

# Assessment of Naturally Occurring Asbestos in El Dorado Hills

U.S. EPA Region 9

## Assessment of Naturally Occurring Asbestos in El Dorado Hills

- How Did Region 9 Become Involved?
  - Oak Ridge High School soccer field construction and cleanup
  - September 2003 CERCLA 105(d) citizen petition to assess other public areas in El Dorado Hills

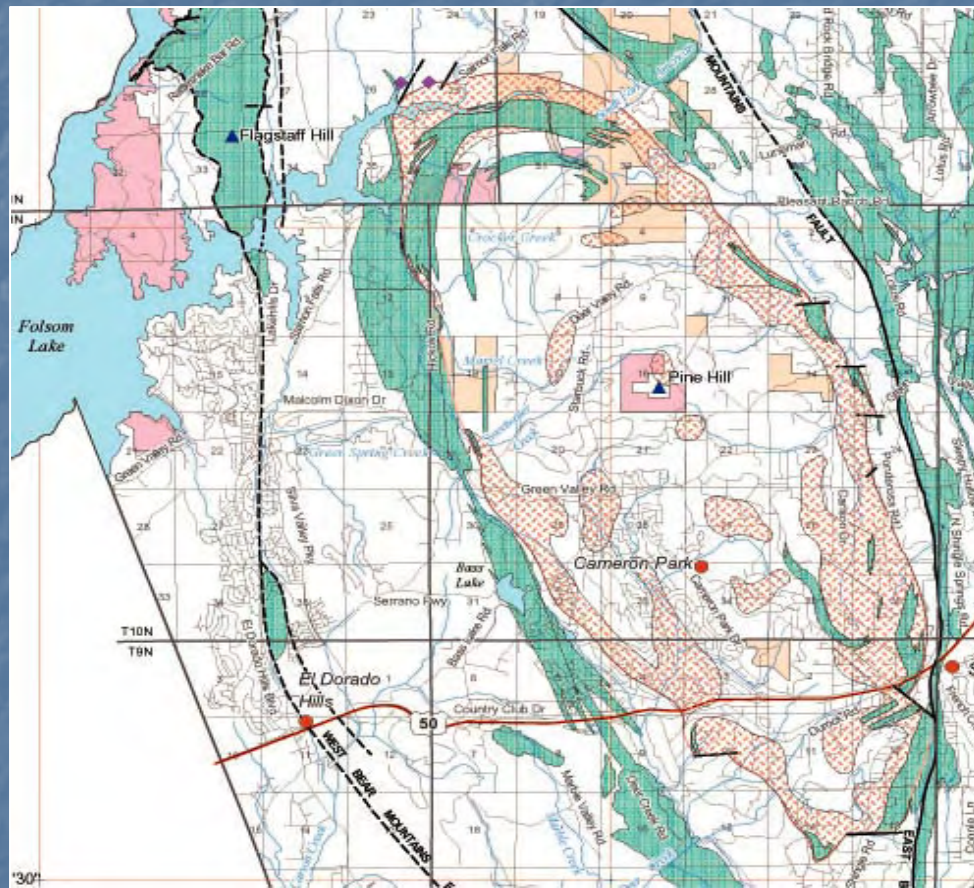


## Assessment of Naturally Occurring Asbestos in El Dorado Hills

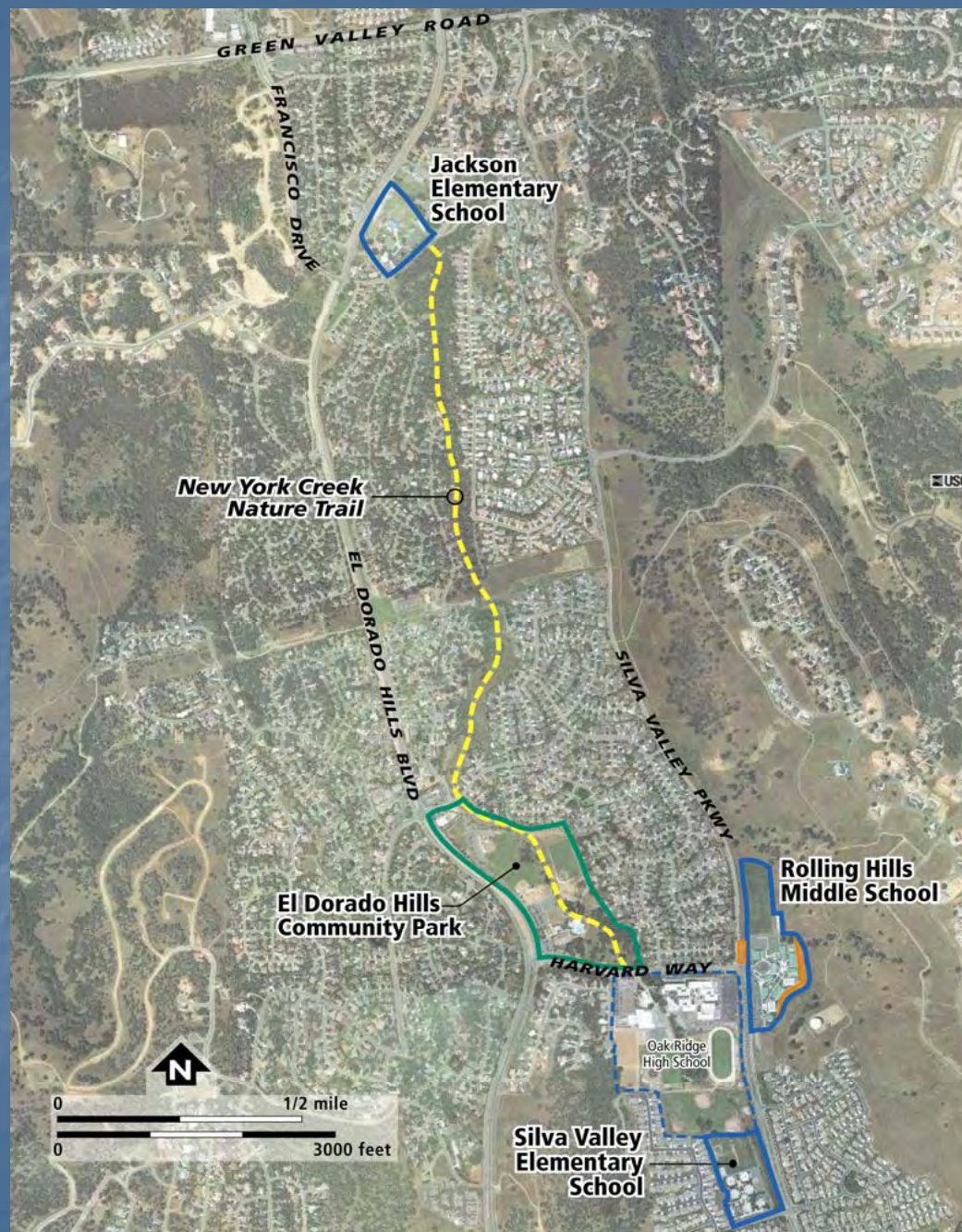




# Assessment of Naturally Occurring Asbestos in El Dorado Hills







## Assessment of Naturally Occurring Asbestos in El Dorado Hills

- Overall Principles

Focus on activity-based air sampling



## Assessment of Naturally Occurring Asbestos in El Dorado Hills



- Activity-based air sampling directly addresses the asbestos exposure route of health concern and avoids the pitfalls of soil sampling and analysis

