ENGINEERING EVALUATION

Contra Costa Waste Service Inc.
1300 Loveridge Road, Pittsburg, CA 94565
Application No. 32114
Facility ID No. 9902

BACKGROUND

Contra Costa Waste Service Inc., previously Recycling Center and Transfer Station, is applying for a Permit to Operate for the following equipment:

S-4 Portable Grinder, Powered by Portable Prime Diesel Engine S-5
Make: Morbark, Model: 7600
Max C&D Throughput: 38 tons/hour, 400 tons/day, 70,000 tons/year
Max Green Waste Throughput: 25 tons/hour, 176 tons/day, 52,200 tons/year
Max Wood Throughput: 15 tons/hour, 120 tons/day, 34,200 tons/year

S-5 Portable Prime Diesel Engine, Powering S-4 Grinder
Make: Caterpillar, Model: C32, Model Year: 2019
1,200 bhp, 8.32 MMBtu/hr

S-6 Unprocessed Wood Stockpile
Max Throughputs: 15 tons/hour, 120 tons/day, 34,200 tons/year

S-7 Sorted C&D Stockpile
Max Throughputs: 38 tons/hour, 300 tons/day, 70,000 tons/year

S-9 Unprocessed Green Waste Stockpile, abated by A-3
Max Throughputs: 25 tons/hour, 176 tons/day, 52,200 tons/year

S-10 Finished Mulch & Compost Stockpile
Max Throughputs: 23 tons/hour, 180 tons/day, 1,700 tons/year

S-11 Processed Wood Stockpile
Max Throughputs: 15 tons/hour, 120 tons/day, 34,200 tons/year

S-12 Ground ADC Stockpile
Max Throughputs: 38 tons/hour, 400 tons/day, 70,000 tons/year

S-13 Processed Green Waste Stockpile, abated by A-3
Max Throughputs: 25 tons/hour, 176 tons/day, 52,200 tons/year

S-14 Sorted Concrete Stockpile
Max Throughputs: 38 tons/hour, 300 tons/day, 70,000 tons/year

Abated by

A-3 Building Enclosure

Mount Diablo Resource Recovery (MDRR) operates as Contra Costa Waste Service Inc., a solid waste transfer station and recycling center that is designed to accept recyclables and solid waste

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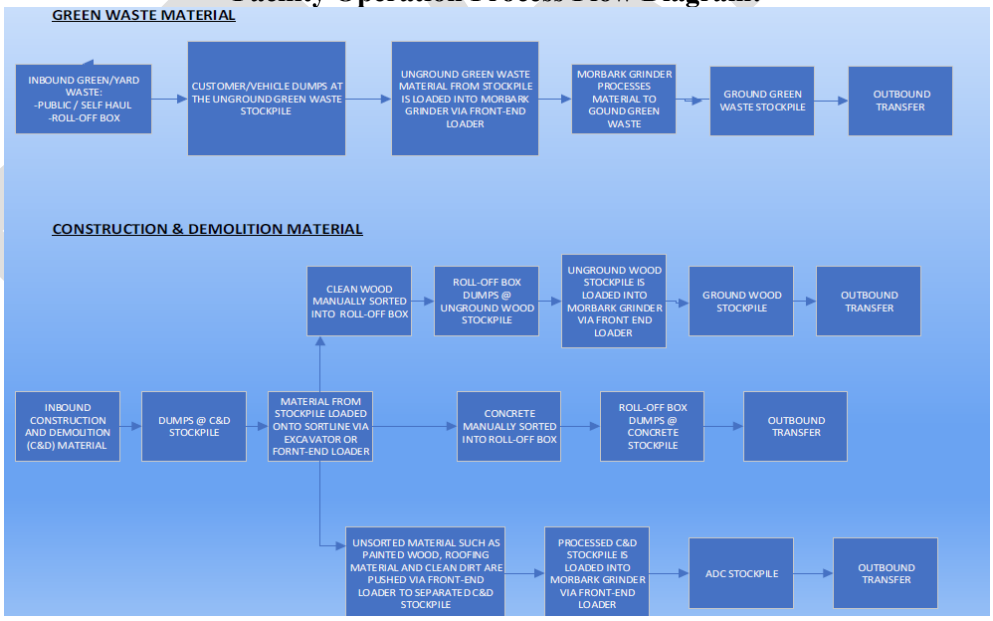
for limited sorting and baling. There are two existing operations at this facility. S-1 Waste Transfer Area Including Waste and Recyclable Receiving Area, Tipping Floor, and Transfer Loading Pit receives recyclable material, sorts, and/or bales the recyclables. There is an additional recyclable processing area including a sort line and baler line which receives solid wastes and loads those wastes plus the waste from the recycling area onto transfer vehicles, sorted using a sorting conveyor, and baled using a stationary baler. The waste portion of the material received will be discharged onto a tipping floor and loaded into transfer vehicles for hauling to a landfill.

The transfer station was originally permitted to only receive and transfer material. Processing such as shredding, screening, grinding, composting, intentional venting of aerosol cans, and intentional venting of refrigerants into the atmosphere were prohibited and enforceable by permit conditions. Current facility operations include grinding and future facility operations will include food/green waste composting. MDRR plans to construct a new building enclosure (A-3) to house their green waste stockpiles and future food waste composting operations per Assembly Bill (AB) 1826 requirements. MDRR will submit a separate permit application for their future composting operations.

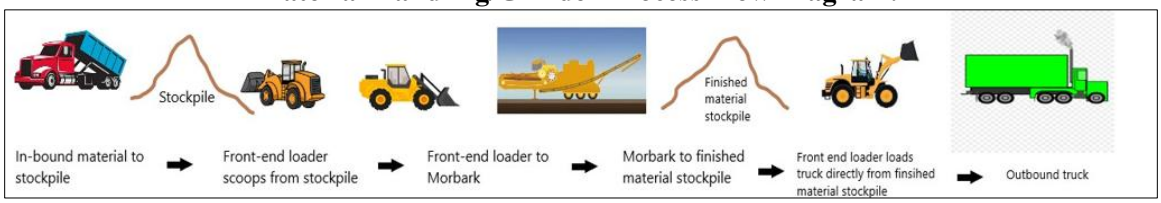
MDRR received NOV #A60770 for operating S-6 through S-14 stockpiles without a permit. Emissions from these stockpiles and associated fugitive dust emissions will be evaluated in this application.

Below are process flow diagrams of the facility's operations and material handling/grinding operations.

Facility Operation Process Flow Diagram:



Material Handling/Grinder Process Flow Diagram:



S-4 and S-5 were registered under CARB's Portable Equipment Registration Program (PERP) and owned prior to the Air District's PERP policy effective date of 02/19/2020. Therefore, S-4 and S-5 are treated as loss of exemption (LOE) sources. S-4 and S-5 are portable on-site sources that move throughout the site, but do not leave the site. Per the 2020 PERP policy, S-4 and S-5 are integral to the facility's operations and therefore considered as stationary sources. Therefore, S-4 and S-5 will be permitted as on-site portable equipment and permitted as stationary sources.

EMISSION CALCULATIONS

Stockpile Precursor Organic Compound (POC) Emissions

Basis:

- S-9 and S-13 emission factors for precursor organic compounds (POC) obtained from approved source tests NST-9988, NST-9989, NST-9990, and NST-9991.
- S-10 emission factors are default from Chapter 11.16 *Composting Operations* of Permit Handbook.
- Hourly stockpile emissions = daily emissions / 24 hours/day.

Table 1. POC Emission Rates Summary for S-9, S-10, and S-13

Sources	Max Hourly Throughput (ton/hour)	Max Daily Throughput (ton/day)	Max Annual Throughput (ton/year)	Emission Factor (lb/ton)	Hourly Emission Rate (lb/hour)	Daily Emission Rate (lb/day)	Annual Emission Rate (lb/year)	Annual Emission Rate (ton/year)
S-9 Unprocessed Green Waste	25	176	52,200	0.02343	0.17	4.1	1,223	0.612
S-10 Finished Mulch and Compost	23	180	1,700	0.02	0.15	3.6	34	0.017
S-13 Processed Green Waste	25	176	52,200	0.19431	1.42	34.2	10,143	5.071
Total Project POC Emissions					**1.75**	**41.9**	**11,400**	**5.700**

S-5 Portable Prime Diesel Engine Emissions

S-5 Portable Prime Diesel Engine powers the grinding operation. S-5 will be moving around the site, but will stay within the site, where it is required to perform necessary operating functions. S-4 and S-5 are permanent sources at this location. S-5 will meet the Environmental Protection Agency and California Air Resources Board (EPA/CARB) Tier 4 Off-road standard. The engine will burn commercially available California low sulfur diesel fuel. The sulfur content of the diesel fuel will not exceed 0.0015% sulfur by weight.

