



Environmental Health & Safety

Acceptance of Soil from Off Site Sources

I. Policy

In order to prevent the import and use of contaminated soil to be used as fill material on campus, the Environmental Health and Safety (EHS) Office has established this policy for receiving soil from off-site sources.

II. Authority

California Code of Regulations Title 22.

III. Scope

The use of imported fill material has the potential to bring contaminated soil onto the campus, potentially impacting an otherwise clean site. Currently, the California Environmental Protection Agency (Cal EPA) - Department of Toxic Substance Control (DTSC) has no recently published standards that address environmental requirements for imported fill material.

Environmental Health and Safety Office has prepared this guideline document in order to provide information for acceptance of clean imported fill material from off campus sites.

IV. Definitions

Department of Toxic Substances Control (DTSC)

The DTSC establishes regulations governing site remediation and hazardous chemical disposal.

Local Oversight Program Agency

The Local Oversight Program Agency is the Fullerton Fire Department or the Orange County Environmental Health Agency. These Agencies enforce regulations pertaining to the remediation of gas stations, auto repair facilities, sites containing petroleum impacted soils, and disposal and transportation of these soils on and off a contaminated site.

State Water Quality Control Board (SWQCB)

The SWQCB enforces laws pertaining to groundwater, surface water, and stormwater runoff, as well as underground storage tank remediation, encompassing any contaminated soil found during the remedial activities including transportation and disposal.

Santa Ana Regional Water Quality Control Board (SARWQCB)

SARWQCB has been delegated authority by the SWQCB to enforce all laws and regulations pertaining to their authority.

V. Accountability

Facilities Management ensures all soil brought onto the CSUF campus to be free from contaminants that may adversely affect human health and/or the environment.

EHS consults and advises with campus departments and contractors about the policy and guideline established in this document.

VI. Program

Both natural and manufactured fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site-specific geotechnical engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil and from demolition debris (asphalt, broken concrete, etc.).

Materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill and the quality of the assessment and/or mitigation measures, if necessary. Unless material from a construction project can be determined to be free of contamination and/or appropriate for the proposed use, the use of those materials as fill should be avoided.

1.0 Selecting Fill Material

- Gravel, crushed aggregate base, and fill materials/soil from commercial brokers are exempted from this guideline.
- Fill source areas should be located in non-industrial areas from sites not undergoing an environmental cleanup. Non-industrial sites include those that were previously undeveloped or used solely for residential or agricultural purposes.
- Undesirable sources of fill material include industrial and/or commercial sites where hazardous materials were used, handled, or stored as part of the business operations, former gasoline service stations, auto repair facilities, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities, metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, and unpaved parking areas used for the disposal of soil, construction debris or trash, or where petroleum hydrocarbons could have been spilled or leaked into the soil.

Fill Source Documentation

- To minimize the potential introduction of contaminated fill material onsite, it is necessary to verify through documentation that the fill source is uncontaminated.
- Fill documentation shall include as much information as is available as to the current and historic use of the import fill source site, including, environmental site assessment reports, results of any analytical chemical testing performed, interviews with current or former occupants, tax assessor records, building permits, etc.

- Samples of the fill material shall be collected by a qualified environmental consultant and analyzed by an environmental laboratory accreditation program (ELAP) laboratory.

3.0 Sampling Schedule

- Representative samples shall be collected at the fill source area while the potential fill material is still in place whenever possible, or from stockpiles, and analyzed prior to importing.
- An appropriate number of samples shall be collected relative to the size of the source area or stockpile volume of soil to be used as fill material. Refer to Tables and 2 to determine the sampling schedule needed to adequately characterize fill material.
- In-situ sampling shall include one sample collected at one-foot depth below ground surface (bgs), and every two-feet thereafter.
- Composite sampling for fill material characterization is not acceptable.

Table 1: Recommended Minimum Stockpile Fill Material Sampling Schedule

Volume of Source Stockpile	Sample per Volume
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1,000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 samples per each additional 1.000 cubic yards

Table 2: Recommended In-Situ Fill Material Sampling Schedule

Area of Individual Source Site	Sampling Requirements
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 sub-samples per location (32 total samples)

4.0 Determination

- All samples shall be analyzed for heavy metals (EPA Methods 6010B and 7471A), volatile organic compounds (VOCs; EPA Method 8021 or 8260B), semi-VOCs (EPA Method 8270C), total petroleum hydrocarbons (TPH; EPA Method 8015 modified), polychlorinated biphenyls (PCBs; EPA Method 8082 or 8080A) and asbestos (qualitative polarized light microscopy). If the source area is near an existing freeway or railway the samples shall also be analyzed for polycyclic aromatic hydrocarbons (PAHs; EPA Method 8310). If the source area is located near a mining area or rock quarry the samples shall also be analyzed for pH. If the source area was used for agricultural purposes the samples shall also be analyzed for organochlorine pesticides (OCPs; EPA Method 8081A or 8080A), organophosphate pesticides (OPPs; EPA Method 8141A) and chlorinated herbicides (EPA Method 8151A),
- Reported concentrations of chemical compounds of concern within the fill material shall be compared to the DTSC HERO Note 3 Screening Levels (SL;

2020), or the San Francisco Bay Regional Water Quality Control Boards (SFBRWQCB) Environmental Screening Levels (ESLs; 2019) and US Environmental Protection Agency's (EPA) Regional Screening Levels (RSLs; 2021) if an SL is not provided.

- Reported concentrations of heavy metals will be compared to regional background concentrations (University of California, 1996; DTSC, 2008). Reported concentrations of heavy metals and 23 VOCs and SVOCs identified as potential State or Federal hazardous constituents (CCR T22:66261.24 and 40CFR261) will be compared to Hazardous Waste Criteria Total Threshold Limit Concentrations (TTLC) and analyzed for Soluble Threshold Limit Concentration (STLC) extraction (wet) and Toxicity Characteristic Leaching Procedure (TCLP) for waste disposal, if required.
- A Soil Certification report must be provided to EHS prior to accepting fill onsite. This report shall be certified by an appropriate professional (e.g., geologist, hydrogeologist, or engineer), and state if the fill should be accepted or rejected based on the content of this policy, and shall include, at a minimum, available field documentation and analytical testing reports, including chain-of-custody (COC) documentation and quality assurance and quality control (QA/QC) protocol and analyses.

5.0 References

Department of Toxic Substances Control, 2001, Information Advisory, Clean Imported Fill Material, October.

Department of Toxic Substances Control, Human and Ecological Risk Office, 2022, Human Health Risk Assessment (HHRA) Note Number 3, Guidance for Screening Level Human Health Risk Assessments, March 4.

Department of Toxic Substances Control, 2008, Determination of a Southern California Regional Background Arsenic Concentration in Soil, Chernoff, G., Bosan, W., and Oudiz, D.

Department of Toxic Substances Control – Regional Water Quality Control Board, 2023, Supplemental Guidance: Screening and Evaluating Vapor Intrusion, Final Draft, February.

San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, 2019.

United States Environmental Protection Agency, Regional Screening Levels (RSLs), May 2021.

United States Environmental Protection Agency, SW-846 – Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, <https://www.epa.gov/hw-sw846>.

University of California, Kearny Foundation of Soil Science, 1996, Concentrations of Trace and Major Elements in California Soils, March.

6.0 Additional Information

For further information, please contact Rob Denman, Environmental Compliance Specialist, Environmental Health and Safety at 657-278-7233.

2/8/2008 cp, Revised: 2011 (EHS), 2022 (EHS), 2023 (Citadel EHS)