ASBESTOS DUST MITIGATION AND FUGITIVE DUST CONTROL PLAN
CANDLESTICK POINT DEVELOPMENT

Prepared for
CP Development Co., LP
1 California Street, Suite 2700
San Francisco, California 94111

Prepared by
Geosyntec
consultants
engineers | scientists | innovators
1111 Broadway, 6th Floor
Oakland, California 94607

Project Number: WR1843
28 April 2014
Asbestos Dust Mitigation and
Fugitive Dust Control Plan
Candlestick Point Development
San Francisco, California

Prepared by
Geosyntec Consultants, Inc.
1111 Broadway, 6th Floor
Oakland, California 94607

Randolph C. Brandt, P.G.
Principal

Project Number: WR1843
28 April 2014
# TABLE OF CONTENTS

1. **INTRODUCTION** ........................................................................................................... 1

2. **REGULATORY FRAMEWORK** ....................................................................................... 2
   2.1 ATCM .......................................................................................................................... 3
   2.2 Article 22B .................................................................................................................. 3

3. **PROJECT DESCRIPTION** .............................................................................................. 5
   3.1 Development Description ........................................................................................... 5
   3.2 Regional Topography and Site Setting ......................................................................... 6
   3.3 Regional Geology and Description of Fill Material .................................................... 6
   3.4 Scope of Work .............................................................................................................. 7

4. **LOCATIONS OF SERPENTINITE-CONTAINING SOILS WITHIN THE SITE** ...................................................................................................................... 8

5. **LAND USES WITHIN 0.25 MILE OF WORK SITE WITH SERPENTINE SOILS** ...................................................................................................................... 9

6. **POTENTIAL SOURCES OF DUST EMISSIONS** ............................................................ 10

7. **DUST MITIGATION MEASURES** .................................................................................. 11
   7.1 Track-out Prevention and Control ................................................................................ 11
   7.2 Active Storage Piles ...................................................................................................... 11
   7.3 Inactive Surface Areas and Storage Piles .................................................................... 12
   7.4 Dust Mitigation for Roads, Parking Lots, and Staging Area ....................................... 12
      7.4.1 Dust Mitigation Measures for Unpaved Roads, Parking Lots, and Staging Areas .................. 12
      7.4.2 Dust Mitigation Measures for Paved Public Roads .................................................. 13
   7.5 Dust Mitigation for Earth Moving Activities ............................................................. 13
   7.6 Control for Offsite Transport ....................................................................................... 14
   7.7 Post-Construction Stabilization ................................................................................... 14
   7.8 Contingency Dust Control Measures ......................................................................... 14

8. **AIR MONITORING** ....................................................................................................... 17
   8.1 Airborne Asbestos Dust Monitoring Program .............................................................. 17
8.1.1 Air Sampling Equipment .............................................................. 17
8.1.2 Siting of Airborne Asbestos Sampling Devices............................... 18
8.1.3 Modifications to Airborne Asbestos Monitoring Network(s) .......... 19
8.1.4 Sampling Duration and Frequency ................................................ 20
8.1.5 Analytical Method and Procedure ............................................... 20
8.1.6 Reporting and Data Availability .................................................. 21
8.1.7 Air Monitoring Triggered Dust Mitigation Measures ................... 21
8.2 Fugitive Dust Monitoring Program ................................................... 22
  8.2.1 Perimeter Air Monitoring Instruments ....................................... 22
  8.2.2 Visible Dust Monitoring During Site Activities ........................... 23
  8.2.3 Visible Dust Crossing the Property Boundary ............................ 23
  8.2.4 On-Site Visible Dust .............................................................. 24
  8.2.5 Windblown Visible Dust during Inactive Periods ....................... 24
8.3 Independent Third Party Inspections ................................................ 24
8.4 Community Relations ..................................................................... 25

LIST OF FIGURES

Figure 1: Site Location Map
Figure 2: Site Plan with Project Boundaries
Figure 3: Development Plan
Figure 4: Sensitive Receptors Within 1000 Feet of the Site
Figure 5: Wind Rose – San Francisco International Airport
Figure 6: Airborne Asbestos Monitoring Location Map
LIST OF APPENDICES

Appendix A: ADM/DCP Approval Letter from BAAQMD, (15 April, 2014) and SFDPH, via email (25 April, 2014)

Appendix B: Construction SWPPP BMPs

Appendix C: SFDPH Article 22B Particulate Monitoring System and Approval Form

Appendix D: SFDPH Article 22B Independent Third Party Inspection Checklist
### ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM</td>
<td>Airborne Toxic Control Measure</td>
</tr>
<tr>
<td>BAAQMD</td>
<td>Bay Area Air Quality Management District</td>
</tr>
<tr>
<td>BMP</td>
<td>best management practices</td>
</tr>
<tr>
<td>CCR</td>
<td>California Code of Regulations</td>
</tr>
<tr>
<td>DTSC</td>
<td>Department of Toxic Substance Control</td>
</tr>
<tr>
<td>HEPA</td>
<td>high-efficiency particulate air</td>
</tr>
<tr>
<td>CP</td>
<td>Candlestick Point Project Area</td>
</tr>
<tr>
<td>km/h</td>
<td>kilometers per hour</td>
</tr>
<tr>
<td>mph</td>
<td>miles per hour</td>
</tr>
<tr>
<td>SWPPP</td>
<td>Storm Water Pollution Prevention Plan</td>
</tr>
<tr>
<td>TSP</td>
<td>Total Suspended Particulate</td>
</tr>
<tr>
<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

This Asbestos Dust Mitigation and Fugitive Dust Control Plan (ADM/DCP) has been prepared by Geosyntec Consultants, Inc. (Geosyntec), on behalf of CP Development Co., LP (CP DevCo), and for use within the Candlestick Point Redevelopment Project Area located in San Francisco, California (CP or the Site). The Candlestick Point Redevelopment Project Area encompasses approximately 281 acres, located in the southeastern portion of the city of San Francisco (Figures 1 and 2).

