SOIL MANAGEMENT PLAN

For proposed development of
Outlot 20, Lake View, Iowa

Background

Outlot 20, Lake View, Iowa, is owned by the City of Lake View. It is the intent of the City to develop the property as several residential units. The units are proposed as slab-on-grade structures.

Outlot 20 had been used as a salvage yard for a number of decades, prior to acquisition by the City. Most material stored on site had been removed as part of a "clean-up" in 2015. However, there was no removal of soil, and no investigations for potential contamination of soil or groundwater was completed on the property at that time. With plans to develop the site, the City of Lake View contacted Environmental Resource Services (ERS) to complete a Phase I investigation of Outlot 20. With knowledge of the past use of the site, it was determined that a Phase I, with additional "Phase II" investigations, would be the best means to compile relevant information.

A Limited Phase I / Phase II Environmental Site Assessment was conducted. The Phase II investigation consisted of eight (8) borings on the site. The borings were to a depth of 20 feet. A representative soil sample was collected from each boring, and groundwater samples were collected from two (2) of the borings. A July 10, 2021 report was provided to the City of Lake View.

Samples were analyzed for gasoline and diesel components using Iowa OA-1 and OA-2 analytical methods. The analyses indicated the presence of diesel and waste oil in each of the soil samples, and waste oil in one of the groundwater samples, and diesel in the other groundwater sample. Only the diesel in the one groundwater sample exceeded the statewide standard (for a protected groundwater source).

With knowledge of contamination on the property, the City of Lake View contacted the Iowa DNR Contaminated Sites Section to assist in the plans to proceed with development on the site. In a correspondence of July 26, 2021, the DNR required that a Soil Management Plan be provided for DNR review and approval prior to redevelopment for residential use. DNR also advised that an environmental covenant should be placed on the property prohibiting the installation of a water supply well without approval of the Iowa DNR Water Supply and Contaminated Sites Section.

Field-Screening of Soil

The proposed development is expected to clear areas of the property, removing the uppermost layers of topsoil and soil. Based on the sampling of soil completed as part of the Limited Phase 1 / Phase II Environmental Site Assessment, this may result in generation of petroleum-contaminated soils, either those soils to be removed for placement of subbase beneath the slab-on-grade structures, or those soils which have been exposed but will remain.

No soils contaminated in excess of the Iowa DNR Statewide Standards have been previously noted from sampling at the site. However, documentation of both removed soils and exposed (but remaining) soils will be completed.

During initial clearing of the site, a photoionization detector (PID), calibrated for benzene, will be utilized as a field-screening to detect VOC's. Any area of discolored soil, or soil with a noticeable odor, will be field-screened. At a minimum, readings will be taken for each cubic yard of material being removed from the site, regardless of apparent contamination.

Soils which register less than 10 ppm, will be removed from the site. Any soils with a PID reading greater than 10 ppm will be stockpiled on site. The stockpiled soils will be located on the property, in an area which will not be disturbed by any construction activity. The area will be bermed, and the soils covered, to prevent storm water runoff from the soils onto surrounding areas. The stockpiled soils will be sampled, to be analyzed (by certified lab) per Iowa OA-1 and OA-2 to determine gasoline constituents, diesel, and waste oil. Samples will be collected, at a minimum, from approximately every cubic yard. Any area of the stockpiled soil exceeding an Iowa DNR Statewide Standard will be transported to the Sac County Landfill.

All PID recordings, and all samples submitted for laboratory analyses, will be logged with an identification number corresponding to areas indicated on a map of the development. Photographs will also be compiled of the excavation and sampling activities.

In addition to the screening of soils cut from the site, field-screening of the exposed soils will be conducted. At a minimum, PID readings will be recorded for every 100 square feet of exposed surface, or in areas of observed discoloration and/or petroleum odor. Sites with a PID reading exceeding 10 ppm will be sampled for laboratory analyses per Iowa OA-1 and OA-2. An obvious limited area of contamination (exceeding 10 ppm PID) might be excavated and placed with the stockpiled soils, if it appears such limited

excavation would effectively remove contamination. Excavation would be limited to the depth to water table, which was noted at approximately 6.5 feet in the limited Phase II investigations previously completed.

On-site Storage of Excavated Soil

The soil management plan requires separation of soils based on field-screening with a PID. Soils with a PID reading greater than 10 ppm will be separated from those with a reading less than 10 ppm. Those less than 10 ppm are not considered contaminated, and can be removed from the site without restriction. Those exceeding 10 ppm will be temporarily stored on-site. The storage area will be in an area which will not be disturbed by activities on the site, will be bermed, and the stockpiled soils will be covered.

Laboratory analyses will be completed on stockpiled soil. At a minimum, samples will be collected from approximately every cubic yard of stockpiled soil. The samples will be analyzed per Iowa OA-1 and OA-2 to determine gasoline constituents, diesel, and waste oil. Any area of the stockpiled soil exceeding an Iowa DNR Statewide Standard will be transported to the Sac County Landfill.

Laboratory analyses that indicate sampled soils below all Iowa DNR Statewide Standards will be removed from the site without restrictions.

All samples submitted to the laboratory will be assigned a unique sample number. A log of all samples collected from the stockpiled soils will be maintained, including rational for all decisions regarding soils deemed contaminated or not contaminated.

Disposal of Impacted Soil

Disposal of soils, determined by laboratory analyses to exceed an Iowa DNR Statewide Standard will be transported to the Sac County Landfill for disposal. All transport and disposal of soils will be per Iowa DNR regulations and guidelines, and per policies and practices of the Sac County Landfill.

Appropriate waste manifests and documentation will be kept, to become part of a final report for activities pertaining to soil management for development on Outlot 20.

Groundwater Impacts

Development of the site is not intended to include excavations to depths of groundwater. The groundwater at the site has been previously noted to be at an approximate depth of 6.5 feet below grade, and appears to have a high hydraulic conductivity (very rapid recharge to the borings completed in the limited Phase II investigations).

All contractors are to be made aware that any excavations that might require dewatering will require coordination with the IDNR and City of Lake View, and such activities will likely require sampling and a management plan to address those activities. Given that previous sampling has detected groundwater contamination in excess of an Iowa Statewide Standard, normal discharge (commonly to the surface) of groundwater from an excavation may not likely be possible.

Documentation

Detailed logs of all field-screening and sampling will be completed. Locations of all PID readings, and approximate areas from which stockpiled soils exceeding DNR Statewide Standards will be plotted on site maps of the development.

A report of activities will be completed to include

- A map of all locations of PID readings and sampled soils
- A table of all PID readings
- A table of all sample analyses
- Photographs of site activities
- Documentation of all disposed soil
- Discussion of all rationale pertinent to decisions regarding soil contamination