
**El Dorado Hills
Naturally Occurring Asbestos
Multimedia Exposure Assessment
El Dorado Hills, California**

**Soil Sampling of Community Park,
Schools, and Public Areas
Field Sampling Plan
WORKING DRAFT**

Contract No.: 68-W-01-012

TDD No.: 09-04-01-0011

Job No.: 001275.0440.01CP

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**Prepared for:
U.S. Environmental Protection Agency
Region IX**

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Superfund Technical Assessment and Response Team

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Addendum

Addendum SS-1	Sampling and Sample Preparation Procedures
Addendum SS-2	Equipment List

1 Introduction

The United States Environmental Protection Agency (USEPA) has directed Ecology and Environment, Inc.'s (E & E's) Superfund Technical Assessment and Response Team (START) to conduct a multimedia assessment of community areas and schools in the City of El Dorado Hills in California to assess the potential for exposure from naturally occurring asbestos present in soils that have been disturbed. This Field Sampling Plan (FSP) addresses soil sample collection at the following locations:

- The New York Creek Nature Trail;
- The New York Creek baseball playing field at the Community Park;
- The north baseball playing field at the Community Park;
- The south baseball playing field at the Community Park;
- The (lower) soccer playing field between the north and south baseball playing fields at the Community Park;
- The baseball playing field at Silva Valley Elementary School;
- The playing field at Jackson Elementary School;
- The garden and outdoor classroom at Jackson Elementary School;
- Bare areas, pathways, and asphalted play areas at Jackson Elementary School;
- The soccer playing field at Rolling Hills Middle School;
- A dirt embankment behind and inside the eastern boundary of Rolling Hills Middle School (Dirt Embankment); and
- An unpaved lot used for parking on public property in front of and outside the western boundary of Rolling Hills Middle School (Dirt Parking Area).

The task-specific field sampling information pertaining to surface soils at these locations is addressed in this FSP, which is supplemental to information addressed in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan* (QAPP). This FSP describes in detail the planned sample locations, sample location rationale, numbers of samples, and specific sample collection and handling techniques that will be used, including protocols and sample custody procedures that will be used to ensure that sample integrity is not compromised. This FSP is intended to reflect accurately the planned data-gathering activities for this investigation.

2 Background

Background information is described in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

3 Project Objectives

The soil sampling is tentatively scheduled to take place in October 2004. The soil sampling is expected to commence after the completion of activity-based outdoor air sampling. The duration of the soil sampling collection activity is expected to last 2 to 4 days.

Project objectives are described in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

4 Sampling Design

Sampling rationale and design are described in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

4.1 Sampling Locations

Soil samples will be collected from 12 areas of concern within the El Dorado Hills community. The areas where the sampling will be conducted are shown on Figure SS4-1: Areas of Concern Location Map.

4.1.1 Baseball Playing Fields

There are four baseball playing fields whose soil infield areas will be sampled. Three of the baseball playing fields are at the Community Park, and one is at Silva Valley Elementary School. The three Community Park baseball playing fields have infield areas that are routinely groomed and skinned. The infield skins are periodically replenished with a mixture of imported crushed lava rock and topsoil. At the three Community Park baseball playing fields, surface soil samples will be collected from the top inch of infield soil, and subsurface samples will be collected from beneath the interface of the imported material and the soil below it. Selection of the sample locations will be both biased and random. The subsurface soil samples will be collected from the Community Park baseball playing fields at the same sample locations as the surface soil samples.

The baseball playing field at Silva Valley Elementary School has a grass infield. The composition of the dirt portion of the infield at the Silva Valley Elementary School baseball playing field has not yet been identified. Only surface soil samples from the top inch of infield soil will be collected from the baseball playing field at Silva Valley Elementary School; subsurface soil samples will not be collected there. Selection of the sample locations will be both biased and random.

4.1.1.1 Sampling at Community Park Baseball Playing Fields

The infield areas of each Community Park baseball playing field will be sampled at seven random locations determined by generating random spatial coordinates. Since the infield area soil for each playing field is believed to be somewhat uniform due to its origin and from routine grooming, seven random surface soil samples are expected to be sufficient to provide 95 percent confidence that the average asbestos fibers concentration for the infield area is within 20 percent of the true average. A split from each of seven random surface soil samples also will be combined into a separate composite sample.

Surface soil from three additional biased locations also will be sampled as areas where the majority of the activity-based dust might originate. Those three areas are:

- The left side of home plate (as you face the outfield);
- The left side of second base (as you face home plate); and
- The left side of third base (as you face home plate).

Insert Figure SS4-1
Areas of Concern Location Map

The areas where the sampling will be conducted are shown on Figure SS4-2: Community Park Baseball Playing Fields - Generalized Soil Sampling Area Map.

Each surface soil sample will be collected from within a 1-square-foot sampling area and will include surface soil between the ground surface and 1 inch below ground surface. A metal template will be used to isolate the 1-square-foot area. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

Subsurface soil grab samples will be collected from the same locations. The subsurface soil samples will be collected using a hand auger or a shovel from depths estimated to be between 1 and 2 feet below ground surface. The grab sample will be collected when it appears, based upon the professional judgment of a California registered geologist, that the soil in the auger hole is no longer imported soil. A split from each of seven random samples at each baseball playing field also will be combined into a separate composite sample.

4.1.1.2 Sampling at Silva Valley Elementary School Baseball Playing Field

Surface soil from the dirt-covered sections of the infield will be sampled at four random locations along the base paths and three random locations in the middle infield area. Locations will be determined by generating random spatial coordinates. Since the composition of the infields and grooming frequency has not been identified, seven surface soil samples will be collected to determine the asbestos fibers distribution and provide an estimated average concentration for the infield. A split from each of seven random samples also will be combined into a separate composite sample.

Surface soil from three additional biased locations will be sampled as areas where the majority of the activity-based dust might originate. Those three areas are:

- The left side of home plate (as you face the outfield);
- The left side of second base (as you face home plate); and
- The left side of third base (as you face home plate).

The areas where the sampling will be conducted are shown on Figure SS4-3: Silva Valley Elementary School Baseball Playing Field - Generalized Soil Sampling Area Map.

Each surface soil sample will be collected from within a 1-square-foot sampling area and will include surface soil between the ground surface and approximately 1 inch below ground surface. A metal template will be used to isolate the 1-square-foot area. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

4.1.2 Soccer and Grass-Covered Playing Fields

Surface soil from soccer and grass-covered playing fields will be sampled in a biased manner based upon conditions observed during activity-based air sampling and visual observation on the day of soil sampling. Locations of exposed soil will be identified within the area of concern, and the largest exposed areas will be sampled. The areas where the sampling will be conducted are shown on Figure SS4-4: Soccer and Grass-Covered Playing Fields - Generalized Soil Sampling Area Map.

