

**REPORT
PRE-DEMOLITION SURVEY
WILSON RESERVOIR BUILDINGS
545 WEST ADELYN DRIVE
SAN GABRIEL, CALIFORNIA**

**URS JOB NO. 38001519
JULY 22, 2011**

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1.0 INTRODUCTION

URS Corporation (URS) has prepared this report for a pre-demolition survey for asbestos-containing materials (ACM), lead-based paint (LBP), polychlorinated biphenyls (PCBs), and hazardous materials on behalf of the City of South Pasadena (City) for the Wilson Reservoir buildings and structures located at 545 West Adelyn Drive in San Gabriel, California (Site). A site plan for the facility is shown in Figure 1.

The pre-demolition survey consisted of a review of available building information, visual inspection of a water reservoir, water wells, water pumping stations and various structures. The site buildings and structures include the office, water reservoir, pumping stations and sample house. The objective of the pre-demolition survey was to observe, locate, and evaluate the condition of suspected ACM, LBP, and PCBs before demolition of the buildings. The survey objectives also included a hazardous materials/chemical survey and an evaluation of potential mold and fungi impacts.

Tables 1 and 2 provide a summary of the ACM and LBP sampling results. The bulk asbestos sampling data are provided in Table 3A through 3G, and bulk LBP sampling data are provided in Table 4A through 4F. Laboratory results and chain-of-custody records are provided in Appendix A.

1.1 SITE BACKGROUND

The subject site is located at 545 West Adelyn Drive in San Gabriel, California. Originally constructed in approximately 1920, the reservoir is constructed of concrete and is covered by a wood frame roof. Water is pumped into the reservoir from two wells located on-site and a third well located a short distance south of the site on Bradbury Drive. Booster pumping stations, a water chlorination system, and an operations building are located on the reservoir site. Stored water is pumped from the Wilson Reservoir through transmission lines to the Garfield Reservoir within the City of South Pasadena. In recent years, the roof of the 90-year old reservoir has begun to deteriorate and sag in areas. An inspection in early 2008 concluded that a severe roof collapse was imminent. Because of its age, the reservoir also does not meet current earthquake resistance standards. The City of South Pasadena is proposing to demolish the existing reservoir, office and pump station buildings and in their place construct a new reinforced concrete reservoir, pump station and office.

1.2 OBJECTIVES AND SCOPE OF WORK

The objective of the pre-demolition survey was to assess the Site buildings for the potential presence of ACM, LBP, PCBs, hazardous materials/chemicals, and readily observable mold and fungi. To meet this objective, the scope of work described below was conducted:

1.2.1 Task 1-Review of Previous Studies

The tasks described in this report were performed by Mr. Ronald Miller of URS, a California Registered Environmental Assessor (REA). Mr. Miller is a State of California Certified Asbestos Consultant # 92-0470 (CAC) with the credentials required by the Asbestos Hazard Emergency Response Act (AHERA

and is also a State of California Department of Health Services Certified Lead-Based Paint Inspector/Assessor # 5228 (IA). There were no previous asbestos or lead-based paint studies of the buildings available for review prior to this study.

1.2.2 Task 2-Asbestos-Containing Materials Survey

The following tasks were performed as part of the ACM survey:

- ◆ A walk-through of the buildings was conducted to assess homogeneous areas of suspected ACM.
- ◆ Bulk samples of friable and non-friable suspect ACM were collected for laboratory analysis. Minimal intrusive sampling techniques, such as cutting existing carpet to locate suspect floor coverings and cutting into walls to sample materials, were used in this survey. Small incisions were made in closets, behind doors, or other inconspicuous locations to assess the presence of suspect ACM. Repair of the ceiling tiles, walls, and other materials where sampling occurred was not included in the scope of work. The suspect ACM was assessed based on the type, condition, and location of each sample.
- ◆ The samples, accompanied by a chain-of-custody form, were submitted to a laboratory for analysis of asbestos content. The laboratory is certified by the American Industrial Hygiene Association (AIHA) and participates in the National Voluntary Laboratory Accreditation Program (NVLAP).

1.2.3 Task 3-Lead-Based Paint Survey

The following tasks were performed as part of the LBP survey:

- ◆ A walk-through of the building was conducted to assess areas of suspected LBP based on United States Environmental Protection Agency (EPA) guidelines.
- ◆ Bulk samples of suspect LBP were collected for laboratory analysis in accordance with United States Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (June 1995). Repair of areas damaged during sampling was not included in the scope of work.
- ◆ The samples, accompanied by a chain-of-custody form, were submitted to a laboratory for analysis of lead. The laboratory is certified by the American Industrial Hygiene Association (AIHA) and participates in the Environmental Lead Laboratory Accreditation Program (ELLAP).

1.2.4 Task 4PCB Survey

- ◆ Approximately 10 percent of the lighting ballasts in the facility were examined. The inspector dismantled the light fixtures in order to check them for the “PCB-free” label required on ballasts not containing PCBs. The results of the visual inspection were recorded in field notes and described in Section 2.4.

1.2.5 Task 5-Hazardous Materials/Chemical Survey

- ◆ A hazardous materials/chemical management survey, consisting of a walk-through of the buildings and associated structures, was conducted to identify the presence of cans and containers suspected of containing chemicals of hazardous materials. Locations of suspect containers were recorded in field notes and described in Section 2.5.

1.2.6 Task 6-Mold/Fungi Survey

- ◆ A walk-through of the buildings was conducted to assess areas of water intrusion based on the New York City Department of Health (DOH) guidelines on “Assessment and Remediation of Fungi in Indoor Environments”. The initial step of the visual inspection was to identify possible contamination issues. The extent of water damage and mold and fungi growth was then visually assessed. Ceiling tiles, gypsum wallboard, cardboard, paper, and other cellulous surfaces were given careful attention during the visual inspection. Possible water leaks and suspect mold/fungi were recorded by location and described in Section 2.6.

1.2.7 Task 7-Report

- ◆ This report was produced to summarize the investigation methodology, field activities, laboratory testing procedures, results, and conclusions and recommendations for future actions. The report also contains diagrams showing sampling locations, photographs, and tables summarizing the location, condition, and estimated quantity of confirmed ACM, LBP, PCBs, and containers of hazardous materials.

2.0 PRE-DEMOLITION SURVEY

2.1 BUILDING DESCRIPTION

Built in approximately 1920, the Wilson Reservoir is located at 545 West Adelyn Drive in San Gabriel, California. The Wilson Reservoir is constructed of concrete and is covered by a wood frame roof. The wood roof is covered with asphalt rolled roofing materials and black roofing mastic.

The Wilson Reservoir office building is a wood frame structure on a concrete slab. The office has a pitched wood roof covered with asphalt roofing shingles. The floor of the office is covered with 9-inch by 9-inch vinyl floor tiles. The interior walls are covered with wood paneling. The exterior walls are covered with painted wood siding. The ceiling of the office is covered with glued-on 1-foot by 1-foot ceiling tiles. The office building is heated by a gas wall heater unit.

The Wilson Reservoir above grade pump station building is a concrete building constructed on a concrete slab. The pump station has a wood frame pitched roof covered with asphalt roofing shingles. The concrete floor has 9-inch by 9-inch vinyl floor tiles located on the raised area near the electrical panels. The majority of the concrete floor is covered with paint. The ceiling of the pump station is covered with pressboard panels. The attic area is insulated with fiberglass insulation material.

The Wilson Reservoir has five wood frame structures located on site. The wood frame structures are used as water sampling stations, storage and ventilation. The exterior walls are covered with painted wood siding. The floors are concrete slabs. The wood frame roofs are covered with green roofing shingles. The interior walls are painted wood framing.

There are two below grade well pumps and an additional below grade booster pump station at the site. The walls and floors of the below grade structures are painted concrete. Concrete slabs cover the below grade pumping stations.

2.2 PRE-DEMOLITION ASBESTOS-CONTAINING MATERIALS SURVEY

Mr. Miller conducted a pre-demolition asbestos survey of the Wilson Reservoir buildings on May 17, 2011. The survey followed EPA guidelines (EPA, 1985). Each room was evaluated, and samples of accessible homogeneous materials used in the insulation, ceilings, walls, and floors were collected. Potentially friable and non-friable ACM were visually identified, and samples were collected for analysis. Three bulk samples of each type of suspect building material were collected, and the samples were placed in sample bags that were labeled with the time, date, location, and condition of each sample. Chain-of-custody forms were completed and accompanied the samples to the laboratory. Sample locations were recorded on facility sketch maps.