Basis:

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- Max daily potential to emit: Assume 2,496-hour operation of prime use for purposes of the health risk assessment.
- [1]Conservative Assumption: All PM_{10} emissions are $PM_{2.5}$.
- Nitrogen oxide (NO_x), POC, particulate matter 10 microns in size (PM_{10}) and particulate matter 2.5 microns in size ($PM_{2.5}$) emission factors are from EPA Engine Family Name KCPXL32.0HXG for S-5.
- Carbon monoxide (CO) emission factor is from the manufacturer specifications.
- Sulfur dioxide[2] (SO_2) emission factor from AP-42 Table 3.4-1, SO_2 (15 ppm) = 0.00809*0.0015 lb SO_2/bhp-hour = 0.000012 lb/bhp-hr * 454 gr/lb = 0.006 g/bhp-hr

Table 2. Total Annual and Daily Combustion Emissions for S-5, 1,200 BHP

Pollutant	Emission Factor (g/bhp-hour)	Max Daily Emissions (lbs/day)	Annual Emissions (lbs/year)	Annual Emissions (tons/year)
NO_x	2.31	146.6	15,251	7.626
POC	0.04	2.4	246	0.123
CO	0.25	15.9	1649	0.825
[1]PM_{10}	0.03	1.9	197	0.098
[1]$PM_{2.5}$	0.03	1.9	197	0.098
[2]SO_2	0.006	0.3	36	0.018

Project Particulate Matter Emissions

Detailed calculations for the sources emitting only particulate matter (PM) listed below are included in Appendix A. Table 3 shows the emission rates summary for PM_{10} and $PM_{2.5}$ for all sources.

Table 3. Project PM Emission Rates Summary

Sources	PM_{10} Hourly Emission Rate (lb/hour)	PM_{10} Daily Emission Rate (lb/day)	PM_{10} Annual Emission Rate (lb/year)	PM_{10} Annual Emission Rate (ton/year)	$PM_{2.5}$ Hourly Emission Rate (lb/hour)	$PM_{2.5}$ Daily Emission Rate (lb/day)	$PM_{2.5}$ Annual Emission Rate (lb/year)	$PM_{2.5}$ Annual Emission Rate (ton/year)
S-4 Portable Grinder	1.1	10.0	2,252	1.126	0.6	5.0	1,126	0.563
S-5 Portable Prime Diesel Engine	0-negligible	1.9	197	0.098	--	1.9	197	0.098
S-6 Unprocessed Wood Stockpile	0.01	1.2	350	0.175	0.002	0.1	37	0.018
S-7 Sorted C&D Stockpile	0.01	8.2	1,908	0.954	0.002	0.8	193	0.096
S-9 Unprocessed Green Waste	0.06	2.4	703	0.352	0.009	0.3	77	0.039
S-10 Finished Mulch and Compost	0.06	2.4	46	0.023	0.009	0.3	6	0.003
S-11 Processed Wood Stockpile	0.01	1.2	348	0.174	0.002	0.1	37	0.018
S-12 Ground ADC Stockpile	0.02	5.5	970	0.485	0.002	0.6	100	0.050
S-13 Processed Green Waste Stockpile	0.06	2.3	697	0.348	0.009	0.3	77	0.038
S-14 Sorted Concrete Stockpile	0.01	4.0	945	0.473	0.002	0.4	96	0.048
Total	**1.4**	**39.1**	**8,417**	**4.209**	**0.6**	**9.7**	**1,945**	**0.973**

HEALTH RISK ASSESSMENT (HRA)

Per the Air District PERP policy dated 02/19/2020, PERP equipment owned prior to the effective date are treated as LOE sources. LOE sources are not subject to Regulation 2-5 which are applicable to new or modified sources. S-4 Grinder and S-5 Prime Engine are not a new or

modified sources. Therefore, diesel PM TAC emissions from the engine and toxic air contaminant (TAC) emissions from the grinding operations are not included in the HRA.

The main TAC pollutants are organic/inorganic emitted from the S-9 Unprocessed Green Waste Stockpile, S-13 Processed Green Waste Stockpile, and S-10 Finished Mulch/Compost Stockpile. Emission factors used to estimate emissions for the organic stockpiles were obtained from approved source tests NST-9988, NST-9989, NST-9990, and NST-9991. Respirable crystalline silica (RCS) is found in fugitive road dust at these material recovery facilities and landfills.

Based on the calculations found in Appendix B, an HRA was triggered for acetaldehyde, naphthalene, benzene, and respirable crystalline silica emissions.

HRA Results

Results from this HRA indicate that the maximum project cancer risk is estimated at 2.2 in a million, the maximum project chronic hazard index (HI) is estimated at 0.078, and the project acute HI is estimated at 1.0. Since the estimated project cancer risk does not exceed 6 in a million and hazard indices do not exceed 1.0, this proposed project complies with the Air District's Regulation 2-5-302 project risk requirements, for projects located in an Overburdened Community, as defined in Regulation 2-1-243. See HRA Report for more details.

Table 4. Risk Screening Results

Maximally Exposed Receptor	Maximum Cancer Risk	Maximum Chronic Hazard Index	Maximum Acute Hazard Index
Resident	0.94 chances in a million	0.0063	--
Off-site worker	2.2 chances in a million	0.078	--
Point Max Impact	--	--	1.0

Table 5. Individual Source Risks

Source	Cancer Risk (in a million)
S-6 Unprocessed Wood Stockpile	-
S-7 Sorted C&D Stockpile	-
S-9 Unprocessed Green Waste	0.74
S-10 Finished Mulch and Compost	0.0010
S-11 Processed Wood Stockpile	-
S-12 Ground ADC Stockpile	-
S-13 Processed Green Waste Stockpile	1.4
S-14 Sorted Concrete Stockpile	-

Toxics Best Available Control Technology (TBACT)

In accordance with the Air District's Regulation 2-5-301, S-13 requires TBACT because the estimated source risk exceeds a cancer risk of 1.0 in a million. In most cases, TBACT is the same as BACT in actual application.

The Air District does not have a BACT/TBACT Guideline for green waste stockpiles. Because BACT 1 is not identified, a BACT 2 analysis was performed. Since BACT 1 is not identified, the facility needs to comply with BACT 2 to meet TBACT.

San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4566, limits stockpile storage time to 10 days for operations processing green waste less than 100,000 tons/year of material and to 3 days (72 hours) for operations processing 100,000 tons/year or more. Other facilities within the Air District retain materials for up to 3 days of processing regardless of throughput. Therefore, 3 days is the maximum achieved in practice duration for stockpile storage time. The facility has agreed to limit stockpile storage time to 48 hours and will be listed as a requirement in the permit conditions. Therefore, the green waste stockpiles will satisfy TBACT for POC control.

CUMULATIVE INCREASE

The table below summarizes the cumulative increase in criteria pollutant emissions from this application. Emissions from S-4 and S-5 loss of exemption sources are not included in the facility's cumulative increase.

Table 6. Plant Cumulative Emissions Increase, Post 4/5/91

Pollutant	Current Emissions (tons/year)	Application Emissions (tons/year)	Cumulative Emissions (tons/year)
NOx	0.000	7.626	7.626
POC	0.012	5.823	5.835
CO	0.012	0.825	0.837
PM_{10}	1.150	4.209	5.359
$PM_{2.5}$	0.000	0.973	0.973
SO_2	0.000	0.018	0.018

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

In accordance with Regulation 2-2-301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, non-precursor organic compounds (NPOC), NOx, CO, SO_2, PM_{10} or $PM_{2.5}$.

NOx and CO emissions from S-5 exceed 10 lbs/day. Daily PM_{10} emissions for S-4 exceed 10 lbs/day. However, S-4 and S-5 are LOE sources. BACT is applicable to only new or modified sources. Therefore S-4 and S-5 are not subject to BACT. However, as shown in Table 1, daily POC emissions for S-13 are 34.2 lb/day which exceeds the 10 lb/day BACT threshold. Therefore, S-13 is subject to BACT.

Per Section 2-2-202, BACT is defined as an emission limitation, control device, or control technique applied at a source that is the most stringent of:

- the most effective device or technique successfully utilized,
- the most stringent emission limitation achieved by an emission control device or technique for the type of equipment comprising such a source,
- the most effective emission control limitation for the type of equipment comprising such a source that is contained in an approved implementation plan of any state, or
- the most effective control device or technique or most stringent emission limitation that is technologically feasible, taking into consideration cost-effectiveness, any ancillary health and environmental impacts, and energy requirements.

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These requirements are generally categorized as either technologically feasible and cost-effective (termed "BACT 1") or achieved-in-practice (termed "BACT 2").

BACT 2 is either equal to or less stringent than BACT 1. Because achieved-in-practice is required regardless of cost and BACT 1 is more stringent than BACT 2, an evaluation for what has been achieved-in-practice is first conducted. Because the Air District does not have a BACT/TBACT workbook for green waste stockpiles, and BACT 1 is not identified, a BACT 2 analysis was conducted. BACT 2 was determined to be a maximum of 3 days storage time for the stockpiles. The facility has agreed to comply with the 3-day storage time limitation by limiting the retention time to 48 hours of storage.

Achieved-in-Practice.
The Environmental Protection Agency's (EPA) BACT Clearinghouse and California Air Resources Board's (CARB) Clearinghouse did not have any determinations that were relevant to green waste stockpiles. South Coast Air Quality Management District (SCAQMD), Sacramento Metropolitan Air Quality Management District (SMAQMD), and San Diego Air Pollution Control District (SDAPCD) BACT determinations did not have any results for green waste stockpiles.

As mentioned above, the Air District does not have BACT Guidelines for green waste stockpiles. The proposed BACT 2 Achieved in Practice control technology as a limit on the duration of time that material resides in the stockpile. Under SJVAPCD's Rule 4566, green waste stockpile storage time is limited to 10 days for operations processing green waste less than 100,000 tons/year of material and to 3 days for operations processing 100,000 tons/year or more. However, other facilities within the Air District retain materials for up to 3 days of storage regardless of throughput. Therefore, 3 days is the maximum achieved in practice duration for stockpile storage time. The facility has agreed to limit stockpile storage time to 48 hours and will be listed as a requirement in the permit conditions. Therefore, the green waste stockpiles will satisfy BACT for POC control.

