



**TETRA TECH**

June 2, 2008

Mr. Roy Crossland  
START Project Officer  
U.S. Environmental Protection Agency, Region 7  
901 North 5<sup>th</sup> Street  
Kansas City, Kansas 66101

**Subject:       Quality Assurance Project Plan**  
**AgForce Site, Herington, Kansas**  
**U.S. EPA Region 7 START 3, Contract No. EP-S7-06-01, Task Order No. 0105**  
**Task Monitor: Randy Schademann, On-Scene Coordinator**

Dear Mr. Crossland:

Tetra Tech EM Inc. is submitting the attached Quality Assurance Project Plan for a removal action at the AgForce site in Herington, Kansas. If you have any questions or comments, please contact the project manager at (816) 412-1937.

Sincerely,

Jeff Pritchard, CHMM  
START Project Manager

Ted Faile, PG, CHMM  
START Program Manager

Enclosures

**QUALITY ASSURANCE PROJECT PLAN  
FOR A REMOVAL ACTION AT THE AGFORCE SITE  
HERINGTON, KANSAS**

**Superfund Technical Assessment and Response Team (START)  
Contract No. EP-S7-06-01, Task Order 0105**

Prepared For:

U.S. Environmental Protection Agency  
Region 7  
Superfund Division  
901 N. 5<sup>th</sup> Street  
Kansas City, Kansas 66101

June 2, 2008

Prepared By:

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415 Oak Street  
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**Region 7 Superfund Program**  
**Addendum to the QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2007)**  
**for the AgForce Site**

**Project Information:**

<b>Project Name:</b> AgForce		<b>City:</b> Herington	<b>State:</b> KS
<b>EPA Project Manager:</b> Randy Schademmann		<b>START Project Manager:</b> Jeff Pritchard	
<b>Approved By:</b> <i>[Signature]</i>	<b>Date:</b> 6/2/08	<b>Prepared For:</b> EPA Region 7 Superfund Division	
<b>Title:</b> START Project Manager	<b>Date:</b>		
<b>Approved By:</b> <i>[Signature]</i>	<b>Date:</b> 6/2/08	<b>Prepared By:</b> Jeff Pritchard <b>Date:</b> June 2008	
<b>Title:</b> START Program Manager	<b>Date:</b>		
<b>Approved By:</b> <i>[Signature]</i>	<b>Date:</b> 6/2/08	<b>Tetra Tech START Project Number:</b> X9004.08.0105.000	
<b>Title:</b> START QA Manager	<b>Date:</b>		
<b>Approved By:</b>	<b>Date:</b>		
<b>Title:</b> EPA Project Manager	<b>Date:</b>		
<b>Approved By:</b>	<b>Date:</b>		
<b>Title:</b> EPA Region 7 QA Coordinator	<b>Date:</b>		

**1.0 Project Management:**

**1.1 Distribution List**

EPA—Region 7: Randy Schademmann, EPA Project Manager  
Diane Harris, EPA Region 7 QA Coordinator

Tetra Tech START: Jeff Pritchard, Project Manager  
Kathy Homer, QA Manager

**1.2 Project/Task Organization**

Randy Schademmann, of the EPA Region 7 Superfund Division, will serve as the EPA project manager for the activities described in this QAPP. Jeff Pritchard, of Seagull Environmental Technologies, Inc., a subcontractor to Tetra Tech EM, Inc., (Tetra Tech), will serve as the START project manager for field activities.

**1.3 Problem Definition/Background:**

Description: This site-specific Quality Assurance Project Plan form is prepared as an addendum to the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007), and contains site-specific data quality objectives for the sampling activities described herein.

☒ Description attached.

☐ Description in referenced report: \_\_\_\_\_

Title

Date

**1.4 Project/Task Description:**

☐ CERCLA PA

☐ CERCLA SI

☐ Brownfields Assessment

☒ Removal Action

☐ Other (description attached):

☐ Pre-CERCLIS Screening

☐ Removal Site Evaluation

Other Description:

Schedule: Field work is scheduled to be conducted in June 2008, and is anticipated to last about 1 week.