The samples were submitted to AmeriSci Los Angeles (AmeriSci) for analysis of asbestos content by Polarized Light Microscopy (PLM) (Method EPA-600/R-93/116) as described in "The Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA, December 1982). The PLM method utilizes the optical properties of minerals to identify the selected constituent. The use of this method

enables identification of the type and the percentage of asbestos in a given sample. The asbestos detection limit of the PLM method is 0.1 percent (0.1%) by volume. The EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation recognizes a material containing greater than 1 percent (>1%) asbestos as ACM; however, in the State of California materials containing greater than 0.1 % asbestos are considered to be ACM. For a building material to be considered a non-ACM in the State of California, all three of the suspect homogeneous bulk samples collected must have tested negative (<0.1%) for asbestos. For a building material to be considered an ACM, only one sample must have tested positive (>0.1%) for asbestos.

URS collected a total of 77 bulk samples of suspect ACM from the buildings and other features. Twelve (12) bulk samples from the office building, twenty-one (21) bulk samples were collected from the Pumping Station (PS) structure, nine (9) bulk samples were collected from the sampling house, three (3) bulk samples were collected from the underground pumping station (UPS), three (3) bulk samples were collected from the concrete cover over well #3, three (3) bulk samples were collected from the abandoned section of water line located behind the office building and twenty-nine (29) bulk samples were collected from the water reservoir. The sample locations are shown on Figures 2 through 7, and the analytical results of the survey are summarized in Table 1. Tables 3A through 3G summarize the asbestos bulk sampling data such as the location of the sample, the type of material sampled, and the percent asbestos found in the sample. Laboratory analytical results and chain-of-custody records are presented in Appendix A. A total of at least three samples of each suspect ACM were analyzed from the three surveys conducted in combination.

**TABLE 1
SUMMARY OF ASBESTOS SAMPLING RESULTS
545 WEST ADELYN DRIVE
SAN GABRIEL, CALIFORNIA**

<i>Building</i>	<i>Material Sampled</i>	<i>Total # Samples Collected</i>	<i>Survey Results</i>
Office Building	9-inch by 9-inch Red/Brown Vinyl Floor Tiles	3	3% Chrysotile
	1-ft by 1-ft ceiling Tiles	3	No Asbestos Detected
	1-ft by 1-ft ceiling Tile Mastic	3	No Asbestos Detected
	Green Roofing Shingles	3	No Asbestos Detected
Above Grade Pump Station	9-inch by 9-inch Red/Brown Vinyl Floor Tiles	3	4% Chrysotile
	Press Board Material	3	No Asbestos Detected
	Gasket Material	3	No Asbestos Detected
	Green Roofing Shingles	3	No Asbestos Detected
	Black Barrier Roofing Paper	3	No Asbestos Detected
	Gray Putty Material	3	No Asbestos Detected

<i>Building</i>	<i>Material Sampled</i>	<i>Total # Samples Collected</i>	<i>Survey Results</i>
	Pipe Barrier Paper	3	35% Chrysotile
Sample House	Green Roofing Shingles	3	No Asbestos Detected
	Green Roofing Material	3	No Asbestos Detected
	Roofing Paper		No Asbestos Detected
Below Grade Pump Station	Green Roofing Shingles	3	No Asbestos Detected
Well #3	Black Mastic Material	3	5% Chrysotile
Water Pipe (behind office)	Black Exterior Coating	1	No Asbestos Detected
	Concrete Interior Coating	1	No Asbestos Detected
	Black Interior Coating	1	No Asbestos Detected
Reservoir Structure	Rolled Roofing Material	3	No Asbestos Detected
	Roofing Material	21	Trace <1% Chrysotile
	Roofing Mastic	21	2% to 5% Chrysotile

In summary, the following building materials are considered ACM:

- ◆ 9-inch by 9-inch red/brown vinyl floor tiles located in the office;
- ◆ 9-inch by 9-inch red/brown vinyl floor tiles located in the above grade pump station;
- ◆ The black pipe wrapping material located at the rear of the above grade pump station;
- ◆ The black mastic located on the concrete roof over well #3;
- ◆ The green roofing material located on the wood frame roof covering the reservoir; and
- ◆ The black mastic located on the wood frame roof covering the reservoir.

2.3 PRE-DEMOLITION LEAD-BASED PAINT SURVEY

Mr. Miller conducted a pre-demolition LBP survey at the buildings on May 17, 2011 to assess the degree, presence, location, and type of LBP hazard in the building. Bulk paint samples were collected in accordance with HUD Guidelines and were used to identify LBP materials for worker protection and waste disposal. The sampling instruments were decontaminated after each use. Mr. Miller wore gloves to collect the samples and spray-misted the area before scraping the paint. The paint was scraped from the surface of the interior or exterior building components, and the chips were placed in plastic sample bags that were labeled with the date, time, and location. Chain-of-custody forms were completed and accompanied the samples to the laboratory. The samples were submitted to AmeriSci Los Angeles Laboratory (AmeriSci) for analysis of lead content by atomic absorption (AA) in accordance with EPA Method 7420/3050, and NIOSH Method 7082 (modified). Bulk paint samples containing concentrations greater than 100 parts per million (ppm) lead (0.01 percent by weight) are considered to be LBP.

URS collected a total of 46 bulk paint samples from the structures and piping. Six (6) bulk samples were collected from the office building, four (4) bulk samples were collected from the sampling house structure and associated structures, thirteen (13) bulk samples were collected from the above grade pumping station structure, eight (8) bulk samples were collected from the below grade pumping station structure, eight (8) bulk samples were collected from the well #3 structure and seven (7) bulk samples were collected from the water reservoir structure. The sample locations are shown on Figures 2 through 7, and the analytical results of the survey are summarized in Table 2. Tables 4A through 4F summarize the LBP sampling data such as the sample number, the location of the sample, the type of material sampled, and the lead concentration found in each sample. Laboratory analytical results and chain-of-custody records are presented in Appendix A.

**TABLE 2
SUMMARY OF LEAD-BASED PAINT SAMPLING RESULTS
545 WEST ADELYN DRIVE
SAN GABRIEL, CALIFORNIA**

<i>Building</i>	<i>Material Sampled</i>	<i>Total # Samples Collected</i>	<i>Survey Results (ppm)</i>
Office Building	Tan Exterior Wall Paint	3	16,000 to 49,000
	Light Brown Trim Paint	1	1,000
	White Interior Door Paint	1	8,400
	White Interior Wall Paint	1	1,700
Sample House	Tan Exterior Wall Paint	1	19,000
	Red Floor Paint	1	2,800
	White Door/Trim Paint	1	4,800
	Light Blue Cabinet Paint	1	21,000
Above Grade Pump Station	Tan Exterior Wall Paint	3	3,000 to 9,600
	Tan Door Paint	1	4,800
	White Interior Wall Paint	3	1,100 to 4,100
	Dark Blue Paint	2	740 to 4,000
	Light Blue Paint	2	110 to 5,500
Below Grade Pump Station	Gray Pump Paint	2	490 to 1,100
	Tan Exterior Wall Paint	2	26,000 to 46,000
	White Interior Wall Paint	2	210 to 1,200
	Gray Pipe Paint	1	700
	Blue/Green Motor Paint	1	9,400

<i>Building</i>	<i>Material Sampled</i>	<i>Total # Samples Collected</i>	<i>Survey Results (ppm)</i>
	Silver Paint on Metal Ducting	1	110
	Blue/Green Paint on Floor	1	630
Well #3	White Wall Paint	1	4,000
	Gray Pipe Paint	1	1,000
	Green Cabinet Paint	1	4,300
	Red Pump Base Paint	1	280
	Blue Floor Paint	1	570
	Tan Ladder Paint	1	17,000
	Tan Vent Pipe Paint	2	120 to 4,400
Reservoir Structure	Tan Paint on Concrete Wall	3	1,100 to 39,000
	Tan Paint on Wood Cover	3	5,400 to 23,000

In summary, the following building components are considered to contain LBP:

- ◆ The tan paint located on the concrete wall of the reservoir;
- ◆ The tan paint located on the wood frame roof covering the reservoir;
- ◆ The tan paint located on the exterior wall of the office building;
- ◆ The light brown trim paint located on the door, door frame and other trim items on the reservoir;
- ◆ The white paint located on the door frame and interior walls of the office building;
- ◆ The tan exterior wall paint located on the walls of the sampling house and related structures;
- ◆ The red paint located on the floor of the sampling house;
- ◆ The white paint located on the door and door trim of the sampling house and related structures;
- ◆ The light blue paint located on the cabinets in the sampling house;
- ◆ The tan paint located on the exterior structures of the below grade pumping station;
- ◆ The white paint located on the interior wall of the below grade pumping station;
- ◆ The gray paint located on the metal piping and pumps located inside the below grade pumping station;
- ◆ The blue/green paint located on the motor assemblies inside the below grade pumping station;
- ◆ The silver paint located on the metal ventilation ducting located inside the below grade pumping station;
- ◆ The blue/green paint located on the concrete floor of the below grade pumping station;

- ◆ The white paint located on the interior walls of Well #3;
- ◆ The green paint located on the metal electrical cabinets inside Well #3;
- ◆ The gray paint located on the metal piping inside Well #3;
- ◆ The red paint located concrete pump base's located inside Well #3;
- ◆ The blue paint located on the concrete floor of Well #3;
- ◆ The tan paint located on the metal ladder and pipe vents in Well #3;
- ◆ The tan paint located on the exterior of the above grade pumping station building;
- ◆ The tan paint located on the door frames and doors of the above grade pumping station;
- ◆ The white paint located on the interior walls of the above grade pumping station building;
- ◆ The dark blue paint located on the concrete floor of the above grade pumping station building;
- ◆ The light blue paint located on the concrete floor of the above grade pumping station building;
and
- ◆ The gray paint located pump motors inside the above grade pumping station building.

