

**QUALITY ASSURANCE PROJECT PLAN  
FOR A TARGETED BROWNFIELDS ASSESSMENT  
JAYLYNN LLC PROPERTY, LINCOLN, NEBRASKA**

**MINI-SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM (MINI-START)**

**CONTRACT NO. EP-S7-09-01, TASK ORDER NO. 0013**

Prepared For:

U.S. Environmental Protection Agency  
Region 7  
Superfund Division  
901 N. 5<sup>th</sup> Street  
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December 18, 2009

Prepared By:

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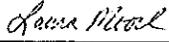
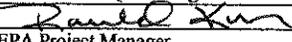
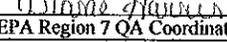
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**APPENDICES**

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- A SITE-SPECIFIC INFORMATION FOR THE JAYLYNN LLC PROPERTY
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| Region 7 Superfund Program<br>Addendum to the Generic QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2007)<br>for the JayLynn LLC Property  |   |   |  |
|---|---|---|--|
| Project Information:  |   |   |  |
| Project Name: JayLynn LLC Property  |   | City: Lincoln                               | State: NE  |
| EPA Project Manager: Ron King   |   | Project Manager: Jeff Pritchard             |  |
| Approved By:   | Title: Mini-START Project Manager                                 | Date: 12-18-09                              | Prepared For: EPA Region 7 Superfund Division          |
| Approved By:   | Title: Mini-START Program Manager                                 | Date: 12-18-09                              |  |
| Approved By:   | Title: Mini-START QA Manager                                      | Date: 12-18-09                              | Prepared By: Jeff Pritchard<br>Date: December 18, 2009 |
| Approved By:   | Title: EPA Project Manager  | Date: 12-18-09                              | Project Number: EPS70901.0013                          |
| Approved By:   | Title: EPA Region 7 QA Coordinator                                | Date: 11/04/2010                            |  |
| 1.0 Project Management:   |   |   |  |
| <b>1.1 Distribution List</b>  |   |   |  |
| EPA—Region 7: Ron King, Project Manager<br>Diane Harris, QA Coordinator   |   | Mini-START: Jeff Pritchard, Project Manager |  |
| <b>1.2 Project/Task Organization</b>  |   |   |  |
| Ron King, of the EPA Region 7 Superfund Division, will serve as the EPA project manager for the activities described in this QAPP. Jeff Pritchard, with Seagull Environmental Technologies, Inc., will serve as the Mini-START project manager for field activities.  |   |   |  |
| <b>1.3 Problem Definition/Background:</b>   |   |   |  |
| 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.  |   |   |  |
| <input checked="" type="checkbox"/> Description attached.<br><input type="checkbox"/> Description in referenced report: _____ Title _____ Date _____  |   |   |  |
| <b>1.4 Project/Task Description:</b>  |   |   |  |
| <input type="checkbox"/> CERCLA PA <input type="checkbox"/> CERCLA SI <input checked="" type="checkbox"/> Brownfields Assessment <input type="checkbox"/> Removal Action<br><input type="checkbox"/> Other (description attached): <input type="checkbox"/> Pre-CERCLIS Screening <input type="checkbox"/> Removal Site Evaluation  |   |   |  |
| Other Description:  |   |   |  |
| Schedule: Field work is scheduled to begin in January 2010 and is anticipated to last three to four days.   |   |   |  |
| <input type="checkbox"/> Description in referenced report: _____ Title _____ Date _____   |   |   |  |
| <b>1.5 Quality Objectives and Criteria for Measurement Data:</b>  |   |   |  |
| a. Accuracy:  | <input checked="" type="checkbox"/> Identified in attached table. |   |  |
| b. Precision:   | <input checked="" type="checkbox"/> Identified in attached table. |   |  |
| c. Representativeness:  | <input checked="" type="checkbox"/> Identified in attached table. |   |  |
| d. Completeness*:   | <input checked="" type="checkbox"/> Identified in attached table. |   |  |
| e. Comparability:   | <input checked="" type="checkbox"/> 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.  |   |   |  |
| <b>1.6 Special Training/Certification Requirements:</b>   |   |   |  |
| <input checked="" type="checkbox"/> OSHA 1910 <input checked="" type="checkbox"/> Special Equipment/Instrument Operator (describe below): _____ <input type="checkbox"/> Other (describe below): _____  |   |   |  |
| Sampling personnel will be experienced in Geoprobe® operation and in the collection of soil and groundwater samples. Geoprobe® operation will be conducted under the supervision of a licensed Nebraska Well Driller. Bulk material samples will be collected by a certified asbestos inspector. Field personnel will be experienced with operation of x-ray fluorescence (XRF) spectrometer instruments. |   |   |  |

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**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.

