PES Environmental, Inc.
Engineering & Environmental Services

A Report Prepared for:

Rockwood Atrium LLC
TMG Partners
100 Bush Street, 26th Floor
San Francisco, California 94104
Attention: Mr. Ken Dupee

INTRUSIVE EARTHWORK GUIDANCE PLAN
THE ATRIUM AT EMERY BAY PLAZA
1650 65TH STREET
EMERYVILLE, CALIFORNIA

MAY 5, 2005

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TABLE OF CONTENTS

1.0 GENERAL

1.1 Introduction

This Intrusive Earthwork Guidance Plan (plan), including additional soil management procedures, was prepared by PES Environmental, Inc. (PES) and Sterling & Associates (Sterling) to manage intrusive earthwork prior to performance of subsurface activities that may occur at an indefinite future date at the Atrium property (site) within Emery Bay Plaza. The site is located at 1650 65th Street in Emeryville, California.

This guidance document is not intended to be utilized as a site Health and Safety Plan. A separate Earthwork Health and Safety, Contingency, and Soil Management Plan was prepared in May 2004 for the site by PES for a prior specific work scope (PES, 2004b). For future regulated intrusive earthwork (refer to Section 2.0), the Contractor shall develop its own Site Health and Safety Plan for any work not expressly covered in the 2004 Earthwork Health and Safety, Contingency, and Soil Management Plan.

This document has been developed to provide: 1) a description of regulated activities to which this plan applies; 2) an overview of subsurface conditions at the site; 3) procedures to be followed prior to commencement of regulated activities; 4) guidance for Contractor development of Health and Safety Plan; and 5) soil management procedures so that potentially hazardous materials, if encountered, are handled, managed and disposed in accordance with applicable regulatory requirements.

1.2 Background Information

This 5.0-acre project site is located within the Emeryville Brownfield Redevelopment Area. The property includes an existing commercial building (~127,000 square feet). According to a Phase I investigation conducted at the site in 1989 by Engineering Science, Inc. (ESI, 1989), prior to as early as 1931 the site was below sea level. Sometime thereafter the site was reclaimed as a municipal landfill. Shallow subsurface materials beneath the site consist primarily of engineered fill and landfill debris.

A previous Phase II environmental investigation conducted by LFR indicated that shallow soils beneath the site are affected by: (1) heavy metals typical of the area (including arsenic, cadmium, and lead), particularly in the northwestern portion of the site; (2) the pesticide dieldrin, identified in the northwestern corner of the property; and (3) polychlorinated biphenyls (PCBs), identified in shallow soil in the southwestern portion of the site (LFR, 2003).

Volatile organic compound (VOC) issues associated with the site (LFR, 2003; PES, 1990; and PES, 2001) are those typically associated with petroleum (gasoline/diesel) underground storage tank (UST) issues including benzene, toluene, ethylbenzene, and xylenes. In addition, vinyl

chloride was identified directly beneath the building slab. Polynuclear aromatic hydrocarbons (PAHs) were discovered in the southern-southeaster portion of the property.

Also of note is the identification of methane within shallow soils throughout the site identified during previous investigations (LFR, 2003 and PES, 2004a). At some locations the levels of methane detected exceed the safety levels considered for explosive or flammable atmospheres. A methane collection, control, and monitoring system has been constructed for the subject site building (PES, 2005).

A listing of prior environmental documents for the site is provided in Appendix A.

2.0 REGULATED ACTIVITIES

This plan has been developed to provide procedures to follow to protect the public and workers involved in potential subgrade construction, maintenance, repair, inspection or other activity involving subgrade work ("regulated activities"). Regulated activities are described below.

2.1 Regulated Activities

The following subgrade activities constitute regulated work under this plan.

- **Subsurface Construction or Repair** – any activity occurring beneath the grade level of existing pavement, concrete or 65th Street grade;
- **Deep Landscaping Work** – any activity related to landscaping that extends lower than 18 inches beneath existing grade;
- **Utility Line Work** – any subterranean inspection, excavation, or repair of electrical, telephone, water, sanitary sewer or storm drains occurring within or outside of existing vaults;
- **Sub-Slab Work** – any work performed beneath the slab of the site building, or any work which requires breaching the existing slab;
- **Environmental Investigations –** any subsurface air, soil or groundwater sampling activities, groundwater monitoring well installation or destruction activities or other activities which may expose workers or the public to subsurface media; or
- **Other** – other subgrade activities not expressly listed above.