☐ Description in referenced report: \_\_\_\_\_

Title

Date

**1.5 Quality Objectives and Criteria for Measurement Data:**

a. Accuracy:

☒ Identified in attached table.

b. Precision:

☒ Identified in attached table.

c. Representativeness:

☒ Identified in attached table.

d. Completeness\*:

☒ Identified in attached table.

e. Comparability:

☒ Identified in attached table.

Other Description:

\*A completeness goal of 100 percent has been established for this project. However, if the completeness goal is not met, EPA may still be able to make decisions based on any or all of the remaining validated data. No "critical samples" have been identified for this project.

**1.6 Special Training/Certification Requirements:**

☒ OSHA 1910

☐ Special Equipment/Instrument Operator (describe below):

☐ Other (describe below):

**1.7 Documentation and Records:**

☒ Field Sheets

☒ Daily Log

☐ Trip Report

☒ Area Maps

☒ Video

☒ Chain of Custody

☒ Health and Safety Plan

☒ Letter Report

☒ Photos

☒ Sample documentation will follow EPA Region 7 SOP 2420.05.

☒ Other: Analytical information will be handled according to procedures identified in Table 2.

<b>Region 7 Superfund Program</b> <b>Addendum to the QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2007)</b> <b>for the AgForce Site</b>			
<b>2.0 Measurement and Data Acquisition:</b>			
<b>2.1 Sampling Process Design:</b>			
<input type="checkbox"/> Random Sampling <input type="checkbox"/> Search Sampling <input type="checkbox"/> Screening w/o/ Definitive Confirmation <input type="checkbox"/> Sample Map Attached	<input type="checkbox"/> Transect Sampling <input type="checkbox"/> Systematic Grid	<input checked="" type="checkbox"/> Biased/Judgmental Sampling <input type="checkbox"/> Systematic Random Sampling <input type="checkbox"/> Screening w/ Definitive Confirmation	<input type="checkbox"/> Stratified Random Sampling <input checked="" type="checkbox"/> Definitive Sampling
<input checked="" type="checkbox"/> Other (Provide rationale behind each sample): See Attachment A for additional sampling information.			
<p>The proposed sampling scheme will be judgmental, in accordance with the <i>Guidance for Performing Site Inspections Under CERCLA</i>, OSWER Directive #9345.1-05, September 1992, and <i>Removal Program Representative Sampling Guidance, Volume 1: Soil</i>, OSWER Directive 9360.4-10, November 1991. Judgmental sampling is the subjective (biased) selection of sampling locations based on historical information, visual inspection, and the best professional judgment of the sampler(s). See Appendices 1 and 2 for additional site-specific information and a site location map.</p> <p>Samples will be collected from aboveground storage tanks (AST), drums, and other various-sized containers. The exact number of containers and samples to be collected will be determined during reconnaissance activities performed in the field. The proposed number of samples is a balance between cost and coverage, and represents a reasonable attempt to meet the study objectives while staying within the budget constraints of a typical removal action of this type.</p>			
<b>Sample Summary Location</b>	<b>Matrix</b>	<b># of Samples*</b>	<b>Analysis</b>
Tanks, drums, tubs, etc.	Liquid Waste	50	Field screening for hazardous characteristics (corrosivity, flammability, oxidizing potential, reactivity with air and water, miscibility, sulfides, and cyanides)
Tanks, drums, tubs, etc.	Liquid Waste	10	Pesticides, herbicides, nitrogen (nitrate + nitrite), ammonia, and phosphorus
<small>*NOTE: Number is approximate and may change significantly depending on site conditions. Background/QC samples are not included with these totals. See Table 1 for a complete sample summary.</small>			
<b>2.2 Sample Methods Requirements:</b>			
<b>Matrix</b>	<b>Sampling Method</b>		<b>EPA Region 7 SOP(s) or other Method</b>
Liquid Waste	Samples of liquids will be collected from tanks, drums, tubs, and other containers, using disposable glass thieving rods/Coliwasas or by other suitable means. The samples will be field screened on site to determine hazardous characteristics. In addition, selected samples will be submitted for laboratory analysis to assist with disposal profiling.		SOPs 4231.2009 & 4231.2010
<input type="checkbox"/> Other Description:			
<b>2.3 Sample Handling and Custody Requirements:</b>			
<input checked="" type="checkbox"/> Samples will be packaged and preserved in accordance with procedures defined in Region 7 EPA SOP 2420.06. <input checked="" type="checkbox"/> COC will be maintained as directed by Region 7 EPA SOP 2420.04. <input checked="" type="checkbox"/> Samples will be accepted according to Region 7 EPA SOP 2420.01. <input type="checkbox"/> Other (Describe):			
<b>2.4 Analytical Methods Requirements:</b>			
<input checked="" type="checkbox"/> Identified in attached table. <input checked="" type="checkbox"/> Rationale: The requested analyses have been selected based on historic information about the area and program experience with similar types of sites. <input type="checkbox"/> Other (Describe):			
<b>2.5 Quality Control Requirements:</b>			
<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Identified in attached table. <input checked="" type="checkbox"/> In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007). <input checked="" type="checkbox"/> Field QC Samples: For this investigation, no field QC samples will be collected. <input type="checkbox"/> Other (Describe):			
<b>2.6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements:</b>			
<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007). <input checked="" type="checkbox"/> Testing, inspection, and maintenance of analytical instrumentation will proceed in accordance with the previously referenced SOPs and/or manufacturers' recommendations. Testing, inspection, and maintenance of field instruments (HazMat ID, GPS units, etc.) will proceed in accordance with manufacturers' recommendations.			