**2.0 Measurement and Data Acquisition:**

**2.1 Sampling Process Design:**

- Random Sampling                       Transect Sampling                       Biased/Judgmental Sampling                       Stratified Random Sampling  
 Search Sampling                       Systematic Grid                       Systematic Random Sampling                       Definitive Sampling  
 Screening w/ Definitive Confirmation                       Screening w/ Definitive Confirmation  
 Sample Map Attached
- Other (Provide rationale behind each sample): See Appendix A for additional sampling information.

The proposed sampling scheme will be judgmental, in accordance with the *Guidance for Performing Site Inspections Under CERCLA*, OSWER Directive #9345.1-05, September 1992, and *Removal Program Representative Sampling Guidance, Volume 1: Soil*, 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). Soil samples will be collected for field screening and definitive laboratory analysis (for a portion of screened samples). Groundwater samples will be collected for definitive laboratory analysis only. In addition, all structural samples will also be collected or laboratory analysis only. See Appendices A and B for additional site-specific information and figures.

A summary of the anticipated maximum number of samples to be collected for laboratory confirmation analysis is provided in Table 1. The proposed number of samples represents a balance between cost and coverage, and a reasonable attempt to meet the study objectives while staying within the budget constraints of a typical site investigation.

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 assessment of this type.

| Sample Summary Location           | Matrix               | # of Samples* | Analysis   |
|-----------------------------------|----------------------|---------------|--|
| On-site Geoprobe® locations       | Soil                 | 10            | VOCs, TPH-DRO (OA-2), SVOCs, and RCRA metals (including mercury)                     |
| On-site Geoprobe® temporary wells | Water                | 5             | VOCs, TPH-DRO (OA-2), SVOCs, and total and dissolved RCRA metals (including mercury) |
| On-site building                  | Structural materials | 75            | Asbestos by Polarized Light Microscopy   |

\*NOTE: Number is approximate and may change depending on site conditions. Background/QC samples are not included with these totals. See Table 1 for a complete sample summary.

**2.2 Sample Methods Requirements:**

| Matrix               | Sampling Method  | SOP(s) or other Method(s)                                    |
|----------------------|--|--|
| Soil                 | Subsurface soil samples will be collected with a Geoprobe® direct-push apparatus, using Macro-Core samplers fitted with polyvinyl chloride (PVC) liners.   | SOPs 4230.07, 4230.03, & 4231.2012, 4231.1707, & Method 5035 |
| Water                | Groundwater samples will be collected from Geoprobe® temporary monitoring wells. These groundwater samples will be collected through Geoprobe® rods using polyethylene tubing and a check valve.                                 | SOPs 4230.07 & 4230.15                                       |
| Structural Materials | Samples will be collected using techniques appropriate for the suspect asbestos-containing building materials (ACBM). A coring device will be used for interior and exterior wall locations, ceiling, floor, and pipe materials. | ASTM E 2356-04   |

Other Description..

**2.3 Sample Handling and Custody Requirements:**

- Samples will be packaged and preserved in accordance with procedures defined in Region 7 EPA SOP 2420.06.  
 COC will be maintained as directed by Region 7 EPA SOP 2420.04.  
 Samples will be accepted according to Region 7 EPA SOP 2420.01.  
 Other (Describe): Samples will be accepted in accordance with procedures established by a contracted laboratory.

