674	1404182-01	25		NA	
4E06002-PS1		QC	05/06/2014	100	25	14D0674	1404182-01	25		NA	

Reagents Used:

Standard	Description
14A0613	Nitric acid
14A0614	Hydrochloric Acid
14E0086	Metals 50mL Digestion Vessel- DigiTUBE

PREPARATION BENCH SHEET

4E14023

Empirical Laboratories, LLC

Printed: 5/27/2014 3:41:21PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405013-01	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405013-03	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405013-05	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405013-07	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405013-09	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405065-01	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405065-03	L	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	MS/MSD
1405065-05	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405065-07	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
4E14023-BLK1		QC	05/14/2014	100	25					NA	
4E14023-BS1		QC	05/14/2014	100	25	14E0168		2000		NA	
4E14023-DUP1		QC	05/14/2014	100	25		1405065-03			NA	
4E14023-MS1		QC	05/14/2014	100	25	14E0170	1405065-03	25		NA	
4E14023-MSD1		QC	05/14/2014	100	25	14E0170	1405065-03	25		NA	
4E14023-PS1		QC	05/14/2014	100	25	14E0170	1405065-03	25		NA	

Reagents Used:

Standard	Description
14E0086	Metals 50mL Digestion Vessel- DigiTUBE
14E0321	Nitric acid
14E0322	Hydrochloric Acid

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404205-01 [ST105-30047]	4D30008	100.00/100.00	100	100	1.00			04/30/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404205-01 [ST105-30047]	4E01024	40.00/40.00	40.0	40.0	1.00			05/01/14
1404205-02 [ST105-30047]	4E01024	40.00/40.00	40.0	40.0	1.00			05/01/14

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405013-01 [ST105-30029]	4E07008	100.00/100.00	100	100	1.00			05/07/14
1405013-03 [ST105-30043]	4E07008	100.00/100.00	100	100	1.00			05/07/14
1405013-05 [ST105-30048]	4E07008	100.00/100.00	100	100	1.00			05/07/14
1405013-07 [ST105-30049]	4E07008	100.00/100.00	100	100	1.00			05/07/14
1405013-09 [ST105-30050]	4E07008	100.00/100.00	100	100	1.00			05/07/14

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404205-01 [ST105-30047]	4E08007	20.00/20.00	20.0	20.0	1.00			05/08/14
1405013-01 [ST105-30029]	4E08007	20.00/20.00	20.0	20.0	1.00			05/08/14
1405013-03 [ST105-30043]	4E08007	20.00/20.00	20.0	20.0	1.00			05/08/14
1405013-05 [ST105-30048]	4E08007	20.00/20.00	20.0	20.0	1.00			05/08/14
1405013-07 [ST105-30049]	4E08007	20.00/20.00	20.0	20.0	1.00			05/08/14
1405013-09RE1 [ST105-30050]	4E08007	20.00/20.00	20.0	20.0	1.00			05/08/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404205-01 [ST105-30047]	4E08017	25.00/25.00	25.0	25.0	1.00			05/08/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405013-05 [ST105-30048]	4E12929	25.00/25.00	25.0	25.0	1.00			05/12/14
1405013-07 [ST105-30049]	4E12929	25.00/25.00	25.0	25.0	1.00			05/12/14
1405013-09 [ST105-30050]	4E12929	25.00/25.00	25.0	25.0	1.00			05/12/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404205-01 [ST105-30047]	4E13320	5.00/5.00	5.00	5.00	1.00			05/13/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405013-01 [ST105-30029]	4E13321	5.00/5.00	5.00	5.00	1.00			05/13/14
1405013-03 [ST105-30043]	4E13321	5.00/5.00	5.00	5.00	1.00			05/13/14
1405013-05 [ST105-30048]	4E13321	5.00/5.00	5.00	5.00	1.00			05/13/14
1405013-07 [ST105-30049]	4E13321	5.00/5.00	5.00	5.00	1.00			05/13/14
1405013-09 [ST105-30050]	4E13321	5.00/5.00	5.00	5.00	1.00			05/13/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405013-01 [ST105-30029]	4E14026	25.00/25.00	25.0	25.0	1.00			05/15/14
1405013-03 [ST105-30043]	4E14026	25.00/25.00	25.0	25.0	1.00			05/15/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404205-01RE1 [ST105-30047]	4E15013	20.00/20.00	4.00	20.0	2.00			05/15/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405013-01 [ST105-30029]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-02 [ST105-30029]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-03 [ST105-30043]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-04 [ST105-30043]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-05 [ST105-30048]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-06 [ST105-30048]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-07 [ST105-30049]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-08 [ST105-30049]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-09 [ST105-30050]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14
1405013-10 [ST105-30050]	4E16007	40.00/40.00	40.0	40.0	1.00			05/16/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405013-01 [ST105-30029]	4E16013	20.00/20.00	4.00	20.0	1.00			05/16/14
1405013-03 [ST105-30043]	4E16013	20.00/20.00	4.00	20.0	1.00			05/16/14
1405013-05RE1 [ST105-30048]	4E16013	20.00/20.00	4.00	20.0	5.00			05/16/14
1405013-07RE1 [ST105-30049]	4E16013	20.00/20.00	4.00	20.0	5.00			05/16/14
1405013-09RE1 [ST105-30050]	4E16013	20.00/20.00	4.00	20.0	5.00			05/16/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1404205-01 [ST105-30047]	4E20006	100.00/100.00	100	100	1.00			05/20/14
1405013-01 [ST105-30029]	4E20006	100.00/100.00	100	100	1.00			05/20/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405013-03 [ST105-30043]	4E20012	100.00/100.00	100	100	1.00			05/20/14
1405013-05 [ST105-30048]	4E20012	100.00/100.00	100	100	1.00			05/20/14
1405013-07 [ST105-30049]	4E20012	100.00/100.00	100	100	1.00			05/20/14
1405013-09 [ST105-30050]	4E20012	100.00/100.00	100	100	1.00			05/20/14

ANALYSIS DATA SHEET

ST105-30047

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404205-01
Sampled:	04/28/14 15:29	Received:	04/30/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E20006	05/20/14 18:05
24959-67-9	Bromide	**0.665**	**0.0420**	0.125	0.250	1		SW9056A	4E13320	05/13/14 22:37
TDS	Total Dissolved Solids	**368**	**20.0**	20.0	20.0	1		SM2540C	4D30008	04/30/14 17:20
NA	Total Kjeldahl Nitrogen		4.00	4.00	4.00	1	MUQ N	E351.2	4E08007	05/09/14 09:40
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/02/14 18:42
16887-00-6	Chloride	**65.6**	**0.170**	0.330	0.500	1		SW9056A	4E13320	05/13/14 22:37
NA	Nitrate/Nitrite as N	**11.4**	**0.500**	1.50	3.00	2	D	E353.2	4E15013	05/15/14 15:14
16984-48-8	Fluoride	**0.298**	**0.0330**	0.100	0.250	1		SW9056A	4E13320	05/13/14 22:37
471-34-1	Alkalinity, Total (as CACO3)	**106**	**1.00**	1.00	1.00	1		SM2320B	4E08017	05/08/14 16:54
14808-79-8	Sulfate as SO4	**53.1**	**0.330**	1.00	2.50	1		SW9056A	4E13320	05/13/14 22:37
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/02/14 18:42
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/02/14 18:42

ANALYSIS DATA SHEET

ST105-30047

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1404205-02
Sampled:	04/28/14 15:29	Received:	04/30/14 08:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/02/14 19:05
7440-44-0	TOC-MAX (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/02/14 19:05
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E01024	05/02/14 19:05

ANALYSIS DATA SHEET

ST105-30029

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-01
Sampled:	05/01/14 13:15	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E20006	05/20/14 18:21
24959-67-9	Bromide	**0.0740**	**0.0420**	0.125	0.250	1	J	SW9056A	4E13321	05/14/14 04:08
TDS	Total Dissolved Solids	**186**	**20.0**	20.0	20.0	1		SM2540C	4E07008	05/07/14 13:14
NA	Total Kjeldahl Nitrogen		2.00	2.00	2.00	1	MUQ N	E351.2	4E08007	05/09/14 09:42
7440-44-0	Total Organic Carbon	**1.39**	**1.25**	2.50	3.00	1	J	SW9060A	4E16007	05/16/14 16:58
16887-00-6	Chloride	**9.98**	**0.170**	0.330	0.500	1		SW9056A	4E13321	05/14/14 04:08
NA	Nitrate/Nitrite as N	**3.61**	**0.250**	0.750	1.50	1		E353.2	4E16013	05/16/14 13:24
16984-48-8	Fluoride	**0.427**	**0.0330**	0.100	0.250	1		SW9056A	4E13321	05/14/14 04:08
471-34-1	Alkalinity, Total (as CACO3)	**126**	**1.00**	1.00	1.00	1		SM2320B	4E14026	05/15/14 08:42
14808-79-8	Sulfate as SO4	**27.0**	**0.330**	1.00	2.50	1		SW9056A	4E13321	05/14/14 04:08
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 16:58
7440-44-0	TOC-MAX	**1.85**	**1.25**	2.50	3.00	1	J	SW9060A	4E16007	05/16/14 16:58

ANALYSIS DATA SHEET

ST105-30029

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-02
Sampled:	05/01/14 13:15	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)	**1.75**	**1.25**	2.50	3.00	1	J	SW9060A	4E16007	05/16/14 17:21
7440-44-0	TOC-MAX (dissolved)	**2.11**	**1.25**	2.50	3.00	1	J	SW9060A	4E16007	05/16/14 17:21
7440-44-0	TOC-MIN (dissolved)	**1.57**	**1.25**	2.50	3.00	1	J	SW9060A	4E16007	05/16/14 17:21

ANALYSIS DATA SHEET

ST105-30043

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-03
Sampled:	05/01/14 10:51	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E20012	05/20/14 18:24
24959-67-9	Bromide	**0.248**	**0.0420**	0.125	0.250	1	J	SW9056A	4E13321	05/14/14 04:26
TDS	Total Dissolved Solids	**264**	**20.0**	20.0	20.0	1		SM2540C	4E07008	05/07/14 13:14
NA	Total Kjeldahl Nitrogen		3.00	3.00	3.00	1	MUQ N	E351.2	4E08007	05/09/14 09:43
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 17:44
16887-00-6	Chloride	**23.6**	**0.170**	0.330	0.500	1		SW9056A	4E13321	05/14/14 04:26
NA	Nitrate/Nitrite as N	**7.51**	**0.250**	0.750	1.50	1		E353.2	4E16013	05/16/14 13:25
16984-48-8	Fluoride	**0.632**	**0.0330**	0.100	0.250	1		SW9056A	4E13321	05/14/14 04:26
471-34-1	Alkalinity, Total (as CACO3)	**132**	**1.00**	1.00	1.00	1		SM2320B	4E14026	05/15/14 08:54
14808-79-8	Sulfate as SO4	**35.5**	**0.330**	1.00	2.50	1		SW9056A	4E13321	05/14/14 04:26
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 17:44
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 17:44

ANALYSIS DATA SHEET

ST105-30043

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-04
Sampled:	05/01/14 13:15	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 18:06
7440-44-0	TOC-MAX (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 18:06
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 18:06

ANALYSIS DATA SHEET

ST105-30048

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-05
Sampled:	04/30/14 12:18	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E20012	05/20/14 18:25
24959-67-9	Bromide	**0.239**	**0.0420**	0.125	0.250	1	J	SW9056A	4E13321	05/14/14 04:43
TDS	Total Dissolved Solids	**344**	**20.0**	20.0	20.0	1		SM2540C	4E07008	05/07/14 13:14
NA	Total Kjeldahl Nitrogen		4.00	4.00	4.00	1	MUQ N	E351.2	4E08007	05/09/14 09:45
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 19:25
16887-00-6	Chloride	**21.7**	**0.170**	0.330	0.500	1		SW9056A	4E13321	05/14/14 04:43
NA	Nitrate/Nitrite as N	**30.8**	**1.25**	3.75	7.50	5	D	E353.2	4E16013	05/16/14 14:02
16984-48-8	Fluoride	**0.340**	**0.0330**	0.100	0.250	1		SW9056A	4E13321	05/14/14 04:43
471-34-1	Alkalinity, Total (as CACO3)	**124**	**1.00**	1.00	1.00	1		SM2320B	4E12929	05/12/14 15:08
14808-79-8	Sulfate as SO4	**16.6**	**0.330**	1.00	2.50	1		SW9056A	4E13321	05/14/14 04:43
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 19:25
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 19:25

ANALYSIS DATA SHEET

ST105-30048

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-06
Sampled:	05/01/14 12:18	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 19:48
7440-44-0	TOC-MAX (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 19:48
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 19:48

ANALYSIS DATA SHEET

ST105-30049

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-07
Sampled:	04/30/14 12:18	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**0.252**	**0.100**	0.150	0.300	1	J	SM4500NH3BG	4E20012	05/20/14 18:26
24959-67-9	Bromide	**0.245**	**0.0420**	0.125	0.250	1	J	SW9056A	4E13321	05/14/14 05:01
TDS	Total Dissolved Solids	**369**	**20.0**	20.0	20.0	1		SM2540C	4E07008	05/07/14 13:14
NA	Total Kjeldahl Nitrogen		4.00	4.00	4.00	1	MUQ N	E351.2	4E08007	05/09/14 09:46
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 20:11
16887-00-6	Chloride	**22.1**	**0.170**	0.330	0.500	1		SW9056A	4E13321	05/14/14 05:01
NA	Nitrate/Nitrite as N	**30.6**	**1.25**	3.75	7.50	5	D	E353.2	4E16013	05/16/14 14:03
16984-48-8	Fluoride	**0.346**	**0.0330**	0.100	0.250	1		SW9056A	4E13321	05/14/14 05:01
471-34-1	Alkalinity, Total (as CACO3)	**133**	**1.00**	1.00	1.00	1		SM2320B	4E12929	05/12/14 15:16
14808-79-8	Sulfate as SO4	**16.9**	**0.330**	1.00	2.50	1		SW9056A	4E13321	05/14/14 05:01
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 20:11
7440-44-0	TOC-MAX	**1.34**	**1.25**	2.50	3.00	1	J	SW9060A	4E16007	05/16/14 20:11

ANALYSIS DATA SHEET

ST105-30049

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-08
Sampled:	05/01/14 12:18	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 20:34
7440-44-0	TOC-MAX (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 20:34
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 20:34

ANALYSIS DATA SHEET

ST105-30050

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-09
Sampled:	04/30/14 15:11	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E20012	05/20/14 18:27
24959-67-9	Bromide	**0.318**	**0.0420**	0.125	0.250	1		SW9056A	4E13321	05/14/14 05:18
TDS	Total Dissolved Solids	**392**	**20.0**	20.0	20.0	1		SM2540C	4E07008	05/07/14 13:14
NA	Total Kjeldahl Nitrogen		2.00	2.00	2.00	1	MUQ N	E351.2	4E08007	05/14/14 13:23
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 20:57
16887-00-6	Chloride	**29.1**	**0.170**	0.330	0.500	1		SW9056A	4E13321	05/14/14 05:18
NA	Nitrate/Nitrite as N	**28.2**	**1.25**	3.75	7.50	5	D	E353.2	4E16013	05/16/14 14:04
16984-48-8	Fluoride	**0.302**	**0.0330**	0.100	0.250	1		SW9056A	4E13321	05/14/14 05:18
471-34-1	Alkalinity, Total (as CACO3)	**110**	**1.00**	1.00	1.00	1		SM2320B	4E12929	05/12/14 15:28
14808-79-8	Sulfate as SO4	**70.1**	**0.330**	1.00	2.50	1		SW9056A	4E13321	05/14/14 05:18
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 20:57
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 20:57

ANALYSIS DATA SHEET

ST105-30050

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405013-10
Sampled:	04/30/14 15:11	Received:	05/02/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 21:21
7440-44-0	TOC-MAX (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 21:21
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 21:21

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D30008-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4D30008	04/30/14 17:20

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4D30008-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**975.0**	**20.0**	20.0	20.0	1		SM2540C	4D30008	04/30/14 17:20

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E01024-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 17:08
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4E01024	05/01/14 17:08

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E01024-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**22.90**	**1.25**	2.50	3.00	1		SW9060A	4E01024	05/01/14 17:35
7440-44-0	Total Organic Carbon (dissolved)	**22.90**	**1.25**	2.50	3.00	1		SW9060A	4E01024	05/01/14 17:35

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E07008-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4E07008	05/07/14 13:14

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E07008-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**990.0**	**20.0**	20.0	20.0	1		SM2540C	4E07008	05/07/14 13:14

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E07008-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**835.0**	**20.0**	20.0	20.0	1		SM2540C	4E07008	05/07/14 13:14

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E08007-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	ND	0.500	1.00	1.50	1	UQ	E351.2	4E08007	05/09/14 09:37

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E08007-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.839**	**0.500**	1.00	1.50	1		E351.2	4E08007	05/09/14 09:38

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E08007-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**4.395**	**0.500**	1.00	1.50	1		E351.2	4E08007	05/09/14 09:39

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E08007-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**2.192**	**0.556**	1.11	1.67	1	Q	E351.2	4E08007	05/14/14 13:24

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E08007-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**1.831**	**0.556**	1.11	1.67	1	Q	E351.2	4E08007	05/14/14 13:25

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E08017-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4E08017	05/08/14 14:20

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E08017-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1047**	**5.00**	5.00	5.00	1		SM2320B	4E08017	05/08/14 14:22

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E12929-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4E12929	05/12/14 10:52

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E12929-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1030**	**5.00**	5.00	5.00	1		SM2320B	4E12929	05/12/14 10:55

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E13320-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4E13320	05/13/14 14:13
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4E13320	05/13/14 14:13
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4E13320	05/13/14 14:13
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4E13320	05/13/14 14:13

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E13320-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.44**	**0.0420**	0.125	0.250	1		SW9056A	4E13320	05/13/14 14:30
16887-00-6	Chloride	**4.114**	**0.170**	0.330	0.500	1		SW9056A	4E13320	05/13/14 14:30
16984-48-8	Fluoride	**2.645**	**0.0330**	0.100	0.250	1		SW9056A	4E13320	05/13/14 14:30
14808-79-8	Sulfate as SO4	**20.69**	**0.330**	1.00	2.50	1		SW9056A	4E13320	05/13/14 14:30

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4E13321-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4E13321	05/13/14 23:30
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4E13321	05/13/14 23:30
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4E13321	05/13/14 23:30
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4E13321	05/13/14 23:30

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E13321-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.29**	**0.0420**	0.125	0.250	1		SW9056A	4E13321	05/13/14 23:47
16887-00-6	Chloride	**4.049**	**0.170**	0.330	0.500	1		SW9056A	4E13321	05/13/14 23:47
16984-48-8	Fluoride	**2.654**	**0.0330**	0.100	0.250	1		SW9056A	4E13321	05/13/14 23:47
14808-79-8	Sulfate as SO4	**20.44**	**0.330**	1.00	2.50	1		SW9056A	4E13321	05/13/14 23:47

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E14026-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4E14026	05/14/14 16:12

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E14026-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1021**	**5.00**	5.00	5.00	1		SM2320B	4E14026	05/14/14 16:05

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E15013-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4E15013	05/15/14 14:34

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E15013-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**15.41**	**0.500**	1.50	3.00	1		E353.2	4E15013	05/15/14 14:35

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E16007-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 12:53
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4E16007	05/16/14 12:53

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E16007-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**24.62**	**1.25**	2.50	3.00	1		SW9060A	4E16007	05/16/14 13:21
7440-44-0	Total Organic Carbon (dissolved)	**24.62**	**1.25**	2.50	3.00	1		SW9060A	4E16007	05/16/14 13:21

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E16013-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4E16013	05/16/14 13:21

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E16013-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**15.62**	**0.500**	1.50	3.00	1		E353.2	4E16013	05/16/14 13:22

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E20006-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4E20006	05/20/14 18:01

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_014

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20006-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**3.741**	**0.100**	0.150	0.300	1		SM4500NH3BG	4E20006	05/20/14 18:03

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E20012-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4E20012	05/20/14 18:02

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E20012-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.201**	**0.100**	0.150	0.300	1		SM4500NH3BG	4E20012	05/20/14 18:04

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4121001
Sequence: 4E12102

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12102-ICV1	Bromide	14.00	13.62	97.3	mg/L	+/- 10.00%
	Chloride	4.200	4.347	104	mg/L	+/- 10.00%
	Fluoride	2.800	2.686	95.9	mg/L	+/- 10.00%
	Sulfate as SO4	21.00	20.93	99.6	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4119004
Sequence: 4E12211

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12211-CCV1	Total Organic Carbon	25.00	22.93	91.7	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	22.93	91.7	mg/L	+/- 20.00%
4E12211-CCV2	Total Organic Carbon	50.00	46.48	93.0	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	46.48	93.0	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4119004
Sequence: 4E12513

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12513-CCV1	Total Organic Carbon	25.00	23.05	92.2	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	23.05	92.2	mg/L	+/- 20.00%
4E12513-CCV2	Total Organic Carbon	50.00	46.05	92.1	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	46.05	92.1	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4129001
Sequence: 4E12905

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12905-ICV1	Total Kjeldahl Nitrogen	10.00	9.695	97.0	mg/L	+/- 10.00%
4E12905-CCV1	Total Kjeldahl Nitrogen	10.00	10.86	109	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4134003
Sequence: 4E13410

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E13410-ICV1	Total Kjeldahl Nitrogen	10.00	10.44	104	mg/L	+/- 10.00%
4E13410-CCV1	Total Kjeldahl Nitrogen	10.00	10.76	108	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4141001
Sequence: 4E13512

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E13512-ICV1	Nitrate/Nitrite as N	1.200	1.300	108	mg/L	+/- 10.00%
4E13512-CCV1	Nitrate/Nitrite as N	1.200	1.214	101	mg/L	+/- 10.00%
4E13512-CCV2	Nitrate/Nitrite as N	1.200	1.205	100	mg/L	+/- 10.00%
4E13512-CCV3	Nitrate/Nitrite as N	1.200	1.196	99.7	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4136005
Sequence: 4E13612

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E13612-ICV1	Nitrate/Nitrite as N	1.200	1.290	108	mg/L	+/- 10.00%
4E13612-CCV1	Nitrate/Nitrite as N	1.200	1.211	101	mg/L	+/- 10.00%
4E13612-CCV2	Nitrate/Nitrite as N	1.200	1.209	101	mg/L	+/- 10.00%
4E13612-CCV3	Nitrate/Nitrite as N	1.200	1.207	101	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4119004
Sequence: 4E13904

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E13904-CCV1	Total Organic Carbon	25.00	25.35	101	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	25.35	101	mg/L	+/- 20.00%
4E13904-CCV2	Total Organic Carbon	50.00	49.76	99.5	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	49.76	99.5	mg/L	+/- 20.00%
4E13904-CCV3	Total Organic Carbon	25.00	25.33	101	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	25.33	101	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4121001
Sequence: 4E14037

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E14037-CCV1	Bromide	6.300	5.980	94.9	mg/L	+/- 10.00%
	Chloride	25.00	25.09	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.421	96.8	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.23	101	mg/L	+/- 10.00%
4E14037-CCV2	Bromide	6.300	5.967	94.7	mg/L	+/- 10.00%
	Chloride	25.00	24.92	99.7	mg/L	+/- 10.00%
	Fluoride	2.500	2.465	98.6	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.04	100	mg/L	+/- 10.00%
4E14037-CCV3	Bromide	6.300	5.879	93.3	mg/L	+/- 10.00%
	Chloride	25.00	25.06	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.443	97.7	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.72	98.9	mg/L	+/- 10.00%
4E14037-CCV4	Bromide	6.300	5.950	94.4	mg/L	+/- 10.00%
	Chloride	25.00	25.13	101	mg/L	+/- 10.00%
	Fluoride	2.500	2.430	97.2	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.92	99.7	mg/L	+/- 10.00%
4E14037-CCV5	Bromide	6.300	5.995	95.2	mg/L	+/- 10.00%
	Chloride	25.00	25.13	101	mg/L	+/- 10.00%
	Fluoride	2.500	2.440	97.6	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.04	100	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_014
Project: Kirtland AFB (ECOS)
Calibration: 4140003
Sequence: 4E14047

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E14047-ICV1	Ammonia as N	2.000	2.137	107	mg/L	+/- 10.00%
4E14047-CCV1	Ammonia as N	2.000	2.096	105	mg/L	+/- 10.00%
4E14047-CCV2	Ammonia as N	2.000	2.101	105	mg/L	+/- 10.00%
4E14047-CCV3	Ammonia as N	2.000	2.088	104	mg/L	+/- 10.00%

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 4121001

Sequence: 4E14037

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4E14037-CRL1	Chloride	0.5000	0.5410	108	mg/L	50 - 150
4E14037-CRL2	Bromide	0.2520	0.1620	64.3	mg/L	50 - 150
	Fluoride	0.1000	0.09000	90.0	mg/L	50 - 150
	Sulfate as SO4	1.000	1.100	110	mg/L	50 - 150

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4D30008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4D30008-BLK1	Total Dissolved Solids	-5.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E01024

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E01024-BLK1	Total Organic Carbon	0.502	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.502	1.25	3.00	mg/L	U	SW9060A

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E07008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E07008-BLK1	Total Dissolved Solids	-4.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E08007

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E08007-BLK1	Total Kjeldahl Nitrogen	-1.18	0.500	1.50	mg/L	J	E351.2

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E08017

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E08017-BLK1	Alkalinity, Total (as CACO3)	-0.408	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E12929

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12929-BLK1	Alkalinity, Total (as CACO3)	-0.408	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E13320

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13320-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0100	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0290	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E13321

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13321-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E14026

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14026-BLK1	Alkalinity, Total (as CACO3)	0.00	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E15013

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E15013-BLK1	Nitrate/Nitrite as N	-0.0191	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E16007

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E16007-BLK1	Total Organic Carbon	0.516	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.516	1.25	3.00	mg/L	U	SW9060A

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E16013

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E16013-BLK1	Nitrate/Nitrite as N	-0.0174	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E20006

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E20006-BLK1	Ammonia as N	0.0528	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E20012

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E20012-BLK1	Ammonia as N	-0.0292	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E12102
Calibration: 4121001
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12102-ICB1	Bromide	0.000	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.03000	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.008000	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.02100	0.330	2.50	mg/L	U	SW9056A

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E12211
Calibration: 4119004
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12211-CCB1	Total Organic Carbon	0.490	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.490	1.25	3.00	mg/L	U	SW9060A
4E12211-CCB2	Total Organic Carbon	0.510	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.510	1.25	3.00	mg/L	U	SW9060A

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E12513
Calibration: 4119004
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12513-CCB1	Total Organic Carbon	0.444	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.444	1.25	3.00	mg/L	U	SW9060A
4E12513-CCB2	Total Organic Carbon	0.488	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.488	1.25	3.00	mg/L	U	SW9060A

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E12905
Calibration: 4129001
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12905-ICB1	Total Kjeldahl Nitrogen	-0.5001	0.500	1.50	mg/L	J	E351.2
4E12905-CCB1	Total Kjeldahl Nitrogen	-3.92	0.500	1.50	mg/L		E351.2

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E13410
Calibration: 4134003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13410-ICB1	Total Kjeldahl Nitrogen	-0.2017	0.500	1.50	mg/L	U	E351.2
4E13410-CCB1	Total Kjeldahl Nitrogen	-0.112	0.500	1.50	mg/L	U	E351.2

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E13512
Calibration: 4141001
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13512-ICB1	Nitrate/Nitrite as N	-0.03133	0.0500	0.300	mg/L	U	E353.2
4E13512-CCB1	Nitrate/Nitrite as N	-0.0176	0.0500	0.300	mg/L	U	E353.2
4E13512-CCB2	Nitrate/Nitrite as N	-0.0205	0.0500	0.300	mg/L	U	E353.2
4E13512-CCB3	Nitrate/Nitrite as N	-0.0242	0.0500	0.300	mg/L	U	E353.2

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E13612
Calibration: 4136005
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13612-ICB1	Nitrate/Nitrite as N	-0.02161	0.0500	0.300	mg/L	U	E353.2
4E13612-CCB1	Nitrate/Nitrite as N	-0.0241	0.0500	0.300	mg/L	U	E353.2
4E13612-CCB2	Nitrate/Nitrite as N	-0.0151	0.0500	0.300	mg/L	U	E353.2
4E13612-CCB3	Nitrate/Nitrite as N	-0.0161	0.0500	0.300	mg/L	U	E353.2

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E13904
Calibration: 4119004
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13904-CCB1	Total Organic Carbon	0.565	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.565	1.25	3.00	mg/L	U	SW9060A
4E13904-CCB2	Total Organic Carbon	0.573	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.573	1.25	3.00	mg/L	U	SW9060A
4E13904-CCB3	Total Organic Carbon	0.584	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.584	1.25	3.00	mg/L	U	SW9060A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E14037
Calibration: 4121001
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14037-CCB1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0140	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0320	0.330	2.50	mg/L	U	SW9056A
4E14037-CCB2	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4E14037-CCB3	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4E14037-CCB4	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4E14037-CCB5	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_014
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E14047
Calibration: 4140003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14047-ICB1	Ammonia as N	-0.04444	0.100	0.300	mg/L	U	SM4500NH3BG
4E14047-CCB1	Ammonia as N	-0.0148	0.100	0.300	mg/L	U	SM4500NH3BG
4E14047-CCB2	Ammonia as N	-0.0387	0.100	0.300	mg/L	U	SM4500NH3BG
4E14047-CCB3	Ammonia as N	0.0242	0.100	0.300	mg/L	U	SM4500NH3BG

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E351.2

ST105-30050

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E08007

% Solids:

Source Sample Name: **1405013-09RE1**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	ND	2.192	39.5	N	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	1.831	33.0	18.0	N	20	75 - 125

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4D30008	Laboratory ID:	4D30008-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	975.0	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E01024	Laboratory ID:	4E01024-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	22.90	91.6	80 - 120
Total Organic Carbon (dissolved)	25.00	22.90	91.6	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E07008	Laboratory ID:	4E07008-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	990.0	102	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Dissolved Solids	973.0	835.0	85.8	17.0	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E08007	Laboratory ID:	4E08007-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.839	116	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	**3.300**	**4.395**	**133 ***	**13.5**	**20**	**80 - 120**

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E08017	Laboratory ID:	4E08017-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1047	105	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E12929	Laboratory ID:	4E12929-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1030	103	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E13320	Laboratory ID:	4E13320-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.44	96.0	80 - 120
Chloride	4.200	4.114	98.0	80 - 120
Fluoride	2.800	2.645	94.5	80 - 120
Sulfate as SO4	21.00	20.69	98.5	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E13321	Laboratory ID:	4E13321-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.29	94.9	80 - 120
Chloride	4.200	4.049	96.4	80 - 120
Fluoride	2.800	2.654	94.8	80 - 120
Sulfate as SO4	21.00	20.44	97.3	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E14026	Laboratory ID:	4E14026-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1021	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E15013	Laboratory ID:	4E15013-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	15.41	104	90 - 110

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E16007	Laboratory ID:	4E16007-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	24.62	98.5	80 - 120
Total Organic Carbon (dissolved)	25.00	24.62	98.5	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E16013	Laboratory ID:	4E16013-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	15.62	106	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E20006	Laboratory ID:	4E20006-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	4.400	3.741	85.0	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E20012	Laboratory ID:	4E20012-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	4.400	4.201	95.5	80 - 120

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4D30008 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30047	1404205-01	04/30/14 10:01	100.00	100.00
Blank	4D30008-BLK1	04/30/14 10:01	100.00	100.00
LCS	4D30008-BS1	04/30/14 10:01	20.00	20.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E01024 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30047	1404205-01	05/01/14 14:20	40.00	40.00
ST105-30047	1404205-02	05/01/14 14:20	40.00	40.00
Blank	4E01024-BLK1	05/01/14 14:20	40.00	40.00
LCS	4E01024-BS1	05/01/14 14:20	40.00	40.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E07008 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30029	1405013-01	05/07/14 10:28	100.00	100.00
ST105-30043	1405013-03	05/07/14 10:28	100.00	100.00
ST105-30048	1405013-05	05/07/14 10:28	100.00	100.00
ST105-30049	1405013-07	05/07/14 10:28	100.00	100.00
ST105-30050	1405013-09	05/07/14 10:28	100.00	100.00
Blank	4E07008-BLK1	05/07/14 08:28	100.00	100.00
LCS	4E07008-BS1	05/07/14 08:28	20.00	20.00
LCS Dup	4E07008-BSD1	05/07/14 08:28	20.00	20.00

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E08007 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30047	1404205-01	05/08/14 09:27	20.00	20.00
ST105-30029	1405013-01	05/08/14 09:27	20.00	20.00
ST105-30043	1405013-03	05/08/14 09:27	20.00	20.00
ST105-30048	1405013-05	05/08/14 09:27	20.00	20.00
ST105-30049	1405013-07	05/08/14 09:27	20.00	20.00
ST105-30050	1405013-09RE1	05/08/14 09:27	20.00	20.00
Blank	4E08007-BLK1	05/08/14 09:27	20.00	20.00
LCS	4E08007-BS1	05/08/14 09:27	20.00	20.00
LCS Dup	4E08007-BSD1	05/08/14 09:27	20.00	20.00
ST105-30050	4E08007-MS1	05/08/14 09:27	18.00	20.00
ST105-30050	4E08007-MSD1	05/08/14 09:27	18.00	20.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E08017 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30047	1404205-01	05/08/14 12:12	25.00	25.00
Blank	4E08017-BLK1	05/08/14 12:12	25.00	25.00
LCS	4E08017-BS1	05/08/14 12:12	5.00	25.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E12929 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30048	1405013-05	05/12/14 08:41	25.00	25.00
ST105-30049	1405013-07	05/12/14 08:41	25.00	25.00
ST105-30050	1405013-09	05/12/14 08:41	25.00	25.00
Blank	4E12929-BLK1	05/12/14 08:41	25.00	25.00
LCS	4E12929-BS1	05/12/14 08:41	5.00	25.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E13320 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30047	1404205-01	05/13/14 11:33	5.00	5.00
Blank	4E13320-BLK1	05/13/14 11:33	5.00	5.00
LCS	4E13320-BS1	05/13/14 11:33	5.00	5.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E13321 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30029	1405013-01	05/13/14 11:37	5.00	5.00
ST105-30043	1405013-03	05/13/14 11:37	5.00	5.00
ST105-30048	1405013-05	05/13/14 11:37	5.00	5.00
ST105-30049	1405013-07	05/13/14 11:37	5.00	5.00
ST105-30050	1405013-09	05/13/14 11:37	5.00	5.00
Blank	4E13321-BLK1	05/13/14 11:37	5.00	5.00
LCS	4E13321-BS1	05/13/14 11:37	5.00	5.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E14026 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30029	1405013-01	05/15/14 08:00	25.00	25.00
ST105-30043	1405013-03	05/15/14 08:00	25.00	25.00
Blank	4E14026-BLK1	05/14/14 13:10	25.00	25.00
LCS	4E14026-BS1	05/14/14 13:10	5.00	25.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E15013 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30047	1404205-01RE1	05/15/14 13:11	4.00	20.00
Blank	4E15013-BLK1	05/15/14 13:11	20.00	20.00
LCS	4E15013-BS1	05/15/14 13:11	2.00	20.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E16007 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30029	1405013-01	05/16/14 09:39	40.00	40.00
ST105-30029	1405013-02	05/16/14 09:39	40.00	40.00
ST105-30043	1405013-03	05/16/14 09:39	40.00	40.00
ST105-30043	1405013-04	05/16/14 09:39	40.00	40.00
ST105-30048	1405013-05	05/16/14 09:39	40.00	40.00
ST105-30048	1405013-06	05/16/14 09:39	40.00	40.00
ST105-30049	1405013-07	05/16/14 09:39	40.00	40.00
ST105-30049	1405013-08	05/16/14 09:39	40.00	40.00
ST105-30050	1405013-09	05/16/14 09:39	40.00	40.00
ST105-30050	1405013-10	05/16/14 09:39	40.00	40.00
Blank	4E16007-BLK1	05/16/14 09:39	40.00	40.00
LCS	4E16007-BS1	05/16/14 09:39	40.00	40.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E16013 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30029	1405013-01	05/16/14 11:23	4.00	20.00
ST105-30043	1405013-03	05/16/14 11:23	4.00	20.00
ST105-30048	1405013-05RE1	05/16/14 11:23	4.00	20.00
ST105-30049	1405013-07RE1	05/16/14 11:23	4.00	20.00
ST105-30050	1405013-09RE1	05/16/14 11:23	4.00	20.00
Blank	4E16013-BLK1	05/16/14 11:23	20.00	20.00
LCS	4E16013-BS1	05/16/14 11:23	2.00	20.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E20006 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30047	1404205-01	05/20/14 08:37	100.00	100.00
ST105-30029	1405013-01	05/20/14 08:37	100.00	100.00
Blank	4E20006-BLK1	05/20/14 08:37	100.00	100.00
LCS	4E20006-BS1	05/20/14 08:37	100.00	100.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E20012 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30043	1405013-03	05/20/14 12:29	100.00	100.00
ST105-30048	1405013-05	05/20/14 12:29	100.00	100.00
ST105-30049	1405013-07	05/20/14 12:29	100.00	100.00
ST105-30050	1405013-09	05/20/14 12:29	100.00	100.00
Blank	4E20012-BLK1	05/20/14 12:29	100.00	100.00
LCS	4E20012-BS1	05/20/14 12:29	100.00	100.00

ANALYSIS SEQUENCE SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Blank	4E08017-BLK1	050814-003	05/08/14 14:20
LCS	4E08017-BS1	050814-002	05/08/14 14:22
Blank	4E12929-BLK1	051214-003	05/12/14 10:52
LCS	4E12929-BS1	051214-002	05/12/14 10:55
LCS	4E14026-BS1	051414-002	05/14/14 16:05
Blank	4E14026-BLK1	051414-003	05/14/14 16:12