The majority of the painted surfaces appears to be in good condition and is not loose and flaking at the time of the survey.

2.4 PRE-DEMOLITION POLYCHLORINATED BIPHENYL SURVEY

URS performed a pre-demolition PCB survey at the buildings on May 17, 2011. Mr. Miller examined ten accessible lighting ballasts in the reservoir buildings by dismantling the lighting units in order to check the ballasts for the "PCB-free" label required on ballasts not containing PCBs. Three of the ten ballasts did not have the "PCB-free" label on the fixture.

2.5 PRE-DEMOLITION HAZARDOUS MATERIALS/CHEMICAL SURVEY

A pre-demolition hazardous materials/chemical survey was conducted at the buildings on May 17, 2011. During the survey, Mr. Miller observed 150 pound chlorine cylinders, small containers of cleaning products, oils, gasoline, solvents, thinner and paints. One window mounted air conditioning unit that may contain chlorofluorocarbons (CFCs) refrigerants was also observed.

2.6 PRE-DEMOLITION MOLD/FUNGI SURVEY

A pre-demolition walk-through mold and fungi survey was also performed at the buildings on May 17, 2011. Mr. Miller examined the buildings for water intrusion resulting in mold and fungi damage to the structures. Areas identified as having water damage were investigated for moisture using a moisture level meter. Four areas of the water reservoir structure were identified as having damage from water intrusion. The wood frame roofing materials of the water reservoir has water damage. However, no visible mold or fungi was observed on the surface areas, consequently, no samples were collected for laboratory analysis. Water damage was observed on the ceiling tiles in the reservoir office building. No visible fungal growth was observed on the office ceiling tiles or the wall material.

Laboratory reports and chain-of-custody forms are included in Appendix A.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 ASBESTOS-CONTAINING MATERIALS

Non-friable ACM was found in the 9-inch by 9-inch red/brown vinyl floor tiles located on the floor in the office and pump station, the black pipe wrapping material located on the water line behind the pump station, the roofing material located on the wood frame roof of the reservoir, the roofing mastic located on the roof of the reservoir and the black roofing mastic used to seal the cracks in the concrete cover over Well #3. However, this does not necessarily mean that the health of the occupants is endangered. If ACM remains in good condition and is not disturbed, exposures to asbestos are expected to be negligible. However, when ACM deteriorates, is disturbed or damaged, such as during renovation or demolition operations, asbestos fibers may be released creating a potential health hazard for building occupants and construction personnel.

URS recommends the following:

- ◆ Remove and dispose of ACM prior to demolition using a licensed abatement contractor in accordance with Federal, State, and local regulations and ordinances.
- ◆ Prepare bid documents and specifications for the renovation project for project control and ensure lawful removal techniques are used.
- ◆ Have a third party provide renovation oversight to document that the contractor complies with the specifications, proper protective equipment is used, and proper disposal procedures are followed.

In addition to these recommendations, the following precautions should be taken prior to any repair or maintenance activities involving less than 100 square feet of ACM:

- ◆ Do not cut, sand, or drill materials containing asbestos.
- ◆ Prior to initiating maintenance and renovation activities that would disturb the ACM, thoroughly wet the area to prevent possible release into the air.
- ◆ Remove dust with a high-efficiency particulate air (HEPA) vacuum or wet wipe with disposable towels.
- ◆ Follow Federal, State and local regulations for proper disposal of ACM.

3.2 LEAD-BASED PAINT

Detected levels of lead were found throughout the Wilson Reservoir buildings in concentrations ranging from 110 ppm to 49,000 ppm. Lead-based paint was detected in the tan paint located on the concrete wall of the reservoir; the tan paint located on the wood frame roof covering the reservoir; the tan paint located on the exterior wall of the reservoir office building; the light brown trim paint located on the door; door frame and other trim items on the reservoir; the white paint located on the door frame and interior walls of the office building; the tan exterior wall paint located on the walls of the sampling house and related structures; the red paint located on the floor of the sampling house; the white paint located on the door and door trim of the sampling house and related structures; the light blue paint located on the cabinets in the sampling house; the tan paint located on the exterior of the underground pumping station; the white

paint located on the interior wall of the underground pumping station; the gray paint located on the metal piping and pumps located inside the underground pumping station; the blue/green paint located on the motor assemblies inside the underground pumping station; the silver paint located on the metal ventilation ducting located inside the underground pumping station; the blue/green paint located on the concrete floor of the underground pumping station; the white paint located on the interior walls of Well #3; the green paint located on the metal electrical cabinets inside Well #3; the gray paint located on the metal piping inside Well #3; the red paint located concrete pump base's located inside Well #3; the blue paint located on the concrete floor of Well #3; the tan paint located on the metal ladder and pipe vents in Well #3; the tan paint located on the exterior of pumping station building; the tan paint located on the door frames and doors of the pumping station; the white paint located on the interior walls of the pumping station building; the dark blue paint located on the concrete floor of the pumping station building; the light blue paint located on the concrete floor of the pumping station building; and the gray paint located pump motors inside pumping station building.

If the LBP is removed from the building substrate, then testing of the lead should be performed prior to disposal. Subcontractors should be aware of LBP locations, the hazards of LBP, and proper handling/cleaning techniques.

The presence of LBP does not necessarily mean that the health of the occupants is endangered. If the LBP remains in good condition and is not disturbed, exposures to lead are expected to be negligible. However, when LBP deteriorates, is disturbed or damaged, such as during demolition or renovation operations, lead dust may be released, creating potential health hazards for building occupants and maintenance personnel.

URS recommends the following:

- ◆ The LBP on the interior or exterior of the buildings that is in good condition does not need to be abated prior to demolition. However, any flaking LBP or peeling should be removed by a licensed lead abatement contractor and disposed following Federal, State, and local regulations. LBP may be disposed as construction debris as long as it remains on the substrate;
- ◆ The demolition contractor should implement precautions to comply with OSHA 29 CFR 1926.62, Lead in Construction; and
- ◆ Dispose of all painted building materials as construction debris and do not permit the demolition contractor to recycle the painted wood in accordance with Federal, State, and local regulations for the proper disposal of LBP.

In addition to the above-mentioned recommendations, the following precautions should be taken prior to any repair or maintenance activities that would disturb LBP:

- ◆ Do not cut, sand, or drill materials containing LBP;
- ◆ Prior to initiating demolition activities that would disturb the LBP, wet the area to prevent possible release into the air;
- ◆ Remove dust with HEPA vacuum or wet wipe with disposable towels; and

- ◆ Follow Federal, State, and local regulations for proper disposal of LBP.

3.3 POLYCHLORINATED BIPHENYLS

Of the ten lighting ballasts inspected in the facility buildings, three of the ten ballasts inspected did not have the “PCB-free” label. Therefore, approximately thirty percent of the light ballasts in the buildings are expected to contain PCBs.

3.4 HAZARDOUS MATERIALS/CHEMICALS

Large and small containers of oil, fluids, solvents, gasoline, thinners, cleaners and paint were identified in the buildings. The air conditioning equipment and refrigeration should be removed and disposed of without releasing chlorofluorocarbons refrigerants to the atmosphere. According to the site personnel, the materials and chemicals will be removed by the facility personnel prior to closure of the facility.

3.5 MOLD AND FUNGI

No visible mold or fungi were identified in the Wilson Reservoir buildings during the survey. However, hidden mold and fungi can be present in a building, even with no observable signs of moisture damage. This survey did not include destructive testing of the walls and ceiling. During demolition activities, a qualified inspector should be available to collect samples if mold or fungi is discovered by the construction activities.