**2.4 Analytical Methods Requirements:**

- Identified in attached table.  
 Rationale: The requested analyses have been selected based on historic information about the area and program experience with similar types of sites.  
 Other (Describe):

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**2.5 Quality Control Requirements:**

- Not Applicable
- Identified in attached table.
- In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- Field QC Samples: For this investigation, field QC samples will include one equipment rinsate blank (water), one water trip blank, and one water field blank. The equipment rinsate will evaluate the effectiveness of decontamination procedures for Geoprobe™ sampling equipment. The trip blank will be used to assess transportation-related contamination. The field blank will be collected to evaluate contamination of sampling containers and/or preservatives and to assess contamination potentially introduced during the sampling and laboratory procedure(s). All QC samples will be submitted for the analyses listed in the attached tables. Evaluation of the blank samples depends on the levels of contamination found in environmental samples to determine whether the environmental samples are representative. Analytical results of the blank samples will be evaluated on a qualitative basis by the EPA project manager and EPA contractor(s) to determine a general indication of field-introduced and/or lab-introduced contamination. Because it is not necessary for total method precision to be evaluated for this project, no field duplicates will be collected.
- Other (Describe):

**2.6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements:**

- Not Applicable
- In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- Testing, inspection, and maintenance of field instruments (GPS unit, photoionization detector [PID], XRF, etc.) will be performed in accordance with manufacturers' recommendations. Testing, inspection, and maintenance of laboratory equipment will be performed in accordance with the previously referenced SOPs and/or manufacturers' recommendations.

**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): Calibration of field equipment (PID, XRF, etc.) will be performed as described in the previously referenced SOPs and/or manufacturers' recommendations.

**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): Laboratory data will be managed in accordance with procedures established by the Seagull-contracted laboratory.

**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 2430.06 and 2430.12.
- Other (Describe): Assessment and response actions pertaining to analytical phases of the project will be in accordance with procedures established by the Seagull-contracted laboratory.

**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):

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**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 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):

**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 2430.06 and 2430.12.
- Other (Describe): Data review and verification will be performed by qualified Seagull personnel.

**4.2 Validation and Verification Methods:**

- Identified in attached table.
- The data will be validated in accordance with Region 7 EPA SOPs 2430.06 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): Data validation will be performed by qualified Seagull personnel.

**4.3 Reconciliation with User Requirements:**

- 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):

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**Table 1: Sample Summary**

| <b>Project Name: JayLynn LLC Property</b> |                      |                                   |  | <b>Location: Lincoln, Nebraska; See Appendix B, Figures 1 and 2</b>                         |   |  |   |
|---|----------------------|-----------------------------------|--|---|---|--|---|
| <b>Project Manager: Jeff Pritchard</b>    |                      |                                   |  | <b>Activity/ASR #: To be determined</b>   |   |  | <b>Date:<br/>December<br/>18, 2009</b>                    |
| <b>No. of<br/>Samples</b>                 | <b>Matrix</b>        | <b>Location</b>                   | <b>Purpose</b>   | <b>Depth or<br/>other<br/>Descriptor</b>  | <b>Requested Analysis</b>   | <b>Sampling<br/>Methods</b>  | <b>Analytical<br/>Method</b>                              |
| 10  | Soil                 | On-site locations                 | To assess potential soil contamination from site operations and historical activities in the site area | 2-foot interval (between 0 and 20 feet below ground surface [bgs]) based on field screening | VOCs, TPH-DRO, SVOCs, & RCRA metals (including mercury)                     | EPA SOPs 4230.07, 4230.03, 4231.2012, 4231.1707, & EPA Method 5035 | EPA Methods 5035, 8260, 8270, 6010, and 7471; Method OA-2 |
| 5   | Water                | On-site Geoprobe® temporary wells | To assess potential groundwater contamination from site operations                                     | Directly below the water table  | VOCs, TPH-DRO, SVOCs, & total and dissolved RCRA metals (including mercury) | EPA SOPs 4230.07 & 4230.15   | EPA Methods 8260, 8270, 6020, and 7470; Method OA-2       |
| 75  | Structural Materials | On-site building                  | To quantify any asbestos in building materials   | Bulk material from floors, walls, ceilings, and pipes                                       | Asbestos by PLM   | ASTM E 2356-04   | NIOSH Method 9002   |
| <b>QC Samples</b>                         |                      |                                   |  |   |   |  |   |
| 1   | Water                | Trip blank                        | To assess transportation-related contamination   | NA  | VOCs  | NA   | EPA Method 8260   |
| 1   | Water                | Equipment Rinsate                 | To evaluate effectiveness of decontamination procedures for Geoprobe® sampling equipment               | NA  | VOCs, TPH-DRO, SVOCs, & RCRA metals (including mercury)                     | NA   | EPA Methods 8260, 8270, 6020, and 7470; Method OA-2       |
| 1   | Water                | Field blank                       | To assess field/laboratory-related contamination   | NA  | VOCs, TPH-DRO, SVOCs, & RCRA metals (including mercury)                     | NA   | EPA Methods 8260, 8270, 6020, and 7470; Method OA-2       |