**Region 7 Superfund Program**  
**Addendum to the QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2007)**  
**for the AgForce Site**

**2.7 Instrument Calibration and Frequency:**

- ☐ Not Applicable  
☒ In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).  
☒ Calibration of laboratory equipment will be performed as described in the previously referenced SOPs and/or manufacturers' recommendations.  
☐ Other (Describe):

**2.8 Inspection/Acceptance Requirements for Supplies and Consumables:**

- ☐ Not Applicable  
☒ In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).  
☒ All sample containers will meet EPA criteria for cleaning procedures for low-level chemical analysis. Sample containers will have Level II certifications provided by the manufacturer in accordance with pre-cleaning criteria established by EPA in *Specifications and Guidelines for Obtaining Contaminant-Free Containers*.  
☐ Other (Describe):

**2.9 Data Acquisition Requirements:**

- ☐ Not Applicable  
☒ In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).  
☒ Previous data or information pertaining to the area (including other analytical data, reports, photos, maps, etc. that are referenced in this QAPP) has been compiled by EPA and/or its contractor(s) from other sources. Some of that data have not been verified by EPA and/or its contractor(s); however, that unverified information will not be used for decision-making purposes by EPA without verification by an independent professional qualified to verify such data or information.  
☐ Other (Describe):

**2.10 Data Management:**

- ☒ All laboratory data acquired will be managed in accordance with Region 7 EPA SOP 2410.01.  
☐ Other (Describe):

**3.0 Assessment and Oversight:**

**3.1 Assessment and Response Actions:**

- ☒ Peer Review                      ☒ Management Review                      ☐ Field Audit                      ☐ Lab Audit  
☒ Assessment and response actions pertaining to analytical phases of the project are addressed in Region 7 EPA SOPs 2430.05 and 2430.12.  
☐ Other (Describe):