4.0 LIMITATIONS

This pre-demolition report has been prepared for the exclusive use of the City of South Pasadena. The conclusions in this report are professional opinions based on the indicated data described in this report. They are intended only for the purpose, the location, and the project indicated. The survey for ACM, LBP, PCBs, and hazardous materials was intended to provide data sufficient for the purpose of demolition of the buildings at 545 West Adelyn Drive in San Gabriel, California. Buried or otherwise inaccessible ACM, LBP, mold and fungi may not have been identified. The interpretations and conclusions contained in this report are based on the expertise and experience of URS in conducting similar assessments at similar sites. In preparing this report, URS has relied, in part, on findings from prior consultants. Accordingly, URS accepts no responsibility for any deficiency, misstatements, or inaccuracy contained in this report that may result from misstatements, inaccuracies, omissions, misrepresentations, or fraudulent information provided in the referenced reports.

Changes in applicable standards may occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control. Opinions and judgments expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

URS' objective is to perform our work with care, exercising the customary thoroughness and competence of environmental and engineering consulting professionals, in accordance with the standard for professional services for a national consulting firm at the time these services are provided. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental liability on a particular site.

5.0 REFERENCES

- California Code of Regulations, Title 8, Chapter 3.2, Subchapter 2, Article 2.5, Registration-Asbestos-related Work. Section 341.6, Registration Requirements.
- California Code of Regulations, Title 8, Chapter 3.2, Subchapter 2, Article 2.5, Registration-Asbestos-related Work. Section 341.9, Notification to the Division-Asbestos Related Work.
- California Code of Regulations, Title 8, Section 1529, Asbestos, and associated Appendices.
- U.S. Department of Labor: OSHA, U. S. Occupational Safety and Health Administration – General Industry Standard. Chapter XVII. Asbestos. 29 CFR 1910.1001. June 1986; Amended, September 1988.
- U.S. Department of Labor: OSHA Regulation. 29 CFR 1910.134 – Respiratory Protection Standard. June, 1974.
- U.S. Department of Labor: OSHA, U. S. Occupational Safety and Health Administration– Construction Industry Asbestos Standard. Chapter XVII. Asbestos. 29 CFR 1910.1101, 1994.
- USEPA, 1984. U.S. Environmental Protection Agency. National Emission Standards for Hazardous Air Pollutants. 40 CFR 61. April 5, 1984.
- USEPA, 1985. U.S. Environmental Protection Agency. Asbestos in buildings: Simplified sampling scheme for surfacing materials. Washington DC: USEPA. EPA 560/5-85-030A. ("Pink Book")
- USEPA, 1985. U.S. Environmental Protection Agency. Guidance for controlling asbestos-containing materials in buildings. Washington DC: EPA 560/5-85-024. ("Purple Book")
- USEPA, 1986. U.S. Environmental Protection Agency. A guide to respiratory protection for the asbestos abatement industry. Washington DC: EPA 560/OPTS-86-001.
- USEPA, 1987. U.S. Environmental Protection Agency. Asbestos Abatement Projects; Worker Protection, Final Rule. 40 CFR 763. February 1987, Revised July 1, 1997.
- USEPA, 1987. U.S. Environmental Protection Agency. Asbestos-Containing Materials in Schools; Final Rule and Notice. 40 CFR 763. Federal Register, October 30, 1987, Revised July 1, 1997.
- USEPA, 1988. EPA Study of Asbestos-Containing Materials in Public Buildings: A Report to Congress. February, 1988.
- USEPA, 1989. Asbestos Ban and Phase-out Rule. 40 CFR 763.160 to 763.179. Federal Register, July 12, 1989.

USEPA, 1989. Transmission Electron Microscopy Asbestos Laboratories: Quality Assurance Guidelines.
Washington DC: EPA 560/5-90-002.

Should you have any questions or comments, please do not hesitate to contact Ronald Miller at (714) 835-6886 or Bernie Pyska at (909) 980-4000.

Respectfully submitted,

URS CORPORATION

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Industrial Hygienist

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Project Manager

Tables

Table 3A - Asbestos Survey Analytical Results

Sample No.	Floor No.	Building No.	Sample Location	Sample Description	Friable Y/N	Asbestos Content
Office-A1	Int.	Office	Office Floor	Red/Brown Vinyl Floor Tiles	N	3% Chrysotile
Office-A2	Int.	Office	Office Floor	Red/Brown Vinyl Floor Tiles	N	3% Chrysotile
Office-A3	Int.	Office	Office Floor	Red/Brown Vinyl Floor Tiles	N	3% Chrysotile
Office-A4	Int.	Office	Office Ceiling	1-ft by 1-ft Ceiling Tiles	N	No Asbestos Detected
Office-A5	Int.	Office	Office Ceiling	1-ft by 1-ft Ceiling Tiles	Y	No Asbestos Detected
Office-A6	Int.	Office	Office Ceiling	1-ft by 1-ft Ceiling Tiles	Y	No Asbestos Detected
Office-A7	Int.	Office	Office Ceiling	1-ft by 1-ft Ceiling Tile Mastic	Y	No Asbestos Detected
Office-A8	Int.	Office	Office Ceiling	1-ft by 1-ft Ceiling Tile Mastic	N	No Asbestos Detected
Office-A9	Int.	Office	Office Ceiling	1-ft by 1-ft Ceiling Tile Mastic	N	No Asbestos Detected
Office-A10	Roof	Office	Shed Roof	Green Roofing Shingles	N	No Asbestos Detected
Office-A11	Roof	Office	Shed Roof	Green Roofing Shingles	N	No Asbestos Detected
Office-A12	Roof	Office	Shed Roof	Green Roofing Shingles	N	No Asbestos Detected

NOTES:

EA = Each

SF = Square feet

NAD = No asbestos detected

N/A = Not applicable

* = Material quantities are approximate. It is the contractor's responsibility to confirm ACM quantities prior to bid submittals and initiating renovation or demolition activities at the site.

Table 3B - Asbestos Survey Analytical Results

Sample No.	Floor No.	Building No.	Sample Location	Sample Description	Friable Y/N	Asbestos Content
Sample House-A1	Roof	Sample House	Roof	Green Roofing Shingles	N	No Asbestos Detected
Sample House-A2	Roof	Sample House	Roof	Green Roofing Shingles	N	No Asbestos Detected
Sample House-A3	Roof	Sample House	Roof	Green Roofing Shingles	N	No Asbestos Detected
Sample House-A4	Roof	Sample House	Roof	Green Roofing	N	No Asbestos Detected
Sample House-A5	Roof	Sample House	Roof	Green Roofing	N	No Asbestos Detected
Sample House-A6	Roof	Sample House	Roof	Green Roofing	N	No Asbestos Detected
Sample House-A7	Roof	Sample House	Roof	Roofing Paper	N	No Asbestos Detected
Sample House-A8	Roof	Sample House	Roof	Roofing Paper	N	No Asbestos Detected
Sample House-A9	Roof	Sample House	Roof	Roofing Paper	N	No Asbestos Detected

NOTES:

EA = Each

SF = Square feet

NAD = No asbestos detected

N/A = Not applicable

* = Material quantities are approximate. It is the contractor's responsibility to confirm ACM quantities prior to bid submittals and initiating renovation or demolition activities at the site.

Table 3C - Asbestos Survey Analytical Results

Sample No.	Floor No.	Building No.	Sample Location	Sample Description	*Approx. Quantity (SF/LF/EA)	Friable Y/N	Asbestos Content
PS-A1	Int.	Pump Station	Pump Station Floor	Red/Brown Vinyl Floor		N	4% Chrysotile
PS-A2	Int.	Pump Station	Pump Station Floor	Red/Brown Vinyl Floor		N	4% Chrysotile
PS-A3	Int.	Pump Station	Pump Station Floor	Red/Brown Vinyl Floor		N	4% Chrysotile
PS-A4	Int.	Pump Station	Pump Station Ceiling	Press Board Material		N	No Asbestos Detected
PS-A5	Int.	Pump Station	Pump Station Ceiling	Press Board Material		N	No Asbestos Detected
PS-A6	Int.	Pump Station	Pump Station Ceiling	Press Board Material		N	No Asbestos Detected
PS-A7	Int.	Pump Station	Pump Station Piping	Gasket Material		N	No Asbestos Detected
PS-A8	Int.	Pump Station	Pump Station Piping	Gasket Material		N	No Asbestos Detected
PS-A9	Int.	Pump Station	Pump Station Piping	Gasket Material		N	No Asbestos Detected
PS-A10	Roof	Pump Station	Pump Station Roof	Green Roofing Shingles		N	No Asbestos Detected
PS-A11	Roof	Pump Station	Pump Station Roof	Green Roofing Shingles		N	No Asbestos Detected
PS-A12	Roof	Pump Station	Pump Station Roof	Green Roofing Shingles		N	No Asbestos Detected
PS-A13	Roof	Pump Station	Pump Station Roof	Roofing Barrier Paper		N	No Asbestos Detected
PS-A14	Roof	Pump Station	Pump Station Roof	Roofing Barrier Paper		N	No Asbestos Detected
PS-A15	Roof	Pump Station	Pump Station Roof	Roofing Barrier Paper		N	No Asbestos Detected
PS-A16	Roof	Pump Station	Roof	Gray Putty Material		N	No Asbestos Detected
PS-A17	Roof	Pump Station	Roof	Gray Putty Material		N	No Asbestos Detected
PS-A18	Roof	Pump Station	Roof	Gray Putty Material		N	No Asbestos Detected
PS-A19	Ext.	Pump Station	Water Pipe	Pipe Barrier Paper	12 sq/ft	N	35% Chrysotile
PS-A20	Ext.	Pump Station	Water Pipe	Pipe Barrier Paper	see above	N	35% Chrysotile
PS-A21	Ext.	Pump Station	Water Pipe	Pipe Barrier Paper	see above	N	35% Chrysotile

NOTES:

EA = Each

SF = Square feet

NAD = No asbestos detected

N/A = Not applicable

* = Material quantities are approximate. It is the contractor's responsibility to confirm ACM quantities prior to bid submittals and initiating renovation or demolition activities at the site.