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**Table 2: Data Quality Objective Summary**

| <b>Project Name:</b> JayLynn LLC Property  |                   | <b>Location:</b> Lincoln, Nebraska; See Appendix B, Figures 1 and 2 |                       |  |   |  |                                |                                |
|--|-------------------|---|-----------------------|--|---|--|--------------------------------|--------------------------------|
| <b>Project Manager:</b> Jeff Pritchard     |                   | <b>Activity/ASR #:</b> To be determined                             |                       |  |   |  | <b>Date:</b> December 18, 2009 |                                |
| Analysis                                   | Analytical Method | Data Quality Measurements   |                       |  |   |  | Sample Handling Procedures     | Data Management Procedures     |
|  |                   | Accuracy  | Precision             | Representativeness   | Completeness                                    | Comparability  |                                |                                |
| <b>SOIL</b>                                |                   |   |                       |  |   |  |                                |                                |
| VOCs, TPH-DRO (OA-2), SVOCs, & RCRA metals | 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. |
| <b>GROUNDWATER</b>                         |                   |   |                       |  |   |  |                                |                                |
| VOCs, TPH-DRO (OA-2), SVOCs, & RCRA metals | 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. |
| <b>STRUCTURAL MATERIALS</b>                |                   |   |                       |  |   |  |                                |                                |
| Asbestos by PLM                            | 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 identified. | 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 JAYLYNN LLC PROPERTY**

## **INTRODUCTION**

Seagull Environmental Technologies, Inc. (Seagull) has been tasked by the U.S. Environmental Protection Agency (EPA), under the Mini-Superfund Technical Assessment and Response Team (Mini-START) contract, to conduct a Phase II Targeted Brownfields Assessment (TBA) at the JayLynn Limited Liability Company (LLC) Property in Lincoln, Nebraska. The purpose of the investigation is to determine whether past site operations have resulted in releases of hazardous contaminants to the soil and groundwater; and, for redevelopment purposes, to evaluate whether asbestos-containing building materials (ACBM) are present. This Quality Assurance Project Plan (QAPP) identifies site-specific features and addresses elements of the sampling strategy and analytical methods proposed for this investigation.

## **SITE DESCRIPTION/BACKGROUND**

The site is located at 660 N Street, Lincoln, Lancaster County, Nebraska. The site is in Section 26, Township 10 North, and Range 6 East (Appendix B, Figure 1). The coordinates for the approximate center of the site are 40.813030 degrees north latitude and 96.712369 degrees west longitude. The site comprises approximately 1.09 acres and is currently a lumberyard with an office building and three storage buildings. The site is bounded to the north by West O Street (also identified as South 66<sup>th</sup> Street), to the east by Burlington Northern Santa Fe (BNSF) railroad tracks and South 7<sup>th</sup> Street beyond, to the south by N Street, and to the west by South 6<sup>th</sup> Street. Across South 6<sup>th</sup> Street to the west is Alter Scrap (scrap yard), as well as BNSF and Union Pacific (UP) railroad tracks.

A review of historical records indicated that in 1886, a manufactured gas plant (or commonly referred to as a Former Manufactured Gas Plant [FMGP]) was in operation at the site. A Sanborn<sup>®</sup> map from 1886 shows a gas holder and purifier located in the southwest portion of the subject property. A Sanborn<sup>®</sup> map from 1891 identifies the site as the Lincoln Gas Works (FMGP) and shows a gasometer located at the site. In addition, historical records indicate that since 1928 the site has been occupied by a lumberyard. Currently, a mix of industrial, commercial, and retail properties are in the surrounding area.

The Cretaceous Dakota sandstones and shales typically form the uppermost bedrock in this portion of Lancaster County, with underlying Pennsylvanian-age limestones forming the uppermost bedrock along the Salt Creek Valley. Unconsolidated Quaternary-age deposits overlie bedrock throughout the County. Light gray silts of the late-Nebraskan Fullerton formation outcrop at various locations west and north of Lincoln. Kansan glacial till is present at the surface in western, northern, and central Lancaster County. Previous studies within the site area indicate that groundwater is expected to be encountered between 6

feet to 20 feet below ground surface (bgs). In addition, groundwater flow is anticipated to be southwest-west, towards Salt Creek.