Insert Figure SS4-2
Community Park Baseball Playing Fields - Generalized Soil Sampling Area Map

Insert Figure SS4-3

Silva Valley Elementary School Baseball Playing Field - Generalized Soil Sampling Area Map

Insert Figure SS4-4
Soccer and Grass-Covered Playing Fields - Generalized Soil Sampling Area Map

Exposed soil in areas of less than 100 square feet will be sampled in one composite. The composite will be comprised of soil from three random and discrete locations within each area. Areas larger than 100 square feet will be divided in sectors of approximately 100 square feet. Each sector will be sampled in one composite. A total of seven samples will be collected. Since the composition of the exposed soil in the fields is unknown, the seven samples will be collected to determine the asbestos fibers distribution and provide an estimated average concentration for each area of exposed soil. A split from each of seven samples also will be combined into a separate composite sample.

Each surface soil sample will be collected from within a 1-square-foot sampling area and will include surface soil between the ground surface and approximately 1 inch below ground surface. A metal template will be used to isolate the 1-square-foot area. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

4.1.3 New York Creek Nature Trail

The New York Creek Nature Trail will be divided into 1,000-foot long trail sections. Each trail section will be sampled along a centralized transect line. Three surface soil samples will be collected from within each trail section at random distances along the transect line determined by generating random spatial coordinates. At each of the three random locations along the transect line, a sample will be collected as a composite of three aliquots taken from an imaginary line perpendicular to the transect line. One aliquot will be taken from the intersection of the imaginary line and the transect line, and the other two aliquots will be taken from areas on the imaginary line 2 feet on either side of the transect line. Locations that are not areas of exposed soil (e.g., rock) will not be selected.

Splits from samples of groups of four consecutive trail sections also will be combined into separate composite samples. Surface soil from up to ten additional biased locations also will be sampled at areas near residential housing, near stationary air sampling locations and at areas where the trails appear to be used heavily. Each biased location will be a composite of three aliquots at 2-foot intervals along an imaginary line perpendicular to the trail transect line.

Each aliquot will be collected from within a 1-square-foot sampling area and will include surface soil between the ground surface and approximately 1 inch below ground surface. A metal template will be used to isolate the 1-square-foot area. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

Since the composition of the exposed soil in the trail is unknown, the samples will be collected to determine the asbestos fibers distribution and provide an estimated average concentration for each section of trail. The areas where the sampling will be conducted are shown on Figure SS4-5: New York Creek Nature Trail - Generalized Soil Sampling Area Map.

4.1.4 Bare Areas and Pathways at Jackson Elementary School

Exposed soil pathways at Jackson Elementary School will be identified prior to sampling and will be sampled at 100-foot long intervals. Each pathway will be sampled along a centralized transect line. Three surface soil samples will be collected at random distances along the transect line determined by generating random spatial coordinates. At each of the three random locations

Insert Figure SS4-5
New York Creek Nature Trail - Generalized Soil Sampling Area Map

along the transect line, a sample will be collected as a composite of three aliquots taken from an imaginary line perpendicular to the transect line. One aliquot will be taken from the intersection of the imaginary line and the transect line, and the other two aliquots will be taken from areas on the imaginary line 2 feet on either side of the transect line.

A split from each pathway sample also will be combined into a separate composite sample. Since the composition of the exposed soil in the pathway is unknown, the samples will be collected to determine the asbestos fibers distribution and provide an estimated average concentration for each pathway section. The areas where the sampling will be conducted are shown on Figure SS4-6: Jackson Elementary School Pathways - Generalized Soil Sampling Area Map.

Locations of exposed soil at Jackson Elementary School will be identified prior to sampling. Sampling will focus on the larger exposed soil areas. Exposed soil in areas of less than 100 square feet will be sampled in one composite. The composite will be comprised of surface soil from three random and discrete locations within each area. Areas larger than 100 square feet will be divided in sectors of approximately 100 square feet. Each sector will be sampled in one composite. A total of seven surface soil samples will be collected. Since the composition of the exposed soil in the areas is unknown, the seven samples will be collected to determine the asbestos fibers distribution and provide an estimated average concentration for each area of exposed soil. A split from each of the seven samples also will be combined into a separate composite sample.

Each aliquot will be collected from within a 1-square-foot sampling area and will include surface soil between the ground surface and approximately 1 inch below ground surface. A metal template will be used to isolate the 1-square-foot area. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

4.1.5 Garden and Outdoor Classroom at Jackson Elementary School

The exposed soil in the Jackson Elementary School garden will be sampled by dividing the garden into 1,600-square-foot sectors. Each sector will be sampled at three random and discrete locations and then composited into a single sample. A total of nine samples will be collected based on the estimated garden area of 14,000 square feet. Since the composition of the exposed soil in the garden is unknown but expected to be uniform, the samples will be collected to determine the asbestos fibers distribution and provide an estimated average concentration for each area of exposed soil. A split from each of the nine samples also will be combined into a separate composite sample.

The exposed soil in the outdoor classroom at Jackson Elementary School will be sampled by dividing the classroom area into 1,600-square-foot sectors. Each sector will be sampled at three random and discrete locations and then composited into a single sample. A total of nine samples will be collected based on the estimated outdoor classroom area of 14,000 square feet. Since the composition of the exposed soil in the outdoor classroom is unknown but expected to be uniform, the samples will be collected to determine the asbestos fibers distribution and provide an estimated average concentration for each area of exposed soil. A split from each of the nine samples also will be combined into a separate composite sample.

Insert Figure SS4-6
Jackson Elementary School Pathways - Generalized Soil Sampling Area Map

The areas where the sampling will be conducted are shown on Figure SS4-7: Jackson Elementary School Garden and Outdoor Classroom - Generalized Soil Sampling Area Map. Each aliquot will be collected from within a 1-square-foot sampling area and will include surface soil between the ground surface and approximately 1 inch below ground surface. A metal template will be used to isolate the 1-square-foot area. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

4.1.6 Dirt Parking Area

The Dirt Parking Area on public land adjacent to and in front of Rolling Hills Middle School will be divided into four 10,000-square-foot sampling area sections. Each section will be sampled along a transect line positioned such that it is biased toward areas that show visible wear or use. Three samples will be collected at random distances along the transect line determined by generating random spatial coordinates. At each of the three random locations along the transect line, a sample will be collected as a composite of three aliquots taken from an imaginary line perpendicular to the transect line, with one aliquot from an area on the transect line itself, and the other two aliquots from areas 2 feet on either side of the transect line. A split from each of samples also will also be combined into a separate composite sample.

Locations that are not areas of exposed soil will not be selected. Up to three additional biased locations also will be sampled at areas where the soil appears to be worn heavily. Samples from each biased location will be a composite of three aliquots along a transect at 2-foot intervals.

Each aliquot will be collected from within a 1-square-foot sampling area and will include surface soil between the ground surface and approximately 1 inch below ground surface. A metal template will be used to isolate the 1-square-foot area. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

Since the composition of the exposed soil in the areas is unknown, the samples will be collected to determine the asbestos fibers distribution and provide an estimated average concentration for each section of trail. The areas where the sampling will be conducted are shown on Figure SS4-8: Dirt Parking Area - Generalized Soil Sampling Area Map.

4.1.7 Dirt Embankment

Biased samples will be collected from the Dirt Embankment based upon examination of the exposed soil by a California registered geologist. Each sample will be from a discrete location that will be selected based upon the professional judgment of a California register geologist as a location where naturally occurring asbestos may be present. Up to seven biased locations will be sampled.

