

**Project Name** | New Pioneer Gun Club Environmental Site Assessment **Date** | 9.15.2025

**To / Contact info** | Jake Ried, Neighborhood Builders, LLC, 6205 Mills Civic Pkwy, West Des Moines, Iowa 50266

**Cc / Contact info** |

**From / Contact info** | Gregory Eckley, Environmental Scientist, Emmons & Olivier Resources, Inc., 1002 Quartz Avenue, Boone, Iowa 50036

**Regarding** | Discussion and Recommendations for ESA test results

Neighborhood Builders, LLC is proposing to purchase the three parcels of property currently owned by the New Pioneer Gun Club to be converted into a neighborhood-scale housing development. The existing site is suspected to contain amounts of lead contamination that may exceed regulatory limits. Neighborhood Builders, LLC contracted with Emmons & Olivier Resources, Inc. (EOR) to conduct a Phase I and limited Phase II Environmental Site Assessment to investigate the extent of lead contamination onsite and provide recommendations for site recovery.

The study area is situated in southeastern Dallas County within the incorporated municipal area of the Waukee, Iowa. The project is located south of Westown Pkwy and west of Timberline Middle School. It is within the southern ½ of Section 5, Township 78 North, Range 26 West (Boone Township – Figure 2).

The limited Phase II Site Investigation consisted of four parts:

- a. Two temporary monitoring wells drilled to collect groundwater samples to be analyzed for dissolved lead per EPA Method 6020A.
- b. Eleven soil samples collected – 3 from the primary shooting station and one each from remote shooting stations.
- c. Analysis of soil samples by Microbac Laboratories, Inc. for lead using EPA Method 6010.
- d. Review and interpretation of results.

## 1. METHODS & RESULTS

### 1.1. Soil Sample Analysis

The 11 soil samples were collected from a depth of approximately 3.5 to 4 inches below the ground surface from locations adjacent to shooting stations (Table 1, Figure 3). Soil samples were collected manually using a stainless-steel trowel and placed into laboratory-supplied sample jars. To minimize the potential for cross-contamination between sampling locations, the trowel was decontaminated between each sample using a rinse of distilled water followed by a wash with a water and trisodium phosphate (TSP) solution. All samples were properly labeled and transported under chain of custody to the analytical laboratory.

**Table 1. Soil Analysis Results**

Sample Location	Lead Concentration (parts per million = ppm)
<b>1</b>	<b>70,200</b>
<b>2</b>	<b>1,280</b>
<b>3</b>	124
<b>4</b>	210
<b>5</b>	104
<b>6</b>	50.2
<b>7</b>	45.9
<b>8</b>	274
<b>9</b>	<b>807</b>
<b>10</b>	376
<b>11</b>	243

\* Concentrations and sample locations in red exceed the regulatory threshold.

In accordance with the Iowa Administrative Code r. 567-137.5, the regulatory threshold for lead in residential soils is defined as 400 parts per million (ppm) of total lead in bare soil. Exceedance of this threshold invokes applicable regulatory requirements. Lead concentrations at Sample Locations 1, 2, and 9 exceeded this regulatory threshold.

## 1.2. Groundwater Sample Analysis

The two groundwater samples were collected from locations along the groundwater flow path that follows the topographic contours leading to the residential areas west of the site (Table 2, Figure 3). The test borings were drilled on August 19, 2025 using all-terrain drilling equipment and four-inch diameter continuous flight augers. Test boring TB-1 was drilled at the northwest corner of the clay target trap field along the south side of the tributary drainage channel and TB-2 was drilled on the west side of the property near the southwest corner. Test boring TB-1 was drilled to a depth of 28 feet and TB-2 was drilled to a depth of 24 feet.

**Table 2. Soil Analysis Results**

Test Well	Depth to Groundwater (ft)	Dissolved Lead (Lb)
<b>TB-1</b>	24.9	0.6
<b>TB-2</b>	17.7	<0.5

Dissolved Lead was detected at a concentration of 0.6 µg/L in groundwater from test boring TB-1. The Dissolved Lead level was less than the method reporting \*(<0.5 µg/L) in test boring TB-2. These concentrations are less than the Iowa Land Recycling Program statewide standard of 15 µg/L.

## 2. CONCLUSIONS AND RECOMMENDATIONS

The Phase I and limited Phase II Environmental Site Assessment conducted by Emmons & Olivier Resources, Inc. (EOR) identified the presence of lead contamination in soil at concentrations exceeding the applicable residential regulatory standard established in the Iowa Administrative Code r. 567-137.5 (400 ppm total lead in bare soil). Three of the eleven soil samples collected from shooting station areas exceeded this threshold, with the highest concentration (70,200 ppm) detected at Sample Location 1. These findings confirm that historical operation of the New Pioneer Gun Club has resulted in localized lead impacts to site soils, particularly in proximity to active shooting stations.