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_014

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	4D30008-BS1	043014-002	04/30/14 17:20
Blank	4D30008-BLK1	043014-001	04/30/14 17:20
LCS Dup	4E07008-BSD1	050714-003	05/07/14 13:14
LCS	4E07008-BS1	050714-002	05/07/14 13:14
Blank	4E07008-BLK1	050714-001	05/07/14 13:14

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11915	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11915-CAL1		02/14/14 16:20
Cal Standard	4D11915-CAL2		02/14/14 16:42
Cal Standard	4D11915-CAL3		02/14/14 17:03
Cal Standard	4D11915-CAL4		02/14/14 17:25
Cal Standard	4D11915-CAL5		02/14/14 17:48
Cal Standard	4D11915-CAL6		02/14/14 18:13
Cal Standard	4D11915-CAL7		02/14/14 18:42
Cal Standard	4D11915-CAL8		02/14/14 19:18

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12102	Instrument:	WC-IC
Calibration:	4121001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E12102-CAL1	042914curve-003	04/29/14 14:13
Cal Standard	4E12102-CAL2	042914curve-004	04/29/14 14:31
Cal Standard	4E12102-CAL3	042914curve-005	04/29/14 14:48
Cal Standard	4E12102-CAL4	042914curve-006	04/29/14 15:06
Cal Standard	4E12102-CAL5	042914curve-007	04/29/14 15:23
Cal Standard	4E12102-CAL6	042914curve-008	04/29/14 15:40
Cal Standard	4E12102-CAL7	042914curve-009	04/29/14 15:58
Cal Standard	4E12102-CAL8	042914curve-010	04/29/14 16:15
Initial Cal Check	4E12102-ICV1	042914curve-011	04/29/14 16:33
Initial Cal Blank	4E12102-ICB1	042914curve-012	04/29/14 16:50

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12211	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4E12211-CCV1	5-01-14Q-001	05/01/14 16:22
Calibration Blank	4E12211-CCB1	5-01-14Q-002	05/01/14 16:45
Blank	4E01024-BLK1	5-01-14Q-003	05/01/14 17:08
LCS	4E01024-BS1	5-01-14Q-004	05/01/14 17:35
Calibration Check	4E12211-CCV2	5-01-14Q-017	05/01/14 23:28
Calibration Blank	4E12211-CCB2	5-01-14Q-018	05/01/14 23:53

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12513	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4E12513-CCV1	5-02-14Q-001	05/02/14 14:16
Calibration Blank	4E12513-CCB1	5-02-14Q-002	05/02/14 14:39
ST105-30047	1404205-01	5-02-14Q-012	05/02/14 18:42
ST105-30047	1404205-01		05/02/14 18:42
ST105-30047	1404205-02	5-02-14Q-013	05/02/14 19:05
ST105-30047	1404205-02		05/02/14 19:05
Calibration Check	4E12513-CCV2	5-02-14Q-014	05/02/14 19:33
Calibration Blank	4E12513-CCB2	5-02-14Q-015	05/02/14 19:58

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12905	Instrument:	WC-Lachat
Calibration:	4129001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E12905-CAL1	)M_5-9-2014_09-25-20AM-00	05/09/14 09:27
Cal Standard	4E12905-CAL2	)M_5-9-2014_09-25-20AM-00	05/09/14 09:28
Cal Standard	4E12905-CAL4	)M_5-9-2014_09-25-20AM-00	05/09/14 09:30
Cal Standard	4E12905-CAL5	)M_5-9-2014_09-25-20AM-00	05/09/14 09:31
Cal Standard	4E12905-CAL7	)M_5-9-2014_09-25-20AM-00	05/09/14 09:33
Initial Cal Check	4E12905-ICV1	)M_5-9-2014_09-25-20AM-00	05/09/14 09:34
Initial Cal Blank	4E12905-ICB1	)M_5-9-2014_09-25-20AM-00	05/09/14 09:36
Blank	4E08007-BLK1	)M_5-9-2014_09-25-20AM-01	05/09/14 09:37
LCS	4E08007-BS1	)M_5-9-2014_09-25-20AM-01	05/09/14 09:38
LCS Dup	4E08007-BSD1	)M_5-9-2014_09-25-20AM-01	05/09/14 09:39
ST105-30047	1404205-01	)M_5-9-2014_09-25-20AM-01	05/09/14 09:40
ST105-30029	1405013-01	)M_5-9-2014_09-25-20AM-01	05/09/14 09:42
ST105-30043	1405013-03	)M_5-9-2014_09-25-20AM-01	05/09/14 09:43
ST105-30048	1405013-05	)M_5-9-2014_09-25-20AM-01	05/09/14 09:45
ST105-30049	1405013-07	)M_5-9-2014_09-25-20AM-01	05/09/14 09:46
Calibration Check	4E12905-CCV1	)M_5-9-2014_09-25-20AM-02	05/09/14 09:48
Calibration Blank	4E12905-CCB1	)M_5-9-2014_09-25-20AM-02	05/09/14 09:49

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E13410	Instrument:	WC-Lachat
Calibration:	4134003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E13410-CAL1	M_5-14-2014_01-08-49PM-00	05/14/14 13:10
Cal Standard	4E13410-CAL2	M_5-14-2014_01-08-49PM-00	05/14/14 13:11
Cal Standard	4E13410-CAL3	M_5-14-2014_01-08-49PM-00	05/14/14 13:12
Cal Standard	4E13410-CAL4	M_5-14-2014_01-08-49PM-00	05/14/14 13:14
Cal Standard	4E13410-CAL5	M_5-14-2014_01-08-49PM-00	05/14/14 13:15
Cal Standard	4E13410-CAL6	M_5-14-2014_01-08-49PM-00	05/14/14 13:16
Cal Standard	4E13410-CAL7	M_5-14-2014_01-08-49PM-00	05/14/14 13:17
Initial Cal Check	4E13410-ICV1	M_5-14-2014_01-08-49PM-00	05/14/14 13:18
Initial Cal Blank	4E13410-ICB1	M_5-14-2014_01-08-49PM-00	05/14/14 13:19
ST105-30050	1405013-09RE1	M_5-14-2014_01-08-49PM-01	05/14/14 13:23
ST105-30050	4E08007-MS1	M_5-14-2014_01-08-49PM-01	05/14/14 13:24
ST105-30050	4E08007-MSD1	M_5-14-2014_01-08-49PM-01	05/14/14 13:25
Calibration Check	4E13410-CCV1	M_5-14-2014_01-08-49PM-02	05/14/14 13:37
Calibration Blank	4E13410-CCB1	M_5-14-2014_01-08-49PM-02	05/14/14 13:38

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E13512	Instrument:	WC-Lachat
Calibration:	4141001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E13512-CAL1	M_5-15-2014_02-16-15PM-00	05/15/14 14:18
Cal Standard	4E13512-CAL2	M_5-15-2014_02-16-15PM-00	05/15/14 14:19
Cal Standard	4E13512-CAL3	M_5-15-2014_02-16-15PM-00	05/15/14 14:21
Cal Standard	4E13512-CAL4	M_5-15-2014_02-16-15PM-00	05/15/14 14:22
Cal Standard	4E13512-CAL5	M_5-15-2014_02-16-15PM-00	05/15/14 14:24
Cal Standard	4E13512-CAL6	M_5-15-2014_02-16-15PM-00	05/15/14 14:25
Cal Standard	4E13512-CAL7	M_5-15-2014_02-16-15PM-00	05/15/14 14:26
Cal Standard	4E13512-CAL8	M_5-15-2014_02-16-15PM-00	05/15/14 14:28
Initial Cal Check	4E13512-ICV1	M_5-15-2014_02-16-15PM-00	05/15/14 14:29
Initial Cal Blank	4E13512-ICB1	M_5-15-2014_02-16-15PM-01	05/15/14 14:31
Blank	4E15013-BLK1	M_5-15-2014_02-16-15PM-01	05/15/14 14:34
LCS	4E15013-BS1	M_5-15-2014_02-16-15PM-01	05/15/14 14:35
Calibration Check	4E13512-CCV1	M_5-15-2014_02-16-15PM-02	05/15/14 14:54
Calibration Blank	4E13512-CCB1	M_5-15-2014_02-16-15PM-02	05/15/14 14:55
Calibration Check	4E13512-CCV2	M_5-15-2014_02-16-15PM-03	05/15/14 15:10
Calibration Blank	4E13512-CCB2	M_5-15-2014_02-16-15PM-03	05/15/14 15:11
ST105-30047	1404205-01RE1	M_5-15-2014_02-16-15PM-04	05/15/14 15:14
Calibration Check	4E13512-CCV3	M_5-15-2014_02-16-15PM-04	05/15/14 15:19
Calibration Blank	4E13512-CCB3	M_5-15-2014_02-16-15PM-04	05/15/14 15:20

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E13612	Instrument:	WC-Lachat
Calibration:	4136005		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E13612-CAL1	M_5-16-2014_01-03-25PM-00	05/16/14 13:05
Cal Standard	4E13612-CAL2	M_5-16-2014_01-03-25PM-00	05/16/14 13:06
Cal Standard	4E13612-CAL3	M_5-16-2014_01-03-25PM-00	05/16/14 13:08
Cal Standard	4E13612-CAL4	M_5-16-2014_01-03-25PM-00	05/16/14 13:09
Cal Standard	4E13612-CAL5	M_5-16-2014_01-03-25PM-00	05/16/14 13:11
Cal Standard	4E13612-CAL6	M_5-16-2014_01-03-25PM-00	05/16/14 13:12
Cal Standard	4E13612-CAL7	M_5-16-2014_01-03-25PM-00	05/16/14 13:14
Cal Standard	4E13612-CAL8	M_5-16-2014_01-03-25PM-00	05/16/14 13:15
Initial Cal Check	4E13612-ICV1	M_5-16-2014_01-03-25PM-00	05/16/14 13:17
Initial Cal Blank	4E13612-ICB1	M_5-16-2014_01-03-25PM-01	05/16/14 13:18
Blank	4E16013-BLK1	M_5-16-2014_01-03-25PM-01	05/16/14 13:21
LCS	4E16013-BS1	M_5-16-2014_01-03-25PM-01	05/16/14 13:22
ST105-30029	1405013-01	M_5-16-2014_01-03-25PM-01	05/16/14 13:24
ST105-30043	1405013-03	M_5-16-2014_01-03-25PM-01	05/16/14 13:25
Calibration Check	4E13612-CCV1	M_5-16-2014_01-03-25PM-02	05/16/14 13:38
Calibration Blank	4E13612-CCB1	M_5-16-2014_01-03-25PM-02	05/16/14 13:40
Calibration Check	4E13612-CCV2	M_5-16-2014_01-03-25PM-03	05/16/14 13:59
Calibration Blank	4E13612-CCB2	M_5-16-2014_01-03-25PM-03	05/16/14 14:00
ST105-30048	1405013-05RE1	M_5-16-2014_01-03-25PM-04	05/16/14 14:02
ST105-30049	1405013-07RE1	M_5-16-2014_01-03-25PM-04	05/16/14 14:03
ST105-30050	1405013-09RE1	M_5-16-2014_01-03-25PM-04	05/16/14 14:04
Calibration Check	4E13612-CCV3	M_5-16-2014_01-03-25PM-04	05/16/14 14:06
Calibration Blank	4E13612-CCB3	M_5-16-2014_01-03-25PM-04	05/16/14 14:07

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E13904	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4E13904-CCV1	5-16-14Q-001	05/16/14 12:06
Calibration Blank	4E13904-CCB1	5-16-14Q-002	05/16/14 12:30
Blank	4E16007-BLK1	5-16-14Q-003	05/16/14 12:53
LCS	4E16007-BS1	5-16-14Q-004	05/16/14 13:21
ST105-30029	1405013-01	5-16-14Q-013	05/16/14 16:58
ST105-30029	1405013-02	5-16-14Q-014	05/16/14 17:21
ST105-30043	1405013-03	5-16-14Q-015	05/16/14 17:44
ST105-30043	1405013-04	5-16-14Q-016	05/16/14 18:06
Calibration Check	4E13904-CCV2	5-16-14Q-017	05/16/14 18:38
Calibration Blank	4E13904-CCB2	5-16-14Q-018	05/16/14 19:02
ST105-30048	1405013-05	5-16-14Q-019	05/16/14 19:25
ST105-30048	1405013-06	5-16-14Q-020	05/16/14 19:48
ST105-30049	1405013-07	5-16-14Q-021	05/16/14 20:11
ST105-30049	1405013-08	5-16-14Q-022	05/16/14 20:34
ST105-30050	1405013-09	5-16-14Q-023	05/16/14 20:57
ST105-30050	1405013-10	5-16-14Q-024	05/16/14 21:21
Calibration Check	4E13904-CCV3	5-16-14Q-029	05/16/14 23:20
Calibration Blank	4E13904-CCB3	5-16-14Q-030	05/16/14 23:45

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E14037	Instrument:	WC-IC
Calibration:	4121001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4E14037-CCV1	051314-003	05/13/14 12:46
Calibration Blank	4E14037-CCB1	051314-004	05/13/14 13:03
Instrument RL Check	4E14037-CRL1	051314-005	05/13/14 13:20
Instrument RL Check	4E14037-CRL2	051314-006	05/13/14 13:38
Blank	4E13320-BLK1	051314-008	05/13/14 14:13
LCS	4E13320-BS1	051314-009	05/13/14 14:30
Calibration Check	4E14037-CCV2	051314-023	05/13/14 18:34
Calibration Blank	4E14037-CCB2	051314-024	05/13/14 18:51
ST105-30047	1404205-01	051314-037	05/13/14 22:37
Calibration Check	4E14037-CCV3	051314-038	05/13/14 22:55
Calibration Blank	4E14037-CCB3	051314-039	05/13/14 23:12
Blank	4E13321-BLK1	051314-040	05/13/14 23:30
LCS	4E13321-BS1	051314-041	05/13/14 23:47
Calibration Check	4E14037-CCV4	051314-054	05/14/14 03:33
Calibration Blank	4E14037-CCB4	051314-055	05/14/14 03:51
ST105-30029	1405013-01	051314-056	05/14/14 04:08
ST105-30043	1405013-03	051314-057	05/14/14 04:26
ST105-30048	1405013-05	051314-058	05/14/14 04:43
ST105-30049	1405013-07	051314-059	05/14/14 05:01
ST105-30050	1405013-09	051314-060	05/14/14 05:18
Calibration Check	4E14037-CCV5	051314-066	05/14/14 07:02
Calibration Blank	4E14037-CCB5	051314-067	05/14/14 07:20

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E14047	Instrument:	WC-Lachat
Calibration:	4140003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E14047-CAL1	M_5-20-2014_05-51-16PM-00	05/20/14 17:52
Cal Standard	4E14047-CAL2	M_5-20-2014_05-51-16PM-00	05/20/14 17:53
Cal Standard	4E14047-CAL3	M_5-20-2014_05-51-16PM-00	05/20/14 17:54
Cal Standard	4E14047-CAL4	M_5-20-2014_05-51-16PM-00	05/20/14 17:54
Cal Standard	4E14047-CAL5	M_5-20-2014_05-51-16PM-00	05/20/14 17:55
Cal Standard	4E14047-CAL6	M_5-20-2014_05-51-16PM-00	05/20/14 17:56
Cal Standard	4E14047-CAL7	M_5-20-2014_05-51-16PM-00	05/20/14 17:57
Cal Standard	4E14047-CAL8	M_5-20-2014_05-51-16PM-00	05/20/14 17:58
Initial Cal Check	4E14047-ICV1	M_5-20-2014_05-51-16PM-00	05/20/14 17:59
Initial Cal Blank	4E14047-ICB1	M_5-20-2014_05-51-16PM-01	05/20/14 18:00
Blank	4E20006-BLK1	M_5-20-2014_05-51-16PM-01	05/20/14 18:01
Blank	4E20012-BLK1	M_5-20-2014_05-51-16PM-01	05/20/14 18:02
LCS	4E20006-BS1	M_5-20-2014_05-51-16PM-01	05/20/14 18:03
LCS	4E20012-BS1	M_5-20-2014_05-51-16PM-01	05/20/14 18:04
ST105-30047	1404205-01	M_5-20-2014_05-51-16PM-01	05/20/14 18:05
Calibration Check	4E14047-CCV1	M_5-20-2014_05-51-16PM-02	05/20/14 18:14
Calibration Blank	4E14047-CCB1	M_5-20-2014_05-51-16PM-02	05/20/14 18:15
ST105-30029	1405013-01	M_5-20-2014_05-51-16PM-03	05/20/14 18:21
Calibration Check	4E14047-CCV2	M_5-20-2014_05-51-16PM-03	05/20/14 18:22
Calibration Blank	4E14047-CCB2	M_5-20-2014_05-51-16PM-03	05/20/14 18:23
ST105-30043	1405013-03	M_5-20-2014_05-51-16PM-03	05/20/14 18:24
ST105-30048	1405013-05	M_5-20-2014_05-51-16PM-03	05/20/14 18:25
ST105-30049	1405013-07	M_5-20-2014_05-51-16PM-03	05/20/14 18:26
ST105-30050	1405013-09	M_5-20-2014_05-51-16PM-03	05/20/14 18:27
Calibration Check	4E14047-CCV3	M_5-20-2014_05-51-16PM-04	05/20/14 18:33
Calibration Blank	4E14047-CCB3	M_5-20-2014_05-51-16PM-04	05/20/14 18:34

INITIAL CALIBRATION DATA

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119004	Instrument:	WC-TOC1	
Matrix:	Water	Calibration Dates:	2/14/14 16:20	2/14/14 19:18

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Organic Carbon	0	0	1	19.74	2.5	15.292	5	13.902	10	13.68	25	13.992
Total Organic Carbon	0	0	1	19.74	2.5	15.292	5	13.902	10	13.68	25	13.992

INITIAL CALIBRATION DATA (Continued)

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119004	Instrument:	WC-TOC1	
Matrix:	Water	Calibration Dates:	2/14/14 16:20	2/14/14 19:18

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Organic Carbon	50	14.424	100	15.05								
Total Organic Carbon	50	14.424	100	15.05								

INITIAL CALIBRATION DATA (Continued)

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119004	Instrument:	WC-TOC1	
Matrix:	Water	Calibration Dates:	2/14/14 16:20	2/14/14 19:18

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Organic Carbon	13.26	43.00536			0.9992826		0.995	
Total Organic Carbon	13.26	43.00536			0.9992826		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4121001	Instrument:	WC-IC	
Matrix:	Water	Calibration Dates:	4/29/14 14:13	4/29/14 16:15

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	0.126	159881	0.126	316904.8	0.63	163830.2	1.26	176354	6.3	183568.1	12.6	179961
Chloride	0.5	421506	0.5	787168	2.5	394408.4	5	399378.4	25	411468.8	50	407750.2
Fluoride	0.05	~~775280~~	0.05	1364560	0.25	691468	0.5	685650	2.5	686538.4	5	640231.8
Sulfate as SO4	0.5	538696	0.5	900462	2.5	380967.6	5	338126.8	25	312521.2	50	303954.4

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4121001	Instrument:	WC-IC	
Matrix:	Water	Calibration Dates:	4/29/14 14:13	4/29/14 16:15

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	31.5	177743.7	63	181116.7								
Chloride	125	406745	250	403355.2								
Fluoride	12.5	~~575363.2~~	25	~~515857.6~~								
Sulfate as SO4	125	298662.8	250	296911.2								

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4121001	Instrument:	WC-IC	
Matrix:	Water	Calibration Dates:	4/29/14 14:13	4/29/14 16:15

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Bromide	192419.9	26.50488	7.60125	1.262659	0.999913		0.995	
Chloride	453972.5	29.70977	4.45625	0.5989249	0.9999724		0.995	
Fluoride	813689.6	37.93147	3.106	1.058189	0.998347		0.995	
Sulfate as SO4	421287.7	49.79368	6.23375	4.232915	0.999902		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4129001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/9/14 9:27	5/9/14 9:33

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	20	0.2992	10	~~0.3875~~	5	0.546	2	0.948	0	0		

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4129001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/9/14 9:27	5/9/14 9:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Kjeldahl Nitrogen	0.4483	89.4533	50.2075	0.4082427	0.9984507		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4134003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/14/14 13:10	5/14/14 13:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	20	0.2437	10	~~0.3078~~	8	~~0.3325~~	5	0.415	2	0.716	1	1.207

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4134003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/14/14 13:10	5/14/14 13:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	0	0										

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4134003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/14/14 13:10	5/14/14 13:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Kjeldahl Nitrogen	0.51634	90.22259	48.578	1.100552	0.9991228		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4136005	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/16/14 13:05	5/16/14 13:15

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	2	3.61	1.6	3.75375	1.2	3.680833	0.8	3.75875	0.4	4.01	0.2	3.992

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4136005	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/16/14 13:05	5/16/14 13:15

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	0.1	4.422	0	0								

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4136005	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/16/14 13:05	5/16/14 13:15

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate/Nitrite as N	3.403417	41.11078	31.29125	3.948607	0.9992659		0.99	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4140003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/20/14 17:52	5/20/14 17:58

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	2.489	8	2.69875	2	2.744	1	2.719	0.4	2.48025	0.2	2.043

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4140003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/20/14 17:52	5/20/14 17:58

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	1.183	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4140003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/20/14 17:52	5/20/14 17:58

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.044625	47.78459	30.9275	3.336566	0.997438		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4141001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/15/14 14:18	5/15/14 14:28

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	2	3.866	1.6	4.045	1.2	4.015	0.8	4.0625	0.4	4.2975	0.2	4.3195

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4141001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/15/14 14:18	5/15/14 14:28

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	0.1	4.833	0	0								

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_014	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4141001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/15/14 14:18	5/15/14 14:28

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate/Nitrite as N	3.679812	41.19857	33.45	1.672149	0.9990048		0.99	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4D30008

Empirical Laboratories, LLC

Printed: 5/16/2014 12:59:20PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404165-01	H	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404165-02	V	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	MS/MSD;
1404165-04	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404165-08	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404165-09	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404165-10	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404165-11	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404165-12	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404165-13	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404165-15	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404168-01	G	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	MS/MSD
1404168-03	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404184-01	A	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404184-03	A	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404203-01	D	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
1404205-01	A	WC_TOTAL_DISS_SOLIDS_25	04/30/2014	100	100					NA	
4D30008-BLK1		QC	04/30/2014	100	100					NA	
4D30008-BS1		QC	04/30/2014	20	20	14B0390		20000		NA	
4D30008-DUP1		QC	04/30/2014	100	100		1404168-01			NA	
4D30008-DUP2		QC	04/30/2014	100	100		1404165-02			NA	

PREPARATION BENCH SHEET

4D30008

Empirical Laboratories, LLC

Printed: 5/16/2014 12:59:20PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

4E01024

Empirical Laboratories, LLC

Printed: 5/7/2014 12:58:15PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404108-01	C	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404108-02	A	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	
1404108-03	C	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404108-04	A	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	
1404108-05	C	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404108-06	A	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	
1404119-02	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404119-05	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404119-05RE1	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	Added 5/2/2014 by RGB
1404119-07	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404119-07RE1	E	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	Added 5/2/2014 by RGB
1404142-01	U	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	Added for BatchQC in: 4E01024
1404142-01	U	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	MS/MSD
1404142-02	G	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404142-03	G	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404173-01	H	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404173-02	H	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404173-03	I	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404173-04	V	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	Added for BatchQC in: 4E01024
1404173-04	V	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	MS/MSD
1404173-05	I	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	
1404205-01	C	WC_TOC_9060A_QUAD	05/01/2014	40	40					NA	

PREPARATION BENCH SHEET

4E01024

Empirical Laboratories, LLC

Printed: 5/7/2014 12:58:15PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404205-02	A	WC_TOC_DISS_9060A_QUAD	05/01/2014	40	40					NA	Filtered
4E01024-BLK1		QC	05/01/2014	40	40					NA	
4E01024-BS1		QC	05/01/2014	40	40	14D0680		40000		NA	
4E01024-MS1		QC	05/01/2014	40	40	13F0271	1404142-01	600		NA	
4E01024-MS2		QC	05/01/2014	40	40	13F0271	1404173-04	600		NA	
4E01024-MSD1		QC	05/01/2014	40	40	13F0271	1404142-01	600		NA	
4E01024-MSD2		QC	05/01/2014	40	40	13F0271	1404173-04	600		NA	

Reagents Used:

Standard	Description
14D0319	TOC Phosphoric Acid Reagent
14D0959	TOC PERSULFATE REAGENT

PREPARATION BENCH SHEET

4E07008

Empirical Laboratories, LLC

Printed: 5/27/2014 3:46:44PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405013-01	A	WC_TOTAL_DISS_SOLIDS_25	05/07/2014	100	100					NA	
1405013-03	A	WC_TOTAL_DISS_SOLIDS_25	05/07/2014	100	100					NA	
1405013-05	A	WC_TOTAL_DISS_SOLIDS_25	05/07/2014	100	100					NA	
1405013-07	A	WC_TOTAL_DISS_SOLIDS_25	05/07/2014	100	100					NA	
1405013-09	A	WC_TOTAL_DISS_SOLIDS_25	05/07/2014	100	100					NA	
1405038-09	L	WC_TOTAL_DISS_SOLIDS_25	05/08/2014	100	100					NA	
4E07008-BLK1		QC	05/07/2014	100	100					NA	
4E07008-BS1		QC	05/07/2014	20	20	14B0390		20000		NA	
4E07008-BSD1		QC	05/07/2014	20	20	14B0390		20000		NA	

Reagents Used:

Standard	Description
13L0250	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

4E08007

Empirical Laboratories, LLC

Printed: 5/27/2014 3:48:05PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404205-01	C	WC_TKN_351.2	05/08/2014	20	20					NA	Outside DoD cert
1405006-03	A	WC_TKN_351.2	05/08/2014	4	20					NA	
1405006-03RE1	A	WC_TKN_351.2	05/08/2014	4	20					NA	Added 5/9/2014 by DXR
1405013-01	C	WC_TKN_351.2	05/08/2014	20	20					NA	Outside DoD cert
1405013-03	C	WC_TKN_351.2	05/08/2014	20	20					NA	Outside DoD cert
1405013-05	C	WC_TKN_351.2	05/08/2014	20	20					NA	Outside DoD cert
1405013-07	C	WC_TKN_351.2	05/08/2014	20	20					NA	Outside DoD cert
1405013-09	C	WC_TKN_351.2	05/08/2014	20	20					NA	Outside DoD cert
1405013-09RE1	C	WC_TKN_351.2	05/08/2014	20	20					NA	Added 5/14/2014 by DXR
4E08007-BLK1		QC	05/08/2014	20	20					NA	
4E08007-BS1		QC	05/08/2014	20	20	14A0452		20000		NA	
4E08007-BSD1		QC	05/08/2014	20	20	14A0452		20000		NA	
4E08007-MS1		QC	05/08/2014	18	20	14A0166	1405013-09RE1	2000		NA	
4E08007-MSD1		QC	05/08/2014	18	20	14A0166	1405013-09RE1	2000		NA	

Reagents Used:

Standard	Description
14D0663	TKN 0.8M NaOH
14D0724	TKN Digestion Soln
14D0899	TKN Carrier
14D0952	TKN Salicylate Nitroprusside Reagent
14E0201	TKN Buffer
14E0202	TKN Sodium Hypochlorite Reagent
14E0215	TKN Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4E08007

Empirical Laboratories, LLC

Printed: 5/27/2014 3:48:05PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

PREPARATION BENCH SHEET

4E08017

Empirical Laboratories, LLC

Printed: 5/13/2014 2:25:14PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404165-01	H	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	Carb & Bicarb
1404165-04	D	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	Carb & Bicarb
1404165-13	D	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	Carb & Bicarb
1404165-15	D	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	Carb & Bicarb
1404166-03	I	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	carb/bicarb
1404166-11	I	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	carb/bicarb
1404166-13	I	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	carb/bicarb
1404168-01	G	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	MS/MSD
1404194-02	F	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	
1404194-04	F	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	
1404201-02	G	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	
1404201-04	G	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	
1404203-01	D	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	
1404205-01	A	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	
1404207-03	I	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	carb/bicarb
1404207-09	I	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	carb/bicarb
1404207-13	I	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	carb/bicarb
1404207-15	I	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	carb/bicarb
1404207-17	I	WC_ALKALINITY_2320B	05/08/2014	25	25					NA	carb/bicarb
4E08017-BLK1		QC	05/08/2014	25	25					NA	
4E08017-BS1		QC	05/08/2014	5	25	13L0375		5000		NA	
4E08017-MS1		QC	05/08/2014	22.5	25	13L0375	1404168-01	2500		NA	

PREPARATION BENCH SHEET

4E08017

Empirical Laboratories, LLC

Printed: 5/13/2014 2:25:14PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E08017-MSD1		QC	05/08/2014	22.5	25	13L0375	1404168-01	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E12929

Empirical Laboratories, LLC

Printed: 5/14/2014 4:40:55PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404207-01	I	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	carb/bicarb
1404207-05	I	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	carb/bicarb
1404207-07	I	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	carb/bicarb
1404207-11	I	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	carb/bicarb
1405003-01	C	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405003-03	C	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405003-05	C	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405008-01	C	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405008-03	C	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405013-05	A	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405013-07	A	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405013-09	A	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405015-07	I	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	carb/bicarb
1405015-09	I	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	Carb/bicarb
1405015-11	AA	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	MS/MSD; carb/bicarb
1405015-13	I	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	Carb/bicarb
1405015-15	I	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	Carb/bicarb
1405037-02	F	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405037-03	F	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
1405037-04	F	WC_ALKALINITY_2320B	05/12/2014	25	25					NA	
4E12929-BLK1		QC	05/12/2014	25	25					NA	
4E12929-BS1		QC	05/12/2014	5	25	13L0375		5000		NA	

PREPARATION BENCH SHEET

4E12929

Empirical Laboratories, LLC

Printed: 5/14/2014 4:40:55PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E12929-MS1		QC	05/12/2014	22.5	25	13L0375	1405008-01	2500		NA	
4E12929-MS2		QC	05/12/2014	22.5	25	13L0375	1405015-11	2500		NA	
4E12929-MSD1		QC	05/12/2014	22.5	25	13L0375	1405008-01	2500		NA	
4E12929-MSD2		QC	05/12/2014	22.5	25	13L0375	1405015-11	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E13320

Empirical Laboratories, LLC

Printed: 5/27/2014 3:49:45PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404168-01	G	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	Added for BatchQC in: 4E13320
1404168-01	G	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	MS/MSD
1404168-01	G	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Added for BatchQC in: 4E13320
1404168-03	D	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	see versions
1404203-01	D	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	see versions
1404205-01	A	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	see versions
1405096-04	B	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	see versions
1405097-01	A	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Added for BatchQC in: 4E13320
1405097-01	A	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	see version
1405097-01	A	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	Added for BatchQC in: 4E13320
1405097-02	A	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	see version
1405098-02	F	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	SO4
1405098-02	F	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	
1405098-03	F	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	SO4
1405098-03	F	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	
1405098-04	F	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	
1405098-04	F	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	SO4
1405098-05	F	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	SO4
1405098-05	F	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	
1405098-06	F	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	SO4
1405098-06	F	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	
1405099-01	A	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	see version sulfate and Chloride

PREPARATION BENCH SHEET

4E13320

Empirical Laboratories, LLC

Printed: 5/27/2014 3:49:45PM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405099-01	A	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	See version
1405099-02	A	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	see version sulfate and Chloride
1405099-02	A	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	See version
1405099-03	A	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	see version sulfate and Chloride
1405099-03	A	WC_ANIONS_300.0 (Short Hol	05/13/2014	5	5					NA	See version
4E13320-BLK1		QC	05/13/2014	5	5					NA	
4E13320-BS1		QC	05/13/2014	5	5	14E0088		5000		NA	
4E13320-DUP1		QC	05/13/2014	5	5		1405097-01			NA	
4E13320-DUP2		QC	05/13/2014	5	5		1404168-01			NA	
4E13320-MS1		QC	05/13/2014	22.5	25	14D0880	1405097-01	2500		NA	
4E13320-MS2		QC	05/13/2014	22.5	25	14D0880	1404168-01	2500		NA	
4E13320-MSD1		QC	05/13/2014	22.5	25	14D0880	1405097-01	2500		NA	
4E13320-MSD2		QC	05/13/2014	22.5	25	14D0880	1404168-01	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E13321

Empirical Laboratories, LLC

Printed: 5/22/2014 9:53:41AM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404207-01	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1404207-03	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1404207-05	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1404207-07	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1404207-09	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1404207-11	I	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	Added for BatchQC in: 4E13321
1404207-11	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1404207-13	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1404207-15	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1404207-17	I	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Br, Cl, SO4
1405007-18RE1	G	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	RR for Cl
1405007-23RE1	S	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	RR for Cl
1405007-23RE1	S	WC_ANIONS_300.0 (Regular)	05/13/2014	5	5					NA	Added for BatchQC in: 4E13321
1405013-01	A	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	see versions
1405013-03	A	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	see versions
1405013-05	A	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	see versions
1405013-07	A	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	see versions
1405013-09	A	WC_ANIONS_9056A (Regular)	05/13/2014	5	5					NA	see versions
4E13321-BLK1		QC	05/13/2014	5	5					NA	
4E13321-BS1		QC	05/13/2014	5	5	14E0088		5000		NA	
4E13321-DUP1		QC	05/13/2014	5	5		1404207-11			NA	
4E13321-DUP2		QC	05/13/2014	5	5		1405007-23RE1			NA	

PREPARATION BENCH SHEET

4E13321

Empirical Laboratories, LLC

Printed: 5/22/2014 9:53:41AM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E13321-MS1		QC	05/13/2014	22.5	25	14D0880	1404207-11	2500		NA	
4E13321-MS2		QC	05/13/2014	22.5	25	14D0880	1405007-23RE1	2500		NA	
4E13321-MSD1		QC	05/13/2014	22.5	25	14D0880	1404207-11	2500		NA	
4E13321-MSD2		QC	05/13/2014	22.5	25	14D0880	1405007-23RE1	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E14026

Empirical Laboratories, LLC

Printed: 5/20/2014 12:19:44PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405007-16	G	WC_ALKALINITY_2320B	05/14/2014	25	25					NA	
1405007-18	G	WC_ALKALINITY_2320B	05/14/2014	25	25					NA	
1405007-21	G	WC_ALKALINITY_2320B	05/14/2014	25	25					NA	
1405007-23	S	WC_ALKALINITY_2320B	05/14/2014	25	25					NA	MS/MSD;
1405007-25	G	WC_ALKALINITY_2320B	05/14/2014	25	25					NA	
1405007-27	G	WC_ALKALINITY_2320B	05/15/2014	25	25					NA	
1405013-01	A	WC_ALKALINITY_2320B	05/15/2014	25	25					NA	
1405013-03	A	WC_ALKALINITY_2320B	05/15/2014	25	25					NA	
1405015-01	I	WC_ALKALINITY_2320B	05/15/2014	25	25					NA	carb/bicarb
1405015-03	I	WC_ALKALINITY_2320B	05/15/2014	25	25					NA	carb/bicarb
1405015-05	I	WC_ALKALINITY_2320B	05/15/2014	25	25					NA	carb/bicarb
1405037-05	F	WC_ALKALINITY_2320B	05/15/2014	25	25					NA	
4E14026-BLK1		QC	05/14/2014	25	25					NA	
4E14026-BS1		QC	05/14/2014	5	25	13L0375		5000		NA	
4E14026-MS1		QC	05/14/2014	22.5	25	13L0375	1405007-23	2500		NA	
4E14026-MSD1		QC	05/14/2014	22.5	25	13L0375	1405007-23	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E15013

Empirical Laboratories, LLC **Printed: 5/23/2014 3:49:59PM**

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404149-01	E	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404149-03	E	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404149-05	E	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404168-01	L	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	MS/MSD
1404168-03	E	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404168-03RE1	E	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	Added 5/15/2014 by RGB
1404203-01	E	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404205-01	C	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404205-01RE1	C	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	Added 5/15/2014 by RGB
1404207-01	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404207-03	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404207-05	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404207-07	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404207-09	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404207-11	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404207-13	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404207-15	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1404207-17	J	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1405054-01	A	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1405054-03	A	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	
1405054-03RE1	A	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	Added 5/15/2014 by RGB
1405057-01	A	WC_NO3NO2_N_353.2	05/15/2014	4	20					NA	

PREPARATION BENCH SHEET

4E15013

Empirical Laboratories, LLC

Printed: 5/23/2014 3:49:59PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E15013-BLK1		QC	05/15/2014	20	20					NA	
4E15013-BS1		QC	05/15/2014	2	20	14A0409		2000		NA	
4E15013-MS1		QC	05/15/2014	4	20	14B0358	1404168-01	500		NA	
4E15013-MSD1		QC	05/15/2014	4	20	14B0358	1404168-01	500		NA	

Reagents Used:

Standard	Description
14D0740	NO2/NO3 Sulfanilimide Color Reagent
14D0864	NO2/NO3 Buffer
14E0119	NO3/NO2 Carrier (Acid DI)

PREPARATION BENCH SHEET

4E16007

Empirical Laboratories, LLC

Printed: 5/22/2014 9:56:25AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405007-16	H	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405007-18	H	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405007-21	H	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405007-23	X	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	MS/MSD
1405007-23	X	WC_TOC_DISS_9060A_QUAD	05/16/2014	40	40					NA	Added for BatchQC in: 4E16007
1405007-25	H	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405007-27	H	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405013-01	C	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405013-02	A	WC_TOC_DISS_9060A_QUAD	05/16/2014	40	40					NA	Filter in lab using unpreserved container from -01. Do not filter preserved container labeled as -02
1405013-03	C	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405013-04	A	WC_TOC_DISS_9060A_QUAD	05/16/2014	40	40					NA	
1405013-05	C	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405013-06	A	WC_TOC_DISS_9060A_QUAD	05/16/2014	40	40					NA	
1405013-07	C	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405013-08	A	WC_TOC_DISS_9060A_QUAD	05/16/2014	40	40					NA	
1405013-09	C	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405013-10	A	WC_TOC_DISS_9060A_QUAD	05/16/2014	40	40					NA	
1405014-02	H	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405014-03	H	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405014-04	H	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
1405014-05	I	WC_TOC_9060A_QUAD	05/16/2014	40	40					NA	
4E16007-BLK1		QC	05/16/2014	40	40					NA	