## **PREVIOUS INVESTIGATIONS**

HWS Consulting Group (HWS) conducted Phase I and Phase II Environmental Site Assessments (ESA) for the subject property in August 2007 and May 2008, respectively. The Phase I ESA identified the presence of the FMGP at the site as a recognized environmental condition (REC) and recommended that a Phase II be completed to determine if contamination was present as a result of the FMGP. The Phase II findings are summarized below:

- Soil and groundwater samples were collected primarily from the center and southwest portion of the site. Laboratory results determined soil and groundwater has been impacted by volatile organic compounds (VOC) and polynuclear aromatic hydrocarbons (PAH). VOCs and PAHs are contaminants commonly associated with FMGPs.
- Ten borings were installed at the site for collection of soil and groundwater samples. Several PAHs, including naphthalene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene, were detected in both soil and groundwater samples that exceeded their established health-based benchmarks (Nebraska Department of Environmental Quality Remediation Goals and EPA Region 9 Preliminary Remediation Goals). In addition, VOCs commonly associated with FMGP sites were also detected. Detected VOCs included benzene, ethylbenzene, toluene, xylenes, and naphthalene. The highest contaminant concentration detected in the soil was naphthalene (in SB-1 from 12 to 13 feet bgs) at 88.9 milligrams per kilogram (mg/kg). The highest contaminant concentration detected in the groundwater was naphthalene (in SB-10 [sampling depth not identified]) at 3,110 micrograms per liter ( $\mu\text{g/L}$ ). It should be noted that arsenic was also detected in shallow soils (1 to 3 feet bgs) at concentrations that exceeded health-based benchmarks.

Based on these findings, HWS concluded that soils and groundwater at the site have been impacted due to historic FMGP operations. The source of arsenic was unknown (HWS 2008).

## **SAMPLING STRATEGY AND METHODOLOGY**

The sampling activities are tentatively scheduled to be conducted in January 2010, and will require approximately 3 to 4 days to complete. Anticipation is that two Seagull employees will be required to perform the activities described in this QAPP. When applicable, the standard operating procedures (SOP) and chain-of-custody (COC) procedures referenced in the QAPP will be followed throughout the sampling activities to verify the integrity of the samples from the time of collection until submittal to the laboratory for analysis. Disposal of investigation-derived wastes (IDW) and procedures for equipment and personal decontamination will be addressed in a site-specific health and safety plan prepared by Seagull. Most IDW is expected to consist of disposable sampling supplies (gloves, paper towels, tubing,

etc.) that will be disposed of off site as uncontaminated solid waste. Descriptions of the sampling strategy and procedures are presented below.

### **Soil Sampling**

Soil samples will be collected from 10 locations at the site (Appendix B, Figure 2). At each of those locations, continuous soil cores will be collected with a Geoprobe® direct-push apparatus. Geoprobe® sample locations were selected based on current and historical site activities, future redevelopment plans, and to cover the geographic extent of the site.

At each borehole, a Geoprobe® Macro-Core soil sampler fitted with a disposable polyvinyl chloride (PVC) sleeve will be advanced to 20 feet below ground surface (bgs), groundwater, or refusal, whichever is encountered first. The soil core from each 4-foot interval will be retrieved and screened for VOCs with a photoionization detector (PID), and for metals (lead in particular) with an x-ray fluorescence (XRF) spectrometer. Samples for laboratory analysis will be collected (from each borehole) from the 2-foot interval that yields the highest PID and/or XRF result, or from the top 2-foot section of the soil core if no field screening results above background levels are recorded.

Following retrieval and field screening of the soil cores, soil samples for analysis of VOCs will be collected following EPA Method 5035. The remaining soil from the selected 2-foot interval of each boring will be removed from the PVC sleeve and placed in a disposable aluminum pie pan for homogenization prior to transfer to 8-ounce jars for the remaining analyses (semi-volatile organic compounds [SVOC], [including PAHs], TPH-diesel range organics [DRO], and metals regulated under the Resource Conservation and Recovery Act [RCRA], including mercury). Following sample collection, the open boreholes will be abandoned in accordance with state regulations.

Pertinent data, including analyses to be performed and sample locations will be recorded on field sheets for each sample. All soil samples will be stored in coolers maintained at or below 4 degrees Celsius (°C) pending submittal to the Seagull-contracted laboratory.

