



# Irvine Unified School District

## Portola High School Final Workplan and Confirmational Sampling Results

May 24, 2016

### Board of Education

Paul Bokota, President

Ira Glasky

Lauren Brooks

Michael Parham

Sharon Wallin



# Introductions

## Irvine Unified School District

- Kelvin Okino, Executive Director Facilities, Planning and Const.
- Lorrie Ruiz, Director Facilities and Planning

## Department of Toxic Substances Control

- Dot Lofstrom, PG, Division Chief & Acting Deputy Director
- Dan Gallagher, PG, CHG, Senior Engineering Geologist
- Yolanda Garza, Unit Chief
- Russ Edmondson, Public Information Officer

## PlaceWorks

- Dwayne Mears, Principal
- Denise Clendening, PhD, Associate Principal

## Atkinson, Andelson, Loya, Ruud & Romo

- Andreas Chialtas, Senior Partner



# Agenda

- Workplan Development Process
- Sampling
  - Process
  - Timeline
  - Locations
  - Findings
- Human Health Risk Assessment
- Conclusion



# Workplan Development Process

## Workplan

- Mar. 2, 2016: Received letter from Barbara Lee, Director DTSC
- Mar. 8, 2016: Met with DTSC Staff at Portola High School to evaluate potential locations for additional testing
- Mar. 11, 2016: Submitted “draft” Workplan to DTSC
- Mar. 22, 2016: IUSD Special Board Meeting
  - Attended by:
    - DTSC Sacramento and Cypress Offices
    - PlaceWorks
    - Irvine USD Board of Education, Executive Cabinet and Staff
  - Received and considered public comments
  - Increased confirmational samples from 8 to 17
- **Mar. 28, 2016: Conditional Approval of Workplan**



# Sampling Process

## Independent Firms Utilized

- Interphase Environmental
  - Set soil gas probes
  - Collect soil samples
- A&R Laboratories
  - Chain-of-Custody
  - Soil Sample Laboratory
- Jones Environmental, Inc.
  - Collect soil gas samples
  - Soil gas Laboratory
- PlaceWorks
  - Human Health Screening Risk Evaluation



# Sampling Timeline

## Timeline

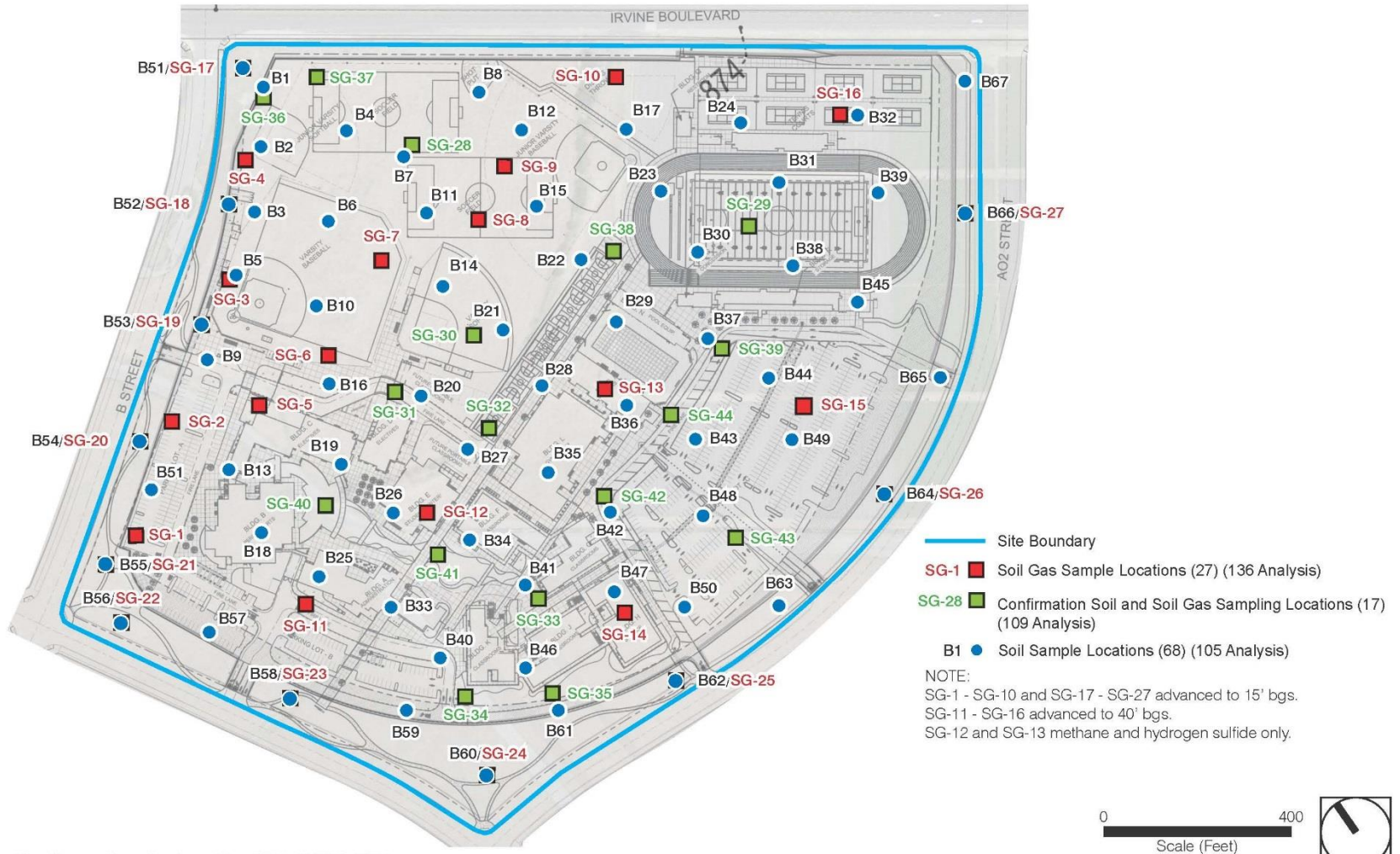
- Mar. 29, 30, Apr. 5, 6, and 12, 2016: Soil and soil gas sampling performed
- May 11, 2016: Initial Characterization Report to DTSC
  - Initial schedule was Apr. 22, 2016
  - Additional samples required extended durations
- May 19, 2016: DTSC provides response
  - Initial schedule was May 6, 2016
  - Additional samples required extended durations
- **May 24, 2016: Final Characterization Report**
  - Presentation to Board of Education