## Assessment of Naturally Occurring Asbestos in El Dorado Hills

### ■ Overall Principles

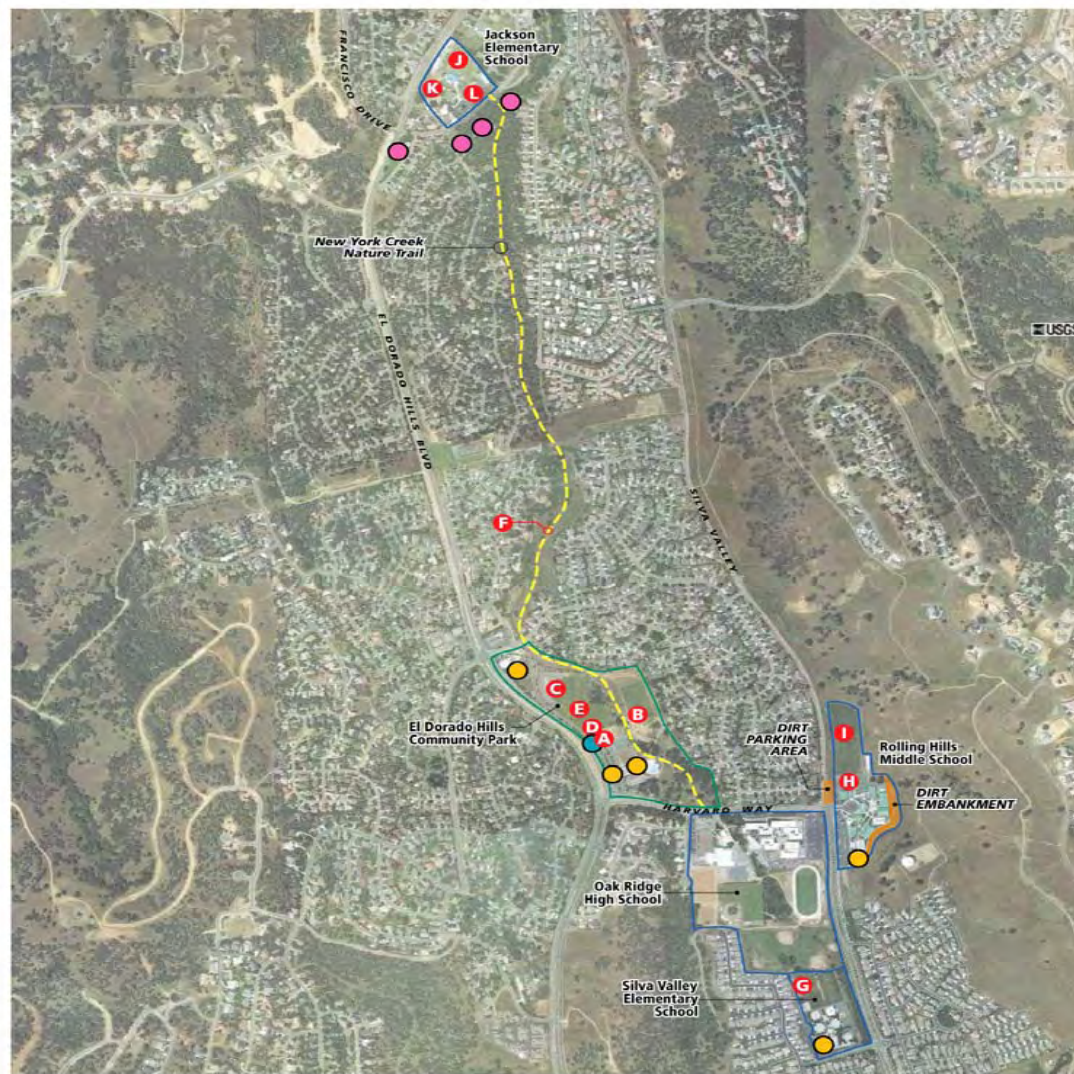
Focus on activity-based air sampling

Focus on children

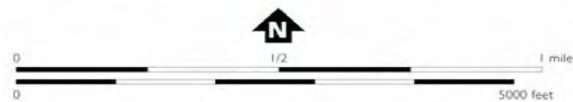
Capture exposures of most active

Compare activity levels with nearby reference samples





- |   |   |   |
|---|---|---|
| <b>A</b> Children's playground at the Community Park  | <b>F</b> New York Creek Nature Trail                              | <b>J</b> Playing field at Jackson Elementary School |
| <b>B</b> New York Creek baseball playing field at the Community Park                                    | <b>G</b> Baseball playing field at Silva Valley Elementary School | <b>K</b> Outdoor classroom & garden at Jackson E.S. |
| <b>C</b> North baseball playing field at the Community Park   | <b>H</b> Basketball court area at Rolling Hills Middle School     | <b>L</b> Play areas at Jackson Elementary School    |
| <b>D</b> South baseball playing field at the Community Park   | <b>I</b> Soccer field at Rolling Hills Middle School              |   |
| <b>E</b> Lower soccer field (between the north and south baseball playing fields) at the Community Park |   |   |
| Northern Reference Area   |   |   |
| Ambient Air Monitoring Station at the Community Park  |   |   |
| Southern Reference Area   |   |   |



## Assessment of Naturally Occurring Asbestos in El Dorado Hills

### ■ Overall Principles

Focus on activity-based air sampling

Focus on children

Capture exposures of most active

Compare activity levels with nearby reference samples

Base assessment on best science for sample collection and analysis



## Assessment of Naturally Occurring Asbestos in El Dorado Hills

- Air analysis by the ISO 10312 method:
  - ✓ International TEM Method
  - ✓ Comprehensive counting rules that limit discretion of analyst
  - ✓ Allows for characterization and identification of every fiber
- PE samples sent to the laboratory prior and during sampling