Groundwater sampling results indicated dissolved lead concentrations below the Iowa Land Recycling Program (LRP) statewide standard of 15 µg/L. The detection of 0.6 µg/L at Test Boring TB-1 and non-detect (<0.5 µg/L) at TB-2 suggest that, at present, groundwater at the site is not adversely impacted by lead migration from surface soils.

These findings indicate that soils in areas of historical shooting activity present a potential health and regulatory concern for residential development. To address this, Neighborhood Builders, LLC should:

- 1) Conduct additional soil sampling to define the full extent of lead contamination.
- 2) Coordinate with the Iowa Department of Natural Resources and consider enrolling the property in the **Iowa Land Recycling Program** to establish a formal cleanup plan and secure liability protection.
- 3) Evaluate and implement remedial measures to achieve compliance with residential soil standards. Options may include:
  - a) Excavation and off-site disposal of contaminated soil at a licensed landfill, such as stripping and relocating the top 6 inches of soil from impacted areas.
  - b) On-site soil management with engineered barriers or clean soil replacement.
- 4) Explore funding assistance through the **Iowa Brownfields Program**, which may provide grants to offset assessment and remediation costs.

With proper investigation, remediation, and regulatory coordination, the site can be prepared for safe residential redevelopment while minimizing financial and legal risk. Upon completion of the recommended soil remediation and verification sampling, Neighborhood Builders, LLC can submit documentation to the Iowa Department of Natural Resources under the Iowa Land Recycling Program. If the DNR determines that the site meets residential soil standards, they will issue a **No Further Action (NFA) letter**. This letter provides regulatory confirmation that the property has been remediated, removes state-level liability for the addressed contamination, and allows the project to proceed with residential development with confidence that the site is safe for future occupants.



 Study Area  
 Project Parcels



**Neighborhood Builders, LLC**

New Pioneer Gun Club  
Environmental Site Assessment

Site Map



Figure 1. Site Map.

