City and County of San Francisco
DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH

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April 17, 2019

Brad Wiblin
Reservoir Community Partners
600 California Street
San Francisco, CA 94108

Subject: SFHC Article 22A Compliance
BALBOA RESERVOIR (11 PHELAN AVENUE/11 FRIDA KAHLO WAY, SF)
EHB-SAM NO. SMED: 1766

Dear Brad Wiblin:

In accordance with the San Francisco Health Code, Article 22A and the Building Code, Section 106A.3.2.4.1, 106A.3.2.4.2 and 106A.3.2.4.4 – Hazardous Substances; the San Francisco Department of Public Health, Environmental Health Branch, Site Assessment and Mitigation (EHB-SAM) has reviewed the following documents:

- Draft Phase I Environmental Site Assessment Report by SCS Engineers (SCS) 27TH January 2018.
- Summary Report, Limited Phase II Site Investigation, Balboa Reservoir, 11 Phelan Avenue, San Francisco, California (APN – 22-3180-005-01), for Reservoir Community Partners, LLC, prepared by SCS Engineers (SCS), March 2019
- Site Mitigation Plan 11 Phelan Avenue, San Francisco, California (APN – 22-3180-005-01), for Reservoir Community Partners, LLC, prepared by SCS Engineers (SCS), March 2019.

The current Project plan entails grading to create a buildable surface, consisting of cutting and then followed by the construction of 1,100 units of affordable and market rate housing and 4.2 acres of parks and open space and mixed-use retail space Site preparation will raise grade in the central portion of the Site by several feet, using the Site perimeter embankment material (approximately 71,000 cubic yards or cy) as a fill source along with clean off-Site fill source material (approximately 177,000 cy).

The soil vapor survey was originally designed to include installing and sampling eight to ten temporary on-Site soil vapor probes (PV-1 through PV-10; however, based upon field observations, SCS requested that TEG (drilling contractor) add an 11th location (PV-11).

Following the soil vapor survey, TEG advanced six borings (P-1 through P-6, *Figure 2*), each to ten feet bgs. SCS requested that the analytical laboratory prepare five composite soil samples, including the 0.75- and 2.5-foot samples from borings P-1, P-2, P-3, and P- 4, and the 9.5-foot sample from boring P-5 combined with the 0.75- and 5.0-foot samples from boring P-6. SCS requested analysis of each composite sample for the following:

- Petroleum hydrocarbon range (gas, diesel, and motor oil) with diesel and motor oil after first using a silica gel cleanup;
- VOCs;
- Semi-volatile organic compounds (SVOCs);
- Organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs);
- California Administrative Manual (CAM) 17 metals;
- Total cyanide by EPA Method SM4500-CN⁻CE;
- Total hexavalent chromium by EPA Method 7199; and,
- Soluble lead (by the Waste Extraction Test or WET method).
- Total cyanide;
- Total hexavalent chromium; and,
- Soluble lead.

SCS requested that the laboratory also analyze discrete samples from borings P-3 (0.75 feet and 2.5-feet), P-5 (9.5-feet), and P-6 (0.75- and 5.0-feet) for total hexavalent chromium; and discrete samples from borings P-5 (9.5-feet) and P-6 (0.75- and 5.0-feet) for analysis of VOCs.

Soil vapor results indicated that none of the eleven soil vapor samples collected and analyzed by TEG in their on-Site mobile laboratory yielded TPHg at or above the corresponding reporting limits (RLs). T e sole VOC analyte detected was benzene reported in the sample from location PV-5 at 52 micrograms per cubic meter ($\mu g/m^3$), in excess of the recently-revised Environmental Screening Level (ESL) value of 3.2 $\mu g/m^3$ for residential land use.

SCS stated that neither methane, nor the leak check compound 1,1-DFA were detected at or above the corresponding laboratory RLs in any of the eleven analyzed soil vapor samples. Oxygen was detected at concentrations of 11 to 21 %, and carbon dioxide was detected in four samples at concentrations ranging from 5.4 to 11%.