PREPARATION BENCH SHEET

4E16007

Empirical Laboratories, LLC

Printed: 5/22/2014 9:56:25AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E16007-BS1		QC	05/16/2014	40	40	14E0197		40000		NA	
4E16007-MS1		QC	05/16/2014	40	40	13F0271	1405007-23	600		NA	
4E16007-MSD1		QC	05/16/2014	40	40	13F0271	1405007-23	600		NA	

Reagents Used:

Standard	Description
14E0251	TOC PERSULFATE REAGENT
14E0375	TOC Phosphoric Acid Reagent

PREPARATION BENCH SHEET

4E16013

Empirical Laboratories, LLC

Printed: 5/23/2014 3:50:39PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405013-01	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405013-03	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405013-05	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405013-05RE1	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	Added 5/16/2014 by RGB
1405013-07	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405013-07RE1	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	Added 5/16/2014 by RGB
1405013-09	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405013-09RE1	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	Added 5/16/2014 by RGB
1405015-01	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405015-03	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405015-05	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405015-07	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405015-09	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405015-11	AD	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	MS/MSD
1405015-13	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405015-15	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-01	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-03	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-05	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405114-01	E	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405114-03	E	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405114-05	E	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	

PREPARATION BENCH SHEET

4E16013

Empirical Laboratories, LLC

Printed: 5/23/2014 3:50:39PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405130-01	A	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
4E16013-BLK1		QC	05/16/2014	20	20					NA	
4E16013-BS1		QC	05/16/2014	2	20	14A0409		2000		NA	
4E16013-MS1		QC	05/16/2014	4	20	14B0358	1405015-11	500		NA	
4E16013-MSD1		QC	05/16/2014	4	20	14B0358	1405015-11	500		NA	

Reagents Used:

Standard	Description
14D0740	NO2/NO3 Sulfanilimide Color Reagent
14D0864	NO2/NO3 Buffer
14E0119	NO3/NO2 Carrier (Acid DI)

PREPARATION BENCH SHEET

4E20006

Empirical Laboratories, LLC

Printed: 5/22/2014 9:57:22AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404205-01	C	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1404207-01	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1404207-03	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1404207-05	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1404207-07	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1404207-11	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1404207-13	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405007-16	H	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405007-18	H	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405007-21	H	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405007-23	X	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	MS/MSD;
1405007-25	H	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405007-27	H	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405013-01	C	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
4E20006-BLK1		QC	05/20/2014	100	100					NA	
4E20006-BS1		QC	05/20/2014	100	100	14E0466		100000		NA	
4E20006-MS1		QC	05/20/2014	100	100	14A0483	1405007-23	500		NA	
4E20006-MS2		QC	05/20/2014	100	100	14A0483	1405007-23	500		NA	
4E20006-MSD1		QC	05/20/2014	100	100	14A0483	1405007-23	500		NA	
4E20006-MSD2		QC	05/20/2014	100	100	14A0483	1405007-23	500		NA	

PREPARATION BENCH SHEET

4E20006

Empirical Laboratories, LLC

Printed: 5/22/2014 9:57:22AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14D0092	Borate Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14E0040	0.04N H2SO4 FOR NH3 simpledist. distillation
14E0362	0.04N H2SO4 FOR NH3 simpledist. distillation
14E0475	1N H2SO4
14E0499	NH3 Sodium Hypochlorite Reagent
14E0500	NH3 Sodium Phenolate Reagent
14E0503	NH3 Buffer

PREPARATION BENCH SHEET

4E20012

Empirical Laboratories, LLC

Printed: 5/23/2014 3:51:42PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405013-03	C	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405013-05	C	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405013-07	C	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405013-09	C	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405015-01	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405015-03	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405015-05	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405015-07	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405015-09	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405015-11	AD	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	MS/MSD
1405015-13	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
1405015-15	J	WC_AMMONIA_PHENATE_45	05/20/2014	100	100					NA	
4E20012-BLK1		QC	05/20/2014	100	100					NA	
4E20012-BS1		QC	05/20/2014	100	100	14E0466		100000		NA	
4E20012-MS1		QC	05/20/2014	100	100	14A0483	1405015-11	500		NA	
4E20012-MS2		QC	05/20/2014	100	100	14A0483	1405015-11	500		NA	
4E20012-MSD1		QC	05/20/2014	100	100	14A0483	1405015-11	500		NA	
4E20012-MSD2		QC	05/20/2014	100	100	14A0483	1405015-11	500		NA	

PREPARATION BENCH SHEET

4E20012

Empirical Laboratories, LLC

Printed: 5/23/2014 3:51:42PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14B0165	pH 7.0 Buffer Yellow
14D0092	Borate Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14E0362	0.04N H2SO4 FOR NH3 simpledist. distillation
14E0475	1N H2SO4
14E0499	NH3 Sodium Hypochlorite Reagent
14E0500	NH3 Sodium Phenolate Reagent
14E0503	NH3 Buffer

ANALYTICAL DATA PACKAGE
SDG # KIRTLANDECOS_015

PROJECT NAME: KIRTLAND AFB (ECOS)
PROJECT LOCATION: ALBUQUERQUE, NEW MEXICO

SUBMITTAL TO:
Susan Huang
SHAW E&I, Inc.
4005 Port Chicago Highway
Concord, CA 94520

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Marianne Walker
Tel (615)345-1115
Fax (866)417-0548
Email: mwalker@empirlabs.com

Original Report Date: June 10, 2014
Report Revision #: 01
Revision Date: June 11, 2014
Total # of Pages: 277

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

Table of Contents

#	Description	Page #
1	Cover Page	1
2	Table of Contents	2
3	Case Narrative	3
4	Sample Receipt Information Chain of Custody Forms Sample Receipt Confirmations WorkOrder Summary Sample Delivery Group (SDG) Sheets	10
5	Data for SW6010C Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	24
6	Data for Wet Chemistry Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	80

Sample Delivery Group Case Narrative

Receipt Information:

The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. No samples in this SDG were subcontracted.

The following issues were discovered with the COC and/or samples upon log-in:

1. The client requested filtering for sample ST105-3029 5/1/14 @ 1315, the container received was preserved with H2SO4.

Changes to the Revision:

Revision 01: The package was revised to change the Total Organic Carbon min and max for samples 1405065-02, -08, 1405110-02, and -04 due to the data being entered in the data system in reverse.

Analytical Information:

All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6010C:

The following matrix spikes exceeded criteria:

4E14023-MS1/MSD1 (1405065-03) for Calcium, Magnesium, and Sodium; note – the parent sample concentrations for Calcium, Magnesium, and Sodium are greater than 4 times the amount spiked and are within criteria in the associated batch spike

4E20004-MS1/MSD1 (1405110-03) for Calcium, Magnesium, and Sodium; note – the parent sample concentrations for Calcium, Magnesium, and Sodium are greater than 4 times the amount spiked and are within criteria in the associated batch spike

The following post spikes exceeded criteria:

4E14023-PS1 (1405065-03) for Calcium; note – the parent sample concentration for Calcium is greater than 4 times the amount spiked and is within criteria in the associated batch spike

4E20004-PS1 (1405110-03) for Calcium; note – the parent sample concentration for Calcium is

greater than 4 times the amount spiked and is within criteria in the associated batch spike

The following duplicates exceeded criteria:
4E20004-DUP2 (1405110-01) for Iron

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:
The following compounds are qualified with an M to indicate that the DL, LOD, and LOQ were raised:
TKN for 1405065-01, -03, and -05; note - the TKN results are suppressed with negative concentrations more negative than the LOQ. The detection limits have been increased due to this negative bias.

The following matrix spikes exceeded criteria:
4E16015-MS1/MSD1 (1405065-03) with a negative bias for Nitrate/Nitrite as N; note – the associated batch spike is within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 05/13/2014)

DoD ELAP, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2014

State of Georgia, Environmental Protection Agency – NELAP
- Expires: 06/30/2014

State of Illinois, Environmental Protection Agency – NELAP, Certificate No.: 003300
- Groundwater
- Solid and Hazardous Waste
- Expires: 09/13/2014

State of Kentucky Department of Environmental Protection – NELAP, Certificate No.: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Nevada, Department of Conservation and Natural Resources – NELAP, Certificate No.: TN000042013-1
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

State of New Jersey Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2014

State of North Carolina, Department of Environment and Natural Resources - Certificate No.: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of North Dakota, Department of Health – NELAP, Certificate No.: R-204
- Aqueous
- Non-aqueous
- Expires: 06/30/2014

State of Texas, Commission on Environmental Quality – NELAP, Certificate No.: T104704307-14-10
- Aqueous
- Non-aqueous
- Expires: 12/31/2014

State of Utah, Department of Health – NELAP, Certificate No.: TN0042013-5
- Aqueous
- Non-aqueous
- Expires: 07/31/2014

Commonwealth of Virginia, Department of General Services – VELAP, Certificate No.: 2633 – Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2014

State of Washington, Department of Ecology – NELAP, Lab ID: C934-14
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2015

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

1405060 5

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-0620

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 08 MAY 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: ~~Jennifer Chandler~~ Marianne Walker
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119371492

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard X Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab X Archive (mos.)

1. Relinquished By (Signature/Affiliation) Date: 5/8/14 Time: 1600
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Date: 5/9/14 Time: 840

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30024	KAFB1007-GW-ST105-30024-REG	05 MAY 2014	14:14	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30024	KAFB1007-GW-ST105-30024-REG	05 MAY 2014	14:14	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30024	KAFB1007-GW-ST105-30024-REG	05 MAY 2014	14:14	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
02	ST105-30024	KAFB1007-GW-ST105-30024-REG	05 MAY 2014	14:14	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
01	ST105-30024	KAFB1007-GW-ST105-30024-REG	05 MAY 2014	14:14	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		

1405065

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-0620

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
04	ST105-30025	KAFB1008-GW-ST105-30025-REG	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30025	KAFB1008-GW-ST105-30025-REG	06 MAY 2014	14:34	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30025	KAFB1008-GW-ST105-30025-REG	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
	ST105-30025	KAFB1008-GW-ST105-30025-REG	06 MAY 2014	14:34	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30025	KAFB1008-GW-ST105-30025-REG	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30025-MS	KAFB1008-GW-ST105-30025-MS-MS	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	~~ST105-30025-MS~~	~~KAFB1008-GW-ST105-30025-MS-MS~~	~~06 MAY 2014~~	~~14:34~~	~~250 mL HDPE~~	~~1~~	~~HNO3<pH 2~~	~~Ca, Mg, K, Na, Fe, and Mn by SW846 6010B~~			N		
	ST105-30025-MS	KAFB1008-GW-ST105-30025-MS-MS	06 MAY 2014	14:34	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30025-MS	KAFB1008-GW-ST105-30025-MS-MS	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
04	ST105-30025-MS	KAFB1008-GW-ST105-30025-MS-MS	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30025-MS	KAFB1008-GW-ST105-30025-MSD-MSD	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	~~ST105-30025-MS~~	~~KAFB1008-GW-ST105-30025-MSD-MSD~~	~~06 MAY 2014~~	~~14:34~~	~~250 mL HDPE~~	~~1~~	~~None except cool to 4 C~~	~~Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C~~			N		
	ST105-30025-MS	KAFB1008-GW-ST105-30025-MSD-MSD	06 MAY 2014	14:34	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
04	ST105-30025-MS	KAFB1008-GW-ST105-30025-MSD-MSD	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
03	ST105-30025-MS	KAFB1008-GW-ST105-30025-MSD-MSD	06 MAY 2014	14:34	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		
05	ST105-30041	KAFB0620-GW-ST105-30041-REG	07 MAY 2014	11:47	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
06	ST105-30041	KAFB0620-GW-ST105-30041-REG	07 MAY 2014	11:47	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
05	ST105-30041	KAFB0620-GW-ST105-30041-REG	07 MAY 2014	11:47	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	~~ST105-30041~~	~~KAFB0620-GW-ST105-30041-REG~~	~~07 MAY 2014~~	~~11:47~~	~~250 mL HDPE~~	~~1~~	~~H2SO4<pH 2~~	~~Total Organic Carbon by SM 5310C~~			N		
	ST105-30041	KAFB0620-GW-ST105-30041-REG	07 MAY 2014	11:47	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
07	ST105-30045	KAFB0625-GW-ST105-30045-REG	07 MAY 2014	16:07	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		

1405065

Shaw™
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-0620

Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
07 ST105-30045	KAFB0625-GW-ST105-30045-REG	07 MAY 2014	16:07	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
08 ST105-30045	KAFB0625-GW-ST105-30045-REG	07 MAY 2014	16:07	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
07 ST105-30045	KAFB0625-GW-ST105-30045-REG	07 MAY 2014	16:07	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
↓ ST105-30045	KAFB0625-GW-ST105-30045-REG	07 MAY 2014	16:07	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 05/09/14 0840 Workorder# 1405065

1. Tracking # 1492 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 4.7 °C + *correction factor (-0.3)* = 4.3 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

   If yes, how many and where: 2 front + back

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES NO and Intact YES NO NA

   Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

    b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence #____

I certify that I unloaded the cooler and answered questions 7-14 (initial) TH

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

    b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) TH

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) TH

I certify that I attached a label with the unique LIMS number to each container (initial) TH

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) JTG

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO #____

Additional Details:

14051110

Shaw
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-0621

Project Number: 150577
Project Name: Kirtland AFB
Sample Coordinator: David Aubrey
Turnaround Time:

Samples Shipment Date: 13 MAY 2014
Lab Destination: Empirical Laboratories, Inc.
Lab Contact: ~~Jennifer Chandler~~ Marianne Walker
Project Contact: Susan Huang
Carrier/Waybill No.: Fed Ex/565119371610

Bill To:

Report To: CB&I Concord - Susan Huang
4005 Port Chicago Highway
Concord CA 94520

Special Instructions:

Possible Hazard Indentification:
Non-hazard X Flammable Skin Irritant Poison B Radiological Unknown

Sample Disposal:
Return to Client Disposal by Lab X Archive (mos.)

1. Relinquished By (Signature/Affiliation) Date: 5/13/14 Time: 1600
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Date: 5/14/14 Time: 0900

Comments:

	Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
01	ST105-30037	KAFB0617-GW-ST105-30037-REG	12 MAY 2014	~~12:28~~ 1226	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30037	KAFB0617-GW-ST105-30037-REG	12 MAY 2014	~~12:28~~ 1226	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30037	KAFB0617-GW-ST105-30037-REG	12 MAY 2014	~~12:28~~ 1226	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
02	ST105-30037	KAFB0617-GW-ST105-30037-REG	12 MAY 2014	~~12:28~~ 1226	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
01	ST105-30037	KAFB0617-GW-ST105-30037-REG	12 MAY 2014	~~12:28~~ 1226	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		

140511Ø

Shaw
Shaw E & I, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 150577-0621

	Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Sample Vol	Units	Fil	CID	Condition On Receipt
Ø4	ST105-30042	KAFB0621-GW-ST105-30042-REG	13 MAY 2014	14:00	250 mL HDPE	1	H2SO4<pH 2	Dissolved Organic Carbon by SM 5310C			N		
Ø3	ST105-30042	KAFB0621-GW-ST105-30042-REG	13 MAY 2014	14:00	250 mL HDPE	1	H2SO4<pH 2	TKN by EPA 351.2, Nitrate plus Nitrite by EPA 353.2, Ammonia by SM4500 NH3BG			N		
	ST105-30042	KAFB0621-GW-ST105-30042-REG	13 MAY 2014	14:00	250 mL HDPE	1	None except cool to 4 C	Bromide, chloride, fluoride, and sulfate by EPA 300, Alkalinity by SM2320B, TDS by SM 2540C			N		
	ST105-30042	KAFB0621-GW-ST105-30042-REG	13 MAY 2014	14:00	250 mL HDPE	1	HNO3<pH 2	Ca, Mg, K, Na, Fe, and Mn by SW846 6010B			N		
	ST105-30042	KAFB0621-GW-ST105-30042-REG	13 MAY 2014	14:00	250 mL HDPE	1	H2SO4<pH 2	Total Organic Carbon by SM 5310C			N		

KirtlandECOS_015

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 05/14/14 0900 Workorder# 1405110

1. Tracking # 1610 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 1.4 °C + *correction factor (-0.3)* = 1.1 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

   If yes, how many and where: 2 front + back

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) JTG

7. Were custody seals on containers: YES NO and Intact YES NO NA

   Were these signed and dated correctly? YES NO NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13. a. Were VOA vials received? YES NO NA

    b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence #____

I certify that I unloaded the cooler and answered questions 7-14 (initial) JTG

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

    b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) JTG

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) JTG

I certify that I attached a label with the unique LIMS number to each container (initial) JTG

I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial) ____

21. Were there Non-Conformance issues at login? YES NO Was a NCR generated? YES NO #____

Additional Details:

WORK ORDER

Printed: 5/13/2014 9:47:04AM

1405065

Empirical Laboratories, LLC

Client:	**Shaw Environmental, Inc.**	**Project Manager:**	**Marianne J. Walker**
Project:	**Kirtland AFB (ECOS)**	**Project Number:**	**SHW_Kirtland**

Report To:

Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:

Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 05/30/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By:	Tiana L. Hutchings	Date Received:	05/09/2014 08:40
Logged In By:	Tiana L. Hutchings	Date Logged In:	05/09/2014 09:55

Samples Received at:	**4.3°C**		
Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1405065-01 ST105-30024 [Water] Sampled 05/05/2014 14:14 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	05/27/2014 14:00	15	05/19/2014 15:14	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/27/2014 14:00	15	06/02/2014 15:14	
SW9056A	WC_ANIONS_9056A (Regular)	05/27/2014 14:00	15	06/02/2014 15:14	see versions
E353.2	WC_NO3NO2_N_353.2	05/27/2014 14:00	15	06/02/2014 15:14	
E351.2	WC_TKN_351.2	05/27/2014 14:00	15	06/02/2014 15:14	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	05/27/2014 14:00	15	06/02/2014 15:14	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/27/2014 14:00	15	05/12/2014 15:14	
SW6010C	MET_ICP_LOW6010C_FULL	05/27/2014 14:00	15	11/01/2014 15:14	see versions
1405065-02 ST105-30024 [Water] Sampled 05/05/2014 14:14 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	05/27/2014 14:00	15	06/02/2014 15:14	

1405065

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland

Method	Test Code	Due	TAT	Expires	Comments
1405065-03 ST105-30025 [Water] Sampled 05/06/2014 14:34 Mountain 'Client Sample'					**MS/MSD**
SW9060A	WC_TOC_9060A_QUAD	05/27/2014 14:00	15	06/03/2014 15:34	MS/MSD
E351.2	WC_TKN_351.2	05/27/2014 14:00	15	06/03/2014 15:34	MS/MSD
E353.2	WC_NO3NO2_N_353.2	05/27/2014 14:00	15	06/03/2014 15:34	MS/MSD
SW9056A	WC_ANIONS_9056A (Regular)	05/27/2014 14:00	15	06/03/2014 15:34	MS/MSD
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/27/2014 14:00	15	06/03/2014 15:34	MS/MSD
SW6010C	MET_ICP_LOW6010C_FULL	05/27/2014 14:00	15	11/02/2014 15:34	MS/MSD
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/27/2014 14:00	15	05/13/2014 15:34	MS/MSD
SM2320B	WC_ALKALINITY_2320B	05/27/2014 14:00	15	05/20/2014 15:34	MS/MSD
1405065-04 ST105-30025 [Water] Sampled 05/06/2014 14:34 Mountain 'Client Sample'					**MS/MSD**
SW9060A	WC_TOC_DISS_9060A_QUAD	05/27/2014 14:00	15	06/03/2014 15:34	MS/MSD
1405065-05 ST105-30041 [Water] Sampled 05/07/2014 11:47 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	05/27/2014 14:00	15	05/21/2014 12:47	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/27/2014 14:00	15	06/04/2014 12:47	
SW9056A	WC_ANIONS_9056A (Regular)	05/27/2014 14:00	15	06/04/2014 12:47	see versions
E353.2	WC_NO3NO2_N_353.2	05/27/2014 14:00	15	06/04/2014 12:47	
E351.2	WC_TKN_351.2	05/27/2014 14:00	15	06/04/2014 12:47	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	05/27/2014 14:00	15	06/04/2014 12:47	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/27/2014 14:00	15	05/14/2014 12:47	
SW6010C	MET_ICP_LOW6010C_FULL	05/27/2014 14:00	15	11/03/2014 12:47	see versions
1405065-06 ST105-30041 [Water] Sampled 05/06/2014 11:47 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	05/27/2014 14:00	15	06/03/2014 12:47	
1405065-07 ST105-30045 [Water] Sampled 05/07/2014 16:07 Mountain 'Client Sample'					
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	05/27/2014 14:00	15	05/14/2014 17:07	
SW9060A	WC_TOC_9060A_QUAD	05/27/2014 14:00	15	06/04/2014 17:07	
E351.2	WC_TKN_351.2	05/27/2014 14:00	15	06/04/2014 17:07	Outside DoD cert
E353.2	WC_NO3NO2_N_353.2	05/27/2014 14:00	15	06/04/2014 17:07	
SW9056A	WC_ANIONS_9056A (Regular)	05/27/2014 14:00	15	06/04/2014 17:07	see versions
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	05/27/2014 14:00	15	06/04/2014 17:07	
SW6010C	MET_ICP_LOW6010C_FULL	05/27/2014 14:00	15	11/03/2014 17:07	see versions
SM2320B	WC_ALKALINITY_2320B	05/27/2014 14:00	15	05/21/2014 17:07	

WORK ORDER

Printed: 5/13/2014 9:47:04AM

1405065

Empirical Laboratories, LLC

Client:	**Shaw Environmental, Inc.**	**Project Manager:**	**Marianne J. Walker**
Project:	**Kirtland AFB (ECOS)**	**Project Number:**	**SHW_Kirtland**

Method	Test Code	Due	TAT	Expires	Comments
1405065-08 ST105-30045 [Water] Sampled 05/07/2014 16:07 Mountain 'Client Sample'					
SW9060A	WC_TOC_DISS_9060A_QUAD	05/27/2014 14:00	15	06/04/2014 17:07	

Reviewed By

Date

WORK ORDER

Printed: 5/15/2014 5:08:31PM

1405110

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland

Report To:
Shaw Environmental, Inc.
Susan Huang
4005 Port Chicago Highway
Concord, CA 94520
Phone: (925) 288-2099
Fax: (925) 288-0888

Invoice To:
Shaw Environmental, Inc.
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Due to Client: 06/05/2014 16:00 *This is the projected due date to the client, at the time of receipt, and is for report delivery via upload, and/or email, and/or shipment to meet TAT as setup by project*

Received By: Joshua T. Gross
Date Received: 05/14/2014 09:00
Logged In By: Joshua T. Gross
Date Logged In: 05/14/2014 11:09

Samples Received at: **1.1°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Method	Test Code	Due	TAT	Expires	Comments
1405110-01 ST105-30037 [Water] Sampled 05/12/2014 12:26 Mountain 'Client Sample'					
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	06/02/2014 14:00	15	05/19/2014 13:26	
SM2320B	WC_ALKALINITY_2320B	06/02/2014 14:00	15	05/26/2014 13:26	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	06/02/2014 14:00	15	06/09/2014 13:26	
SW9056A	WC_ANIONS_9056A (Regular)	06/02/2014 14:00	15	06/09/2014 13:26	see versions
E353.2	WC_NO3NO2_N_353.2	06/02/2014 14:00	15	06/09/2014 13:26	
E351.2	WC_TKN_351.2	06/02/2014 14:00	15	06/09/2014 13:26	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	06/02/2014 14:00	15	06/09/2014 13:26	
SW6010C	MET_ICP_LOW6010C_FULL	06/02/2014 14:00	15	11/08/2014 13:26	see versions
1405110-02 ST105-30037 [Water] Sampled 05/12/2014 12:26 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	06/02/2014 14:00	15	06/09/2014 13:26	

1405110

Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Project Manager: Marianne J. Walker
Project Number: SHW_Kirtland

Method	Test Code	Due	TAT	Expires	Comments
1405110-03 ST105-30042 [Water] Sampled 05/13/2014 14:00 Mountain 'Client Sample'					
SM2320B	WC_ALKALINITY_2320B	06/02/2014 14:00	15	05/27/2014 15:00	
SM4500NH3BG	WC_AMMONIA_PHENATE_4500NH3BG	06/02/2014 14:00	15	06/10/2014 15:00	
SW9056A	WC_ANIONS_9056A (Regular)	06/02/2014 14:00	15	06/10/2014 15:00	see versions
E353.2	WC_NO3NO2_N_353.2	06/02/2014 14:00	15	06/10/2014 15:00	
E351.2	WC_TKN_351.2	06/02/2014 14:00	15	06/10/2014 15:00	Outside DoD cert
SW9060A	WC_TOC_9060A_QUAD	06/02/2014 14:00	15	06/10/2014 15:00	
SM2540C	WC_TOTAL_DISS_SOLIDS_2540C	06/02/2014 14:00	15	05/20/2014 15:00	
SW6010C	MET_ICP_LOW6010C_FULL	06/02/2014 14:00	15	11/09/2014 15:00	see versions
1405110-04 ST105-30042 [Water] Sampled 05/13/2014 14:00 Mountain 'Client Sample'					**Filtered**
SW9060A	WC_TOC_DISS_9060A_QUAD	06/02/2014 14:00	15	06/10/2014 15:00	

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Shaw Environmental, Inc.
PROJECT NAME: Kirtland AFB (ECOS)
SDG #: DRAFT KirtlandECOS_015

QC LEVEL: Level III
Report Due: 6/5/2014 - 6/5/2014
Client Sample Count: 12

Lab ID	Client ID	Sampled	Received	Matrix	E 351.2	E 353.2	SM 2320B	SM 2540C	SM 4500 NH3BG	SW 6010C	SW 9056A	SW 9060A
1405065-01	ST105-30024	5/5/2014	5/9/2014	Water	X	X	X	X	X	X	X	X
1405065-02	ST105-30024	5/5/2014	5/9/2014	Water								DISS
1405065-03	ST105-30025	5/6/2014	5/9/2014	Water	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD
1405065-04	ST105-30025	5/6/2014	5/9/2014	Water								DISS
1405065-05	ST105-30041	5/7/2014	5/9/2014	Water	X	X	X	X	X	X	X	X
1405065-06	ST105-30041	5/5/2014	5/9/2014	Water								DISS
1405065-07	ST105-30045	5/7/2014	5/9/2014	Water	X	X	X	X	X	X	X	X
1405065-08	ST105-30045	5/7/2014	5/9/2014	Water								DISS
1405110-01	ST105-30037	5/12/2014	5/14/2014	Water	X	X	X	X	X	X	X	X
1405110-02	ST105-30037	5/12/2014	5/14/2014	Water								DISS
1405110-03	ST105-30042	5/13/2014	5/14/2014	Water	X	X	X	X	X	X	X	X
1405110-04	ST105-30042	5/13/2014	5/14/2014	Water								DISS

Data for SW6010C Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-01 [ST105-30024]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14
1405065-03 [ST105-30025]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14
1405065-05 [ST105-30041]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14
1405065-07 [ST105-30045]	4E14023	100.00/25.00	100	25.0	1.00			05/15/14

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405110-01 [ST105-30037]	4E20004	100.00/25.00	100	25.0	1.00			05/20/14
1405110-03 [ST105-30042]	4E20004	100.00/25.00	100	25.0	1.00			05/20/14

ANALYSIS DATA SHEET

ST105-30024

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-01
Sampled:	05/05/14 14:14	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**42500**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:36
7439-89-6	Iron	**477**	**7.50**	15.0	25.0	1		SW6010C	4E14023	05/20/14 14:36
7439-95-4	Magnesium	**10900**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:36
7439-96-5	Manganese	**16.4**	**0.750**	1.50	3.75	1		SW6010C	4E14023	05/20/14 14:36
7440-09-7	Potassium	**3870**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:36
7440-23-5	Sodium	**21000**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:36

ANALYSIS DATA SHEET

ST105-30025

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-03
Sampled:	05/06/14 14:34	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**33700**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:40
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4E14023	05/20/14 14:40
7439-95-4	Magnesium	**9250**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:40
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4E14023	05/20/14 14:40
7440-09-7	Potassium	**3320**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:40
7440-23-5	Sodium	**18900**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:40

ANALYSIS DATA SHEET

ST105-30041

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-05
Sampled:	05/07/14 11:47	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**59500**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 15:02
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010C	4E14023	05/20/14 15:02
7439-95-4	Magnesium	**11000**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 15:02
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010C	4E14023	05/20/14 15:02
7440-09-7	Potassium	**4190**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 15:02
7440-23-5	Sodium	**23400**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 15:02

ANALYSIS DATA SHEET

ST105-30045

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-07
Sampled:	05/07/14 16:07	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**47900**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 15:07
7439-89-6	Iron	**28.7**	**7.50**	15.0	25.0	1		SW6010C	4E14023	05/20/14 15:07
7439-95-4	Magnesium	**10500**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 15:07
7439-96-5	Manganese	**0.984**	**0.750**	1.50	3.75	1	J	SW6010C	4E14023	05/20/14 15:07
7440-09-7	Potassium	**6270**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 15:07
7440-23-5	Sodium	**29500**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 15:07

ANALYSIS DATA SHEET

ST105-30037

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405110-01
Sampled:	05/12/14 12:26	Received:	05/14/14 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**51100**	**250**	500	1250	1		SW6010C	4E20004	05/21/14 11:13
7439-89-6	Iron	**141**	**7.50**	15.0	25.0	1	*	SW6010C	4E20004	05/21/14 11:13
7439-95-4	Magnesium	**10100**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:13
7439-96-5	Manganese	**5.21**	**0.750**	1.50	3.75	1		SW6010C	4E20004	05/21/14 11:13
7440-09-7	Potassium	**2110**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:13
7440-23-5	Sodium	**30100**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:13

ANALYSIS DATA SHEET

ST105-30042

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405110-03
Sampled:	05/13/14 14:00	Received:	05/14/14 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**64500**	**250**	500	1250	1		SW6010C	4E20004	05/21/14 11:22
7439-89-6	Iron	**77.8**	**7.50**	15.0	25.0	1	*	SW6010C	4E20004	05/21/14 11:22
7439-95-4	Magnesium	**11900**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:22
7439-96-5	Manganese	**1.77**	**0.750**	1.50	3.75	1	J	SW6010C	4E20004	05/21/14 11:22
7440-09-7	Potassium	**2190**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:22
7440-23-5	Sodium	**26000**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:22

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4E14023-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4E14023	05/20/14 14:03
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4E14023	05/20/14 14:03
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4E14023	05/20/14 14:03
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4E14023	05/20/14 14:03
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4E14023	05/20/14 14:03
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4E14023	05/20/14 14:03

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E14023-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**542.4**	**250**	500	1250	1	J	SW6010C	4E14023	05/20/14 14:07
7439-89-6	Iron	**19.94**	**7.50**	15.0	25.0	1	J	SW6010C	4E14023	05/20/14 14:07
7439-95-4	Magnesium	**561.5**	**250**	750	1250	1	J	SW6010C	4E14023	05/20/14 14:07
7439-96-5	Manganese	**9.756**	**0.750**	1.50	3.75	1		SW6010C	4E14023	05/20/14 14:07
7440-09-7	Potassium	**525.5**	**250**	750	1250	1	J	SW6010C	4E14023	05/20/14 14:07
7440-23-5	Sodium	**545.1**	**250**	750	1250	1	J	SW6010C	4E14023	05/20/14 14:07

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E14023-DUP1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**35280**	**1250**	2500	6250	5	D	SW6010C	4E14023	05/20/14 14:58
7439-89-6	Iron	ND	37.5	75.0	125	5	U	SW6010C	4E14023	05/20/14 14:58
7439-95-4	Magnesium	**9588**	**1250**	3750	6250	5	D	SW6010C	4E14023	05/20/14 14:58
7439-96-5	Manganese	ND	3.75	7.50	18.8	5	U	SW6010C	4E14023	05/20/14 14:58
7440-09-7	Potassium	**3250**	**1250**	3750	6250	5	JD	SW6010C	4E14023	05/20/14 14:58
7440-23-5	Sodium	**19290**	**1250**	3750	6250	5	D	SW6010C	4E14023	05/20/14 14:58

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E14023-MS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**35340**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:44
7439-89-6	Iron	**248.5**	**7.50**	15.0	25.0	1		SW6010C	4E14023	05/20/14 14:44
7439-95-4	Magnesium	**10530**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:44
7439-96-5	Manganese	**125.9**	**0.750**	1.50	3.75	1		SW6010C	4E14023	05/20/14 14:44
7440-09-7	Potassium	**4532**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:44
7440-23-5	Sodium	**20220**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:44

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4E14023-MSD1
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**37290**	**250**	500	1250	1		SW6010C	4E14023	05/20/14 14:49
7439-89-6	Iron	**252.4**	**7.50**	15.0	25.0	1		SW6010C	4E14023	05/20/14 14:49
7439-95-4	Magnesium	**10980**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:49
7439-96-5	Manganese	**127.6**	**0.750**	1.50	3.75	1		SW6010C	4E14023	05/20/14 14:49
7440-09-7	Potassium	**4691**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:49
7440-23-5	Sodium	**20940**	**250**	750	1250	1		SW6010C	4E14023	05/20/14 14:49

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4E20004-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	4E20004	05/21/14 10:55
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	4E20004	05/21/14 10:55
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	4E20004	05/21/14 10:55
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	4E20004	05/21/14 10:55
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	4E20004	05/21/14 10:55
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	4E20004	05/21/14 10:55

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20004-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**576.8**	**250**	500	1250	1	J	SW6010C	4E20004	05/21/14 11:08
7439-89-6	Iron	**19.89**	**7.50**	15.0	25.0	1	J	SW6010C	4E20004	05/21/14 11:08
7439-95-4	Magnesium	**596.6**	**250**	750	1250	1	J	SW6010C	4E20004	05/21/14 11:08
7439-96-5	Manganese	**9.672**	**0.750**	1.50	3.75	1		SW6010C	4E20004	05/21/14 11:08
7440-09-7	Potassium	**550.5**	**250**	750	1250	1	J	SW6010C	4E20004	05/21/14 11:08
7440-23-5	Sodium	**585.0**	**250**	750	1250	1	J	SW6010C	4E20004	05/21/14 11:08

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20004-DUP1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**68720**	**1250**	2500	6250	5	D	SW6010C	4E20004	05/21/14 11:36
7439-89-6	Iron	**85.66**	**37.5**	75.0	125	5	JD	SW6010C	4E20004	05/21/14 11:36
7439-95-4	Magnesium	**12520**	**1250**	3750	6250	5	D	SW6010C	4E20004	05/21/14 11:36
7439-96-5	Manganese	ND	3.75	7.50	18.8	5	U	SW6010C	4E20004	05/21/14 11:36
7440-09-7	Potassium	**2125**	**1250**	3750	6250	5	JD	SW6010C	4E20004	05/21/14 11:36
7440-23-5	Sodium	**26900**	**1250**	3750	6250	5	D	SW6010C	4E20004	05/21/14 11:36

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20004-DUP2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**49960**	**250**	500	1250	1		SW6010C	4E20004	05/21/14 11:18
7439-89-6	Iron	**172.6**	**7.50**	15.0	25.0	1		SW6010C	4E20004	05/21/14 11:18
7439-95-4	Magnesium	**10070**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:18
7439-96-5	Manganese	**5.586**	**0.750**	1.50	3.75	1		SW6010C	4E20004	05/21/14 11:18
7440-09-7	Potassium	**2089**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:18
7440-23-5	Sodium	**30130**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:18

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20004-MS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-70-2	Calcium	**63840**	**250**	500	1250	1		SW6010C	4E20004	05/21/14 11:27
7439-89-6	Iron	**321.7**	**7.50**	15.0	25.0	1		SW6010C	4E20004	05/21/14 11:27
7439-95-4	Magnesium	**12660**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:27
7439-96-5	Manganese	**119.8**	**0.750**	1.50	3.75	1		SW6010C	4E20004	05/21/14 11:27
7440-09-7	Potassium	**3279**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:27
7440-23-5	Sodium	**26260**	**250**	750	1250	1		SW6010C	4E20004	05/21/14 11:27

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4140002
Sequence: 4E14039

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E14039-ICV1	Calcium	50000	49940	99.9	ug/L	+/- 10.00%
	Iron	10000	10750	108	ug/L	+/- 10.00%
	Magnesium	50000	49840	99.7	ug/L	+/- 10.00%
	Manganese	1000	1069	107	ug/L	+/- 10.00%
	Potassium	10000	10060	101	ug/L	+/- 10.00%
	Sodium	50000	50630	101	ug/L	+/- 10.00%
4E14039-CCV1	Calcium	50000	50050	100	ug/L	+/- 10.00%
	Iron	10000	10480	105	ug/L	+/- 10.00%
	Magnesium	50000	49680	99.4	ug/L	+/- 10.00%
	Manganese	1000	1060	106	ug/L	+/- 10.00%
	Potassium	10000	10060	101	ug/L	+/- 10.00%
	Sodium	50000	50620	101	ug/L	+/- 10.00%
4E14039-CCV3	Calcium	50000	49260	98.5	ug/L	+/- 10.00%
	Iron	10000	10410	104	ug/L	+/- 10.00%
	Magnesium	50000	49080	98.2	ug/L	+/- 10.00%
	Manganese	1000	1055	105	ug/L	+/- 10.00%
	Potassium	10000	9966	99.7	ug/L	+/- 10.00%
	Sodium	50000	50210	100	ug/L	+/- 10.00%
4E14039-CCV4	Calcium	50000	49900	99.8	ug/L	+/- 10.00%
	Iron	10000	10340	103	ug/L	+/- 10.00%
	Magnesium	50000	49460	98.9	ug/L	+/- 10.00%
	Manganese	1000	1046	105	ug/L	+/- 10.00%
	Potassium	10000	9973	99.7	ug/L	+/- 10.00%
	Sodium	50000	50180	100	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4143003
Sequence: 4E14311