Surface soil samples will be collected from depths not greater than 1 inch. All surface soil samples will be collected from areas that are 1 square foot and whose locations will be determined at random. A metal template will be used to isolate the 1 square foot area. A split from each of seven samples also will be combined into a separate composite sample. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

Insert Figure SS4-7

Jackson Elementary School Garden and Outdoor Classroom - Generalized Soil Sampling Area
Map

Insert Figure SS4-8
Dirt Parking Area - Generalized Soil Sampling Area Map

The areas where the sampling will be conducted are shown on Figure SS4-9: Dirt Embankment - Generalized Soil Sampling Area Map.

4.2 Sampling Sequence

The soil sampling has been designed to take place after activity-based air sampling and prior to any additional field grooming or maintenance. Soil sampling is not expected to take place during activity-based air sampling.

4.3 Rationale For Sample Locations

Table SS4-1 summarizes the rationale for the inclusion and placement of each sample location.

4.4 Analytical Rationale

Analytical Rationale is described in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

Table SS4-1 Summary of Sample Location Rationale	
Sample Location	Rationale
Random locations at each baseball playing field.	Establish the average concentration with acceptable confidence of the infield areas at the fields. Can provide information on spatial distribution of asbestos.
Random sub-surface locations at Community Park baseball playing fields.	Comparison with surface samples.
Composite samples at each baseball playing field.	Economical means to establish the average asbestos concentration of the infield areas at the fields, with acceptable confidence for elevated concentrations.
Biased sampling locations at baseball playing fields.	Determine the asbestos concentration in areas of heavy usage.
Biased sampling locations at soccer and grass-covered playing fields.	Establish the average concentration of asbestos in exposed soil at specific locations with acceptable confidence. Can provide information on spatial distribution of asbestos.
Composite samples at each playing field.	Economical means to establish the average concentration of the exposed playing fields, with acceptable confidence for elevated concentrations.
Random sampling locations along New York Creek Nature Trail.	Establish the average concentration of asbestos in sections of the New York Creek Nature Trail with acceptable confidence. Determine the spatial distribution of asbestos along the trail.
Composite samples for extended sections of New York Creek Nature Trail.	Economical means to establish the average concentration of the trail areas, with acceptable confidence for elevated concentrations.
Biased sampling locations along New York Creek Nature Trail.	Determine the asbestos concentration in areas of heavy usage and at areas near residential housing.

Table SS4-1
Summary of Sample Location Rationale

Sample Location	Rationale
Random sampling locations along pathways and bare areas at Jackson Elementary School.	Establish the average concentration with acceptable confidence of the pathway areas. Can provide information on spatial distribution of asbestos.
Composite samples for pathways and bare areas at Jackson Elementary School.	Economical means to establish the average concentration of the trail areas, with acceptable confidence for elevated concentrations.
Random locations at garden and outdoor classroom at Jackson Elementary School.	Establish the average concentration with acceptable confidence of the garden and outdoor classroom. Can provide information on spatial distribution of asbestos.
Composite samples at garden and outdoor classroom at Jackson Elementary School.	Economical means to establish the average concentration of the pathway, with acceptable confidence for elevated concentrations.
Random sampling locations along transect at Dirt Parking Area.	Establish the average concentration of asbestos in area. Provide spatial distribution data.
Composite samples of Dirt Parking Area.	Economical means to establish the average concentration of the area, with acceptable confidence for elevated concentrations.
Biased sampling at Dirt Embankment.	Establish the presence of asbestos in the soil at embankment area.
Composite samples of Dirt Embankment.	Economical means to establish the average concentration of the area, with acceptable confidence for elevated concentrations.

Insert Figure SS4-9
Dirt Embankment - Generalized Soil Sampling Area Map

5 Analytical Laboratory Methods

Analytical Methods are described in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

Table SS5-1 summarizes analytical methods and requirements for soil sampling. Table SS5-2 contains the detailed sample collection information.

Table SS5-1 Summary of Analytical Methods and Requirements	
Method:	<i>NIOSH 9002 Asbestos (bulk) by PLM</i>
	<i>EPA 600/R-93/116, Method for the Determination of Asbestos in Bulk Building Materials Method</i>
Sample Container:	2-liter polypropylene bags
Sample Types	Number of Samples
Total soil samples (excluding area composites and duplicates)	187
Total baseball playing field surface soil samples (excluding area composites)	40
Total baseball playing field sub-surface soil samples (excluding area composites)	21
Total soccer and grass-covered playing field surface soil samples (excluding area composites)	21
Total New York Creek Nature Trail surface soil samples (excluding area composites)	34
Total Jackson Elementary School garden and outdoor classroom surface soil samples (excluding area composites)	18
Total Jackson Elementary School pathway and bare area surface soil samples (excluding area composites)	31
Total Dirt Parking Area surface soil samples (excluding area composite)	15
Total Dirt Embankment surface soil samples (excluding area composite)	7
Total soil samples area composites	19
Total duplicate samples	20
Total performance evaluation samples	1
Total samples including duplicates, composites, and performance evaluation samples	226

Table SS5-2
Request for Analytical Services: Soil Samples
Laboratory Analytical Methods and Requirements

ANALYSES REQUESTED		
ANALYSIS TYPE	ASBESTOS	
SPECIFIC ANALYSES REQUESTED	<i>NIOSH 9002 Asbestos (bulk) by PLM</i>	*If Needed* TEM analysis following EPA 600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials
SENSITIVITY	1 percent by area	0.0025 percent by weight (for smallest structure)
LEVEL OF DETECTION (for zero structures)	1 percent by area	0.0075 percent by weight (for smallest structure)
REFERENCE CONCENTRATION	1 percent by area	0.01 percent by weight (for smallest structure)
PRESERVATIVES	none	none
ANALYTICAL HOLDING TIME(S)	none	none
VOLUME OF SAMPLE PER ANALYSIS	2-liters	8 ounces

**Community Park
New York Creek Baseball Playing Field
Soil Samples**

Sample Number	Special Designation	Location	Sample
NYB-S01-(Date)	Sample	New York Creek Baseball Random sample #1	1
NYB-SS01-(Date)	Sample	New York Creek Baseball Random sub-surface sample #1	1
NYB-S02-(Date)	Sample	New York Creek Baseball Random sample #2	1
NYB-SS02-(Date)	Sample	New York Creek Baseball Random sub-surface sample #2	1
NYB-S03-(Date)	Sample	New York Creek Baseball Random sample #3	1
NYB-SS03-(Date)	Sample	New York Creek Baseball Random sub-surface sample #3	1
NYB-S04-(Date)	Sample	New York Creek Baseball Random sample #4	1
NYB-S104-(Date)	Duplicate of NYB-S04-(Date)	New York Creek Baseball Random sample #4	1
NYB-SS04-(Date)	Sample	New York Creek Baseball Random sub-surface sample #4	1
NYB-SS104-(Date)	Duplicate of NYB-SS04-(Date)	New York Creek Baseball Random sub-surface sample #4	1
NYB-S05-(Date)	Sample	New York Creek Baseball Random sample #5	1
NYB-SS05-(Date)	Sample	New York Creek Baseball Random sub-surface sample #5	1
NYB-S06-(Date)	Sample	New York Creek Baseball Random sample #6	1
NYB-SS06-(Date)	Sample	New York Creek Baseball Random sub-surface sample #6	1
NYB-S07-(Date)	Sample	New York Creek Baseball Random sample #7	1
NYB-SS07-(Date)	Sample	New York Creek Baseball Random sub-surface sample #7	1
NYB-CS01-(Date)	Composite Sample	Composite of New York Creek Baseball Random Samples	1
NYB-CSS01-(Date)	Composite Sample	Composite of New York Creek Baseball Random sub-surface samples	1