**3.1A Corrective Action:**

- ☒ Corrective actions will be at the discretion of the EPA project manager whenever problems appear that could adversely affect data quality and/or resulting decisions affecting future response actions pertaining to the area.  
☐ Other (Describe):

**3.2 Reports to Management:**

- ☐ Audit Report                      ☐ Data Validation Report                      ☐ Project Status Report                      ☐ None Required  
☒ A letter report describing the sampling techniques, locations, problems encountered (with resolutions to those problems), and interpretation of analytical results will be prepared by START and submitted to the EPA.  
☒ Reports will be prepared in accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).  
☐ Other (Describe):

**Region 7 Superfund Program**  
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**for the AgForce Site**

**4.0 Data Validation and Usability:**

**4.1 Data Review, Validation, and Verification Requirements:**

- ☐ Identified in attached table.
- ☒ Data review and verification will be performed in accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- ☒ Data review and verification will be performed by a qualified analyst and the laboratory's section manager as described in Region 7 EPA SOPs 2430.05 and 2430.12.
- ☐ Other (Describe):

**4.2 Validation and Verification Methods:**

- ☐ Identified in attached table.
- ☒ The data will be validated in accordance with Region 7 EPA SOPs 2430.05 and 2430.12.
- ☒ The EPA project manager will inspect the data to provide a final review. The EPA project manager will review the data, if applicable, for laboratory spikes and duplicates, laboratory blanks, and field blanks and duplicates to ensure the data are acceptable. The EPA project manager will also compare the sample descriptions with the field sheets for consistency, and will ensure appropriate documentation of any anomalies in the data.
- ☐ Other (Describe):

**4.3 Reconciliation with User Requirements:**

- ☐ Identified in attached table.
- ☒ If data quality indicators do not meet the project's requirements as outlined in this QAPP, the data may be discarded and re-sampling or re-analysis of the subject samples may be required by the EPA project manager.
- ☐ Other (Describe):

<b>Region 7 Superfund Program</b> <b>Addendum to the QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2007)</b> <b>for the AgForce Site</b>							
Table 1: Sample Summary							
<b>Project Name:</b> AgForce				<b>Location:</b> Herington, Kansas; See Appendix B, Figure 1			
<b>START Project Manager:</b> Jeff Pritchard				<b>Activity/ASR #:</b> To be determined			<b>Date:</b> June 2008
No. of Samples	Matrix	Location	Purpose	Depth or other Descriptor	Requested Analysis	Sampling Methods	Analytical Method
50	Liquid Waste	Tanks, drums, tubs, etc.	To identify hazardous characteristics of chemical wastes for disposal purposes	NA	Field screening for corrosivity, flammability, oxidizing potential, reactivity, miscibility, sulfides, and cyanides	EPA SOPs 4231.2009 & 4231.2010	HAZCAT Kit KT1206 and Hazmat ID
10	Liquid Waste	Tanks, drums, tubs, etc.	To identify chemicals for disposal purposes	NA	Pesticides, herbicides, nitrogen (nitrate + nitrite), ammonia, and phosphorus	EPA SOPs 4231.2009 & 4231.2010	EPA SOPs 3240.02, 3240.06, 3250.04, 3133.02, 3133.01, & 3133.04

Region 7 Superfund Program Addendum to the QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2007) for the AgForce Site								
Table 2: Data Quality Objective Summary								
Project Name: AgForce				Location: Herington, Kansas; See Appendix B, Figure 1				
START Project Manager: Jeff Pritchard				Activity/ASR #: To be determined				Date: June 2008
Analysis	Analytical Method	Data Quality Measurements					Sample Handling Procedures	Data Management Procedures
		Accuracy	Precision	Representativeness	Completeness	Comparability		
LIQUID WASTE								
Field screening parameters	see Table 1	per analytical method	per analytical method	judgmental sampling, based on professional judgment of the sampling team	100%; no critical samples have been defined	Standardized procedures for sample collection and analysis will be used.	See Section 2.3 of QAPP form.	See Section 2.10 of QAPP form.
Pesticides, herbicides, nitrogen (nitrate + nitrite), ammonia, and phosphorus	see Table 1	per analytical method	per analytical method	judgmental sampling, based on professional judgment of the sampling team	100%; no critical samples have been defined	Standardized procedures for sample collection and analysis will be used.	See Section 2.3 of QAPP form.	See Section 2.10 of QAPP form.