3.0 REGULATED ACTIVITIES REQUIREMENTS

Prior to commencement of any regulated activities, the following tasks must be completed:

- All contractors and subcontractors of either the owner, tenants, or another party causing regulated activities at the site, shall read this plan and sign the Agreement and Acknowledgment Statement (Appendix B) to certify that they have read, understood and agreed to abide by its provisions;

- Review applicable environmental documents and investigations pertaining to the site. Documents are maintained in the onsite management office;

- Location of subsurface utilities will be verified with Underground Safety Alert (USA) or a private contractor; and

- The personnel or subcontractor performing such work will be required to develop a health and safety plan in accordance with the hazardous material regulations found in the California Occupational Safety and Health Administration (CAL-OSHA), Title 8 of the California Code of Regulations (CCR), Section 5192 (Hazardous Waste Operations and Emergency Response (HAZWOPER).

Compliance with this plan is required of all personnel, subcontractors, etc. associated with the regulated activities mentioned above.

4.0 GUIDANCE FOR CONTRACTOR DEVELOPMENT OF HEALTH AND SAFETY PLAN

All contractors and subcontractors will act in accordance with applicable federal, State, regional, and local regulations during all phases of the project. Applicable regulations include but are not limited to CAL-OSHA, 8 CCR 5192.

The Contractor's Health and Safety Plan should include, but not be limited to, the following components.

4.1 Introduction

The main purpose of the introduction is to describe the site, the specific area of the site that the Contractor's Health and Safety Plan will encompass, and its applicability to operations.

4.2 Key Personnel

This section should include names, descriptions of responsibilities, and ways of contact for key personnel involved with the project.

4.3 Hazard Assessment

Hazard assessment is a methodology used to identify inherent or potential hazards which may be encountered in the work environment associated with accomplishing a project. The hazard

assessment should include the identification of an operation or a job to be assessed, a break down of the project, identification of the hazards associated with each task, and determination of the necessary controls for the hazards.

4.4 Safety Training

The environmental conditions of the site shall be disclosed to all construction workers and subcontractors who will be engaged in earthwork activates including soil excavation, dewatering, and other subsurface activities where contact with potentially contaminated soil and/or groundwater is possible. It is the individual contractor/subcontractor's responsibility to provide additional site-specific construction safety training. For construction activities, additional safety meetings must be held at least once every 10 working days and may include a discussion of site work plans, personal protective equipment, site rules, site hazards, trenching/shoring, and the requirements of the Contractor's Health and Safety Plan.

4.5 Personal Protective Equipment

Modified Level D is the minimum acceptable level for this site. The Contractor should make the appropriate personal protective equipment selection based on the specific project and site hazards.

4.6 Medical Monitoring Program

All construction personnel engaged in regulated subsurface work will be required to be medically qualified prior to donning a respirator should respiratory protection become necessary. If site conditions vary drastically from those anticipated in the plan, other medical surveillance procedures may become necessary, as required.

4.7 Air Monitoring

To the extent feasible, the presence of airborne contaminants will be evaluated through the use of sampling equipment. Information gathered will be used to ensure the adequacy of the levels of protection being employed at the site, and may be used as the basis for upgrading or downgrading levels of Personal Protection, at the discretion of the Contractor's Health & Safety representative and/or Manager.

The following air sampling equipment may be utilized for site monitoring by the Contractor's Health & Safety Representative:

- Photo-Ionization Detector (PID) – organic vapors (alternatively, a FID may also be utilized for this purpose); and
- LEL/O_2 Meter.

The PID and/or FID will serve as the primary instrument for personal exposure monitoring for organic vapors. The instrument will need to be utilized to characterize potential employee exposure and the need for equipment upgrades/downgrades.

During initial excavation activities monitoring should be conducted for explosive atmospheres using an LEL/O_2 monitor. In addition to the petroleum hydrocarbons, fill materials of the site could present methane or other flammable vapor issue.

Monitoring will be conducted to evaluate the potential for exposure to site personnel during initial operations. Continuous monitoring should be performed during operations that have not been characterized. After initial site screening, monitoring shall be conducted periodically and when site conditions might be altered (i.e. weather, drilling, new area of excavation, etc.).

Results of monitoring information shall be recorded including time, date, location, operations, and any other conditions that may contribute to potential airborne organic vapors and lead. All maintenance and calibration information shall be maintained on-site. The monitoring equipment will be calibrated in accordance with the manufacturer's specifications, and the records of such maintained with the plan and/or project file.

4.8 Site Control

The site control program is used to control movement of people and equipment in order to minimize worker exposure to hazardous substances. Site work zones, site communication procedures, safe work practices, and a site map should be included.

