Engineering Evaluation
Half Moon Bay Building and Garden, Inc.
119 Main Street, Half Moon Bay, CA 94019
Plant No. 1999 (Site No. A1999)
Application No. 28657
Project Description: Installation of New Concrete Batch Plant – Truck Mix Loading

BACKGROUND

Half Moon Bay Building and Garden, Inc. (HMBBG) has applied to obtain an Authority to Construct (A/C) and/or Permit to Operate (P/O) for the following equipment:

S-5 Sand & Aggregate Storage Piles
Maximum Aggregate Throughput: 69,938 Ton/Yr
Maximum Sand Throughput: 53,550 Ton/Yr
0.02 Acre Common Area

S-6 Charge Hopper & Conveyors
15 Ton Charge Hopper
Stephens Manufacturing, Model Eagle, 36" x 100', Transfer Conveyor
Abated by Water Spray System, A-3

S-7 Aggregate/Sand Weigh Hopper
Stephens Manufacturing, Model Eagle, 12 Cubic Yard, Weigh Hopper

S-8 Aggregate/Sand Storage Bin
Stephens Manufacturing, Model Eagle, 150 Ton, Storage Bin

S-9 Cement Storage Silo
Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo
Abated by Baghouse/Fabric Filter, A-4

S-10 Cement Supplement Storage Silo (Fly Ash)
Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo
Abated by Baghouse/Fabric Filter, A-5

S-11 Cement Supplement Storage Silo (Slag)
Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo
Abated by Baghouse/Fabric Filter, A-6

S-12 Weigh Hopper
Stephens Manufacturing, 14 Cubic Yard, Cement Batcher
Abated by Baghouse/Fabric Filter, A-7

S-13 Truck Mixed Product Loading
Stephens Manufacturing, Model Eagle, 117 Cubic Yard/Hr
Abated by Baghouse/Fabric Filter, A-8

A-3 Water Spray System
Abating Charge Hopper & Conveyor, S-6

A-4 Baghouse/Fabric Filter
WAM Group, Model Silotop R03 Silo Venting Filters
7 Cartridge, 17" Length x 3" Width x 36" Height
Time Pulse Jet, 1,500 CFM,
Abating Cement Storage Silo, S-9

A-5 Baghouse/Fabric Filter
WAM Group, Model Silotop R03 Silo Venting Filters
7 Cartridge, 17" Length x 3" Width x 36" Height
Time Pulse Jet, 1,500 CFM,
Abating Cement Supplement Storage Silo (Fly Ash), S-10

A-6 Baghouse/Fabric Filter
WAM Group, Model Silotop R03 Silo Venting Filters
7 Cartridge, 17" Length x 3" Width x 36" Height
Time Pulse Jet, 1,500 CFM,
Abating Cement Supplement Storage Silo (Slag), S-11

A-7 Baghouse/Fabric Filter
Stephens Manufacturing, Model SV-20 Top Mounted Batcher Vent
14 Cartridge, 4" Diameter x 16" Length
Abating Weigh Hopper, S-12

A-8 Baghouse
Stephens Manufacturing, Model 6100 Pulse Jet Cartridge
Central Dust Collector, 8,000 CFM
Abating Truck Mixed Product Loading, S-13

HMBBG is proposing to install new sources at an existing concrete batching operation. The new sources will replace an existing concrete batch plant (S-1). In addition, HMBBG is proposing to increase their concrete production from 30 ton/hr (15 cubic yard per hour) to 235 ton/hr (117 cubic yard per hour).

Pursuant to Regulation 2-1-232.4, the addition of the new equipment will subject the facility to Regulation 2-2 *"New Source Review"* (NSR). The criteria pollutants associated with the sand and aggregate storage piles (S-5), charge hopper and conveyors (S-6), aggregate weigh hopper/storage bin (S-7), sand weigh hopper/storage bin (S-8), cement storage silo (S-9), fly ash storage silo (S-10), slag storage silo (S-11), weigh hopper (S-12), and truck mixed product loading (S-13) are particulate matter 10 microns in size (PM_{10}) and particulate matter 2.5

microns in size ($PM_{2.5}$). In addition, toxic air contaminant (TAC) emissions are associated with the new sources.

The operation of S-5 through S-13 should not pose any health threat to the surrounding community or public at large.

EMISSIONS CALCULATIONS

In order to calculate emissions from specific processes of the concrete batching operation, emission factors from Section 11.12 *"Concrete Batching"* of the Environmental Protection Agency (EPA) *"Compilation of Air Pollution Emission Factors"* (AP-42) were used. The following tables provide a summary of PM_{10} and $PM_{2.5}$ emissions expected from the operation.