## **APPENDIX A**

### **SITE-SPECIFIC INFORMATION FOR THE AGFORCE SITE**

## INTRODUCTION

The Tetra Tech EM Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) has been tasked by the U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division to conduct removal support activities at the AgForce site, located at 1401 Helen Street in Herington, Kansas (see Appendix B, Figure 1). The removal action is being conducted to address liquid wastes associated with a former agricultural chemical facility that have been abandoned at the site. The site most recently operated under the names AgForce Chemical, LLC and Northeast Ag Chemical, LLC.; however, those businesses went bankrupt in 2007.

In March 2008, the Kansas Department of Health and Environment (KDHE) completed a Preliminary Removal Site Evaluation (PRE) to assess a release or threat of release of hazardous substances, pollutants, or contaminants at the site. The KDHE PRE documented that many of the abandoned storage containers (aboveground storage tanks [AST], poly tank, and drums) at the facility still contained chemicals. The facility's secondary containment area (for ASTs) held a large volume of liquid that had been released from the various containers located inside the containment area. Analysis of samples collected during the PRE indicated hazardous substances (primarily herbicides) in the released liquid. Based on PRE conclusions, KDHE referred the site to EPA to consider a Superfund removal action to address the hazardous waste remaining at the site.

The purpose of this removal action is to characterize and properly dispose of all chemical materials abandoned at the site. Removal support activities will include field screening and sampling chemical wastes to determine appropriate disposal options. This quality assurance project plan (QAPP) identifies site-specific features and addresses elements of the sampling strategy and analytical methods proposed for this removal action. An assessment of the data acquired during this project will proceed according to the National Oil and Hazardous Pollution Contingency Plan (NCP), 40 *Code of Federal Regulations* (CFR) 300.415(b)(2), to determine the appropriate course of removal activities.

## SITE DESCRIPTION

The AgForce site is located at 1401 Helen Street near the northeast city limits of Herington, Kansas. The coordinates for the approximate center of the site are 38.6772 degrees north latitude and 96.92650 degrees west longitude. The site consists of an agricultural tank battery in a concrete containment area, an area of abandoned drums, and several burn/debris disposal areas (see Appendix B, Figure 2). Many of the containers abandoned at the site still contain various amounts of liquids. Two large (500,000-gallon) ASTs are located at the site; however, those ASTs were found empty during the KDHE PRE activities. A

large volume of discolored liquid was located inside the concrete containment area, with approximately 2 feet of freeboard at the time of those site activities. KDHE collected three samples of the discolored liquid (from within the containment area), and analysis of the samples indicated elevated concentrations of herbicides and ammonia. The herbicides atrazine (33,500 micrograms per liter [ $\mu\text{g/L}$ ]), metolachor (442,000  $\mu\text{g/L}$ ), and 2,4-dichlorophenoxyacetic acid (2,4-D) (6,160  $\mu\text{g/L}$ ) were detected at high concentrations in the samples. In addition, ammonia was detected at concentrations up to 2,610 milligrams per liter (mg/L) in these samples.

Currently, no fence is around the facility, and security at the site is limited. Based on the previous KDHE site activities, various abandoned agricultural chemicals remain on the property, presenting a threat of release to the environment.

## **SAMPLING STRATEGY AND METHODOLOGY**

In support of EPA, under this task order, START will conduct sampling of containerized chemical materials. The proposed sampling scheme for this project is judgmental (based on the best professional judgment of the sampling team), in accordance with the *Removal Program Representative Sampling Guidance, Volume 1: Soil*, Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-10, November 1991.