# Soil Gas and Soil Sampling Map

PORTOLA HIGH SCHOOL

PEA, SSI and Confirmation Sampling Locations



Base Map Source: Hunsaker Associates, 2014, ENGEO, 2014.

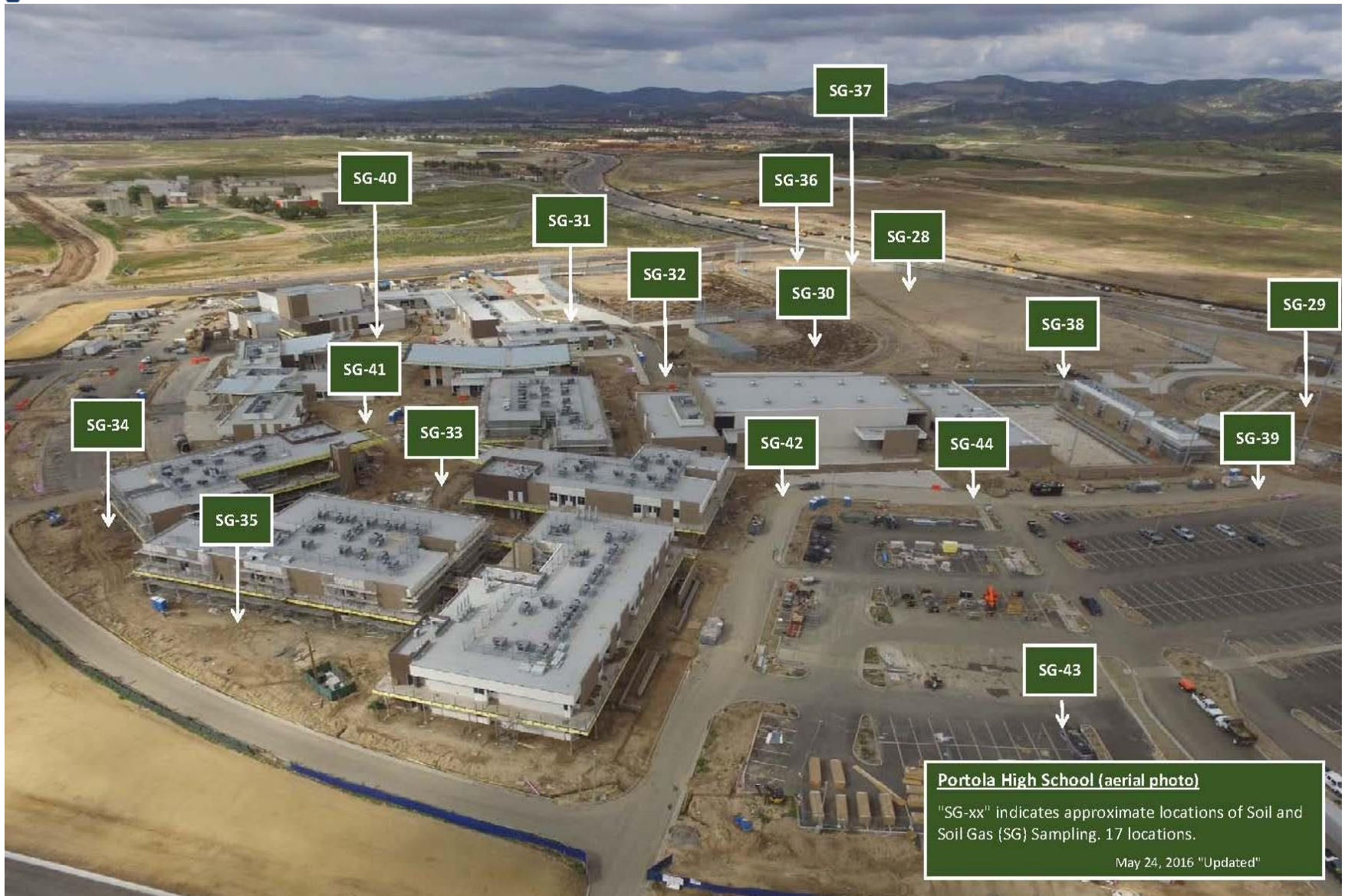


PlaceWorks





# Confirmational Sampling Map







# Summary of Findings

## Confirmational Sampling

- Soil sampling non-detect for Total Petroleum Hydrocarbons
- Soil gas sampling results similar to findings:
  - Preliminary Environmental Assessment (PEA)
  - Supplemental Site Investigation (SSI)
  - Offsite Storm Drain Investigation
  - Retaining Wall Investigation
- Volatile Organic Compounds detected at very low levels
- Human health risk assessment screening showed chemical concentrations not a risk to human health under an unrestricted, residential land use scenario



