

## **DRAFT ENGINEERING EVALUATION**

**Half Moon Bay Building and Garden, Inc.  
Facility ID 1999  
Application No. 703018  
119 Main Street, Half Moon Bay, CA 94019**

### **BACKGROUND**

Half Moon Bay Building and Garden, Inc. (HMBBG) has applied for Authorities to Construct for the following:

**S-14 Portable Screening Skid**

**Make: Terex Finlay; Model: 693+Supertrack  
Consisting of 1 Hopper, 1 Screen, and 4 Conveyors  
Maximum Soil Throughput: 90 tons/hour, 750 tons/day, 9,750 tons/year,  
Maximum Concrete Throughput: 150 tons/hour, 1,200 tons/day, 48,000  
tons/year, abated by A-9 Water Spray Bar**

**S-15 Soil Stockpiles**

**Soil/Waste Byproduct, Raw Soil 0.28 Acres, Screened Soil 1.40 Acre, Waste  
Byproduct 0.09 Acres, Maximum Soil Throughput: 90 tons/hour, 750  
tons/day, 9,750 tons/year, abated by A-11 Water Truck and Hose**

**S-16 Portable Hopper/Conveyor Skid**

**Make: Power Screen; Model: M70  
Consisting of 1 Hopper, and 1 Conveyor  
Maximum Soil Throughput: 90 tons/hour, 750 tons/day, 9,750 tons/year,  
Maximum Concrete Throughput: 150 tons/hour, 1,200 tons/day, 48,000  
tons/year, abated by A-10 Water Spray Bar**

Abated by

**A-9 Water Spray Bar System  
Abating S-14**

**A-10 Water Spray Bar System  
Abating S-16**

**A-11 Water Truck and Hose Spray  
Abating S-15**

The HMBBG facility includes a portable screening skid, stockpiles, and a portable hopper/conveyor skid, which occur on the same lot as a portable concrete crushing operation, associated with the adjacent Andreini Brother's facility (Facility #11468). The shared lot where concrete crushing, and soil screening activities take place has historically been referred to as the "Resource Recovery Center."

All incoming materials are directed to the western side of the HMBBG sales office where they are weighed before being directed to deposit their load at the Soil Stockpiles (S-15), located at the Resource and Recovery Center. During active operations, records indicate as many as sixteen (16) trucks deliver soil to the HMBBG facility per day. To be conservative, emissions were calculated assuming as many as 30 trucks per day. Trucks delivering soil to the facility travel approximately 1,000 feet on paved roads, up to the Resource Recovery Center, and then up to approximately 390 feet on unpaved roads within the Resource Recovery Center (i.e., to deposit materials on the soil stockpile toward the center of the site). All soil screening operations occur on the eastern portion of the Resource Recovery Center.

Raw soil product is loaded into the hopper of the Portable Screening Skid (S-14) using a certified EPA Tier 4 loader. The raw material is then transported to the screen box via the main conveyer of S-14. Materials pass through the screen box, which contain two (2) 20' x 5' decks that separate materials into screened soil product (1/2" minus) and waste byproduct. The separated materials are transferred via conveyer belts equipped on S-14 (i.e., one for each product) and the finished product is wetted via Spray Bar (A-9) before being discharged from S-14 and transferred by a Portable Hopper/Conveyor Skid (S-16) abated by Spray Bar (A-10) or a certified EPA Tier 4 loader to the Soil Stockpiles (S-15) on the northern side of the site. HMBBG's hourly, daily, and annual maximum throughput for screening operations are summarized in the *Emissions* section of this evaluation, under the *basis* for the emission calculations. The seasonal nature of the soil screening operations leads to lower annual throughput values than maximum daily throughput values would support.

Approximately 5% of total throughput would be waste byproduct (wood debris, rocks, and other materials greater than 1/2" in size) that is made available as a local source of construction fill material, reducing emissions from mobile sources associated with local construction projects.

HMBBG conducts regular dust abatement of S-15 as well as unpaved travel surfaces using Water Truck and Hose Spray (A-11). Vehicles used to pick up purchased, processed soil materials from HMBBG have the same general characteristics as raw material deliveries.

HMBBG registered S-14 Portable Screening Skid through California Air Resources Board's (CARB) Portable Equipment Registration Program (PERP) Permit #1682839. HMBBG requested to operate at multiple locations within the Air District. HMBBG will maintain a valid PERP registration to operate at other sites not owned and/or operated by HMBBG, for less than 12 consecutive months, within the Air District. Otherwise, S-14 Portable Screening Skid, will be permitted as a stationary source at the shared Resources Recovery Center with Andreini Brother's. As a new stationary source, S-14 operates within 1000 feet of a K-12 school site and requires a public notice per Regulation 2-1-412. S-15 and S-16 also operate within 1000 feet of a school site and require public notice per Regulation 2-1-412.

## **EMISSIONS**

Tables 1 and 2 summarize the project emissions from particulate matter 10 microns in size (PM<sub>10</sub>) and particulate matter 2.5 microns in size (PM<sub>2.5</sub>).