The boundaries of the Project Site, which is delineated into 18 sub-phase development blocks that are designated CP-01 through CP-18, are shown on Figure 3. Project information is as follows:

<table>
<thead>
<tr>
<th>Company Name and Address</th>
<th>Project Location/Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP Development Co., LP</td>
<td>Project location defined by San Francisco Bay on the north, east and south; Bayview Hill and Jamestown Avenue on the west and Hawes Street on the northwest (Figure 2).</td>
</tr>
<tr>
<td>1 California Street, Suite 2700 San Francisco, CA 94111 Attention: Jeffrey C. Martin Phone: 415-995-1770</td>
<td>San Francisco, CA</td>
</tr>
<tr>
<td></td>
<td>Start Date: March 2014</td>
</tr>
<tr>
<td></td>
<td>Estimated Completion Date of Project: December 2029</td>
</tr>
<tr>
<td></td>
<td>Job Trailer Location: The CP DevCo job trailer will be located along Arelious Walker Drive north of Gilman Avenue. This location may change as new work commences.</td>
</tr>
</tbody>
</table>
2. REGULATORY FRAMEWORK

In the summer of 2010, San Francisco (the City) certified the Candlestick Point-Hunters Point Shipyard Phase II Project Final Environmental Impact Report 2010 (CP-HPS Phase II FEIR 2010), which includes mitigation measures to be implemented during development of CP. Specifically, Mitigation Measure MM HZ-15 requires that Asbestos Dust Mitigation Plans and Dust Control Plans be prepared for the project. These mitigation measures were adopted in the Mitigation Monitoring and Reporting Program, dated July 2010.

This ADM/DCP has been prepared in response to MM HZ-15 and pursuant to Title 17 of the California Code of Regulations (17 CCR) Section 93105, Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations, and the City and County of San Francisco Municipal Health Code Article 22B, Construction Dust Control Requirements.

This DCP incorporates requirements of the following applicable codes and regulations:

- California Code of Regulations (CCR) Title 17, Section 93105, the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations;
- BAAQMD Regulation 2, Permits;
- BAAQMD Regulation 6, Rule 1, Particulate Matter and Visible Emissions;
- BAAQMD Regulation 11, Rule 14, Asbestos Containing Serpentine;
- City and County of San Francisco Building Code Section 106A.3.2.6, Construction Dust Control;
- City and County of San Francisco Health Code Article 22B;
- City and County of San Francisco Order Number 171,378; and

Collectively, these regulations and Mitigation Measures specify a goal of “no visible dust” emissions from the Site and outline Best Management Practices (BMPs) required to meet this goal.

Neither CP DevCo nor any of its contractors, subcontractors, representatives, or agents, shall engage in any construction or grading activity anywhere on the Site, or in
conjunction with a Work Site related offsite utility or trenching project, unless the provisions of the ADM/DCP, including without limitation the mitigation measures presented in Section 7.0 and the air monitoring measures presented in Section 8.0, are implemented at the beginning and maintained throughout the duration of the construction or grading activity.

2.1  **ATCM**

The asbestos ATCM (17 CCR 93105(b)(1)) states that the ADM/DCP, and the dust mitigation measures contained therein, apply to "any construction, grading...operation on any property [where]...[a]ny portion of the area to be disturbed is located in a geographic ultramafic rock unit." The terms "Construction," "Grading," "Construction or Grading Operation" and "Construction or Grading Activity" are defined in the ATCM to mean "any surface disturbance conducted with powered equipment or any related activity, including, but not limited to, all surface and subsurface cuts and fills, excavation, trenching, stockpiling, bulldozing, and landfills". (California Code of Regulations, title 17, § 93105, subdivision (i)(12)).

Regulatory authority for compliance with the ATCM is with the Bay Area Air Quality Management District (BAAQMD). Non-compliance with any provision of this ADM/DCP shall not subject any person or entity to BAAQMD jurisdiction or otherwise implicate BAAQMD enforcement authority except to the extent that such provision is required to be included in this ADM/DCP pursuant to the ATCM without regard to Article 22B. All mitigation measures listed in Section 7 and all monitoring requirements listed in Section 8.1 are required to be included in this ADM/DCP pursuant to the ATCM without regard to Article 22B. This ADM/DCP was submitted to BAAQMD in February 2014 and was subsequently approved by the BAAQMD on April 15, 2014 (Appendix A).

2.2  **Article 22B**

San Francisco Health Code Article 22B, Construction Dust Control Requirements, is intended to protect residents of San Francisco from exposure to construction dust by requiring Dust Control Plans with enhanced monitoring and control measures for large construction projects in San Francisco. Article 22B applies to all construction projects over half an acre in size that are within 1000 feet of a sensitive receptor (e.g., a residence, school, childcare center, hospital or other healthcare facility or group living quarters). The location of sensitive receptors relative to the Site is depicted on Figure 4.

Regulatory authority for compliance with Article 22B is with the San Francisco Department of Public Health (SFDPH). Non-compliance with any provision of this
ADM/DCP shall not subject any person or entity to SFDPH jurisdiction or otherwise implicate SFDPH enforcement authority except to the extent that such provision is required to be included in this ADM/DCP pursuant to Article 22B without regard to the ATCM. This ADM/DCP was submitted to the SFDPH in February and was subsequently approved by SFDPH on 25 April, 2014 (Appendix A).
3. PROJECT DESCRIPTION

This Section presents a description of the development activities to occur over the lifetime of the project and a description of the local topography and geology. For purposes of clarity, the following terms and related definitions are used throughout the ADM/DCP:

- **Project Area** – An interchangeable term used alongside the “Site”. The Project Area encompasses approximately 281 acres.
- **Development Phases** – All areas within the Project Area have been broken down into numbered phasing and sub-phasing areas that correspond to schedule and land use (e.g., CP-01)
- **Construction Site** – Any area within the Project area that is undergoing active construction. This term also includes support/staging areas immediately adjacent to the active construction.
- **Future Street** – Any street within the Project Area that is either already in place or will be installed via future construction efforts
- **Future Park** – A number of regional and pocket parks are planned within the Project Area. Regional parks are larger in size and pocket parks encompass approximately 10,000 square feet and are located immediately adjacent to future Development Blocks.