# Volatile Organic Compounds (VOCs)

## Definition

- VOCs: a group of chemicals that volatilize easily, meaning they evaporate easily into the air at room temperature
- Examples of products include gun cleaner, paint strippers, and de-greasing solvents, as well as gasoline
- Causes adverse health effects at certain concentrations (specific to each chemical)



# Volatile Organic Compounds (VOCs)

## Reasons for Concern

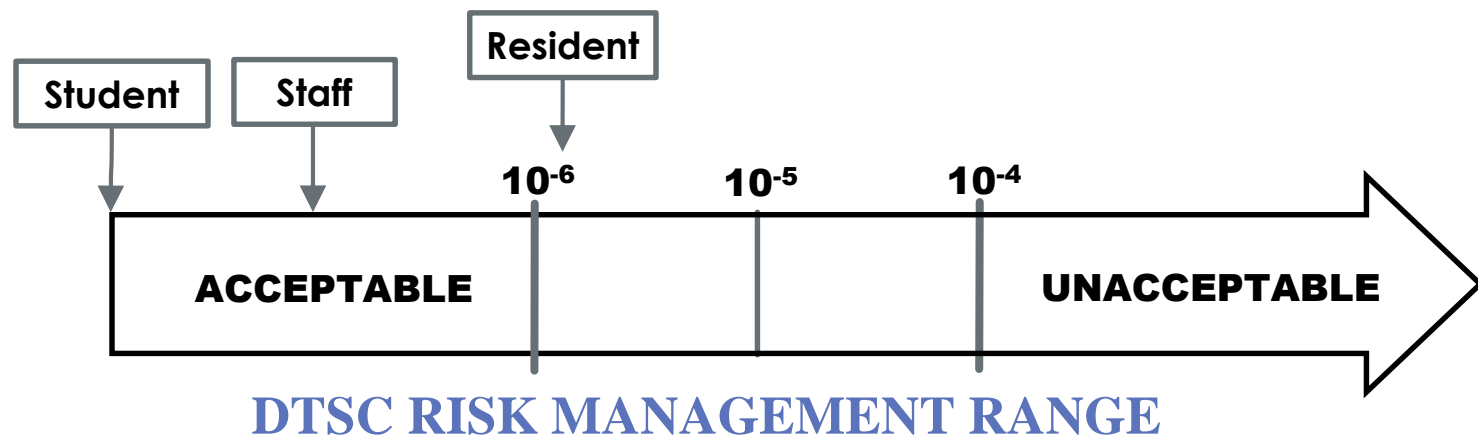
- Prior use of the Site by the military
- Occurrence of contamination at the storm drain located at the northern corner of the property
- Past sampling that found low levels of VOCs