The composite soil sample results indicated that TPHd and TPHmo were reported in four of the analyzed samples at ranges of 1.1 to 4.0 milligrams per kilogram (mg/kg) and 20 to 110 mg/kg, all well below applicable ESL values for residential or commercial land use. The sample from location P-1 yielded Dichlorodiphenyltrichloroethane (DDT) at 0.0003 mg/kg, below the corresponding ESL value (0.00059 mg/kg) for residential land use. The composite sample from combined locations P-5 and P-6 yielded tetrachloroethylene (PCE) and vinyl chloride at respective concentrations of 0.00042 mg/kg and 0.0003 mg/kg, below corresponding residential land use ESL values of 0.6 mg/kg and 0.0082 mg/kg.

Select CAM 17 metals were detected, and with the exception of arsenic, none of the CAM 17 metals were reported above corresponding ESL values for residential land use. The detected arsenic concentrations ranged from 1.5 to 3.2 mg/kg, above corresponding residential and commercial land use ESL values (0.067 and 0.31 mg/kg), but well within values considered to be representative of background concentrations (range of 0.61 to 11 mg/kg) for alluvial soils in the San Francisco Bay Area. Hexavalent chromium was detected above the RL in two composite samples (locations P-3 and P-5/P-6) at respective concentrations of 0.35 and 0.31 mg/kg, slightly above the residential land use ESL value of 0.3 mg/kg, but below the corresponding ESL for a construction worker (2.8 mg/kg). Locations P-1 and P-2 also yielded estimated hexavalent

chromium detections but all concentrations were below the laboratory RL and below the residential land use ESL value. None of the analyzed soil samples yielded total cyanide or soluble lead at or above the corresponding RL values of 0.1 mg/kg and 0.1 milligrams per liter (mg/L). None of the analyzed soil samples yielded analytes at or above ten times the soluble threshold limit concentration (STLC) value or the total threshold limit concentration (TTLC) value governing soils disposal in California.

Discrete soil sampling results indicated that VOCs were not reported at or above RLs in the analyzed discrete soil samples. Hexavalent chromium concentrations decreased with depth below ground surface. Samples P-3 at 0.75 and 2.5 feet yielded hexavalent chromium at 0.22 mg/kg and 0.17 mg/kg (estimated). Samples P-5 at 9.5 feet, and P-6 at 0.75 feet and 5.0 feet yielded hexavalent chromium at 0.28, 0.55, and 0.34 mg/kg, two of which exceeded the residential ESL value of 0.30 mg/kg and none of which exceeded the construction worker ESL value of 2.8 mg/kg and commercial ESL of 6.2 mg/kg.

SCS concluded that the presence of significant residual chemicals in Site soil vapor was not identified. Benzene was detected in one soil vapor probe location (PV-5) in the immediate vicinity of a trailer used to store motorcycles used for training at a concentration of 52 $\mu g/m^3$, in excess of the recently revised residential land use ESL value. The oxygen concentration in sample PV-5 was 20%. The project development will place approximately five feet of clean fill soil over the current groundsurface in the PV-5 location.

The absence of benzene in any of the other ten (10) soil vapor samples collected, the lack of other VOCs, including petroleum constituents (TPHg, ethylbenzene, toluene, xylenes or naphthalene), in the soil vapor samples and the absence of VOCs at or above RLs in any of the discrete soil samples analyzed, including P-5, suggests a very limited, localized residual impact.

Arsenic was detected in each composite soil sample at concentrations ranging from 1.5 to 3.2 mg/kg, above the residential land use ESL value, but well within the range considered to represent background conditions for alluvial soils in the San Francisco Bay Area.

Hexavalent chromium was detected in composite soil samples at concentrations slightly above a residential land use ESL value in two locations including the berm borings P-5 and P-6, and from location P-3 located at the southeastern edge of the lower lying portion of the Site. The total chromium values reported for these same locations were not elevated. SCS then requested analysis of discrete soil samples from locations P-3, P-5 and P-6 for hexavalent chromium, and from P-5 and P-6 for VOCs. Although slightly beyond recommended hold times, the sample analysis indicated hexavalent chromium concentrations decrease with depth below ground surface. Although the hexavalent chromium concentrations in the discrete soil samples slightly exceeded residential ESL values at three locations, the values were below the ESL value used for construction worker protection.