OFFSETS
Offset must be provided for any new or modified source at a facility that will have the potential to emit (PTE) more than 10 tons per year of NOx or POC, as specified in Regulation 2-2-302; 100 tons per year or more of $PM_{2.5}$, PM_{10} or sulfur dioxide, as specified in Regulation 2-2-303.

Emissions from S-4 and S-5 LOE sources are included in the facility's PTE.

Table 7. Potential to Emit for Facility 9902

Pollutant	Existing Annual Emissions (TPY)	Application Annual Emissions* (TPY)	Facility Annual Emissions* (TPY)	Offset Requirement (TPY)	Offset Required
NOx	0.000	7.626	7.626	>10	N
POC	0.018	5.823	5.841	>10	N
CO	0.019	0.825	0.844	-	N
PM_{10}	1.150	4.209	5.359	≥100	N
$PM_{2.5}$	0.000	0.973	0.973	≥100	N
SO_2	0.000	0.018	0.018	≥100	N

Since the facility permitted levels of NOx, POC, PM_{10}, $PM_{2.5}$, and SO_2 are below the offset triggers levels specified in Regulation 2-2, offsets are not required.

STATEMENT OF COMPLIANCE

Sources S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13, and S-14 are subject to and are expected to comply with all applicable requirements. Key requirements are listed below:

For S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13, and S-14:

Regulation 6, Rule 1: Particulate Matter – General Requirements

- Regulation 6-1-302 (Opacity Limitation – a person shall not emit from any source exceeds 20% opacity for more than 3 minutes in any hour).

- Regulation 6-1-303 (Ringelmann No. 2 Limitation - A person shall not emit for a period of more than three minutes in any hour, a visible emission that is a dark or darker than No. 2 chart on the Ringelmann Chart, or be equal to or greater than 40 percent opacity).

- Regulation 6-1-305 (Visible Particles - No person shall emit particles from any operation in sufficient number to cause annoyance to any other person where the particles are large enough to be visible).

- Regulation 6-1-311 (Total Suspended Particulate (TSP) – Weight Limits) – S-6 through S-14 have a PTE of less than 1,000 kg/year. Therefore, S-6 through S-14 are subject to 6-1-311.1 TSP limits. As shown in Table 8, S-6 through S-14 are expected to comply with the following TSP weight limits of Table 6-1-311.1.

- Regulation 6-1-311.2 (Total Suspended Particulate (TSP) – Weight Limits) – Effective 7/1/2020, Table 6-1-311.2 emissions limits apply to any source with a PTE greater than 1,000 kg/year. As shown in Table 8, S-4 has a TSP PTE of more than 1,000 kg/year. Therefore, S-4 is subject to and expected to comply with 6-1-311.2 limits.

Table 8. 6-1-311 Compliance Summary

Source	TSP Potential to Emit (kg/year)	TSP Potential to Emit (lb/hour)	Process Weight Rate (lb/hour)	TSP Emission Limit (lb/hour)	Complies?
S-4 Portable Grinder	1,702.3	1.86	200,000	20.6	Yes
S-6 Unprocessed Wood Stockpile	104.6	0.08	30,000	26.5	Yes
S-7 Sorted C&D Stockpile	81.0	0.10	75,000	40.0	Yes
S-9 Unprocessed Green Waste Stockpile	367.0	0.38	50,000	38.0	Yes
S-10 Finished Mulch & Compost Stockpile	47.7	0.35	45,000	35.9	Yes
S-11 Processed Wood Stockpile	90.1	0.07	30,000	26.5	Yes
S-12 Ground ADC Stockpile	84.1	0.08	75,000	40.0	Yes
S-13 Processed Green Waste Stockpile	363.9	0.38	50,000	38.0	Yes
S-14 Sorted Concrete Stockpile	71.7	0.08	75,000	40.0	Yes

Regulation 6, Rule 6: Particulate Matter – Prohibition of Trackout

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This facility operation is subject to and expected to comply with the trackout requirements of Regulation 6-6. The fugitive dust emissions from trackout are required to be cleaned, as necessary, to ensure haul roads do not exceed Ringelmann 0.5 or equivalent to 10% opacity for a period or aggregate periods of more than 3 minutes in any 60 minute period. These requirements will be imposed in permit conditions.

Regulation 7, Rule 1: Odorous Substances
Regulation 7-1 is only applicable to facilities with 10 or more odor complaints. Therefore, Regulation 7 does not apply to this facility. However, the permit conditions will include language that would require the facility to provide an Air District approved Odor Minimization Plan if the facility does become subject to Regulation 7-1 due to receiving 10 or more odor complaints within a year.

For S-5:

Airborne Toxic Control Measure for Portable Equipment Registration Program (PERP)
ATCM, 11/30/2018, §2451(b)(2), Title 17, CA Code of Regulations

According to § 93116.3 Requirements, Diesel PM standard, S-5 is required to meet Tier 3 or Tier 4 requirements. S-5 will meet the Environmental Protection Agency and California Air Resources Board (EPA/CARB) Tier 4 Off-road standard. Therefore, S-5 will meet the requirements of § 93116.3.

Regulation 6, Rule 1: Particulate Matter – General Requirements

- Regulation 6-1-302 (Opacity Limitation – a person shall not emit from any source exceeds 20% opacity for more than 3 minutes in any hour).

- Regulation 6-1-303 (*Ringelmann No. 2 Limitation - A person shall not emit for a period of more than three minutes in any hour, a visible emission that is a dark or darker than No. 2 chart on the Ringelmann Chart, or be equal to or greater than 40 percent opacity*).

- Regulation 6-1-305 (Visible Particles- No person shall emit particles from any operation in sufficient number to cause annoyance to any other person where the particles are large enough to be visible).

- Regulation 6-1-310.1 (Total Suspended Particulate (TSP) – Concentration Limits). Sections 6-1-310.1 limits TSP emissions to 0.15 grains/dscf of exhaust gas volume or less depending on the exhaust gas rate (see Table 6-1-310.2 for the corresponding TSP concentration limit). S-5 emits 313.56 kg PM_{10}/year. Assuming diesel PM_{10} emissions = TSP, S-5 is below the 1,000 kg/year TSP PTE threshold of 6-1-310.2. Therefore, S-5 is only subject to 6-1-310.1. As shown in the emission calculations in the table below, the certified particulate emission rate from S-5 is 0.03 grams per bhp-hour, which results in an outlet grain loading of 0.00621 gr/dscf. Since the emission rate is less than the 0.15 gr/dscf limit in Section 6-1-310, S-5 will comply with Regulation 6-1-310.1's TSP concentration limit. Non-road portable engines are not subject to Air District regulations that contain emission limits per Federal Clean Air Act Section 209(e).

Table 9. Section 6-1-310 Emissions Calculations

Engine Maximum Exhaust Flow Rate*	193.7	acfm	=	96.05	dscf/min	=	5,762.832	dscf/hr

Engine Maximum Exhaust Temperature	475	F						
Water (H2O) Content (%)	12.5							
PM10 abatement for Engine	0							
Engine PM10 emissions**	0.08	lb/hr	=	313.56	kg/yr	=	35.79	gr/hr
Are Engine PM10 Emissions > 1000 kg/yr?	NO							
Applicable Regulation 6-1-310 section?	6-1-310.1							
TSP Concentration for Engine	0.00621	gr/dscf						
Corresponding Regulation 6-1 TSP Limit	0.15	gr/dscf						
PM10 emissions < Corresponding Reg 6-1 TSP Limit?	**YES**							

* dscfm = acfm x (460 R + 70 F)/(460 R + Engine Maximum Exhaust Temperature in F) x (1- water (H2O Content))

Regulation 9, Rule 1: Sulfur Dioxide

Section 209(e) of the Federal Clean Air Act and Appendix A of Subpart A of 40 CFR 89, states "or political subdivisions" is not allowed to impose emission control on non-road engines. Therefore, the on-site portable non-road engine S-5, as defined by USEPA, is not subject to Regulation 9-1.

Regulation 9, Rule 8: Nitrogen Oxides And Carbon Monoxide from Stationary Internal Combustion Engines

Section 209(e) of the Federal Clean Air Act and Appendix A of Subpart A of 40 CFR 89, states "or political subdivisions" is not allowed to impose emission control on non-road engines. Therefore, the on-site portable non-road engine S-5, as defined by USEPA, is not subject to Regulation 9-8.

New Source Performance Standards (NSPS)

40 CFR 60, Subpart IIII (*Stationary Compression Ignition Internal Combustion Engines*)
According to the "Applicable Requirements for Portable Engines" policy dated 5/8/2020, the on-site portable non-road engine S-5, as defined by US EPA, is not subject to Subpart III.

National Emissions Standards for Hazardous Air Pollutants (NESHAP)

40 CFR 63, Subpart ZZZZ (*Stationary Reciprocating Internal Combustion Engines (RICE)*)
According to the "Applicable Requirements for Portable Engines" policy dated 5/8/2020, the on-site portable non-road engines S-5, as defined by US EPA, is not subject to BACT Subpart ZZZZ.