# Volatile Organic Compounds (VOCs)

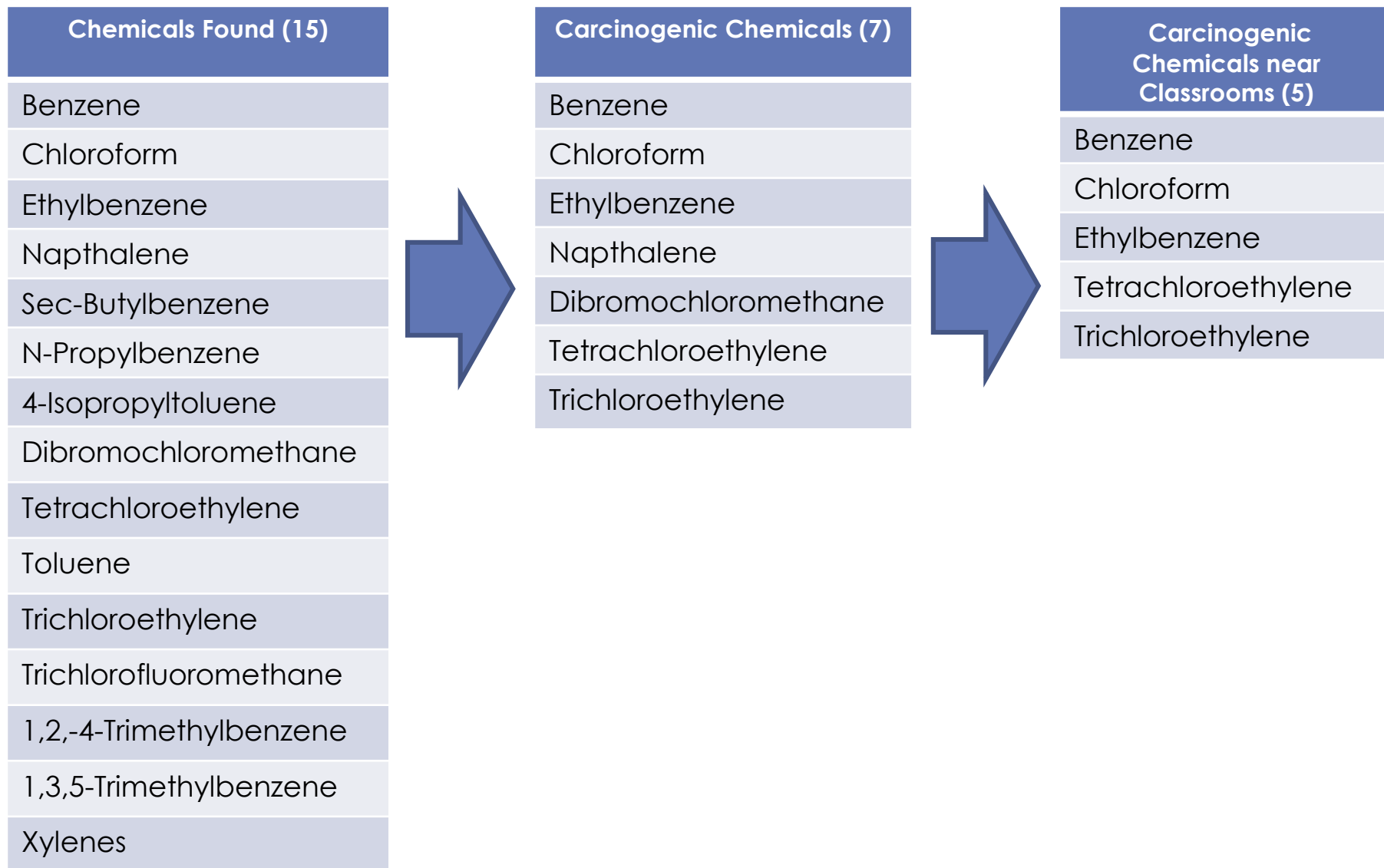
## Calculated Site Risk

- Highest cancer risk to student using maximum concentrations near the buildings:  $1.9 \times 10^{-8}$
- Highest cancer risk to staff using maximum concentration near the buildings:  $1.2 \times 10^{-7}$
- Residential exposure using maximum concentrations:  $1.9 \times 10^{-6}$