Table 1. PM_{10} Concrete Batch Operation Emissions[1]

Process	PM_{10} Hourly Emission Rate[2] (lb/hr)	PM_{10} Daily Emission Rate[3] (lb/day)	PM_{10} Annual Emission Rate[4] (lb/yr)	PM_{10} Annual Emission Rate (ton/yr)
All Sources[5]	2.80	25.23	1,797.03	0.899
Unpaved Area[6] (Fugitive)	0.39	1.87	573.31	0.287
Paved Road[7,8] (Fugitive)	1.17	4.23	1,311.59	0.656
Stockpile[9] (Fugitive)	0.00	0.03	12.41	0.006
Total	**4.36**	**31.36**	**3,694.34**	**1.848**

[1] For further details on the emission calculations, please reference Appendix A *"New Concrete Batch Plant Emissions Review"* (Appendix A).

[2] Hourly emission rates are based on material throughputs provided by the applicant (Coarse Aggregate = 109 ton/hr; Sand = 84 ton/hr; Cement = 29 ton/hr; Cement Supplement = 4 ton/hr; Water = 10 ton/hr).

[3] Daily emission rates are based on material throughputs provided by the applicant (Coarse Aggregate = 982 ton/day; Sand = 752 ton/day; Cement = 259 ton/day; Cement Supplement = 38 ton/day; Water = 88 ton/day).

[4] Annual emission rates are based on material throughputs provided by the applicant (Coarse Aggregate = 69,938 ton/yr; Sand = 53,550 ton/yr; Cement = 18,413 ton/yr; Cement Supplement = 2,738 ton/yr; Water = 6,270 ton/yr).

[5] The emissions for "All Sources" is the combination of sources S-5 through S-13.

[6] Hourly, daily, and annual emission rates are based on vehicle miles travelled (VMT) provided by the applicant (Hourly VMT = 0.09 VMT/hr; Daily VMT = 0.43 VMT/day; Annual VMT = 132.10 VMT/yr).

[7] Hourly, daily, and annual emission rates are based on vehicle miles travelled (VMT) provided by the applicant (Hourly VMT = 10.65 VMT/hr; Daily VMT = 38.64 VMT/day; Annual VMT = 11,977.27 VMT/yr).

[8] In order to limit particulate matter (PM) emissions from the operation, the facility will be provided a condition to control dust with wet suppression. A correspondence from May 12, 2016 has established that the facility currently wets and sweeps surfaces.

[9] "Stockpile Pile" emissions are based on an area of 0.02 acres over 365 days. The 0.02 acres was obtained from a description in a correspondence from the facility dated May 12, 2016.

Table 2. $PM_{2.5}$ Concrete Batch Operation Emissions[1]

Process	$PM_{2.5}$ Hourly Emission Rate (lb/hr)	$PM_{2.5}$ Daily Emission Rate (lb/day)	$PM_{2.5}$ Annual Emission Rate (lb/yr)	$PM_{2.5}$ Annual Emission Rate (ton/yr)
All Sources	0.41	3.71	264.33	0.132
Unpaved Area (Fugitive)	0.04	0.18	56.80	0.028
Paved Road (Fugitive)	0.12	0.42	129.93	0.065
Stockpile (Fugitive)	N/A	N/A	N/A	N/A
Total	**0.57**	**4.31**	**451.06**	**0.225**

[1] For further details on the emission calculations, please reference Appendix A.

Table 3. Source Daily Emission Rate			
Source #	**Description**	**PM_{10} Daily Emission Rate (lb/day)**	**$PM_{2.5}$ Daily Emission Rate (lb/day)**
5	Sand & Aggregate Stockpiles	9.58[1]	1.13[1]
6	Charge Hopper & Conveyor	3.98	0.60
7	Aggregate Elevated Storage Bin	2.75	0.39
8	Sand Elevated Storage Bin	2.11	0.30
9	Cement Silo	0.09	0.01
10	Cement Supplement Silo (Fly Ash)	0.09[2]	0.01[2]
11	Cement Supplement Silo (Slag)	0.09[2]	0.01[2]
12	Weigh Hopper	4.85	0.69
13	Truck Mix Loading	7.81	1.16

[1] Daily emission rates include S-5 emissions and fugitive emissions from unpaved areas, paved roads, and stockpiles.

[2] Cement supplement throughput was divided between two sources in order to estimate emissions from S-10 and S-11.

TOXIC RISK SCREENING ANALYSIS

TAC emissions are expected from sources that handle cement and cement supplement. Emission factors from AP-42 were used to estimate TAC emissions from these equipment units. The following table provide a summary of TAC emissions from the cement and cement supplement handling equipment units.