**Community Park
New York Creek Baseball Playing Field
Soil Samples**

Sample Number	Special Designation	Location	Sample
NYB-S08-(Date)	Sample	New York Creek Baseball Home Plate	1
NYB-S09-(Date)	Sample	New York Creek Baseball Second Base	1
NYB-S10-(Date)	Sample	New York Creek Baseball Third Base	1

**Community Park
North Field Baseball Playing Field
Soil Samples**

Sample Number	Special Designation	Location	Sample
NFB-S01-(Date)	Sample	North Field Baseball Random sample #1	1
NFB-SS01-(Date)	Sample	North Field Baseball Random sub-surface sample #1	1
NFB-S02-(Date)	Sample	North Field Baseball Random sample #2	1
NFB-SS02-(Date)	Sample	North Field Baseball Random sub-surface sample #2	1
NFB-S03-(Date)	Sample	North Field Baseball Random sample #3	1
NFB-SS03-(Date)	Sample	North Field Baseball Random sub-surface sample #3	1
NFB-S04-(Date)	Sample	North Field Baseball Random sample #4	1
NFB-SS04-(Date)	Sample	North Field Baseball Random sub-surface sample #4	1
NFB-S05-(Date)	Sample	North Field Baseball Random sample #5	1
NFB-SS05-(Date)	Sample	North Field Baseball Random sub-surface sample #5	1
NFB-S06-(Date)	Sample	North Field Baseball Random sample #6	1
NFB-SS06-(Date)	Sample	North Field Baseball Random sub-surface sample #6	1
NFB-S07-(Date)	Sample	North Field Baseball Random sample #7	1
NFB-SS07-(Date)	Sample	North Field Baseball Random sub-surface sample #7	1
NFB-CS01-(Date)	Composite Sample	Composite of North Field Baseball Random Samples	1
NFB-CSS01-(Date)	Composite Sample	Composite of North Field Baseball Random sub-surface samples	1
NFB-S08-(Date)	Sample	North Field Baseball Home Plate	1

**Community Park
North Field Baseball Playing Field
Soil Samples**

Sample Number	Special Designation	Location	Sample
NFB-S09-(Date)	Sample	North Field Baseball Second Base	1
NFB-S10-(Date)	Sample	North Field Baseball Third Base	1
NFB-S110-(Date)	Duplicate of NFB-S10-(Date)	North Field Baseball Third Base	1

**Community Park
South Field Baseball Playing Field
Soil Samples**

Sample Number	Special Designation	Location	Sample
SFB-S01-(Date)	Sample	South Field Baseball Random sample #1	1
SFB-SS01-(Date)	Sample	South Field Baseball Random sub-surface sample #1	1
SFB-S02-(Date)	Sample	South Field Baseball Random sample #2	1
SFB-SS02-(Date)	Sample	South Field Baseball Random sub-surface sample #2	1
SFB-S03-(Date)	Sample	South Field Baseball Random sample #3	1
SFB-SS03-(Date)	Sample	South Field Baseball Random sub-surface sample #3	1
SFB-S04-(Date)	Sample	South Field Baseball Random sample #4	1
SFB-SS04-(Date)	Sample	South Field Baseball Random sub-surface sample #4	1
SFB-S05-(Date)	Sample	South Field Baseball Random sample #5	1
SFB-SS05-(Date)	Sample	South Field Baseball Random sub-surface sample #5	1
SFB-S06-(Date)	Sample	South Field Baseball Random sample #6	1
SFB-SS06-(Date)	Sample	South Field Baseball Random sub-surface sample #6	1
SFB-S07-(Date)	Sample	South Field Baseball Random sample #7	1
SFB-S107-(Date)	Duplicate of SFB-S07-(Date)	South Field Baseball Random sample #7	1
SFB-SS07-(Date)	Sample	South Field Baseball Random sub-surface sample #7	1
SFB-SS107-(Date)	Duplicate of SFB-SS07-(Date)	South Field Baseball Sub-surface Random sample #7	1
SFB-CS01-(Date)	Composite Sample	Composite of South Field Baseball Random Samples	1
SFB-CS101-(Date)	Duplicate of SFB-CS01-(Date)	Duplicate Composite of South Field Baseball Random Samples	1

**Community Park
South Field Baseball Playing Field
Soil Samples**

Sample Number	Special Designation	Location	Sample
SFB-CSS01-(Date)	Composite Sample	Composite of South Field Baseball Random sub-surface sample #1	1
SFB-S08-(Date)	Sample	South Field Baseball Home Plate	1
SFB-S09-(Date)	Sample	South Field Baseball Second Base	1
SFB-S10-(Date)	Sample	South Field Baseball Third Base	1

**Silva Valley Elementary School
Baseball Playing Field
Soil Samples**

Sample Number	Special Designation	Location	Sample
SVB-S01-(Date)	Sample	Silva Valley Baseball Random sample #1	1
SVB-S02-(Date)	Sample	Silva Valley Baseball Random sample #2	1
SVB-S03-(Date)	Sample	Silva Valley Baseball Random sample #3	1
SVB-S04-(Date)	Sample	Silva Valley Baseball Random Base path #1	1
SVB-S05-(Date)	Sample	Silva Valley Baseball Random Base path #2	1
SVB-S06-(Date)	Sample	Silva Valley Baseball Random Base path #3	1
SVB-S106-(Date)	Duplicate of SVB-S06-(Date)	Silva Valley Baseball Random Base path #3	
SVB-S07-(Date)	Sample	Silva Valley Baseball Random Base path #4	1
SVB-CS01-(Date)	Composite Sample	Composite of Silva Valley Baseball Random Samples	1
SVB-S08-(Date)	Sample	Silva Valley Baseball Home Plate	1
SVB-S09-(Date)	Sample	Silva Valley Baseball Second Base	1
SVB-S10-(Date)	Sample	Silva Valley Baseball Third Base	1