California Environmental Quality Act (CEQA)

In accordance with Section 15082 of the CEQA Guidelines, an Environmental Impact Report (EIR) was prepared for the Mt. Diablo Resource Recovery Park (MDRRP, now Contra Costa Waste Services Inc.) Project in December 2014 and was certified by the CEQA Lead Agency City of Pittsburg (City) on May 26, 2015 (SCH No. 2011052053). In June 2021, the applicant submitted an amendment to their initial EIR to the City to process materials within buildings requiring air filtering systems to reduce air quality impacts and an increase from the existing Use Permit (UP) development of a 295,659 square feet of building to a total of 570,580 square feet of development. There was no change to the 5,500 tons/day total amount of material processed at the facility approved in the May 26, 2015 EIR. The intent of the project is to comply with both current and anticipated state and federal standards regulating the processing of waste material. The City adopted the second addendum for this project on September 20, 2021 and filed a Notice of Determination (NOD) to approve the project on October 4, 2021.

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AB 1826 requires the handling of organic and food waste to be carried out within a building by January 2021. As mentioned in the background of the project, MDRR intends to move their green waste stockpiles and future food waste composting operations within future building enclosure A-3. Currently, the processing of organic material is outdoors and is not combined with food waste.

This permit application is categorically exempt from CEQA because the project has no potential for causing a significant adverse environmental impact, or the application is categorically exempt from CEQA under CEQA Guidelines Sections 15300 to 15333, specifically 15301 *Existing Facilities*.

In making the determination that this application is categorically exempt: 1) the Air District reviewed the CEQA-related Information from the applicant (Regulation 2-1-426-1) indicating that there is no potential for a significant adverse environmental impact from the project; 2) a formal health risk assessment was either not required or was approved by the Air District; and 3) the Air District determined there are no unusual circumstances, or that the cumulative impacts from successive projects of the same type in the same place do not result in significant adverse environmental impacts.

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 over 1,000 feet from the nearest K-12 school and is therefore not subject to the school public notification requirements. This project is located within an Overburdened Community and required an HRA. Therefore, this project is subject to the public notification requirements of 2-1-412(ii).

A public notice will be sent to all addresses within 1,000 feet of the facility. There will be a 30-day public comment period.

PERMIT CONDITIONS

The owner/operator of S-4 Portable Grinder and S-5 Portable Prime Diesel Engine are subject to the following conditions.

Permit Condition #100799

1. The owner/operator of S-5 Portable Prime Diesel Engine has been given a permit for a portable source and is subject to the CARB Portable Engine ATCM.
   [Basis: CARB ATCM for Portable Diesel Engines]

2. The owner/operator of S-5 Portable Prime Diesel Engine shall not store or operate the sources in one location (footprint) for more than 12 consecutive months, following the date of initial operation. The owner/operator shall not move the equipment and then return it to the same location in an attempt to circumvent the portable equipment time requirement.
   [Basis: CARB ATCM for Portable Diesel Engines]

3. The owner/operator shall fire S-5 Portable Prime Diesel Engine exclusively with CARB diesel fuel.
   [Basis: Cumulative Increase, Section 93116.3(a) of the ATCM for Portable Diesel Engines]

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4. The owner/operator of S-4 Portable Grinder and S-5 Portable Prime Diesel Engine shall not operate for more than 8 hours during any calendar day and 2,496 hours in any consecutive 12-month period.
   [Basis: Cumulative Increase]

5. The owner/operator of S-4 Portable Grinder shall not exceed the following throughput limits during any calendar day and/or consecutive 12-month period:

Material	Throughput Limit
Construction & Demolition (C&D)	400 tons/day; 70,000 tons/year
Unprocessed Green Waste	176 tons/day; 52,200 tons/year
Unprocessed Wood	120 tons/day; 34,200 tons/year

   [Basis: Cumulative Increase]

6. The owner/operator of S-4 shall ensure visible particulate emissions from S-4 and haul roads do not exceed Ringelmann 0.5 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 6-1-301, 6-1-302]

7. The owner/operator of S-4 shall abate the particulate matter (PM_{10}) emissions from haul roads, as needed, using A-1 Watering Truck to maintain compliance with Part 6 of this condition.
   [Basis: Cumulative Increase]

8. The owner/operator shall equip S-5 Portable Prime Diesel Engine with either:
   a. a non-resettable totalizing meter that measures hours of operation for the engine; or
   b. a non-resettable fuel usage meter, the maximum hourly fuel rate shall be used to convert fuel usage to hours of operation.

   [Basis: Cumulative Increase]

9. To determine compliance with the above conditions, the owner/operator of S-4 and S-5 shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions.
   a. Throughput of each material processed at S-4 on a daily basis.
   b. The daily throughput of material shall be totaled on a monthly and consecutive 12-month basis.
   c. Daily hours of operation of S-4 and S-5.
   d. Daily hours of operation of S-4 and S-5 shall be totaled on a monthly and consecutive 12-month basis.
   e. Daily consumption of diesel fuel (in gallons) used at S-5.
   f. Amount of diesel fuel in part e) shall be totaled on a rolling consecutive 12-month basis.

   The owner/operator shall record all records in an Air District-approved log. The owner/operator shall retain the 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 Regulations.

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

End of Conditions

The owner/operator of S-6 Unprocessed Wood Stockpile, S-7 Sorted C&D Stockpile, S-11 Processed Wood Stockpile, S-12 Ground ADC Stockpile, and S-14 Sorted Concrete Stockpile are subject to the following conditions. These stockpiles are inorganic and only PM emissions are associated with these stockpiles.

Permit Condition #100800

1. The owner/operator of S-6 Unprocessed Wood Stockpile, S-7 Sorted C&D Stockpile, S-11 Processed Wood Stockpile, S-12 Ground ADC Stockpile, and/or S-14 Sorted Concrete Stockpile shall not exceed the following throughputs during any calendar day and/or any consecutive 12-month period:

Material	Throughput Limit
Unprocessed Wood	120 tons/day; 34,200 tons/year
Sorted Construction & Demolition (C&D)	300 tons/day; 70,000 tons/year
Processed Wood	120 tons/day; 34,200 tons/year
Ground Alternative Daily Cover (ADC)	400 tons/day; 70,000 tons/year
Sorted Concrete	300 tons/day; 70,000 tons/year

[Basis: Cumulative Increase]

2. The owner/operator of S-6, S-7, S-11, S-12, and/or S-14 shall not exceed the following acres of land for each stockpile:

S-6 Unprocessed Wood Stockpile: 0.10 acres
S-7 Sorted C&D Stockpile: 0.13 acres
S-11 Processed Wood Stockpile: 0.17 acres
S-12 Ground ADC Stockpile: 0.35 acres
S-14 Sorted Concrete: 0.04 acres

[Basis: Cumulative Increase]

3. The owner/operator of S-6, S-7, S-11, S-12, and/or S-14 shall ensure visible particulate emissions from S-6, S-7, S-11, S-12, S-14 and haul roads do not exceed Ringelmann 0.5 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 6-1-301, Regulation 6-1-302]

4. The owner/operator of S-6, S-7, S-11, S-12, and/or S-14 shall abate the particulate matter (PM_{10}) emissions from S-6, S-7, S-11, S-12, S-14 and haul roads using A-1 Watering Truck as necessary to maintain compliance with Part 3 of this condition.
[Basis: Cumulative Increase, Regulation 6-1-301, 6-1-302, and 6-6]

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5. To determine compliance with the above parts, the owner/operator of S-6, S-7, S-11, S-12, and S-14 shall maintain the following records and provide all of the data necessary to evaluate compliance with the above parts including the following information:

    a. Daily throughput and type of materials.
    b. The daily throughput of material shall be totaled on a monthly and consecutive 12-month basis.
    c. The occupied area of each stockpile on a 12-month basis.

    The owner/operator shall keep this log on site for at least two years from the date of entry and make it available to Air District staff upon request.
    [Basis: Recordkeeping, Regulation 2-1-403]

End of Conditions

The owner/operator of S-9 Unprocessed Green Waste Stockpile, S-10 Finished Mulch & Compost Stockpile, and S-13 Processed Green Waste Stockpile are subject to the following conditions. Finished Mulch and Compost is acquired in limited quantities from third-party sources and made available to the public to support the SB1383 initiative. These stockpiles are organic and only POC emissions are associated with these stockpiles.

Permit Condition #100801

1. The owner/operator of S-9 Unprocessed Green Waste Stockpile, S-10 Finished Mulch & Compost Stockpile, and/or S-13 Processed Green Waste Stockpile shall not exceed the following throughputs during any calendar day and/or any consecutive 12-month period:

Material	Throughput Limit
Unprocessed Green Waste	176 tons/day; 52,200 tons/year
Finished Mulch & Compost	180 tons/day; 1,700 tons/year
Processed Green Waste	176 tons/day; 52,200 tons/year

    [Basis: Cumulative Increase, Regulation 2-5, BACT]

2. Processing Time Limit: The owner/operator of S-9 Unprocessed Green Waste Stockpile, S-10 Finished Mulch & Compost Stockpile, and/or S-13 Processed Green Waste Stockpile shall process the material within the following time frames from when the material is placed into the stockpile. The owner/operator shall be subject to the record keeping requirements in Part 17.