Sampling procedures will follow standard operating procedures (SOP) outlined in the QAPP and will involve collection of liquid chemical wastes from various containers on the property. Sampling of other environmental media (soil, surface water, etc.) is beyond the scope of this removal action. Descriptions of the sampling strategy and procedures are presented below.

**Chemical Waste Sampling** – START will collect representative samples of liquid chemical wastes from various containers (tanks, drums, tubs, etc.) for field screening purposes. Each of these samples will be collected using a disposable thieving rod, ColiWasa, or other appropriate disposable sampling device. These samples will be transferred to glass containers (40-milliliter vials, 4-ounce jars, etc.), from which aliquots will be obtained for on-site field screening conducted by START. The field screening will include tests for corrosivity, flammability, oxidizing potential, reactivity with air and water, miscibility, sulfides, and cyanides. Instrumentation with chemical-specific libraries (e.g., HazMat ID) may also be used if determined appropriate by EPA. In addition, approximately 10 samples will be collected from compatible wastestreams (determined by field screening results) for laboratory analysis to assist with disposal profiling, following the same sampling protocol as stated above. The samples will be transferred

directly into five 8-ounce jars for analysis of herbicides, pesticides, nitrogen (nitrate + nitrite), ammonia, and phosphorus.

Pertinent data, including analyses to be performed and exact sample locations, will be recorded on field sheets for each sample. All samples will be stored in coolers maintained at or below 4 degrees Celsius (°C) pending submittal to the EPA Region 7 laboratory in Kansas City, Kansas. Following receipt of sample results and a review of field screening data, chemical materials at the site will be segregated and/or bulked for proper disposal.