The proposed high-density residential development project consists of three primary elements:

- Multiple story residential buildings;
- Paved parking and hardscaped walkways; and,

- Community-accessible parks and gardens.

Although slightly in excess of residential ESL values in limited locations, SCS does not consider the presence of hexavalent chromium concentrations in shallow Site soils a risk to future Site occupants. First, hexavalent chromium is a transient form of chromium which converts to the more stable trivalent chromium in the presence of oxygen. Thus, those soils containing hexavalent chromium at concentrations already very close to the residential ESL value are expected to be rendered inert when exposed to ambient conditions.

Site development plans include the presence of hard scape over the majority of the Site, rendering the potential for exposure of residents to hexavalent chromium-containing soils further unlikely. Community parks and gardens will be developed using a layer of clean fill soil, thereby eliminating a potential exposure pathway.

In March 2019, a site mitigation plan (SMP) was developed for the project. The SMP is to address soil, and as appropriate, groundwater management practices and procedures to be employed during the construction activities associated with the proposed Site development, which will include earth-moving activities and groundwater dewatering. The purpose of this SMP is to provide measures to mitigate potential long-term environmental or health and safety risks (if any) to protect construction workers, nearby residents, workers, and/or pedestrians. This SMP also contains contingency plans to be implemented during soil excavation if unanticipated hazardous materials are encountered.

The proposed construction activities for the Site are anticipated to disturb soils (e.g. grading, new foundation work, utility installation, etc). At this time, the proposed foundation systems will consist of spread foundations. During all soil handling activities involving the foundation elements, dust control measures will be implemented to reduce the potential for fugitive dust production. The general contractor and contractors will be responsible for establishing and maintaining proper health and safety procedures to minimize the potential for worker and public exposure to impacted materials during construction of the foundations.

Subsequent to the construction of the proposed Site structures, contaminant exposure risks will be limited to shallow subsurface soil. Persons who could come in contact with contaminated soil will be protected by institutional controls that will be developed and implemented.

Mitigation measures will consist of handling soils safely during construction activities and providing a clean layer of cover soil or other surfacing (hardscape, landscape, etc.) to prevent future exposure to contaminants once the redevelopment activity has been completed. Mitigation measures include the following:

- Site soils to be cut and used for fill at other on-Site locations will be located below hardscape (buildings and pavement) and will therefore not be accessible to residents;
- Those areas not covered by hardscape (gardens or landscaped areas) will be covered with a minimum of three feet of documented clean imported fill;
- If on-Site soil is used in areas not covered by hardscape, the soil will be tested for the complete suite of analytes specified in the Maher Ordinance; and,

- Although current Site development plans call for a net import of approximately 106,000 cubic yards (cy) and do not call for off-Site export of soils, in the event that soil export is necessary, waste materials will be properly profiled, classified and disposed of according to current laws and regulations.

A health and safety plan will be developed for the site and construction workers. Based on the previously identified site contaminants, the primary exposure pathways of concern are inhalation of dust from the subsurface, ingestion of soil particles, and dermal contact during excavation and soil handling activities. Worker notification and other risk management procedures will be implemented by the general contractor and/or their contractors to reduce potential human exposures during construction activities. The GC will be responsible for establishing and maintaining proper health and safety procedures to minimize worker and public exposure to Site contaminants during construction.

The general public will be protected through the following measures:

- the Site will be fenced;
- exposed soil at the construction Site will be watered at least twice a day to prevent visible dust from migrating off-site;
- soil stockpiles will be covered;
- water will be misted or sprayed during the loading of soil onto trucks for off haul;
- trucks transporting contaminated soil will be covered with a tarpaulin or other cover;
- the wheels of the trucks exiting the Site will be cleaned prior to entering public streets;
- public streets will be swept daily if soil is visible; excavation and loading activities will be suspended if winds exceed 20 miles per hour; and,
- the fence will be posted with requirements of the safe drinking water and toxic enforcement act (Proposition 65).

Planned project construction activities are anticipated to disturb soil during the development activities associated with shallow excavation, Site grading, and the construction of new foundations. During all soil handling activities, dust control measures will be implemented to reduce the potential for fugitive dust production. These measures may include moisture-conditioning the soil and covering exposed soil and/or soil stockpiles with secured plastic sheeting to keep soil secured and in place.