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E14311-ICV1	Calcium	50000	50470	101	ug/L	+/- 10.00%
	Iron	10000	10750	107	ug/L	+/- 10.00%
	Magnesium	50000	51030	102	ug/L	+/- 10.00%
	Manganese	1000	1036	104	ug/L	+/- 10.00%
	Potassium	10000	9996	100	ug/L	+/- 10.00%
	Sodium	50000	51280	103	ug/L	+/- 10.00%
4E14311-CCV1	Calcium	50000	51080	102	ug/L	+/- 10.00%
	Iron	10000	10450	105	ug/L	+/- 10.00%
	Magnesium	50000	51230	102	ug/L	+/- 10.00%
	Manganese	1000	1032	103	ug/L	+/- 10.00%
	Potassium	10000	9994	99.9	ug/L	+/- 10.00%
	Sodium	50000	51740	103	ug/L	+/- 10.00%
4E14311-CCV2	Calcium	50000	51640	103	ug/L	+/- 10.00%
	Iron	10000	9905	99.0	ug/L	+/- 10.00%
	Magnesium	50000	51080	102	ug/L	+/- 10.00%
	Manganese	1000	1007	101	ug/L	+/- 10.00%
	Potassium	10000	10020	100	ug/L	+/- 10.00%
	Sodium	50000	51680	103	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4140002
Sequence: 4E14039

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4E14039-CRL1	Calcium	2000	1955	97.7	ug/L	80 - 120
	Iron	60.00	59.86	99.8	ug/L	80 - 120
	Magnesium	3000	2966	98.9	ug/L	80 - 120
	Manganese	6.000	6.086	101	ug/L	80 - 120
	Potassium	3000	2773	92.4	ug/L	80 - 120
	Sodium	3000	2897	96.6	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: ME-ICP

Calibration: 4143003

Sequence: 4E14311

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4E14311-CRL1	Calcium	2000	2133	107	ug/L	80 - 120
	Iron	60.00	65.80	110	ug/L	80 - 120
	Magnesium	3000	3256	109	ug/L	80 - 120
	Manganese	6.000	6.319	105	ug/L	80 - 120
	Potassium	3000	2998	99.9	ug/L	80 - 120
	Sodium	3000	3178	106	ug/L	80 - 120

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4E14039
Calibration: 4140002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14039-ICB1	Calcium	-1.680	1000	5000	ug/L	U	SW6010C
	Iron	4.650	30.0	100	ug/L	U	SW6010C
	Magnesium	3.050	1000	5000	ug/L	U	SW6010C
	Manganese	0.006620	3.00	15.0	ug/L	U	SW6010C
	Potassium	-15.96	1000	5000	ug/L	U	SW6010C
	Sodium	-19.74	1000	5000	ug/L	U	SW6010C
4E14039-CCB1	Calcium	-1.90	1000	5000	ug/L	U	SW6010C
	Iron	5.52	30.0	100	ug/L	U	SW6010C
	Magnesium	11.3	1000	5000	ug/L	U	SW6010C
	Manganese	0.00815	3.00	15.0	ug/L	U	SW6010C
	Potassium	-17.2	1000	5000	ug/L	U	SW6010C
	Sodium	-19.9	1000	5000	ug/L	U	SW6010C
4E14039-CCB3	Calcium	1.18	1000	5000	ug/L	U	SW6010C
	Iron	2.71	30.0	100	ug/L	U	SW6010C
	Magnesium	5.18	1000	5000	ug/L	U	SW6010C
	Manganese	0.0747	3.00	15.0	ug/L	U	SW6010C
	Potassium	-1.24	1000	5000	ug/L	U	SW6010C
	Sodium	-26.8	1000	5000	ug/L	U	SW6010C
4E14023-BLK1	Calcium	0.435	250	1250	ug/L	U	SW6010C
	Iron	-0.0413	7.50	25.0	ug/L	U	SW6010C
	Magnesium	2.47	250	1250	ug/L	U	SW6010C
	Manganese	0.0383	0.750	3.75	ug/L	U	SW6010C
	Potassium	2.56	250	1250	ug/L	U	SW6010C
	Sodium	-3.08	250	1250	ug/L	U	SW6010C
4E14039-CCB4	Calcium	2.76	1000	5000	ug/L	U	SW6010C
	Iron	-1.64	30.0	100	ug/L	U	SW6010C
	Magnesium	5.24	1000	5000	ug/L	U	SW6010C
	Manganese	0.0416	3.00	15.0	ug/L	U	SW6010C
	Potassium	-9.19	1000	5000	ug/L	U	SW6010C
	Sodium	-16.3	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Instrument ID: ME-ICP
Project: Kirtland AFB (ECOS)
Sequence: 4E14311
Calibration: 4143003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14311-ICB1	Calcium	1.520	1000	5000	ug/L	U	SW6010C
	Iron	9.504	30.0	100	ug/L	U	SW6010C
	Magnesium	-3.400	1000	5000	ug/L	U	SW6010C
	Manganese	0.01745	3.00	15.0	ug/L	U	SW6010C
	Potassium	11.90	1000	5000	ug/L	U	SW6010C
	Sodium	5.850	1000	5000	ug/L	U	SW6010C
4E14311-CCB1	Calcium	3.11	1000	5000	ug/L	U	SW6010C
	Iron	8.58	30.0	100	ug/L	U	SW6010C
	Magnesium	12.2	1000	5000	ug/L	U	SW6010C
	Manganese	0.0732	3.00	15.0	ug/L	U	SW6010C
	Potassium	7.85	1000	5000	ug/L	U	SW6010C
	Sodium	3.40	1000	5000	ug/L	U	SW6010C
4E20004-BLK1	Calcium	1.19	250	1250	ug/L	U	SW6010C
	Iron	2.64	7.50	25.0	ug/L	U	SW6010C
	Magnesium	4.30	250	1250	ug/L	U	SW6010C
	Manganese	0.0299	0.750	3.75	ug/L	U	SW6010C
	Potassium	8.02	250	1250	ug/L	U	SW6010C
	Sodium	4.52	250	1250	ug/L	U	SW6010C
4E14311-CCB2	Calcium	1.10	1000	5000	ug/L	U	SW6010C
	Iron	3.26	30.0	100	ug/L	U	SW6010C
	Magnesium	-7.55	1000	5000	ug/L	U	SW6010C
	Manganese	0.0374	3.00	15.0	ug/L	U	SW6010C
	Potassium	18.5	1000	5000	ug/L	U	SW6010C
	Sodium	5.76	1000	5000	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4140002
Sequence: 4E14039

Lab Sample ID	Analyte	True	Found	%R	Units
4E14039-IFA1	Calcium	500000	463,400.00	92.7	ug/L
	Iron	200000	202,910.00	101	ug/L
	Magnesium	500000	473,980.00	94.8	ug/L
	Manganese		-1.26		ug/L
	Potassium		-79.16		ug/L
	Sodium		27.01		ug/L
4E14039-IFB1	Calcium	500000	453,510.00	90.7	ug/L
	Iron	200000	205,040.00	103	ug/L
	Magnesium	500000	476,420.00	95.3	ug/L
	Manganese	500.0	520.29	104	ug/L
	Potassium		-96.36		ug/L
	Sodium		32.63		ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Instrument ID: ME-ICP
Calibration: 4143003
Sequence: 4E14311

Lab Sample ID	Analyte	True	Found	%R	Units
4E14311-IFA1	Calcium	500000	456,470.00	91.3	ug/L
	Iron	200000	205,190.00	103	ug/L
	Magnesium	500000	478,090.00	95.6	ug/L
	Manganese		-1.71		ug/L
	Potassium		-46.30		ug/L
	Sodium		41.47		ug/L
4E14311-IFB1	Calcium	500000	452,020.00	90.4	ug/L
	Iron	200000	204,000.00	102	ug/L
	Magnesium	500000	477,310.00	95.5	ug/L
	Manganese	500.0	501.98	100	ug/L
	Potassium		-30.38		ug/L
	Sodium		52.54		ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

ST105-30025

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E14023

% Solids:

Source Sample Name: **1405065-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Calcium	1250	33650	35340	135	4x	80 - 120
Iron	250.0	ND	248.5	99.4		80 - 120
Magnesium	1250	9252	10530	102		80 - 120
Manganese	125.0	ND	125.9	101		80 - 120
Potassium	1250	3324	4532	96.7		80 - 120
Sodium	1250	18900	20220	106		80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS	
						RPD	REC.
Calcium	1250	37290	291	5.36	4x	20	80 - 120
Iron	250.0	252.4	101	1.58		20	80 - 120
Magnesium	1250	10980	139	4.20	4x	20	80 - 120
Manganese	125.0	127.6	102	1.34		20	80 - 120
Potassium	1250	4691	109	3.45		20	80 - 120
Sodium	1250	20940	164	3.50	4x	20	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

ST105-30042

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E20004

% Solids:

Source Sample Name: **1405110-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Calcium	1250	64480	63840	-50.6	4x	80 - 120
Iron	250.0	77.80	321.7	97.6		80 - 120
Magnesium	1250	11870	12660	62.7	4x	80 - 120
Manganese	125.0	1.767	119.8	94.4		80 - 120
Potassium	1250	2186	3279	87.4		80 - 120
Sodium	1250	26050	26260	16.8	4x	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

ST105-30025

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4E14023-PS1
Batch: 4E14023
Lab Source ID: 1405065-03
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Calcium	**142400**	**134600**	**5000**	**155**	**80 - 120**
Iron	1167	ND	1000	116	80 - 120
Magnesium	42560	37010	5000	111	80 - 120
Manganese	591.7	ND	500.0	118	80 - 120
Potassium	18810	13300	5000	110	80 - 120
Sodium	80930	75590	5000	107	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

ST105-30042

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Matrix: Water
Laboratory ID: 4E20004-PS1
Batch: 4E20004
Lab Source ID: 1405110-03
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Calcium	**265300**	**257900**	**5000**	**149**	**80 - 120**
Iron	1457	311.2	1000	115	80 - 120
Magnesium	53080	47500	5000	112	80 - 120
Manganese	553.6	7.067	500.0	109	80 - 120
Potassium	14130	8745	5000	108	80 - 120
Sodium	108700	104200	5000	91.0	80 - 120

ST105-30037

DUPLICATES

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4E20004
Preparation: MET_3005A_LOW
Source Sample Name: ST105-30037

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E20004-DUP2
Lab Source ID: 1405110-01
Initial/Final: 100 mL / 25 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Calcium	20	51100	49960	2.18		SW6010C
Iron	20	141	172.6	20.3	*	SW6010C
Magnesium	20	10100	10070	0.431		SW6010C
Manganese	20	5.21	5.586	7.00		SW6010C
Potassium	20	2110	2089	0.781		SW6010C
Sodium	20	30100	30130	0.0830		SW6010C

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E14023	Laboratory ID:	4E14023-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	542.4	90.4	80 - 120
Iron	20.00	19.94	99.7	80 - 120
Magnesium	600.0	561.5	93.6	80 - 120
Manganese	10.00	9.756	97.6	80 - 120
Potassium	600.0	525.5	87.6	80 - 120
Sodium	600.0	545.1	90.8	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E20004	Laboratory ID:	4E20004-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Calcium	600.0	576.8	96.1	80 - 120
Iron	20.00	19.89	99.4	80 - 120
Magnesium	600.0	596.6	99.4	80 - 120
Manganese	10.00	9.672	96.7	80 - 120
Potassium	600.0	550.5	91.8	80 - 120
Sodium	600.0	585.0	97.5	80 - 120

SERIAL DILUTION

SW6010C

ST105-30025

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Sequence: 4E14039
Preparation: MET_3005A_LOW

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E14023-DUP1
Lab Source ID: 1405065-03
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Calcium	134610	141130	4.84		SW6010C	10.00
Iron	ND	ND			SW6010C	10.00
Magnesium	37010	38351	3.62		SW6010C	10.00
Manganese	ND	ND			SW6010C	10.00
Potassium	13295	12998	-2.23		SW6010C	10.00
Sodium	75590	77165	2.08		SW6010C	10.00

SERIAL DILUTION

SW6010C

ST105-30042

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Sequence: 4E14311
Preparation: MET_3005A_LOW

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E20004-DUP1
Lab Source ID: 1405110-03
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Calcium	257900	274900	6.59		SW6010C	10.00
Iron	311.22	342.66	10.1		SW6010C	10.00
Magnesium	47496	50070	5.42		SW6010C	10.00
Manganese	7.0673	ND			SW6010C	10.00
Potassium	8745.3	8498.5	-2.82		SW6010C	10.00
Sodium	104190	107590	3.26		SW6010C	10.00

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_015

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	-0.000001	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000025	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_015

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_015

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Iron	261.187	0.000000	-0.000701	0.000000	0.000000	-0.000794
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_015

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_015

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: Shaw Environmental, Inc.

SDG No.: KirtlandECOS_015

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 12/27/2013

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Calcium	317.933	0.000000				
Calcium	317.933	0.000000				
Iron	261.187	0.000000				
Iron	261.187	0.000000				
Magnesium	279.079	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.61	0.000000				
Manganese	257.61	0.000000				
Potassium	766.49	0.000000				
Potassium	766.49	0.000000				
Sodium	589.592	0.000000				
Sodium	589.592	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc. SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

ICP Instrument ID: ME-ICP Date: 12/27/2013

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Calcium	15	500000	P
Calcium	15	500000	P
Iron	15	500000	P
Iron	15	500000	P
Magnesium	15	500000	P
Magnesium	15	500000	P
Manganese	15	15000	P
Manganese	15	15000	P
Potassium	15	100000	P
Potassium	15	100000	P
Sodium	15	500000	P
Sodium	15	500000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E14023 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30024	1405065-01	05/15/14 13:00	100.00	25.00
ST105-30025	1405065-03	05/15/14 13:00	100.00	25.00
ST105-30041	1405065-05	05/15/14 13:00	100.00	25.00
ST105-30045	1405065-07	05/15/14 13:00	100.00	25.00
Blank	4E14023-BLK1	05/14/14 13:00	100.00	25.00
LCS	4E14023-BS1	05/14/14 13:00	100.00	25.00
ST105-30025	4E14023-DUP1	05/14/14 13:00	100.00	25.00
ST105-30025	4E14023-MS1	05/14/14 13:00	100.00	25.00
ST105-30025	4E14023-MSD1	05/14/14 13:00	100.00	25.00
ST105-30025	4E14023-PS1	05/14/14 13:00	100.00	25.00

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E20004 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30037	1405110-01	05/20/14 07:49	100.00	25.00
ST105-30042	1405110-03	05/20/14 07:49	100.00	25.00
Blank	4E20004-BLK1	05/20/14 07:49	100.00	25.00
LCS	4E20004-BS1	05/20/14 07:49	100.00	25.00
ST105-30042	4E20004-DUP1	05/20/14 07:49	100.00	25.00
ST105-30037	4E20004-DUP2	05/20/14 07:49	100.00	25.00
ST105-30042	4E20004-MS1	05/20/14 07:49	100.00	25.00
ST105-30042	4E20004-PS1	05/20/14 07:49	100.00	25.00

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E14039	Instrument:	ME-ICP
Calibration:	4140002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E14039-CAL1	5-20-14A-001	05/20/14 09:07
Cal Standard	4E14039-CAL2	5-20-14A-002	05/20/14 09:11
Cal Standard	4E14039-CAL3	5-20-14A-003	05/20/14 09:16
Cal Standard	4E14039-CAL4	5-20-14A-004	05/20/14 09:20
Cal Standard	4E14039-CAL5	5-20-14A-005	05/20/14 09:24
Cal Standard	4E14039-CAL6	5-20-14A-006	05/20/14 09:29
Cal Standard	4E14039-CAL7	5-20-14A-007	05/20/14 09:34
Cal Standard	4E14039-CAL8	5-20-14A-008	05/20/14 09:39
Initial Cal Check	4E14039-ICV1	5-20-14B-001	05/20/14 10:28
Initial Cal Blank	4E14039-ICB1	5-20-14B-002	05/20/14 10:36
Instrument RL Check	4E14039-CRL1	5-20-14B-004	05/20/14 10:47
Interference Check A	4E14039-IFA1	5-20-14B-006	05/20/14 10:56
Interference Check B	4E14039-IFB1	5-20-14B-007	05/20/14 11:02
Calibration Check	4E14039-CCV1	5-20-14B-009	05/20/14 11:11
Calibration Blank	4E14039-CCB1	5-20-14B-010	05/20/14 11:19
Calibration Check	4E14039-CCV3	5-20-14C-015	05/20/14 13:51
Calibration Blank	4E14039-CCB3	5-20-14C-016	05/20/14 13:59
Blank	4E14023-BLK1	5-20-14C-017	05/20/14 14:03
LCS	4E14023-BS1	5-20-14C-018	05/20/14 14:07
ST105-30024	1405065-01	5-20-14C-024	05/20/14 14:36
ST105-30025	1405065-03	5-20-14C-025	05/20/14 14:40
ST105-30025	4E14023-MS1	5-20-14C-026	05/20/14 14:44
ST105-30025	4E14023-MSD1	5-20-14C-027	05/20/14 14:49
ST105-30025	4E14023-PS1	5-20-14C-028	05/20/14 14:53
ST105-30025	4E14023-DUP1	5-20-14C-029	05/20/14 14:58
ST105-30041	1405065-05	5-20-14C-030	05/20/14 15:02
ST105-30045	1405065-07	5-20-14C-031	05/20/14 15:07
Calibration Check	4E14039-CCV4	5-20-14C-032	05/20/14 15:12
Calibration Blank	4E14039-CCB4	5-20-14C-033	05/20/14 15:20

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E14311	Instrument:	ME-ICP
Calibration:	4143003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E14311-CAL1	5-21-14A-001	05/21/14 09:03
Cal Standard	4E14311-CAL2	5-21-14A-002	05/21/14 09:06
Cal Standard	4E14311-CAL3	5-21-14A-003	05/21/14 09:11
Cal Standard	4E14311-CAL4	5-21-14A-004	05/21/14 09:15
Cal Standard	4E14311-CAL5	5-21-14A-005	05/21/14 09:19
Cal Standard	4E14311-CAL6	5-21-14A-006	05/21/14 09:24
Cal Standard	4E14311-CAL7	5-21-14A-007	05/21/14 09:30
Cal Standard	4E14311-CAL8	5-21-14A-008	05/21/14 09:34
Initial Cal Check	4E14311-ICV1	5-21-14B-001	05/21/14 10:02
Initial Cal Blank	4E14311-ICB1	5-21-14B-002	05/21/14 10:10
Instrument RL Check	4E14311-CRL1	5-21-14B-004	05/21/14 10:20
Interference Check A	4E14311-IFA1	5-21-14B-006	05/21/14 10:29
Interference Check B	4E14311-IFB1	5-21-14B-007	05/21/14 10:34
Calibration Check	4E14311-CCV1	5-21-14B-009	05/21/14 10:43
Calibration Blank	4E14311-CCB1	5-21-14B-010	05/21/14 10:50
Blank	4E20004-BLK1	5-21-14B-011	05/21/14 10:55
LCS	4E20004-BS1	5-21-14B-014	05/21/14 11:08
ST105-30037	1405110-01	5-21-14B-015	05/21/14 11:13
ST105-30037	4E20004-DUP2	5-21-14B-016	05/21/14 11:18
ST105-30042	1405110-03	5-21-14B-017	05/21/14 11:22
ST105-30042	4E20004-MS1	5-21-14B-018	05/21/14 11:27
ST105-30042	4E20004-PS1	5-21-14B-019	05/21/14 11:31
ST105-30042	4E20004-DUP1	5-21-14B-020	05/21/14 11:36
Calibration Check	4E14311-CCV2	5-21-14B-028	05/21/14 12:12
Calibration Blank	4E14311-CCB2	5-21-14B-029	05/21/14 12:19

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4140002	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	5/20/14 9:07 5/20/14 9:39

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.2094E-05	10000	2.2066E-05			500000	2.1608E-05		
Antimony	0	0	100	0.0004209	1000	5.7229E-04					10000	5.6849E-04
Arsenic	0	0	100	0.0002846	1000	3.0763E-04					10000	3.0368E-04
Barium	0	0	50	0.0095238	1000	0.0091023	5000	0.0090782				
Beryllium	0	0	100	0.0025401	1000	0.0025157					10000	0.0024324
Boron	0	0	50	0.0000152	1000	1.412E-05					5000	1.4378E-05
Cadmium	0	0	100	0.016292	1000	0.014983					10000	0.014985
Calcium	0	0	1100	6.795454E-05	50000	5.9688E-05					10000	
Chromium	0	0	100	0.0000529	1000	5.094E-05					10000	5.0169E-05
Cobalt	0	0	100	0.0045274	1000	0.0044905					10000	0.0045353
Copper	0	0	100	0.0000815	1000	7.563E-05					10000	7.7257E-05
Iron	0	0	5100	7.337255E-06	10000	6.791E-06			500000	6.6718E-06	10000	
Lead	0	0	100	0.0010655	1000	0.0010613					10000	0.0010905
Magnesium	0	0	5100		50000	2.6294E-06			500000	2.654E-06	10000	
Manganese	0	0	100	0.0002966	1000	2.7983E-04	10000	2.7177E-04			10000	
Molybdenum	0	0	100	0.0033406	1000	0.0035272					10000	0.0034202
Nickel	0	0	100	0.0015295	1000	0.0014868					10000	0.0014936
Potassium	0	0	1000	1.137E-05	10000	1.3718E-05						
Selenium	0	0	100	0.0004254	1000	4.0757E-04					10000	3.9413E-04
Silver	0	0	20	0.000062	500	5.382E-05	2000	5.546E-05				
Sodium	0	0	1000		50000	5.0014E-05						
Thallium	0	0	100	0.0006058	1000	0.000586					10000	6.0312E-04
Tin	0	0	50	0.0013816	1000	0.0014063					5000	1.41366E-03
Titanium	0	0	100	0.0002037	1000	1.9655E-04					10000	1.9583E-04
Vanadium	0	0	100	0.0000518	1000	5.028E-05					10000	5.1134E-05
Zinc	0	0	100	0.0060263	1000	0.00606					10000	0.005817
Strontium	0	0	100	0.001406	1000	0.001392					10000	0.001369
Lithium (outside certification)	0	0	100	0.0000116	1000	1.163E-05					10000	1.0858E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4140002	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	5/20/14 9:07 5/20/14 9:39

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	5.9314E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.6493E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.3813E-05										
Selenium												
Silver												
Sodium	100000	4.9239E-05	500000	4.8628E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015		
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)		
Calibration:	4140002	Instrument:	ME-ICP		
Matrix:	Water	Calibration Dates:	5/20/14 9:07	5/20/14 9:39	

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.6442E-05	66.68044	3.932528	188.5367	0.9999998		0.998	
Antimony	3.9042E-04	69.06808	0.652895	64.87862	0.9999904		0.998	
Arsenic	2.239775E-04	66.81766	2.744043	174.3583	0.9999966		0.998	
Barium	6.926075E-03	66.73209	1.7755	161.5242	0.9999998		0.998	
Beryllium	1.87205E-03	66.71215	2.66128	138.6032	0.9999894		0.998	
Boron	1.09245E-05	66.79981	4.038822	133.7193	0.9999822		0.998	
Cadmium	0.011565	66.87952	1.712675	158.7161	0.9999993		0.998	
Calcium	4.673914E-05	67.21045	2.69755	116.9931	0.9999997		0.998	
Chromium	3.850225E-05	66.73349	41.81169	194.4898	0.9999981		0.998	
Cobalt	0.0033883	66.66916	1.660895	158.7462	0.999999		0.998	
Copper	5.859675E-05	66.80028	2.178367	92.61323	0.9999939		0.998	
Iron	5.200014E-06	66.89907	19.47847	191.7011	0.9999993		0.998	
Lead	8.04325E-04	66.68593	29.29576	197.4445	0.9999934		0.998	
Magnesium	1.983175E-06	66.66883	46.71067	197.9846	0.9999993		0.998	
Manganese	2.1205E-04	66.84485	49.49535	193.6551	0.9999928		0.998	
Molybdenum	0.002572	66.7329	19.61844	196.787	0.9999895		0.998	
Nickel	1.127475E-03	66.68736	11.21794	195.5843	0.9999996		0.998	
Potassium	9.72525E-06	67.6715	3.341342	158.008	0.9999992		0.998	
Selenium	3.06775E-04	66.79726	2.55282	173.7613	0.9999921		0.998	
Silver	4.282E-05	67.17545	3.561367	143.0522	0.9999258		0.998	
Sodium	3.697025E-05	66.68431	71.97434	198.04	0.9999907		0.998	
Thallium	4.4873E-04	66.69531	8.204937	189.8052	0.9999922		0.998	
Tin	1.05039E-03	66.67945	3.594012	180.0311	0.9999992		0.998	
Titanium	1.4902E-04	66.70928	3.144858	180.2321	1		0.998	
Vanadium	3.83035E-05	66.68645	4.749225	148.494	0.9999968		0.998	
Zinc	4.475825E-03	66.70991	3.087215	164.4915	0.9999838		0.998	
Strontium	1.04175E-03	66.68274	1.990025	147.0046	0.9999973		0.998	
Lithium (outside certification)	8.522E-06	66.7982	13.31515	177.1947	0.9999555		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4143003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	5/21/14 9:03 5/21/14 9:34

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.0842E-05	10000	2.1086E-05			500000	2.1044E-05		
Antimony	0	0	100	0.0003971	1000	5.4638E-04					10000	5.4109E-04
Arsenic	0	0	100	0.0002728	1000	2.9721E-04					10000	2.9018E-04
Barium	0	0	50	0.009071	1000	0.0087487	5000	0.0086806				
Beryllium	0	0	100	0.0024085	1000	0.0024208					10000	0.0022638
Boron	0	0	50	0.0000142	1000	1.386E-05					5000	1.3558E-05
Cadmium	0	0	100	0.01782	1000	0.016667					10000	0.016642
Calcium	0	0	1100	6.447273E-05	50000	5.7848E-05					10000	
Chromium	0	0	100	0.0000495	1000	4.914E-05					10000	4.7904E-05
Cobalt	0	0	100	0.0042912	1000	0.0042687					10000	0.0042749
Copper	0	0	100	0.000064	1000	6.166E-05					10000	5.9784E-05
Iron	0	0	5100	6.947059E-06	10000	6.465E-06			500000	6.579E-06	10000	
Lead	0	0	100	0.0010103	1000	0.0010186					10000	0.0010387
Magnesium	0	0	5100		50000	2.538E-06			500000	2.5368E-06	10000	
Manganese	0	0	100	0.0002494	1000	2.4072E-04	10000	0.0002335			10000	
Molybdenum	0	0	100	0.0031872	1000	0.0033581					10000	0.0032483
Nickel	0	0	100	0.0014445	1000	0.0014462					10000	0.0014284
Potassium	0	0	1000	1.048E-05	10000	1.3142E-05						
Selenium	0	0	100	0.0003849	1000	3.8826E-04					10000	3.7272E-04
Silver	0	0	20	0.000059	500	5.262E-05	2000	5.2545E-05				
Sodium	0	0	1000		50000	4.7912E-05						
Thallium	0	0	100	0.0006799	1000	6.5936E-04					10000	0.0006809
Tin	0	0	50	0.0013152	1000	0.0013445					5000	1.34476E-03
Titanium	0	0	100	0.0001928	1000	1.8794E-04					10000	1.8564E-04
Vanadium	0	0	100	0.0000492	1000	4.941E-05					10000	4.8667E-05
Zinc	0	0	100	0.0057256	1000	0.0058539					10000	0.0055915
Strontium	0	0	100	0.001322	1000	0.001318					10000	0.001308
Lithium (outside certification)	0	0	100	0.0000121	1000	1.245E-05					10000	1.1687E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4143003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	5/21/14 9:03 5/21/14 9:34

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	5.6972E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.5181E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.3215E-05										
Selenium												
Silver												
Sodium	100000	4.6951E-05	500000	4.6022E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.		Project:	Kirtland AFB (ECOS)	
Calibration:	4143003		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	5/21/14 9:03	5/21/14 9:34

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.5743E-05	66.6701	2.384677	179.332	1		0.998	
Antimony	3.711425E-04	69.22185	0.6328425	81.04889	0.9999878		0.998	
Arsenic	2.150475E-04	66.83715	4.11499	193.6178	0.9999913		0.998	
Barium	6.625075E-03	66.71619	0.97591	150.9884	0.9999979		0.998	
Beryllium	1.773275E-03	66.78777	3.103438	160.4835	0.9999552		0.998	
Boron	1.04045E-05	66.7143	4.420565	144.9178	0.9999812		0.998	
Cadmium	1.278225E-02	66.80514	2.55347	184.3292	0.9999996		0.998	
Calcium	4.482318E-05	67.08393	1.855752	138.6419	0.999998		0.998	
Chromium	3.6636E-05	66.69277	1.18155	42.51186	0.9999939		0.998	
Cobalt	0.0032087	66.66732	2.039453	180.0123	1		0.998	
Copper	4.6361E-05	66.77037	1.761868	53.26288	0.9999924		0.998	
Iron	4.997765E-06	66.79361	6.721835	190.1199	0.9999994		0.998	
Lead	0.0007669	66.68479	15.81899	195.1404	0.9999968		0.998	
Magnesium	1.898225E-06	66.66839	44.88798	198.6757	0.9999974		0.998	
Manganese	1.80905E-04	66.76343	3.963152	143.3175	0.9999919		0.998	
Molybdenum	0.0024484	66.72919	27.83134	198.1189	0.9999879		0.998	
Nickel	1.079775E-03	66.6708	72.07478	199.4643	0.9999986		0.998	
Potassium	9.20925E-06	68.08342	2.285808	163.3188	0.9999983		0.998	
Selenium	2.8647E-04	66.70739	147.9459	199.4982	0.9999837		0.998	
Silver	4.104125E-05	67.07298	1.647302	99.57033	0.9999997		0.998	
Sodium	3.522125E-05	66.70266	2.354263	147.7769	0.9999778		0.998	
Thallium	5.0504E-04	66.69564	9.808812	195.536	0.9999904		0.998	
Tin	1.001115E-03	66.68107	4.548542	190.8533	1		0.998	
Titanium	1.41595E-04	66.69998	2.042357	188.0542	0.9999991		0.998	
Vanadium	3.681925E-05	66.67208	4.422358	150.4186	0.999998		0.998	
Zinc	4.29275E-03	66.71337	10.53841	197.2155	0.9999788		0.998	
Strontium	9.869999E-04	66.66934	1.39375	98.31615	0.9999993		0.998	
Lithium (outside certification)	9.05925E-06	66.75548	4.944975	136.1187	0.9999606		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4E14023

Empirical Laboratories, LLC

Printed: 5/27/2014 3:41:21PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405013-01	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405013-03	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405013-05	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405013-07	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405013-09	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405065-01	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405065-03	L	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	MS/MSD
1405065-05	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
1405065-07	D	MET_ICP_LOW6010C_FULL	05/15/2014	100	25					NA	see versions
4E14023-BLK1		QC	05/14/2014	100	25					NA	
4E14023-BS1		QC	05/14/2014	100	25	14E0168		2000		NA	
4E14023-DUP1		QC	05/14/2014	100	25		1405065-03			NA	
4E14023-MS1		QC	05/14/2014	100	25	14E0170	1405065-03	25		NA	
4E14023-MSD1		QC	05/14/2014	100	25	14E0170	1405065-03	25		NA	
4E14023-PS1		QC	05/14/2014	100	25	14E0170	1405065-03	25		NA	

Reagents Used:

Standard	Description
14E0086	Metals 50mL Digestion Vessel- DigiTUBE
14E0321	Nitric acid
14E0322	Hydrochloric Acid

PREPARATION BENCH SHEET

4E20004

Empirical Laboratories, LLC

Printed: 6/4/2014 12:48:16PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1404001-02	-	MET_ICP_LOW6010C_FULL_(	05/20/2014	100	25					NA	Validating Q5 Limits!
1405110-01	D	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	see versions
1405110-01	D	MET_ICP_LOW6010C_FULL_(	05/20/2014	100	25					NA	Added for BatchQC in: 4E20004
1405110-01	D	ZZ_MET_ICP_LOW6010B_FUI	05/20/2014	100	25					NA	Added for BatchQC in: 4E20004
1405110-03	D	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	see versions
1405110-03	D	MET_ICP_LOW6010C_FULL_(	05/20/2014	100	25					NA	Added for BatchQC in: 4E20004
1405110-03	D	ZZ_MET_ICP_LOW6010B_FUI	05/20/2014	100	25					NA	Added for BatchQC in: 4E20004
1405122-01	A	ZZ_MET_ICP_LOW6010B_FUI	05/20/2014	100	25					NA	
1405122-02	-	ZZ_MET_ICP_LOW6010B_FUI	05/20/2014	100	25					NA	
1405133-40	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405133-41	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405135-16	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405135-17	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405135-18	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405150-12	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405150-13	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405151-02	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405151-13	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405151-18	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405151-28	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
1405151-29	A	MET_ICP_LOW6010C_FULL	05/20/2014	100	25					NA	soil - digest 2.5g->100mL
4E20004-BLK1		QC	05/20/2014	100	25					NA	

PREPARATION BENCH SHEET

4E20004

Empirical Laboratories, LLC

Printed: 6/4/2014 12:48:16PM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E20004-BS1		QC	05/20/2014	100	25	14E0168		2000		NA	
4E20004-DUP1		QC	05/20/2014	100	25		1405110-03			NA	
4E20004-DUP2		QC	05/20/2014	100	25		1405110-01			NA	
4E20004-MRL1		QC	05/20/2014	100	25	14B0290		250		NA	
4E20004-MRL2		QC	05/20/2014	100	25	14B0291		250		NA	
4E20004-MS1		QC	05/20/2014	100	25	14E0170	1405110-03	25		NA	
4E20004-PS1		QC	05/20/2014	100	25	14E0170	1405110-03	25		NA	

Reagents Used:

Standard	Description
14E0086	Metals 50mL Digestion Vessel- DigiTUBE
14E0321	Nitric acid
14E0322	Hydrochloric Acid

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-01 [ST105-30024]	4E12924	100.00/100.00	100	100	1.00			05/12/14
1405065-03 [ST105-30025]	4E12924	100.00/100.00	100	100	1.00			05/12/14
1405065-05 [ST105-30041]	4E12924	100.00/100.00	100	100	1.00			05/12/14
1405065-07 [ST105-30045]	4E12924	100.00/100.00	100	100	1.00			05/12/14

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-01 [ST105-30024]	4E13322	20.00/20.00	20.0	20.0	1.00			05/13/14
1405065-03 [ST105-30025]	4E13322	20.00/20.00	20.0	20.0	1.00			05/13/14
1405065-05 [ST105-30041]	4E13322	20.00/20.00	20.0	20.0	1.00			05/13/14

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405110-01 [ST105-30037]	4E15008	100.00/100.00	100	100	1.00			05/15/14
1405110-03 [ST105-30042]	4E15008	100.00/100.00	100	100	1.00			05/15/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-01 [ST105-30024]	4E16001	25.00/25.00	25.0	25.0	1.00			05/16/14
1405065-03 [ST105-30025]	4E16001	25.00/25.00	25.0	25.0	1.00			05/16/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-01 [ST105-30024]	4E16015	20.00/20.00	4.00	20.0	1.00			05/16/14
1405065-03 [ST105-30025]	4E16015	20.00/20.00	4.00	20.0	1.00			05/16/14
1405065-05RE1 [ST105-30041]	4E16015	20.00/20.00	4.00	20.0	2.00			05/16/14
1405065-07RE1 [ST105-30045]	4E16015	20.00/20.00	4.00	20.0	2.00			05/16/14

Sample Extraction Data

Prep Method: pNone-E353.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405110-01RE1 [ST105-30037]	4E16017	20.00/20.00	4.00	20.0	2.00			05/16/14
1405110-03RE1 [ST105-30042]	4E16017	20.00/20.00	4.00	20.0	2.00			05/16/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-05 [ST105-30041]	4E19008	25.00/25.00	25.0	25.0	1.00			05/19/14
1405065-07 [ST105-30045]	4E19008	25.00/25.00	25.0	25.0	1.00			05/19/14

Sample Extraction Data

Prep Method: pNone-SW9060A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-01 [ST105-30024]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405065-02 [ST105-30024]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405065-03 [ST105-30025]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405065-04 [ST105-30025]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405065-05 [ST105-30041]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405065-06 [ST105-30041]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405065-07 [ST105-30045]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405065-08 [ST105-30045]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405110-01 [ST105-30037]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405110-02 [ST105-30037]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405110-03 [ST105-30042]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14
1405110-04 [ST105-30042]	4E20019	40.00/40.00	40.0	40.0	1.00			05/20/14

Sample Extraction Data

Prep Method: pNone-SM2320B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405110-01 [ST105-30037]	4E22003	25.00/25.00	25.0	25.0	1.00			05/22/14
1405110-03 [ST105-30042]	4E22003	25.00/25.00	25.0	25.0	1.00			05/22/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-01 [ST105-30024]	4E23002	5.00/5.00	5.00	5.00	1.00			05/23/14
1405065-03 [ST105-30025]	4E23002	5.00/5.00	5.00	5.00	1.00			05/23/14
1405065-05 [ST105-30041]	4E23002	5.00/5.00	5.00	5.00	1.00			05/23/14
1405065-07 [ST105-30045]	4E23002	5.00/5.00	5.00	5.00	1.00			05/23/14