Community Park Soccer Playing Field Soil Samples

Sample Number	Special Designation	Location	Sample
CPS-S01-(Date)	Sample	Community Park Lower Soccer Location #1	1
CPS-S101-(Date)	Duplicate of CPS-S01-(Date)	Community Park Lower Soccer Location #1	1
CPS-S02-(Date)	Sample	Community Park Lower Soccer Location #2	1
CPS-S03-(Date)	Sample	Community Park Lower Soccer Location #3	1
CPS-S04-(Date)	Sample	Community Park Lower Soccer Location #4	1
CPS-S05-(Date)	Sample	Community Park Lower Soccer Location #5	1
CPS-S06-(Date)	Sample	Community Park Lower Soccer Location #6	1
CPS-S07-(Date)	Sample	Community Park Lower Soccer Location #7	1
CPS-CS01-(Date)	Composite Sample	Composite of Community Park Lower Soccer Samples	1

Rolling Hills Middle School Soccer Field Soil Samples

Sample Number	Special Designation	Location	Sample
RHS-S01-(Date)	Sample	Rolling Hills Soccer Location #1	1
RHS-S02-(Date)	Sample	Rolling Hills Soccer Location #2	1
RHS-S03-(Date)	Sample	Rolling Hills Soccer Location #3	1
RHS-S04-(Date)	Sample	Rolling Hills Soccer Location #4	1
RHS-S05-(Date)	Sample	Rolling Hills Soccer Location #5	1
RHS-S06-(Date)	Sample	Rolling Hills Soccer Location #6	1
RHS-S106-(Date)	Duplicate of RHS-S06-(Date)	Rolling Hills Soccer Location #6	1
RHS-S07-(Date)	Sample	Rolling Hills Soccer Location #7	1
RHS-CS01-(Date)	Composite Sample	Composite of Rolling Hills Soccer Samples	1

Jackson Elementary School Playing Field Soil Samples

Sample Number	Special Designation	Location	Sample
JSS-S01-(Date)	Sample	Jackson School Playing Field Location #1	1
JSS-S02-(Date)	Sample	Jackson School Playing Field Location #2	1
JSS-S03-(Date)	Sample	Jackson School Playing Field Location #3	1
JSS-S04-(Date)	Sample	Jackson School Playing Field Location #4	1
JSS-S05-(Date)	Sample	Jackson School Playing Field location #5	1
JSS-S06-(Date)	Sample	Jackson School Playing Field Location #6	1
JSS-S07-(Date)	Sample	Jackson School Playing Field Location #7	1
JSS-CS01-(Date)	Composite Sample	Composite of Jackson School Playing Field Samples	1

Jackson Elementary School Garden and Outdoor Classroom Soil Samples

Sample Number	Special Designation	Location	Sample
JSG-S01-(Date)	Sample	Jackson School Garden Location #1	1
JSG-S02-(Date)	Sample	Jackson School Garden Location #2	1
JSG-S03-(Date)	Sample	Jackson School Garden Location #3	1
JSG-S04-(Date)	Sample	Jackson School Garden Location #4	1
JSG-S05-(Date)	Sample	Jackson School Garden location #5	1
JSG-S06-(Date)	Sample	Jackson School Garden Location #6	1
JSG-S07-(Date)	Sample	Jackson School Garden Location #7	1
JSG-S107-(Date)	Duplicate of JSG-S07-(Date)	Duplicate Jackson School Garden Location #7	1
JSG-S08-(Date)	Sample	Jackson School Garden Location #8	1
JSG-S09-(Date)	Sample	Jackson School Garden Location #9	1
JSG-CS01-(Date)	Composite Sample	Composite of Jackson School Garden Samples	1
JOC-S01-(Date)	Sample	Jackson School Outdoor Classroom Location #1	1
JOC-S02-(Date)	Sample	Jackson School Outdoor Classroom Location #2	1
JOC-S03-(Date)	Sample	Jackson School Outdoor Classroom Location #3	1
JOC-S04-(Date)	Sample	Jackson School Outdoor Classroom Location #4	1
JOC-S05-(Date)	Sample	Jackson School Outdoor Classroom location #5	1
JOC-S06-(Date)	Sample	Jackson School Outdoor Classroom Location #6	1
JOC-S106-(Date)	Duplicate of JOC-S06-(Date)	Duplicate Jackson Outdoor Classroom Location #6	1

**Jackson Elementary School
Garden and Outdoor Classroom
Soil Samples**

Sample Number	Special Designation	Location	Sample
JOC-S07-(Date)	Sample	Jackson School Outdoor Classroom Location #7	1
JOC-S08-(Date)	Sample	Jackson School Outdoor Classroom Location #8	1
JOC-S09-(Date)	Sample	Jackson School Outdoor Classroom Location #9	1
JOC-CS01-(Date)	Composite Sample	Composite of Jackson School Outdoor Classroom Samples	1

New York Creek Nature Trail Soil Samples

Sample Number	Special Designation	Location	Sample
NYT-SA1-(Date)	Sample	New York Trail Section #A Random Sample #1	1
NYT-SA2-(Date)	Sample	New York Trail Section #A Random Sample #2	1
NYT-S1A2-(Date)	Duplicate of NYT-SA2-(Date)	New York Trail Section #A Random Sample #2	1
NYT-SA3-(Date)	Sample	New York Trail Section #A Random Sample #3	1
NYT-SB1-(Date)	Sample	New York Trail Section #B Random Sample #1	1
NYT-SB2-(Date)	Sample	New York Trail Section #B Random Sample #2	1
NYT-SB3-(Date)	Sample	New York Trail Section #B Random Sample #3	1
NYT-SC1-(Date)	Sample	New York Trail Section #C Random Sample #1	1
NYT-SC2-(Date)	Sample	New York Trail Section #C Random Sample #2	1
NYT-SC3-(Date)	Sample	New York Trail Section #C Random Sample #3	1
NYT-SD1-(Date)	Sample	New York Trail Section #D Random Sample #1	1
NYT-SD2-(Date)	Sample	New York Trail Section #D Random Sample #2	1
NYT-SD3-(Date)	Sample	New York Trail Section #D Random Sample #3	1
NYT-CS01-(Date)	Composite Sample	Composite of Random New York Trail Samples for Sections A-D	1
NYT-CS101-(Date)	Duplicate of NYT-CS01-(Date)	Duplicate of Composite of Random New York Trail Samples for Sections A-D	1
NYT-SE1-(Date)	Sample	New York Trail Section #E Random Sample #1	1
NYT-S1E1-(Date)	Duplicate of NYT-SE1-(Date)	New York Trail Section #E Random Sample #1	1
NYT-SE2-(Date)	Sample	New York Trail Section #E Random Sample #2	1