The Site's HASP and/or Dust Monitoring Plan should contain additional dust monitoring, action levels, dust control measures, and work stoppage provisions that will be followed during construction activities in addition to those described in this Revised SMP.

Current Site development plans, specific to shallow excavation and grading activities, are to minimize the off-Site movement and disposal of Site material. Soil within the boundaries of the Site may be moved within or between various portions of the Site, managed and re-used without need for sampling, provided no unanticipated conditions are encountered. Prior to moving and reusing soil on the Site, SCS must be notified and approve of the proposed use. SCS-approved representatives must also visually inspect the soil proposed for reuse prior to reusing the soil.

Trucks used to transport soils, if any, will be loaded in a manner to minimize spillage and blowing of soil. Movement of soils on-Site will be managed in accordance with the Dust Monitoring Plan (DMP).

A storm water pollution prevention plan (SWPPP) will also be prepared and implemented, including associated storm water best management practices (BMPs).

Soils to be re-used on-Site from on-Site excavation activities and stockpiles will meet residential direct exposure ESLs; except for arsenic for which the RWQCB-approved background value of 10 mg/kg will be used. Sampling frequency and analytical requirements for on-Site and off-Site fill sources will follow the DTSC Information Advisory Clean Imported Fill Materials, dated October 2001.

If soil stockpiling of suspected contaminated soil is to be performed, the excavation contractor shall establish appropriate soil stockpile locations on the Site to properly segregate, secure, control dust, profile, and manage the excavated soil. At a minimum, stockpiled soils will be placed on top of one layer of 10-mil polyethylene sheeting (or equivalent), such as VisqueenTM. When stockpiled soil is not actively being handled, top sheeting will be adequately secured so that all surface areas are covered.

If needed, chemical testing of the stockpiled soil will be performed to profile or characterize the soil for disposal. Soil profiling criteria depends on the receiving disposal facility.

If soil samples are required for analysis, SCS will collect the samples. If analytical results indicate that constituents of concern in excess of respective ESLs, the soil will be segregated and tested for off-Site disposal. If constituents of concern in the excavated excess soil are below their respective ESLs, and not required to be disposed off-Site, it may be reused on-Site.

Prior to initiating construction activities, a detailed Dust Monitoring Plan (DMP) will be prepared by the general contractor and will outline dust control and monitoring procedures to be implemented during potential dust generating activities. Dust control will be accomplished through implementation of best management practices, including engineering controls. Misting or spraying will be performed to sufficiently reduce fugitive dust emissions, but limited to prevent water runoff. Additionally, efforts will also be made to minimize the material drop height from an excavator's bucket onto stockpiles and/or into transport trucks.

The DMP will be submitted to the EHB-SAM for review and approval. Subsequent to approval, the DMP will be implemented to reduce potential exposure during excavation and loading operations to comply with Article 22B of the San Francisco Public Health Code. In accordance with Article 22B, projects that disturb more than 50 cy of soil and are greater than one- half acre, must evaluate whether "sensitive receptors" are located within 1,000 feet of the Site boundary. This document will contain measures to protect construction workers and the public including: dust control measures and work stoppage provisions that will be followed during construction activities. The plan will at a minimum, specify:

- Conditions when real-time dust monitoring is required;

- The dust monitoring equipment to be used, as well as the minimum detection limit and equipment calibration requirements;
- Monitoring frequency and locations;
- Reporting requirements;
- Dust threshold levels and proposed corrective action responses; and,
- A figure showing the approximate 1,000-foot sensitive receptor zone around the Site.

General dust control measures that may be used at the Site include, but are not limited to the following:

- Covering soil stockpiles with plastic sheeting;
- Watering uncovered ground surface at the Site; use of water will be limited to prevent runoff;
- Misting or spraying of soil during excavation andloading;
- Emplacement of gravel and/or rubble plates on-Site access roads as feasible;
- Trucks hauling soil from the Site will be covered;
- Visible dust will be monitored during excavation and subsurface demolition;
- The soil drop height from an excavator's bucket onto soil piles or into transport trucks will be minimized;
- Windbreaks will be deployed as necessary;
- If necessary, the area of excavation may be limited to reduce dust generation;
- Site vehicle speed limits;
- Street sweeping;
- Termination of excavation if winds exceed 25 mph; and,
- Addition of soil stabilizers and other responses as-needed.