Sample Extraction Data

Prep Method: pNone-E351.2

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-07 [ST105-30045]	4E27018	20.00/20.00	20.0	20.0	1.00			05/27/14
1405110-01 [ST105-30037]	4E27018	20.00/20.00	20.0	20.0	1.00			05/27/14
1405110-03 [ST105-30042]	4E27018	20.00/20.00	20.0	20.0	1.00			05/27/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405065-01 [ST105-30024]	4E27028	100.00/100.00	100	100	1.00			05/27/14
1405065-03 [ST105-30025]	4E27028	100.00/100.00	100	100	1.00			05/27/14
1405065-05 [ST105-30041]	4E27028	100.00/100.00	100	100	1.00			05/27/14
1405065-07 [ST105-30045]	4E27028	100.00/100.00	100	100	1.00			05/27/14

Sample Extraction Data

Prep Method: pNone-SM4500NH3BG

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405110-01 [ST105-30037]	4E29012	100.00/100.00	100	100	1.00			05/29/14
1405110-03 [ST105-30042]	4E29012	100.00/100.00	100	100	1.00			05/29/14

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1405110-01 [ST105-30037]	4F03002	5.00/5.00	5.00	5.00	1.00			06/03/14
1405110-03 [ST105-30042]	4F03002	5.00/5.00	5.00	5.00	1.00			06/03/14

ANALYSIS DATA SHEET

ST105-30024

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-01
Sampled:	05/05/14 14:14	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E27028	05/28/14 10:52
24959-67-9	Bromide	**0.135**	**0.0420**	0.125	0.250	1	J	SW9056A	4E23002	05/23/14 10:40
TDS	Total Dissolved Solids	**266**	**20.0**	20.0	20.0	1		SM2540C	4E12924	05/12/14 14:45
NA	Total Kjeldahl Nitrogen		2.00	2.00	2.00	1	MU	E351.2	4E13322	05/14/14 13:34
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 21:49
16887-00-6	Chloride	**11.2**	**0.170**	0.330	0.500	1		SW9056A	4E23002	05/23/14 10:40
NA	Nitrate/Nitrite as N	**9.04**	**0.250**	0.750	1.50	1	N	E353.2	4E16015	05/16/14 14:31
16984-48-8	Fluoride	**0.475**	**0.0330**	0.100	0.250	1		SW9056A	4E23002	05/23/14 10:40
471-34-1	Alkalinity, Total (as CACO3)	**120**	**1.00**	1.00	1.00	1		SM2320B	4E16001	05/16/14 13:46
14808-79-8	Sulfate as SO4	**40.3**	**0.330**	1.00	2.50	1		SW9056A	4E23002	05/23/14 10:40
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 21:49
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 21:49

ANALYSIS DATA SHEET

ST105-30024

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-02
Sampled:	05/05/14 14:14	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 22:13
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 22:13
7440-44-0	TOC-MAX (dissolved)	**1.38**	**1.25**	2.50	3.00	1	J	SW9060A	4E20019	05/20/14 22:13

ANALYSIS DATA SHEET

ST105-30025

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-03
Sampled:	05/06/14 14:34	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E27028	05/28/14 10:53
24959-67-9	Bromide	**0.0850**	**0.0420**	0.125	0.250	1	J	SW9056A	4E23002	05/23/14 10:58
TDS	Total Dissolved Solids	**240**	**20.0**	20.0	20.0	1		SM2540C	4E12924	05/12/14 14:45
NA	Total Kjeldahl Nitrogen		0.800	1.00	1.50	1	MU	E351.2	4E13322	05/14/14 13:35
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 22:35
16887-00-6	Chloride	**8.28**	**0.170**	0.330	0.500	1		SW9056A	4E23002	05/23/14 10:58
NA	Nitrate/Nitrite as N	**6.12**	**0.250**	0.750	1.50	1	N	E353.2	4E16015	05/16/14 14:32
16984-48-8	Fluoride	**0.481**	**0.0330**	0.100	0.250	1		SW9056A	4E23002	05/23/14 10:58
471-34-1	Alkalinity, Total (as CACO3)	**109**	**1.00**	1.00	1.00	1		SM2320B	4E16001	05/16/14 10:12
14808-79-8	Sulfate as SO4	**31.0**	**0.330**	1.00	2.50	1		SW9056A	4E23002	05/23/14 10:58
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 22:35
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 22:35

ANALYSIS DATA SHEET

ST105-30025

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-04
Sampled:	05/06/14 14:34	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 01:05
7440-44-0	TOC-MAX (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 01:05
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 01:05

ANALYSIS DATA SHEET

ST105-30041

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-05
Sampled:	05/07/14 11:47	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E27028	05/28/14 10:56
24959-67-9	Bromide	**0.169**	**0.0420**	0.125	0.250	1	J	SW9056A	4E23002	05/23/14 12:08
TDS	Total Dissolved Solids	**330**	**20.0**	20.0	20.0	1		SM2540C	4E12924	05/12/14 14:45
NA	Total Kjeldahl Nitrogen		1.50	1.50	1.50	1	MU	E351.2	4E13322	05/14/14 13:36
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 23:47
16887-00-6	Chloride	**17.7**	**0.170**	0.330	0.500	1		SW9056A	4E23002	05/23/14 12:08
NA	Nitrate/Nitrite as N	**12.3**	**0.500**	1.50	3.00	2	D N	E353.2	4E16015	05/16/14 15:10
16984-48-8	Fluoride	**0.387**	**0.0330**	0.100	0.250	1		SW9056A	4E23002	05/23/14 12:08
471-34-1	Alkalinity, Total (as CACO3)	**152**	**1.00**	1.00	1.00	1		SM2320B	4E19008	05/20/14 11:18
14808-79-8	Sulfate as SO4	**37.9**	**0.330**	1.00	2.50	1		SW9056A	4E23002	05/23/14 12:08
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 23:47
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 23:47

ANALYSIS DATA SHEET

ST105-30041

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-06
Sampled:	05/05/14 11:47	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 02:20
7440-44-0	TOC-MAX (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 02:20
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 02:20

ANALYSIS DATA SHEET

ST105-30045

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-07
Sampled:	05/07/14 16:07	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E27028	05/28/14 10:57
24959-67-9	Bromide	**0.153**	**0.0420**	0.125	0.250	1	J	SW9056A	4E23002	05/23/14 12:25
TDS	Total Dissolved Solids	**347**	**20.0**	20.0	20.0	1		SM2540C	4E12924	05/12/14 14:45
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	4E27018	05/27/14 18:32
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 02:43
16887-00-6	Chloride	**16.4**	**0.170**	0.330	0.500	1		SW9056A	4E23002	05/23/14 12:25
NA	Nitrate/Nitrite as N	**12.9**	**0.500**	1.50	3.00	2	D N	E353.2	4E16015	05/16/14 15:11
16984-48-8	Fluoride	**0.411**	**0.0330**	0.100	0.250	1		SW9056A	4E23002	05/23/14 12:25
471-34-1	Alkalinity, Total (as CACO3)	**149**	**1.00**	1.00	1.00	1		SM2320B	4E19008	05/20/14 11:23
14808-79-8	Sulfate as SO4	**30.2**	**0.330**	1.00	2.50	1		SW9056A	4E23002	05/23/14 12:25
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 02:43
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 02:43

ANALYSIS DATA SHEET

ST105-30045

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405065-08
Sampled:	05/07/14 16:07	Received:	05/09/14 08:40

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 03:06
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 03:06
7440-44-0	TOC-MAX (dissolved)	**1.28**	**1.25**	2.50	3.00	1	J	SW9060A	4E20019	05/21/14 03:06

ANALYSIS DATA SHEET

ST105-30037

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405110-01
Sampled:	05/12/14 12:26	Received:	05/14/14 09:00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E29012	05/30/14 09:38
24959-67-9	Bromide	**0.178**	**0.0420**	0.125	0.250	1	J	SW9056A	4F03002	06/03/14 21:52
TDS	Total Dissolved Solids	**314**	**20.0**	20.0	20.0	1		SM2540C	4E15008	05/15/14 18:17
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	4E27018	05/27/14 18:33
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 03:29
16887-00-6	Chloride	**16.0**	**0.170**	0.330	0.500	1		SW9056A	4F03002	06/03/14 21:52
NA	Nitrate/Nitrite as N	**14.9**	**0.500**	1.50	3.00	2	D	E353.2	4E16017	05/16/14 15:13
16984-48-8	Fluoride	**0.505**	**0.0330**	0.100	0.250	1		SW9056A	4F03002	06/03/14 21:52
471-34-1	Alkalinity, Total (as CACO3)	**167**	**1.00**	1.00	1.00	1		SM2320B	4E22003	05/23/14 08:40
14808-79-8	Sulfate as SO4	**20.5**	**0.330**	1.00	2.50	1		SW9056A	4F03002	06/03/14 21:52
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 03:29
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 03:29

ANALYSIS DATA SHEET

ST105-30037

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405110-02
Sampled:	05/12/14 12:26	Received:	05/14/14 09:00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 03:52
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 03:52
7440-44-0	TOC-MAX (dissolved)	**1.37**	**1.25**	2.50	3.00	1	J	SW9060A	4E20019	05/21/14 03:52

ANALYSIS DATA SHEET

ST105-30042

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405110-03
Sampled:	05/13/14 14:00	Received:	05/14/14 09:00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N		0.100	0.150	0.300	1	U	SM4500NH3BG	4E29012	05/30/14 09:39
24959-67-9	Bromide	**0.313**	**0.0420**	0.125	0.250	1		SW9056A	4F03002	06/03/14 22:10
TDS	Total Dissolved Solids	**354**	**20.0**	20.0	20.0	1		SM2540C	4E15008	05/15/14 18:17
NA	Total Kjeldahl Nitrogen		0.500	1.00	1.50	1	U	E351.2	4E27018	05/27/14 18:34
7440-44-0	Total Organic Carbon		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 04:15
16887-00-6	Chloride	**29.1**	**0.170**	0.330	0.500	1		SW9056A	4F03002	06/03/14 22:10
NA	Nitrate/Nitrite as N	**12.5**	**0.500**	1.50	3.00	2	D	E353.2	4E16017	05/16/14 15:14
16984-48-8	Fluoride	**0.404**	**0.0330**	0.100	0.250	1		SW9056A	4F03002	06/03/14 22:10
471-34-1	Alkalinity, Total (as CACO3)	**139**	**1.00**	1.00	1.00	1		SM2320B	4E22003	05/23/14 08:45
14808-79-8	Sulfate as SO4	**51.3**	**0.330**	1.00	2.50	1		SW9056A	4F03002	06/03/14 22:10
7440-44-0	TOC-MIN		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 04:15
7440-44-0	TOC-MAX		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 04:15

ANALYSIS DATA SHEET

ST105-30042

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water	Laboratory ID:	1405110-04
Sampled:	05/13/14 14:00	Received:	05/14/14 09:00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 04:39
7440-44-0	TOC-MIN (dissolved)		1.25	2.50	3.00	1	U	SW9060A	4E20019	05/21/14 04:39
7440-44-0	TOC-MAX (dissolved)	**1.51**	**1.25**	2.50	3.00	1	J	SW9060A	4E20019	05/21/14 04:39

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E12924-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4E12924	05/12/14 14:45

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E12924-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1035**	**20.0**	20.0	20.0	1		SM2540C	4E12924	05/12/14 14:45

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E12924-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**249.0**	**20.0**	20.0	20.0	1		SM2540C	4E12924	05/12/14 14:45

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E13322-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	ND	0.500	1.00	1.50	1	U	E351.2	4E13322	05/14/14 13:20

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E13322-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.420**	**0.500**	1.00	1.50	1		E351.2	4E13322	05/14/14 13:21

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E13322-MS2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**4.777**	**0.556**	1.11	1.67	1		E351.2	4E13322	05/27/14 18:45

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids: 0.00

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E13322-MSD2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**4.241**	**0.556**	1.11	1.67	1		E351.2	4E13322	05/27/14 18:46

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E15008-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	4E15008	05/15/14 18:17

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E15008-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1100**	**20.0**	20.0	20.0	1		SM2540C	4E15008	05/15/14 18:17

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E15008-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**304.0**	**20.0**	20.0	20.0	1		SM2540C	4E15008	05/15/14 18:17

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E16001-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4E16001	05/16/14 09:06

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E16001-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1045**	**5.00**	5.00	5.00	1		SM2320B	4E16001	05/16/14 09:22

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E16001-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**229.2**	**1.11**	1.11	1.11	1		SM2320B	4E16001	05/16/14 09:43

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E16001-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**229.6**	**1.11**	1.11	1.11	1		SM2320B	4E16001	05/16/14 10:03

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E16015-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4E16015	05/16/14 14:09

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E16015-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**15.48**	**0.500**	1.50	3.00	1		E353.2	4E16015	05/16/14 14:10

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E16015-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**8.250**	**0.250**	0.750	1.50	1		E353.2	4E16015	05/16/14 14:33

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E16015-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**8.305**	**0.250**	0.750	1.50	1		E353.2	4E16015	05/16/14 14:35

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E16017-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	ND	0.0500	0.150	0.300	1	U	E353.2	4E16017	05/16/14 14:50

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E16017-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Nitrate/Nitrite as N	**15.55**	**0.500**	1.50	3.00	1		E353.2	4E16017	05/16/14 14:51

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E19008-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4E19008	05/19/14 13:18

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E19008-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1027**	**5.00**	5.00	5.00	1		SM2320B	4E19008	05/19/14 13:36

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E20019-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	ND	1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 18:23
7440-44-0	Total Organic Carbon (dissolved)	ND	1.25	2.50	3.00	1	U	SW9060A	4E20019	05/20/14 18:23

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E20019-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**24.07**	**1.25**	2.50	3.00	1		SW9060A	4E20019	05/20/14 18:50
7440-44-0	Total Organic Carbon (dissolved)	**24.07**	**1.25**	2.50	3.00	1		SW9060A	4E20019	05/20/14 18:50

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20019-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**13.97**	**1.25**	2.50	3.00	1		SW9060A	4E20019	05/20/14 23:00

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20019-MS2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)	**13.87**	**1.25**	2.50	3.00	1		SW9060A	4E20019	05/21/14 01:30

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20019-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon	**13.46**	**1.25**	2.50	3.00	1		SW9060A	4E20019	05/20/14 23:25

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E20019-MSD2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-44-0	Total Organic Carbon (dissolved)	**13.66**	**1.25**	2.50	3.00	1		SW9060A	4E20019	05/21/14 01:57

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E22003-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	ND	1.00	1.00	1.00	1	U	SM2320B	4E22003	05/22/14 13:42

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E22003-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
471-34-1	Alkalinity, Total (as CACO3)	**1060**	**5.00**	5.00	5.00	1		SM2320B	4E22003	05/22/14 13:54

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E23002-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4E23002	05/23/14 10:06
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4E23002	05/23/14 10:06
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4E23002	05/23/14 10:06
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4E23002	05/23/14 10:06

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E23002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.65**	**0.0420**	0.125	0.250	1		SW9056A	4E23002	05/23/14 10:23
16887-00-6	Chloride	**4.212**	**0.170**	0.330	0.500	1		SW9056A	4E23002	05/23/14 10:23
16984-48-8	Fluoride	**2.726**	**0.0330**	0.100	0.250	1		SW9056A	4E23002	05/23/14 10:23
14808-79-8	Sulfate as SO4	**20.94**	**0.330**	1.00	2.50	1		SW9056A	4E23002	05/23/14 10:23

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E23002-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**0.08200**	**0.0420**	0.125	0.250	1	J	SW9056A	4E23002	05/23/14 11:50
16887-00-6	Chloride	**8.195**	**0.170**	0.330	0.500	1		SW9056A	4E23002	05/23/14 11:50
16984-48-8	Fluoride	**0.4640**	**0.0330**	0.100	0.250	1		SW9056A	4E23002	05/23/14 11:50
14808-79-8	Sulfate as SO4	**30.61**	**0.330**	1.00	2.50	1		SW9056A	4E23002	05/23/14 11:50

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Laboratory ID: 4E23002-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**6.894**	**0.0467**	0.139	0.278	1		SW9056A	4E23002	05/23/14 11:15
16887-00-6	Chloride	**36.93**	**0.189**	0.367	0.556	1		SW9056A	4E23002	05/23/14 11:15
16984-48-8	Fluoride	**3.214**	**0.0367**	0.111	0.278	1		SW9056A	4E23002	05/23/14 11:15
14808-79-8	Sulfate as SO4	**59.05**	**0.367**	1.11	2.78	1		SW9056A	4E23002	05/23/14 11:15

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E23002-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**6.901**	**0.0467**	0.139	0.278	1		SW9056A	4E23002	05/23/14 11:33
16887-00-6	Chloride	**36.99**	**0.189**	0.367	0.556	1		SW9056A	4E23002	05/23/14 11:33
16984-48-8	Fluoride	**3.196**	**0.0367**	0.111	0.278	1		SW9056A	4E23002	05/23/14 11:33
14808-79-8	Sulfate as SO4	**59.22**	**0.367**	1.11	2.78	1		SW9056A	4E23002	05/23/14 11:33

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E27018-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	ND	0.500	1.00	1.50	1	U	E351.2	4E27018	05/27/14 18:28

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E27018-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.112**	**0.500**	1.00	1.50	1		E351.2	4E27018	05/27/14 18:30

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E27018-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
NA	Total Kjeldahl Nitrogen	**3.113**	**0.500**	1.00	1.50	1		E351.2	4E27018	05/27/14 18:31

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E27028-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4E27028	05/28/14 10:50

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E27028-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**3.879**	**0.100**	0.150	0.300	1		SM4500NH3BG	4E27028	05/28/14 10:51

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E27028-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.334**	**0.100**	0.150	0.300	1		SM4500NH3BG	4E27028	05/28/14 10:54

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids: 0.00

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E27028-MSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**4.425**	**0.100**	0.150	0.300	1		SM4500NH3BG	4E27028	05/28/14 10:55

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E29012-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	ND	0.100	0.150	0.300	1	U	SM4500NH3BG	4E29012	05/30/14 09:36

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: Shaw Environmental, Inc.

Matrix: Water

% Solids:

SDG: KirtlandECOS_015

Project: Kirtland AFB (ECOS)

Laboratory ID: 4E29012-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7664-41-7	Ammonia as N	**3.805**	**0.100**	0.150	0.300	1		SM4500NH3BG	4E29012	05/30/14 09:37

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4F03002-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	ND	0.0420	0.125	0.250	1	U	SW9056A	4F03002	06/03/14 21:17
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	4F03002	06/03/14 21:17
16984-48-8	Fluoride	ND	0.0330	0.100	0.250	1	U	SW9056A	4F03002	06/03/14 21:17
14808-79-8	Sulfate as SO4	ND	0.330	1.00	2.50	1	U	SW9056A	4F03002	06/03/14 21:17

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
% Solids:

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4F03002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
24959-67-9	Bromide	**13.66**	**0.0420**	0.125	0.250	1		SW9056A	4F03002	06/03/14 21:35
16887-00-6	Chloride	**4.243**	**0.170**	0.330	0.500	1		SW9056A	4F03002	06/03/14 21:35
16984-48-8	Fluoride	**2.744**	**0.0330**	0.100	0.250	1		SW9056A	4F03002	06/03/14 21:35
14808-79-8	Sulfate as SO4	**21.08**	**0.330**	1.00	2.50	1		SW9056A	4F03002	06/03/14 21:35

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4121001
Sequence: 4E12102

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E12102-ICV1	Bromide	14.00	13.62	97.3	mg/L	+/- 10.00%
	Chloride	4.200	4.347	104	mg/L	+/- 10.00%
	Fluoride	2.800	2.686	95.9	mg/L	+/- 10.00%
	Sulfate as SO4	21.00	20.93	99.6	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4134003
Sequence: 4E13410

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E13410-ICV1	Total Kjeldahl Nitrogen	10.00	10.44	104	mg/L	+/- 10.00%
4E13410-CCV1	Total Kjeldahl Nitrogen	10.00	10.76	108	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E353.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4136005
Sequence: 4E13612

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E13612-ICV1	Nitrate/Nitrite as N	1.200	1.290	108	mg/L	+/- 10.00%
4E13612-CCV3	Nitrate/Nitrite as N	1.200	1.207	101	mg/L	+/- 10.00%
4E13612-CCV4	Nitrate/Nitrite as N	1.200	1.202	100	mg/L	+/- 10.00%
4E13612-CCV5	Nitrate/Nitrite as N	1.200	1.231	103	mg/L	+/- 10.00%
4E13612-CCV6	Nitrate/Nitrite as N	1.200	1.220	102	mg/L	+/- 10.00%
4E13612-CCV7	Nitrate/Nitrite as N	1.200	1.190	99.2	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9060A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-TOC1

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4119004
Sequence: 4E14109

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E14109-CCV1	Total Organic Carbon	25.00	23.57	94.3	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	23.57	94.3	mg/L	+/- 20.00%
4E14109-CCV2	Total Organic Carbon	50.00	47.92	95.8	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	50.00	47.92	95.8	mg/L	+/- 20.00%
4E14109-CCV3	Total Organic Carbon	25.00	23.95	95.8	mg/L	+/- 20.00%
	Total Organic Carbon (dissolved)	25.00	23.95	95.8	mg/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E351.2

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4134003
Sequence: 4E14714

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E14714-ICV1	Total Kjeldahl Nitrogen	10.00	9.927	99.3	mg/L	+/- 10.00%
4E14714-CCV1	Total Kjeldahl Nitrogen	10.00	10.73	107	mg/L	+/- 10.00%
4E14714-CCV2	Total Kjeldahl Nitrogen	10.00	10.72	107	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4148001
Sequence: 4E14802

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E14802-ICV1	Ammonia as N	2.000	2.111	106	mg/L	+/- 10.00%
4E14802-CCV2	Ammonia as N	2.000	2.140	107	mg/L	+/- 10.00%
4E14802-CCV3	Ammonia as N	2.000	2.146	107	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-Lachat

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4150001
Sequence: 4E15025

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4E15025-ICV1	Ammonia as N	2.000	2.137	107	mg/L	+/- 10.00%
4E15025-CCV1	Ammonia as N	2.000	2.109	105	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4121001
Sequence: 4F15501

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4F15501-CCV1	Bromide	6.300	6.156	97.7	mg/L	+/- 10.00%
	Chloride	25.00	24.95	99.8	mg/L	+/- 10.00%
	Fluoride	2.500	2.530	101	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.36	101	mg/L	+/- 10.00%
4F15501-CCV2	Bromide	6.300	5.905	93.7	mg/L	+/- 10.00%
	Chloride	25.00	25.08	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.470	98.8	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.86	99.4	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Instrument ID: WC-IC

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Calibration: 4121001
Sequence: 4F16008

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
4F16008-CCV1	Bromide	6.300	6.075	96.4	mg/L	+/- 10.00%
	Chloride	25.00	25.12	100	mg/L	+/- 10.00%
	Fluoride	2.500	2.478	99.1	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	25.31	101	mg/L	+/- 10.00%
4F16008-CCV2	Bromide	6.300	5.967	94.7	mg/L	+/- 10.00%
	Chloride	25.00	24.72	98.9	mg/L	+/- 10.00%
	Fluoride	2.500	2.444	97.8	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.71	98.8	mg/L	+/- 10.00%
4F16008-CCV4	Bromide	6.300	5.913	93.9	mg/L	+/- 10.00%
	Chloride	25.00	24.88	99.5	mg/L	+/- 10.00%
	Fluoride	2.500	2.433	97.3	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.73	98.9	mg/L	+/- 10.00%
4F16008-CCV5	Bromide	6.300	5.928	94.1	mg/L	+/- 10.00%
	Chloride	25.00	24.87	99.5	mg/L	+/- 10.00%
	Fluoride	2.500	2.466	98.6	mg/L	+/- 10.00%
	Sulfate as SO4	25.00	24.78	99.1	mg/L	+/- 10.00%

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 4121001

Sequence: 4F15501

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4F15501-CRL1	Chloride	0.5000	0.5510	110	mg/L	50 - 150
4F15501-CRL2	Bromide	0.2520	0.2120	84.1	mg/L	50 - 150
	Fluoride	0.1000	0.1070	107	mg/L	50 - 150
	Sulfate as SO4	1.000	1.157	116	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Instrument ID: WC-IC

Calibration: 4121001

Sequence: 4F16008

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
4F16008-CRL1	Bromide	0.1260	0.1060	84.1	mg/L	50 - 150
	Chloride	0.5000	0.5190	104	mg/L	50 - 150
	Fluoride	0.05000	0.05200	104	mg/L	50 - 150
	Sulfate as SO4	0.5000	0.7170	143	mg/L	50 - 150

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E12924

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12924-BLK1	Total Dissolved Solids	7.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E13322

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13322-BLK1	Total Kjeldahl Nitrogen	-0.326	0.500	1.50	mg/L	U	E351.2

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E15008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E15008-BLK1	Total Dissolved Solids	6.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E16001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E16001-BLK1	Alkalinity, Total (as CACO3)	0.00	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E16015

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E16015-BLK1	Nitrate/Nitrite as N	-0.0190	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E16017

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E16017-BLK1	Nitrate/Nitrite as N	-0.0144	0.0500	0.300	mg/L	U	E353.2

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E19008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E19008-BLK1	Alkalinity, Total (as CACO3)	-0.406	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E20019

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E20019-BLK1	Total Organic Carbon	0.425	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.425	1.25	3.00	mg/L	U	SW9060A

METHOD BLANKS
SM2320B

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E22003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E22003-BLK1	Alkalinity, Total (as CACO3)	0.00	1.00	1.00	mg/L	U	SM2320B

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E23002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E23002-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0180	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0620	0.330	2.50	mg/L	U	SW9056A

METHOD BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E27018

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E27018-BLK1	Total Kjeldahl Nitrogen	-0.487	0.500	1.50	mg/L	U	E351.2

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E27028

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E27028-BLK1	Ammonia as N	0.0300	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4E29012

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E29012-BLK1	Ammonia as N	-0.0262	0.100	0.300	mg/L	U	SM4500NH3BG

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Batch: 4F03002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4F03002-BLK1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0250	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00600	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E12102
Calibration: 4121001
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E12102-ICB1	Bromide	0.000	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.03000	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.008000	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.02100	0.330	2.50	mg/L	U	SW9056A

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E13410
Calibration: 4134003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13410-ICB1	Total Kjeldahl Nitrogen	-0.2017	0.500	1.50	mg/L	U	E351.2
4E13410-CCB1	Total Kjeldahl Nitrogen	-0.112	0.500	1.50	mg/L	U	E351.2

BLANKS
E353.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E13612
Calibration: 4136005
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E13612-ICB1	Nitrate/Nitrite as N	-0.02161	0.0500	0.300	mg/L	U	E353.2
4E13612-CCB3	Nitrate/Nitrite as N	-0.0161	0.0500	0.300	mg/L	U	E353.2
4E13612-CCB4	Nitrate/Nitrite as N	-0.0210	0.0500	0.300	mg/L	U	E353.2
4E13612-CCB5	Nitrate/Nitrite as N	-0.0247	0.0500	0.300	mg/L	U	E353.2
4E13612-CCB6	Nitrate/Nitrite as N	-0.0185	0.0500	0.300	mg/L	U	E353.2
4E13612-CCB7	Nitrate/Nitrite as N	-0.0352	0.0500	0.300	mg/L	U	E353.2

BLANKS
SW9060A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E14109
Calibration: 4119004
Instrument ID: WC-TOC1

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14109-CCB1	Total Organic Carbon	0.475	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.475	1.25	3.00	mg/L	U	SW9060A
4E14109-CCB2	Total Organic Carbon	0.488	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.488	1.25	3.00	mg/L	U	SW9060A
4E14109-CCB3	Total Organic Carbon	0.494	1.25	3.00	mg/L	U	SW9060A
	Total Organic Carbon (dissolved)	0.494	1.25	3.00	mg/L	U	SW9060A

BLANKS
E351.2

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E14714
Calibration: 4134003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14714-ICB1	Total Kjeldahl Nitrogen	-0.4363	0.500	1.50	mg/L	U	E351.2
4E14714-CCB1	Total Kjeldahl Nitrogen	-0.313	0.500	1.50	mg/L	U	E351.2
4E14714-CCB2	Total Kjeldahl Nitrogen	-0.481	0.500	1.50	mg/L	U	E351.2

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E14802
Calibration: 4148001
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E14802-ICB1	Ammonia as N	0.02516	0.100	0.300	mg/L	U	SM4500NH3BG
4E14802-CCB2	Ammonia as N	0.0375	0.100	0.300	mg/L	U	SM4500NH3BG
4E14802-CCB3	Ammonia as N	-0.0386	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
SM4500NH3BG

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4E15025
Calibration: 4150001
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4E15025-ICB1	Ammonia as N	-0.04009	0.100	0.300	mg/L	U	SM4500NH3BG
4E15025-CCB1	Ammonia as N	0.0168	0.100	0.300	mg/L	U	SM4500NH3BG

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4F15501
Calibration: 4121001
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4F15501-CCB1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0260	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.138	0.330	2.50	mg/L	U	SW9056A
4F15501-CCB2	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.149	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.0400	0.0330	0.250	mg/L	J	SW9056A
	Sulfate as SO4	0.0330	0.330	2.50	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: KirtlandECOS_015
Client: Shaw Environmental, Inc.
Project: Kirtland AFB (ECOS)
Sequence: 4F16008
Calibration: 4121001
Instrument ID: WC-IC

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
4F16008-CCB1	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0220	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0430	0.330	2.50	mg/L	U	SW9056A
4F16008-CCB2	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0230	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.0270	0.330	2.50	mg/L	U	SW9056A
4F16008-CCB4	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0440	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00900	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A
4F16008-CCB5	Bromide	0.00	0.0420	0.250	mg/L	U	SW9056A
	Chloride	0.0270	0.170	0.500	mg/L	U	SW9056A
	Fluoride	0.00600	0.0330	0.250	mg/L	U	SW9056A
	Sulfate as SO4	0.00	0.330	2.50	mg/L	U	SW9056A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E351.2

ST105-30025

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E13322

% Solids:

Source Sample Name: **1405065-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	ND	4.777	86.0		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	5.556	4.241	76.3	11.9		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SM2320B

ST105-30025

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E16001

% Solids:

Source Sample Name: **1405065-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Alkalinity, Total (as CACO3)	111.1	109.2	229.2	108		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Alkalinity, Total (as CACO3)	111.1	229.6	108	0.197		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E353.2

ST105-30025

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E16015

% Solids:

Source Sample Name: **1405065-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate/Nitrite as N	2.500	6.115	8.250	85.4	N	90 - 110

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Nitrate/Nitrite as N	2.500	8.305	87.6	0.664	N	20	90 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9060A

ST105-30025

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E20019

% Solids:

Source Sample Name: **1405065-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Organic Carbon	15.00	ND	13.97	93.1		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS	
						RPD	REC.
Total Organic Carbon	15.00	13.46	89.7	3.72		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9060A

ST105-30025

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E20019

% Solids:

Source Sample Name: **1405065-04**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Total Organic Carbon (dissolved)	15.00	ND	13.87	92.5		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Total Organic Carbon (dissolved)	15.00	13.66	91.1	1.53		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9056A

ST105-30025

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E23002

% Solids:

Source Sample Name: **1405065-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Bromide	7.000	0.08500	6.894	97.3		80 - 120
Chloride	27.78	8.275	36.93	103		80 - 120
Fluoride	2.778	0.4810	3.214	98.4		80 - 120
Sulfate as SO4	27.78	31.04	59.05	101		80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Bromide	7.000	6.901	97.4	0.0967		15	80 - 120
Chloride	27.78	36.99	103	0.165		15	80 - 120
Fluoride	2.778	3.196	97.7	0.589		15	80 - 120
Sulfate as SO4	27.78	59.22	101	0.287		15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SM4500NH3BG

ST105-30025

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Matrix: Water

Batch: 4E27028

% Solids:

Source Sample Name: **1405065-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Ammonia as N	5.000	ND	4.334	86.7		75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Ammonia as N	5.000	4.425	88.5	2.08		20	75 - 125

ST105-30025

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4E12924
Preparation: pNone
Source Sample Name: ST105-30025

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E12924-DUP1
Lab Source ID: 1405065-03
Initial/Final: 100 mL / 100 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	240	249.0	3.68		SM2540C

ST105-30037

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4E15008
Preparation: pNone
Source Sample Name: ST105-30037

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E15008-DUP1
Lab Source ID: 1405110-01
Initial/Final: 100 mL / 100 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	314	304.0	3.24		SM2540C

ST105-30025

DUPLICATES

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: Shaw Environmental, Inc.
Matrix: Water
Batch: 4E23002
Preparation: WC_PREP_ANIONS_W
Source Sample Name: ST105-30025

SDG: KirtlandECOS_015
Project: Kirtland AFB (ECOS)
Laboratory ID: 4E23002-DUP1
Lab Source ID: 1405065-03
Initial/Final: 5 mL / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Bromide	10	0.0850 J	0.08200 J	3.59		SW9056A
Chloride	10	8.28	8.195	0.971		SW9056A
Fluoride	10	0.481	0.4640	3.60		SW9056A
Sulfate as SO4	10	31.0	30.61	1.37		SW9056A

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E12924	Laboratory ID:	4E12924-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	1035	106	80 - 120

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E13322	Laboratory ID:	4E13322-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.420	104	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E15008	Laboratory ID:	4E15008-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	973.0	1100	113	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E16001	Laboratory ID:	4E16001-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1045	105	80 - 120

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E16015	Laboratory ID:	4E16015-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	15.48	105	90 - 110

LCS / LCS DUPLICATE RECOVERY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E16017	Laboratory ID:	4E16017-BS1
Preparation:	pNone	Initial/Final:	2 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate/Nitrite as N	14.80	15.55	105	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E19008	Laboratory ID:	4E19008-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1027	103	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E20019	Laboratory ID:	4E20019-BS1
Preparation:	pNone	Initial/Final:	40 mL / 40 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Organic Carbon	25.00	24.07	96.3	80 - 120
Total Organic Carbon (dissolved)	25.00	24.07	96.3	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2320B

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E22003	Laboratory ID:	4E22003-BS1
Preparation:	pNone	Initial/Final:	5 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Alkalinity, Total (as CACO3)	1000	1060	106	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E23002	Laboratory ID:	4E23002-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.65	97.5	80 - 120
Chloride	4.200	4.212	100	80 - 120
Fluoride	2.800	2.726	97.4	80 - 120
Sulfate as SO4	21.00	20.94	99.7	80 - 120

LCS / LCS DUPLICATE RECOVERY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E27018	Laboratory ID:	4E27018-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.112	94.3	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total Kjeldahl Nitrogen	3.300	3.113	94.3	0.0321	20	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E27028	Laboratory ID:	4E27028-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	4.400	3.879	88.2	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4E29012	Laboratory ID:	4E29012-BS1
Preparation:	pNone	Initial/Final:	100 mL / 100 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia as N	4.400	3.805	86.5	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Matrix:	Water		
Batch:	4F03002	Laboratory ID:	4F03002-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Bromide	14.00	13.66	97.6	80 - 120
Chloride	4.200	4.243	101	80 - 120
Fluoride	2.800	2.744	98.0	80 - 120
Sulfate as SO4	21.00	21.08	100	80 - 120

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E12924 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30024	1405065-01	05/12/14 08:02	100.00	100.00
ST105-30025	1405065-03	05/12/14 08:02	100.00	100.00
ST105-30041	1405065-05	05/12/14 08:02	100.00	100.00
ST105-30045	1405065-07	05/12/14 08:02	100.00	100.00
Blank	4E12924-BLK1	05/12/14 08:02	100.00	100.00
LCS	4E12924-BS1	05/12/14 08:02	20.00	20.00
ST105-30025	4E12924-DUP1	05/12/14 08:02	100.00	100.00

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E13322 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30024	1405065-01	05/13/14 11:49	20.00	20.00
ST105-30025	1405065-03	05/13/14 11:49	20.00	20.00
ST105-30041	1405065-05	05/13/14 11:49	20.00	20.00
Blank	4E13322-BLK1	05/13/14 11:49	20.00	20.00
LCS	4E13322-BS1	05/13/14 11:49	20.00	20.00
ST105-30025	4E13322-MS2	05/13/14 11:49	18.00	20.00
ST105-30025	4E13322-MSD2	05/13/14 11:49	18.00	20.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E15008 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30037	1405110-01	05/15/14 10:26	100.00	100.00
ST105-30042	1405110-03	05/15/14 10:26	100.00	100.00
Blank	4E15008-BLK1	05/15/14 10:26	100.00	100.00
LCS	4E15008-BS1	05/15/14 10:26	20.00	20.00
ST105-30037	4E15008-DUP1	05/15/14 10:26	100.00	100.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E16001 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30024	1405065-01	05/16/14 07:38	25.00	25.00
ST105-30025	1405065-03	05/16/14 07:38	25.00	25.00
Blank	4E16001-BLK1	05/16/14 07:38	25.00	25.00
LCS	4E16001-BS1	05/16/14 07:38	5.00	25.00
ST105-30025	4E16001-MS1	05/16/14 07:38	22.50	25.00
ST105-30025	4E16001-MSD1	05/16/14 07:38	22.50	25.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E16015 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30024	1405065-01	05/16/14 13:12	4.00	20.00
ST105-30025	1405065-03	05/16/14 13:12	4.00	20.00
ST105-30041	1405065-05RE1	05/16/14 13:12	4.00	20.00
ST105-30045	1405065-07RE1	05/16/14 13:12	4.00	20.00
Blank	4E16015-BLK1	05/16/14 13:12	20.00	20.00
LCS	4E16015-BS1	05/16/14 13:12	2.00	20.00
ST105-30025	4E16015-MS1	05/16/14 13:12	4.00	20.00
ST105-30025	4E16015-MSD1	05/16/14 13:12	4.00	20.00