Table 4. AP-42 TAC Concrete Batch Operation Project Emissions[1]						
Pollutant	**Acute**			**Chronic**		
	Hourly Project Emission Rate (lb/hr)	**Acute Trigger Level (lb/hr)**	**Project Exceeds Acute Trigger Level? (Yes/No)**	**Annual Project Emission Rate (lb/yr)**	**Chronic Trigger Level (lb/yr)**	**Project Exceeds Chronic Trigger Level? (Yes/No)**
Arsenic (7440-38-2)	2.4E-05	4.4E-04	No	1.6E-02	1.6E-03	**Yes**
Beryllium (7440-41-7)	3.8E-06	N/A	No	2.5E-03	3.4E-02	No
Cadmium (7440-43-9)	3.0E-07	N/A	No	1.9E-04	1.9E-02	No
Chromium (VI) (18540-29-9)	2.0E-05	N/A	No	1.3E-02	5.1E-04	**Yes**
Lead (7439-92-1)	5.3E-05	N/A	No	3.4E-02	2.9E-01	No
Manganese (7439-96-5)	6.9E-04	N/A	No	4.4E-01	3.5E+00	No
Nickel (7440-02-0)	1.7E-04	3.1E-05	**Yes**	1.1E-01	3.1E-01	No
Selenium (7782-49-2)	4.0E-06	N/A	No	2.6E-03	8.0E+00	No

[1] The emission rates are based on the hourly and annual cement and cement supplement throughputs provided by the applicant.

Furthermore, TAC emissions were also estimated using the California Air Resources Board (CARB) memo *"PM Size and Chemical Speciation Profile for Concrete Batching – PM3431"* (PM3431). The highest estimated emission rate for a TAC, which can either be estimated using the AP-42 or PM3431 methodology, were used to determine compliance with Regulation 2-5. The following table provides the emission rates for TACs using the PM3431 methodology.

PM3431 does not specify the type of PM emissions related to the chemical speciation profiles. However, Section 2.2 *"Chemical Species Fraction"* of PM3431 discusses that the chemical speciation profiles were developed using the chemical composition of cement. Therefore, PM3431 emission calculations have been performed from PM emissions from cement and cement supplement handling/processing sources (S-9, S-10, S-11, and S-13). Furthermore, since the cement and cement supplement handling/processing sources use some type of abatement device, it is assumed that PM larger than PM_{10} will be captured.

Table 5. PM3431 TAC Concrete Batch Operation Project Emissions						
Pollutant	**Acute**			**Chronic**		
	Hourly Project Emission Rate (lb/hr)	**Acute Trigger Level (lb/hr)**	**Project Exceeds Acute Trigger Level? (Yes/No)**	**Annual Project Emission Rate (lb/yr)**	**Chronic Trigger Level (lb/yr)**	**Project Exceeds Chronic Trigger Level? (Yes/No)**
Chlorine[1] (7782-50-5)	1.8E-04	4.6E-01	No	1.2E-01	7.7E+00	No
Manganese[1] (7439-96-5)	1.1E-03	N/A	No	6.9E-01	3.5E+00	No
Sulfate[1] (No CAS)	3.8E-02	2.6E-01	No	2.4E+01	N/A	No

[1] PM3431 establishes TAC mass percentages based on cement composition review. It is assumed that the mass percentages of TACs are related to the PM_{10} emission rate from cement and cement supplement handling sources. (Chlorine = 0.02% by weight of PM_{10}; Manganese = 0.12% by weight of PM_{10}; Sulfate = 4.21% by weight of PM_{10}).

Lastly, to estimate respirable crystalline silica, a respirable crystalline silica to PM_{10} ratio was used and obtained from *"PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California."* Emissions were only estimated for PM_{10} from conveyor transfer points; as these equipment units were one of the three types of operations reviewed. The following table provides the emission rates for Silica.

Table 6. Respirable Crystalline Silica TAC Concrete Batch Operation Project Emissions						
Pollutant	**Acute**			**Chronic**		
	Hourly Project Emission Rate (lb/hr)	**Acute Trigger Level (lb/hr)**	**Project Exceeds Acute Trigger Level? (Yes/No)**	**Annual Project Emission Rate (lb/yr)**	**Chronic Trigger Level (lb/yr)**	**Project Exceeds Chronic Trigger Level? (Yes/No)**
Silica Crystalline, Respirable (7631-86-9)	4.5E-02	N/A	No	2.9E+01	1.2E+02	No

The project is expected to exceed the TAC trigger levels of Regulation 2-5 for arsenic, hexavalent chromium, and nickel, and is subject to a Health Risk Assessment (HRA).