New York Creek Nature Trail Soil Samples

Sample Number	Special Designation	Location	Sample
NYT-SE3-(Date)	Sample	New York Trail Section #E Random Sample #3	1
NYT-SF1-(Date)	Sample	New York Trail Section #F Random Sample #1	1
NYT-SF2-(Date)	Sample	New York Trail Section #F Random Sample #2	1
NYT-SF3-(Date)	Sample	New York Trail Section #F Random Sample #3	1
NYT-SG1-(Date)	Sample	New York Trail Section #G Random Sample #1	1
NYT-SG2-(Date)	Sample	New York Trail Section #G Random Sample #2	1
NYT-S1G2-(Date)	Duplicate of NYT-SG2-(Date)	New York Trail Section #G Random Sample #2	1
NYT-SG3-(Date)	Sample	New York Trail Section #G Random Sample #3	1
NYT-SH1-(Date)	Sample	New York Trail Section #H Random Sample #1	1
NYT-SH2-(Date)	Sample	New York Trail Section #H Random Sample #2	1
NYT-SH3-(Date)	Sample	New York Trail Section #H Random Sample #3	1
NYT-CS02-(Date)	Composite Sample	Composite of Random New York Trail Samples for Sections E-H	1
NYT-S01-(Date)	Sample	New York Trail Biased Sample #1	1
NYT-S02-(Date)	Sample	New York Trail Biased Sample #2	1
NYT-S03-(Date)	Sample	New York Trail Biased Sample #3	1
NYT-S04-(Date)	Sample	New York Trail Biased Sample #4	1
NYT-S104-(Date)	Duplicate of NYT-S04-(Date)	New York Trail Biased Sample #4	1
NYT-S05-(Date)	Sample	New York Trail Biased Sample #5	1

New York Creek Nature Trail Soil Samples

Sample Number	Special Designation	Location	Sample
NYT-S06-(Date)	Sample	New York Trail Biased Sample #6	1
NYT-S07-(Date)	Sample	New York Trail Biased Sample #7	1
NYT-S08-(Date)	Sample	New York Trail Biased Sample #8	1
NYT-S09-(Date)	Sample	New York Trail Biased Sample #9	1
NYT-S10-(Date)	Sample	New York Trail Biased Sample #10	1
NYT-1ZP-(Date)	Performance Evaluation Sample	Obtained from Region 9 QA Office	1

Jackson Elementary School Pathways and Bare Areas Soil Samples

Sample Number	Special Designation	Location	Sample
JSP-SA1-(Date)	Sample	Jackson School Pathways Section #A Random Sample #1	1
JSP-SA2-(Date)	Sample	Jackson School Pathways Section #A Random Sample #2	1
JSP-SA3-(Date)	Sample	Jackson School Pathways Section #A Random Sample #3	1
JSP-SB1-(Date)	Sample	Jackson School Pathways Section #B Random Sample #1	1
JSP-S1B1-(Date)	Duplicate of JSP-SB1-(Date)	Duplicate Jackson School Pathways Section #B Random Sample #1	
JSP-SB2-(Date)	Sample	Jackson School Pathways Section #B Random Sample #2	1
JSP-SB3-(Date)	Sample	Jackson School Pathways Section #B Random Sample #3	1
JSP-SC1-(Date)	Sample	Jackson School Pathways Section #C Random Sample #1	1
JSP-SC2-(Date)	Sample	Jackson School Pathways Section #C Random Sample #2	1
JSP-SC3-(Date)	Sample	Jackson School Pathways Section #C Random Sample #3	1
JSP-SD1-(Date)	Sample	Jackson School Pathways Section #D Random Sample #1	1
JSP-SD2-(Date)	Sample	Jackson School Pathways Section #D Random Sample #2	1
JSP-SD3-(Date)	Sample	Jackson School Pathways Section #D Random Sample #3	1
JSP-CS01-(Date)	Composite Sample	Composite of Random Jackson School Pathways Samples for Sections A-D	1
JSP-SE1-(Date)	Sample	Jackson School Pathways Section #E Random Sample #1	1
JSP-SE2-(Date)	Sample	Jackson School Pathways Section #E Random Sample #2	1
JSP-SE3-(Date)	Sample	Jackson School Pathways Section #E Random Sample #3	1
JSP-SF1-(Date)	Sample	Jackson School Pathways Section #F Random Sample #1	1

Jackson Elementary School Pathways and Bare Areas Soil Samples

Sample Number	Special Designation	Location	Sample
JSP-SF2-(Date)	Sample	Jackson School Pathways Section #F Random Sample #2	1
JSP-SF3-(Date)	Sample	Jackson School Pathways Section #F Random Sample #3	1
JSP-SG1-(Date)	Sample	Jackson School Pathways Section #G Random Sample #1	1
JSP-SG2-(Date)	Sample	Jackson School Pathways Section #G Random Sample #2	1
JSP-SG3-(Date)	Sample	Jackson School Pathways Section #G Random Sample #3	1
JSP-SH1-(Date)	Sample	Jackson School Pathways Section #H Random Sample #1	1
JSP-SH2-(Date)	Sample	Jackson School Pathways Section #H Random Sample #2	1
JSP-SH3-(Date)	Sample	Jackson School Pathways Section #H Random Sample #3	1
JSP-CS02-(Date)	Composite Sample	Composite of Random Jackson School Pathways Samples for Sections E-H	1
JSB-S01-(Date)	Sample	Jackson School Exposed Soil Bare Area Sample #1	1
JSB-S101-(Date)	Duplicate of JSB-S01-(Date)	Duplicate Jackson School Exposed Soil Bare Area Sample #1	1
JSB-S02-(Date)	Sample	Jackson School Exposed Soil Bare Area Sample #2	1
JSB-S03-(Date)	Sample	Jackson School Exposed Soil Bare Area Sample #3	1
JSB-S04-(Date)	Sample	Jackson School Exposed Soil Bare Area Sample #4	1
JSB-S05-(Date)	Sample	Jackson School Exposed Soil Bare Area Sample #5	1
JSB-S06-(Date)	Sample	Jackson School Exposed Soil Bare Area Sample #6	1
JSB-S07-(Date)	Sample	Jackson School Exposed Soil Bare Area Sample #7	1
JSB-CS01-(Date)	Composite Sample	Composite of Exposed Soil Bare Area Samples	1

Dirt Parking Area Soil Samples			
Sample Number	Special Designation	Location	Sample
DPA-SA1-(Date)	Sample	Dirt Parking Area Section #A Sample #1	1
DPA-SA2-(Date)	Sample	Dirt Parking Area Section #A Sample #2	1
DPA-SA3-(Date)	Sample	Dirt Parking Area Section #A Sample #3	1
DPA-SB1-(Date)	Sample	Dirt Parking Area Section #B Sample #1	1
DPA-SB2-(Date)	Sample	Dirt Parking Area Section #B Sample #2	1
DPA-S1B2-(Date)	Duplicate of DPA-SB2-(Date)	Dirt Parking Area Section #B Sample #2	1
DPA-SB3-(Date)	Sample	Dirt Parking Area Section #B Sample #3	1
DPA-SC1-(Date)	Sample	Dirt Parking Area Section #C Sample #1	1
DPA-SC2-(Date)	Sample	Dirt Parking Area Section #C Sample #2	1
DPA-SC3-(Date)	Sample	Dirt Parking Area Section #C Sample #3	1
DPA-SD1-(Date)	Sample	Dirt Parking Area Section #D Sample #1	1
DPA-SD2-(Date)	Sample	Dirt Parking Area Section #D Sample #2	1
DPA-SD3-(Date)	Sample	Dirt Parking Area Section #D Sample #3	1
DPA-CS01-(Date)	Composite Sample	Composite of Random Dirt Parking Area Samples for Sections A-D	1
DPA-S01-(Date)	Sample	Dirt Parking Area Biased Sample #1	1
DPA-S02-(Date)	Sample	Dirt Parking Area Biased Sample #2	1
DPA-S03-(Date)	Sample	Dirt Parking Area Biased Sample #3	1