# VOC's Identified During Sampling



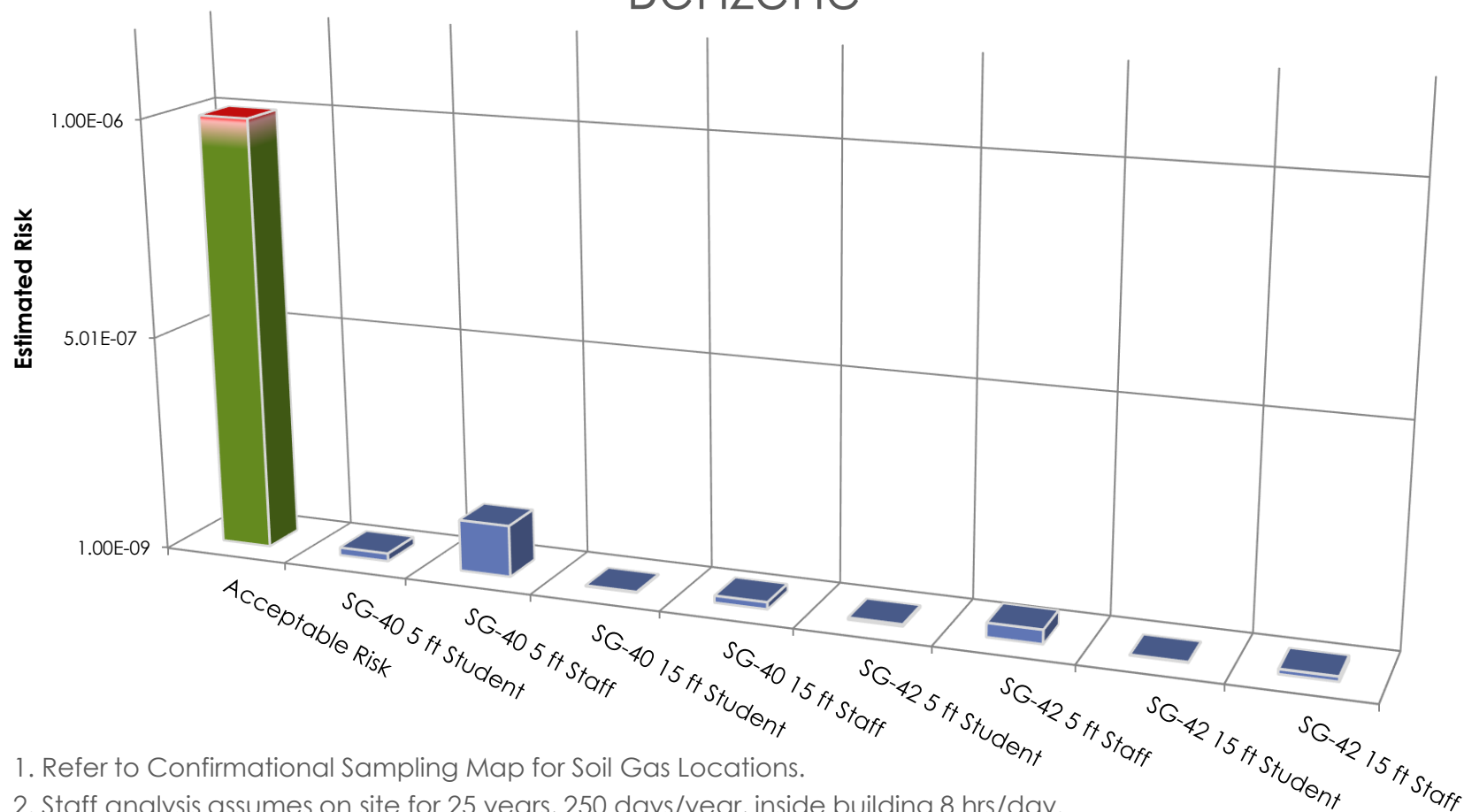




# Human Health Risk Assessment

## School Site Exposure – Soil Gas Data

### Benzene



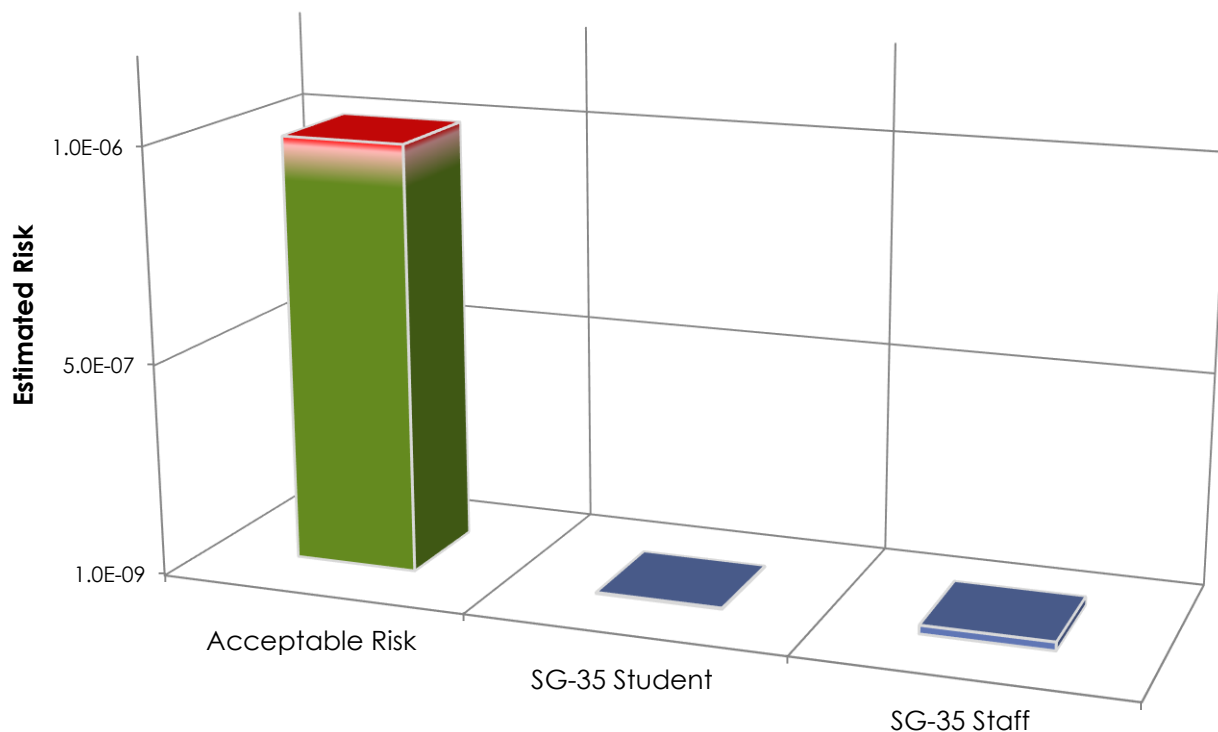
1. Refer to Confirmational Sampling Map for Soil Gas Locations.
2. Staff analysis assumes on site for 25 years, 250 days/year, inside building 8 hrs/day.
3. Student analysis assumes on site for 4 years, 250 days/year, inside building 8 hrs/day.
4. Acceptable Risk - DTSC's level, if lower than, supports a no further action determination.



