SHALLOW SOIL CHARACTERIZATION & REMOVAL

Palm Elementary School

14740 Palm Avenue, Hacienda Heights, California

Roux Associates, Inc.

Peter Shimer, P.G. | Principal Geologist

HLPUSD Board of Education • August 20, 2026

ROUX

Our Role & Scope

To be protective of students and staff, Roux was initially retained to confirm the findings of the previous composite screening evaluation. Compositing effectively averages results over a larger area, and although unlikely, it is possible for localized hot spots to be obscured. Out of an abundance of caution, Roux completed a conservative, discrete-sample evaluation, then delineated, removed, and confirmed cleanup of accessible soils with metals above health risk criteria. The work was executed carefully and safely **to prevent the spread of contamination and protect students, staff, and the community**.

1 Investigate

Discrete soil sampling to find metals

2 Delineate

Step-out sampling to map the extent

3 Remove

Targeted excavation of impacted soil

4 Confirm

Verification sampling of clean results

Scope: to characterize and remove soil above screening levels.

Site Investigation

Roux designed a deliberate, wide-reaching sampling program — covering the full campus and focusing where metals are most likely to accumulate — so no impacted area was missed.

Comprehensive Coverage

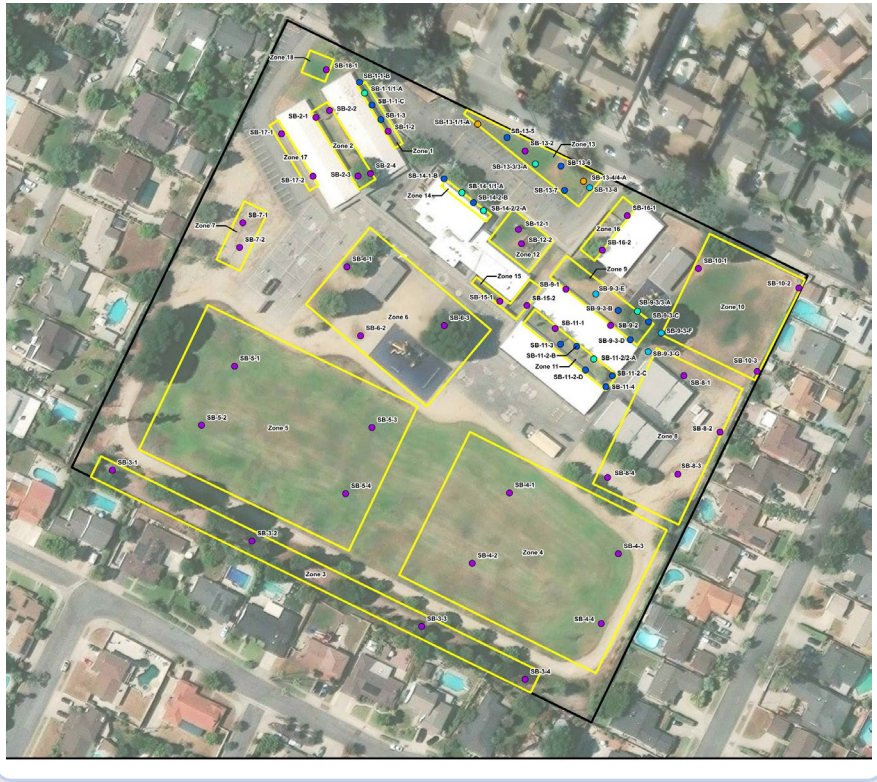
~50 discrete samples across 18 zones spanning the entire campus, so every area was represented.

Targeted by Design

Sampling focused where metals concentrate — driplines, low spots, and swales — and screened for several common sources.

Followed the Data

Where impacts appeared, 96 step-out samples mapped their full width and depth until clean edges were confirmed.



Nearly 150 samples — robust and comprehensive investigation

Cleanup Goals — Established Regulatory Standards

For cleanup standards, we relied on conservative, DTSC-established **screening level concentrations**, below which soil is considered safe for unrestricted residential use — including a school.

Lead

80 mg/kg

DTSC residential soil screening level

The established DTSC residential standard, set to protect the most sensitive group — young children's neurological development.