3.1 Development Description

The proposed project to be executed at the Site by CP DevCo is part of an integrated, mixed-use development program planned for the larger Hunters Point and Candlestick Point project area. The CP Site encompasses approximately 281 acres and includes demolition of existing structures within the Site, mass grading to meet design grades and facilitate surface water drainage, installation of new below grade utilities, construction of new roads, reconstruction of existing roads, construction of public open spaces and construction of new housing and commercial buildings.

It is estimated that the total duration of all development activities could exceed 15 years. Private development blocks, future parks and future public rights-of-way are depicted on Figure 3.
3.2 Regional Topography and Site Setting

The Site is located within the USGS, San Francisco South 7.5-Minute topographic quadrangle. The Site is located on a peninsula in the southeastern sector of San Francisco and within the Bayview neighborhood. The terrain at the majority of the Site is generally flat with certain sections overlying natural topographic low lying hills; the first being the part of the Site that abuts Bayview Hill and the second being the part that encompasses the current location of the Alice Griffith housing development. The Site is bounded by South Basin (a part of San Francisco Bay) on the northeast, San Francisco Bay on the east, southeast and south. The northern boundary of the Site is bordered by primarily commercial and industrial land uses with public facilities (a church and school) and residential land uses located along Ingalls and Carroll Avenues. To the west of the Site is Bayview Hill, a primarily undeveloped topographic high.

3.3 Regional Geology and Description of Fill Material

The Site is located within the Coastal Range geologic province. Regionally, the subsurface is comprised of anthropogenic fill overlying marine deposits and Franciscan bedrock. The marine deposits consist primarily of interbedded silt, sandy clay, and clayey sand. The sandy clay and clayey sand are collectively known locally as the Bay Mud deposits. The bedrock in the Site vicinity is the Franciscan Formation, which primarily consists of weathered serpentinite, sandstone, and shale. Asbestos is a naturally occurring mineral found in serpentinite and poses a potential health threat if asbestos fibers are mobilized from the serpentinite rock and released into the atmosphere as a result of grading and/or excavation activities. Although serpentinite bedrock has not been mapped on the surface at the Site, asbestos-containing serpentinite fragments may be present in fill material that is derived from off Site bedrock outcrops.

The Site was largely submerged beneath San Francisco Bay prior to the 1940s. Land filling began in the area in the 1940s. Land filling and grading were completed in the Site vicinity by the early 1960s. The source of the fill material is unknown; however, documented filling activities at the Hunters Point Shipyard and other nearby areas indicate that large portions of Franciscan bedrock outcrops and knolls were excavated (leveled) and the excavated material placed into the Bay margin to extend new upland areas into the Bay. Based on this land filling history, it is suspected that fragments of potentially asbestos-containing serpentinite bedrock may be present in the fill material beneath the Site.
3.4 **Scope of Work**

Candlestick Point Redevelopment work consists of four general activities to be conducted over the lifetime of the project:

- Demolition of existing structures and roads;
- Mass grading and surcharging program;
- Infrastructure improvements (below grade utilities, streets, other surface completions and park construction); and
- Vertical Construction, including fine grading, shoring, foundation construction, and utility service tie-in.

For each of these activities, this ADM/DTD will define minimum mitigation measures to be employed as long as earth disturbing activities are occurring. These mitigation measures are described in greater detail in Section 7.
4. **LOCATIONS OF SERPENTINITE-CONTAINING SOILS WITHIN THE SITE**

As stated in Section 3.3, the fill material placed within the Site may contain fragments of serpentine that may or may not contain asbestos fibers at concentrations of concern. For this reason, all development activities that have the potential to disturb historically placed fill material beneath the Site will be subject to this ADM/DCP.
5. **LAND USES WITHIN 0.25 MILE OF WORK SITE WITH SERPENTINE SOILS**

Land use within 0.25 mile of the Work Site is generally light/heavy industrial, residential, parks and open space and commercial. For purposes of this ADM/DCP, sensitive land uses are defined as a residence, school, childcare center, hospital or other healthcare facility or group living quarters located within 0.25 miles of the Work Site. Within 0.25 mile of the Work Site, potentially sensitive land uses include Bret Harte Elementary School, located at 1035 Gilman, Gilman Playground, located immediately south of Bret Harte Elementary School, Candlestick Point State Park Recreation Area, Bayview Park and a day care center is located in the Alice Griffith housing development, which is within the Work Site. Alice Griffith is bounded by Arelious Walker Drive, Carroll Avenue, Gilman Avenue and Hawes Street. No hospitals or nursing homes are known to exist within 0.25 mile of the Work Site.
6. POTENTIAL SOURCES OF DUST EMISSIONS

While all parties understand that soil disturbance and excavation activities, by their nature, will produce dust, Site controls will be used to mitigate visible dust as it is generated in an effort to achieve the no visible dust goal. This section lists methods for control of fugitive dust generated by soil disturbance or excavation including:

- Demolition Activities — Wrecking, moving or dismantling of any load-supporting structural member or portion of a building; any related cutting, disjointing, stripping, or removal of structural elements; and crushing of concrete for recycling/reuse.

- Construction Traffic — Movement of construction equipment and/or materials around the Work Site on unpaved travel routes or on dirt-covered paved surfaces. Vehicular traffic on paved or unpaved roads and parking lots.

- Site Preparation and Foundation Work — Grading, placement of fill soil, excavation of footings and foundations, installation of shoring and backfilling operations.

- Trenching and Road Construction Activities — Excavation of trenches for the installation of underground utilities can cause dust emissions.

- Material Stockpiles — Stockpiles of excavated soil from trenching activities or stockpiles of fill material.

- Cleanup and Final Site Grading — Backfilling, grading, and re-vegetating of the excavated areas.

- Any other "Construction," "Grading," "Construction or Grading Operation" or "Construction or Grading Activity" as defined in California Code of Regulations, Title 17, § 93105, subdivision (i)(12).

These potential sources of dust emissions and related dust mitigation measures are addressed in Section 7.0.
7. **DUST MITIGATION MEASURES**

This section describes minimum mitigation measures that must be employed at the Site when earth disturbing activities are taking place. If these minimum mitigation measures are found to be insufficient, additional contingency measures are presented in Section 7.8.