## Assessment of Naturally Occurring Asbestos in El Dorado Hills

### ■ Locations and Venues

Silva Valley Elementary	<i>Little League Field</i>
Rolling Hills Middle School	<i>Playing Field</i>
	<i>Basketball Court</i>
Jackson Elementary	<i>Outdoor Classroom/ Garden Area</i>
	<i>Playing Field</i>
	<i>Hard Courts</i>



## Assessment of Naturally Occurring Asbestos in El Dorado Hills

### ■ Locations and Venues

Park at Community Center

*Baseball Fields*

*Soccer Field*

*Playground*

New York Creek Nature Trail

*Jogging*

*Biking*

## Assessment of Naturally Occurring Asbestos in El Dorado Hills

- Activity-Based Air Sampling - Common Factors
  - ✓ Two hour simulations of baseball, soccer, basketball, gardening, playing, jogging, and biking
  - ✓ Persons conducting activities wore personal samplers with intakes set at breathing height
  - ✓ Samplers at reference locations ran for 8 hours each sampling day
  - ✓ Sampling was conducted under dry conditions



## El Dorado Hills Assessment Actual Sampling Schedule

Sampling Day	Date	Scenario 1	Scenario 2	Scenario 3	Reference Sample
1	Friday, October 1 [Close Park all Day]	Rehearsal All Day + Press Availability 1:00 pm to 3:00 pm [Rehearsal at Park. Close Park for Day]			South Area
2	Saturday, October 2	Silva Valley Baseball Field Maintenance	Silva Valley Baseball		South Area
3	Sunday, October 3	Silva Valley Baseball	Rolling Hills Soccer	Rolling Hills Basketball	South Area
		Eight Hour Trail Perimeter Sampling			
4	Monday, October 4 [Close Park All Day]	Community Center Playground □Typical□ + □Aggressive□			South Area
5	Tuesday, October 5 [Close Park All Day]	Two-hour Biking Activity on Trail + Two hour Perimeter Sampling	Community Center Baseball North Field	Community Center Baseball South Field	South Area
6	Wednesday, October 6 [Close Park All Day]	Two hour Jogging Activity on Trail + Two hour Perimeter Sampling	Community Center Baseball South Field	Community Center Baseball South Field without maintenance	South Area
7	Thursday, October 7 [Close Park All Day]	Two hour Jogging Activity on Trail + Two hour Perimeter Sampling	Community Center Baseball NY Field	Community Center Soccer South Field	South Area
8	Friday, October 8	Soil Sampling Community Park, Trail			South Area
9	Saturday, October 9	Soil Sampling Silva Valley, Rolling Hills			North Area
		Eight Hour Trail Perimeter Sampling			
10	Sunday, October 10	Jackson School Garden Area	Jackson School Soccer	Jackson School Basketball and Kindergarten Play Area	North Area
11	Monday, October 11	Soil Sampling Dirt Parking Area			North Area





























































## Assessment of Naturally Occurring Asbestos in El Dorado Hills

- What Did We Find?
  - Amphibole was the main fiber type
  - Asbestos was observed in almost all the activity-based and reference samples
  - Disturbance of soil resulted in elevated exposures compared to reference samples
  - Baseball infields at Park may contain imported chrysotile asbestos

## Assessment of Naturally Occurring Asbestos in El Dorado Hills

### ■ Next Steps?

- Expert Advisory Panel
- Continued coordination with State and Local partners
- Sampling outside of El Dorado County



## Assessment of Naturally Occurring Asbestos in El Dorado Hills

- Messages for the Community

- Risk is Dependent Upon:

- Level of Asbestos in Air

- Duration of Exposure – How Long

- Frequency of Exposure – How Often

- Time lapse from First Exposure

Quantifying these factors and the effect on disease risk is very difficult

## Assessment of Naturally Occurring Asbestos in El Dorado Hills

- Messages For the Community (con't)
  - Take Reasonable and Appropriate Steps to Reduce Exposure
  - Future actions should focus on Prevention – ATCM, Dust Control Rules, Outreach and Education
  - The Entire Community Must Participate – State/County Government, Business Leaders, Schools, Service Providers, Public