Table 3D - Asbestos Survey Analytical Results

Sample No.	Floor No.	Building No.	Sample Location	Sample Description	Friable Y/N	Asbestos Content
UPS-A1	Roof	Sample House	Roof	Green Roofing Shingles	N	No Asbestos Detected
UPS-A2	Roof	Sample House	Roof	Green Roofing Shingles	N	No Asbestos Detected
UPS-A3	Roof	Sample House	Roof	Green Roofing Shingles	N	No Asbestos Detected

NOTES:

EA = Each

SF = Square feet

NAD = No asbestos detected

N/A = Not applicable

* = Material quantities are approximate. It is the contractor's responsibility to confirm ACM quantities prior to bid submittals and initiating renovation or demolition activities at the site.

Table 3E - Asbestos Survey Analytical Results

Sample No.	Floor No.	Building No.	Sample Location	Sample Description	Friable Y/N	Asbestos Content
RES-A1	Roof	Reservoir	Reservoir Roof	Rolled Roofing Material	N	No Asbestos Detected
RES-A2	Roof	Reservoir	Reservoir Roof	Rolled Roofing Material	N	No Asbestos Detected
RES-A3	Roof	Reservoir	Reservoir Roof	Rolled Roofing Material	N	No Asbestos Detected
RES-A4	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A5	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A6	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A7	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A8	Roof	Reservoir	Reservoir Roof	Roofing Material	N	Trace <1% Chrysotile
RES-A9	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A10	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A11	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A12	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A13	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A14	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A15	Roof	Reservoir	Reservoir Roof	Roofing Material	N	Trace <1% Chrysotile
RES-A16	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A17	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A18	Roof	Reservoir	Reservoir Roof	Roofing Material	N	Trace <1% Chrysotile
RES-A19	Roof	Reservoir	Reservoir Roof	Roofing Material	N	Trace <1% Chrysotile
RES-A20	Roof	Reservoir	Reservoir Roof	Roofing Material	N	Trace <1% Chrysotile
RES-A21	Roof	Reservoir	Reservoir Roof	Roofing Material	N	Trace <1% Chrysotile
RES-A22	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A23	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected
RES-A24	Roof	Reservoir	Reservoir Roof	Roofing Material	N	No Asbestos Detected

Table 3E - Asbestos Survey Analytical Results

Sample No.	Floor No.	Building No.	Sample Location	Sample Description	Friable Y/N	Asbestos Content
RES-A25	Roof	Reservoir	Reservoir Roof	Roofing Mastic	N	5% Chrysotile
RES-A26	Roof	Reservoir	Reservoir Roof	Roofing Mastic	N	No Asbestos Detected
RES-A27	Roof	Reservoir	Reservoir Roof	Roofing Mastic	N	No Asbestos Detected
RES-A28	Roof	Reservoir	Reservoir Roof	Roofing Mastic	N	2% Chrysotile
RES-A29	Roof	Reservoir	Reservoir Roof	Roofing Mastic	N	No Asbestos Detected

NOTES:

EA = Each

SF = Square feet

NAD = No asbestos detected

N/A = Not applicable

* = Material quantities are approximate. It is the contractor's responsibility to confirm ACM quantities prior to bid submittals and initiating renovation or demolition activities at the site.

Table 3F - Asbestos Survey Analytical Results

Sample No.	Floor No.	Building No.	Sample Location	Sample Description	*Approx. Quantity (SF/LF/EA)	Friable Y/N	Asbestos Content
WEIL-3-A1	Driveway	Well #3 Cover	Concrete Cover/Driveway	Black Mastic	20 linear feet	N	5% Chrysotile

NOTES:

EA = Each

SF = Square feet

NAD = No asbestos detected

N/A = Not applicable

* = Material quantities are approximate. It is the contractor's responsibility to confirm ACM quantities prior to bid submittals and initiating renovation or demolition activities at the site.

Table 3G - Asbestos Survey Analytical Results

Sample No.	Floor No.	Building No.	Sample Location	Sample Description	Friable Y/N	Asbestos Content
Pipe-A1	Pipe	Water Pipe	Pipe	Black Exterior Coating	N	No Asbestos Detected
Pipe-A2	Pipe	Water Pipe	Pipe	Concrete Interior Coating	N	No Asbestos Detected
Pipe-A3	Pipe	Water Pipe	Pipe	Black Interior Coating	N	No Asbestos Detected

NOTES:

EA = Each

SF = Square feet

NAD = No asbestos detected

N/A = Not applicable

* = Material quantities are approximate. It is the contractor's responsibility to confirm ACM quantities prior to bid submittals and initiating renovation or demolition activities at the site.

Table 4A - Lead Survey Results - All Readings

Sample No.	Interior/ Exterior	Area	Floor	Feature	Substrate	Color	Lead Content (ppm)
Office-L1	Ext.	Wall	1st.	Exterior Wall	Wood	Tan	16,000
Office-L2	Ext.	Wall	1st.	Exterior Wall	Wood	Tan	49,000
Office-L3	Ext.	Wall	1st.	Exterior Wall	Wood	Tan	18,000
Office-L4	Int.	Door Frame	1st.	Door Trim	Wood	Light Brown	1,000
Office-L5	Int.	Door Frame	1st.	Door Frame	Wood	White	8,400
Office-L6	Int.	Wall	1st.	Interior Wall	Wood	White	1,700

Notes

ppm = parts per million by weight (or milligrams per kilogram)