7.1 **Track-out Prevention and Control**

Track-out results when vehicles leave the Work Site with residual dirt or dust on the tires or undercarriage of the vehicle. This residual dirt or dust becomes deposited on the paved road surfaces leaving the Work Site and can later be stirred up as airborne dust by subsequent vehicle traffic. In order to control track-out, the following control measures will be implemented:

1. Removal of any visible track-out from a paved public road at any location where vehicles exit the work site; this shall be accomplished using wet sweeping or a HEPA filter equipped vacuum device at the end of the work day or at least one time per day.

2. Installation of one or more of the following track-out prevention measures:
   a. a gravel pad designed using good engineering practices to clean the tires of exiting vehicles;
   b. a tire shaker;
   c. an automated wheel wash system;
   d. pavement extending for not less than fifty (50) consecutive feet from the intersection with the paved public road; or,

3. Wheel wash stations at areas where vehicles exit onto paved public roads from unpaved roads.

4. Inspection and cleaning of horizontal surfaces on trucks that can collect soil (e.g., bumpers, fenders, etc.)

7.2 **Active Storage Piles**

A storage pile is considered active if material is added to, or removed from the storage pile in question within 7 calendar days. In order to control fugitive dust emissions from active soil storage piles one or more of the following control measures will be used:

1. Adequately wetting the exposed surface with water; or,
2. Use of a temporary cover (plastic sheeting, tarp, etc.).

7.3 **Inactive Surface Areas and Storage Piles**

Dust emissions from excavations, other exposed soil-disturbed areas, and storage piles that will remain inactive for more than 7 calendar days shall be controlled by one or more of the following control measures:

1. Adequately wetting the exposed surface with water at a frequency necessary to control dust emissions.
2. Establishing and maintenance of a surface crust sufficient to satisfy the test requirements in Section (h)(6) of the ATCM.
3. Application of chemical dust suppressants or chemical stabilizers according to the manufacturers’ recommendations.
4. Covering with tarps or vegetated cover.
5. Installation of wind barriers of fifty (50) percent porosity around three (3) sides of a storage pile.
6. Installation of wind barriers across open areas.

To prevent the general public from accessing storage piles, security fencing will be erected and maintained.

7.4 **Dust Mitigation for Roads, Parking Lots, and Staging Area**

7.4.1 **Dust Mitigation Measures for Unpaved Roads, Parking Lots, and Staging Areas**

In order to control fugitive dust emissions from construction traffic traveling on unpaved surfaces, the following mitigation measures shall be used.

1. No vehicle will exceed 5 miles per hour (mph) (8 kilometers per hour [km/h]) on unpaved surfaces or 15 mph on paved surfaces within the Work Site. Visible speed limit signs will be posted at the Work Site entrances.
2. One or more of the following:
   a. Watering every 2 hours of active operations or sufficiently often to keep the area adequately wetted;
   b. Applying chemical dust suppressants consistent with manufacturer’s directions;
c. Maintaining a gravel cover with a silt content that is less than five (5) percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, to a depth of three (3) inches on the surface being used from travel; or

Implementation of erosion control measures identified in the Construction SWPPP, to be provided separately but implemented concurrently, will help control fugitive dust emissions within the Work Site as well as on public roadways, staging areas and parking areas.

7.4.2 Dust Mitigation Measures for Paved Public Roads

The following mitigation measures shall be used to control fugitive dust emissions from construction traffic traveling on paved public roads:

1. No vehicle of any type will be allowed to exit unpaved portions of the Work Site except through treated Work Site exits. For a description of these Work Site exits, see Section 7.1.

2. Construction areas adjacent to and above grade from any paved public roadway will be treated with BMPs, as specified in the Construction SWPPP.

The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit visible dust emissions. Use of blower devices is expressly forbidden.

7.5 Dust Mitigation for Earth Moving Activities

Excavation activities will be visually monitored daily for the generation of fugitive dust. If dust is being generated, water will be applied to the point of excavation or disturbance to control dust.

In order to control fugitive dust emissions generated from earth moving activities the following methods shall be used:

1. Pre-wetting the ground to the depth of anticipated cuts. A dedicated water source (e.g., fire hose) will be used at each point of excavation to ensure that adequate moisture is present to minimize dust generation. This water source will be directed both at the point of excavation and the point of drop off into an awaiting dump truck or an existing storage pile, as appropriate.
2. Suspending grading operations when wind speeds are high enough to result in dust emissions crossing the property line, despite the application of dust mitigation measures.

3. Application of water prior to any land clearing.

7.6 **Control for Offsite Transport**

Any material generated from activities conducted within the Work Site and which material is to be transported off Site must be done so with vehicles that are maintained such that:

1. No spillage can occur from holes or other openings in cargo compartments;
2. The loads are adequately wetted and either:
   a. Covered with a tarp; or
   b. Loaded onto the trucks such that the material does not touch the front, back or sides of the cargo compartment at any point less than twelve (12) inches from the top and that no point of the load extends above the top of the cargo compartment.

   Trucks carrying loose soil or sand will be covered before they leave the Work Site. If concrete and/or asphalt are to be hauled off Site, reasonable effort will be made to remove excess Site soil adhered to the material to be hauled off Site.

7.7 **Post-Construction Stabilization**

One or more of the following post construction measures to mitigate dust emissions of serpentine-containing soil shall be utilized:

1. Establishing a vegetative cover; or
2. Placement of at least three (3) inches of fill containing less than 0.25% asbestos; or
3. Installation of hardscape (e.g., sidewalk, road, building foundation).

7.8 **Contingency Dust Control Measures**

In the event the above measures are not successful at controlling dust emissions from the construction activities, one or more of the following activities will be considered and implemented until the condition stabilizes:
Any designated haul roads will be watered more frequently as necessary to control windblown dust and dust generated by construction vehicle traffic when in use by the contractor.

Streets adjacent to the Work Site locations will be swept as necessary to remove accumulated dust and soil. Only wet sweeping methods or a HEPA filter equipped vacuum device will be used. Dry rotary sweeping methods will not be used.

Water may also be applied to paved roads leading between Work Sites, when necessary. Vehicle trips will be reduced to the extent practicable.

Construction employees will park personal vehicles on paved surfaces.

1. The construction schedule will be prioritized to the extent possible to install permanent cap over potentially asbestos containing soil by placement of concrete road base and curb/gutter.