**Table 1. PM<sub>10</sub> Emissions Summary**

Source	PM <sub>10</sub> Emissions			
	Hourly (lbs/day)	Daily (lbs/day)	Annual (lbs/year)	Annual (tons/year)
S-14 Portable Screening Skid	0.23	1.9	55	0.028
S-15 Stockpiles/Fugitive Road Dust	1.30	9.0	434	0.217
S-16 Portable Hopper/Conveyor	0.02	0.2	5	0.002
<b>Project Total</b>	<b>1.55</b>	<b>11</b>	<b>493</b>	<b>0.247</b>

**Table 2. PM<sub>2.5</sub> Emissions Summary**

Source	PM <sub>2.5</sub> Emissions			
	Hourly (lbs/day)	Daily (lbs/day)	Annual (lbs/year)	Annual (tons/year)
S-14 Portable Screening Skid	0.03	0.3	8	0.004
S-15 Stockpiles	0.34	1.3	64	0.032
S-16 Portable Hopper/Conveyor	0.01	0.1	2	0.001
<b>Project Total</b>	<b>0.38</b>	<b>1.7</b>	<b>74</b>	<b>0.037</b>

### ***S-14 Portable Screening Skid***

Emission factors for controlled Screening and Conveyor Transfer Points were obtained from United States Environmental Protection Agency (EPA) AP-42 Chapter 11.19.2 “Crushed Stone Processing Operations.”

Emission factors from drop operations into storage piles are derived from Chapter 11.19.2-2 “Crushed Stone Processing and Pulverized Mineral Processing” of AP-42 (fifth edition, Volume I). Controlled emission factors are assumed due to the use of water spray bars that suppress dust from the screening operation and drop points. The following two tables show the emission factors used to calculate emissions for S-14.

Basis:

- Operating Schedule: 8 hours/day, 5 days/week, and 52 weeks/year.
- Max soil throughputs: 90 tons/hour, 750 tons/day, and 9,750 tons/year.
- Max Concrete throughputs: 150 tons/hour, 1,200 tons/day, and 48,000 tons/year.
- Drop Unloading (controlled) is Drop Unloading (uncontrolled) with a 70% abatement efficiency added on for water spray in accordance with Permit Handbook Chapter 11.7 Crushing and Grinding.
- Controlled emission factors for screens and conveyors were obtained from AP-42 Chapter 11.19.2.

**Table 3. S-14 PM<sub>10</sub> Portable Screening Skid Emissions**

Equipment	# of Units	Controlled Emission Factor (lbs/ton)	Hourly PM <sub>10</sub> Emissions (lbs/hour)	Daily PM <sub>10</sub> Emissions (lbs/day)	Annual PM <sub>10</sub> Emissions (lbs/year)	Annual PM <sub>10</sub> Emissions (tons/year)
Hoppers	1	0.00003 <sup>(1)</sup>	0.01	0.1	2	0.001
Screens	1	0.00074 <sup>(2)</sup>	0.18	1.4	43	0.022
Conveyors	4	0.000184 <sup>(3)</sup>	0.04	0.4	11	0.005
<b>S-14 Total</b>			<b>0.23</b>	<b>1.9</b>	<b>55</b>	<b>0.028</b>

**Notes:**

1. Basis: Permit Handbook Chapter 11.7 Crushing and Grinding Drop Unloading (Controlled)
2. Basis: Table 11.19.2-2 Screening (Controlled) of AP-42 Chapter 11.19.2.
3. Basis: Table 11.19.2-2 Conveyor Transfer Point (Controlled) of AP-42 Chapter 11.19.2.

**Table 4. S-14 PM<sub>2.5</sub> Portable Screening Skid Emissions**

Equipment	# of Units	Controlled Emission Factor (lbs/ton)	Hourly PM <sub>2.5</sub> Emissions (lbs/hour)	Daily PM <sub>2.5</sub> Emissions (lbs/day)	Annual PM <sub>2.5</sub> Emissions (lbs/year)	Annual PM <sub>2.5</sub> Emissions (tons/year)
Hoppers	1	0.00003 <sup>(1)</sup>	0.01	0.1	2	0.001
Screens	1	0.00005 <sup>(2)</sup>	0.01	0.1	3	0.001
Conveyors	4	0.000052 <sup>(3)</sup>	0.01	0.1	3	0.002
<b>S-14 Total</b>			<b>0.03</b>	<b>0.3</b>	<b>8</b>	<b>0.004</b>

**Notes:**

1. Basis: Permit Handbook Drop Unloading (Controlled)
2. Basis: Table 11.19.2-2 Screening (Controlled)
3. Basis: Table 11.19.2-2 Conveyor Transfer Point (Controlled)

**S-15: Stockpiles & Vehicle Road Dust Emissions**

Emission factors from drop operations into storage piles are derived from Chapter 13.2.4 “Aggregate Handling and Storage Piles” of AP-42.

$$\text{Stockpile EF (lb/ton)} = k \times (0.032) \times \left(\frac{U}{5}\right)^{1.3} \left(\frac{M}{2}\right)^{1.4}$$

Where:

- EF = emission factor (lb/ton)
- k = particle size multiplier (0.35 for PM<sub>10</sub>; 0.053 for PM<sub>2.5</sub>), (dimensionless)
- U = mean wind speed, (miles per hour)
- M = material moisture content, (%)

For the project, a mean windspeed of 25.92 miles per hour was assumed based on the monthly average of the max hourly wind speed of each month in the year 2023. This year was selected for having the most complete data and windiest wind speeds of the past five years for the city of Half Moon Bay. A moisture content of 2.1% was conservatively assumed in accordance with the Bay Area Air District’s Permit Handbook, which

recommends using 2.1% for concrete batch plants. While this is not concrete batch plant, some concrete is present at the facility. However, the moisture content at this facility would be expected to be higher considering soil typically has a higher moisture content.