# Human Health Risk Assessment

School Site Exposure – Soil Gas Data

Chloroform



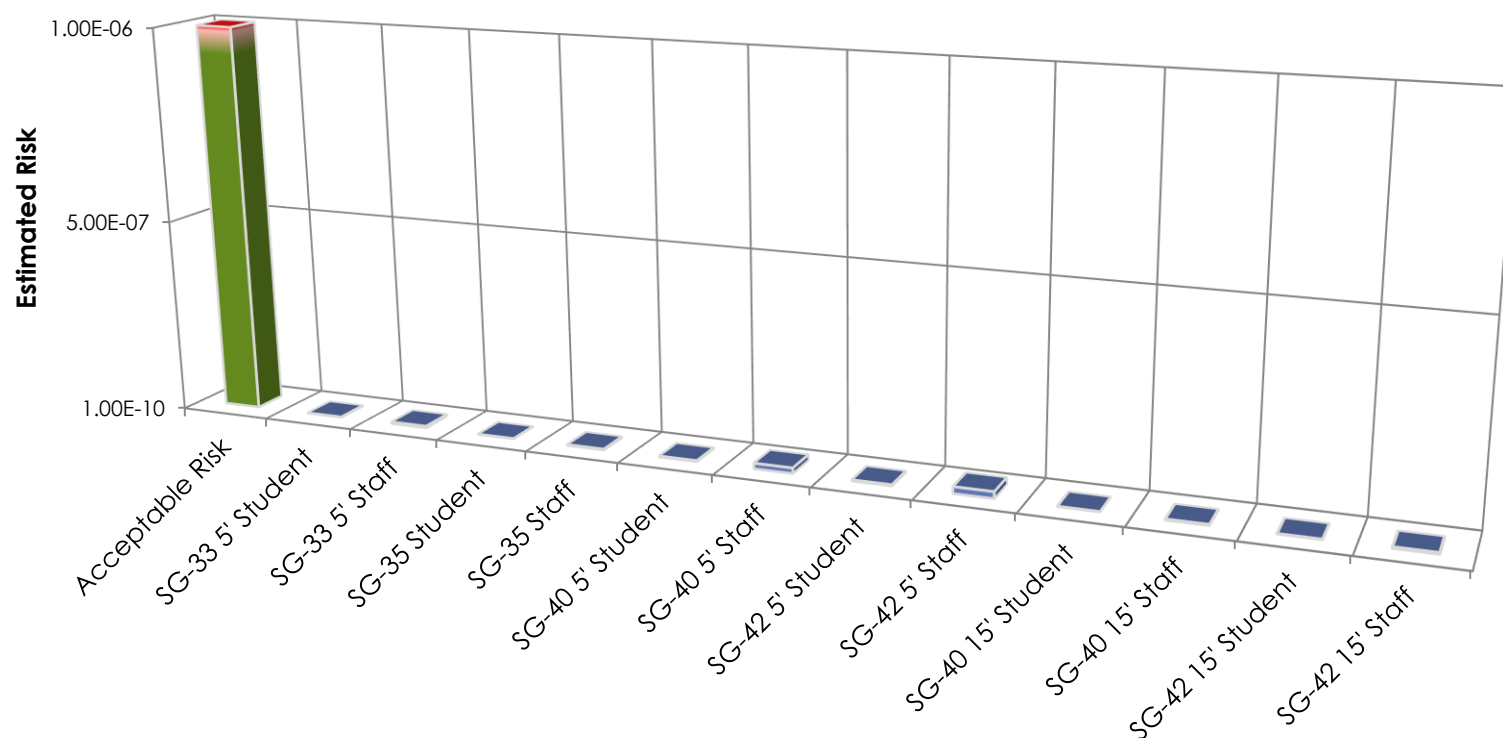
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# Human Health Risk Assessment

## School Site Exposure – Soil Gas Data

### Ethylbenzene



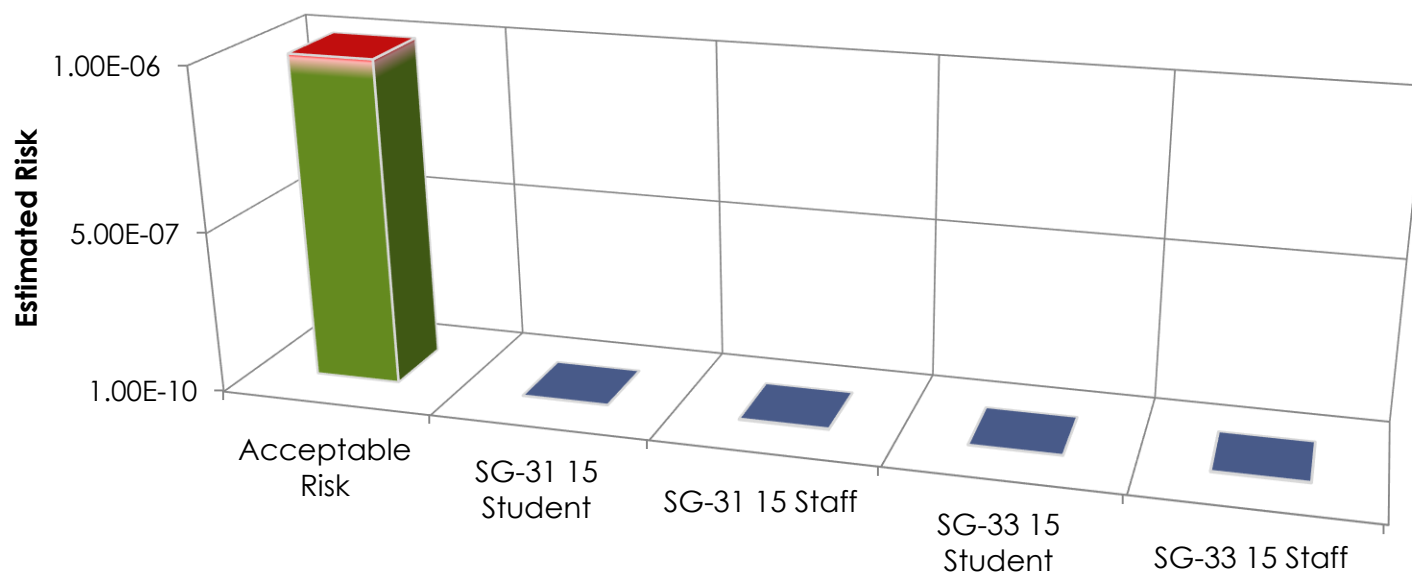
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# Human Health Risk Assessment