2. Imported clean aggregate base rock may be used for placement of the final 6 to 12 inches of necessary fill to raise the grade to final subgrade elevation and provide a cover over potentially asbestos containing soil.

Paved public roads will be washed at the end of each work day.

Additional water trucks will be utilized to aid in wetting paved public roads, and Work Site roads as needed, throughout the day.

Installation of a misting system can be used up to as much as 24 hours per day as needed to aid in keeping soil moist after construction activity has ceased each day.

Drop heights will be minimized when dropping soil into an awaiting dump truck.

Periodic watering of haul routes from the point of excavation to the drop-off point regardless of whether the route is paved, unpaved or within or outside the defined Work Site.

A dedicated laborer will be assigned to each point of excavation to sweep, shovel or otherwise push soil inadvertently dropped on adjacent paved roads within the Work Site. If appropriate, an excavator may be used to push soil back into a trench.

3. A mechanical sweeper will be utilized at and around points of active excavation and/or backfill occurring on paved streets to prevent soil from collecting on paved surfaces. This measure will be employed to help control track out of sediment onto paved public streets. Only wet sweeping methods or a HEPA filter equipped vacuum device will be used. Dry rotary sweeping methods will not be used.
If compaction will not take place immediately following clearing and grubbing, the surface soil will be stabilized with dust palliative and water to form a crust on the soil surface.

Graded areas will be stabilized with chemical stabilizers within 5 working days of verification of final grading completion. All unpaved, inactive portions of the Work Site will be seeded and watered to maintain a grass cover if they are to remain inactive for long periods of time.

All clearing, grading, earthmoving, and excavating activities will be halted during periods of sustained strong winds (hourly average wind speeds of 25 mph (40 km/h) or greater).

The areas subject to excavation, grading or other construction activity will be limited at any one time.

In the event blasting is required, the blasting activities will be designed to reduce the potential for PM emissions. Guidance from the BAAQMD staff report will be followed which may include covering the blast area with wet soil. The amount of soil used will be based on best engineering judgment taking into consideration the amount of the charge, the size of the blast area, and the proximity to receptors and other structures.

Asbestos emissions from demolition activities will be controlled in accordance with the requirements of BAAQMD Section 11-2-303, as described in a separate plan.
8.  AIR MONITORING

This section describes the air monitoring protocol to be used at the Site. The monitoring consists of two components: i) airborne asbestos dust monitoring in accordance with the ATCMs; and ii) fugitive dust (particulate) monitoring in accordance with Article 22B. Also presented are those specific actions that must be taken by CP DevCo if the level of airborne asbestos is detected at or above project action levels.

At the start of the project, airborne asbestos and fugitive dust monitoring are required when earth disturbing activities are active. SFDPH Article 22B may allow for a decrease and possible cessation of fugitive dust monitoring; a process that may take 3 months or more from the date of construction start. When any one project ceases to disturb soil, monitoring may also cease, but only with the proper notifications and/or approvals.

No airborne asbestos or particulate monitoring is required when the construction Site is shut down and no work is being conducted and no vehicles are being driven on unpaved surfaces. This is the presumed condition on weekends and holidays. If work is planned for the weekend or on holidays, CP DevCo will notify the SFDPH and BAAQMD of this plan at least 48 hours prior to the scheduled work. This notification will occur via email.

8.1  Airborne Asbestos Dust Monitoring Program

8.1.1  Air Sampling Equipment

Sampling at all airborne asbestos monitoring stations will be conducted using battery operated heavy duty vacuum pumps. Either model SKC 1532 and/or Model BGI 100 or an equivalent model vacuum pump will be used for each of the monitoring stations. The battery will be a marine grade deep cycle 12 volt battery, or equivalent. A battery charging station will be set up at a secure location at the Site to ensure adequately charged batteries are always available for pump operation. Selected equipment will be of the type that is used extensively in air sampling for asbestos.

The sampling train will consist of the following; pump, a flow regulator/dampener, a lockable air flow adjustment valve, tygon tubing and filter cassette assembly. The cassette will be attached to a tripod, or equivalent, to ensure the filter cassette maintains a constant elevation of 4 feet above ground surface. The filter cassettes will have a 25 millimeter open face cowl and will consist of a mixed cellulose ester (MCE) filter with a 0.45 micron pore size.
Each of the pumps, battery packs, sampling trains and cassettes will be inspected regularly to ensure proper operation. To prevent vandalism, sampling equipment will be placed in locked boxes and, if possible, behind locked fences. In the event monitors are found to not be operating properly, as soon as practicable BAAQMD staff will be notified of the location, monitor name, time discovered, plan of action and estimated time needed to complete repairs.

### 8.1.2 Siting of Airborne Asbestos Sampling Devices

A Work Site perimeter airborne asbestos monitoring program using high-volume Total Suspended Particulate (TSP) methodology will be conducted to measure and document the concentration of airborne asbestos dust in ambient air. The airborne asbestos monitoring program includes upwind, downwind and crosswind sampling locations to determine the concentration of airborne asbestos resulting from Site activities that could potentially be transported off Site.

Prior to earthwork being initiated at a specific project work area, airborne asbestos monitoring locations will be selected based on locally measured wind speed and direction data as provided by an onsite meteorological station and/or data provided by another weather station located in close proximity of the Site (e.g., the weather station at SFO). The attached wind rose diagram (Figure 5) illustrates the general historical wind speed, direction and frequency of occurrence at the San Francisco Airport, which is located less than 3 miles from the Site. This information will be used to establish airborne asbestos monitoring stations in the initial stages of airborne asbestos monitoring, until more site specific data is collected from the onsite meteorological station. Site airborne asbestos monitoring locations will be selected in cooperation with BAAQMD air monitoring staff a minimum of 7 days prior to the initiation of earthwork. In general, the sampling will be conducted at or near Site property lines at four locations.

The initial phase of earthwork will occur immediately south of the Alice Griffith Housing area. To monitor potential airborne asbestos emissions from this work, site monitoring stations will be established at the four locations depicted on Figure 6. The meteorological station will be located as depicted on Figure 6 and will be maintained at this location throughout the duration of the Candlestick Point Redevelopment project.