A summary of the estimated health risks is detailed on the following table.

Table 7. Estimated Health Risk			
Receptor	**Cancer Risk (in a million)**	**Chronic HI**	**Acute HI**
Resident	3.5	0.042	N/A
Worker	0.67	0.028	N/A
Student[1]	0.06	0.005	N/A
PMI[2]	N/A	N/A	0.54

[1] The student risk values are for Half Moon Bay High School.

[2] PMI = Point of Maximum Impact.

Based on the proposed operation, the project passed the HRA conducted on February 15, 2018 by the District's Permitting, Title V & Toxics Section. The project poses no significant toxic risk, since the increased cancer risk to the maximally exposed receptor (residents) is 3.5 in a million. The chronic hazard index for a resident is 0.042. In addition, the increased cancer risk to workers and students of Half Moon Bay High School are 0.67 and 0.06 in a million, receptively. Furthermore, the chronic hazard index to workers and students of Half Moon Bay High School are 0.028 and 0.005, respectively. The project is expected to meet a cancer risk less than 10 in a million and a hazard index less than 1.0.

Emissions from S-13 contribute most to the cancer risk, at an estimated cancer risk of 3.35 in a million. The risk driver of S-13 is hexavalent chromium. Since S-13 has a cancer risk more than 1 in a million, S-13 must meet the requirements of Toxic Best Available Control Technology (TBACT). S-13, which is abated by A-8, is expected to meet a TBACT exhaust emission rate of 0.0013 grains of PM_{10}/dscf.

BEST AVAILABLE CONTROL TECHNOLOGY

Pursuant to Regulation 2-2-301, Best Available Control Technology (BACT) is required for any new or modified source with a regulated air pollutant potential to emit (PTE) equal to or greater than 10.0 lb per day.

The addition of S-5 through S-13 will not result in a PM_{10} or $PM_{2.5}$ emission increase greater than 10.0 lb per day. Therefore, the requirements of Regulation 2-2-301 do not apply.

OFFSETS

Pursuant to Regulation 2-2-302, offsets must be provided for any new or modified source at a facility that emits, or is permitted to emit, more than 10 tons per year of precursor organic compounds (POCs) or nitrogen oxides (NO_X). Furthermore, pursuant to Regulation 2-2-303 offsets must be provided for any new or modified source at a major facility with a cumulative increase that exceeds 1.0 ton per year of PM_{10}, $PM_{2.5}$, or sulfur dioxide (SO_2).

The following table provides the PTE for the facility.

Table 8. Facility Potential to Emit			
Source #	**Description**	**PM_{10} Annual Emission Rate (ton/yr)**	**$PM_{2.5}$ Annual Emission Rate (ton/yr)**
2	Gardening Material Screening[1,2]	0.156	0.156[3]
3	Gardening Material Conveying[1,2]	0.059	0.059[3]
4	Gardening Material Storage[1,2]	3.649	3.649[3]
5	Sand & Aggregate Stockpiles	1.072	0.112
6	Charge Hopper & Conveyor	0.142	0.022
7	Aggregate Elevated Storage Bin	0.098	0.014
8	Sand Elevated Storage Bin	0.075	0.011
9	Cement Silo	0.003	0.000
10	Cement Supplement Silo (Fly Ash)	0.003	0.000
11	Cement Supplement Silo (Slag)	0.003	0.000
12	Weigh Hopper	0.173	0.025
13	Truck Mix Loading	0.278	0.041
	Total	**5.711**	**4.089**

[1] The facility is permitted to process 6,500 cubic yards of gardening material in any 12-consecutive 12-month period. Since the density of the gardening material is unknown and emission factors are based on tons of materials processed, it is assumed that the density of the gardening material is equivalent to the density of aggregates (~1.4175 tons of material per cubic yard of material). Furthermore, the throughput of the gardening material storage (S-4) is assumed to be equivalent to the throughput of the gardening material screening (S-2) and the gardening material conveying (S-3).

[2] Emission factors used to calculate the PTE were obtained from DATABANK (S-2 = 3.39E-02 lb PM_{10}/ton of material; S-3 = 1.27E-02 lb PM_{10}/ton of material; S-4 = 1.98E+00 lb PM_{10}/ton of material with an abatement factor of 4.00E-01.

[3] It is assumed that PM_{10} = $PM_{2.5}$.

The following table provides the facility's cumulative increase minus any contemporaneous onsite emission reduction credits.

