

Proposed Reconnaissance Activities

The following is a summary of reconnaissance activities Harding Lawson Associates (HLA) has proposed to perform prior to Remedial Investigation (RI) field activities at Hunters Point Annex (HPA). Plate 1 presents the proposed locations for reconnaissance activities, which have been described in the Scoping Document and in the sampling plans for the RI at each site. Because reconnaissance tasks provide information to support the RI and are not included in the RI field investigation itself, it should be possible to carry them out prior to final review of the sampling plans or the Scoping Document by the regulatory agencies. However, all reconnaissance field activities will conform to the approved Site Safety Plan. The advantage of carrying out these tasks now is that the data obtained can be used for additional planning before the main RI effort begins this spring.

The reconnaissance tasks will be performed in the following order:

1. Surface scintillation survey
2. Topographic and grid surveying
3. Geophysical test program
4. Geophysical surveys
5. Trenching
6. Drilling of pilot borings
7. Off-site well survey
8. Tank sampling

This sequence of reconnaissance activities was developed to evaluate potential health and safety concerns at each site and to allow the scope of subsequent tasks to be

revised/adjusted to incorporate the new data (i.e., geophysical data will provide lithologic and stratigraphic detail for optimum siting of soil borings). The scopes of work described below are estimates of the expected level of effort; in most cases, the locations of surveys or borings may change according to information gathered during the field work. These tasks will be performed in accordance with the methods described in the Quality Assurance Project Plan (QAPP, in preparation) and are described below.

Surface Scintillation Survey

A surface scintillation survey is planned to evaluate areas where sandblast waste may potentially contain radioactive materials. These sites include the Industrial Landfill (IR-1), the Bay Fill Area (IR-2), the Oil Reclamation Ponds (IR-3), the Tank Farm (IR-6), and the Sub-base Area (IR-7). The purpose of the survey is to evaluate the presence of radioactive materials in the surficial sandblast waste and any potential hazards to field personnel.

Gamma radiation measurements will be made at points on a grid in each suspect area. Background readings will be obtained prior to each survey in areas not suspected of containing sandblast waste. The sampling grid will have 100-foot centers. A measurement will be taken at each grid intersection over the entire grid area. Where anomalously high readings are recorded, a smaller grid (25- or 50-foot centers) will be established to investigate the anomaly.

Where each anomalous reading is obtained, a surface soil sample (0 to 6 inches deep) will be collected and analyzed using gamma ray spectral analyses. If radionuclides are detected above background concentrations by spectral analyses, radiochemical analyses directed towards the specific radionuclides detected by the spectral analyses will be performed.

Topographic and Grid Surveying

During the RI field activities, the locations of borings, trenches, monitoring wells, geophysical and other survey lines, and surface samples will be noted on detailed site topographic maps. To ensure that these maps are as accurate as possible, a licensed surveyor will use existing controls to locate benchmarks and establish on-site control. These controls will be used to obtain exact locations for the scintillation survey grids, geophysical survey grids, trenches, and pilot borings. Permanent markers will be established at the corners of each survey grid so that each grid can be relocated at a later time.

Geophysical Test Program

A geophysical test program will be performed to evaluate the effectiveness of proposed geophysics methods under site-specific conditions. The test program will compare the effectiveness of the various geophysical methods in delineating subsurface features (e.g., depth to bedrock, presence of buried pits and trenches), and in locating buried utilities. These methods to be tested include seismic refraction, ground penetrating radar, electrical resistivity, magnetometer, and electromagnetic surveys.

Geophysical Surveys

Using the methods found to be most effective during the geophysical test program, geophysical surveys will be performed at each IR site as described in the individual sampling plans.

Initially, geophysical surveys will be performed along about half of the proposed survey lines; the remaining survey lines will be located according to data obtained from the initial surveys. This approach will provide data that is more representative of conditions at each site.

Trenching

A number of trenches will be excavated to define the limits of fill material at the Industrial Landfill and the Bay Fill Area and to aid in correlating geophysical survey data with actual site conditions. All trenching operations will be conducted in accordance with procedures presented in the Site Safety Plan (in review). At each trenching location, the Site Safety Officer will establish appropriate site controls, decontamination procedures, and emergency procedures, and will conduct on-site safety briefings. At a minimum, Level C personal protection will be utilized for all persons within the trenching site exclusion zones. Direct reading instruments will be used to detect the presence of radiation, organic vapors, combustible gas, and oxygen deficiency at each trench site.

Drilling of Pilot Borings

At some IR sites where little subsurface information is currently available, pilot borings will be drilled. These pilot borings will be drilled to obtain information about subsurface geologic and hydrogeologic conditions for monitoring well design, including the physical characteristics of the water-bearing units. Borings will be drilled by truck-mounted mud-rotary or hollow-stem auger methods. An HLA geologist will lithologically log each hole and obtain representative samples of the soil for limited physical properties testing. The soil samples will be collected at 5-foot intervals, or at lithologic changes until bedrock is encountered. Physical-properties testing will be performed by HLA's laboratory and will include grain-size sieve analysis and Atterberg Limits to develop well screen and sand-pack design parameters. Each soil sample will be screened in the field using head-space analysis to check for volatile organic chemicals.

Each pilot boring will be geophysically logged to refine and support the lithologic logging. After geophysical logging completed, each boring will be grouted to the surface with a cement-bentonite mix, following the procedures established in the QAPP (in review).

Chemical Analyses will also be performed on selected soil samples to evaluate potential health and safety concerns at each site and for preliminary screening for the RI field work. At this time, it is expected that soil samples from unsaturated surface soils, saturated fill material, bay muds, and any other lithologic units encountered will be analyzed. The number and locations of samples to be analyzed will be determined once borehole lithology is developed. Photoionization detectors, scintillation counters, calorimetric tubes, and explosimeters will be utilized to monitor air quality in the immediate vicinity of the drilling rigs.

Off-Site Well Survey

To assess the potential impacts of activities at Hunters Point Annex on any usable ground-water supplies, a survey of off-site wells will be performed. City and county files and published reports will be reviewed and local well drillers contacted to determine the location, depth and use of wells within one mile of the site. Relevant data used during the Initial Assessment Study (IAS) well survey will be reviewed during this step. This activity is not dependent upon approval of the Site Safety Plan.

Tank Sampling

Presently, liquid, sludge, and residual material remain in a number of tanks at the Tank Farm and Pickling and Plate Yard sites. To characterize the chemicals present, the content of each tank will be sampled and the samples analyzed, at a minimum, for semivolatile organic compounds, polychlorinated biphenyls, total petroleum

PROPOSED RECONNAISSANCE ACTIVITES
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