Source No.	Description	Processing Time Limit
S-9	Unprocessed Green Waste Stockpiles	2 days
S-13	Processed Green Waste Stockpiles	2 days

    [Basis: Cumulative Increase, BACT, TBACT]

3. The owner/operator shall ensure that POC emissions for S-9 shall not exceed 0.023 pounds per wet ton of material processed, 0.172 pounds per hour, and/or 1,223 pounds per consecutive 12-month period.
    [Basis: Cumulative Increase, Regulation 2-5]

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4. The owner/operator shall ensure that POC emissions for S-10 shall not exceed 0.02 pounds per wet ton of material processed, 0.15 pounds per hour, and/or 34 pounds per consecutive 12-month period.
[Basis: Cumulative Increase]

5. The owner/operator shall ensure that POC emissions for S-13 shall not exceed 0.1943 pounds per wet ton of material processed, 1.42 pounds per hour, and/or 10,143 pounds per consecutive 12-month period.
[Basis: Cumulative Increase, Regulation 2-5]

6. The owner/operator of S-9 Unprocessed Green Waste Stockpile shall not exceed any of the following limits in any hour and/or consecutive 12-month period:

    - Acetaldehyde: 5.0E-02 lb/hr, 3.5E+02 lb/yr
    - Ammonia: 6.4E-03 lb/hr, 4.5E+01 lb/yr
    - IPA: 6.7E-05 lb/hr, 4.8E-01 lb/yr
    - Methanol: 5.3E-03 lb/hr, 3.7E+01 lb/yr
    - Naphthalene: 7.2E-05 lb/hr, 5.1E-01 lb/yr
    - Propylene: 2.5E-04 lb/hr, 1.8E+00 lb/yr

    a. Any toxic air contaminants not listed in Part 6 detected during a source test shall not equal or exceed the respective trigger levels contained in Regulation 2-5.
    b. If the owner/operator of S-9 exceeds any of the limits in Part 6, the exceedances shall not be considered a violation if the owner/operator can demonstrate compliance with the requirements of Regulation 2-5.
    c. If the emissions limits per Part 6 comply with the requirements of Regulation 2-5, the owner/operator may submit a written request to the Air District to revise the TAC emission limits in Part 6 within 60 days of receipt of approved results from the source tests conducted provided that the provisions within 6b are satisfied.

    [Basis: Regulation 2-5]

7. The owner/operator of S-10 Finished Mulch & Compost Stockpiles shall not exceed any of the following limits in any hour and/or consecutive 12-month period:

    - Acetaldehyde: 2.8E-03 lb/hr, 6.3E-01 lb/yr
    - Ammonia: 1.7E-02 lb/hr, 3.4E+00 lb/yr
    - IPA: 2.2E-04 lb/hr, 5.0E-02 lb/yr
    - Methanol: 1.2E-04 lb/hr, 2.6E-02 lb/yr
    - Naphthalene: 4.7E-04 lb/hr, 1.1E-01 lb/yr
    - Propylene: 1.0E-02 lb/hr, 2.3E+00 lb/yr

    a. Any toxic air contaminants not listed in Part 7 detected during a source test shall not equal or exceed the respective trigger levels contained in Regulation 2-5.
    b. If the owner/operator of S-10 exceeds any of the limits in Part 7, the exceedances shall not be considered a violation if the owner/operator can demonstrate compliance with the requirements of Regulation 2-5.
    c. If the emissions limits per Part 7 comply with the requirements of Regulation 2-5, the owner/operator may submit a written request to the Air District to revise

the TAC emission limits in Part 7 within 60 days of receipt of approved results from the source tests conducted provided that the provisions within 7b are satisfied.

[Basis: Regulation 2-5]

8. The owner/operator of S-13 Processed Green Waste Stockpiles shall not exceed any of the following limits in any hour and/or consecutive 12-month period:

    - Acetaldehyde: 5.1E-02 lb/hr, 3.6E+02 lb/yr
    - Ammonia: 4.3E-02 lb/hr, 1.3E+01 lb/yr
    - IPA: 3.9E-02 lb/hr, 2.8E+02 lb/yr
    - Methanol: 3.5E-01 lb/hr, 2.5E+03 lb/yr
    - Naphthalene: 3.7E-03 lb/hr, 2.7E+01 lb/yr
    - Propylene: 5.1E-04 lb/hr, 3.7E+00 lb/yr

    a. Any toxic air contaminants not listed in Part 8 detected during a source test shall not equal or exceed the respective trigger levels contained in Regulation 2-5.
    b. If the owner/operator of S-13 exceeds any of the limits in Part 8, the exceedances shall not be considered a violation if the owner/operator can demonstrate compliance with the requirements of Regulation 2-5.
    c. If the emissions limits per Part 8 comply with the requirements of Regulation 2-5, the owner/operator may submit a written request to the Air District to revise the TAC emission limits in Part 8 within 60 days of receipt of approved results from the source tests conducted provided that the provisions within 8b are satisfied.

    [Basis: Regulation 2-5]

9. The owner/operator of S-9, S-10, and/or S-13 shall not exceed the following acres of land for each stockpile:

    S-9 Unprocessed Green Waste Stockpile: 0.12 acres
    S-10 Finished Mulch & Compost Stockpiles: 0.06 acres
    S-13 Processed Green Waste Stockpiles: 0.16 acres

    [Basis: Cumulative Increase]

10. The owner/operator of S-9, S-10, and/or S-13 shall ensure visible dust emissions from any operation occurring outside the A-3 building housing these sources shall not exceed a Ringelmann 0.5 or result in fallout on adjacent property in such quantities as to cause a public nuisance per Regulation 1-301. To ensure compliance with this Part, the owner/operator shall visually observe all material recovery facility-related (MRF) material handling operations around the MRF building daily by following applicable procedures in Regulation 6-1-601 and shall immediately initiate corrective actions, if any visible dust emissions are detected that persist for longer than 3 minutes in an hour.
    [Basis: Regulations 1-301, 6-1-601, 6-1-301, 6-1-305, and Cumulative Increase]

11. The owner/operator of S-9, S-10, and/or S-13 shall operate and maintain in good condition water trucks and/or sweeping trucks with built-in water spray inside and outside of all buildings, indoor tipping floor and tipping floor truck entrance driveways, turnaround yard,

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and roadways to remove debris and organic residues at least 2 times per day (especially when trucks exit the facility).
[Basis: Cumulative Increase]

12. The owner/operator of S-9, S-10, and/or S-13 shall maintain all paved and unpaved roadways associated with this facility in a clean or wetted condition, by using A-1 Watering Truck to suppress dust. Vehicle speed inside the facility shall not exceed 15 MPH. When on-site, all vehicles hauling material shall be enclosed/tarped and the material shall remain covered at all times while in the vehicle. All refuse trucks shall be maintained in condition to prevent leakage of solid or liquid material. Trucks shall be cleared of any debris to minimize nuisance emissions at the end of each working day. The owner/operator of S-9 and/or S-13 shall ensure that all haul trucks that travel on-site shall not exceed the following limits:

    a. Mean vehicle weight of inbound/outbound haul trucks shall not exceed 28.75 tons.
    b. The distance travelled by haul trucks on unpaved roads shall not exceed 4.5 miles per day and/or 1,649.8 miles per consecutive twelve-month period.

    [Basis: Regulation 1-301 and Regulation 6-1-305]

13. The owner/operator of S-9, S-10, and/or S-13 shall ensure dry, dusty material from the material handling operations such as loading, unloading, stockpiling, conveying, sorting, screening, and other separation processes be abated by A-1 Water Truck as necessary to comply with Part 10.
    [Basis: Regulations 6-1-301 and 6-1-305]

14. Within 90 days of issuance of the Authority to Construct permit, the owner/operator of S-9, S-10, and/or S-13 shall develop and maintain an Air District approved organic emissions and odor management plan (OMP) detailing all processes and procedures, equipment, management practices, abatement and control measures that are employed or are scheduled to be implemented to minimize fugitive emissions of POC and odors. The owner/operator shall correct any identified deficiencies and resubmit the proposed OMP within 45 days of Air District comments. The owner/operator shall revise and continue to re-submit the OMP for APCO review until it is approved. The owner/operator shall update the OMP as needed to address any confirmed odor complaints and shall submit an updated OMP to the APCO within 45 days of notification by the APCO. The updated OMP shall be made available for Air District inspection upon request. The updated OMP shall be certified and signed by a Responsible Manager and shall include, but not be limited to:

    a. Table of contents
    b. Company Description
    c. Company organizational chart and schedule of management operators
    d. Description of facility operations
    e. Management practices to reduce organic emissions and odors. A description and evaluation of odor prevention measures.
    f. Description of abatement and control equipment
    g. Technical data that includes a process flow diagram and facility layout/floor plan that provides a complete description of facility operations, including locations of all processing equipment (exempt and permitted equipment) and associated monitoring and control equipment.
    h. Description of all employee training to minimize organic emissions and odors and frequency of any ongoing training.

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i. A description of the equipment, processes and procedures installed or implemented within the last 5 years to reduce emissions, including the year of installation for each device.
j. A description and schedule of future plans to implement additional organic emissions and odor reduction measures.
k. Information pertinent to the process operating parameters requested by the APCO as necessary to enable determination of compliance with applicable provisions of this permit. The Air District may administratively amend these permit conditions in order to incorporate any requirement contained within the approved BMP that are deemed necessary for compliance by the Air District.
l. Correction actions taken to prevent future repetition.
m. Failure to implement and maintain equipment, processes, procedures or organic emissions and odor prevention measures in accordance with the APCO approved OMP is a violation of this permit.