Table 9. Facility Cumulative Increase				
Pollutant	**Existing Cumulative Increase (ton/yr)**	**New Emission Increase (ton/yr)**	**Contemporaneous Onsite Emission Reduction Credit From S-1 (ton/yr)**	**Total Cumulative Increase (ton/yr)**
PM_{10}	0.250	1.847	0.784	1.313
$PM_{2.5}$	0.000	0.226	0.085	0.141

[1] Contemporaneous onsite emission reduction credits are based on Reasonably Available Control Technology (RACT) adjusted emissions factors for concrete batch plants with water spray and baghouse abatement.

[2] Applicant provided total throughputs of raw material for a 3-year period preceding the submittal of this application.

[3] The applicant provided the average annual vehicle miles travelled on unpaved and paved roads.

The facility is not expected to have a PTE greater than 10 tons per year of POC or NO_X, nor is the facility a major facility of PM_{10}, $PM_{2.5}$, and SO_2. Therefore, the requirements of Regulations 2-2-302 and 2-2-303 do not apply.

STATEMENT OF COMPLIANCE

Regulation 1

The facility will be subject to the public nuisance requirements of Regulation 1-301, which states the following:

"No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. For purposes of this section, three or more violation notices validly issued in a 30-day period to a facility for public nuisance shall give rise to a rebuttable presumption that the violations resulted from negligent conduct."

The facility is expected to meet the requirement of Regulation 1-301.

Regulation 2, Rule 1

Pursuant to Regulation 2-1-115.1.1, concrete production facilities with a capacity less than 15 cubic yards per hour, and which do not trigger permitting requirements pursuant to Regulation 2-1-319, are exempt from the A/C and P/O requirements of Regulations 2-1-301 and 2-1-302. The facility is proposing new sources with an overall PTE capacity of 117 cubic yards of concrete production per hour. Therefore, the facility is subject to the A/C and P/O requirements of this regulation.

Regulation 2, Rule 2

Pursuant to Regulation 2-2-301, BACT is required for any new or modified source with a regulated air pollutant PTE equal to or greater than 10.0 lb per day. In addition, per Regulation 2-2-302, offsets must be provided for any new or modified source at a facility that emits, or is permitted to emit, more than 10 tons per year of POC or NO_X. Furthermore, pursuant to Regulation 2-2-303 offsets must be provided for any new or modified source at a major facility with a cumulative increase that exceeds 1.0 ton per year of PM_{10}, $PM_{2.5}$, or SO_2.

None of the proposed new sources is expected to exceed a daily PTE of 10.0 lb per day of any regulated air pollutant. Moreover, the new sources will not emit more than 10 tons per year of POC or NO_X, nor is the facility a major facility of PM_{10}, $PM_{2.5}$, or SO_2. Therefore, the BACT and offset requirements of Regulation 2-2 do not apply.

Regulation 2, Rule 5
Pursuant to Regulation 2-5-110, the provisions of this rule are not subject to projects with an increase in emissions less than the trigger levels listed in Table 2-5-1.

The project, consisting of S-5 through S-13, is expected to exceed the chronic trigger levels for arsenic and hexavalent chromium and the acute trigger level for nickel. Therefore, the provisions of this rule apply to the project.

However, the project is expected to meet source and project hazard index requirements and cancer risk thresholds. Furthermore, sources that are estimated to have a cancer risk greater than 1 in a million are proposed to be equipped with TBACT.

Regulation 2, Rule 6
The facility is not expected to exceed 100 tons per year of any regulated air pollutant, nor is the facility expected to exceed 10 tons per year of a single hazardous air pollutant (HAP) or 25 tons per year of a combination of HAPs. Therefore, the facility is not a major facility and is not subject to the requirements of Regulation 2-6.

Regulation 6, Rule 1
Pursuant to Regulation 6-1-301, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.

Furthermore, pursuant to Regulation 6-1-305, a person shall not emit particles from any operation in sufficient number to cause annoyance to any other person, which particles are large enough to be visible as individual particles at the emission point or of such size and nature as to be visible individually as incandescent particles. This Section 6-1-305 shall only apply if such particles fall on real property other than that of the person responsible for the emission.

Moreover, pursuant to Regulation 6-1-310, a person shall not emit from any source particulate matter in excess of 343 mg per dscm (0.15 gr. Per dscf) of exhaust gas volume.

Lastly, pursuant to Regulation 6-1-311, a person shall not discharge more than 40 lb/hr of particulate matter from sources with a process rate of over 57,320 lb/hr.

The operation of S-5 through S-13 is expected to meet the requirements of all the applicable sections of Regulation 6-1, since the operation is intended to be controlled by water spray and fabric filter/baghouse devices.