Emissions are assumed to be 70% controlled due to the use of water spray bars that suppress dust from the crushing operation and drop points. The following tables show the emission rates for S-15.

**Table 5. S-15 PM<sub>10</sub> Stockpile Emissions**

Emission Type	Hourly PM <sub>10</sub> Emissions (lbs/hour)	Daily PM <sub>10</sub> Emissions (lbs/day)	Annual PM <sub>10</sub> Emissions (lbs/year)	Annual PM <sub>10</sub> Emissions (tons/year)
Wind Erosion <sup>(1)</sup>	0.04	0.9	329	0.165
Soil Drop Operations <sup>(2)</sup>	0.32	2.7	35	0.017

**Notes:**

1. Basis: Permit Handbook Chapter 11.7 Crushing & Grinding, Emission factor of 1.7lbs/acre/day before an additional 70% abatement from water spray
2. Basis: Chapter 13.2.4 “Aggregate Handling and Storage Piles” of AP-42.

**Table 6. S-15 PM<sub>2.5</sub> Stockpile Emissions**

Emission Type	Hourly PM <sub>2.5</sub> Emissions (lbs/hour)	Daily PM <sub>2.5</sub> Emissions (lbs/day)	Annual PM <sub>2.5</sub> Emissions (lbs/year)	Annual PM <sub>2.5</sub> Emissions (tons/year)
Wind Erosion <sup>(1)</sup>	0.006	0.1	49	0.025
Soil Drop Operations <sup>(2)</sup>	0.05	0.4	5	0.003

**Notes:**

1. Basis: Permit Handbook Chapter 11.7 Crushing & Grinding, Emission factor of 1.7lbs/acre/day before an additional 70% abatement from water spray
2. Basis: Chapter 13.2.4 “Aggregate Handling and Storage Piles” of AP-42.

For vehicles traveling on unpaved surfaces at industrial sites, emissions are estimated from the following equation from AP-42 Chapter 13.2.2 **Unpaved Roads**:

$$E = k(s/12)^a(W/3)^b$$

Where:

E = size specific emission factor (lb/VMT)

k = 1.5 for PM<sub>10</sub>; 0.15 for PM<sub>2.5</sub>

a = 0.9

b = 0.45

s = surface material silt content % for stone quarrying and processing; 8.3

W = mean weight (tons) = (40 tons for max weight vehicles + 15 tons for empty vehicles) / 2 = 27.5 ton trucks (mean)

Emissions for vehicles traveling on paved roads were estimated using the following equation from AP-42 Chapter 13.2.1 **Paved Roads**:

$$E = k(sL)^{0.91}(W)^{1.02}$$

Where:

E = size specific emission factor (lb/VMT)

k = 0.0022 for PM<sub>10</sub>; 0.00054 for PM<sub>2.5</sub>

sL = surface material silt content % for stone quarrying and processing; 8.3

W = mean weight (tons) = (40 tons for max weight vehicles + 15 tons for empty vehicles) / 2 = 27.5 ton trucks (mean)

The vehicle and distance assumptions used to estimate emissions are shown in Table 7.

Table 8 below shows the emission rates summary for PM<sub>10</sub> and PM<sub>2.5</sub> dust generated by vehicle traffic.

Basis:

- 40 tons of fully loaded truck – 15 tons empty weight = 25 tons of material per truck
- Vehicle miles traveled per day on paved roads (VMT/day) = 750 ton/day / 25 tons of material per truck = 30 trucks/day \* 0.379 miles/truck = 11.363 VMT/day
- Vehicle miles traveled per year on paved roads (VMT/year) = 9,750 ton/year / 25 tons of material per truck = 390 trucks/year \* 0.379 miles/truck = 147.7 VMT/year
- Front end loaders round trip of 0.076 miles of unpaved portions of the site
- Loadout trucks round trip of 0.068 miles of unpaved roads and 0.38 miles of paved roads
- Vehicle fugitive road dust emissions are abated by water sprays which provides 70% control efficiency.

**Table 7. Vehicle and Distance Assumptions**

Vehicle	Road Type	Round Trip Distance (miles)	# of Truck Trips		Vehicle Miles Traveled (miles)	
			Daily	Annual	Daily	Annual
Front End Loaders	Unpaved	0.076	30	390	2.27	29.55
Loadout Trucks	Unpaved	0.074	30	390	2.22	28.81
Loadout Trucks	Paved	0.379	30	390	11.36	147.73
Front End Loaders	Unpaved	0.076	30	390	2.27	29.55
Loadout Trucks	Unpaved	0.074	30	390	2.22	28.81
Loadout Trucks	Paved	0.379	30	390	11.36	147.73

**Table 8. Vehicle Traffic Emissions**

Vehicle	Road Type	Emission Factor (lb/VMT)	Emission Rate			
			Hourly (lbs/hour)	Daily (lbs/day)	Annual (lbs/year)	Annual (ton/year)
Front End Loaders	Unpaved	2.917	0.08	2.0	26	0.013
Loadout Trucks	Unpaved	2.917	0.48	1.9	25	0.013
Loadout Trucks	Paved	0.444	0.38	1.5	20	0.010
<b>PM<sub>10</sub> Total Emissions</b>			<b>0.95</b>	<b>5.4</b>	<b>71</b>	<b>0.035</b>
Front End Loaders	Unpaved	0.292	0.01	0.2	3	0.001
Loadout Trucks	Unpaved	0.292	0.10	0.2	3	0.001
Loadout Trucks	Paved	0.109	0.19	0.4	5	0.002
<b>PM<sub>2.5</sub> Total Emissions</b>			<b>0.29</b>	<b>0.8</b>	<b>10</b>	<b>0.005</b>