### **Groundwater Sampling**

Seagull personnel will attempt to collect five groundwater samples at the site. The five proposed groundwater samples will be from temporary wells installed with a Geoprobe® direct-push apparatus. At each temporary Geoprobe® well location, a Geoprobe® Screen Point 15 groundwater sampling apparatus will be driven below the water table, and a disposable 4-foot-long PVC screen will be deployed. Either a peristaltic pump or check valve with disposable polyethylene tubing will be used for collection of

groundwater samples from the temporary Geoprobe® wells. Immediately after sampling, the temporary wells will be removed, and the open boreholes will be abandoned in accordance with state regulations.

A field sheet will be completed for each groundwater sample. The field sheets will include the exact sample locations and analyses to be performed. Groundwater samples will be submitted for analysis of VOCs, TPH-DRO, SVOCs, and total and dissolved RCRA metals, including mercury. Water samples submitted for VOCs will be collected in four 40-milliliter vials preserved with hydrochloric acid (HCl) to a pH<2. Water samples that will be analyzed for SVOCs and TPH-DRO will be collected in 128-ounce glass jugs (two per sample). Water samples that will be analyzed for metals will be collected in two 1-liter cubitainers (one each for total and dissolved metals) and preserved with nitric acid (HNO<sub>3</sub>) to a pH<2. Dissolved metals samples will be filtered in the field. All water samples will be stored in coolers maintained at or below 4 °C until they are submitted to the Seagull-contracted laboratory.

### **Suspected Asbestos-Containing Building Materials Inventory and Sampling**

Bulk samples (anticipated 75 samples) will be collected from building materials suspected to contain asbestos. Sample locations will be based on a site inspection conducted by Seagull. Bulk samples will be collected with sampling devices appropriate for the suspect building materials. A coring device will be used to collect interior and exterior wall, floor, pipe-wrap, ceiling tile, and roof samples. The samples will be placed into whirl-pak bags. Non-dedicated sampling equipment will be decontaminated between sample locations. All samples will be stored in coolers, pending submittal to a Seagull-contracted laboratory for analysis for asbestos by polarized light microscopy (PLM).

### **QUALITY CONTROL**

To evaluate sample quality control (QC), one equipment rinsate blank, one field blank (water), and one trip blank (water), will be collected, as specified in Section 2.5 of the QAPP form. Because it is not necessary for total method precision to be evaluated for this project, no field duplicates will be collected.

### **ANALYTICAL METHODS**

All samples will be submitted to a Seagull-contracted laboratory. Mini-START will competitively bid the analytical work from its pool of pre-qualified laboratories. Soil and groundwater samples will be analyzed according to EPA SW-846 Methods for VOCs (Method 8260), TPH-DRO (Iowa Method OA-2 [this is not a SW-846 Method]), SVOCs (Method 8270), and RCRA metals (including mercury) (Methods 6010 and 7471 for soil and Methods 6020 and 7470 for water). Groundwater samples will be analyzed for both total and dissolved metals. Samples of bulk structural materials will be analyzed for asbestos by