Airborne asbestos sampling equipment will be located to avoid sheltered or dead air spaces and areas where particle trapping may occur. Sample intakes will be elevated to approximately 4 feet above grade and placed in areas clear of obstructions.
Construction activities may require temporary relocation of airborne asbestos monitors within the vicinity of the locations shown on Figure 6. Should one of the monitors be in direct conflict with construction activities, it may be moved up to 50 feet from its location shown on Figure 6 without notification. Once the construction activities within this area are complete, the airborne asbestos monitor(s) will be placed back at their originally approved location.

**8.1.3 Modifications to Airborne Asbestos Monitoring Network(s)**

As new areas within the Site become active and as other areas are stabilized with one of the three methods presented in Section 7.7, it may be necessary to move airborne asbestos monitoring stations to ensure that adequate coverage of active work areas is maintained. If a new area of the Site becomes active that is significantly distant from an existing network, it may be necessary to create a new airborne asbestos monitoring network. If one or more monitors must be moved to maintain coverage or if a new airborne asbestos monitoring network is proposed, the BAAQMD will be notified at least 7 days in advance of the proposed move or proposed addition. In no case will any monitor be moved more than 50 feet without first obtaining approval from the BAAQMD.

The notification to the BAAQMD must be in writing and include the following minimum information:

1. The reason(s) for the move;
2. If necessary, the reason(s) for the new monitoring network;
3. A description of new monitoring location(s);
4. A map depicting the current and proposed monitoring locations;
5. A map depicting current and future areas to be disturbed;
6. A description of any other proposed changes to monitoring protocol; and
7. Any other information that will help BAAQMD staff in determining whether the proposal can be approved.

Once the move of monitor location(s) is approved by BAAQMD, the monitors will be moved in the field, secured, and a new map of monitor locations will be posted in the CP DevCo Site trailer along with a copy of the BAAQMD approval letter. All correspondence from the BAAQMD will be stored with the ADM/DCP at an onsite location.
8.1.4 Sampling Duration and Frequency

Each high-volume air monitoring sample will consist of a continuous 24-hour sampling period from approximately 3:30 PM to 3:30 PM the next day. During holidays and weekends in which no earth disturbing activities occur, air monitoring may alternatively consist of an 8-hour sampling period from approximately 7:30 AM to 3:30 PM. At the time of sample collection and set up for the next monitoring run, a field technician will record in a field notebook the sample ID number, the sample location, the date and time the pump was activated, the date and time the pump was deactivated, the flow rate at the start of sampling, the flow rate at the end of sampling, the calculated average flow rate, and the calculated total volume of air pumped during the sampling run. All data will be transcribed onto the chain-of-custody form that will remain with the samples until they are delivered to the analytical laboratory.

A rotameter will be used to calibrate the flow rate both before and after sample collection. The rotameter will be attached to the end of the sampling train to check the flow rate before the prior day’s cassette is removed. This is accomplished by placing a specialized cover over the cowl that allows a rotameter to be attached to the cover. The field technician will read the flow rate and record the reading. After the reading is recorded, the sample cassette is removed, labeled and placed in a sealable plastic bag. Once complete, a new cassette is fitted onto the end of the tygon tubing, the cover placed over the cowl, the rotameter attached to check the flow rate at the start of sampling. If an adjustment is necessary, the technician will turn the regulator until the desired flow rate is achieved. The desired flow rate is between 2.5 and 2.7 liters per minute.

At the conclusion of set up at all monitoring locations, the samples will be promptly delivered to a California accredited analytical laboratory for analysis. All samples will be accompanied by the chain-of-custody filled out for that day’s sampling.

8.1.5 Analytical Method and Procedure

All asbestos air samples will be analyzed by transmission electron microscopy (TEM) per the United States Environmental Protection Agency, Asbestos Hazard Emergency Act (AHERA) criteria pursuant to Title 17 of the California Code of Regulations (17 CCR) Section 93105. The following exceptions are required by the ATCM and will be included:

1. The analytical sensitivity shall be 0.001 structures per cubic centimeter (0.001 s/cc); and
2. All asbestos structures with an aspect ratio greater than three to one (3 to 1) shall be counted irrespective of length.

For purposes of consistency with other adjacent airborne asbestos monitoring programs, the asbestos data will be reported in structures per cubic meter (s/m³).

8.1.6 Reporting and Data Availability

All results from monitoring stations will be distributed to all project stakeholders via email on a daily basis regardless of the magnitude of the detected concentrations. The email distributions for air monitoring results will include BAAQMD staff, CP Development staff, general contractors working on behalf of CP DevCo and SFPDH staff.

A cumulative database of all air monitoring results and any on Site wind monitoring data results from project inception to the present will be updated and maintained in the project files. The cumulative air monitoring data will be updated on a monthly basis and the wind data updated on a weekly basis. These data compilations can be made available to BAAQMD and SFPDH staff upon their request.

8.1.7 Air Monitoring Triggered Dust Mitigation Measures

In the event that ambient air monitoring results indicate levels equal to or above 16,000 s/m³ from any BAAQMD-approved air monitor, CP DevCo shall notify the BAAQMD as soon as practical of the monitoring results indicating: the project RIN, sampler ID and location, actual TEM structures per cubic meter, the date the sample was taken and the date analysis was reported. Additionally, all earth disturbing activity within the monitoring network in which the level of airborne asbestos was detected at or above 16,000 s/m³ will be suspended until dust is abated and the restart criteria is achieved.

As stated above, it may be possible to have 2 or more monitoring networks in different parts of the larger Candlestick Redevelopment Project Area operating simultaneously. If one network experiences airborne asbestos levels equal to or above 16,000 s/m³, earth disturbing activities within that network must cease until ambient monitoring drops below 16,000 s/m³. Earth disturbing activities occurring within other monitoring networks may continue.
8.2 Fugitive Dust Monitoring Program

Fugitive dust monitoring will be conducted by visual and mechanical means throughout the duration of construction and earthwork. Daily visual monitoring during all earth disturbing activities is the primary responsibility of the contractor. If criteria are exceeded regarding dust generation at the point of earth disturbance the contractor must follow the processes outlined in Section 7.0 to rectify the particular operation causing the problem.