**Table 9. Total S-15 PM<sub>10</sub> Stockpile Emissions**

Emission Type	Hourly PM <sub>10</sub> Emissions (lb/hour)	Daily PM <sub>10</sub> Emissions (lbs/day)	Annual PM <sub>10</sub> Emissions (lbs/year)	Annual PM <sub>10</sub> Emissions (tons/year)
Wind Erosion	0.04	0.9	329	0.165
Soil Drop Operations	0.32	2.7	35	0.017
Vehicle Traffic Emissions	0.95	5.4	71	0.035
<b>PM<sub>10</sub> Total Emissions</b>	<b>1.30</b>	<b>9.0</b>	<b>434</b>	<b>0.217</b>

**Table 10. Total S-15 PM<sub>2.5</sub> Stockpile Emissions**

Emission Type	Hourly PM <sub>2.5</sub> Emissions (lb/hour)	Daily PM <sub>2.5</sub> Emissions (lbs/day)	Annual PM <sub>2.5</sub> Emissions (lbs/year)	Annual PM <sub>2.5</sub> Emissions (tons/year)
Wind Erosion	0.01	0.1	49	0.025
Soil Drop Operations	0.05	0.4	5	0.003
Vehicle Traffic Emissions	0.29	0.8	10	0.005
<b>PM<sub>2.5</sub> Total Emissions</b>	<b>0.34</b>	<b>1.3</b>	<b>64</b>	<b>0.032</b>

**S-16 Portable Hopper/Conveyor**

Emission factors for controlled Conveyor Transfer Points were obtained from AP-42 Chapter 11.19.2 “Crushed Stone Processing Operations.” Emission factors from drop operations into storage piles are derived from Chapter 11.19.2-2 “Crushed Stone Processing and Pulverized Mineral Processing” of AP-42 (fifth edition, Volume I). Emissions are assumed to be 70% controlled due to the use of water spray bars that suppress dust from the crushing operation and drop points. The following two tables show the emission factors used to calculate emissions for S-16.

Basis:

- Operating Schedule: 8 hours/day, 5 days/week, and 52 weeks/year.
- Max soil throughputs: 90 tons/hour, 750 tons/day, and 9,750 tons/year.
- Max Concrete throughputs: 150 tons/hour, 1,200 tons/day, and 48,000 tons/year.

- Drop Unloading (controlled) is Drop Unloading (uncontrolled) with a 70% abatement efficiency added on for water spray in accordance with Permit Handbook Chapter 11.7 Crushing and Grinding.

**Table 11. S-16 PM<sub>10</sub> Emissions**

Equipment	# of Units	Controlled Emission Factor (lb/ton)	PM <sub>10</sub> Emissions			
			Hourly (lb/hour)	Daily (lb/day)	Annual (lbs/year)	Annual (tons/year)
Hoppers	1	0.00003 <sup>(1)</sup>	0.01	0.1	2	0.001
Conveyors	1	0.000046 <sup>(2)</sup>	0.01	0.1	3	0.001
<b>S-16 Total</b>			<b>0.02</b>	<b>0.2</b>	<b>5</b>	<b>0.002</b>
<b>Notes:</b>						
1. Basis: Permit Handbook Drop Unloading (Controlled)						
2. Basis: Table 11.19.2-2 Conveyor Transfer Point (Controlled)						

**Table 12. S-16 PM<sub>2.5</sub> Emissions**

Equipment	# of Units	Controlled Emission Factor (lb/ton)	PM <sub>2.5</sub> Emissions			
			Hourly (lb/hour)	Daily (lb/day)	Annual (lbs/year)	Annual (tons/year)
Hoppers	1	0.00003 <sup>(1)</sup>	0.01	0.1	1	0.001
Conveyors	1	0.000013 <sup>(2)</sup>	0.00	0.0	1	0.000
<b>S-16 Total</b>			<b>0.01</b>	<b>0.1</b>	<b>2</b>	<b>0.001</b>
<b>Notes:</b>						
1. Basis: Permit Handbook Drop Unloading (Controlled)						
2. Basis: Table 11.19.2-2 Conveyor Transfer Point (Controlled)						

### **CUMULATIVE INCREASE**

Table 8 summarizes the cumulative increase in criteria pollutant emissions that will result from this application. Existing Cumulative Increase taken from Application #28657.

**Table 13. Cumulative Emissions Increase, Post 4/5/91**

Pollutant	Existing Cumulative Increase (tons/year)	Application Emissions (tons/year)	Total Cumulative Increase (tons/year)
POC	0.000	0.000	0.000
NO <sub>x</sub>	0.000	0.000	0.000
SO <sub>2</sub>	0.000	0.000	0.000
CO	0.000	0.000	0.000
PM <sub>10</sub>	1.313	0.247	1.560
PM <sub>2.5</sub>	0.141	0.037	0.178

The facility is not expected to have a potential to emit (PTE) greater than 10 tons per year of precursor organic compounds (POC) or nitrogen oxidizes (NO<sub>x</sub>), nor is the facility a major facility of PM<sub>10</sub>, PM<sub>2.5</sub>, and sulfur dioxide (SO<sub>2</sub>). Therefore, the requirements of Regulations 2-2-302 and 2-2-303 do not apply.