[Basis: Regulation 1-301 and Regulation 7-1]

15. The owner/operator of S-9, S-10, and/or S-13 shall update the OMP and submit an updated plan to the APCO within 12 months following the approval of the initial plan and annually thereafter. The owner or operator shall review the OMP and update the plan to incorporate any new prevention measures to further reduce organic emissions and odors. The updates shall be approved and signed by a Responsible Manager. The APCO shall approve the updated OMP if it is determined that the OMP meets the requirements of this permit, and shall provide written notification to the owner or operator. The facility is responsible to provide an updated OMP that meets the requirements of Part 13. The Air District may administratively revise these permit conditions to incorporate any requirement contained within the approved BMP that are deemed necessary for compliance by the Air District.
[Basis: Regulation 1-301, Regulation 2-1-403, and Regulation 7-1]

16. If the owner/operator of S-9, S-10, and/or S-13 receives more than two (2) Notices of Violation (NOVs) for "public nuisance" from the Air District in any consecutive 12-month period and the MRF is confirmed to be the source of the organic emissions and nuisance odors, the owner/operator shall propose additional control measures to the Air District in an updated OMP within 60 days of the second NOV, including implementation timelines for the additional control measures. Organic emissions and odor control measures may include one or more of the measures suggested in the OMP or other measures agreed upon by the owner/operator and the Air District. If notified by the Air District, the owner/operator shall submit a permit application to the Air District to modify the Permit to Operate and/or this permit condition within 30 days of Air District notification.
[Basis: Regulations 1-301 and 2-1-403]

17. The owner/operator of S-9, S-10, and/or S-13 shall maintain the following records:
    a. Document the active exit locations monitored each workday;
    b. Document each occasion when the trackout exceeds cumulative 25 linear feet and all trackout control and cleanup actions initiated as a result of monitoring Part a of this condition; and
    c. Maintain the records required by Part a and Part b of this condition for two years, in electronic, hard paper copy or logbook format, and make them available to Air District staff upon request.

[Basis: Regulation 6-6-501]

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18. The owner/operator of S-9, S-10, and/or S-13 shall maintain the following records:
    a. On a daily basis: Documentation of the amount of material received at and removed from each source, processing times, and operating hours as needed to demonstrate compliance with the throughput, processing time, and emissions limits listed in Parts 1-8.
    b. On a monthly basis: Summarize process throughput rates for each month and for each consecutive rolling twelve-month period to demonstrate compliance with the throughput, processing time, and emissions limits listed in Parts 1-8.
    c. Maintain records of vehicle trip data (in vehicle miles traveled per day, VMT/day) for vehicles used for green waste, transfer, processing, and pickup; paved and unpaved road distances; vehicle fleet weights; and associated emissions calculations.
    d. Maintain daily records of the number of trucks that travel on-site.

    The owner/operator shall maintain all records in an Air District-approved log. The owner/operator shall retain the records for at least five years from the date of entry and make them available for inspection by Air District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable Air District Regulations.
    [Basis: Cumulative Increase, Recordkeeping]

End of Conditions

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 an Overburdened Community and required an HRA, 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 a Permit to Operate for the following sources:

S-4 Portable Grinder, Powered by Portable Prime Diesel Engine S-5
Make: Morbark, Model: 7600
Max C&D Throughput: 38 tons/hour, 400 tons/day, 70,000 tons/year
Max Green Waste Throughput: 25 tons/hour, 176 tons/day, 52,200 tons/year
Max Wood Throughput: 15 tons/hour, 120 tons/day, 34,200 tons/year

S-5 Portable Prime Diesel Engine, Powering S-4 Grinder
Make: Caterpillar, Model: C32, Model Year: 2019
1,200 bhp, 8.32 MMBtu/hr

S-6 Unprocessed Wood Stockpile
Max Throughputs: 15 tons/hour, 120 tons/day, 34,200 tons/year

S-7 Sorted C&D Stockpile
Max Throughputs: 38 tons/hour, 300 tons/day, 70,000 tons/year

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S-9 Unprocessed Green Waste Stockpile, abated by A-3
Max Throughputs: 25 tons/hour, 176 tons/day, 52,200 tons/year

S-10 Finished Mulch & Compost Stockpile
Max Throughputs: 23 tons/hour, 180 tons/day, 1,700 tons/year

S-11 Processed Wood Stockpile
Max Throughputs: 15 tons/hour, 120 tons/day, 34,200 tons/year

S-12 Ground ADC Stockpile
Max Throughputs: 38 tons/hour, 400 tons/day, 70,000 tons/year

S-13 Processed Green Waste Stockpile, abated by A-3
Max Throughputs: 25 tons/hour, 176 tons/day, 52,200 tons/year

S-14 Sorted Concrete Stockpile
Max Throughputs: 38 tons/hour, 300 tons/day, 70,000 tons/year

Abated by

A-3 Building Enclosure

Prepared by: Bao Trinh, Senior Air Quality Engineer Date: 03/12/2026

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Appendix A: Detailed Calculations

Emissions from S-4 Portable Grinder

S-4 grinds alternative daily cover, construction and demolition (C&D) waste, non-compost green waste, and wood. CalRecycle defines C&D material as a composition of concrete, brick, treated wood, and dirt. Inbound material is dropped from a loading truck onto a stockpile. Front end loaders scoop material from the stockpile and feed the material to S-4. S-4 grinds the material and drops it into a finished material stockpile. From there, another front end loader directly loads the finished material onto an outbound truck that hauls the finished material off site.

Basis:

- Per Chapter 11.13 for Tub Grinders of BAAQMD Permit Handbook, water suppression will provide 50% abatement of PM emissions
- Emission Factor for "Log Debarking AP-42" is from a previous edition of AP-42, Chapter 10.3 Plywood Veneer and Layout Operations, Table 10.3-1 (0.024 lb TSP/ton)
- Approximately 60% of TSP emissions are assumed to be PM_{10} emissions based on Chapter 11.13 for Tub Grinders of BAAQMD Permit Handbook. (0.024 lb TSP/ton * 0.60 lb PM_{10}/lb TSP = 0.0144 lb PM_{10}/ton)
- Approximately 50% of PM_{10} emissions are assumed to be $PM_{2.5}$ emissions based on Chapter 11.13 for Tub Grinders of BAAQMD Permit Handbook. (0.0144 lb TSP/ton * 0.50 lb $PM_{2.5}$/lb TSP = 0.0072 lb $PM_{2.5}$/ton)

Table 1. S-4 Portable Grinder PM_{10} Emissions

Material Processed	Maximum Hourly Throughput (ton/hour)	Maximum Daily Throughput (ton/day)	Maximum Annual Throughput (ton/year)	Emission Factor (lb PM_{10}/ton)	Hourly Emission Rate (lb/hour)	Daily Emission Rate (lb/day)	Annual Emission Rate (lb/year)	Annual Emission Rate (ton/year)
C&D	38	400	70,000	0.0144	0.5	5.8	1,008	0.504
Green Waste	25	176	52,200	0.0144	0.4	2.5	752	0.376
Wood	15	120	34,200	0.0144	0.2	1.7	492	0.246
S-4 Grinder Total	**--**	**--**	**--**	**--**	**1.1**	**10.0**	**2,252**	**1.126**

Table 2. S-4 Portable Grinder $PM_{2.5}$ Emissions

Material Processed	Maximum Hourly Throughput (ton/hour)	Maximum Daily Throughput (ton/day)	Maximum Annual Throughput (ton/year)	Emission Factor (lb $PM_{2.5}$/ton)	Hourly Emission Rate (lb/hour)	Daily Emission Rate (lb/day)	Annual Emission Rate (lb/year)	Annual Emission Rate (ton/year)
C&D	38	400	70,000	0.0072	0.27	2.9	504	0.252
Green Waste	25	176	52,200	0.0072	0.18	1.3	376	0.188
Wood	15	120	34,200	0.0072	0.11	0.9	246	0.123
S-4 Grinder Total	**--**	**--**	**--**	**--**	**0.56**	**5.0**	**1,126**	**0.563**

Stockpile Material Handling (S-6, S-7, S-9, S-10, S-11, S-12, S-13, and S-14)

The clean wood material is dumped into the S-6 Unprocessed Wood Stockpile. The sorted concrete is dumped into the S-14 Sorted Concrete Stockpile where it is transferred offsite. The rest of the C&D material is moved to the S-7 Sorted C&D Stockpile. Front end loaders deliver material from S-6 Unprocessed Wood and S-7 Sorted C&D stockpiles into S-4 Grinder where the

material is ground then dropped onto S-11 Process Wood and S-12 Ground ADC stockpiles, respectively.

The green waste material is brought in via self-hauling from the public or roll off boxes and dumped into S-9 Unprocessed Green Waste Stockpile. Front end loaders feed the unprocessed green waste material to S-4 Grinder which drops the ground green waste onto the S-13 Processed Green Waste Stockpile. The finished materials are hauled offsite.

The following equation was used for estimating particulate emissions during a batch drop of aggregate materials, such as adding material to stockpile or removing it from a stockpile and dropping it into a truck.

$$E = k * (0.0032)\left[\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}\right]$$

Basis:

- The particulate matter emission factor for handling of the material is from AP-42 Section 13.2.4 Aggregate Handling and Storage Piles Table 13.2.4-1 November 2006.
- From Table 13.2.4-1, silt content for miscellaneous landfill fill materials is about 11% and per Chapter 11.15 *Material Recovery Operations* of the BAAQMD Permit Handbook.
- 19.3% material moisture content is used for C&D waste per Chapter 11.15 *Material Recovery Operations* of the BAAQMD Permit Handbook.
- 4.8% material moisture content is used for green waste stockpiles and finished compost/mulch stockpile per Chapter 11.16 *Composting Operations* of the BAAQMD Permit Handbook.
- Water sprays provide 70% abatement.