4.9 Dust Control

Concentrations of lead and petroleum hydrocarbon constituents in the soil indicate that dust control measures will be, at a minimum, consistent with standard construction practices. These will include, but are not limited to, the following:

- Watering of active soil construction areas to prevent visible dust plumes from migrating outside of the site limits;
- Misting or spraying while loading transportation vehicles;
- Minimizing drop heights while loading transportation vehicles; and
- Using tarpaulins or other effective covers for trucks carrying soils that travel on public roads.

Subsurface activities shall immediately cease should airborne dust become visible, and will not recommence until the area is adequately moistened such that no visible dust will be generated. If visible dust is continually being generated, additional measures (e.g., dust monitoring) may be required.

4.10 Decontamination

All personnel and/or equipment leaving a potentially contaminated area are subject to decontamination procedures. If applicable, general decontamination procedures for personnel and equipment are outlined below.

4.10.1 Personal Decontamination

All personnel leaving areas where existing soil (below existing AC, concrete and associated base rock) has been exposed must follow decontamination procedures as outlined in the Contractor's Health and Safety Plan.

4.10.2 Equipment Decontamination

Equipment utilized in the areas of exposed soil (instruments, samples, tools, backhoes, other construction equipment) will be decontaminated prior to leaving the earthwork areas as outlined in the Contractor's Health and Safety Plan.

All contaminated articles and waste decontamination materials shall be containerized, labeled, and disposed of properly.

4.11 Soil Management

For projects where waste soil will be produced, a soil management plan shall be included. The soil management objectives are designed to: (1) reduce the potential for exposure of construction workers at the site, neighboring workers and/or pedestrians, and future users of the site to soil potentially containing chemical residuals; and (2) ensure that soil that is removed from the site is disposed at an appropriately-permitted disposal facility. All soil management and handling activities shall be conducted in accordance with applicable federal, state and local regulations.

4.11.1 Management of Excavated Soil

Soil excavated during construction activities shall be evaluated in the field using sensory and monitoring equipment for evidence of chemical contamination (i.e. staining, odors, discoloration, elevated VOC readings, etc.).

4.11.2 Management of Apparently Clean Soil

If field evaluation activities do not suggest the presence of contamination, the soil shall be stockpiled and may be reused onsite as backfill at the excavation site. If an overage of "clean" soil remains at the end of the project requiring removal from the site, appropriate soil characterization for waste disposal purposes shall be conducted.

4.11.3 Management of Suspect Soil

Excavated soil exhibiting characteristics suggesting potential contamination shall be stockpiled onsite within a designated fenced enclosure. The soil shall be placed on and covered with plastic sheeting. Characterization samples shall be collected. Pending results of the stockpile characterization, appropriate handling and management alternatives shall be evaluated (i.e. reuse onsite or offsite as fill material or disposal at an appropriately permitted facility).

4.11.4 Excess and Suspect Soil Stockpile Sampling and Analysis

Excavated soil suspected to contain chemical residuals and/or requiring off hauling (regardless of the potential for contamination), shall be sampled to evaluate appropriate handling and management alternatives. Soil sampling shall be conducted on a minimum frequency of one discrete sample per approximately 50 cubic yards of soil or a higher frequency if otherwise required to comply with applicable regulations.

The chemical analyses to be conducted shall be determined on the basis of the destination of the material (i.e., landfill, offsite backfill area, etc.) and/or the suspected contaminant(s) (based on field evaluation techniques and/or historic sampling data relevant to the specific portion of the site from which the material was excavated).

4.11.5 Management of Groundwater

For projects where groundwater may be encountered, the groundwater shall be managed. If groundwater is encountered and requires pumping from excavations, the groundwater should be pumped into appropriate containers and samples should be obtained for analysis to determine waste classification and disposal/recycling options. The chemical analyses to be conducted shall be determined on the basis of the suspected contaminant.

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APPENDIX A

ENVIRONMENTAL DOCUMENT LIST

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APPENDIX B

AGREEMENT AND ACKNOWLEDGMENT STATEMENT

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The Atrium @ Emery Bay Plaza
1650 65th Street, Emeryville, California

Intrusive Earthwork Guidance Plan Agreement

All project personnel and subcontractors are required to sign the following agreement prior to conducting work at the site.

1. I have read and fully understand the plan and my individual responsibilities.

2. I agree to abide by the provisions of the plan.

Name	Signature
Company	Date
Name	Signature
Company	Date
Name	Signature
Company	Date
Name	Signature
Company	Date
Name	Signature
Company	Date

(Add additional sheets if necessary)