-- = not applicable

Figures

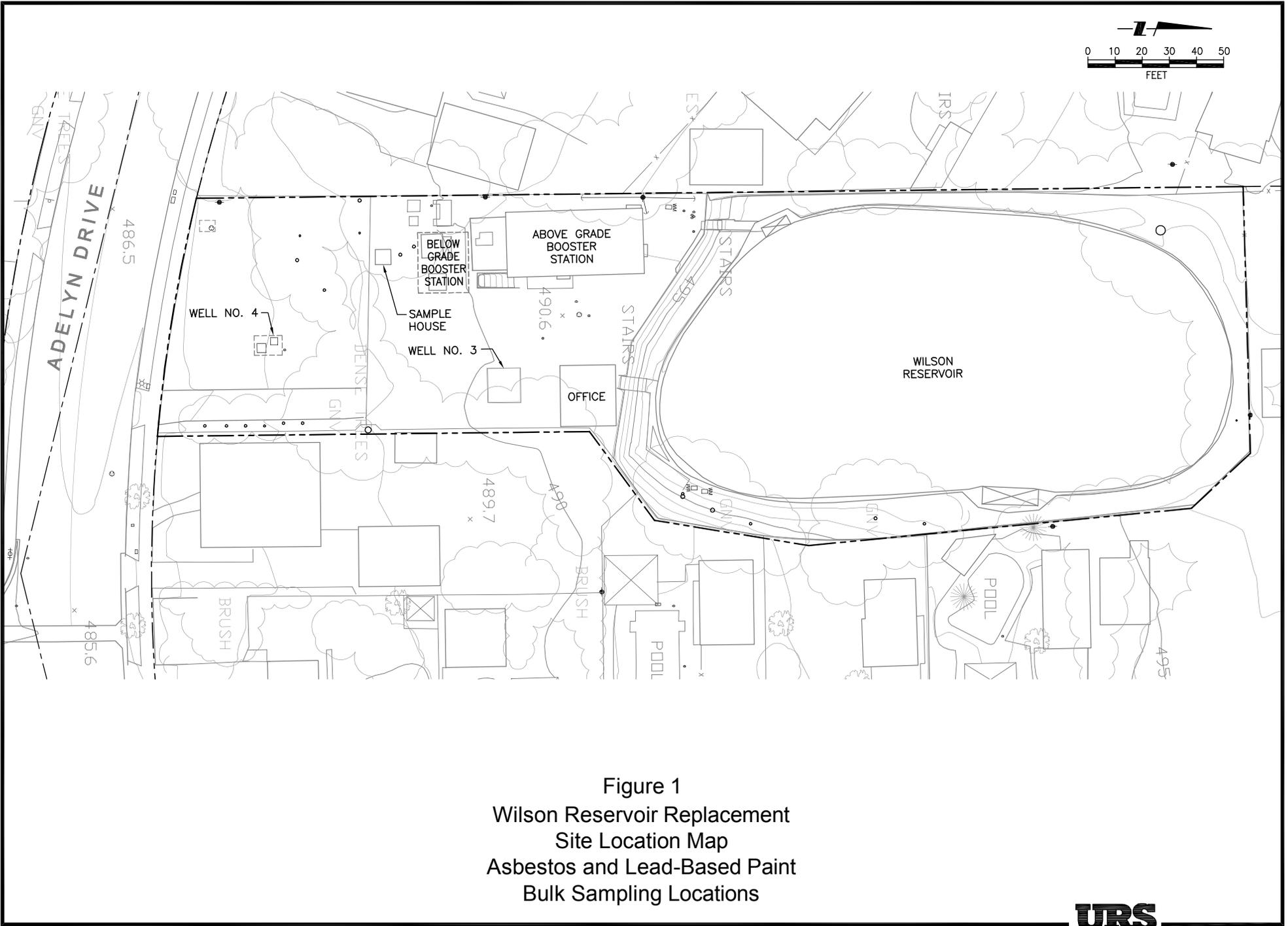
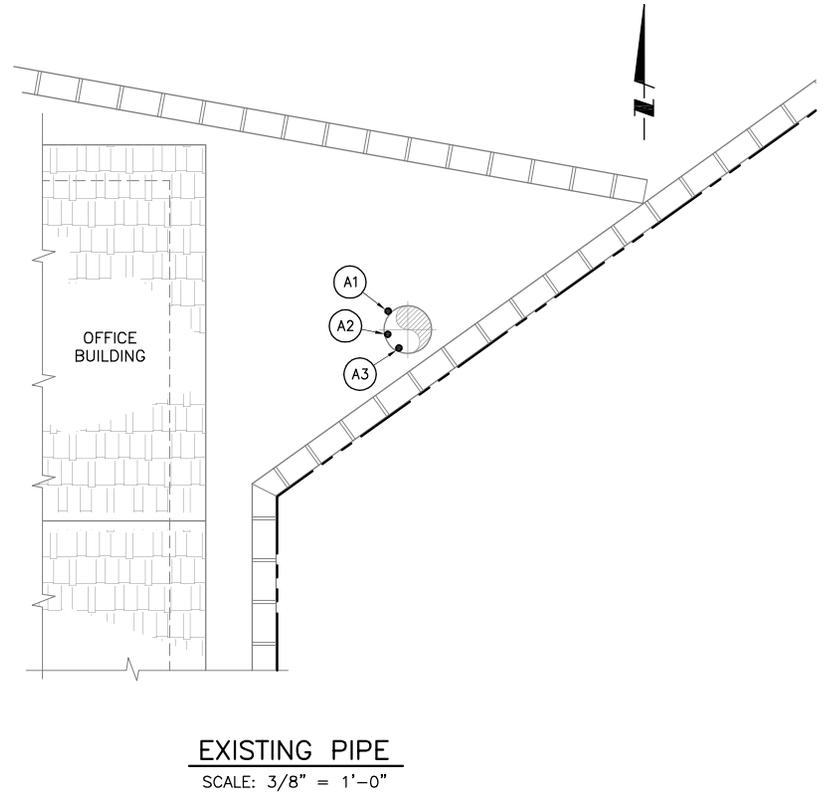
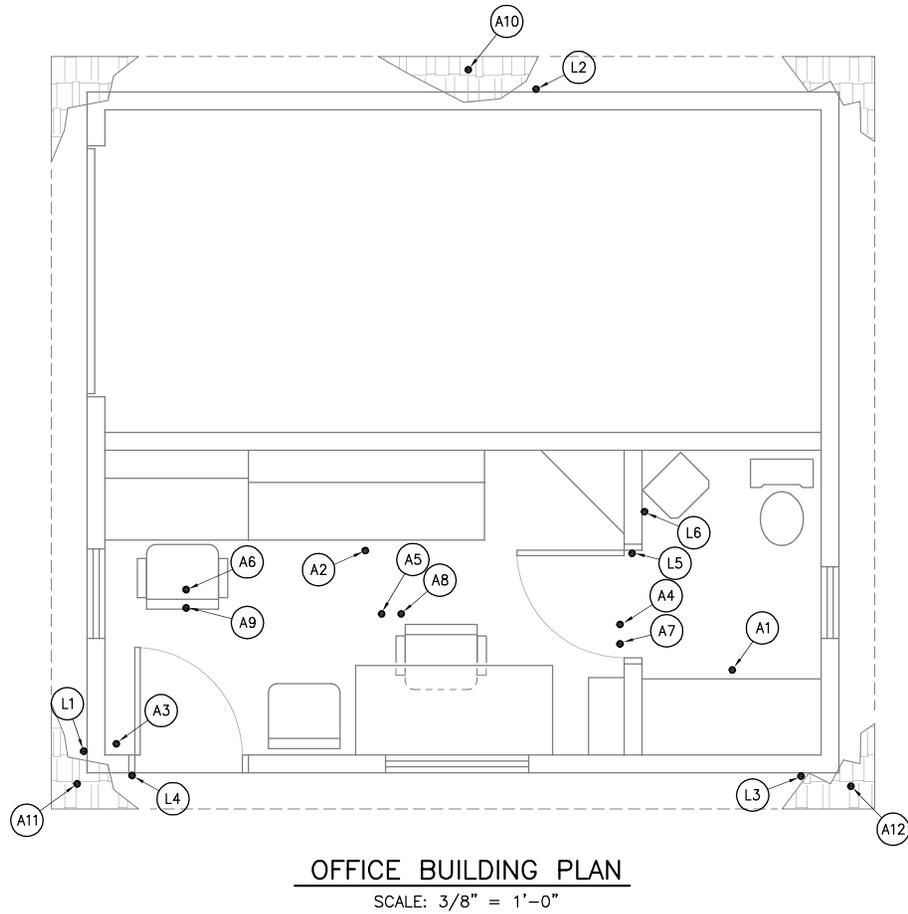


Figure 1
Wilson Reservoir Replacement
Site Location Map
Asbestos and Lead-Based Paint
Bulk Sampling Locations



- LEGEND**
- SAMPLE LOCATION
 - (A) ASBESTOS SAMPLE LOCATION
 - (L) LEAD SAMPLE LOCATION

Figure 2
Wilson Reservoir Replacement
Office Building
Asbestos and Lead-Based Paint
Bulk Sampling Locations