**HEALTH RISK ASSESSMENT ANALYSIS**

Pursuant to Regulation 2-5-110, a project shall not be subject to this rule if, for each toxic air contaminant (TAC), the total project emissions are below the acute and chronic trigger levels listed in Table 2-5-1 of this regulation. A project includes all new or modified sources of TACs within a 5-year period. S-14 through S-16 are permitted under Application #703018. S-14 through S-16 operate with a portable crusher owned by Andreini Brother’s. Therefore, both facilities are considered one project despite being owned by two separate facilities.

**Table 14. Source Specific Hourly Toxic Air Contaminant Emissions**

Pollutant	CAS	Hourly Emissions (lbs/hour)				
		Application 692505		Application 703018		
		S-9	S-9 (Road Dust)	S-14	S-15	S-16
Arsenic	7440-38-2	1.1E-05	N/A	2.0E-06	N/A	1.2E-07
Beryllium	7440-41-7	6.1E-07	N/A	1.3E-07	N/A	7.8E-09
Cadmium	7440-43-9	5.3E-07	N/A	5.9E-08	N/A	3.6E-09
Chromium (Total)	18540-29-9	2.8E-05	N/A	4.0E-06	N/A	2.4E-07
Chromium Hexavalent		2.5E-06	N/A	4.0E-07	N/A	2.5E-08
Copper	7440-50-8	1.5E-05	N/A	1.7E-06	N/A	1.0E-07
Crystalline Silica (respirable)	7631-86-9	--	--	3.0E-02	--	1.9E-03
Lead	7439-92-1	6.6E-06	N/A	3.2E-06	--	2.0E-07
Manganese	7439-96-5	1.9E-04	N/A	2.1E-05	N/A	4.4E-11
Mercury	7439-97-6	N/A	N/A	7.2E-10	N/A	1.3E-06
Nickel	7440-02-0	1.2E-05	N/A	4.1E-06	N/A	2.5E-07
Selenium	7782-49-2	5.3E-07	N/A	1.1E-07	N/A	6.9E-09

**Table 15. Source Specific Annual Toxic Air Contaminant Emissions**

Pollutant	CAS	Annual Emissions (lbs/year)				
		Application 692505		Application 703018		
		S-9	S-9 (Road Dust)	S-14	S-15	S-16
Arsenic	7440-38-2	3.6E-03	N/A	6.3E-04	N/A	3.9E-05
Beryllium	7440-41-7	1.9E-04	N/A	4.1E-05	N/A	2.5E-06
Cadmium	7440-43-9	1.7E-04	N/A	1.9E-05	N/A	1.1E-06
Chromium (Total)	18540-29-9	9.1E-03	N/A	1.3E-03	N/A	7.8E-05
Chromium Hexavalent		8.0E-04	N/A	1.3E-04	N/A	7.9E-06
Copper	7440-50-8	4.9E-03	N/A	5.5E-04	N/A	3.3E-05
Crystalline Silica (respirable)	7631-86-9	5.1E+01	1.1E+01	9.1E+00	2.8E+01	5.7E-01
Lead	7439-92-1	2.1E-03	N/A	6.9E-04	9.4E-03	4.2E-05
Manganese	7439-96-5	6.0E-02	N/A	6.7E-03	N/A	1.4E-08
Mercury	7439-97-6	N/A	N/A	2.3E-07	N/A	4.1E-04
Nickel	7440-02-0	3.9E-03	N/A	1.3E-03	N/A	8.0E-05
Selenium	7782-49-2	1.7E-04	N/A	3.6E-05	N/A	2.2E-06

**Table 16. Total Project Toxic Air Contaminant Emissions**

Toxic Air Contaminant	CAS #	Hourly Emissions (lbs/hour)	Annual Emissions (lbs/year)	Acute Trigger Level (lbs/hour)	Chronic Trigger Level (lbs/year)	Exceed Acute or Chronic Trigger?
Arsenic	7440-38-2	1.3E-05	4.2E-03	8.80E-05	1.6E-03	Yes (chronic)
Beryllium	7440-41-7	7.4E-07	2.4E-04	--	3.4E-02	No
Cadmium	7440-43-9	5.9E-07	1.9E-04	--	1.9E-02	No
Total Chromium		6.8E-06	1.0E-02	--	--	No
Chromium Hexavalent	18540-29-9	2.9E-06	9.4E-04	--	5.1E-04	Yes (chronic)
Copper	7440-50-8	1.7E-05	5.5E-03	4.4E-02	--	No
Crystalline Silica (respirable)	7631-86-9	--	1.2E+02	--	1.2E+02	No
Lead	7439-92-1	--	2.5E-02	--	2.9E-01	No
Manganese	7439-96-5	2.1E-04	6.7E-02	--	3.5E+00	No
Nickel	7440-02-0	1.7E-05	5.3E-03	8.80E-05	3.1E-01	No
Selenium	7782-49-2	6.5E-07	2.1E-04	--	8.0E+00	No
Mercury	7439-97-6	7.6E-10	2.4E-07	2.7E-04	2.1E-01	No

A health risk assessment (HRA) was triggered for arsenic and hexavalent chromium emissions, both of which exceeded the chronic trigger levels.