8.2.1 Perimeter Air Monitoring Instruments

Prevailing wind at Candlestick Point is from the west or southwest and towards the east or northeast, as shown on Figure 4. As each development sub-phase becomes active within the larger CP site, decisions about monitoring will be made independently for each sub-phase, or taken together to establish a monitoring network that will provide coverage for all active areas. In addition, if the potential dust generating activities are contained within even smaller work areas within each sub-phase, then decisions about those areas can be made independently.

Monitoring locations will initially coincide with those selected for the airborne asbestos dust monitoring program (see Section 8.1). Fugitive dust monitoring locations will be checked regularly and adjusted if necessary to maintain downwind coverage.

Real-time particulate dust monitors (Thermo Scientific MIE ADR-1500, Thermo Scientific pDR 1500, or equivalent) will be used to monitor for particulates. The action level and details of the monitoring instruments, locations, and the monitoring frequency will be memorialized by CP DevCo based on the Particulate Monitoring System and Approval Form attached in Appendix C. The details of the system (layout, number of monitors, etc.) can be changed, as needed. The use of this Appendix C form and the ability to change the parameters of the monitoring are intended to allow flexibility within the overall objectives of the particulate monitoring program while still meeting or exceeding all health standards. Once the Appendix C form is completed and prior to construction start, it will be submitted to SFDPH for their records.

National Ambient Air Quality Standards (NAAQS) and the California State Ambient Air Quality Standards (CSAAQS) are designed to protect the general public from airborne particulates generated in the urban, suburban and rural environments. The NAAQS and the CSAAQS are not meant to be applied to project specific actions and related air quality. Rather, those standards are used in an attempt to attain city or region-wide ambient air quality goals for the benefit of the general public. The current standards are:
• 24 Hour National Ambient Air Quality Standard
  o PM-10: 150 micrograms per cubic meter average per 24 hour day (Not to be exceeded more than once per year on average over 3 years)
  o PM-2.5: 35 micrograms per cubic meter average per 24 hour day (98th percentile, averaged over 3 years)

• 24 Hour State Ambient Air Quality Standard
  o PM-10: 50 micrograms per cubic meter average per 24 hour day

It should be noted that the City and County of San Francisco (CCSF) is a non-attainment area for the NAAQS for PM-2.5. CCSF is also a non-attainment area for the CSAAQS for PM-10. Non-attainment areas are areas of the country where air pollution levels persistently exceed the NAAQS as designated by U.S. Environmental Protection Agency (USEPA.)

8.2.2 Visible Dust Monitoring During Site Activities

This section establishes the steps that must be taken toward achieving the goal of no visible dust from soil disturbance or excavation in terms of the amount of time permitted to address visible dust plumes. The criteria in this section apply to an active Construction Site when equipment and personnel are driving on the Site and performing work activities. The “initial observation” starts the clock for the required response measures described below. The “initial observation” is the time any of the following personnel observe visible dust: (a) workers who are disturbing soils or excavating for the permitted activity or (b) any CP DevCo representative, supervisor, contractor, subcontractor or consultant with responsibility for monitoring the permitted activity including the independent third party.

8.2.3 Visible Dust Crossing the Property Boundary

In the event visible dust from soil disturbance or excavation is observed crossing the property boundary, the following procedures will be followed to ensure adequate mitigation measures are in place to address the dust:

1. The specific source of the emissions will be immediately shut down and a more aggressive application of the existing mitigation measures described in this Section 4 will be directed.

2. Once the mitigation measures have been applied, the source of emissions will resume and observations will be conducted to verify that the mitigation measures were successful.
8.2.4 On-Site Visible Dust

In the event visible dust from soil disturbance or excavation is observed on-site, but does not cross the property boundary, the following procedures will be followed to ensure adequate mitigation measures are in place to address the dust:

1. A more aggressive application of the existing mitigation measures described in this Section 4 or additional methods of dust suppression will be directed to the specific source of emissions within 60 minutes of the initial observation.

2. If, despite these more aggressive and/or additional measures, the visible dust emissions continue for 90 minutes from the time of the initial observation, the specific source of emissions will be temporarily shut down until the implemented dust control mitigation is effective or, due to changed conditions, no longer necessary.

8.2.5 Windblown Visible Dust during Inactive Periods

The standards in this section apply on weekends, holidays, or any other times when no equipment and personnel are performing work activities at the Construction Site. In the event of observations of windblown visible dust plumes from soils originating on the Construction Site, mitigation measures described in this Section 7 will be directed by the contractor within less than 4 hours of making the observation. Mitigation measures will be applied until the visible dust plumes originating from the Construction Site are minimized or eliminated. Any observations of visible dust originating from the Construction Site during inactive periods should be reported to the CP DevCo Hotline at 866-5-Lennar.

8.3 Independent Third Party Inspections

An independent third party will observe the potential dust generating activities and implementation of the ADM/DCP mitigation requirements and make notations on the Inspection Checklist (Appendix D). The details of the independent third party observation schedule can be changed as needed to maintain sufficient variability in inspection time. This variability in inspection time has been found to be an effective means to ensure proper contractor response when administering dust mitigation measures.

The checklist results will be reviewed with the contractor on a regular basis. The Independent Third Party will submit the checklists to CP DevCo on a regular basis. The schedule for inspections, review and submittal of the checklists will be specified through the Particulate Monitoring System Approval Form (Appendix C).
The Candlestick Point Project area, and San Francisco in general, is subject to significant daily variation in wind direction and speed. For example, the wind can be calm in the morning and can then increase significantly in the afternoon. Wind direction will be determined with a wind sock, nearby weather station data, or other similar wind direction monitoring device. This variation in daily wind direction and speed will be documented on the Appendix B checklist. The Appendix D checklist also contains information concerning site activities, descriptions of specific dust mitigation measures and any recommendations for enhanced mitigation measures if found to be necessary. Shut down periods that occur during normal work hours will be noted on the Inspection Checklist, or other report.

8.4 **Community Relations**

The Community is encouraged to assist in monitoring and reporting conditions that are not in compliance with this ADM/DCP. A publicly visible sign with the telephone number to contact regarding dust, noise, or odor complaints will be posted prior to starting construction and maintained during construction. For general complaints, the contractor will respond and take corrective action within 24 hours.