PREPARATION BATCH SUMMARY

E353.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E16017 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30037	1405110-01RE1	05/16/14 14:13	4.00	20.00
ST105-30042	1405110-03RE1	05/16/14 14:13	4.00	20.00
Blank	4E16017-BLK1	05/16/14 14:13	20.00	20.00
LCS	4E16017-BS1	05/16/14 14:13	2.00	20.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E19008 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30041	1405065-05	05/19/14 08:25	25.00	25.00
ST105-30045	1405065-07	05/19/14 08:25	25.00	25.00
Blank	4E19008-BLK1	05/19/14 08:25	25.00	25.00
LCS	4E19008-BS1	05/19/14 08:25	5.00	25.00

PREPARATION BATCH SUMMARY

SW9060A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E20019 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30024	1405065-01	05/20/14 16:00	40.00	40.00
ST105-30024	1405065-02	05/20/14 16:00	40.00	40.00
ST105-30025	1405065-03	05/20/14 16:00	40.00	40.00
ST105-30025	1405065-04	05/20/14 16:00	40.00	40.00
ST105-30041	1405065-05	05/20/14 16:00	40.00	40.00
ST105-30041	1405065-06	05/20/14 16:00	40.00	40.00
ST105-30045	1405065-07	05/20/14 16:00	40.00	40.00
ST105-30045	1405065-08	05/20/14 16:00	40.00	40.00
ST105-30037	1405110-01	05/20/14 16:00	40.00	40.00
ST105-30037	1405110-02	05/20/14 16:00	40.00	40.00
ST105-30042	1405110-03	05/20/14 16:00	40.00	40.00
ST105-30042	1405110-04	05/20/14 16:00	40.00	40.00
Blank	4E20019-BLK1	05/20/14 16:00	40.00	40.00
LCS	4E20019-BS1	05/20/14 16:00	40.00	40.00
ST105-30025	4E20019-MS1	05/20/14 16:00	40.00	40.00
ST105-30025	4E20019-MS2	05/20/14 16:00	40.00	40.00
ST105-30025	4E20019-MSD1	05/20/14 16:00	40.00	40.00
ST105-30025	4E20019-MSD2	05/20/14 16:00	40.00	40.00

PREPARATION BATCH SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E22003 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30037	1405110-01	05/22/14 08:32	25.00	25.00
ST105-30042	1405110-03	05/22/14 08:32	25.00	25.00
Blank	4E22003-BLK1	05/22/14 08:32	25.00	25.00
LCS	4E22003-BS1	05/22/14 08:32	5.00	25.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E23002 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30024	1405065-01	05/23/14 07:23	5.00	5.00
ST105-30025	1405065-03	05/23/14 07:23	5.00	5.00
ST105-30041	1405065-05	05/23/14 07:23	5.00	5.00
ST105-30045	1405065-07	05/23/14 07:23	5.00	5.00
Blank	4E23002-BLK1	05/23/14 07:23	5.00	5.00
LCS	4E23002-BS1	05/23/14 07:23	5.00	5.00
ST105-30025	4E23002-DUP1	05/23/14 07:23	5.00	5.00
ST105-30025	4E23002-MS1	05/23/14 07:23	22.50	25.00
ST105-30025	4E23002-MSD1	05/23/14 07:23	22.50	25.00

PREPARATION BATCH SUMMARY

E351.2

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E27018 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30045	1405065-07	05/27/14 08:37	20.00	20.00
ST105-30037	1405110-01	05/27/14 08:37	20.00	20.00
ST105-30042	1405110-03	05/27/14 08:37	20.00	20.00
Blank	4E27018-BLK1	05/27/14 08:37	20.00	20.00
LCS	4E27018-BS1	05/27/14 08:37	20.00	20.00
LCS Dup	4E27018-BSD1	05/27/14 08:37	20.00	20.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E27028 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30024	1405065-01	05/27/14 15:08	100.00	100.00
ST105-30025	1405065-03	05/27/14 15:08	100.00	100.00
ST105-30041	1405065-05	05/27/14 15:08	100.00	100.00
ST105-30045	1405065-07	05/27/14 15:08	100.00	100.00
Blank	4E27028-BLK1	05/27/14 15:08	100.00	100.00
LCS	4E27028-BS1	05/27/14 15:08	100.00	100.00
ST105-30025	4E27028-MS1	05/27/14 15:08	100.00	100.00
ST105-30025	4E27028-MSD1	05/27/14 15:08	100.00	100.00

PREPARATION BATCH SUMMARY

SM4500NH3BG

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4E29012 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30037	1405110-01	05/29/14 12:27	100.00	100.00
ST105-30042	1405110-03	05/29/14 12:27	100.00	100.00
Blank	4E29012-BLK1	05/29/14 12:27	100.00	100.00
LCS	4E29012-BS1	05/29/14 12:27	100.00	100.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc. Project: Kirtland AFB (ECOS)

Batch: 4F03002 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
ST105-30037	1405110-01	06/03/14 07:38	5.00	5.00
ST105-30042	1405110-03	06/03/14 07:38	5.00	5.00
Blank	4F03002-BLK1	06/03/14 07:38	5.00	5.00
LCS	4F03002-BS1	06/03/14 07:38	5.00	5.00

ANALYSIS SEQUENCE SUMMARY

SM2320B

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Blank	4E16001-BLK1	051614-003	05/16/14 09:06
LCS	4E16001-BS1	051614-002	05/16/14 09:22
ST105-30025	4E16001-MS1	051614-004	05/16/14 09:43
ST105-30025	4E16001-MSD1	051614-005	05/16/14 10:03
Blank	4E19008-BLK1	051914-002	05/19/14 13:18
LCS	4E19008-BS1	051914-003	05/19/14 13:36
Blank	4E22003-BLK1	052214-002	05/22/14 13:42
LCS	4E22003-BS1	052214-003	05/22/14 13:54

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: KirtlandECOS_015

Client: Shaw Environmental, Inc.

Project: Kirtland AFB (ECOS)

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	4E12924-BS1	051214-002	05/12/14 14:45
ST105-30025	4E12924-DUP1	051214-003	05/12/14 14:45
Blank	4E12924-BLK1	051214-001	05/12/14 14:45
LCS	4E15008-BS1	051514-002	05/15/14 18:17
ST105-30037	4E15008-DUP1	051514-003	05/15/14 18:17
Blank	4E15008-BLK1	051514-001	05/15/14 18:17

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4D11915	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4D11915-CAL1		02/14/14 16:20
Cal Standard	4D11915-CAL2		02/14/14 16:42
Cal Standard	4D11915-CAL3		02/14/14 17:03
Cal Standard	4D11915-CAL4		02/14/14 17:25
Cal Standard	4D11915-CAL5		02/14/14 17:48
Cal Standard	4D11915-CAL6		02/14/14 18:13
Cal Standard	4D11915-CAL7		02/14/14 18:42
Cal Standard	4D11915-CAL8		02/14/14 19:18

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E12102	Instrument:	WC-IC
Calibration:	4121001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E12102-CAL1	042914curve-003	04/29/14 14:13
Cal Standard	4E12102-CAL2	042914curve-004	04/29/14 14:31
Cal Standard	4E12102-CAL3	042914curve-005	04/29/14 14:48
Cal Standard	4E12102-CAL4	042914curve-006	04/29/14 15:06
Cal Standard	4E12102-CAL5	042914curve-007	04/29/14 15:23
Cal Standard	4E12102-CAL6	042914curve-008	04/29/14 15:40
Cal Standard	4E12102-CAL7	042914curve-009	04/29/14 15:58
Cal Standard	4E12102-CAL8	042914curve-010	04/29/14 16:15
Initial Cal Check	4E12102-ICV1	042914curve-011	04/29/14 16:33
Initial Cal Blank	4E12102-ICB1	042914curve-012	04/29/14 16:50

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E13410	Instrument:	WC-Lachat
Calibration:	4134003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E13410-CAL1	M_5-14-2014_01-08-49PM-00	05/14/14 13:10
Cal Standard	4E13410-CAL2	M_5-14-2014_01-08-49PM-00	05/14/14 13:11
Cal Standard	4E13410-CAL3	M_5-14-2014_01-08-49PM-00	05/14/14 13:12
Cal Standard	4E13410-CAL4	M_5-14-2014_01-08-49PM-00	05/14/14 13:14
Cal Standard	4E13410-CAL5	M_5-14-2014_01-08-49PM-00	05/14/14 13:15
Cal Standard	4E13410-CAL6	M_5-14-2014_01-08-49PM-00	05/14/14 13:16
Cal Standard	4E13410-CAL7	M_5-14-2014_01-08-49PM-00	05/14/14 13:17
Initial Cal Check	4E13410-ICV1	M_5-14-2014_01-08-49PM-00	05/14/14 13:18
Initial Cal Blank	4E13410-ICB1	M_5-14-2014_01-08-49PM-00	05/14/14 13:19
Blank	4E13322-BLK1	M_5-14-2014_01-08-49PM-01	05/14/14 13:20
LCS	4E13322-BS1	M_5-14-2014_01-08-49PM-01	05/14/14 13:21
ST105-30024	1405065-01	M_5-14-2014_01-08-49PM-02	05/14/14 13:34
ST105-30025	1405065-03	M_5-14-2014_01-08-49PM-02	05/14/14 13:35
ST105-30041	1405065-05	M_5-14-2014_01-08-49PM-02	05/14/14 13:36
Calibration Check	4E13410-CCV1	M_5-14-2014_01-08-49PM-02	05/14/14 13:37
Calibration Blank	4E13410-CCB1	M_5-14-2014_01-08-49PM-02	05/14/14 13:38

ANALYSIS SEQUENCE SUMMARY

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E13612	Instrument:	WC-Lachat
Calibration:	4136005		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E13612-CAL1	M_5-16-2014_01-03-25PM-00	05/16/14 13:05
Cal Standard	4E13612-CAL2	M_5-16-2014_01-03-25PM-00	05/16/14 13:06
Cal Standard	4E13612-CAL3	M_5-16-2014_01-03-25PM-00	05/16/14 13:08
Cal Standard	4E13612-CAL4	M_5-16-2014_01-03-25PM-00	05/16/14 13:09
Cal Standard	4E13612-CAL5	M_5-16-2014_01-03-25PM-00	05/16/14 13:11
Cal Standard	4E13612-CAL6	M_5-16-2014_01-03-25PM-00	05/16/14 13:12
Cal Standard	4E13612-CAL7	M_5-16-2014_01-03-25PM-00	05/16/14 13:14
Cal Standard	4E13612-CAL8	M_5-16-2014_01-03-25PM-00	05/16/14 13:15
Initial Cal Check	4E13612-ICV1	M_5-16-2014_01-03-25PM-00	05/16/14 13:17
Initial Cal Blank	4E13612-ICB1	M_5-16-2014_01-03-25PM-01	05/16/14 13:18
Calibration Check	4E13612-CCV3	M_5-16-2014_01-03-25PM-04	05/16/14 14:06
Calibration Blank	4E13612-CCB3	M_5-16-2014_01-03-25PM-04	05/16/14 14:07
Blank	4E16015-BLK1	M_5-16-2014_01-03-25PM-04	05/16/14 14:09
LCS	4E16015-BS1	M_5-16-2014_01-03-25PM-04	05/16/14 14:10
Calibration Check	4E13612-CCV4	M_5-16-2014_01-03-25PM-05	05/16/14 14:26
Calibration Blank	4E13612-CCB4	M_5-16-2014_01-03-25PM-05	05/16/14 14:28
ST105-30024	1405065-01	M_5-16-2014_01-03-25PM-06	05/16/14 14:31
ST105-30025	1405065-03	M_5-16-2014_01-03-25PM-06	05/16/14 14:32
ST105-30025	4E16015-MS1	M_5-16-2014_01-03-25PM-06	05/16/14 14:33
ST105-30025	4E16015-MSD1	M_5-16-2014_01-03-25PM-06	05/16/14 14:35
Calibration Check	4E13612-CCV5	M_5-16-2014_01-03-25PM-07	05/16/14 14:47
Calibration Blank	4E13612-CCB5	M_5-16-2014_01-03-25PM-07	05/16/14 14:48
Blank	4E16017-BLK1	M_5-16-2014_01-03-25PM-07	05/16/14 14:50
LCS	4E16017-BS1	M_5-16-2014_01-03-25PM-07	05/16/14 14:51
Calibration Check	4E13612-CCV6	M_5-16-2014_01-03-25PM-08	05/16/14 15:07
Calibration Blank	4E13612-CCB6	M_5-16-2014_01-03-25PM-08	05/16/14 15:09
ST105-30041	1405065-05RE1	M_5-16-2014_01-03-25PM-08	05/16/14 15:10
ST105-30045	1405065-07RE1	M_5-16-2014_01-03-25PM-08	05/16/14 15:11
ST105-30037	1405110-01RE1	M_5-16-2014_01-03-25PM-08	05/16/14 15:13
ST105-30042	1405110-03RE1	M_5-16-2014_01-03-25PM-09	05/16/14 15:14
Calibration Check	4E13612-CCV7	M_5-16-2014_01-03-25PM-09	05/16/14 15:16
Calibration Blank	4E13612-CCB7	M_5-16-2014_01-03-25PM-09	05/16/14 15:17

ANALYSIS SEQUENCE SUMMARY

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E14109	Instrument:	WC-TOC1
Calibration:	4119004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4E14109-CCV1	5-20-14Q-001	05/20/14 17:36
Calibration Blank	4E14109-CCB1	5-20-14Q-002	05/20/14 18:01
Blank	4E20019-BLK1	5-20-14Q-003	05/20/14 18:23
LCS	4E20019-BS1	5-20-14Q-004	05/20/14 18:50
ST105-30024	1405065-01	5-20-14Q-011	05/20/14 21:37
ST105-30024	1405065-02	5-20-14Q-012	05/20/14 22:00
ST105-30025	1405065-03	5-20-14Q-013	05/20/14 22:23
ST105-30025	4E20019-MS1	5-20-14Q-014	05/20/14 23:00
ST105-30025	4E20019-MSD1	5-20-14Q-015	05/20/14 23:25
ST105-30041	1405065-05	5-20-14Q-016	05/20/14 23:35
Calibration Check	4E14109-CCV2	5-20-14Q-017	05/21/14 00:17
Calibration Blank	4E14109-CCB2	5-20-14Q-018	05/21/14 00:42
ST105-30025	1405065-04	5-20-14Q-019	05/21/14 00:52
ST105-30025	4E20019-MS2	5-20-14Q-020	05/21/14 01:30
ST105-30025	4E20019-MSD2	5-20-14Q-021	05/21/14 01:57
ST105-30041	1405065-06	5-20-14Q-022	05/21/14 02:08
ST105-30045	1405065-07	5-20-14Q-023	05/21/14 02:31
ST105-30045	1405065-08	5-20-14Q-024	05/21/14 02:54
ST105-30037	1405110-01	5-20-14Q-025	05/21/14 03:17
ST105-30037	1405110-02	5-20-14Q-026	05/21/14 03:40
ST105-30042	1405110-03	5-20-14Q-027	05/21/14 04:03
ST105-30042	1405110-04	5-20-14Q-028	05/21/14 04:26
Calibration Check	4E14109-CCV3	5-20-14Q-029	05/21/14 05:07
Calibration Blank	4E14109-CCB3	5-20-14Q-030	05/21/14 05:32

ANALYSIS SEQUENCE SUMMARY

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E14714	Instrument:	WC-Lachat
Calibration:	4134003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E14714-CAL1	M_5-27-2014_06-18-01PM-00	05/27/14 18:18
Cal Standard	4E14714-CAL2	M_5-27-2014_06-18-01PM-00	05/27/14 18:20
Cal Standard	4E14714-CAL3	M_5-27-2014_06-18-01PM-00	05/27/14 18:21
Cal Standard	4E14714-CAL4	M_5-27-2014_06-18-01PM-00	05/27/14 18:22
Cal Standard	4E14714-CAL5	M_5-27-2014_06-18-01PM-00	05/27/14 18:23
Cal Standard	4E14714-CAL6	M_5-27-2014_06-18-01PM-00	05/27/14 18:24
Cal Standard	4E14714-CAL7	M_5-27-2014_06-18-01PM-00	05/27/14 18:25
Initial Cal Check	4E14714-ICV1	M_5-27-2014_06-18-01PM-00	05/27/14 18:26
Initial Cal Blank	4E14714-ICB1	M_5-27-2014_06-18-01PM-00	05/27/14 18:27
Blank	4E27018-BLK1	M_5-27-2014_06-18-01PM-01	05/27/14 18:28
LCS	4E27018-BS1	M_5-27-2014_06-18-01PM-01	05/27/14 18:30
LCS Dup	4E27018-BSD1	M_5-27-2014_06-18-01PM-01	05/27/14 18:31
ST105-30045	1405065-07	M_5-27-2014_06-18-01PM-01	05/27/14 18:32
ST105-30037	1405110-01	M_5-27-2014_06-18-01PM-01	05/27/14 18:33
ST105-30042	1405110-03	M_5-27-2014_06-18-01PM-01	05/27/14 18:34
Calibration Check	4E14714-CCV1	M_5-27-2014_06-18-01PM-02	05/27/14 18:43
Calibration Blank	4E14714-CCB1	M_5-27-2014_06-18-01PM-02	05/27/14 18:44
ST105-30025	4E13322-MS2	M_5-27-2014_06-18-01PM-02	05/27/14 18:45
ST105-30025	4E13322-MSD2	M_5-27-2014_06-18-01PM-02	05/27/14 18:46
Calibration Check	4E14714-CCV2	M_5-27-2014_06-18-01PM-02	05/27/14 18:47
Calibration Blank	4E14714-CCB2	M_5-27-2014_06-18-01PM-02	05/27/14 18:49

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E14802	Instrument:	WC-Lachat
Calibration:	4148001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E14802-CAL1	M_5-28-2014_10-18-54AM-00	05/28/14 10:20
Cal Standard	4E14802-CAL2	M_5-28-2014_10-18-54AM-00	05/28/14 10:21
Cal Standard	4E14802-CAL3	M_5-28-2014_10-18-54AM-00	05/28/14 10:22
Cal Standard	4E14802-CAL4	M_5-28-2014_10-18-54AM-00	05/28/14 10:23
Cal Standard	4E14802-CAL5	M_5-28-2014_10-18-54AM-00	05/28/14 10:24
Cal Standard	4E14802-CAL6	M_5-28-2014_10-18-54AM-00	05/28/14 10:25
Cal Standard	4E14802-CAL7	M_5-28-2014_10-18-54AM-00	05/28/14 10:26
Cal Standard	4E14802-CAL8	M_5-28-2014_10-18-54AM-00	05/28/14 10:27
Initial Cal Check	4E14802-ICV1	M_5-28-2014_10-18-54AM-00	05/28/14 10:28
Initial Cal Blank	4E14802-ICB1	M_5-28-2014_10-18-54AM-01	05/28/14 10:29
Calibration Check	4E14802-CCV2	M_5-28-2014_10-18-54AM-03	05/28/14 10:49
Blank	4E27028-BLK1	M_5-28-2014_10-18-54AM-03	05/28/14 10:50
Calibration Blank	4E14802-CCB2	M_5-28-2014_10-18-54AM-03	05/28/14 10:50
LCS	4E27028-BS1	M_5-28-2014_10-18-54AM-03	05/28/14 10:51
ST105-30024	1405065-01	M_5-28-2014_10-18-54AM-03	05/28/14 10:52
ST105-30025	1405065-03	M_5-28-2014_10-18-54AM-03	05/28/14 10:53
ST105-30025	4E27028-MS1	M_5-28-2014_10-18-54AM-03	05/28/14 10:54
ST105-30025	4E27028-MSD1	M_5-28-2014_10-18-54AM-03	05/28/14 10:55
ST105-30041	1405065-05	M_5-28-2014_10-18-54AM-03	05/28/14 10:56
ST105-30045	1405065-07	M_5-28-2014_10-18-54AM-04	05/28/14 10:57
Calibration Check	4E14802-CCV3	M_5-28-2014_10-18-54AM-04	05/28/14 11:04
Calibration Blank	4E14802-CCB3	M_5-28-2014_10-18-54AM-04	05/28/14 11:05

ANALYSIS SEQUENCE SUMMARY

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4E15025	Instrument:	WC-Lachat
Calibration:	4150001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	4E15025-CAL1	M_5-30-2014_09-25-29AM-00	05/30/14 09:26
Cal Standard	4E15025-CAL2	M_5-30-2014_09-25-29AM-00	05/30/14 09:27
Cal Standard	4E15025-CAL3	M_5-30-2014_09-25-29AM-00	05/30/14 09:28
Cal Standard	4E15025-CAL4	M_5-30-2014_09-25-29AM-00	05/30/14 09:29
Cal Standard	4E15025-CAL5	M_5-30-2014_09-25-29AM-00	05/30/14 09:30
Cal Standard	4E15025-CAL6	M_5-30-2014_09-25-29AM-00	05/30/14 09:31
Cal Standard	4E15025-CAL7	M_5-30-2014_09-25-29AM-00	05/30/14 09:32
Cal Standard	4E15025-CAL8	M_5-30-2014_09-25-29AM-00	05/30/14 09:33
Initial Cal Check	4E15025-ICV1	M_5-30-2014_09-25-29AM-00	05/30/14 09:34
Initial Cal Blank	4E15025-ICB1	M_5-30-2014_09-25-29AM-01	05/30/14 09:35
Blank	4E29012-BLK1	M_5-30-2014_09-25-29AM-01	05/30/14 09:36
LCS	4E29012-BS1	M_5-30-2014_09-25-29AM-01	05/30/14 09:37
ST105-30037	1405110-01	M_5-30-2014_09-25-29AM-01	05/30/14 09:38
ST105-30042	1405110-03	M_5-30-2014_09-25-29AM-01	05/30/14 09:39
Calibration Check	4E15025-CCV1	M_5-30-2014_09-25-29AM-02	05/30/14 09:47
Calibration Blank	4E15025-CCB1	M_5-30-2014_09-25-29AM-02	05/30/14 09:48

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4F15501	Instrument:	WC-IC
Calibration:	4121001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4F15501-CCV1	052314-002	05/23/14 08:04
Calibration Blank	4F15501-CCB1	052314-003	05/23/14 08:21
Instrument RL Check	4F15501-CRL1	052314-006	05/23/14 09:13
Instrument RL Check	4F15501-CRL2	052314-007	05/23/14 09:31
Blank	4E23002-BLK1	052314-009	05/23/14 10:06
LCS	4E23002-BS1	052314-010	05/23/14 10:23
ST105-30024	1405065-01	052314-011	05/23/14 10:40
ST105-30025	1405065-03	052314-012	05/23/14 10:58
ST105-30025	4E23002-MS1	052314-013	05/23/14 11:15
ST105-30025	4E23002-MSD1	052314-014	05/23/14 11:33
ST105-30025	4E23002-DUP1	052314-015	05/23/14 11:50
ST105-30041	1405065-05	052314-016	05/23/14 12:08
ST105-30045	1405065-07	052314-017	05/23/14 12:25
Calibration Check	4F15501-CCV2	052314-018	05/23/14 12:43
Calibration Blank	4F15501-CCB2	052314-019	05/23/14 13:00

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Sequence:	4F16008	Instrument:	WC-IC
Calibration:	4121001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	4F16008-CCV1	060314-003	06/03/14 09:24
Calibration Blank	4F16008-CCB1	060314-004	06/03/14 09:41
Instrument RL Check	4F16008-CRL1	060314-005	06/03/14 09:58
Calibration Check	4F16008-CCV2	060314-012	06/03/14 12:00
Calibration Blank	4F16008-CCB2	060314-013	06/03/14 12:18
Calibration Check	4F16008-CCV4	060314-042	06/03/14 20:43
Calibration Blank	4F16008-CCB4	060314-043	06/03/14 21:00
Blank	4F03002-BLK1	060314-044	06/03/14 21:17
LCS	4F03002-BS1	060314-045	06/03/14 21:35
ST105-30037	1405110-01	060314-046	06/03/14 21:52
ST105-30042	1405110-03	060314-047	06/03/14 22:10
Calibration Check	4F16008-CCV5	060314-059	06/04/14 01:38
Calibration Blank	4F16008-CCB5	060314-060	06/04/14 01:56

INITIAL CALIBRATION DATA

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119004	Instrument:	WC-TOC1	
Matrix:	Water	Calibration Dates:	2/14/14 16:20	2/14/14 19:18

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Organic Carbon	0	0	1	19.74	2.5	15.292	5	13.902	10	13.68	25	13.992
Total Organic Carbon	0	0	1	19.74	2.5	15.292	5	13.902	10	13.68	25	13.992

INITIAL CALIBRATION DATA (Continued)

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)
Calibration:	4119004	Instrument:	WC-TOC1
Matrix:	Water	Calibration Dates:	2/14/14 16:20 2/14/14 19:18

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Organic Carbon	50	14.424	100	15.05								
Total Organic Carbon	50	14.424	100	15.05								

INITIAL CALIBRATION DATA (Continued)

SW9060A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4119004	Instrument:	WC-TOC1	
Matrix:	Water	Calibration Dates:	2/14/14 16:20	2/14/14 19:18

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Organic Carbon	13.26	43.00536			0.9992826		0.995	
Total Organic Carbon	13.26	43.00536			0.9992826		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4121001	Instrument:	WC-IC	
Matrix:	Water	Calibration Dates:	4/29/14 14:13	4/29/14 16:15

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	0.126	159881	0.126	316904.8	0.63	163830.2	1.26	176354	6.3	183568.1	12.6	179961
Chloride	0.5	421506	0.5	787168	2.5	394408.4	5	399378.4	25	411468.8	50	407750.2
Fluoride	0.05	~~775280~~	0.05	1364560	0.25	691468	0.5	685650	2.5	686538.4	5	640231.8
Sulfate as SO4	0.5	538696	0.5	900462	2.5	380967.6	5	338126.8	25	312521.2	50	303954.4

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4121001	Instrument:	WC-IC	
Matrix:	Water	Calibration Dates:	4/29/14 14:13	4/29/14 16:15

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	31.5	177743.7	63	181116.7								
Chloride	125	406745	250	403355.2								
Fluoride	12.5	~~575363.2~~	25	~~515857.6~~								
Sulfate as SO4	125	298662.8	250	296911.2								

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4121001	Instrument:	WC-IC	
Matrix:	Water	Calibration Dates:	4/29/14 14:13	4/29/14 16:15

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Bromide	192419.9	26.50488	7.60125	1.262659	0.999913		0.995	
Chloride	453972.5	29.70977	4.45625	0.5989249	0.9999724		0.995	
Fluoride	813689.6	37.93147	3.106	1.058189	0.998347		0.995	
Sulfate as SO4	421287.7	49.79368	6.23375	4.232915	0.999902		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4134003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/14/14 13:10	5/14/14 13:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	20	0.2437	10	~~0.3078~~	8	~~0.3325~~	5	0.415	2	0.716	1	1.207

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4134003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/14/14 13:10	5/14/14 13:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Total Kjeldahl Nitrogen	0	0										

INITIAL CALIBRATION DATA (Continued)

E351.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4134003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/14/14 13:10	5/14/14 13:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Total Kjeldahl Nitrogen	0.51634	90.22259	48.578	1.100552	0.9991228		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4136005	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/16/14 13:05	5/16/14 13:15

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	2	3.61	1.6	3.75375	1.2	3.680833	0.8	3.75875	0.4	4.01	0.2	3.992

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4136005	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/16/14 13:05	5/16/14 13:15

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate/Nitrite as N	0.1	4.422	0	0								

INITIAL CALIBRATION DATA (Continued)

E353.2

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4136005	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/16/14 13:05	5/16/14 13:15

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate/Nitrite as N	3.403417	41.11078	31.29125	3.948607	0.9992659		0.99	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4148001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/28/14 10:20	5/28/14 10:27

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	2.792	8	2.8775	2	3.0285	1	2.995	0.4	2.8525	0.2	2.808

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4148001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/28/14 10:20	5/28/14 10:27

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	1.914	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4148001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/28/14 10:20	5/28/14 10:27

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.408438	42.97099	31.69875	2.817626	0.9994478		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4150001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/30/14 9:26	5/30/14 9:33

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	10	3.111	8	3.1925	2	3.3925	1	3.391	0.4	3.3225	0.2	3.211

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4150001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/30/14 9:26	5/30/14 9:33

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Ammonia as N	0.1	2.876	0	0								

INITIAL CALIBRATION DATA (Continued)

SM4500NH3BG

Laboratory:	Empirical Laboratories, LLC	SDG:	KirtlandECOS_015	
Client:	Shaw Environmental, Inc.	Project:	Kirtland AFB (ECOS)	
Calibration:	4150001	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	5/30/14 9:26	5/30/14 9:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Ammonia as N	2.812063	40.85138	32.63	0.8131087	0.9995393		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

PREPARATION BENCH SHEET

4E12924

Empirical Laboratories, LLC

Printed: 6/10/2014 9:18:52AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405065-01	-	WC_TOTAL_DISS_SOLIDS_25	05/12/2014	100	100					NA	
1405065-03	-	WC_TOTAL_DISS_SOLIDS_25	05/12/2014	100	100					NA	MS/MSD
1405065-05	-	WC_TOTAL_DISS_SOLIDS_25	05/12/2014	100	100					NA	
1405065-07	-	WC_TOTAL_DISS_SOLIDS_25	05/12/2014	100	100					NA	
4E12924-BLK1		QC	05/12/2014	100	100					NA	
4E12924-BS1		QC	05/12/2014	20	20	14B0390		20000		NA	
4E12924-DUP1		QC	05/12/2014	100	100		1405065-03			NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E13322

Empirical Laboratories, LLC

Printed: 6/10/2014 9:19:58AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405054-01	A	WC_TKN_351.2	05/13/2014	4	20					NA	
1405054-03	A	WC_TKN_351.2	05/13/2014	20	20					NA	
1405054-07	A	WC_TKN_351.2	05/13/2014	20	20					NA	
1405054-08	A	WC_TKN_351.2	05/13/2014	20	20					NA	
1405057-05	A	WC_TKN_351.2	05/13/2014	2	20					NA	
1405065-01	C	WC_TKN_351.2	05/13/2014	20	20					NA	Outside DoD cert
1405065-03	I	WC_TKN_351.2	05/13/2014	20	20					NA	MS/MSD
1405065-05	C	WC_TKN_351.2	05/13/2014	20	20					NA	Outside DoD cert
4E13322-BLK1		QC	05/13/2014	20	20					NA	
4E13322-BS1		QC	05/13/2014	20	20	14A0452		20000		NA	
4E13322-MS1		QC	05/13/2014	18	20	14A0166	1405054-03	2000		NA	
4E13322-MS2		QC	05/13/2014	18	20	14A0166	1405065-03	2000		NA	
4E13322-MSD1		QC	05/13/2014	18	20	14A0166	1405054-03	2000		NA	
4E13322-MSD2		QC	05/13/2014	18	20	14A0166	1405065-03	2000		NA	

Reagents Used:

Standard	Description
14D0663	TKN 0.8M NaOH
14D0899	TKN Carrier
14D0952	TKN Salicylate Nitroprusside Reagent
14E0201	TKN Buffer
14E0285	TKN Digestion Soln
14E0316	TKN Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4E13322

Empirical Laboratories, LLC

Printed: 6/10/2014 9:19:58AM

Instrument:

Matrix: Water

Prepared using: WC - pNone

(No Surrogate)

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

PREPARATION BENCH SHEET

4E15008

Empirical Laboratories, LLC

Printed: 6/10/2014 9:20:39AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405110-01	A	WC_TOTAL_DISS_SOLIDS_25	05/15/2014	100	100					NA	
1405110-03	A	WC_TOTAL_DISS_SOLIDS_25	05/15/2014	100	100					NA	
1405114-01	A	WC_TOTAL_DISS_SOLIDS_25	05/15/2014	100	100					NA	
1405114-03	A	WC_TOTAL_DISS_SOLIDS_25	05/15/2014	100	100					NA	
1405114-05	A	WC_TOTAL_DISS_SOLIDS_25	05/15/2014	100	100					NA	
1405127-01	C	WC_TOTAL_DISS_SOLIDS_25	05/15/2014	100	100					NA	
1405127-03	C	WC_TOTAL_DISS_SOLIDS_25	05/15/2014	100	100					NA	
4E15008-BLK1		QC	05/15/2014	100	100					NA	
4E15008-BS1		QC	05/15/2014	20	20	14B0390		20000		NA	
4E15008-DUP1		QC	05/15/2014	100	100		1405110-01			NA	

Reagents Used:

Standard	Description
14E0214	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

4E16001

Empirical Laboratories, LLC

Printed: 5/28/2014 3:23:49PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405038-01	G	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	
1405038-03	G	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	
1405038-05	G	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	
1405038-07	G	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	
1405038-09	L	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	
1405038-11	K	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	
1405045-01	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-03	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-05	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-07	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-09	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-11	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-13	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-15	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-17	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-19	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-21	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405045-23	I	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	carb/bicarb
1405065-01	A	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	
1405065-03	A	WC_ALKALINITY_2320B	05/16/2014	25	25					NA	MS/MSD
4E16001-BLK1		QC	05/16/2014	25	25					NA	
4E16001-BS1		QC	05/16/2014	5	25	13L0375		5000		NA	

PREPARATION BENCH SHEET

4E16001

Empirical Laboratories, LLC

Printed: 5/28/2014 3:23:49PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E16001-MS1		QC	05/16/2014	22.5	25	13L0375	1405065-03	2500		NA	
4E16001-MSD1		QC	05/16/2014	22.5	25	13L0375	1405065-03	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E16015

Empirical Laboratories, LLC

Printed: 6/3/2014 2:18:00PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405045-07	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-09	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-11	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-13	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-15	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-17	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-19	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-21	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-23	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-25	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405045-27	J	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405065-01	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405065-03	I	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	MS/MSD
1405065-05	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405065-05RE1	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	Added 5/16/2014 by RGB
1405065-07	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405065-07RE1	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	Added 5/16/2014 by RGB
1405067-01	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405067-03	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405067-05	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405067-07	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405067-09	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	

PREPARATION BENCH SHEET

4E16015

Empirical Laboratories, LLC

Printed: 6/3/2014 2:18:00PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E16015-BLK1		QC	05/16/2014	20	20					NA	
4E16015-BS1		QC	05/16/2014	2	20	14A0409		2000		NA	
4E16015-MS1		QC	05/16/2014	4	20	14B0358	1405065-03	500		NA	
4E16015-MSD1		QC	05/16/2014	4	20	14B0358	1405065-03	500		NA	

Reagents Used:

Standard	Description
14D0740	NO2/NO3 Sulfanilimide Color Reagent
14D0864	NO2/NO3 Buffer
14E0119	NO3/NO2 Carrier (Acid DI)

PREPARATION BENCH SHEET

4E16017

Empirical Laboratories, LLC

Printed: 6/3/2014 2:19:33PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405067-11	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405067-13	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405067-15	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405067-17	G	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405110-01	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405110-01RE1	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	Added 5/16/2014 by RGB
1405110-03	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405110-03RE1	C	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	Added 5/16/2014 by RGB
1405127-01	E	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
1405127-03	E	WC_NO3NO2_N_353.2	05/16/2014	4	20					NA	
4E16017-BLK1		QC	05/16/2014	20	20					NA	
4E16017-BS1		QC	05/16/2014	2	20	14A0409		2000		NA	
4E16017-MS1		QC	05/16/2014	4	20	14B0358	1405067-17	500		NA	
4E16017-MSD1		QC	05/16/2014	4	20	14B0358	1405067-17	500		NA	

Reagents Used:

Standard	Description
14D0740	NO2/NO3 Sulfanilimide Color Reagent
14D0864	NO2/NO3 Buffer
14E0119	NO3/NO2 Carrier (Acid DI)

PREPARATION BENCH SHEET

4E19008

Empirical Laboratories, LLC

Printed: 5/27/2014 11:02:34AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405045-25	I	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	carb/bicarb
1405045-27	I	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	carb/bicarb
1405055-02	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405055-04	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405055-06	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405055-08	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405056-01	R	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405056-03	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405056-04	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405056-06	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405056-07	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405056-08	R	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405056-09	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405056-10	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405064-09	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405065-05	A	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405065-07	A	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	
1405067-01	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	carb/bicarb
1405067-03	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	carb/bicarb
1405067-05	F	WC_ALKALINITY_2320B	05/19/2014	25	25					NA	carb/bicarb
4E19008-BLK1		QC	05/19/2014	25	25					NA	
4E19008-BS1		QC	05/19/2014	5	25	13L0375		5000		NA	

PREPARATION BENCH SHEET

4E19008

Empirical Laboratories, LLC

Printed: 5/27/2014 11:02:34AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E19008-MS1		QC	05/19/2014	22.5	25	13L0375	1405056-01	2500		NA	
4E19008-MS2		QC	05/19/2014	22.5	25	13L0375	1405056-08	2500		NA	
4E19008-MSD1		QC	05/19/2014	22.5	25	13L0375	1405056-01	2500		NA	
4E19008-MSD2		QC	05/19/2014	22.5	25	13L0375	1405056-08	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E20019

Empirical Laboratories, LLC

Printed: 5/28/2014 3:28:40PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405038-01	H	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405038-03	H	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405038-05	H	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405038-07	H	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405038-09	H	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405038-11	H	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405065-01	C	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405065-02	A	WC_TOC_DISS_9060A_QUAD	05/20/2014	40	40					NA	
1405065-03	I	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	MS/MSD
1405065-03	I	WC_TOC_DISS_9060A_QUAD	05/20/2014	40	40					NA	Added for BatchQC in: 4E20019
1405065-04	C	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	Added for BatchQC in: 4E20019
1405065-04	C	WC_TOC_DISS_9060A_QUAD	05/20/2014	40	40					NA	MS/MSD
1405065-05	C	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405065-06	A	WC_TOC_DISS_9060A_QUAD	05/20/2014	40	40					NA	
1405065-07	C	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405065-08	A	WC_TOC_DISS_9060A_QUAD	05/20/2014	40	40					NA	
1405110-01	C	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405110-02	A	WC_TOC_DISS_9060A_QUAD	05/20/2014	40	40					NA	
1405110-03	C	WC_TOC_9060A_QUAD	05/20/2014	40	40					NA	
1405110-04	A	WC_TOC_DISS_9060A_QUAD	05/20/2014	40	40					NA	
4E20019-BLK1		QC	05/20/2014	40	40					NA	
4E20019-BS1		QC	05/20/2014	40	40	14E0413		40000		NA	