Dirt Embankment Soil Samples			
Sample Number	Special Designation	Location	Sample
DEM-S01-(Date)	Sample	Dirt Embankment Biased Sample #1	1
DEM-S02-(Date)	Sample	Dirt Embankment Biased Sample #2	1
DEM-S03-(Date)	Sample	Dirt Embankment Biased Sample #3	1
DEM-S04-(Date)	Sample	Dirt Embankment Biased Sample #4	1
DEM-S05-(Date)	Sample	Dirt Embankment Biased Sample #5	1
DEM-S06-(Date)	Sample	Dirt Embankment Biased Sample #6	1
DEM-S106-(Date)	Duplicate of DEM-S06-(Date)	Dirt Embankment Biased Sample #6	1
DEM-S07-(Date)	Sample	Dirt Embankment Biased Sample #7	1
DEM-CS01-(Date)	Composite Sample	Composite of Dirt Embankment Samples	1

6 Field Methods and Procedures

6.1 Equipment Procedures

6.1.1 Equipment

The following primary sampling and monitoring equipment will be utilized to obtain environmental data:

<u>Parameter:</u>	Asbestos in Soil	
<u>Matrix:</u>	Soil	
<u>Equipment:</u>	<u>Fabrication</u>	<u>Dedicated</u>
Trowels	Various	Yes
Sampling Buckets	Various	Yes
Riffle Splitter	Metal	No
Soil Template	Metal	No

A comprehensive list of additional field equipment required to support the data collection activities is located in Addendum SS-2. The planned equipment is in accordance with the USEPA Environmental Response Team (ERT) SOP 2015 *Asbestos Sampling*. The ERT SOP is included in Appendix D of the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

6.1.2 Equipment Maintenance

Field equipment will be operated and maintained by the START according to the manufacturers' instructions. All equipment maintenance will be recorded in the START field logbook.

6.1.3 Inspection/Acceptance Requirements for Supplies and Consumables

There are no project-specific inspection/acceptance criteria for supplies and consumables. It is standard operating procedure that: personnel will not use broken or defective materials; items will not be used past their expiration date; supplies and consumables will be checked against order and packing slips to verify that the correct items were received; and the supplier will be notified of any missing or damaged items.

6.2 Field Notes

6.2.1 Logbooks

A logbook will be maintained for field work. Field logbooks will document where, when, how, and from whom any vital project information was obtained. Logbook entries will be complete and accurate enough to permit reconstruction of field activities. Logbooks will be kept in accordance with E & E SOP *Standard Operating Procedures for Field Activity Logbooks*. Use of subsidiary logbooks and field data sheets to record field and sampling information is allowed as long as a record of these documents is made in the site logbook and information is recorded in the subsidiary documents in accordance with the E & E SOP. The use of data acquisition and data management software, such as Scribe, does not constitute a substitute for a site logbook and information entered into the computer program must be documented in a field logbook or data sheet.

The following information will be recorded, if applicable, during the collection of each sample:

- Sample location and description;
- Site sketch that shows sample location(s) and measured distances;
- Sampler's name(s);
- Date and time of sample collection;
- Sample matrix;
- Sample equipment used;
- Field observations and details important to analysis or integrity of samples (rain, odors, etc.);
- Instrument reading (OVM, TVA, etc.);
- Sample description;
- Shipping arrangements (airbill numbers); and
- Receiving laboratory(ies).

In addition to sampling information, the following specifics may also be recorded in the field logbook for each day of sampling:

- Names of personnel on site and their responsibilities;
- Time of arrival/entry on site and time of departure;
- A summary of meetings or discussions with any potentially responsible party representatives, or representatives of any federal, state, or other regulatory agency;
- Descriptions of deviations from project scope, work plans, sampling plans, site safety plans, or QA procedures;
- Levels of safety protection;
- Equipment calibration and equipment models and serial numbers;
- Record of photographs;
- Field screening measurements; and
- A list of subsidiary logbooks or field logsheets.

6.2.2 Photographs

Photographs will be taken at representative sampling locations and at other areas of interest on site. They will serve to verify information entered in the field logbook. When a photograph is taken, the following information will be written in the logbook or will be recorded in a separate field photography log:

- Time, date, location, and, if appropriate, weather conditions;
- Description of the subject photographed;
- Name of person taking the photograph; and
- Photograph number.

6.3 Field Measurements

6.3.1 Global Positioning System Procedures

Sample points and site features will be documented with a global positioning system (GPS) unit. The GPS will be used to assign precise latitude and longitude positions to sample locations on the site. GPS mapping will be done by personnel trained in the use of the equipment and will be completed in accordance with the manufacturer's instructions. Expected output from the use of the GPS mapping will be a site map with sample locations.

6.3.2 Sample Logging

Soil samples that are collected will be logged by a California registered geologist using the Unified Soil Classification System (USCS) following procedures and protocols described in E & E's SOP for geologic logging (Appendix D of the QAPP).

6.4 Sampling Procedures

Soil samples will be collected and prepared for analysis following ERT and Region 8 SOPs presented in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

Surface soil samples will be collected from depths not greater than 1 inch. All surface soil samples will be collected from areas that are 1 square foot. A metal template will be used to isolate the 1-square-foot area. Each soil sample will be logged following collection. The volume of soil collected will be homogenized and split into an appropriate sample size using procedures described in Addendum SS-1.

6.5 Soil Preparation Procedures

Addendum SS-1 contains pre-analysis soil preparation procedures that will be performed.

6.6 Decontamination Procedures

Non-dedicated sampling equipment (e.g., riffle splitter, soil template) will be wiped down with decontamination wipes or other wetted disposable media (baby wipes) after collection of each sample. Commercial decontamination wipes are routinely used by TEM analysis laboratories to decontaminate equipment. Decontamination wipes will be pre-certified to be asbestos-free prior to field use. Dedicated equipment and decontamination materials will be disposed of as specified in Section 7.

6.7 Field Health and Safety Procedures

Field activities will be conducted according to the Health and Safety Plan included as Attachment C of the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*. In general, soils will be wetted before sampling, and sampling will be conducted in Level D personal protection.

6.8 Field Data Management Procedures

Field data generated for this project include but are not limited to: sample collection dates and times, sample numbers, and field mapping data. These data will be included in the permanent project file maintained in the START office as directed in USEPA Contract #68-W01-012. Information for all soil sampling conducted may also be recorded using a personal digital assistant (PDA) and the Scribe program.

Electronic Sample Logging

The field team may utilize a PDA with the Scribe software to prepare sample labels and chain-of-custody forms. Certain sample information, such as sample numbers, estimated sampling dates, and analyses, may be entered into Scribe prior to mobilization to the field. This information may be changed or supplemented once samples are collected.

At a minimum, the following information must be entered for each sample after collection:

- Sample name;
- Sample date and time;
- Sampling media;
- Analysis priority or data turnaround time;
- Analyses; and
- Sampler name.