Table 3. Material Handling Emission Factors

Material	Parameter	Controlled PM_{10} Emission Factor (lb/ton)	Controlled $PM_{2.5}$ Emission Factor (lb/ton)
Wood	**Emission Factor (lb/ton)**	**0.0004**	**0.00006**
	k = particle size multiplier	0.35	0.053
	U = max wind speed (mph)	34.5	34.5
	M = material moisture content (%)	11	11
C&D/Ground ADC/Sorted Concrete	**Emission Factor (lb/ton)**	**0.0002**	**0.00003**
	k = particle size multiplier	0.35	0.053
	U = mean wind speed (mph)	34.5	34.5
	M = material moisture content (%)	19.3	19.3
Green Waste	**Emission Factor (lb/ton)**	**0.0012**	**0.0002**
	k = particle size multiplier	0.35	0.053
	U = max wind speed (mph)	34.5	34.5
	M = material moisture content (%)	4.8	4.8
Finished Compost & Mulch	**Emission Factor (lb/ton)**	**0.0012**	**0.00018**
	k = particle size multiplier	0.35	0.053
	U = max wind speed (mph)	34.5	34.5
	M = material moisture content (%)	4.8	4.8

Table 6 and 7 below summarize the PM emissions occurring from material handling.

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Basis:

- Summarized emissions are doubled due to the assumption of 2 total drop points: 1 from the front end loader to the S-4 Grinder and 1 from the S-4 Grinder to the stockpile.

Table 4. Material Handling PM_{10} Emissions Summary

Source	Emission Factor (lb/ton)	Max Hourly Throughput (ton/hour)	Max Daily Throughput (ton/day)	Max Annual Throughput (ton/year)	Hourly PM_{10} Emissions Rate (lb/hour)	Daily PM_{10} Emissions Rate (lb/day)	Annual PM_{10} Emissions Rate (lb/year)	Annual PM_{10} Emissions Rate (ton/year)
S-6 Unprocessed Wood	0.0004	15	120	34,200	0.01	0.1	26	0.013
S-11 Processed Wood	0.0004	15	120	34,200	0.01	0.1	26	0.013
S-7 Sorted C&D	0.0002	38	300	70,000	0.01	0.1	24	0.012
S-9 Unprocessed Green Waste	0.0012	25	176	52,200	0.06	0.5	136	0.068
S-13 Processed Green Waste	0.0012	25	176	52,200	0.06	0.5	140	0.070
S-10 Finished Mulch & Compost	0.0012	23	180	1,700	0.05	0.4	4	0.002
S-12 Ground ADC	0.0002	38	400	70,000	0.01	0.1	24	0.012
S-14 Sorted Concrete	0.0002	38	300	70,000	0.01	0.1	24	0.012

Table 5. Material Handling $PM_{2.5}$ Emissions Summary

Source	Emission Factor (lb/ton)	Max Hourly Throughput (ton/hour)	Max Daily Throughput (ton/day)	Max Annual Throughput (ton/year)	Hourly $PM_{2.5}$ Emissions Rate (lb/hour)	Daily $PM_{2.5}$ Emissions Rate (lb/day)	Annual $PM_{2.5}$ Emissions Rate (lb/year)	Annual $PM_{2.5}$ Emissions Rate (ton/year)
S-6 Unprocessed Wood	0.00006	15	120	34,200	0.002	0.01	4	0.002
S-11 Processed Wood	0.00006	15	120	34,200	0.002	0.01	4	0.002
S-7 Sorted C&D	0.00003	38	300	70,000	0.002	0.02	4	0.002
S-9 Unprocessed Green Waste	0.0002	25	176	52,200	0.009	0.07	21	0.010
S-13 Processed Green Waste	0.0002	25	176	52,200	0.009	0.07	21	0.010
S-10 Finished Mulch & Compost	0.0002	23	180	1,700	0.008	0.07	0.6	0.0003
S-12 Ground ADC	0.00003	38	400	70,000	0.002	0.02	4	0.002
S-14 Sorted Concrete	0.00003	38	300	70,000	0.002	0.02	4	0.002

Fugitive Dust Emissions from Wind Erosion

Wind erosion emissions can be estimated using the following equation from BAAQMD Permit Handbook Chapter 11.16 Composting Operations.

$$Wind\ Erosion\ Emissions\ (TSP) = \left(\frac{0.38\ tons\ TSP}{acre - year}\right) \times (\#\#\ acre) \times \left(\frac{2{,}000\ lb}{ton}\right) \div \left(\frac{365\ days}{year}\right) \times (1 - 70\%)$$

Particle Size Multiplier (PM_{10}) = 0.35 x (TSP lb/day)
Particle Size Multiplier ($PM_{2.5}$) = 0.053 x (TSP lb/day)

Basis:

- Stockpile acres provided by the applicant
- AP-42 Table 11.9-4 specifies an emission factor of 0.38 tons of total suspended solids (TSP) per acre per year.
- The particle size multiplier used to calculate PM_{10} and $PM_{2.5}$ is based on the multiplier from AP-42 Section 13.2.4-1.
- An abatement factor of 70% will be applied to the emission calculations due to the high moisture content from food waste.
- To obtain annual PM_{10} emissions, multiply daily emissions by 365

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Table 6. Fugitive Dust PM Emissions from Wind Erosion Summary

Source	Acres	Hourly PM_{10} Emissions Rate (lb/hour)	Daily PM_{10} Emissions Rate (lb/day)	Annual PM_{10} Emissions Rate (lb/year)	Annual PM_{10} Emissions (tons/year)	Hourly $PM_{2.5}$ Emissions Rate (lb/hour)	Daily $PM_{2.5}$ Emissions Rate (lb/day)	Annual $PM_{2.5}$ Emissions Rate (lb/year)	Annual $PM_{2.5}$ Emissions (tons/year)
S-7 Sorted C&D	0.13	0.003	0.1	30	0.015	0.0002	0.004	1.6	0.001
S-9 Unprocessed Green Waste	0.12	0.003	0.1	27	0.014	0.0002	0.004	1.5	0.001
S-13 Processed Green Waste	0.16	0.004	0.1	36	0.018	0.0002	0.005	1.9	0.001
S-6 Unprocessed Wood	0.10	0.003	0.1	23	0.011	0.0001	0.003	1.2	0.001
S-11 Processed Wood	0.17	0.004	0.1	39	0.019	0.0002	0.006	2.1	0.001
S-10 Finished Mulch & Compost	0.06	0.008	0.2	71	0.035	0.0004	0.010	3.7	0.002
S-12 Ground ADC	0.35	0.009	0.2	80	0.040	0.0005	0.012	4.2	0.002
S-14 Sorted Concrete	0.04	0.001	0.02	9	0.005	0.0001	0.001	0.5	0.0002
Total		**0.04**	**0.86**	**315**	**0.157**	**0.002**	**0.046**	**16.7**	**0.008**

Unpaved Vehicle Road Fugitive Dust Emissions

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:

k = 1.5 for PM_{10}; 0.15 for $PM_{2.5}$
a = 0.9
b = 0.45
s = surface material silt content for sand and gravel processing; 4.8
W = mean vehicle weight; 22 tons for front end loaders (FELs), 28.75 tons for outbound wood trucks, 28.75 tons for outbound green waste trucks, 27.44 tons for outbound C&D trucks, and 22.75 tons for outbound mulch trucks

Basis:

- Operating schedule: 8 hours/day, 6 days/week, 52 weeks/year
- Max Throughputs:
    - S-7 Sorted C&D: 38 tph/300 tpd/70,000 tpy
    - S-9 Unprocessed Green Waste: 25 tph/176 tpd/52,200 tpy
    - S-13 Processed Green Waste: 25 tph/176 tpd/52,200 tpy
    - S-6 Unprocessed Wood: 15 tph/120 tpd/34,200 tpy
    - S-11 Processed Wood: 15 tph/120 tpd/34,200 tpy
    - S-10 Finished Mulch & Compost: 23 tph/180 tpd/1,700 tpy
    - S-12 Ground ADC: 38 tph/400 tpd/70,000 tpy
    - S-14 Sorted Concrete: 38 tph/300 tpd/70,000 tpy
- Max round trips = throughput rate/vehicle load

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- Material loadout = materials dumped into stockpile; material loading = materials loaded onto outbound trucks.
- Unprocessed materials are moved around the site via roll off boxes. Assumes roll off boxes are transported via roll off trucks.
- Existing A-1 Watering Truck provides 70% abatement.
- Assumes S-10 Finished Mulch & Compost only has emissions from material loadout because the public purchases the final material, so vehicle weights, trips/day, and trips/year cannot be estimated.