### HRA Results

Results from this HRA indicate that the maximum project cancer risk is estimated at 1.2 in a million, the maximum project chronic hazard index (CHI) is estimated at 0.085, and the project acute hazard index (AHI) is estimated at 0.36. Since the estimated project cancer risk does not exceed 10 in a million and hazard indices do not exceed 1.0, this proposed project complies with the District's Regulation 2-5-302 project risk requirements, for projects not located in an Overburdened Community, as defined in Regulation 2-1-243. See HRA Report for more details.

### Best Available Control Technology for Toxics (TBACT)

In accordance with the District's Regulation 2-5-301, none of the sources require TBACT because none of the estimated source risks exceed a cancer risk of 1.0 in a million and/or a chronic HI of 0.20.

**Table 17. Risk Screening Results**

Maximally Exposed Receptor	Maximum Cancer Risk	Maximum Hazard Index	
		Chronic	Acute
Resident	1.2 chances in a million	0.085	--
Off-site worker	0.078 chances in a million	0.035	--
Student (Half Moon Bay High School)	0.064 chances in a million	0.015	--
Point Max Impact	--	--	0.36

### **BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

Per Regulation 2-2-301, BACT is triggered for any new or modified source with the PTE 10 pounds or more per highest day of POC, non-precursor organic compounds (NPOC), NO<sub>x</sub>, carbon monoxide (CO), SO<sub>2</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub> emissions.

Tables 1 and 2 show PM<sub>10</sub> and PM<sub>2.5</sub> emissions from each new source.

No source is expected to emit more than 10.0 pounds per day, therefore, the requirements of Regulation 2-2-301 are not applicable.

### **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 POC or NO<sub>x</sub>. 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<sub>10</sub>, PM<sub>2.5</sub>, or SO<sub>2</sub>.

The following table provides the potential to emit PM<sub>10</sub> and PM<sub>2.5</sub> for the facility.

**Table 18. Facility Potential to Emit for PM<sub>10</sub> and PM<sub>2.5</sub>**

Source #	Description	Annual Emissions (tons/year)	
		PM <sub>10</sub>	PM <sub>2.5</sub>
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
14	Portable Screening Skid	0.028	0.004
15	Stockpiles	0.217	0.032
16	Portable Hopper/Conveyor	0.002	0.001
<b>Total</b>		<b>2.094</b>	<b>0.262</b>

**Table 19. Potential to Emit for Facility 1999**

Pollutant	Annual Emissions (tons/year)			Offset Requirement (tons/year)	Offset Required?
	Existing	Application	Facility		
NO <sub>x</sub>	0.000	0.000	0.000	>10	No
POC	0.000	0.000	0.000	>10	No
CO	0.000	0.000	0.000	-	No
PM <sub>10</sub>	1.847	0.247	2.094	≥100	No
PM <sub>2.5</sub>	0.225	0.037	0.262	≥100	No
SO <sub>2</sub>	0.000	0.000	0.000	≥100	No

Since the facility's permitted levels of NO<sub>x</sub>, POC, PM<sub>10</sub>, PM<sub>2.5</sub>, and SO<sub>2</sub> are below the offsets trigger levels specified in Regulation 2-2, offsets are not required.

### **STATEMENT OF COMPLIANCE**

#### **Regulation 6, Rule 1**

Pursuant to Regulation 6-1-301 – *Ringelmann No. 1 Limitation* and 6-1-302 – *Opacity Limitation*, a person shall not emit from any source exceeding Ringelmann 1 and 20% opacity for more than 3 minutes in any one-hour period.

Furthermore, pursuant to Regulation 6-1-305 – *Visible Particles*, 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. Section 6-1-305 shall only apply if such particles fall on real property other than that of the person responsible for the emission.

Regulation 6-1-310.2 – *Total Suspended Particulate (TSP) Concentration Limits*: only applies to sources with the potential to emit TSP in quantities greater than 2,200 pounds

per year. None of the sources in this application have that ability, therefore this regulation does not apply.

Regulation 6-1-311.1 – *Total Suspended Particulate (TSP) Weight Limits* states that a person shall not discharge more than 40.0 pounds per hour of TSP particulate matter from sources with a process rate of greater than 55,116 pounds per hour. S-14 and S-16, both exceed 55,116 pounds per hour in terms of process weight, however they only have a potential to emit 0.67 and 0.04 pounds of TSP per hour, respectively.

Section 6-1-311.2 does not apply to S-14 or S-16 because the PTE of S-14 and S-16 TSP emissions are both less than 1,000 kg/year.

The operation of S-14 through S-16 can meet the requirements of all the applicable sections of Regulation 6-1, including Ringelmann Limitations and Visible Emissions with the use of their abatement devices, water sprays (A-9, A-11) and water truck (A-10).

Lastly, S-14 and S-16 will be subject to the monitoring and recordkeeping requirements of Regulation 6-1-503 and 6-1-506.

#### **Regulation 6, Rule 6**

HMBBG meets the definition of a large regulated bulk material site in Regulation 6-6-207. As such it shall not cause or allow trackout at any active exit from such site onto an adjacent paved public roadway or shoulder of a paved public roadway that exceeds cumulative 25 linear feet and creates fugitive dust visible emissions without cleaning up such trackout within 4 hours of when the owner/operator identifies such excessive trackout; and shall not cause or allow more than 1 quart of trackout to remain on the adjacent paved public roadway or the paved shoulder of the paved public roadway at the end of any workday.