## **QUALITY CONTROL**

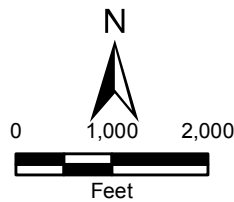
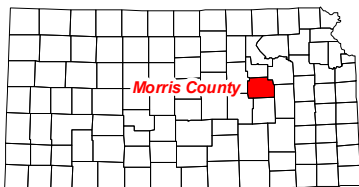
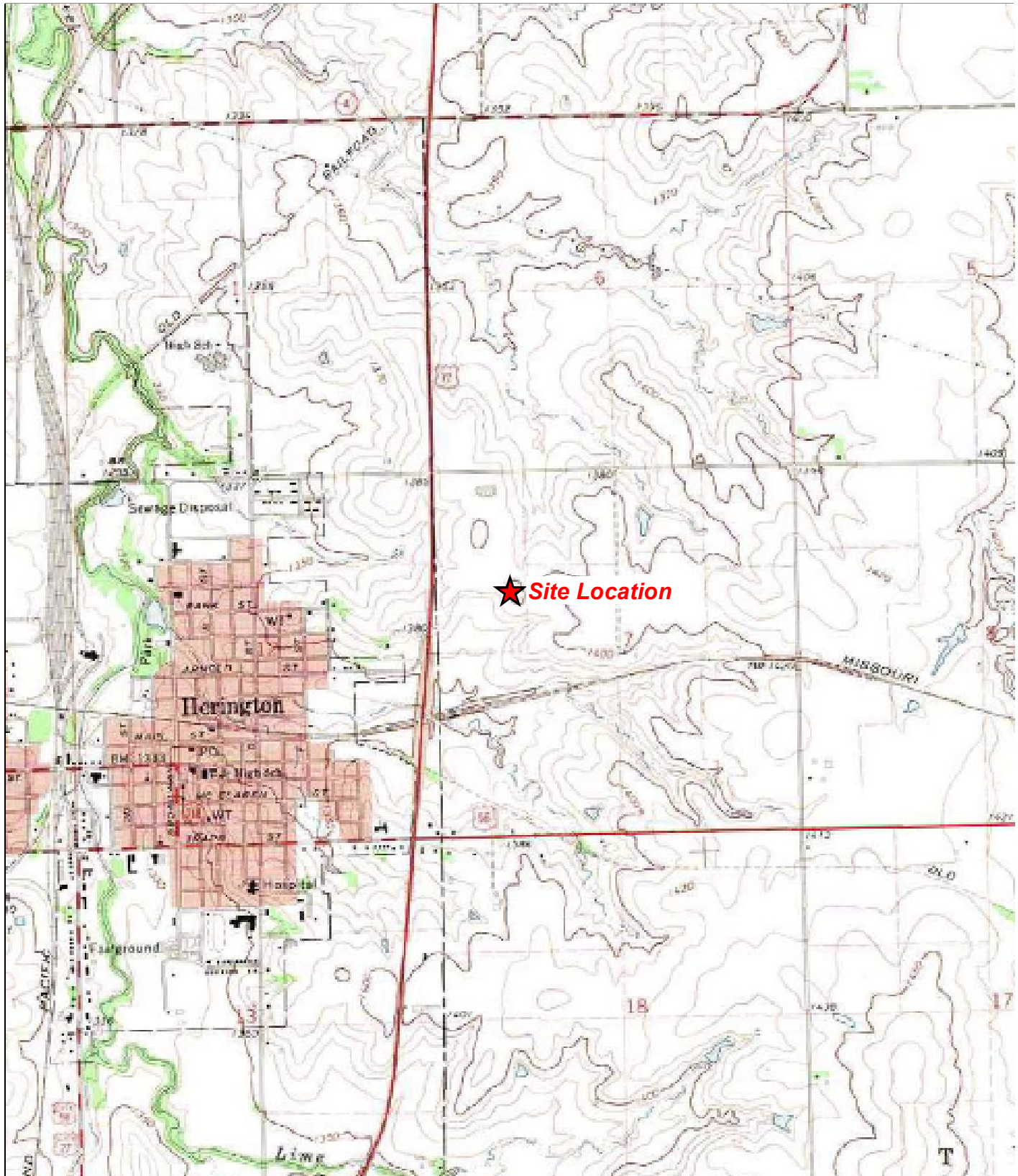
Because determination of total method precision is not required for this project, no field duplicates will be collected. Also, because disposable sampling supplies will be used, no equipment rinsate is required. Analytical accuracy and precision will be determined by analysis of laboratory-prepared spikes and duplicates.

## **ANALYTICAL METHODS**

All samples will be submitted to the EPA Region 7 laboratory in Kansas City, Kansas. Samples will be analyzed for herbicides, pesticides, nitrogen (nitrate + nitrite), ammonia, and phosphorus. All samples will be analyzed according to SOPs and methods referenced on the QAPP form. Standard detection limits for those methods will be adequate for this project. Appropriate containers and physical/chemical preservation techniques will be employed during the field activities to help verify that representative analytical results are obtained. An Analytical Services Request form will be completed by the START Project Manager and submitted to the EPA Region 7 laboratory.

## **APPENDIX B**

### **FIGURES**



AgForce Site  
1401 Helen Street  
Herington, Kansas

**Figure 1**  
Site Location Map

**TETRA TECH EM INC.**

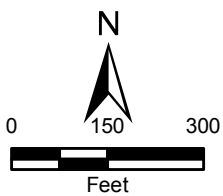
Source: Herington, KS USGS 7.5 Minute Topo Quad, 1972

Date: 05/23/08

Drawn By: Bill Spiking

Project No: 19004.L08.0105.000

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Source: DigitalGlobe Aerial Imagery, 2006

AgForce Site  
1401 Helen Street  
Herington, Kansas

**Figure 2**  
Site Aerial



Date: 05/23/08

Drawn By: Bill Spiking

Project No: 19004.L08.0105.000

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