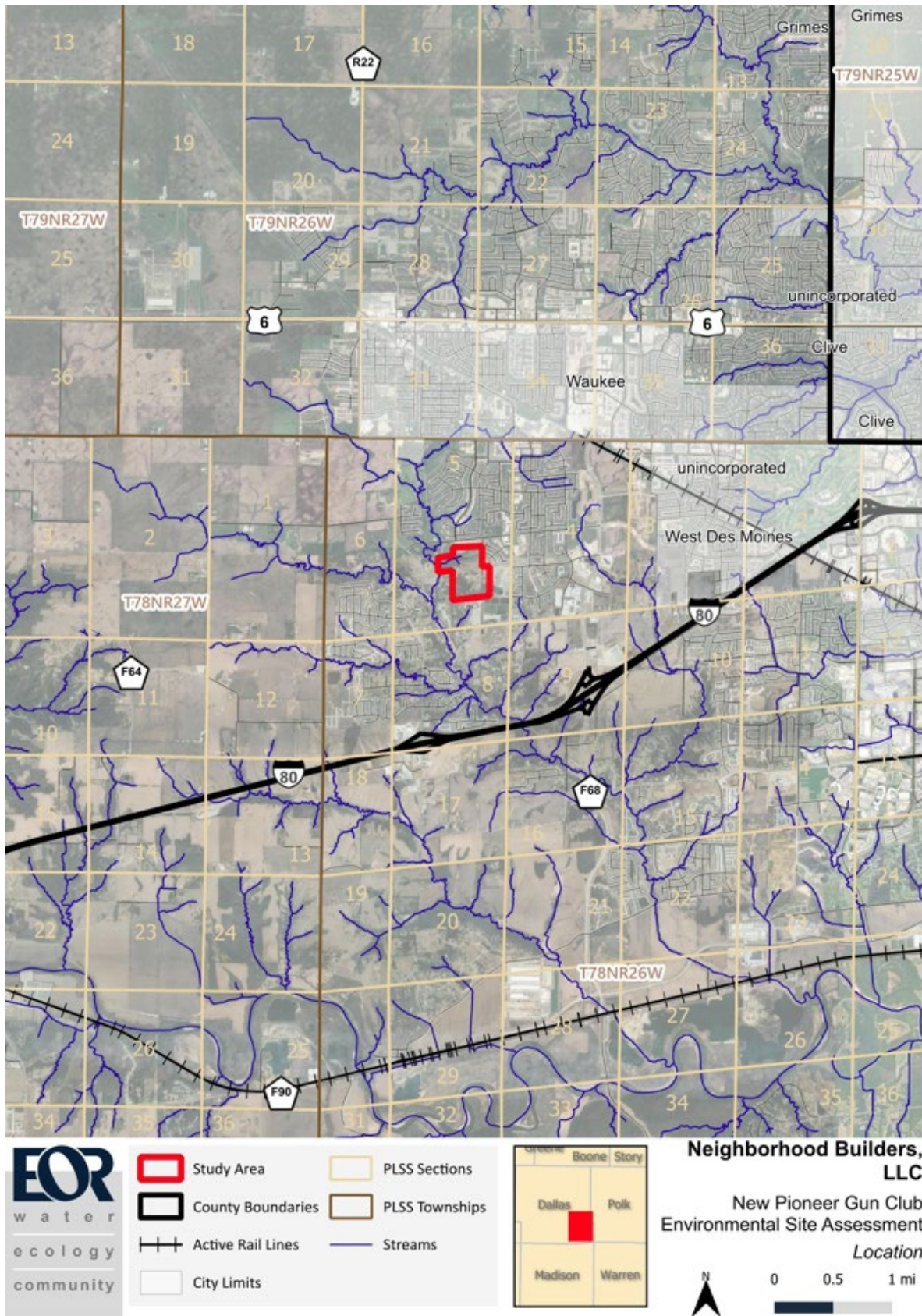


Figure 2. Location.

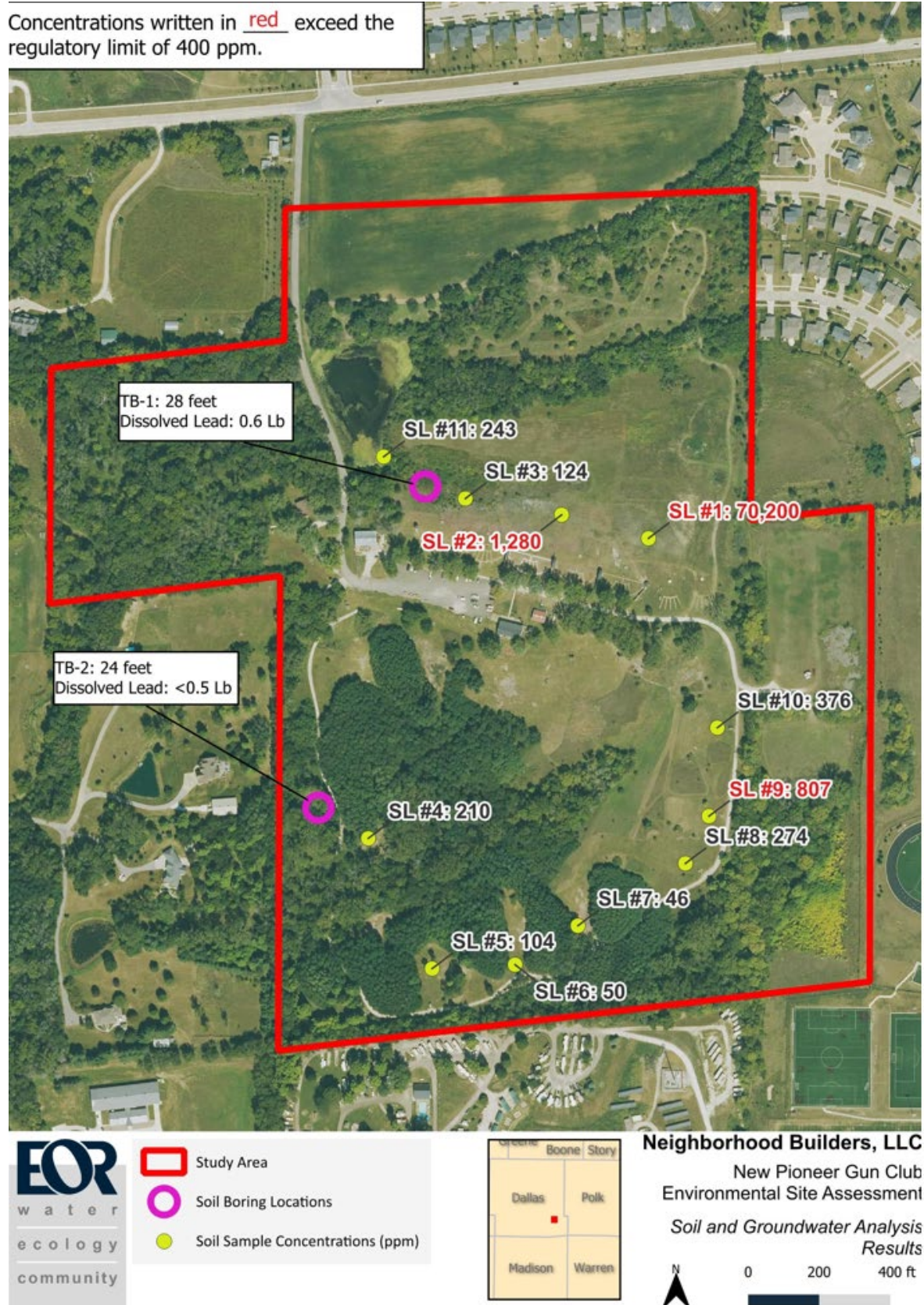


Figure 3. Soil and Groundwater Analysis Results.