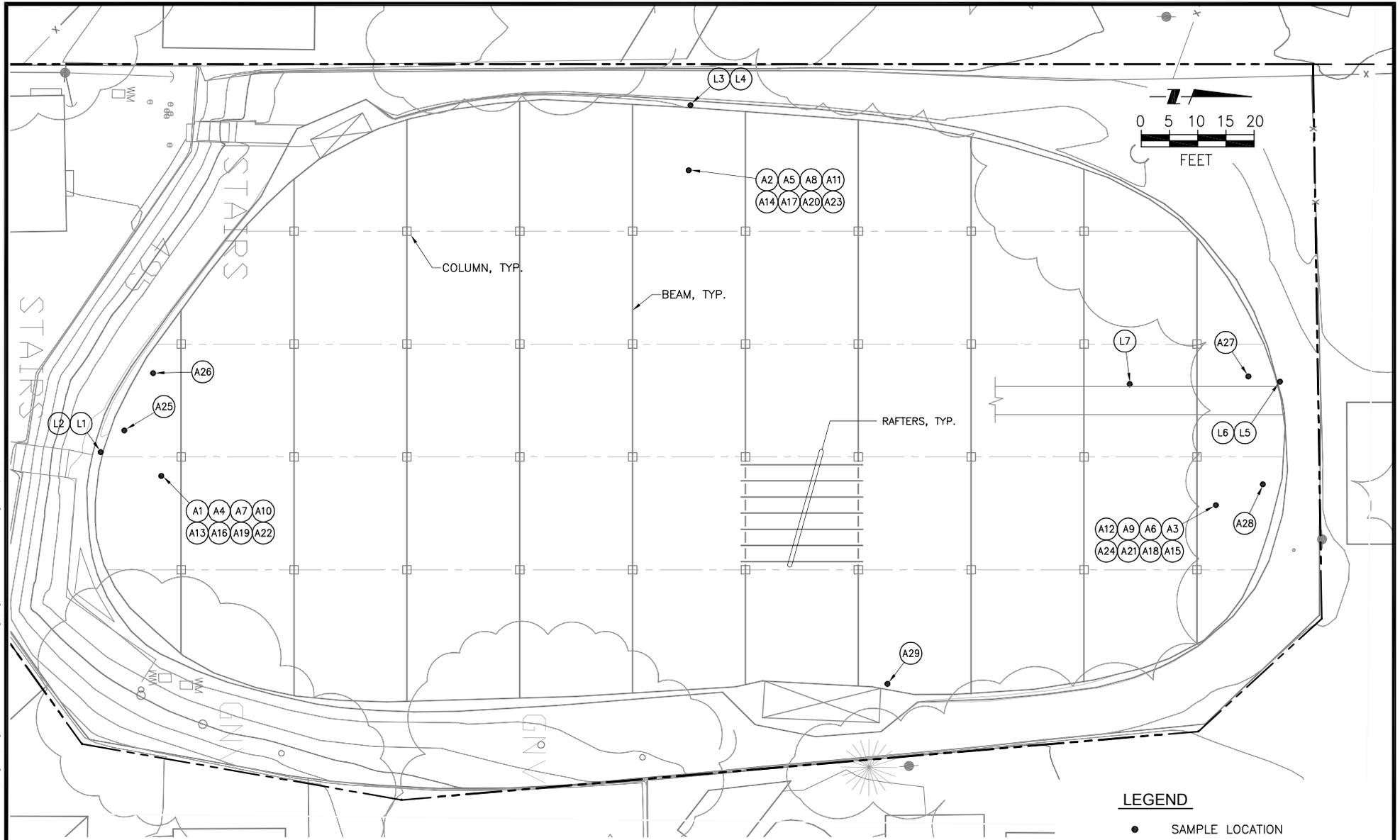
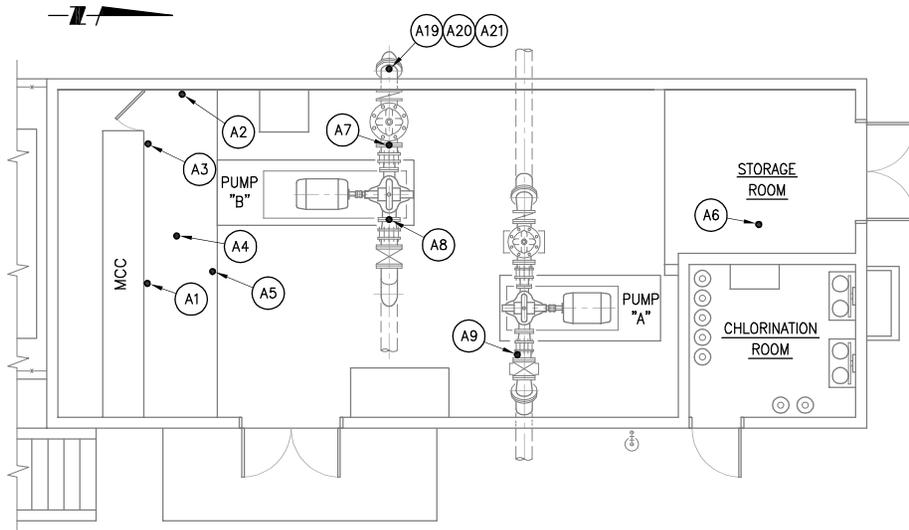


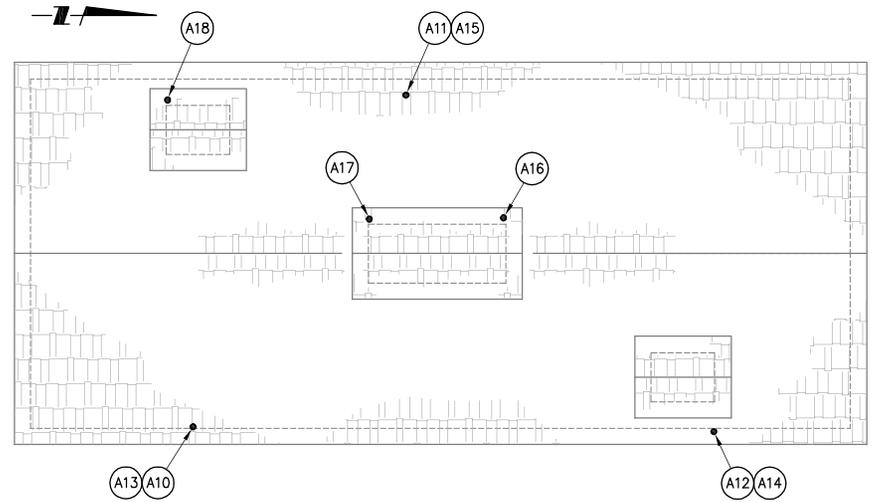
Figure 3
Wilson Reservoir Replacement
Reservoir
Asbestos and Lead-Based Paint
Bulk Sampling Locations

LEGEND

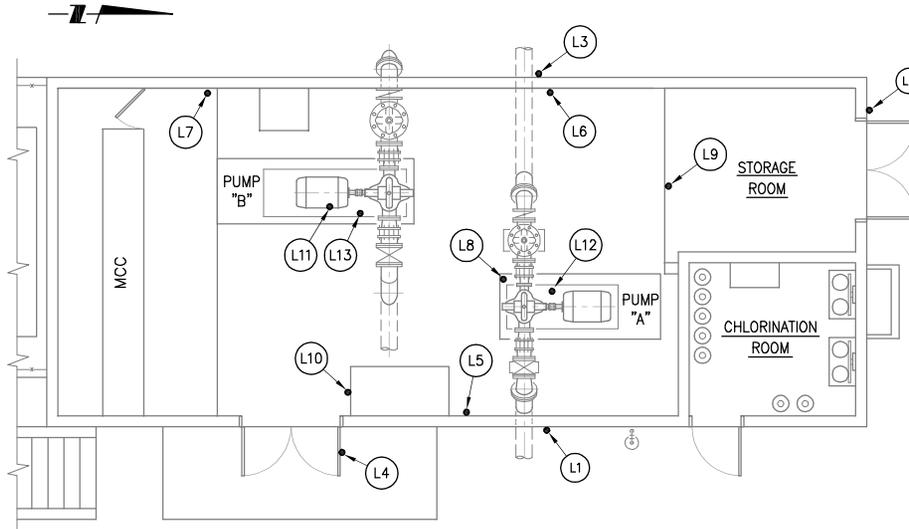
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- A ASBESTOS SAMPLE LOCATION
- L LEAD SAMPLE LOCATION