The field team will generate chain-of-custody forms (i.e., tracking reports) for each cooler or shipping container of samples packaged and sent to a laboratory. Each chain-of-custody form will refer to the shipping method and tracking number.

The use of the Scribe software will require that the field team have access to a computer, a printer, computer paper, and labels while in the field. Field team members will have received specific training in use of the software.

7 Disposal of Investigation-Derived Waste

In the process of collecting environmental samples at this site, several different types of potentially contaminated investigation-derived wastes (IDW) may be generated, including the following:

- Used personal protective equipment (PPE);
- Disposable sampling equipment; and
- Solid decontamination material.

The USEPA's National Contingency Plan requires that management of IDW generated during site investigations comply with all relevant or appropriate requirements to the extent practicable. This sampling plan will follow the *Office of Emergency and Remedial Response (OERR) Directive 9345.3-02* (May 1991), which provides the guidance for management of IDW during site investigations. Listed below are the procedures that will be followed for handling IDW. The procedures are flexible enough to allow the site investigation team to use its professional judgement on the proper method for the disposal of each type of IDW generated at each sampling location.

Used PPE and disposable sampling equipment will be double-bagged in plastic trash bags and taken to a local refuse disposal facility. Any PPE or dedicated equipment that is to be disposed of that could otherwise be reused will be rendered inoperable before disposal.

8 Sample Identification, Documentation and Shipment

8.1 Sample Nomenclature

Sample numbers will be assigned to each sample as it is collected. The sample prefix will be based upon the scenario from which it was generated. The prefixes are as follows:

“SVB”	Soil samples collected at the Silva Valley Elementary School baseball playing field;
“NFB”	Soil samples collected at the Community Park north field baseball playing field;
“SFB”	Soil samples collected at the Community Park south field baseball playing field;
“NYB”	Soil samples collected at the Community Park New York Creek baseball playing field;
“CPS”	Soil samples collected at the Community Park lower soccer playing field;
“JSS”	Soil samples collected at the Jackson Elementary School playing field;
“JSP”	Soil samples collected at the Jackson Elementary School pathways;
“JSB”	Soil samples collected at the Jackson Elementary School bare areas;
“JSG”	Soil samples collected at the Jackson Elementary School garden area;
“JOC”	Soil samples collected at the Jackson Elementary School outdoor classroom
“RHS”	Soil samples collected at the Rolling Hills Middle School soccer playing field;
“NYT”	Soil samples collected at the New York Creek Nature Trail;
“DPA”	Soil samples collected at the Dirt Parking Area; and
“DEM”	Soil samples collected at the Dirt Embankment.

The middle term of the sample name will consist of a hyphen then an “S” for surface soil sample, an “SS” for sub-surface soil sample, “CS” for area surface soil composite sample, and “CSS” for area sub-surface soil composite sample. The middle term will include a number identifying the sample location within the area. If the sampling area is divided into sections, the section will be designated with a letter followed by the sampling location within the section.

The final suffix will be the date in six digits (e.g., May 19, 2004, is “051904”).

Duplicate samples will have the number “1” after the “S,” “SS,” “CS,” or “CSS” in the middle term. For example, the co-located sample of sample NYB-SB1-061704 would be NYB-S1B1-061704. Performance evaluation samples will have a middle term of “1ZP.”

8.2 Preservation and Holding Time Requirements

There are no preservation or holding time requirements for asbestos fiber analysis.

8.3 Sample Labeling, Packaging and Shipping

All laboratory samples collected will be labeled in a clear and precise way for proper identification in the field and for tracking in the laboratory. Sample labels will be affixed to the sample containers and secured with clear tape. Samples will have preassigned, identifiable and unique numbers in accordance with Section 8.1. The sample labels will contain the following information:

- Sample number;
- Date and time of collection;
- Site name; and
- Analytical parameter.

Samples will be stored in a secure location on site pending shipment to the soil preparation laboratory. Samples will be retained in the custody of project personnel at all times or secured so as to deny access to anyone else. When samples are not under the direct control of the individual responsible for them, they must be stored in a locked container sealed with a custody seal.

All samples will be placed in coolers or another delivery container with the appropriate chain-of-custody forms. All forms will be enclosed in plastic bags and affixed to the underside of the cooler lid. Empty space in the cooler will be filled with bubble wrap or styrofoam peanuts to prevent movement and breakage during shipment. Each cooler will be securely taped shut with strapping tape, and custody seals will be affixed to the front, right, and back of each cooler.

Samples will be shipped for immediate delivery to the contracted laboratory. Upon shipping, the laboratory will be notified of:

- Shipment date and expected delivery date;
- Total number of samples by matrix;
- Carrier, air bill number(s), method of shipment (e.g., priority);
- Irregularities or anticipated problems associated with the samples; and
- Whether additional samples will be sent or if this is the last shipment.

8.4 Chain-of-Custody Forms and QA/QC Summary Forms

A chain-of-custody form will be maintained for all samples to be submitted for laboratory preparation and analysis, from the time the sample is collected to its final deposition. The chain-of-custody must include the following:

- Sample identification number;
- Site name;
- Sample date;
- Number and volume of sample containers;
- Required analyses;
- Signature and name of samplers; and
- Signature(s) of any individual(s) with control over samples.

Every transfer of custody must be noted and signed for; a copy of this record is kept by each individual who has signed. The original records will accompany the sample shipment with a separate record for each cooler.

Corrections on sample paperwork will be made by drawing a single line through the mistake, initialing and dating the deletion. The correct information will be entered above, below or after the mistake.

9 Quality Assurance and Quality Control (QA/QC)

9.1 Quality Assurance/Quality Control Samples

The QA/QC samples described in the following subsections, which are also listed in Table SS5-2, will be collected during this investigation.

9.1.1 Field Duplicate Samples

Regional EPA data quality guidelines require that at least 10 percent of samples analyzed must be duplicate. The duplicate samples are collected to evaluate the reproducibility of sampling and analysis. Duplicate samples will be preserved, packaged, and sealed in the same manner as the other samples. A separate sample number will be assigned to each duplicate samples, and all duplicate samples will be submitted blind to the laboratory. If the data quality indicator (DQI) goal for precision is not met for the duplicate sample pairs, the impact on data quality will be evaluated. All duplicate sample locations were selected at random.

9.1.2 Laboratory QC Samples

Laboratory QC is described in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

9.2 Analytical and Data Package Requirements

Analytical and Data package requirements are described in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

9.3 Data Validation

Data Validation is described in the *El Dorado Hills Naturally Occurring Asbestos, Multimedia Exposure Assessment, El Dorado Hills, California, Quality Assurance Project Plan*.

9.4 Field Variances

As conditions in the field may vary, it may become necessary to implement modifications to the proposed sampling as presented in this plan. When appropriate, the USEPA QA Office will be notified of the modifications and a verbal approval obtained before implementing the modifications. All modifications to FSP will be with approval of the USEPA Task Monitor. Modifications to the approved FSP will be recorded in site records and reported in the post-sampling report.

Addendum SS-1

Soil Sampling and Preparation Procedures

Addendum SS-2

Equipment List