Arsenic

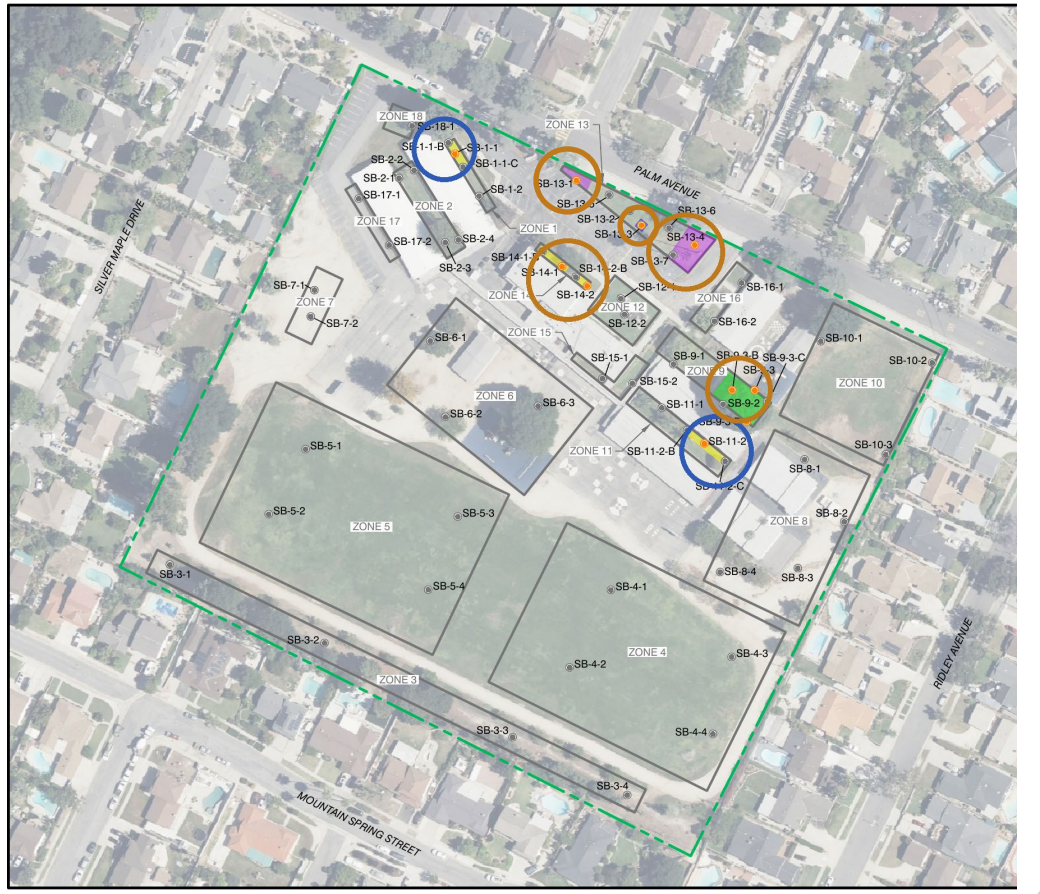
12 mg/kg

DTSC HERO Note No. 11 regional background value

Arsenic occurs naturally in California soils above risk-based screening levels. The 12 mg/kg value is DTSC's established benchmark developed specifically for evaluating background arsenic at LAUSD schools.

We defaulted to accepted, health-protective regulatory standards — conservative by design.

Where & What We Removed



Lead — Zones 1, 11 Arsenic — Zones 9, 13, 14

~237 tons of soil removed

8 excavations across the campus (2 lead, 6 arsenic)

~181 tons of certified-clean virgin fill placed

Excavation completed June 8–11, 2026

How We Protected the Community During Work

Because the excavated soil could have contained hazardous concentrations, Roux prepared and acted accordingly throughout — handling all work to a conservative, protective standard to prevent the spread of contamination and protect students, staff, and the community.

HS

Trained & Licensed Crews

All work performed and overseen by OSHA HAZWOPER-trained personnel under a site-specific Health & Safety Plan (HASP).

AIR

Dust Suppression & Air Monitoring

Under SCAQMD Rule 1466, real-time upwind/downwind monitoring confirmed when dust suppression was containing contaminants — or when additional mitigation was necessary.

PILE

Protective Stockpiling

Excavated soil was staged on plastic to protect underlying clean soil, and covered to prevent fugitive dust — contained at every step.

XRF

Real-Time XRF Screening

Field X-ray fluorescence guided excavation extents in real time and added hundreds of supplemental data points to strengthen confidence in the work.

OUT

Licensed Off-Site Disposal

Impacted soil was transported and disposed of at a permitted off-site facility, fully removing it from the campus.

Excavation Completion Verification

Removal confirmed by discrete sampling

Discrete confirmation samples from every excavation floor and sidewall were below the lead and arsenic cleanup goals — definitive proof that removal was complete in all accessible areas.

Reinforced from all sides

Reinforced by the pre-excavation delineation samples bracketing each work area, and by 134 real-time XRF readings that correlated strongly with the laboratory data.

Bottom line

All accessible lead- and arsenic-impacted soil has been removed, and ~181 tons of certified-clean fill restored the site. The campus is protective for its continued use as a school.

REMAINING IMPACTS

Small amounts of arsenic remain in the sidewalls of two areas (**Zones 13.1 and 13.4**), isolated and capped beneath asphalt pavement.

Because they are inaccessible, there is **no complete exposure pathway.**

This soil would only need management if the pavement is ever removed for future construction.

No further excavation is proposed at this time.

Thank You