## School Site Exposure – Soil Gas Data

### Tetrachloroethylene



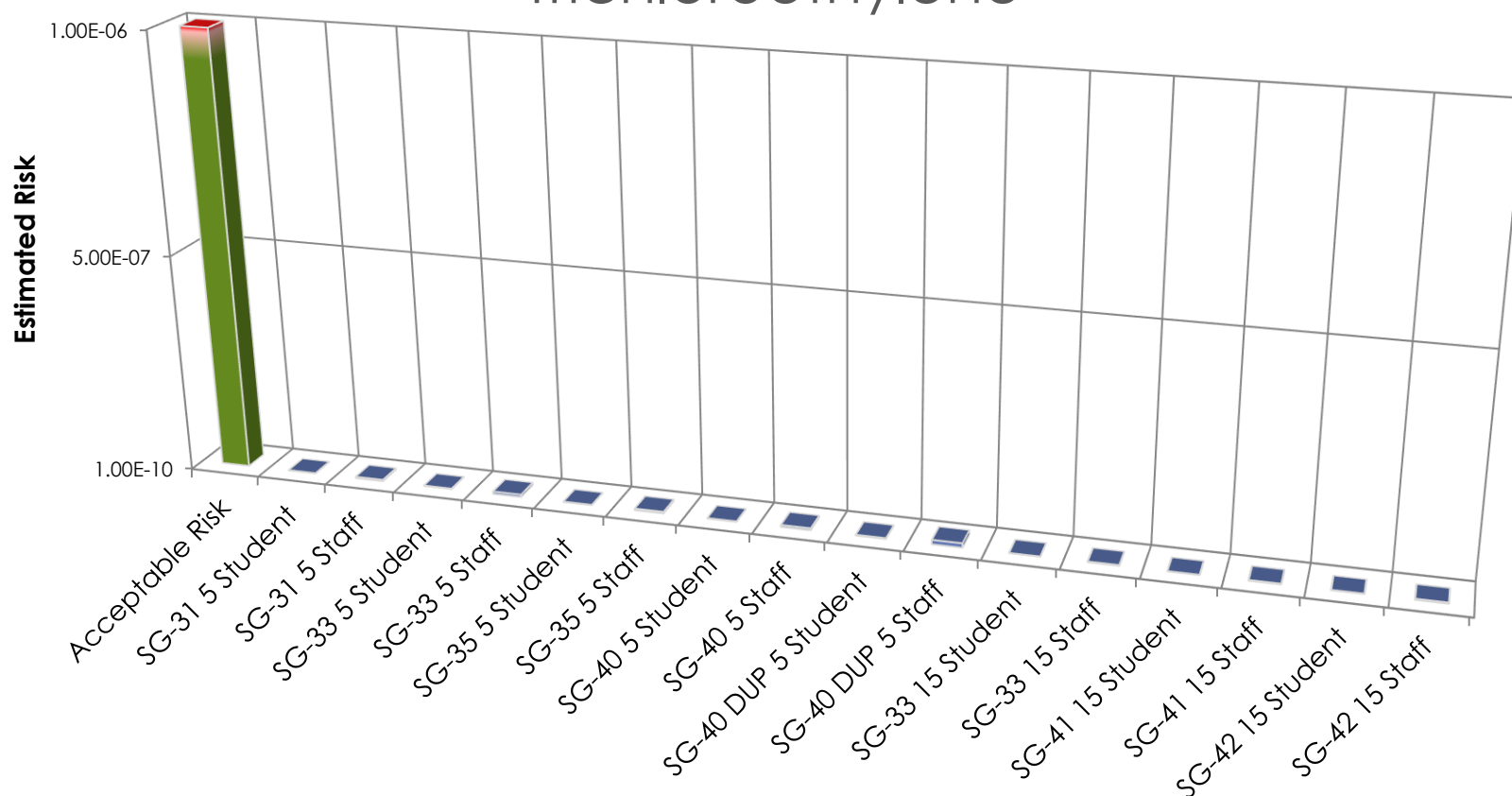
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# Human Health Risk Assessment

## School Site Exposure – Soil Gas Data

### Trichloroethylene



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3. Student analysis assumes on site for 4 years, 250 days/year, inside building 8 hrs/day.
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# Conclusions

- Source identified and no evidence of ongoing release
- Detected concentrations of VOCs well below human health risk based levels
- No threat to health of individuals who attend classes, work at the school, or might otherwise use the school's property



# Thank You

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