Additionally, during excavation and subsurface activities, a Site-specific DMP will be implemented, which includes possible monitoring. Dust monitoring will include the following:

- Analysis of wind direction;
- Dust monitors at the work zone and Site perimeter and appropriate record keeping, including visible inspection; and,
- Establishing a hotline for community response.

The dust monitors shall be capable of continuous, real-time monitoring data-logging, and data transmission, measurement of air-borne particulates 10 micrometers in size (PM-10) or less, measurement of a 15-minute time-weighted average (TWA), a detection limit range of between one and 400,000 $\mu g/m^3$ and be able to trigger visual and/or remote alarms consisting of a flashing light, or similar, to alert on-Site monitoring and/or contractor personnel an action level has been exceeded.

Except in the case of heavy fog or precipitation events, the dust monitors will be set up on a daily basis, for the first week of each new, potential dust-generating activity conducted at the Site (e.g., one week of dust monitoring at the start of grading, one week of dust monitoring at the start of excavation, etc.). The dust monitors will be set up by dust monitoring personnel at the start of

each work-day prior to the start of the dust generating activity, and taken down at the conclusion of each work-day. Additionally, dust monitoring personnel will be present on-Site to monitor field conditions and consult with contractor personnel on suitable dust suppression measures at:

- The start of each new dust-generating activity, and for one to two days thereafter depending on the observed Site conditions;
- The day after an exceedance of the daily average action level, if any;
- The day of and/or the day after an exceedance of the 15-minute TWA action level, if any;
- The day of and/or the day after visual observation of fugitive dust, if any; and,
- The day of and/or the day after neighbor complaints of dust, if any.

Two dust monitors will be placed at the Site perimeter (one upwind and one downwind location. Additional dust monitors will be placed at the western and southern boundaries near the adjacent residential buildings during all excavation and soil handling activities, if needed. Wind direction will be evaluated based on a wind sock or flag located at the Site as well as a weather forecasting and reporting website. Dust monitor locations will be re-located in the case of significant changes in the wind direction. The locations of the dust monitors will be recorded in dedicated field logs.

Action levels for analytes in dust will be calculated for the Site and presented in the Site-specific DMP. The action levels will be defined as the concentration of total dust in the air at which the contaminant of concern would be at its established OSHA Permissible Exposure Limits and the highest detected concentration of the analyte in soil.

If the daily average from perimeter monitoring exceeds the California Air Resources Board (CARB) standard or the 15-minute TWA, additional dust control measures will be implemented. The daily average will be calculated over a 24-hour period based on the continuous dust monitoring data collected over the course of the work day. Baseline dust conditions for the day may be either measurements collected from the upwind dust monitoring location prior to the start of the work day or as continuous monitoring data over an 8-hour period collected one to two days before the start of construction activities and extrapolated over the remainder of the 24-hour period.

If dust levels exceed the action levels listed above or if excessive visible dust is observed, additional engineering controls will be immediately implemented by the GC to minimize fugitive dust emissions. If necessary, work will cease until conditions can be controlled so three consecutive measurements are below the established action levels. Visible emissions shall not be allowed to migrate off-Site at any time.

If needed, odor suppression measures will be implemented by the GC to minimize odor during excavation activities. The means to be considered for minimization of odors during excavation activities includes, but are not limited to: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; (c) Limiting soil excavation or loading to times when meteorological conditions are conducive to conducting operations (e.g., the predominant wind direction does not direct vapors or odors toward a sensitive receptor); (d) use of foams to

cover exposed odorous soil and rock material; (e) use of chemical odorants in spray or misting systems; and, (e) use of staff to monitor odors in surrounding area.

Control of noise during construction activities will abide by the City of San Francisco Noise Control Ordinance, adopted by San Francisco in 2008 (Police Code Sections 2907 (b); 2907 (c); 2901.12; 2908).