California Environmental Quality Act and Regulation 2-1
An Environmental Impact Report (EIR) was prepared for the project proposed by HMBBG. The EIR mentions that there are 2 components to the project, which are as follows:

- Replace and relocate an existing concrete batch plant; and,
- Adjust property boundaries and zoning.

The proposed replacement concrete batch plant will include dust collectors/baghouses and a water spray system. In addition, most components of the concrete batch plant will be sheltered in a steel framed building. The EIR estimates that the hourly and daily production rates are approximately 117 cubic yards of concrete per hour and 1,050 cubic yards of concrete per day.

HMBBG will disassemble the existing concrete mixing system, conveyors, and control center and attempt to sell these components. The existing silos will be relocated and used with the replacement concrete batch plant.

The EIR estimates net operational emissions by taking the difference between existing and proposed emissions. This method of quantifying net emissions is allowed by the District's California Environmental Quality Act (CEQA) Guidelines, if the existing sources were operational at the time that a Notice of Preparation (NOP) was circulated. The concrete batch plant began operation in 1977, and was replaced in 1991. The concrete batch plant has remained in operation, in its current configuration, since 1991. Therefore, the net operational emissions calculation of taking the difference between existing and proposed emissions is acceptable.

The EIR estimates that the net emissions from construction and operation are not expected to exceed the "CEQA Thresholds of Significance" listed in the District's CEQA Guidelines. In addition, HMBBG proposes to use "Best Management Practices" (BMP) during construction to control fugitive dust emissions. Furthermore, construction and operational HRAs are below the significant thresholds.

The project is expected to comply with the District's CEQA Guidelines.

Furthermore, pursuant to Regulation 2-1-311, an application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Regulation 2-1-310 if the District's engineering evaluation and basis for approval or denial of the permit application for the project is limited to the criteria set forth in Regulation 2-1-428 and to the specific procedures, fixed standards, and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The evaluation was performed

in accordance with the criteria set forth in Chapter 11.5 of the Permit Handbook and would be considered ministerial for air quality impacts.

California Health & Safety Code §42301.6 and Regulation 2-1-412
Pursuant to California Health & Safety Code §42301.6(a), prior to approving an application for a permit to construct or modification of a source, which is located within 1,000 feet from the outer boundary of a school site, the District shall prepare a public notice as detailed in §42301.6. §42301.9(a) defines a "school" as any public or private school used for the purposes of the education of more than 12 children in kindergarten or any grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes, if there is an increase in TACs.

The applicant has proposed to install new/modified sources within 1,000 feet from the outer boundary of the following school site identified in the following table, which will result in an increase of respirable crystalline silica above actual historic emission rates.

Table 10. School Sites Located Within 1,000 Feet of the Source

School Name	School Location	Grades	Description
Half Moon Bay High School	1 Lewis Foster Drive Half Moon Bay, CA 94109	9-12	Public

The following table provides a summary of emissions of TACs both before and after construction of the project. For additional information, please reference Appendix B *"Toxic Air Contaminant Potential to Emit Vs. Actual Emissions"* (Appendix B).

Table 11. Public School Notice Toxic Emission Increase Review[1]			
Toxic Air Contaminant	**Historic Actual Project Emission Rate (lb/yr)**	**Proposed Project Emission Rate (lb/yr)**	**Toxic Air Contaminant Increase Over Historic Actual Emission Rate (Yes/No)**
Arsenic (7440-38-2)	1.3E-01	1.6E-02	No
Beryllium (7440-41-7)	2.6E-03	2.5E-03	No
Cadmium (7440-43-9)	3.5E-04	1.9E-04	No
Chromium (VI) (18540-29-9)	1.7E-02	1.3E-02	No
Lead (7439-92-1)	3.8E-02	3.4E-02	No
Manganese (7439-96-5)	6.2E-01	4.4E-01	No
Nickel (7440-02-0)	1.2E-01	1.1E-01	No
Selenium (7782-49-2)	2.7E-02	2.6E-03	No
Chlorine[2] (7782-50-5)	1.8E+00	1.2E-01	No
Manganese[2] (7439-96-5)	1.1E+01	6.9E-01	No
Sulfate[2] (No CAS)	3.8E+02	2.4E+01	No
Silica[3] (7631-86-9)	1.4E+01	2.9E+01	Yes

[1] Emission rates were estimated using emission factors from AP-42, unless otherwise noted.

[2] Emission rates were estimated using emission factors from PM3431. For duplicate TACs, the estimated value is a comparison to other calculation methods.