PREPARATION BENCH SHEET

4E20019

Empirical Laboratories, LLC

Printed: 5/28/2014 3:28:40PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4E20019-MS1		QC	05/20/2014	40	40	13F0271	1405065-03	600		NA	
4E20019-MS2		QC	05/20/2014	40	40	13F0271	1405065-04	600		NA	
4E20019-MSD1		QC	05/20/2014	40	40	13F0271	1405065-03	600		NA	
4E20019-MSD2		QC	05/20/2014	40	40	13F0271	1405065-04	600		NA	

Reagents Used:

Standard	Description
14E0251	TOC PERSULFATE REAGENT
14E0375	TOC Phosphoric Acid Reagent

PREPARATION BENCH SHEET

4E22003

Empirical Laboratories, LLC

Printed: 5/30/2014 2:01:14PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405098-06	F	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	
1405110-01	A	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	
1405110-03	A	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	
1405117-01	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405117-03	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405117-05	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405117-07	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405117-09	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405117-11	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405117-13	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405117-15	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405117-17	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405155-01	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405155-03	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405155-05	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405155-07	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405155-09	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405155-11	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405155-13	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
1405187-03	I	WC_ALKALINITY_2320B	05/22/2014	25	25					NA	carb/bicarb
4E22003-BLK1		QC	05/22/2014	25	25					NA	
4E22003-BS1		QC	05/22/2014	5	25	13L0375		5000		NA	

PREPARATION BENCH SHEET

4E23002

Empirical Laboratories, LLC

Printed: 6/10/2014 9:23:44AM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405065-01	A	WC_ANIONS_9056A (Regular)	05/23/2014	5	5					NA	see versions
1405065-03	A	WC_ANIONS_9056A (Regular)	05/23/2014	5	5					NA	MS/MSD
1405065-03	A	WC_ANIONS_300.0 (Short Hol	05/23/2014	5	5					NA	Added for BatchQC in: 4E23002
1405065-05	A	WC_ANIONS_9056A (Regular)	05/23/2014	5	5					NA	see versions
1405065-07	A	WC_ANIONS_9056A (Regular)	05/23/2014	5	5					NA	see versions
1405188-07	B	WC_ANIONS_300.0 (Short Hol	05/23/2014	5	5					NA	see versions
1405188-07RE1	B	WC_ANIONS_300.0 (Short Hol	05/23/2014	5	5					NA	Added 6/4/2014 by KBG
4E23002-BLK1		QC	05/23/2014	5	5					NA	
4E23002-BS1		QC	05/23/2014	5	5	14E0088		5000		NA	
4E23002-DUP1		QC	05/23/2014	5	5		1405065-03			NA	
4E23002-MS1		QC	05/23/2014	22.5	25	14D0880	1405065-03	2500		NA	
4E23002-MSD1		QC	05/23/2014	22.5	25	14D0880	1405065-03	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

4E27018

Empirical Laboratories, LLC

Printed: 6/10/2014 9:24:41AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405065-07	C	WC_TKN_351.2	05/27/2014	20	20					NA	Outside DoD cert
1405110-01	C	WC_TKN_351.2	05/27/2014	20	20					NA	Outside DoD cert
1405110-03	B	WC_TKN_351.2	05/27/2014	20	20					NA	Outside DoD cert
1405114-01	E	WC_TKN_351.2	05/27/2014	20	20					NA	
1405114-03	D	WC_TKN_351.2	05/27/2014	20	20					NA	
1405114-05	D	WC_TKN_351.2	05/27/2014	20	20					NA	
1405127-01	D	WC_TKN_351.2	05/27/2014	20	20					NA	
1405127-03	E	WC_TKN_351.2	05/27/2014	20	20					NA	
1405130-05	A	WC_TKN_351.2	05/27/2014	2	20					NA	
1405192-05	A	WC_TKN_351.2	05/27/2014	2	20					NA	
4E27018-BLK1		QC	05/27/2014	20	20					NA	
4E27018-BS1		QC	05/27/2014	20	20	14A0452		20000		NA	
4E27018-BSD1		QC	05/27/2014	20	20	14A0452		20000		NA	MS/MSD PERFORMED ON THE PREVIOUS BATCH 4E13322

Reagents Used:

Standard	Description
14D0663	TKN 0.8M NaOH
14D0899	TKN Carrier
14D0952	TKN Salicylate Nitroprusside Reagent
14E0201	TKN Buffer
14E0364	TKN Digestion Soln
14E0623	TKN Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4E27018

Empirical Laboratories, LLC

Printed: 6/10/2014 9:24:41AM

Instrument:

Matrix: Water

Prepared using: WC - pNone

(No Surrogate)

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

PREPARATION BENCH SHEET

4E27028

Empirical Laboratories, LLC

Printed: 6/3/2014 2:27:17PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405065-01	C	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405065-03	I	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	MS/MSD
1405065-05	C	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405065-07	C	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405067-01	G	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405067-03	G	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405067-05	G	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405170-01	A	WC_AMMONIA_PHENATE_45	05/27/2014	10	100					NA	
1405170-03	A	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405170-04	A	WC_AMMONIA_PHENATE_45	05/27/2014	10	100					NA	
1405181-01	A	WC_AMMONIA_PHENATE_45	05/27/2014	10	100					NA	
1405181-03	A	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405182-01	B	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
1405182-02	B	WC_AMMONIA_PHENATE_45	05/27/2014	100	100					NA	
4E27028-BLK1		QC	05/27/2014	100	100					NA	
4E27028-BS1		QC	05/27/2014	100	100	14E0466		100000		NA	
4E27028-MS1		QC	05/27/2014	100	100	14A0483	1405065-03	500		NA	
4E27028-MSD1		QC	05/27/2014	100	100	14A0483	1405065-03	500		NA	

PREPARATION BENCH SHEET

4E27028

Empirical Laboratories, LLC

Printed: 6/3/2014 2:27:17PM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14D0092	Borate Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14E0468	pH 7.0 Buffer Yellow
14E0475	1N H2SO4
14E0500	NH3 Sodium Phenolate Reagent
14E0503	NH3 Buffer
14E0575	0.04N H2SO4 FOR NH3 simpledist. distillation
14E0637	NH3 Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4E29012

Empirical Laboratories, LLC

Printed: 6/10/2014 8:56:32AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405110-01	C	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405110-03	B	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405117-11	J	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405117-13	J	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405117-15	J	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405117-17	J	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405181-04	A	WC_AMMONIA_PHENATE_45	05/29/2014	10	100					NA	
1405188-01	A	WC_AMMONIA_PHENATE_45	05/29/2014	10	100					NA	
1405188-03	A	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405188-07	A	WC_AMMONIA_PHENATE_45	05/29/2014	10	100					NA	
1405192-01	A	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405192-03	A	WC_AMMONIA_PHENATE_45	05/29/2014	10	100					NA	
1405228-01	B	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
1405228-02	B	WC_AMMONIA_PHENATE_45	05/29/2014	100	100					NA	
4E29012-BLK1		QC	05/29/2014	100	100					NA	
4E29012-BS1		QC	05/29/2014	100	100	14E0466		100000		NA	
4E29012-DUP1		QC	05/29/2014	10	100		1405188-01			NA	
4E29012-MS1		QC	05/29/2014	10	100	14A0483	1405192-03	500		NA	

PREPARATION BENCH SHEET

4E29012

Empirical Laboratories, LLC

Printed: 6/10/2014 8:56:32AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments

Reagents Used:

Standard	Description
13J0555	10 N NaOH
13K0494	1N NaOH Solution
13L0451	10.00 pH Buffer
14D0092	Borate Buffer
14D0365	NH3 Sodium Nitroprusside Reagent
14E0468	pH 7.0 Buffer Yellow
14E0475	1N H2SO4
14E0503	NH3 Buffer
14E0575	0.04N H2SO4 FOR NH3 simpledist. distillation
14E0687	NH3 Sodium Phenolate Reagent
14E0690	NH3 Sodium Hypochlorite Reagent

PREPARATION BENCH SHEET

4F03002

Empirical Laboratories, LLC

Printed: 6/10/2014 9:26:05AM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
1405110-01	A	WC_ANIONS_9056A (Regular)	06/03/2014	5	5					NA	see versions
1405110-03	A	WC_ANIONS_9056A (Regular)	06/03/2014	5	5					NA	see versions
1405111-01RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR Cl at 2X
1405111-02RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR Cl at 2X
1405111-04RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR Cl at 2X
1405111-05RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR Cl at 5X
1405111-05RE1	C	WC_ANIONS_9056A (Regular)	06/03/2014	5	5					NA	Added for BatchQC in: 4F03002
1405111-07RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR SO4 at 5X
1405111-08RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR Cl,SO4 at 5X
1405111-09RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR Cl,SO4 at 5X
1405111-10RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR Cl,SO4 at 5X
1405112-01RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR SO4 at 5X
1405112-03RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR SO4 at 5X
1405112-06RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR Cl at 2X
1405112-09RE1	C	WC_ANIONS_300.0 (Regular)	06/03/2014	5	5					NA	RR SO4 at 5X
1405184-03RE1	G	WC_ANIONS_9056A (Regular)	06/03/2014	5	5					NA	RR at 5X for Cl
1405184-06RE1	G	WC_ANIONS_9056A (Regular)	06/03/2014	5	5					NA	RR at 5X for Cl
1405184-08RE1	A	WC_ANIONS_9056A (Regular)	06/03/2014	5	5					NA	RR at 2X for SO4
1405189-05RE1	A	WC_ANIONS_9056A (Regular)	06/03/2014	5	5					NA	RR Cl at 5X
4F03002-BLK1		QC	06/03/2014	5	5					NA	
4F03002-BS1		QC	06/03/2014	5	5	14E0650		5000		NA	
4F03002-DUP1		QC	06/03/2014	5	5		1405111-05RE1			NA	5x

PREPARATION BENCH SHEET

4F03002

Empirical Laboratories, LLC

Printed: 6/10/2014 9:26:05AM

Instrument:

Matrix: Water **Prepared using: WC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Extraction Comments
4F03002-MS1		QC	06/03/2014	22.5	25	14D0880	1405111-05RE1	12500		NA	5x
4F03002-MSD1		QC	06/03/2014	22.5	25	14D0880	1405111-05RE1	12500		NA	5x

Reagents Used:

Standard	Description

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX C

Data Quality Assessment Report

THIS PAGE INTENTIONALLY LEFT BLANK

ACRONYMS AND ABBREVIATIONS

%	percent
%D	percent difference
µg/L	microgram per liter
CCV	continuing calibration verification
DoD	U.S. Department of Defense
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
ICP	inductively coupled plasma
ICS	interference check sample
KAFB	Kirtland Air Force Base
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LIMS	laboratory information management system
LOQ	limit of quantitation
mg/L	milligram per liter
MS	matrix spike
MSD	matrix spike duplicate
DOC	dissolved organic carbon
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Systems Manual
RPD	relative percent difference
RRF	relative response factor
SDG	sample delivery group
SOP	Standard Operating Procedure
TDS	total dissolved solids
TKN	total kjeldahl nitrogen
TOC	total organic carbon
SM	standard method
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compound

THIS PAGE INTENTIONALLY LEFT BLANK

LABORATORY DATA QUALITY ASSESSMENT – GROUNDWATER DECEMBER 2013 – MAY 2014

1. LABORATORY DATA QUALITY SUMMARY

This Laboratory Data Quality Assessment describes the findings of the review of data for the December 2013 through May 2014 groundwater monitoring event at site ST105, and is provided to document the quality of the analytical data used in the Stage 2 Abatement Plan for Nitrate-Contaminated Groundwater (Site ST-105) Sixth Annual Groundwater Monitoring Report. Sampling procedures and overall quality control (QC) and quality assurance protocols for the December 2013 through May 2014 groundwater monitoring event are presented in the *Quality Assurance Project Plan for Long-Term Groundwater Monitoring at Multiple Sites: Solid Waste Management Unit (SWMU) 6-1, Landfill 1; SWMU 6-2, Landfill 2; SWMU 6-4, Landfills 4,5 and 6; ST-105 (CG-C564); UST-58 (PL567); WP026; and ST070, Kirtland Air Force Base, New Mexico* (QAPP, U.S. Army Corps of Engineers [USACE], 2013).

During the period from December 9, 2013 to May 13, 2014, 34 groundwater samples, three field duplicates, and three equipment rinse blanks were collected and submitted to Empirical Laboratories LLC (Empirical) in Nashville, Tennessee, for analyses.

The groundwater samples and duplicates were analyzed for the following list of parameters:

- Total organic carbon (TOC) – U.S. Environmental Protection Agency (EPA) Method SW9060A
- Dissolved organic carbon (DOC) – EPA Method SW9060A
- Total cations and iron and manganese – EPA Methods SW6010C
- Anions – EPA Method SW9056A
- Nitrate and nitrite as nitrogen – EPA Method 353.2
- Total kjeldahl nitrogen (TKN) – EPA Method 351.2
- Ammonia as nitrogen – Standard Method (SM) 4500NH3BG
- Alkalinity – SM 2320B
- Total dissolved solids (TDS) – SM 2540C

The laboratory holds a current U.S. Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) certification to perform the listed analyses.

All analytical results reported were received in eight sample delivery groups (SDG) Kirtland-03. 04, 06, 07, 09, 11,14, and 15. Table 1 (provided at the end of this report) summarizes sample collection dates, sample numbers, sample locations, laboratory, sample types, extraction and analysis methods, extraction and analysis dates, and SDG numbers. An EPA Level III data review was performed for all analytical results for the SDGs. The review was performed in accordance with the guidelines and control criteria specified in the following documents:

- The project QAPP (USACE, 2013)
- *DoD Quality Systems Manual for Environmental Laboratories, Version 4.2* (2010)
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (2006), SW-846* (EPA, 1996 and updates)

- *Standard Methods for the Examination of Water and Wastewater (21st Edition)* (American Public Health Association et al., 2005)
- *Environmental Quality – Guidance for Evaluating Performance-Based Chemical Data*, EM 200-1-10 (USACE, 2005)
- *USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review, Final* (EPA, 2008)
- *USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Superfund Data Review, Final* (EPA, 2010)

The following QC elements were included in the EPA Level III data review:

- Sample preservation and sample extraction and analysis holding times
- Laboratory method blanks
- Initial and continuing calibration blanks (metals, ammonia as nitrogen, anions, nitrate and nitrite as nitrogen, TKN, TOC and DOC analyses only)
- Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries
- Matrix spike (MS)/matrix spike duplicate (MSD) recoveries
- Relative percent differences (RPDs)
- Initial calibration and verifications
- Continuing calibration verifications (CCVs)
- Inductively coupled plasma (ICP) interference check samples (ICS) (metal analysis only)
- Field blanks
- Field duplicates

Analytical data were reviewed in terms of precision, bias, representativeness, comparability, and completeness as follows:

- *Bias* is demonstrated by recovery of target analytes from fortified blank and sample matrices LCS/LCSD, and MS/MSD, respectively. The recovery of target analytes from fortified samples is compared with the acceptance criteria defined in the QAPP (USACE, 2013) and DoD 2010 Quality Systems Manual (QSM). When the acceptance criteria are not available in the QAPP or DoD QSM, results are compared with the laboratory in-house control limits. When these criteria are not met, the data are qualified accordingly.
- *Precision* is expressed as the RPD between the results of replicate sample analyses: sample duplicates, LCSDs, and MSDs. When analyte RPDs exceed the acceptance criteria, the data are qualified accordingly.

- *Representativeness* of the samples submitted for analysis is ensured by adherence to standard sampling techniques and protocols.
- *Comparability* of sample results is ensured through the use of approved sampling and analysis methods.
- *Completeness* is expressed as a ratio of the number of usable data points to the total number of analytical data results.

The following sections present the EPA Level III data review findings. The discussion summarizes data quality exceedances and their potential impact on the quality and usability of analytical results. Table 2 presents definitions of data qualification and reason codes applied to the analytical results. Table 3 summarizes the qualified data. For informational purposes, qualified field QC data are also presented in this table.

1.1 Data Quality Outliers

1.1.1 Sample Preservation and Sample Extraction and Analysis Holding Times (Reason Code H)

The sample coolers and samples contained within were received intact at the laboratory and were held within the required 0 to 6 degrees Celsius and when required were chemically preserved in accordance with EPA and SM preservation requirements.

Sample holding times were evaluated by comparing the sample collection dates to the sample extraction and analysis dates. Extraction and analysis holding times were reviewed for all samples to determine the validity of the sample results. One holding time exceedance was noted for the TDS analysis. Specific sample number, holding time exceedance and holing time requirement are summarized below:

Analytical Method	Sample Location	Sample Number	Holding Time Exceddance (Day)	Holding Time Requirement (Day)
SM2540C	KAFB-0523	ST105-30019	30	7

The listed sample was collected on December 9, 2013 and was received by the laboratory on December 11, 2013. Due to a laboratory login error, this sample was not logged into laboratory information management system (LIMS). This error was not identified until the laboratory report was prepared. The sample was analyzed as soon as the error was identified, however the 7-day analysis holding time was missed by 30 days. The TDS was detected in the sample, and its reported concentration was consequently qualified as estimated (J-) with a low bias as a result of the holding time exceedance. The laboratory has since implemented corrective actions by providing additional training to the login personnel and by performing a second review of the login information to ensure that all the requested analyses are documented in the LIMS and that all the requested analyses will be completed within the holding time requirements.

The analysis holding time requirements were achieved for all samples analyzed for metals, TOC, DOC, anions, ammonia as nitrogen, nitrate and nitrite as nitrogen, TKN, and alkalinity.

1.1.2 Laboratory Method Blanks (Reason Code B1)

The field sample results were evaluated with respect to the laboratory method blank prepared and analyzed for each analytical batch and for each analytical method. Positive detections of ammonia as nitrogen and TKN were observed in a few laboratory method blanks. Specific contaminants, detected levels, and their limits of quantitation (LOQ) are summarized below:

Analytical Method	Laboratory QC Batch #	Contaminant	Contaminant Level (mg/L)	LOQ (mg/L)
SM4500NH3BG	4D01078	Ammonia as nitrogen	0.408	0.3
EPA 351.2	4D16014	TKN	0.65	1

mg/L milligrams per liter

Based on the DoD QSM requirements (2010), laboratory method blank concentrations are considered acceptable when contaminant levels in the blank are less than one-half the LOQ for target analytes and less than the LOQ for common laboratory contaminants, such as acetone and methylene chloride. As indicated in the preceding table, the laboratory method blank levels for ammonia as nitrogen and TKN were greater than their respective LOQ and thus exceeded the blank acceptance criteria.

The analytes ammonia as nitrogen and TKN were not detected in any groundwater samples processed with the laboratory method blanks, and thus, the sample results were not affected by the laboratory method blank detections, and no data qualification was warranted because of the laboratory method blank detections.

All laboratory method blanks were free of metals, TOC, DOC, anions, nitrate and nitrite as nitrogen, TDS, and alkalinity.

1.1.3 Initial and Continuing Calibration Blanks (Reason Code B2)

In addition to the laboratory method blanks for TOC, DOC, metals, anions, ammonia as nitrogen, nitrate and nitrite as nitrogen, and TKN analyses, initial and continuing calibration blank results were reviewed to ensure that the instruments were free of contamination prior to the analyses. All initial and continuing calibration blanks were free of all target analytes.

1.1.4 Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries and Precisions (Reason Codes L and D3)

The LCS is an aliquot of analyte-free matrix spiked with target analytes that is prepared with each analytical batch for each analytical method. The recovery of target analytes from the LCS analysis is a measurement of method performance in an interference-free sample matrix. Non-compliant LCS bias and precision were reported for the TDS analysis by SM2540C. The non-compliant LCS results that led to data qualification is presented as follows:

Analytical Method	Laboratory QC Batch #	LCS Recovery and Precision Outlier (%)	Control Limit (%)
SM2540C	4D16012	TDS: 121/98.7% RPD: 20.8%	Bias: 80-120% RPD: 20%

As shown in the table, the reported LCS bias and precision results for TDS marginally exceeded its respective control criteria. As a result of the LCS bias and precision outliers, the detected results for TDS were qualified as estimated (J+) . This data qualification was applied to the results of TDS in all detected samples in the non-compliant batch. As the reported LCS recovery bias and precision were slightly outside the control criteria, the data usability of the qualified results is not affected.

In addition, high-biased LCS recoveries were observed for TKN in a batch. Because the analyte was not detected in any associated samples, the sample results were not affected by the LCS recovery outliers, and no data qualification was warranted.

The LCS results meet the acceptance criteria for metals, TOC, DOC, anions, ammonia as nitrogen, nitrate and nitrite as nitrogen, and alkalinity analyses.

1.1.5 Matrix Spike/Matrix Spike Duplicate Recoveries and Precisions (Reason Codes M and D2)

The MS and MSD samples are a portion of a field sample spiked with target analytes that are prepared with each analytical batch and with each method. The MS/MSD results are used to evaluate any bias introduced to the method due to matrix interference, and to measure bias and precision for each analytical batch.

In accordance with the project QAPP requirements (USACE, 2013), the MS/MSD samples are to be collected at a rate of 1 per 20 groundwater samples or 5 percent. During the December 2013 through May 2014 groundwater monitoring event, three MS/MSD samples were collected from locations KAFB0518, KAFB0614, and KAFB1008, achieving the five percent MS/MSD sample frequency requirement. Although no additional sample volume was provided to the laboratory, MS/MSD analyses were performed on additional ST105 specific samples to evaluate potential matrix interference and their impact on the bias and precision of the analysis. The following groundwater samples from site ST105 were spiked:

Well Location	Sample Number	MS/MSD Analysis
KAFB0518	ST105-30011	TKN, nitrate and nitrite as nitrogen, ammonia as nitrogen, alkalinity, metals, anions, TOC, and DOC
KAFB0614	ST105-30034	TKN, nitrate and nitrite as nitrogen, ammonia as nitrogen, alkalinity, metals, anions, TOC, and DOC
KAFB1008	ST105-30025	TKN, nitrate and nitrite as nitrogen, ammonia as nitrogen, alkalinity, metals, anions, TOC, and DOC
KAFB5023	ST105-30019	TKN, nitrate and nitrite as nitrogen, and metals
KAFB0506	ST105-30002	Metals
KAFB0616	ST105-30036	Ammonia as nitrogen
KAFB0619	ST105-30040	TKN
KAFB-0615	ST105-30035	Metals
TJA-5	ST105-30050	TKN
KAFB0621	ST105-30042	Metals

The majority of the MS results were within the established bias and precision control requirements. MS/MSD recovery outliers were observed for TKN and ammonia as nitrogen in a few spiked samples. Specific MS sample numbers, MS recovery outliers and acceptance criteria are summarized below:

Analytical Method	MS/MSD Sample #	MS Recovery Outlier (%)	Control Limit (%)
EPA351.2	ST105-30011	TKN 91.1/74.8	75-125
	ST105-30040	TKN: 75.6/74.8	75-125
	ST105-30034	TKN: 20.5/43.8	75-125
	ST105-30050	TKN: 39.5/33..5	75-125
EPA353.2	ST105-30025	Nitrate as nitrite as nitrogen: 85.4/87.6	90-110

As shown above, MS recoveries for TKN and nitrate and nitrite as nitrogen in the spiked samples were recovered below their respective control limit. As a result of the low biased MS recoveries, the results of TKN and nitrate and nitrite as nitrogen were qualified as estimated (J-/UJ). This data qualification was applied to the results of TKN and nitrate and nitrite as nitrogen in the spiked samples only. It should be noted the LCS analysis associated with the non-compliant MS results was within the control criteria, indicating acceptable batch accuracy for all samples in the entire batch for both the TKN and nitrate and nitrite as nitrogen analyses.

In addition to the above, non-compliant MS results were reported for metals in a few MS/MSD samples. In these samples, elevated concentrations of calcium, sodium, or manganese in samples were reported. These high sample concentrations produced a matrix effect, which affected the accuracy of the analysis and led to the non-compliant MS/MSD recoveries. In these samples, the concentrations of calcium, sodium, and manganese were greater four times the spiked levels, and were not qualified because of the MS recovery outliers.

1.1.6 Initial Calibration (Reason Code G)

Instrument calibration is performed for metals, TOC, DOC, anions, ammonia as nitrogen, nitrate and nitrite as nitrogen, and TKN analyses according to the EPA method requirements (EPA, 1996). The linear analytical range is established for each method by analysis of calibration standards prepared at increasing concentrations that cover the expected sample concentrations. The acceptability of the initial calibration is determined by calculation of a percent relative standard deviation or coefficient. The initial calibration results are acceptable for all the listed methods.

Immediately after the initial calibration for each analysis, initial calibration verification was conducted at the mid-point of instrument calibration range by using a second-source calibration standard to verify the accuracy of the initial calibration. The review indicated acceptable initial calibration verification results for all target analytes.

1.1.7 Continuing Calibration Verification (Reason Code C)

Routinely during sample analysis, the stability of the analytical system is monitored by analysis of continuing calibration standards at concentrations near the mid-point of the instrument calibration range. The percent difference (%D) values between the spiked concentrations and reported concentrations in the continuing calibrations met the acceptance criteria for metals, TOC, DOC, anions, ammonia as nitrogen, nitrate and nitrite as nitrogen, and TKN analyses.

1.1.8 Interference Check Samples (Reason Code O)

The ICS verifies the inter-element and background correction factors. An ICS was analyzed at the required frequencies, and all ICS results are within the established control limit for EPA Method SW6010C for the groundwater monitoring event.

1.1.9 Trip Blanks (Reason Code K3)

Trip blanks were prepared by the laboratory and stored with the groundwater samples collected for VOCs analysis. In accordance with the project QAPP requirements (USACE, 2013), one trip blank is to be collected at a rate of one per cooler when collecting groundwater samples for volatile organic compound (VOC) analysis.

No trip blanks are required for site ST105 since no groundwater samples were collected for VOC analysis.

1.1.10 Equipment Rinse Blanks (Reason Code K1)

Equipment rinse blanks are designed to check for contamination from sampling equipment, and the results for the equipment rinse blanks are used to evaluate the efficiency of equipment decontamination procedures.

In accordance with the project QAPP requirements (USACE, 2013), no equipment rinse blanks will be collected when dedicated or disposable sampling equipment is used to collect groundwater samples. When non-dedicated or non-disposable sampling equipment is used, one equipment rinse blank will be collected at a rate of one per day.

During the December 2013 through May 2014 groundwater monitoring event at site ST105, non-dedicated sampling equipment was used to collect groundwater samples. Following sample collection, the sampling equipment was decontaminated in accordance with equipment decontamination procedures. Three equipment rinse blank samples were prepared for the entire sampling event by rinsing the decontaminated pump with the distilled water, and then collecting the final rinse into appropriate sample containers. The equipment rinse blank samples were analyzed for metals. Table 4 summarizes the detected equipment rinse blank results and associated sample results. Positive results in the equipment rinse blanks are summarized below:

Analytical Method	Equipment Rinse Blank #	Contaminant Level (µg/L)	LOQ (µg/L)
EPA SW6010C	ST105-80001	Iron: 162	25
		Manganese: 3.26	3.75
		Sodium: 2450	1250
	ST105-80002	Iron: 28.2	25
		Manganese: 1.38	3.75
		Sodium: 2360	1250
	ST105-80003	Iron: 24.3	25
		Sodium: 585	1250

As a result of the equipment rinse blank detections, the detected results of iron in three samples and manganese in one sample were qualified as non-detected (U) at the LOQ when concentrations of iron and manganese in samples were less than or equal to five times the corresponding blank level. This blank qualification has no impact on the data usability. As shown on Table 6, iron, manganese, and sodium in all other samples were either not detected or their concentrations in samples far exceeded five times the level observed in the corresponding equipment rinse blank, and therefore the sample results were not affected by the equipment rinse blank detections. Except as noted, the equipment rinse blank samples were free of other metals.

1.1.11 Field Duplicates

In accordance with the project QAPP requirements (USACE, 2013), field duplicate samples are to be collected at a minimum rate of 10 percent of the total number of groundwater samples. Field duplicate samples are evaluated by calculating the RPD between the parent sample and its duplicate. The RPD is calculated using the following equation:

$$RPD = /(S-D)/[(S+D)/2]/ \times 100$$

where:

S = sample result
D = duplicate result

Acceptable precision control criteria are established at less than or equal to 35 percent for water samples. The RPD is calculated between pairs of field duplicate samples when both results are reported above the LOQ.

Three field duplicate pair was collected for the December through May 2014 groundwater monitoring event and met the 10 percent field duplicate frequency objective. The duplicate pair was collected from locations KAFB0510, KAFB0619, and TJA-4. The duplicate pairs were analyzed for metals, TOC, DOC, nitrate and nitrite as nitrogen, anions, ammonia as nitrogen, TKN, TDS, and alkalinity. Table 5 presents the field duplicate results.

As indicated on Table 5, except for ammonia as nitrogen, TKN, TOC, and DOC, all other parameters were detected above their respective LOQ in the three pairs. The RPDs for the listed analytes ranged from 0 to 21.7 percent, which is well within the 35 percent field precision requirement. Except as noted, no other target analytes were detected above the LOQ in the pairs. The field duplicate demonstrate acceptable overall field sampling and analytical precision for all methods.

1.2 Completeness

The following sections present a discussion of technical completeness for the December 2013 through May 2014 groundwater monitoring event. Completeness calculations were performed only for the groundwater samples that are used for project decisions. For informational purposes, completeness calculations were also calculated for the field QC samples. Completeness results are presented in Table 6.

1.2.1 Technical Completeness

Technical completeness is a quantitative measure of the data usability based on the number of rejected data compared to the total number of sample results. The technical completeness goal for each method is equal to or greater than 95 percent. The technical completeness calculation considers all data that are not rejected to be usable. The technical completeness is calculated as follows:

$$\% \text{ Technical Completeness} = \frac{\text{Number of Usable Results}}{\text{Total Number of Results}} \times 100$$

As discussed in the previous sections, holding time violation, minor LCS bias and precision outliers, non-compliant MS recoveries, and low level laboratory and field blank detections were observed for the TDS, metals, TKN, and nitrate and nitrite analyses. While the affected results were qualified as estimated or non-detected, the data usability is not affected. Despite the exceedances noted, the technical completeness was 100 percent for all methods exceeding the 95 percent technical completeness objective. Therefore, the project data quality objectives were achieved for all methods for the December 2013 through May 2014 groundwater monitoring event.

1.3 Analysis Completeness

As a part of the data review process, CB&I reviewed chain-of-custody forms against the Groundwater Monitoring Planner for site ST105 to ensure that analytical results were reported for all planned methods and samples. The review indicated the following:

- No groundwater samples were collected from locations KAFB-0516 and KAFB-1009 due to access issues.
- No groundwater samples were collected from locations KAFB-0519, KAFB-0521A, KAFB-0521B, KAFB-0521C. These four wells were deemed unsafe and therefore were not sampled.
- No groundwater samples were collected from locations KAFB-1006 and KAFB-16 due to non-operational dedicated pumps.

Except where noted above, analytical results were reported for all methods and for all samples as planned.

1.4 Summary

The analytical data reported for the December 2013 through May 2014 groundwater monitoring event at site ST105 have been reviewed for precision, accuracy/bias, and completeness. During sampling, samplers followed the approved project QAPP requirements and established sampling standard operating procedures (SOP) to collect, preserve, document, and ship samples to an off-site laboratory, ensuring the representativeness of the groundwater samples collected for the event. The selected laboratory is DoD ELAP certified and adhered to the most current EPA method requirements, project QAPP and DoD QSM requirements to prepare, analyze, and report the data. This ensures the comparability of the analytical results between different samples and different sites. An EPA data review was performed to evaluate the laboratory data and to verify that the laboratory complied with the DoD QSM and project QAPP requirements, and to apply qualifiers to the affected analytical data that was outside the established control criteria. Based on a review of the completed sample collection logs, chain of custody forms, sample receipt forms, and laboratory data packages, the analytical data reported for this event has met the representativeness and comparability requirements.

Data quality exceedances consist of holding time exceedance, minor LCS bias and precision outliers, non-compliant MS recoveries, and low level laboratory and field blank detections. The affected data were qualified as estimated or non-detected. With the exception of the holding time exceedance, the degree of these data quality exceedances was considered minor, and the data usability was not affected. Due to the additional sample storage time, the reported TDS concentration in one sample was qualified as estimated (J-) with a low bias. The laboratory has since implemented corrective actions to ensure that all future samples will be completed within the holding time requirements. The 95 percent technical completeness goal was exceeded for all methods for the December 2013 through May 2014 groundwater monitoring event. All data are usable for their intended purposes.

REFERENCES

American Public Health Association, American Water Works Association, and Water Environment Federation. 2005. *Standard Methods for the Examination of Water and Wastewater, 21st Edition.* American Public Health Association: Washington, DC.

DoD. 2010. *DoD Quality Systems Manual for Environmental Laboratories, Version 4.2.* October.

EPA. 2010. *USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Superfund Data Review, Final.* Office of Superfund Remediation and Technology Innovation, OSWER 8240.1-51 and EPA-540-R-10-011. January.

EPA. 2008. *USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review, Final.* Office of Superfund Remediation and Technology Innovation, OSWER 9240.1-48 and EPA-540-R-08-01. June.

EPA. 1996. *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods (2006), SW-846 On-line*. Office of Solid Waste, Washington D.C. http://www.epa.gov/osw/hazard/testmethods/sw846.

USACE. 2013. *Quality Assurance Project Plan for Long-Term Groundwater Monitoring at Multiple Sites: Solid Waste Management Unit (SWMU) 6-1, Landfill 1; SWMU 6-2, Landfill 2; SWMU 6-4, Landfills 4,5 and 6; ST-105 (CG-C564); UST-58 (PL567); WP026; and ST070, Kirtland Air Force Base, New Mexico* Prepared by CB&I. for the USACE Albuquerque District under USACE Contract No. FA8903-10-D-8595, Task Order 002. December.

USACE. 2005. *Environmental Quality – Guidance for Evaluating Performance-Based Chemical Data,* EM 200-1-10. June 30.

TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

List of Appendix C Tables

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level

Table 2: Data Qualification Flags and Reason Codes

Table 3: Qualified Data Summary

Table 4: Detected Equipment Blank Results and Associated Sample Results

Table 5: Field Duplicate Summary

Table 6: Technical Completeness

THIS PAGE INTENTIONALLY LEFT BLANK

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level ST105, December 2013 - May 2014 Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_003									
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	12/13/2013	NONE	12/16/2013	E351.2	III
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	12/23/2013	NONE	12/23/2013	E353.2	III
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	12/17/2013	NONE	12/17/2013	SM2320B	III
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	12/16/2013	NONE	12/17/2013	SM4500NH3BG	III
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	12/12/2013	SW3005	12/13/2013	SW6010C	III
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	12/20/2013	METHOD	12/21/2013	SW9056A	III
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	1/3/2014	NONE	1/3/2014	SW9060A	III
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	1/3/2014	FLDFLT	1/3/2014	SW9060A-DISS	III
SDG ECOS_004									
12/9/2013	ST105-30019	KAFB-0523	EPLN	REG	1/15/2014	NONE	1/15/2014	SM2540C	III
SDG ECOS_006									
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	3/24/2014	NONE	3/24/2014	E353.2	III
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2320B	III
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	3/21/2014	NONE	3/21/2014	SM2540C	III
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	4/10/2014	NONE	4/11/2014	SM4500NH3BG	III
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	3/27/2014	SW3005	3/31/2014	SW6010C	III
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	3/21/2014	METHOD	3/21/2014	SW9056A	III
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	4/3/2014	NONE	4/3/2014	SW9060A	III
3/19/2014	ST105-30001	KAFB0505	EPLN	REG	4/3/2014	FLDFLT	4/3/2014	SW9060A-DISS	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	3/24/2014	NONE	3/24/2014	E353.2	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2320B	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	3/21/2014	NONE	3/21/2014	SM2540C	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	4/10/2014	NONE	4/11/2014	SM4500NH3BG	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	3/27/2014	SW3005	3/31/2014	SW6010C	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	3/21/2014	METHOD	3/21/2014	SW9056A	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	4/3/2014	NONE	4/3/2014	SW9060A	III
3/19/2014	ST105-30004	KAFB0508	EPLN	REG	4/3/2014	FLDFLT	4/4/2014	SW9060A-DISS	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level
ST105, December 2013 - May 2014
Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_006									
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	3/24/2014	NONE	3/24/2014	E353.2	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2320B	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	3/21/2014	NONE	3/21/2014	SM2540C	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	4/10/2014	NONE	4/11/2014	SM4500NH3BG	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	3/27/2014	SW3005	3/31/2014	SW6010C	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	3/27/2014	SW3005	4/1/2014	SW6010C	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	3/21/2014	METHOD	3/21/2014	SW9056A	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	4/8/2014	METHOD	4/8/2014	SW9056A	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	4/3/2014	NONE	4/3/2014	SW9060A	III
3/20/2014	ST105-30002	KAFB0506	EPLN	REG	4/3/2014	FLDFLT	4/3/2014	SW9060A-DISS	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	3/24/2014	NONE	3/24/2014	E353.2	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2320B	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	3/21/2014	NONE	3/21/2014	SM2540C	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	4/10/2014	NONE	4/11/2014	SM4500NH3BG	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	3/27/2014	SW3005	3/31/2014	SW6010C	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	3/21/2014	METHOD	3/21/2014	SW9056A	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	4/3/2014	NONE	4/4/2014	SW9060A	III
3/20/2014	ST105-30005	KAFB0510	EPLN	REG	4/3/2014	FLDFLT	4/4/2014	SW9060A-DISS	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	3/28/2014	NONE	3/28/2014	E351.2	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	3/24/2014	NONE	3/24/2014	E353.2	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	3/27/2014	NONE	3/27/2014	SM2320B	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	3/21/2014	NONE	3/21/2014	SM2540C	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	4/10/2014	NONE	4/11/2014	SM4500NH3BG	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	3/27/2014	SW3005	3/31/2014	SW6010C	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	3/21/2014	METHOD	3/21/2014	SW9056A	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	4/3/2014	NONE	4/4/2014	SW9060A	III
3/20/2014	ST105-30006	KAFB0510	EPLN	FD	4/3/2014	FLDFLT	4/4/2014	SW9060A-DISS	III
SDG ECOS_007									
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level ST105, December 2013 - May 2014 Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_007									
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	3/31/2014	NONE	3/31/2014	E353.2	III
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2540C	III
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	4/7/2014	NONE	4/10/2014	SM4500NH3BG	III
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	4/7/2014	SW3005	4/17/2014	SW6010C	III
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	4/9/2014	NONE	4/9/2014	SW9060A	III
3/24/2014	ST105-30003	KAFB0507	EPLN	REG	4/9/2014	FLDFLT	4/9/2014	SW9060A-DISS	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	3/31/2014	NONE	4/14/2014	E353.2	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2540C	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	4/7/2014	NONE	4/10/2014	SM4500NH3BG	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	4/7/2014	SW3005	4/17/2014	SW6010C	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	4/9/2014	NONE	4/9/2014	SW9060A	III
3/25/2014	ST105-30010	KAFB0517	EPLN	REG	4/9/2014	FLDFLT	4/9/2014	SW9060A-DISS	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	3/31/2014	NONE	3/31/2014	E353.2	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2540C	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	4/7/2014	NONE	4/10/2014	SM4500NH3BG	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	4/10/2014	SW3005	4/17/2014	SW6010C	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	4/9/2014	NONE	4/9/2014	SW9060A	III
3/25/2014	ST105-30011	KAFB0518	EPLN	REG	4/9/2014	FLDFLT	4/10/2014	SW9060A-DISS	III
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	3/31/2014	NONE	3/31/2014	E353.2	III
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2540C	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level
ST105, December 2013 - May 2014
Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_007									
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	4/7/2014	NONE	4/11/2014	SM4500NH3BG	III
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	4/7/2014	SW3005	4/17/2014	SW6010C	III
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	4/9/2014	NONE	4/10/2014	SW9060A	III
3/25/2014	ST105-30020	KAFB0524	EPLN	REG	4/9/2014	FLDFLT	4/10/2014	SW9060A-DISS	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	3/28/2014	NONE	3/28/2014	E351.2	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	3/31/2014	NONE	3/31/2014	E353.2	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	3/27/2014	NONE	3/27/2014	SM2540C	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	4/7/2014	NONE	4/10/2014	SM4500NH3BG	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	4/7/2014	SW3005	4/17/2014	SW6010C	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	4/9/2014	NONE	4/10/2014	SW9060A	III
3/25/2014	ST105-30021	KAFB0525	EPLN	REG	4/9/2014	FLDFLT	4/10/2014	SW9060A-DISS	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	4/8/2014	NONE	4/8/2014	E351.2	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	3/31/2014	NONE	3/31/2014	E353.2	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	4/2/2014	NONE	4/2/2014	SM2540C	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	4/7/2014	NONE	4/11/2014	SM4500NH3BG	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	4/10/2014	SW3005	4/17/2014	SW6010C	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	4/11/2014	NONE	4/11/2014	SW9060A	III
3/26/2014	ST105-30013	KAFB0520	EPLN	REG	4/11/2014	FLDFLT	4/11/2014	SW9060A-DISS	III
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	4/8/2014	NONE	4/8/2014	E351.2	III
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	3/31/2014	NONE	3/31/2014	E353.2	III
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	4/2/2014	NONE	4/2/2014	SM2540C	III
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	4/7/2014	NONE	4/10/2014	SM4500NH3BG	III
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	4/10/2014	SW3005	4/17/2014	SW6010C	III
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level ST105, December 2013 - May 2014 Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_007									
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	4/11/2014	NONE	4/11/2014	SW9060A	III
3/26/2014	ST105-30018	KAFB0522	EPLN	REG	4/11/2014	FLDFLT	4/11/2014	SW9060A-DISS	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	4/8/2014	NONE	4/8/2014	E351.2	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	3/31/2014	NONE	3/31/2014	E353.2	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	4/2/2014	NONE	4/2/2014	SM2540C	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	4/7/2014	NONE	4/10/2014	SM4500NH3BG	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	4/10/2014	SW3005	4/17/2014	SW6010C	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	4/11/2014	NONE	4/11/2014	SW9060A	III
3/27/2014	ST105-30008	KAFB0514	EPLN	REG	4/11/2014	FLDFLT	4/11/2014	SW9060A-DISS	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	4/8/2014	NONE	4/8/2014	E351.2	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	3/31/2014	NONE	3/31/2014	E353.2	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	4/4/2014	NONE	4/4/2014	SM2320B	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	4/2/2014	NONE	4/2/2014	SM2540C	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	4/10/2014	NONE	4/11/2014	SM4500NH3BG	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	4/10/2014	SW3005	4/17/2014	SW6010C	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	4/2/2014	METHOD	4/2/2014	SW9056A	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	4/18/2014	NONE	4/18/2014	SW9060A	III
3/27/2014	ST105-30038	KAFB0618	EPLN	REG	4/18/2014	FLDFLT	4/18/2014	SW9060A-DISS	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/8/2014	NONE	4/8/2014	E351.2	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/14/2014	NONE	4/14/2014	E353.2	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/14/2014	NONE	4/14/2014	SM2320B	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/3/2014	NONE	4/3/2014	SM2540C	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/17/2014	NONE	4/18/2014	SM4500NH3BG	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/7/2014	SW3005	4/17/2014	SW6010C	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/3/2014	METHOD	4/3/2014	SW9056A	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/17/2014	METHOD	4/17/2014	SW9056A	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/18/2014	NONE	4/18/2014	SW9060A	III
4/1/2014	ST105-30036	KAFB0616	EPLN	REG	4/18/2014	FLDFLT	4/18/2014	SW9060A-DISS	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level
ST105, December 2013 - May 2014
Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_007									
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/8/2014	NONE	4/8/2014	E351.2	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/14/2014	NONE	4/14/2014	E353.2	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/14/2014	NONE	4/14/2014	SM2320B	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/3/2014	NONE	4/3/2014	SM2540C	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/17/2014	NONE	4/18/2014	SM4500NH3BG	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/7/2014	SW3005	4/17/2014	SW6010C	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/3/2014	METHOD	4/3/2014	SW9056A	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/17/2014	METHOD	4/17/2014	SW9056A	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/18/2014	NONE	4/18/2014	SW9060A	III
4/1/2014	ST105-30039	KAFB0619	EPLN	REG	4/18/2014	FLDFLT	4/18/2014	SW9060A-DISS	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/8/2014	NONE	4/8/2014	E351.2	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/14/2014	NONE	4/14/2014	E353.2	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/14/2014	NONE	4/14/2014	SM2320B	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/3/2014	NONE	4/3/2014	SM2540C	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/17/2014	NONE	4/18/2014	SM4500NH3BG	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/7/2014	SW3005	4/17/2014	SW6010C	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/3/2014	METHOD	4/3/2014	SW9056A	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/17/2014	METHOD	4/17/2014	SW9056A	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/18/2014	NONE	4/18/2014	SW9060A	III
4/1/2014	ST105-30040	KAFB0619	EPLN	FD	4/18/2014	FLDFLT	4/18/2014	SW9060A-DISS	III
SDG ECOS_009									
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/16/2014	NONE	4/23/2014	E351.2	III
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/28/2014	NONE	4/28/2014	E353.2	III
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/14/2014	NONE	4/14/2014	SM2320B	III
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/9/2014	NONE	4/9/2014	SM2540C	III
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/23/2014	NONE	4/24/2014	SM4500NH3BG	III
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/10/2014	SW3005	4/17/2014	SW6010C	III
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/15/2014	METHOD	4/15/2014	SW9056A	III
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/28/2014	NONE	4/28/2014	SW9060A	III
4/8/2014	ST105-30031	KAFB0611	EPLN	REG	4/28/2014	FLDFLT	4/28/2014	SW9060A-DISS	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level ST105, December 2013 - May 2014 Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_009									
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/16/2014	NONE	4/23/2014	E351.2	III
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/28/2014	NONE	4/28/2014	E353.2	III
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/14/2014	NONE	4/14/2014	SM2320B	III
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/9/2014	NONE	4/9/2014	SM2540C	III
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/23/2014	NONE	4/24/2014	SM4500NH3BG	III
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/10/2014	SW3005	4/17/2014	SW6010C	III
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/15/2014	METHOD	4/15/2014	SW9056A	III
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/28/2014	NONE	4/28/2014	SW9060A	III
4/8/2014	ST105-30032	KAFB0612	EPLN	REG	4/28/2014	FLDFLT	4/28/2014	SW9060A-DISS	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/16/2014	NONE	4/23/2014	E351.2	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/28/2014	NONE	4/28/2014	E353.2	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/14/2014	NONE	4/14/2014	SM2320B	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/9/2014	NONE	4/9/2014	SM2540C	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/23/2014	NONE	4/24/2014	SM4500NH3BG	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/10/2014	SW3005	4/17/2014	SW6010C	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/15/2014	METHOD	4/15/2014	SW9056A	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/28/2014	NONE	4/28/2014	SW9060A	III
4/8/2014	ST105-30034	KAFB0614	EPLN	REG	4/28/2014	FLDFLT	4/28/2014	SW9060A-DISS	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/16/2014	NONE	4/23/2014	E351.2	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/28/2014	NONE	4/28/2014	E353.2	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/14/2014	NONE	4/14/2014	SM2320B	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/16/2014	NONE	4/16/2014	SM2540C	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/28/2014	NONE	4/29/2014	SM4500NH3BG	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/18/2014	SW3005	4/23/2014	SW6010C	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/15/2014	METHOD	4/15/2014	SW9056A	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/29/2014	NONE	4/30/2014	SW9060A	III
4/9/2014	ST105-30033	KAFB0613	EPLN	REG	4/29/2014	FLDFLT	4/30/2014	SW9060A-DISS	III
SDG ECOS_011									
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	4/29/2014	NONE	4/30/2014	E351.2	III
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	4/28/2014	NONE	4/28/2014	E353.2	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level
ST105, December 2013 - May 2014
Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_011									
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	4/28/2014	NONE	4/28/2014	SM2320B	III
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	4/16/2014	NONE	4/16/2014	SM2540C	III
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	5/1/2014	NONE	5/2/2014	SM4500NH3BG	III
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	4/18/2014	SW3005	4/23/2014	SW6010C	III
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	4/17/2014	METHOD	4/17/2014	SW9056A	III
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	5/1/2014	NONE	5/1/2014	SW9060A	III
4/14/2014	ST105-30035	KAFB0615	EPLN	REG	5/1/2014	FLDFLT	5/1/2014	SW9060A-DISS	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	4/29/2014	NONE	4/30/2014	E351.2	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	4/28/2014	NONE	4/28/2014	E353.2	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	4/28/2014	NONE	4/28/2014	SM2320B	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	4/16/2014	NONE	4/16/2014	SM2540C	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	5/1/2014	NONE	5/2/2014	SM4500NH3BG	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	4/18/2014	SW3005	4/23/2014	SW6010C	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	4/17/2014	METHOD	4/18/2014	SW9056A	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	5/1/2014	NONE	5/1/2014	SW9060A	III
4/15/2014	ST105-30044	KAFB0623	EPLN	REG	5/1/2014	FLDFLT	5/1/2014	SW9060A-DISS	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	4/29/2014	NONE	4/30/2014	E351.2	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	4/28/2014	NONE	4/28/2014	E353.2	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	4/28/2014	NONE	4/28/2014	SM2320B	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	4/16/2014	NONE	4/16/2014	SM2540C	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	5/1/2014	NONE	5/2/2014	SM4500NH3BG	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	4/18/2014	SW3005	4/23/2014	SW6010C	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	4/17/2014	METHOD	4/18/2014	SW9056A	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	5/1/2014	NONE	5/1/2014	SW9060A	III
4/15/2014	ST105-30046	KAFB0904	EPLN	REG	5/1/2014	FLDFLT	5/1/2014	SW9060A-DISS	III
SDG ECOS_014									
4/28/2014	ST105-30047	0,100	EPLN	REG	5/8/2014	NONE	5/9/2014	E351.2	III
4/28/2014	ST105-30047	0,100	EPLN	REG	5/15/2014	NONE	5/15/2014	E353.2	III
4/28/2014	ST105-30047	0,100	EPLN	REG	5/8/2014	NONE	5/8/2014	SM2320B	III
4/28/2014	ST105-30047	0,100	EPLN	REG	4/30/2014	NONE	4/30/2014	SM2540C	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level
ST105, December 2013 - May 2014
Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_014									
4/28/2014	ST105-30047	0,100	EPLN	REG	5/20/2014	NONE	5/20/2014	SM4500NH3BG	III
4/28/2014	ST105-30047	0,100	EPLN	REG	5/6/2014	SW3005	5/7/2014	SW6010C	III
4/28/2014	ST105-30047	0,100	EPLN	REG	5/13/2014	METHOD	5/13/2014	SW9056A	III
4/28/2014	ST105-30047	0,100	EPLN	REG	5/1/2014	NONE	5/2/2014	SW9060A	III
4/28/2014	ST105-30047	0,100	EPLN	REG	5/1/2014	NONE	5/2/2014	SW9060A-DISS	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/8/2014	NONE	5/9/2014	E351.2	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/12/2014	NONE	5/12/2014	SM2320B	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/7/2014	NONE	5/7/2014	SM2540C	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/20/2014	NONE	5/20/2014	SM4500NH3BG	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/15/2014	SW3005	5/20/2014	SW6010C	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/13/2014	METHOD	5/14/2014	SW9056A	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/16/2014	NONE	5/16/2014	SW9060A	III
4/30/2014	ST105-30048	TJA-4	EPLN	REG	5/16/2014	NONE	5/16/2014	SW9060A-DISS	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/8/2014	NONE	5/9/2014	E351.2	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/16/2014	NONE	5/16/2014	E353.2	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/12/2014	NONE	5/12/2014	SM2320B	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/7/2014	NONE	5/7/2014	SM2540C	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/20/2014	NONE	5/20/2014	SM4500NH3BG	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/15/2014	SW3005	5/20/2014	SW6010C	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/13/2014	METHOD	5/14/2014	SW9056A	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/16/2014	NONE	5/16/2014	SW9060A	III
4/30/2014	ST105-30049	TJA-4	EPLN	FD	5/16/2014	NONE	5/16/2014	SW9060A-DISS	III
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/8/2014	NONE	5/14/2014	E351.2	III
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/12/2014	NONE	5/12/2014	SM2320B	III
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/7/2014	NONE	5/7/2014	SM2540C	III
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/20/2014	NONE	5/20/2014	SM4500NH3BG	III
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/15/2014	SW3005	5/20/2014	SW6010C	III
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/13/2014	METHOD	5/14/2014	SW9056A	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level
ST105, December 2013 - May 2014
Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_014									
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/16/2014	NONE	5/16/2014	SW9060A	III
4/30/2014	ST105-30050	TJA-5	EPLN	REG	5/16/2014	NONE	5/16/2014	SW9060A-DISS	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/8/2014	NONE	5/9/2014	E351.2	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/15/2014	NONE	5/15/2014	SM2320B	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/7/2014	NONE	5/7/2014	SM2540C	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/20/2014	NONE	5/20/2014	SM4500NH3BG	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/15/2014	SW3005	5/20/2014	SW6010C	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/13/2014	METHOD	5/14/2014	SW9056A	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/16/2014	NONE	5/16/2014	SW9060A	III
5/1/2014	ST105-30029	GCMP	EPLN	REG	5/16/2014	NONE	5/16/2014	SW9060A-DISS	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/8/2014	NONE	5/9/2014	E351.2	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/15/2014	NONE	5/15/2014	SM2320B	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/7/2014	NONE	5/7/2014	SM2540C	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/20/2014	NONE	5/20/2014	SM4500NH3BG	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/15/2014	SW3005	5/20/2014	SW6010C	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/13/2014	METHOD	5/14/2014	SW9056A	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/16/2014	NONE	5/16/2014	SW9060A	III
5/1/2014	ST105-30043	KAFB0622	EPLN	REG	5/16/2014	NONE	5/16/2014	SW9060A-DISS	III
SDG ECOS_015									
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/13/2014	NONE	5/14/2014	E351.2	III
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/16/2014	NONE	5/16/2014	SM2320B	III
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/12/2014	NONE	5/12/2014	SM2540C	III
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/27/2014	NONE	5/28/2014	SM4500NH3BG	III
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/15/2014	SW3005	5/20/2014	SW6010C	III
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/23/2014	METHOD	5/23/2014	SW9056A	III
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/20/2014	FLDFLT	5/20/2014	SW9060A	III
5/5/2014	ST105-30024	KAFB1007	EPLN	REG	5/20/2014	FLDFLT	5/20/2014	SW9060A-DISS	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level
ST105, December 2013 - May 2014
Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_015									
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/13/2014	NONE	5/14/2014	E351.2	III
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/16/2014	NONE	5/16/2014	SM2320B	III
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/12/2014	NONE	5/12/2014	SM2540C	III
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/27/2014	NONE	5/28/2014	SM4500NH3BG	III
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/15/2014	SW3005	5/20/2014	SW6010C	III
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/23/2014	METHOD	5/23/2014	SW9056A	III
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/20/2014	FLDFLT	5/20/2014	SW9060A	III
5/6/2014	ST105-30025	KAFB1008	EPLN	REG	5/20/2014	FLDFLT	5/21/2014	SW9060A-DISS	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/13/2014	NONE	5/14/2014	E351.2	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/19/2014	NONE	5/20/2014	SM2320B	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/12/2014	NONE	5/12/2014	SM2540C	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/27/2014	NONE	5/28/2014	SM4500NH3BG	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/15/2014	SW3005	5/20/2014	SW6010C	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/23/2014	METHOD	5/23/2014	SW9056A	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/20/2014	FLDFLT	5/20/2014	SW9060A	III
5/7/2014	ST105-30041	KAFB0620	EPLN	REG	5/20/2014	FLDFLT	5/21/2014	SW9060A-DISS	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/27/2014	NONE	5/27/2014	E351.2	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/19/2014	NONE	5/20/2014	SM2320B	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/12/2014	NONE	5/12/2014	SM2540C	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/27/2014	NONE	5/28/2014	SM4500NH3BG	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/15/2014	SW3005	5/20/2014	SW6010C	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/23/2014	METHOD	5/23/2014	SW9056A	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/20/2014	FLDFLT	5/21/2014	SW9060A	III
5/7/2014	ST105-30045	KAFB0625	EPLN	REG	5/20/2014	FLDFLT	5/21/2014	SW9060A-DISS	III
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	5/27/2014	NONE	5/27/2014	E351.2	III
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	5/22/2014	NONE	5/23/2014	SM2320B	III

Table 1: Summary of Samples Collected, Sample Date, Sample Location, Preparation Method, Analysis Method, and Data Review Level
ST105, December 2013 - May 2014
Kirtland Air Force Base

Date Collected	Field Sample ID	Sample Location	Lab	Sample Type	Date Prepared	Prep Method	Date Analyzed	Analytical Method	Review Level
Environmental Samples									
SDG ECOS_015									
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	5/15/2014	NONE	5/15/2014	SM2540C	III
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	5/29/2014	NONE	5/30/2014	SM4500NH3BG	III
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	5/20/2014	SW3005	5/21/2014	SW6010C	III
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	6/3/2014	METHOD	6/3/2014	SW9056A	III
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	5/20/2014	FLDFLT	5/21/2014	SW9060A	III
5/12/2014	ST105-30037	KAFB0617	EPLN	REG	5/20/2014	FLDFLT	5/21/2014	SW9060A-DISS	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	5/27/2014	NONE	5/27/2014	E351.2	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	5/16/2014	NONE	5/16/2014	E353.2	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	5/22/2014	NONE	5/23/2014	SM2320B	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	5/15/2014	NONE	5/15/2014	SM2540C	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	5/29/2014	NONE	5/30/2014	SM4500NH3BG	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	5/20/2014	SW3005	5/21/2014	SW6010C	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	6/3/2014	METHOD	6/3/2014	SW9056A	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	5/20/2014	FLDFLT	5/21/2014	SW9060A	III
5/13/2014	ST105-30042	KAFB0621	EPLN	REG	5/20/2014	FLDFLT	5/21/2014	SW9060A-DISS	III
Field QC Samples									
SDG ECOS_007									
3/26/2014	ST105-80001	FIELDQC	EPLN	ER	4/10/2014	SW3005	4/17/2014	SW6010C	III
3/27/2014	ST105-80002	FIELDQC	EPLN	ER	4/10/2014	SW3005	4/17/2014	SW6010C	III
SDG ECOS_011									
4/14/2014	ST105-80003	FIELDQC	EPLN	ER	4/18/2014	SW3005	4/23/2014	SW6010C	III

Notes:

SDG Sample Delivery Group
EPLN Empirical Laboratories
REG Normal sample sent to the lab
ER Equipment rinse blank
FD Field Duplicate
III Samples received Level III data review

Table 2. Data Qualification Flags and Reason Codes

Data Qualifier Definitions for Organic Data Review

Qualifier	Definition
	No Qualifier indicates that the data are acceptable both qualitatively and quantitatively.
U	The analyte was analyzed for but was not detected above the reported limit of quantitation.
J	The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample. Results are estimated, although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain.
J-	The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.
J+	The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”
NJ	The analysis indicates the presence of an analyte that has been ”tentatively identified,” and the associated value represents its approximate concentration.
UJ	The analyte was not detected above the reported limit of quantitation. However, the reported limit of quantitation is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Re-sampling and re-analysis may be necessary to confirm or deny the presence of the analyte. Results are rejected, and data are unusable for any purposes.

Data Qualifier Definitions For Inorganic Data Review

Qualifier	Definition
	No Qualifier indicates that the data are acceptable both qualitatively and quantitatively.
U	The analyte was analyzed for but was not detected above the level of the reported value. The reported value is the limit of quantitation for water and soil for all the analytes except cyanide and mercury. For cyanide and mercury, the reported value is the contract-required detection limit.
J	The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample. Results are estimated, although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain.
J-	The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.
J+	The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample.
UJ	The analyte was analyzed for but was not detected above the reported value. The reported value may not accurately or precisely represent the sample limit of quantitation.
R	The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Re-sampling and re-analysis may be necessary to confirm or deny the presence of the analyte. Results are rejected, and data are unusable for any purposes.

Table 2. Data Qualification Flags and Reason Codes (concluded)

Reason Codes for Data Review and Validation

Reason Code	Description
A	Serial dilution outside criteria (Level IV).
B1	Method blank contaminants above reporting limit.
B2	Calibration blank contaminants above reporting limit.
B2, Bias Flag "-"	Calibration blank indicates negative interference; false negatives may be present.
C	Calibration outside control limits.
D	Sample results precision between primary and secondary columns outside control limit.
D1	Sample duplicate RPD outside control limit.
D2	Matrix duplicate RPD outside control limit.
D3	Laboratory control sample duplicate RPD outside control limit.
E	The sample results exceed the linear calibration range of the instrument.
F	Hydrocarbon pattern does not match hydrocarbon pattern in the standard.
G1	Initial calibration relative standard deviation outside control limit.
G2	Initial continuing calibration RRF outside control limit.
G3	Continuing calibration RRF outside control limit.
H	Holding time exceeded.
I	Internal standard recovery outside control limit.
K1	Equipment rinsate contamination.
K2	Ambient blank contamination.
K3	Trip blank contamination.
L	LCS outside control limits.
M	MS outside control limits.
O	Interference check sample outside acceptance criteria.
P	Analyte qualified based on the professional judgment of the reviewer.
S	Surrogate recovery outside control limit.
T	Temperature outside acceptance criteria.
Tr	Value reported detected between the detection limit and LOQ.
W	Pesticide breakdown outside criteria (Level IV).
X	Raised reporting limit due to matrix interference or high analyte concentration.
Y	Analyte was not confirmed by a second column.

Table 3
Qualified Data Summary
ST105, December 2013 - May 2014
Kirtland Air Force Base

Sample ID	Sample Type	Sample Date	Analyte	SDG	Result	DL	LOQ	Dilution	Units	Qualifier
Environmental Samples										
Reason Code D3L		**Method SM2540C**								
ST105-30033	REG	4/9/2014	Total Dissolved Solids	ECOS_009	363	20	20	1	mg/L	J+
ST105-30034	REG	4/8/2014	Total Dissolved Solids	ECOS_009	344	20	20	1	mg/L	J+
ST105-30035	REG	4/14/2014	Total Dissolved Solids	ECOS_011	688	20	20	1	mg/L	J+
ST105-30044	REG	4/15/2014	Total Dissolved Solids	ECOS_011	658	20	20	1	mg/L	J+
ST105-30046	REG	4/15/2014	Total Dissolved Solids	ECOS_011	373	20	20	1	mg/L	J+
Reason Code H		**Method SM2540C**								
ST105-30019	REG	12/9/2013	Total Dissolved Solids	ECOS_004	234	20	20	1	mg/L	J-
Reason Code K1		**Method SW6010C**								
ST105-30008	REG	3/27/2014	Iron	ECOS_007	ND	7.5	25	1	ug/L	U
ST105-30018	REG	3/26/2014	Iron	ECOS_007	ND	7.5	25	1	ug/L	U
ST105-30035	REG	4/14/2014	Iron	ECOS_011	ND	7.5	25	1	ug/L	U
ST105-30038	REG	3/27/2014	Manganese	ECOS_007	ND	0.75	3.75	1	ug/L	U
Reason Code M		**Method E351.2**								
ST105-30011	REG	3/25/2014	Total Kjeldahl Nitrogen	ECOS_007	ND	0.5	1.5	1	mg/L	UJ
ST105-30034	REG	4/8/2014	Total Kjeldahl Nitrogen	ECOS_009	ND	0.5	1.5	1	mg/L	UJ
ST105-30040	FD	4/1/2014	Total Kjeldahl Nitrogen	ECOS_007	ND	0.5	1.5	1	mg/L	UJ
ST105-30050	REG	4/30/2014	Total Kjeldahl Nitrogen	ECOS_014	ND	2	2	1	mg/L	UJ
Reason Code M		**Method E353.2**								
ST105-30025	REG	5/6/2014	Nitrate/Nitrite as N	ECOS_015	6.12	0.25	1.5	1	mg/L	J-

Notes: See Table 2 for definitions of Qualifiers and Reason Codes.

SDG Sample delivery group
DL Detection limit
LOQ Limit of quantitation
REG Normal sample sent to the lab
mg/L Milligrams per liter
µg/L Micrograms per liter

Table 4
Detected Equipment Blank Results and Associated Sample Results
ST105, December 2013 - May 2014
Kirtland Air Force Base

Field Sample ID	Sample Type	Sample Date	Method	Analyte	Result	DL	LOQ	Units	Qualifier	Reason Code
ST105-80001	**ER**	**3/26/2014**	**SW6010C**	**Iron**	**162**	**7.5**	**25**	**ug/L**		
ST105-30013	REG	3/26/2014	SW6010C	Iron	ND	7.5	25	ug/L		
ST105-30018	REG	3/26/2014	SW6010C	Iron	ND	7.5	25	ug/L	U	K1
ST105-80001	**ER**	**3/26/2014**	**SW6010C**	**Manganese**	**3.26**	**0.75**	**3.75**	**ug/L**	**J**	**Tr**
ST105-30013	REG	3/26/2014	SW6010C	Manganese	ND	0.75	3.75	ug/L		
ST105-30018	REG	3/26/2014	SW6010C	Manganese	ND	0.75	3.75	ug/L		
ST105-80001	**ER**	**3/26/2014**	**SW6010C**	**Sodium**	**2450**	**250**	**1250**	**ug/L**		
ST105-30013	REG	3/26/2014	SW6010C	Sodium	29200	250	1250	ug/L		
ST105-30018	REG	3/26/2014	SW6010C	Sodium	27100	250	1250	ug/L		
ST105-80002	**ER**	**3/27/2014**	**SW6010C**	**Iron**	**28.2**	**7.5**	**25**	**ug/L**		
ST105-30008	REG	3/27/2014	SW6010C	Iron	ND	7.5	25	ug/L	U	K1
ST105-30038	REG	3/27/2014	SW6010C	Iron	ND	7.5	25	ug/L		
ST105-80002	**ER**	**3/27/2014**	**SW6010C**	**Manganese**	**1.38**	**0.75**	**3.75**	**ug/L**	**J**	**Tr**
ST105-30008	REG	3/27/2014	SW6010C	Manganese	ND	0.75	3.75	ug/L		
ST105-30038	REG	3/27/2014	SW6010C	Manganese	ND	0.75	3.75	ug/L	U	K1
ST105-80002	**ER**	**3/27/2014**	**SW6010C**	**Sodium**	**2360**	**250**	**1250**	**ug/L**		
ST105-30008	REG	3/27/2014	SW6010C	Sodium	26400	250	1250	ug/L		
ST105-30038	REG	3/27/2014	SW6010C	Sodium	52300	250	1250	ug/L		
ST105-80003	**ER**	**4/14/2014**	**SW6010C**	**Iron**	**24.3**	**7.5**	**25**	**ug/L**	**J**	**Tr**
ST105-30035	REG	4/14/2014	SW6010C	Iron	ND	7.5	25	ug/L	U	K1
ST105-80003	**ER**	**4/14/2014**	**SW6010C**	**Sodium**	**585**	**250**	**1250**	**ug/L**	**J**	**Tr**
ST105-30035	REG	4/14/2014	SW6010C	Sodium	44000	250	1250	ug/L		

Notes: See Table 2 for definitions of Qualifiers and Reason Codes.

DL Detection limit
LOQ Limit of quantitation
ND Not detected at the LOQ
REG Normal sample sent to the lab
ER Equipment rinse blank
µg/L Micrograms per liter

Table 5
Field Duplicate Summary
ST105, December 2013 - May 2014
Kirtland Air Force Base

Well ID/Method	Analyte	Sample Date	Normal Sample Result	Normal Sample LOQ	Duplicate Sample Result	Duplicate Sample LOQ	Units	RPD %	RPD Goal of 35% Met
KAFB0510									
E351.2	Total Kjeldahl Nitrogen	3/20/2014	ND	1.5	ND	1.5	mg/L	--	--
E353.2	Nitrate/Nitrite as N		3.54	1.5	3.6	1.5	mg/L	1.7	Yes
SM2320B	Total Alkalinity (as CaCO3)		112	1	110	1	mg/L	1.8	Yes
SM2540C	Total Dissolved Solids		199	20	160	20	mg/L	21.7	Yes
SM4500NH3BG	Ammonia as N		ND	0.3	0.4	0.3	mg/L	--	--
SW6010C	Calcium		40800	1250	42500	1250	ug/L	4.1	Yes
	Iron		ND	25	ND	25	ug/L	--	--
	Magnesium		5460	1250	5610	1250	ug/L	2.7	Yes
	Manganese		ND	3.75	ND	3.75	ug/L	--	--
	Potassium		2000	1250	2070	1250	ug/L	3.4	Yes
	Sodium		20900	1250	21000	1250	ug/L	0.5	Yes
SW9056A	Bromide		0.129 J	0.63	0.131 J	0.63	mg/L	--	--
	Chloride		19	0.5	19	0.5	mg/L	0	Yes
	Fluoride		0.451	0.25	0.447	0.25	mg/L	0.9	Yes
	Sulfate		26.3	2.5	26.4	2.5	mg/L	0.4	Yes
SW9060A	Total Organic Carbon (Max)		ND	3	ND	3	mg/L	--	--
	Total Organic Carbon (Min)		ND	3	ND	3	mg/L	--	--
	Total Organic Carbon		ND	3	ND	3	mg/L	--	--
SW9060A-DISS	Dissolved Organic Carbon		ND	3	ND	3	mg/L	--	--
	Dissolved Organic Carbon (Max)		ND	3	ND	3	mg/L	--	--
	Dissolved Organic Carbon (Min)		ND	3	ND	3	mg/L	--	--
KAFB0619									
E351.2	Total Kjeldahl Nitrogen	4/1/2014	ND	1.5	ND	1.5	mg/L	--	--
E353.2	Nitrate/Nitrite as N		9.4	1.5	9.39	1.5	mg/L	0.1	Yes
SM2320B	Total Alkalinity (as CaCO3)		162	1	159	1	mg/L	1.9	Yes
SM2540C	Total Dissolved Solids		288	20	292	20	mg/L	1.4	Yes
SM4500NH3BG	Ammonia as N		ND	0.3	ND	0.3	mg/L	--	--
SW6010C	Calcium		41900	1250	41600	1250	ug/L	0.7	Yes
	Iron		450	25	424	25	ug/L	5.9	Yes
	Magnesium		8330	1250	8220	1250	ug/L	1.3	Yes
	Manganese		7.19	3.75	6.68	3.75	ug/L	7.4	Yes
	Potassium		3670	1250	3650	1250	ug/L	0.5	Yes
	Sodium		40400	1250	39700	1250	ug/L	1.7	Yes
SW9056A	Bromide		0.119 J	0.63	0.119 J	0.63	mg/L	--	--
	Chloride		11.9	0.5	12.8	0.5	mg/L	7.3	Yes
	Fluoride		0.469	0.25	0.465	0.25	mg/L	0.9	Yes
	Sulfate		20.3	2.5	21.1	2.5	mg/L	3.9	Yes
SW9060A	Total Organic Carbon (Max)		ND	3	ND	3	mg/L	--	--
	Total Organic Carbon (Min)		ND	3	ND	3	mg/L	--	--
	Total Organic Carbon		ND	3	ND	3	mg/L	--	--
SW9060A-DISS	Dissolved Organic Carbon		ND	3	ND	3	mg/L	--	--
	Dissolved Organic Carbon (Max)		1.25 J	3	ND	3	mg/L	--	--

Table 5
Field Duplicate Summary
ST105, December 2013 - May 2014
Kirtland Air Force Base

Well ID/Method	Analyte	Sample Date	Normal Sample Result	Normal Sample LOQ	Duplicate Sample Result	Duplicate Sample LOQ	Units	RPD %	RPD Goal of 35% Met
KAFB0619									
SW9060A-DISS	Dissolved Organic Carbon (Min)	4/1/2014	ND	3	ND	3	mg/L	--	--
TJA-4									
E351.2	Total Kjeldahl Nitrogen	4/30/2014	ND	4	ND	4	mg/L	--	--
E353.2	Nitrate/Nitrite as N		30.8	7.5	30.6	7.5	mg/L	0.7	Yes
SM2320B	Total Alkalinity (as CaCO3)		124	1	133	1	mg/L	7	Yes
SM2540C	Total Dissolved Solids		344	20	369	20	mg/L	7	Yes
SM4500NH3BG	Ammonia as N		ND	0.3	0.252 J	0.3	mg/L	--	--
SW6010C	Calcium		64300	1250	65800	1250	ug/L	2.3	Yes
	Iron		ND	25	ND	25	ug/L	--	--
	Magnesium		12800	1250	13000	1250	ug/L	1.6	Yes
	Manganese		ND	3.75	ND	3.75	ug/L	--	--
	Potassium		3150	1250	3220	1250	ug/L	2.2	Yes
	Sodium		24500	1250	25000	1250	ug/L	2	Yes
SW9056A	Bromide		0.239 J	0.25	0.245 J	0.25	mg/L	--	--
	Chloride		21.7	0.5	22.1	0.5	mg/L	1.8	Yes
	Fluoride		0.34	0.25	0.346	0.25	mg/L	1.7	Yes
	Sulfate		16.6	2.5	16.9	2.5	mg/L	1.8	Yes
SW9060A	Total Organic Carbon (Max)		ND	3	1.34 J	3	mg/L	--	--
	Total Organic Carbon (Min)		ND	3	ND	3	mg/L	--	--
	Total Organic Carbon		ND	3	ND	3	mg/L	--	--
SW9060A-DISS	Dissolved Organic Carbon		ND	3	ND	3	mg/L	--	--
	Dissolved Organic Carbon (Max)		ND	3	ND	3	mg/L	--	--
	Dissolved Organic Carbon (Min)		ND	3	ND	3	mg/L	--	--

Notes:

LOQ	Limit of quantitation
RPD	Relative percent difference
ND	Not detected at the LOQ
mg/L	Milligrams per liter
µg/L	Micrograms per liter

RPD formula = 100 x |Primary Result - Duplicate Result| / ((Primary Result + Duplicate Result) / 2)

-- Not applicable since RPD not calculated. RPD is only calculated when the analyte is detected at or above the LOQ in both the normal sample and the duplicate sample.

Table 6
Technical Completeness
ST105, December 2013 - May 2014
Kirtland Air Force Base

Analytical Method	Number of Analytes	Number of Samples	Number of Results	Number of Useable Results	Technical Completeness [Goal = 95 percent] (percent)
Environmental Samples					
E351.2	1	37	37	37	100.0
E353.2	1	37	37	37	100.0
SM2320B	1	37	37	37	100.0
SM2540C	1	37	37	37	100.0
SM4500NH3BG	1	37	37	37	100.0
SW6010C	6	37	222	222	100.0
SW9056A	4	37	148	148	100.0
SW9060A	3	37	111	111	100.0
SW9060A-DISS	3	37	111	111	100.0
Field QC Samples					
SW6010C	6	3	18	18	100.0