PUMP STATION PLAN



PUMP STATION ROOF PLAN

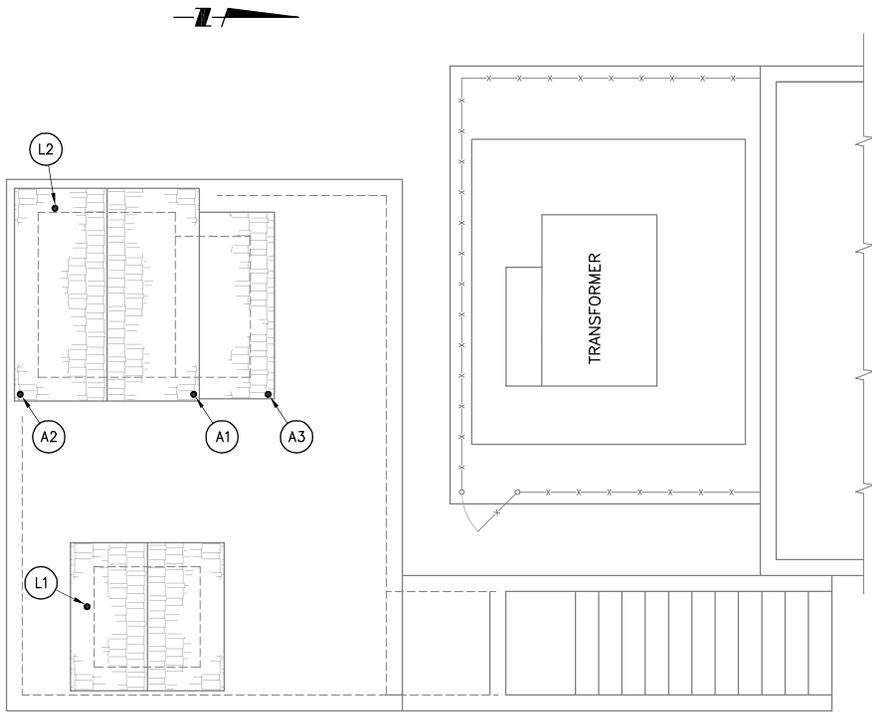


PUMP STATION PLAN

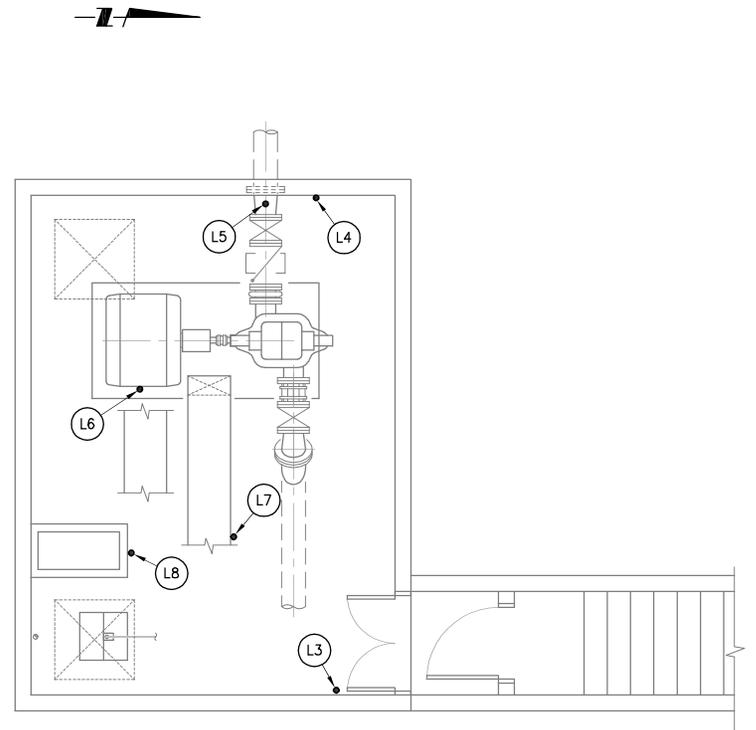
LEGEND

- SAMPLE LOCATION
- (A) ASBESTOS SAMPLE LOCATION
- (L) LEAD SAMPLE LOCATION

Figure 4
Wilson Reservoir Replacement
Above Grade Pumping Station
Asbestos and Lead-Based Paint
Bulk Sampling Locations



BELOW GRADE PUMP STATION
 ABOVE GRADE PLAN
 SCALE: 1/4" = 1'-0"

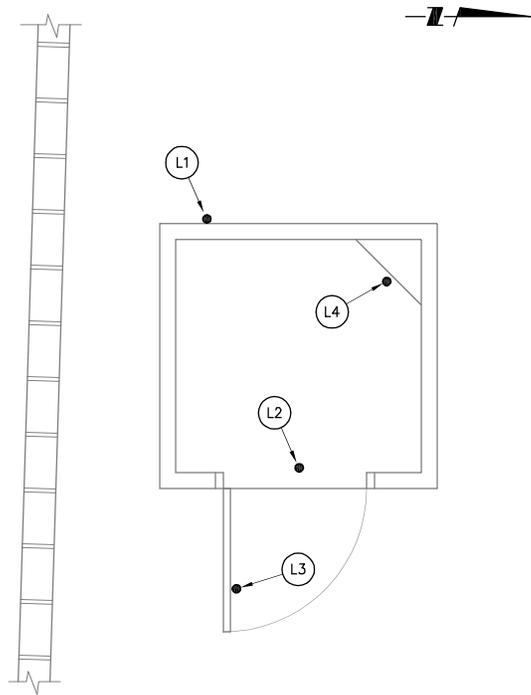


BELOW GRADE PUMP STATION
 BELOW GRADE PLAN
 SCALE: 1/4" = 1'-0"

LEGEND

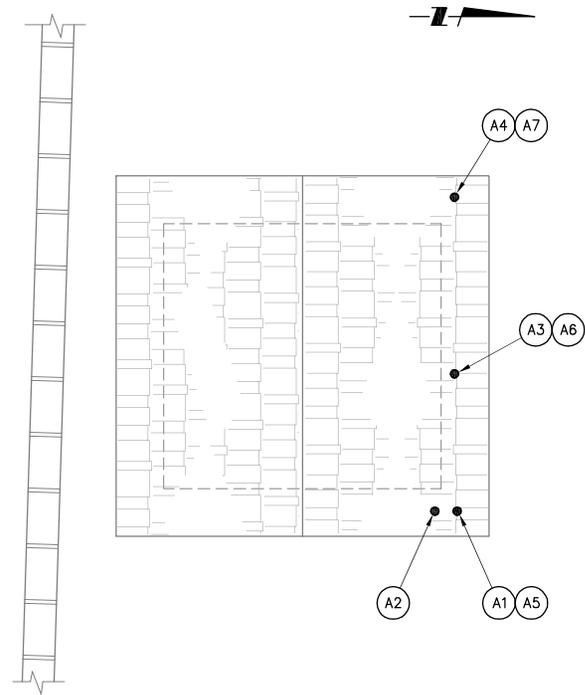
- SAMPLE LOCATION
- (A) ASBESTOS SAMPLE LOCATION
- (L) LEAD SAMPLE LOCATION

Figure 5
 Wilson Reservoir Replacement
 Below Grade Pumping Station
 Asbestos and Lead-Based Paint
 Bulk Sampling Locations



SAMPLE HOUSE FLOOR PLAN

SCALE: 1/2" = 1'-0"



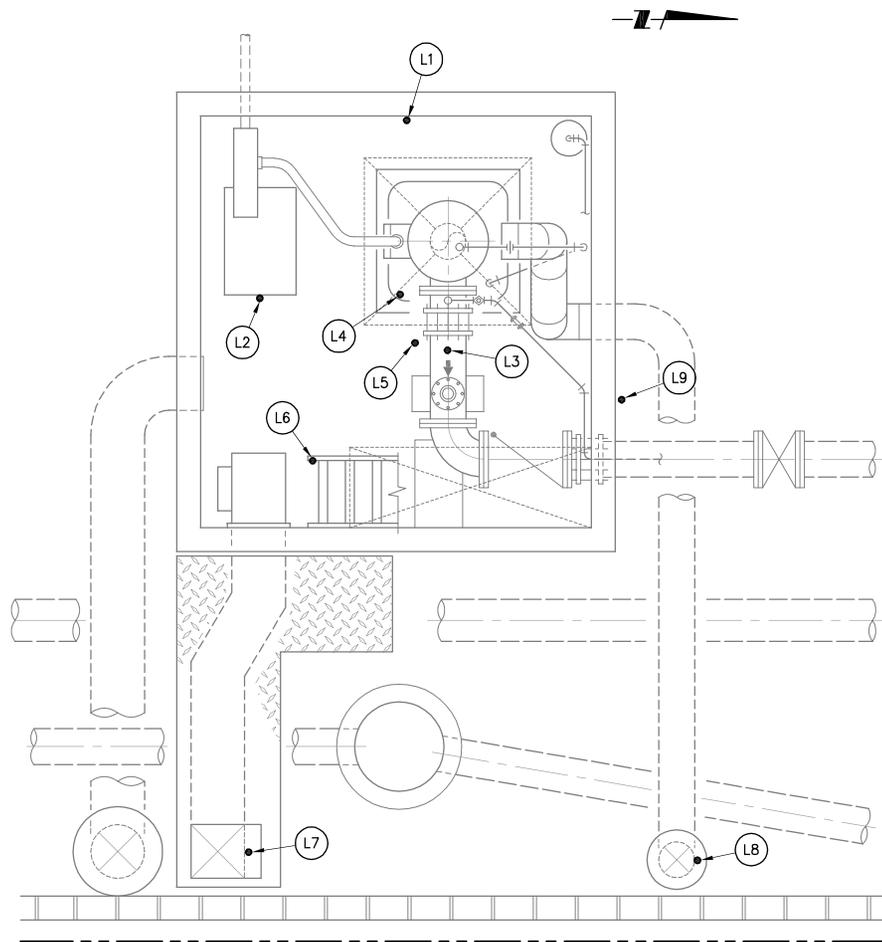
SAMPLE HOUSE ROOF PLAN

SCALE: 1/2" = 1'-0"

LEGEND

- SAMPLE LOCATION
- (A) ASBESTOS SAMPLE LOCATION
- (L) LEAD SAMPLE LOCATION

Figure 6
Wilson Reservoir Replacement
Sample House
Asbestos and Lead-Based Paint
Bulk Sampling Locations



WELL NO. 3 VAULT

SCALE: 3/8" = 1'-0"

LEGEND

- SAMPLE LOCATION
- (A) ASBESTOS SAMPLE LOCATION
- (L) LEAD SAMPLE LOCATION

Figure 7
Wilson Reservoir Replacement
Well No. 3
Asbestos and Lead-Based Paint
Bulk Sampling Locations

Appendix A

Laboratory Analytical Reports and Chain-of-Custody Records