[3] Emission rate was estimated using methodology from *"PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California."*

The District will be required to prepare a public notice as detailed in §42301.6. The public notice will be distributed to the addresses within 1,000 feet of the sources and to the parents or guardians of children attending schools within a quarter mile of the sources. There are no other identified schools within a quarter mile of the sources.

Half Moon Bay Building and Garden, Inc.
Plant No. 1999 (Site No. A1999)
Application No. 28657

PERMIT CONDITIONS
Permit Condition #26742

The following permit condition covers the following sources:

S-5 Sand & Aggregate Storage Piles; Maximum Aggregate Throughput: 69,938 Ton/Yr; Maximum Sand Throughput: 53,550 Ton/Yr; 0.02 Acre Common Area

S-6 Charge Hopper & Conveyors; 15 Ton Charge Hopper; Stephens Manufacturing, Model Eagle, 36" x 100', Transfer Conveyor; Abated by Water Spray System, A-3

S-7 Aggregate/Sand Weigh Hopper; Stephens Manufacturing, Model Eagle, 12 Cubic Yard, Weigh Hopper

S-8 Aggregate/Sand Storage Bin; Stephens Manufacturing, Model Eagle, 150 Ton, Storage Bin

S-9 Cement Storage Silo; Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo; Abated by Baghouse/Fabric Filter, A-4

S-10 Cement Supplement Storage Silo (Fly Ash); Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo; Abated by Baghouse/Fabric Filter, A-5

S-11 Cement Supplement Storage Silo (Slag); Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo; Abated by Baghouse/Fabric Filter, A-6

S-12 Weigh Hopper; Stephens Manufacturing, 14 Cubic Yard, Cement Batcher; Abated by Baghouse/Fabric Filter, A-7

S-13 Truck Mixed Product Loading; Stephens Manufacturing, Model Eagle, 117 Cubic Yard/Hr; Abated by Baghouse/Fabric Filter, A-8

1. The owner/operator shall produce no more than 1,053 cubic yards of concrete per day and 75,008 cubic yards of concrete in any consecutive 12-month period at this facility. [Basis: Cumulative Increase]

2. The owner/operator shall not discharge an air contaminant into the atmosphere for a period or periods aggregating more than 3 minutes in any hour, which is as dark or darker than a Ringelmann 1.0. [Basis: Regulation 6-1-301]

3. The owner/operator shall meet the following requirements:

   a. The owner/operator shall operate the following baghouses/fabric filters, to abate the corresponding sources, during all times of operation.

Abatement Device:	Source Abated:
Baghouse/Fabric Filter, A-4	Cement Storage Silo, S-9
Baghouse/Fabric Filter, A-5	Cement Supplement Storage Silo (Fly Ash), S-10
Baghouse/Fabric Filter, A-6	Cement Supplement Storage Silo (Slag), S-11
Baghouse/Fabric Filter, A-7	Weigh Hopper, S-12
Baghouse/Fabric Filter, A-8	Truck Mixed Product Loading, S-13

   b. The owner/operator shall ensure that A-4, A-5, A-6, and A-7, baghouses/fabric filters, are designed such that the outlet PM10 grain loading for does not exceed 0.01 grains per dry standard cubic foot. The owner/operator is not required to perform a source test at these abatement devices. [Basis: Cumulative Increase]

   c. The owner/operator shall ensure that the outlet PM10 grain loading for A-8, Baghouses does not exceed 0.0013 grains per dry standard cubic foot. [Basis: TBACT]

4. The owner/operator shall abate the Charge Hopper and Conveyors, S-6, and paved roads as necessary with Water Sprays, A-3, to maintain compliance with Part 2 of this condition. [Basis: Cumulative Increase and Regulation 6-1-301]

5. The owner/operator shall properly maintain and keep in good operating condition each baghouse/fabric filter at all times. The owner/operator shall equip each baghouse/fabric filter with a device for measuring the pressure drop across the baghouse. [Basis: Regulation 6-1-301, 6-1-310, 6-1-3111, 2-1-403]

6. The owner/operator shall inspect each baghouse/fabric filter weekly to ensure proper operation. The following items shall be checked:

   a. The pressure drop across the baghouse shall be checked weekly. For baghouses/fabric filters, A-4 through A-6, the pressure drop shall be no lower than 2 inches of water and no greater than 12 inches of water. For baghouses/fabric filters, A-7 and A-8, the pressure drop shall be no lower than 0.5 inches of water and no greater than 5 inches of water.
   b. The baghouse exhaust shall be checked weekly for evidence of particulate breakthrough. If breakthrough is evident from plume observations, dust buildup near the stack outlet, or abnormal pressure drops, the filter bags shall be checked for any tears, holes, abrasions, and scuffs, and replaced as needed.

c. All hoppers shall be discharged in a timely manner to maintain compliance with 6(a) above.
d. The pulsejet, shaker cleaning system shall be maintained and operated at sufficient intervals to maintain compliance with 6(a) above.