During hours of active construction phone calls will be answered or returned as soon as practicable. During non-work hours phone calls may be diverted to a message machine and returned the next business day.
Figure 6
Airborne Asbestos and Dust Monitoring Location Map
Candlestick Point Project Area
San Francisco, California

Legend
- Development Phase
- Extent of Soil Disturbance Activities
- Candlestick Point Project Area
- Off Site Infrastructure Improvements

Prevailing Wind Direction

Project:
WR1843
April 2014

P:\GIS\Lennar\CandlestickPoint\Project\2014Apr\ADMP\Fig06_Asbestos.mxd
Wind rose represents data recorded at San Francisco International Airport between 11/2006 and 1/2014.
Figure 4
1000 ft Buffer and Sensitive Receptors
Candlestick Point Project Area
San Francisco, California

Legend
- 1000 ft Buffer around Candlestick Point Project Area
- Sensitive Receptors
- Candlestick Point Project Area
- Off Site Infrastructure Improvements
Figure 3
Project Phases
Candlestick Point Project Area
San Francisco, California

Legend
Development Phasing Plan

1
2
3
4

Project Area Boundary

Feet
0 312.5 625 1,250

Project:
WR1843

Geosyntec consultants

April 2014

P:\GIS\Lennar\CandlestickPoint\Project\2014\Apr\ADMP\Fig03_Phasing.mxd
Figure 2
Site Plan with Project Boundary

Candlestick Point Project Area
San Francisco, California

Legend

Candlestick Point Project Area
Off Site Infrastructure Improvements

Project: WR1843
April 2014

P:\GIS\Lennar\CandlestickPoint\Project\2014Apr\ADMP\Fig02_SitePlan.mxd
Figure 1
Site Location Map

Candlestick Point Project Area
San Francisco, California

Legend

- Candlestick Point Project Area

Project: WR1843
April 2014
APPENDIX A

ADM/DCP Approval Documentation from BAAQMD, (15 April, 2014) and SFDPH (25 April, 2014)
April 15, 2014

Jeffrey Austin
Geosyntec Consultants, Inc.
1111 Broadway, 6th Floor
Oakland, California 94607

Re: ADMP RIN # NOA-0089
Project: Candlestick Point Redevelopment, San Francisco Project
Applicant: CP Development Co., LP

Dear Mr. Austin,

This letter is in response to the Asbestos Dust Mitigation Plan ("ADMP") referenced above for the subject project submitted to the Bay Area Air Quality Management District ("District") by Geosyntec Consultants, Inc. on behalf of the CP Development Co., LP pursuant to subsection (e)(2)(A) of the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations, Section 93105, Title 17, California Code of Regulation ("Asbestos ATCM").

The reference identification number ("RIN") for this ADMP is NOA-0089; when making inquiries or filing record submittals regarding this ADMP, please refer to the RIN.

The District received the revised ADMP on April 11, 2014, and determined the ADMP meets the applicable criteria pursuant to subsection (e)(4) of the Asbestos ATCM, provided the Dust Mitigation Measures enumerated in the following sub-sections are adhered to throughout the duration of construction and/or grading activities at the project:

7.0 Dust Mitigation Measures
7.1 Track-out Prevention and Control
7.2 Active Storage Piles
7.3 Inactive Areas and Storage Piles
7.4 Dust Mitigation for Roads, Parking Lots, and Staging Area
7.5 Dust Mitigation for Earth Moving Activities
7.6 Control for Offsite Transport
7.7 Post-Construction Stabilization

In addition, approval is subject to the requirements set forth below:

Air monitoring:
1. The District approves the proposed monitoring on condition that:
   a. Air Monitoring be conducted in accordance with the Naturally-Occurring Asbestos ("NOA") ambient perimeter air monitoring protocols contained in the ADMP.
   b. Transmission electron microscopy (TEM) air sample results shall be continuously compiled throughout the duration of ground disturbance activities at the project into a data spreadsheet and reported in units of total structures per cubic centimeter. The spreadsheet shall be submitted for District review once every two weeks. Submit the spreadsheet electronically to Compliance@baaqmd.gov (identifying the project RIN # in the Subject of each email).
Letter to Jeffrey Austin
April 15, 2014
Page 2

c. Standard Operating Procedures for sample collection, processing and shipping, as well as all calibration records for flow measuring devices, and records of the date and location of each monitor shall be available for inspection.

Startup notification:
- The applicant shall submit electronic notification at least one week prior to beginning construction and/or grading activities at the project site to Compliance@baaqmd.gov (identifying the project RIN # in the Subject of email).

This ADMP is the basis for compliance with the Asbestos ATCM for the Candlestick Point Redevelopment Project, and its terms must be implemented throughout the duration of the construction project. At the conclusion of the project, a letter stating the final date of work and detailing the post construction stabilization activities shall be submitted to Compliance and Enforcement at:

Director of Enforcement
939 Ellis St., San Francisco, CA 94109

Any questions you may have regarding this ADMP should be directed to Kevin Vo, Air Quality Specialist, at (415) 749-8620.

Sincerely,

Jeffrey McKay
Deputy Air Pollution Control Officer
Hello Ryan,
SF DPH SAM approves the Dust Control Plan for the 2600-2700 Aurelius Walker, Alice Griffith redevelopment portion of the Candlestick Park Development project (CP-01).

DPH SAM will accept this DCP as the plan for the remaining Candlestick Park development project with the conditions that site specific addenda showing monitoring locations are provided for each development sub area.

Yes, please send a mark up of the SMP for review and approval before sending the final CD for the file.

Thank you,

Elyse D. Heilshorn, P.E.
Sr. Environmental Health Inspector
LOP and Site Assessment and Mitigation Programs
Environmental Health Branch, Population Health Division
San Francisco Department of Public Health
1390 Market St., Suite 210, San Francisco CA 94102
415-252-3885 Fax 415-252-3910
www.sfdph.org/dph/eh

** CONFIDENTIALITY NOTICE** This email message and any attachments are solely for the intended recipient and may contain confidential or privileged information. If you are not the intended recipient, any disclosure, copying, use or distribution of the information included in this message and any attachments is prohibited. If you have received this communication in error, please notify the sender immediately and permanently delete or otherwise destroy the information.