Additionally, HMBBG shall not cause or allow a fugitive dust visible emission during cleanup of any trackout that exceeds 20 percent opacity as determined by EPA Method 203B (or as dark in shade as that designated as Number 1 on the Ringelmann Chart), for a period or aggregate periods of more than 3 minutes in any 60-minute period. Given the nature of this operation, compliance with this rule is expected.

#### **National Emissions Standards for Hazardous Air Pollutants (NESHAP)**

There are no NESHAPs that are applicable.

#### **New Source Performance Standards (NSPS)**

40 CFR Part 60 Subpart OOO – *Standards of Performance for Nonmetallic Mineral Processing Plants*

40 CFR 60.670(c)(2) states that Subpart OOO is not applicable to S-14 or S-16 because they constitute a portable sand and gravel plant and/or concrete crushing operation with capacities of 150 tons per hour or less. S-14 and S-16 each have maximum a capacity of

150 tons per hour, which means HMBBG, as defined as a portable sand and gravel plant, has a maximum capacity of 150 tons per hour.

### **California Environmental Quality Act (CEQA)**

In 2008, Andreini Brothers and Half Moon Bay Building and Garden Supply submitted an amendment to their existing Coastal Development Permit/Conditional Use Permit (#08-00) to the CEQA Lead Agency the City of Half Moon Bay (City), to include a crushing and recycling of concrete, asphalt, and rock operation at the existing Resource Recycling Center in Half Moon Bay under application APN 056-230-240 (Concrete and Asphalt Recycling Facility Project, State Clearinghouse #2007112007). The project site is jointly owned by the Half Moon Bay Building and Garden Supply and Andreini Brothers Construction (Applicant). The 8.84-acre project site is currently permitted to have a 36-space parking lot to serve the Bel Moon Industrial Park and operate a Resource Recovery Center (soil screening operation) that creates a topsoil product. The soil screening operation occupies approximately 2.7 acres of the 8.84-acre project site.

The proposed project (Project) would allow the operation of a concrete and asphalt recycling unit on an industrially zoned parcel. This parcel currently contains a Resource Recovery Center (soils screening operation) that was initially granted by the Planning Commission on January 25, 2001, and has been operating continuously without incident or impact since 2002. The Applicant could load the concrete crusher onto a truck and take it to larger coast-side demolition projects and crush used concrete and asphalt on-site for reuse. When the concrete crusher is not in use, it is stored on the project site in the soil processing area.

The City reviewed the Initial Study and Mitigated Negative Declaration (IS/MND) for the proposed project and determined that based on the environmental evaluation presented in the IS/MND, the Project would not cause significant adverse effects related to aesthetics, air quality, agricultural resources, hazards and hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation/traffic, and utilities/service systems. In addition, substantial adverse effects on humans, either direct or indirect, would not occur. On January 15, 2008, the City of Half Moon Bay City Council approved the Project and determined that: the project will not have a significant impact on the environment; a Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA; and mitigation measures were made a condition of the approval of the project. On January 17, 2008, the Project's Notice of Determination was posted on the State Clearinghouse (<https://ceqanet.lci.ca.gov/2007112007/2>). The Air District has independently reviewed and considered the City's environmental analysis. The Air District has determined that the Project will not have a significant effect on the environment. As the project will not have a significant effect, CEQA does not require the Air District to consider alternatives or mitigation measures to avoid or minimize any such impacts. Since the Air District is not imposing any mitigation measures under CEQA, CEQA does not require the adoption of a mitigation monitoring or reporting plan. With the implementation of the permit conditions outlined in this engineering evaluation and

the operational requirements in the IS/MND, no further CEQA review is required for this project.

**Prevention of Significant Deterioration (PSD)**

This application is not part of a PSD project as defined in Regulation 2-2.

**Public Notification (Regulation 2-1-412)**

This project is within 1,000 feet of Half Moon Bay High School. Therefore, this project is subject to the school public notification requirements of Regulation 2-1-412.

**Table 20. Public Schools Notifications for Application 703018**

<b>Schools</b>	<b>Address</b>
Half Moon Bay High School	1 Lewis Foster Dr, Half Moon Bay, CA 94019

A public notice will be sent to all parents or guardians of students enrolled at the schools listed above within ¼ mile of the source and all businesses and residents within 1000’ of the facility. There will be a 30-day public comment period.

**PERMIT CONDITIONS**

**Permit Condition #100744 for S-14 and S-16**

For: S-14 and S-16

Portable Screening Skid (S-14) and Portable Hopper/Conveyor (S-16)

Application 703018

This permit authorizes operation of Portable Screening Skid (S-14) and Portable Hopper/Conveyor (S-16) at Facility #1999 or Facility #11468. Portable Screening Skid (S-14) and Portable Hopper/Conveyor (S-16) may be operated at another location only in accordance with some other valid legal authorization, such as a valid Portable Equipment Registration Program (PERP) registration.