[Basis: Regulation 2-1-403]

7. No later than 60 days from the startup of the truck mixed product loading, S-13, the owner/operator shall conduct District approved source tests to determine initial compliance with the limits in Part 3(c) of this condition. The owner/operator shall comply with the following requirements:

a. The owner/operator shall obtain approval for all source test procedures used to determine initial compliance with the limit in Part 3(c) of this condition from the District's Source Test Section prior to condition any tests. The owner/operator shall comply with all applicable testing requirements as specified in Volume IV of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing;
b. The owner/operator shall submit the source test results to the District's Source Test Section no later than 60 days after the source test; and,
c. The owner/operator shall maintain a copy of the initial source test compliance report onsite and make it available to District staff upon request.

[Basis: TBACT, Cumulative Increase, Recordkeeping, and Regulation 1-441]

8. The owner/operator shall maintain a District approved log of the following records:

a. Daily, monthly, and annual material throughputs and concrete production from this facility; and,
b. Records of all inspections and all maintenance work including bag replacement for each baghouse. Records of each inspection shall consist of a log containing the date of inspection and the initials of the personnel that inspects the baghouses.

The owner/operator shall keep this log on site for at least two years from the date of entry and make it available to District staff upon request. [Basis: Recordkeeping and Regulation 1-441]

End of Conditions

RECOMMENDATION

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed

below. However, the proposed source will be located within 1,000 feet of a school, which triggers the public notification requirement of District Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on the issuance of an Authority to Construct for the following sources and abatement devices:

S-5 Sand & Aggregate Storage Piles
Maximum Aggregate Throughput: 69,938 Ton/Yr
Maximum Sand Throughput: 53,550 Ton/Yr
0.02 Acre Common Area

S-6 Charge Hopper & Conveyors
15 Ton Charge Hopper
Stephens Manufacturing, Model Eagle, 36" x 100', Transfer Conveyor
Abated by Water Spray System, A-3

S-7 Aggregate/Sand Weigh Hopper
Stephens Manufacturing, Model Eagle, 12 Cubic Yard, Weigh Hopper

S-8 Aggregate/Sand Storage Bin
Stephens Manufacturing, Model Eagle, 150 Ton, Storage Bin

S-9 Cement Storage Silo
Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo
Abated by Baghouse/Fabric Filter, A-4

S-10 Cement Supplement Storage Silo (Fly Ash)
Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo
Abated by Baghouse/Fabric Filter, A-5

S-11 Cement Supplement Storage Silo (Slag)
Stephens Manufacturing, In-Truss, 500 Barrel, Storage Silo
Abated by Baghouse/Fabric Filter, A-6

S-12 Weigh Hopper
Stephens Manufacturing, 14 Cubic Yard, Cement Batcher
Abated by Baghouse/Fabric Filter, A-7

S-13 Truck Mixed Product Loading
Stephens Manufacturing, Model Eagle, 117 Cubic Yard/Hr
Abated by Baghouse/Fabric Filter, A-8

A-3 Water Spray System
Abating Charge Hopper & Conveyor, S-6

A-4 Baghouse/Fabric Filter
WAM Group, Model Silotop R03 Silo Venting Filters
7 Cartridge, 17" Length x 3" Width x 36" Height
Time Pulse Jet, 1,500 CFM,
Abating Cement Storage Silo, S-9

A-5 Baghouse/Fabric Filter
WAM Group, Model Silotop R03 Silo Venting Filters
7 Cartridge, 17" Length x 3" Width x 36" Height
Time Pulse Jet, 1,500 CFM,
Abating Cement Supplement Storage Silo (Fly Ash), S-10

A-6 Baghouse/Fabric Filter
WAM Group, Model Silotop R03 Silo Venting Filters
7 Cartridge, 17" Length x 3" Width x 36" Height
Time Pulse Jet, 1,500 CFM,
Abating Cement Supplement Storage Silo (Slag), S-11

A-7 Baghouse/Fabric Filter
Stephens Manufacturing, Model SV-20 Top Mounted Batcher Vent
14 Cartridge, 4" Diameter x 16" Length
Abating Weigh Hopper, S-12

A-8 Baghouse
Stephens Manufacturing, Model 6100 Pulse Jet Cartridge
Central Dust Collector, 8,000 CFM
Abating Truck Mixed Product Loading, S-13

By: _____ Date: _____
Alfonso Borja
Air Quality Engineer