Construction dewatering is not anticipated based on development plans. If contaminated groundwater is generated during construction activities, SCS will discuss appropriate management and discharge of the extracted groundwater with the GC and the SFPUC.

As part of the contingency plan the following should be implemented during soil excavation if unknown historical subsurface features and/or unanticipated hazardous materials are encountered. While certainly not expected, such unknown materials typically may include unaccounted for underground storage tanks (USTs) and associated product lines, sumps, and/or vaults, former monitoring wells, and soil with significant petroleum hydrocarbon odors and/or stains:

- Stop work in the area where the suspect material is encountered and cover with plastic sheets;
- Notify the GC's HSSO and Site superintendent. The GC will request that SCS conduct a Site inspection and will consult with the SCS regarding appropriate follow- up actions in the suspect area. SCS will notify the SFDPH (if needed and after consultation with the owner) of Site conditions that indicate a material threat to human health or the environment; and,
- Review the existing HASP for revisions, if necessary, and have appropriately trained personnel on-Site to work with the affected materials, once directed by the general contractor

If necessary, notifications will be performed, permits will be in place prior to subsurface feature removals, and permit conditions will be followed.

If a UST, product line, sump, or vault is found, SFDPH and San Francisco Fire Department (SFFD) will be notified and a licensed tank removal contractor will properly remove and dispose of the UST. Proper permits and notifications should be in place prior to removal of the UST. If soil staining is observed, the affected soil will be placed in a stockpile on plastic sheets and covered with plastic sheets. SCS will complete soil sampling and analysis tasks for UST closure in accordance with both SFDPH and SFFD. SCS will collect and analyze soil samples to determine disposal of the material, the extent of the unexpected area of apparent petroleum impacted soil, and that impacted material has been appropriately removed. Soil samples collected from beneath fuel pipelines, if any, will be collected beneath joints and elbows and at a frequency of one sample per twenty linear feet.

If a sump and/or vaults are located during excavation activities, SCS will be contacted for inspection and appropriate action, SCS will notify the SFDPH and SFFD (if needed and after consultation with the owner) of Site conditions. If no liquid, obvious soil staining or odors are

noted, the sump and/or vault will be destroyed and disposed of. SCS will collect and analyze soil samples from beneath the sump and/or vault to determine disposal of the material, the extent of the unexpected area of apparent impacted soil, if any, and that impacted material has been appropriately removed. If liquid is present within the sump and/or vault and/or obvious staining and odors are noted, SCS will collect samples for analyses to evaluate proper disposal of the material SCS will collect and analyze samples of the liquid material and soil samples from beneath the sump and/or vault to determine disposal of the material, and the extent of the unexpected area of apparent impacted soil, if any, and that impacted material has been appropriately removed.

If stained soil or odors are noted in association with an unknown subsurface feature, plastic sheeting will be placed over the affected area and SCS will be contacted for inspection and appropriate action. If the stained or odor-containing soil is excavated, the soil will be stockpiled onto plastic sheeting and covered with plastic sheeting. SCS will collect and analyze soil samples to determine disposal of the material, the extent of the unexpected area of apparent petroleum impacted soil, and that impacted material has been appropriately removed. Soil samples collected from beneath fuel pipelines, if any, will be collected beneath joints and elbows and at a frequency of one sample per twenty linear feet.

EHB-SAM has reviewed the Phase II report and the SMP are found to be in compliance with SFHC Articles 22A and 22B. EHB-SAM has the following comments:

1. The project proponent proposes to excavate and fill the site with additional import of soil. EHB-SAM requests that confirmatory samples be taken to determine the hexavalent chromium levels prior to bringing in clean fill. If the results indicate that hexavalent chromium is not above the ESLs, a deed restriction will not be required for the site.
2. However, if hexavalent chromium is found above the ESLs, then an indicator barrier will be placed between the site soil and the clean fill. A deed restriction will be required for the site.

Should you have any questions please contact me at (415) 252-3926. Please be aware that your caseworker is Senior Inspector Joseph Ossai; his contact is (415) 252-3892.

Sincerely,

Stephanie K.J. Cushing, MSPH, CHMM, REHS
Director, Environmental Health

Cc: Dan Lowrey, DBI
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