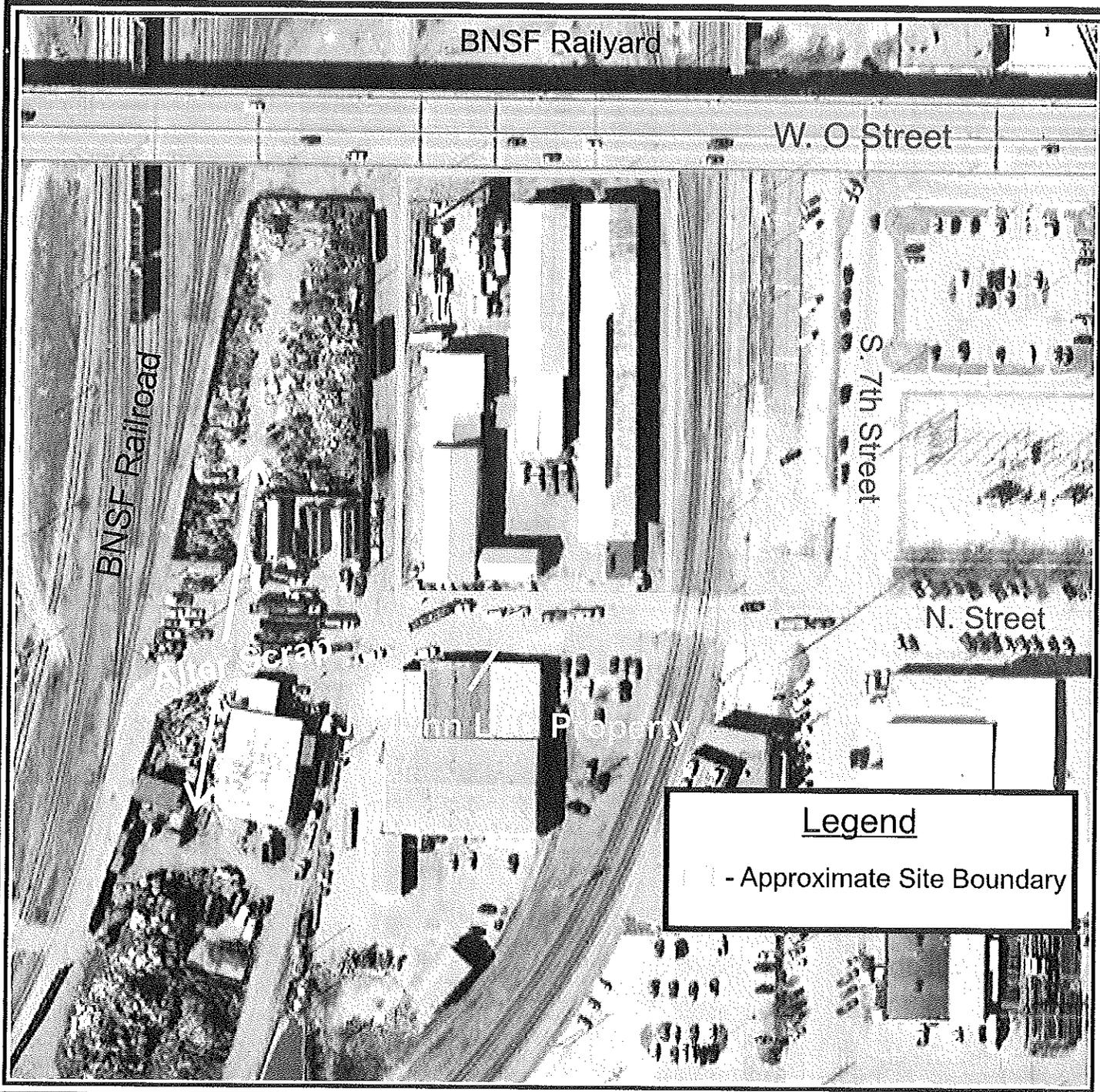
National Institute for Occupational Safety and Health (NIOSH) Method 9002, which is analysis by PLM. All samples will be analyzed according to SOPs and methods referenced on the QAPP form. Standard detection limits for those methods will be adequate for this project. Appropriate containers and physical/chemical preservation techniques will be employed during the field activities to help verify that representative analytical results are obtained. Submittal of samples to the laboratory is expected in January 2010.

## **REFERENCES**

HWS Consulting Group. 2008. Preliminary Phase II Environmental Site Assessment- JayLynn Property.  
May 7.

**APPENDIX B**

**FIGURES**

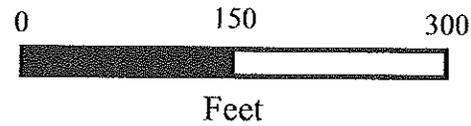
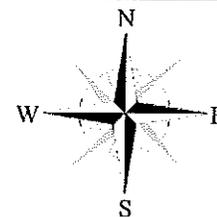