**THROUGHPUTS**

1. The owner/operator of S-14 and S-16 shall not exceed the following throughput limits of material processed at this portable operation in any calendar day and consecutive twelve-month period:

Concrete/Asphalt Rubble

150 tons/hour

1,200 tons/day

48,000 tons/year

Soil

90 tons/hour

750 tons/day

9,750 tons/year  
[Basis: Cumulative Increase]

#### ABATEMENT

2. The owner/operator shall abate the particulate matter emissions from Sources S-14 and S-16 using Water Spray System A-9 and A-10, respectively.  
[Basis: Regulation 6-1-301, and Cumulative Increase]

#### GENERAL

3. The owner/operator of S-14 and S-16 shall ensure visible particulate emissions from Sources S-14 or S-16 do not exceed Ringelmann 1.0 or equivalent to 10% opacity for a period or aggregate periods of more than 3 minutes in any 60 minute period, or result in fallout on adjacent property in such quantities as to cause a public nuisance per Regulation 1-301.  
[Basis: Regulation 1-301, Regulation 2-1-403, 6-1-301]

#### RECORDKEEPING

4. To determine compliance with the above parts, the owner/operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above parts, including the following information:
  - a. Total daily throughput of concrete, asphalt rubble, and soil at each location for S-14 and S-16.
  - b. Daily throughputs shall be totaled for each month and each consecutive twelve-month period.

The owner/operator shall record all records in an Air District-approved log. The owner/operator shall retain records with the equipment for two years, from the date of entry, and make them available for inspection by Air District staff upon request. These record-keeping requirements shall not replace the record-keeping requirements contained in any applicable Air District Regulation.  
[Basis: Recordkeeping]

### **Permit Condition #100751 for S-15**

Stockpiles (S-15)

Application 703018

#### THROUGHPUTS

1. The owner/operator of S-15 shall not exceed the following throughput limits of material processed at this source any calendar day and consecutive twelve-month period:

Soil  
90 tons/hour  
750 tons/day

9,750 tons/year

[Basis: Cumulative Increase]

#### ABATEMENT: STOCKPILES

2. The owner/operator shall abate the particulate matter emissions from Sources S-15 (stockpiles) using Water Spray System A-11.

[Basis: Regulation 6-1-301, and Cumulative Increase]

3. The owner/operator shall maintain Source S-15 (stockpiles) in a completely "surface wet" condition or in a manner that shall not result in visible particulate matter emissions which exceed Ringelmann 1.0.

[Basis: Regulation 6-1-301 and Cumulative Increase]

#### PAVED/UNPAVED ROAD EMISSIONS

4. The owner/operator shall abate the particulate matter emissions from S-15 (including all in-use paved and unpaved roads to and from each stockpile) using Water Spray System A-11, at all times during operation.

[Basis: Regulation 6-1-301, and Cumulative Increase]

5. The owner/operator shall maintain S-15 (including all in-use paved and unpaved roads to and from each stockpile) in a completely "surface wet" condition or in a manner that shall not result in visible particulate matter emissions which exceed Ringelmann 0.5 at all times during operation.

[Basis: Regulation 6-1-301, and Cumulative Increase]

#### RECORDKEEPING

6. To determine compliance with the above parts, the owner/operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above parts, including the following information:

- a. Total daily throughput of soil.
- b. Daily throughputs shall be totaled for each month and each consecutive twelve-month period.

The owner/operator shall record all records in an Air District-approved log. The owner/operator shall retain records with the equipment for two years, from the date of entry, and make them available for inspection by Air District staff upon request. These record-keeping requirements shall not replace the record-keeping requirements contained in any applicable Air District Regulation.

[Basis: Recordkeeping]

#### **RECOMMENDATION**

The Air 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 Air District, state, and federal air quality-related regulations. The preliminary recommendation is to issue a Permit to Operate for

the equipment listed below. However, the proposed source is within 1000 feet of Half Moon Bay High School, which triggers the public notification requirements of Air District Regulation 2-1-412. After the comments are received and reviewed, the Air District will make a final determination on the permit.

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

**S-14 Portable Screening Skid**

**Make: Terex Finlay; Model: 693+Supertrack**

**Consisting of 1 Hopper, 1 Screen, and 4 Conveyors**

**Maximum Soil Throughput: 90 tons/hour, 750 tons/day, 9,750 tons/year,**

**Maximum Concrete Throughput: 150 tons/hour, 1,200 tons/day, 48,000 tons/year, abated by A-9 Water Spray Bar**

**S-15 Soil Stockpiles**

**Soil/Waste Byproduct, Raw Soil 0.28 Acres, Screened Soil 1.40 Acre, Waste**

**Byproduct 0.09 Acres, Maximum Soil Throughput: 90 tons/hour, 750**

**tons/day, 9,750 tons/year, abated by A-11 Water Truck and Hose**

**S-16 Portable Hopper/Conveyor Skid**

**Make: Trakpactor; Model: XH320**

**Consisting of 1 Hopper, and 1 Conveyor**

**Maximum Soil Throughput: 90 tons/hour, 750 tons/day, 9,750 tons/year,**

**Maximum Concrete Throughput: 150 tons/hour, 1,200 tons/day, 48,000 tons/year, abated by A-10 Water Spray Bar**

Abated by

**A-9 Water Spray Bar System**

**Abating S-14**

**A-10 Water Spray Bar System**

**Abating S-16**

**A-11 Water Truck and Hose Spray**

**Abating S-15**

Prepared by: Kevin Creaven, Senior Air Quality Engineer

Date: 11/24/2025