Jaylynn LLC Property, Lincoln, Nebraska

**Figure 1**  
Site Aerial



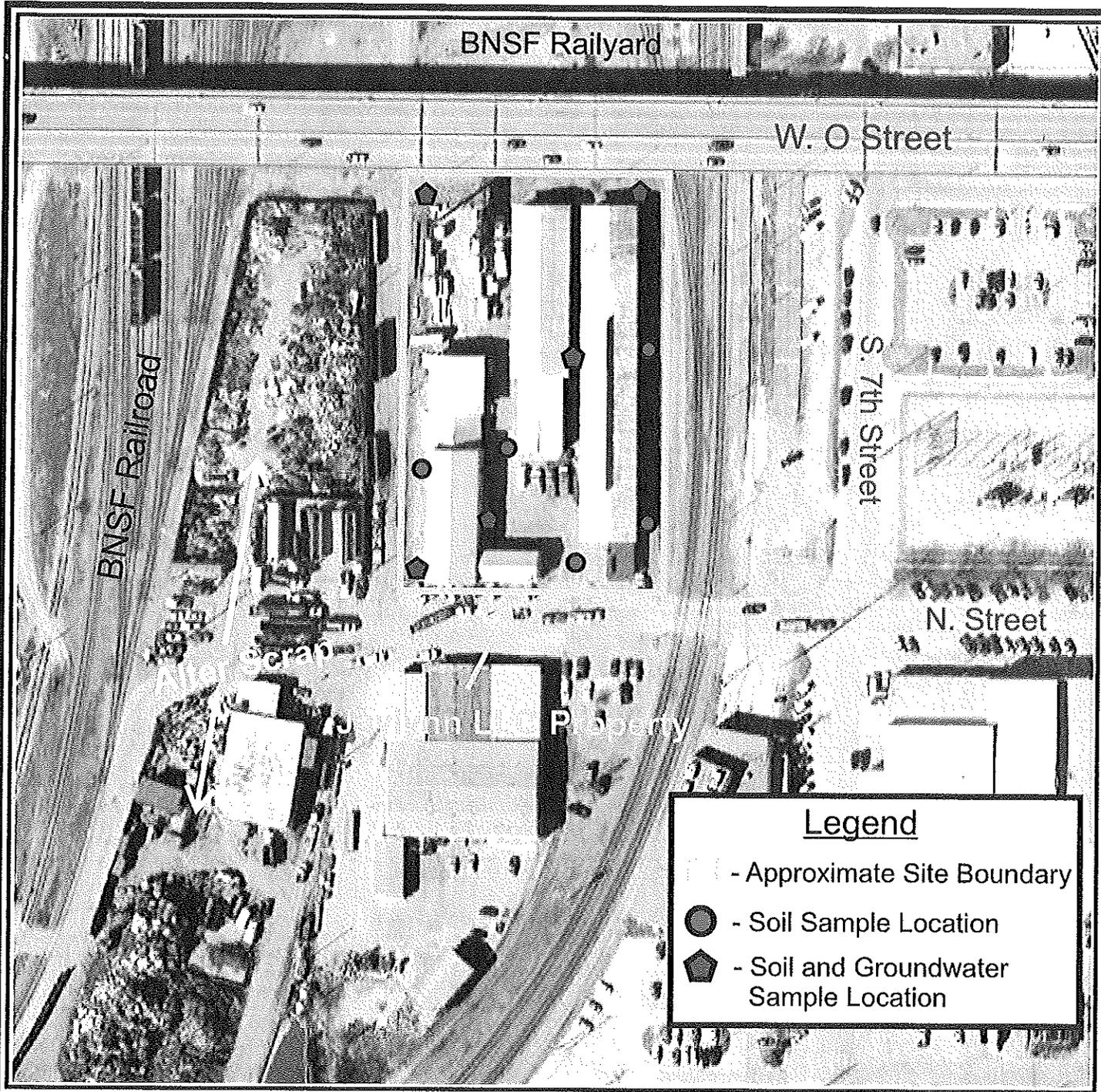
Seagull Environmental Technologies, Inc.



Date: December, 2009

Project No: EPS70901.0013

Source: USDA Farm Service Agency, Google Earth  
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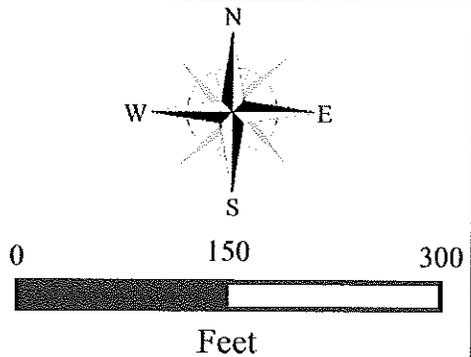


Jaylynn LLC Property, Lincoln, Nebraska

**Figure 2**  
Proposed Sample Location Map



Seagull Environmental Technologies, Inc.



Date: December, 2009

Project No: EPS70901.0013

Source: USDA Farm Service Agency, Google Earth  
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