Table 7. Fugitive Road Dust Emissions PM_{10} Emissions Summary

Route	Round Trip Distance (miles/trip)	PM_{10} EF (lbs/VMT)	Max Daily Trips	Max Annual Trips	Daily Emissions (lbs/day)	Annual Emissions (lbs/year)	Annual Emissions (ton/year)
FEL from S-7 Sorted C&D to S-4 Grinder	0.010	2.09	27	6,364	0.16	38	0.019
FEL from S-9 Unprocessed Green Waste to S-4 Grinder	0.007	2.09	18	2,373	0.04	10	0.005
FEL from S-6 Unprocessed Wood to S-4 Grinder	0.004	2.09	11	3,109	0.01	4	0.002
Front End Loaders Total					**0.2**	**51**	**0.026**
S-7 Sorted C&D Material Loadout	1.04	2.307	22	5,102	7.9	1,836	0.918
S-9 Unprocessed Green Waste Material Loadout	0.44	2.33	12	3,631	1.9	557	0.279
S-13 Processed Green Waste Material Loading	0.44	2.33	12	3,631	1.9	557	0.279
S-6 Unprocessed Wood Material Loadout	0.41	2.11	8	2,379	1.1	308	0.154
S-11 Processed Wood Material Loading	0.41	2.11	8	2,379	1.1	308	0.154
S-10 Finished Mulch & Compost Material Loadout	0.37	2.12	16	149	1.9	18	0.009
S-12 Ground ADC Material Loading	0.52	2.307	29	5,102	5.2	918	0.459
S-14 Sorted Concrete Material Loading	0.52	2.307	22	5,102	3.9	918	0.459
Loading/Loadout Total					**24.8**	**5,420**	**2.710**

Table 8. Fugitive Road Dust Emissions $PM_{2.5}$ Emissions Summary

Route	VMT per Trip (miles/trip)	$PM_{2.5}$ EF (lbs/VMT)	Max Daily Trips	Max Annual Trips	Daily Emissions (lbs/day)	Annual Emissions (lbs/year)	Annual Emissions (ton/year)
Loader from S-7 Sorted C&D to S-4 Grinder	0.010	2.09	27	6,364	0.016	4	0.002
Loader from S-9 Unprocessed Green Waste to S-4 Grinder	0.007	2.09	27	7,118	0.006	1	0.001
Loader from S-6 Unprocessed Wood to S-4 Grinder	0.004	2.09	11	3,109	0.001	0.4	0.0002
Total					**0.023**	**5.6**	**0.003**
S-7 Sorted C&D Material Loadout	1.04	2.307	22	5,102	0.8	184	0.092
S-9 Unprocessed Green Waste Material Loadout	0.44	2.33	12	3,631	0.2	56	0.028
S-13 Processed Green Waste Material Loading	0.44	2.33	12	3,631	0.2	56	0.028
S-6 Unprocessed Wood Material Loadout	0.41	2.11	8	2,379	0.1	31	0.015
S-11 Processed Wood Material Loading	0.41	2.11	8	2,379	0.1	31	0.015
S-10 Finished Mulch & Compost Material Loadout	0.37	2.12	16	149	0.2	2	0.001
S-12 Ground ADC Material Loading	0.52	2.307	29	5,102	0.5	92	0.046
S-14 Sorted Concrete Material Loading	0.52	2.307	22	5,102	0.4	92	0.046
Total					**2.5**	**542**	**0.271**

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Appendix B: Toxic Air Contaminant Calculations

Basis:

- Stockpile hourly emission rate (lb/hour) = max daily throughput (ton/day) * emission factor (lb/ton) / 24 hours/day.
- Stockpile annual emission rate (lb/year) = max annual throughput (ton/year) * emission factor (lb/ton).
- HRA results required S-9 and S-13 to have reduced hourly TAC/POC emissions, so daily throughput was reduced to 176 tons/day to meet project risk requirements of Regulation 2-5-302.

Table 1. Project Total TAC Emission Summary

Source	Pollutant	CAS #	Total Hourly (lb/hour)	Total Annual (lb/year)	Acute Trigger Level (lb/hour)	Acute Trigger?	Chronic Trigger Level (lb/year)	Chronic Trigger?
S-9 Unprocessed Green Waste Stockpile	1,4-Dichlorobenzene	7440-38-2	1.64E-04	1.2E+00	--	No	7.2E+00	No
	2-Propanol (Isopropyl alcohol, IPA)	7440-41-7	6.73E-05	4.8E-01	1.4E+00	No	2.7E+05	No
	Acetaldehyde	7440-43-9	4.99E-02	3.5E+02	2.1E-01	No	2.9E+01	**Yes**
	Allyl Chloride (3-Chloropropene)	18540-29-9	4.29E-05	3.1E-01	--	No	1.4E+01	No
	Benzene	7440-50-8	1.80E-04	1.3E+00	1.2E-02	No	2.9E+00	No
	Carbon disulfide	7439-92-1	8.51E-05	6.1E-01	2.7E+00	No	3.1E+04	No
	Chloroethane	7439-96-5	1.16E-05	8.3E-02	--	No	1.2E+06	No
	Chloroform	7440-02-0	6.70E-05	4.8E-01	6.6E-02	No	1.5E+01	No
	Ethylbenzene	7782-49-2	1.19E-04	8.5E-01	--	No	3.3E+01	No
	Ethylene Dichloride (1,2-dichloroethane)	--	5.56E-05	4.0E-01	--	No	4.0E+00	No
	Hexane	--	9.68E-05	6.9E-01	--	No	2.7E+05	No
	Methanol (Methyl alcohol)	7630-86-9	5.25E-03	3.7E+01	1.2E+01	No	1.5E+05	No
	Methyl Ethyl Ketone (2-butanone)	78-93-3	1.70E-04	1.2E+00	5.8E+00	No	--	No
	Naphthalene	91-20-3	7.19E-05	5.1E-01	--	No	2.4E+00	No
	Propene (Propylene)	115-07-1	2.49E-04	1.8E+00	--	No	1.2E+05	No
	Styrene	100-42-5	1.17E-04	8.3E-01	9.3E+00	No	3.5E+04	No
	Toluene	108-88-3	2.46E-04	1.8E+00	2.2E+00	No	1.6E+04	No
	Vinyl acetate	108-05-4	4.83E-05	3.4E-01	--	No	7.7E+03	No
	Xylenes	1330-20-7	2.38E-04	1.7E+00	9.7E+00	No	2.7E+04	No
	Ammonia	7664-41-7	6.35E-03	4.5E+01	1.4E+00	No	7.7E+03	No
	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	1.9E+01	--	No	1.2E+02	No
S-10 Finished Compost and Mulch	1,4-Dichlorobenzene	7440-38-2	5.3E-04	1.2E-01	--	No	7.2E+00	No
	2-Propanol (Isopropyl alcohol, IPA)	7440-41-7	2.2E-04	5.0E-02	1.4E+00	No	2.7E+05	No
	Acetaldehyde	7440-43-9	2.8E-03	6.3E-01	2.1E-01	No	2.9E+01	**Yes**
	Allyl Chloride (3-Chloropropene)	18540-29-9	2.8E-04	6.3E-02	--	No	1.4E+01	No
	Benzene	7440-50-8	2.8E-04	6.4E-02	1.2E-02	No	2.9E+00	No
	Carbon disulfide	7439-92-1	1.2E-03	2.6E-01	2.7E+00	No	3.1E+04	No
	Chloroethane	7439-96-5	2.3E-04	5.3E-02	--	No	1.2E+06	No
	Chloroform	7440-02-0	4.3E-04	9.8E-02	6.6E-02	No	1.5E+01	No
	Ethylbenzene	7782-49-2	3.9E-04	8.8E-02	--	No	3.3E+01	No
	Ethylene Dichloride (1,2-dichloroethane)	--	3.6E-04	8.2E-02	--	No	4.0E+00	No
	Hexane	--	3.1E-04	7.1E-02	--	No	2.7E+05	No

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	Methanol (Methyl alcohol)	7630-86-9	1.2E-04	2.6E-02	1.2E+01	No	1.5E+05	No
	Methyl Ethyl Ketone (2-butanone)	78-93-3	2.6E-04	5.9E-02	5.8E+00	No	--	No
	Naphthalene	91-20-3	4.7E-04	1.1E-01	--	No	2.4E+00	No
	Propene (Propylene)	115-07-1	1.0E-02	2.3E+00	--	No	1.2E+05	No
	Styrene	100-42-5	3.8E-04	8.6E-02	9.3E+00	No	3.5E+04	No
	Toluene	108-88-3	1.0E-03	2.4E-01	2.2E+00	No	1.6E+04	No
	Vinyl acetate	108-05-4	3.1E-04	7.1E-02	--	No	7.7E+03	No
	Xylenes	1330-20-7	7.7E-04	1.8E-01	9.7E+00	No	2.7E+04	No
	Ammonia	7664-41-7	1.5E-02	3.4E+00	1.4E+00	No	7.7E+03	No
	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	6.0E-01	--	No	1.2E+02	No
S-13 Processed Green Waste Stockpile	1,4-Dichlorobenzene	7440-38-2	7.29E-05	5.2E-01	--	No	7.2E+00	No
	2-Propanol (Isopropyl alcohol, IPA)	7440-41-7	3.93E-02	2.8E+02	1.4E+00	No	2.7E+05	No
	Acetaldehyde	7440-43-9	5.06E-02	3.6E+02	2.1E-01	No	2.9E+01	**Yes**
	Allyl Chloride (3-Chloropropene)	18540-29-9	2.63E-05	1.9E-01	--	No	1.4E+01	No
	Benzene	7440-50-8	2.64E-04	1.9E+00	1.2E-02	No	2.9E+00	No
	Carbon disulfide	7439-92-1	3.51E-05	2.5E-01	2.7E+00	No	3.1E+04	No
	Chloroethane	7439-96-5	9.65E-05	6.9E-01	--	No	1.2E+06	No
	Chloroform	7440-02-0	3.62E-05	2.6E-01	6.6E-02	No	1.5E+01	No
	Ethylbenzene	7782-49-2	3.82E-04	2.7E+00	--	No	3.3E+01	No
	Ethylene Dichloride (1,2-dichloroethane)	--	3.07E-05	2.2E-01	--	No	4.0E+00	No
	Hexane	--	3.65E-03	2.6E+01	--	No	2.7E+05	No
	Methanol (Methyl alcohol)	7630-86-9	3.50E-01	2.5E+03	1.2E+01	No	1.5E+05	No
	Methyl Ethyl Ketone (2-butanone)	78-93-3	6.16E-03	4.4E+01	5.8E+00	No	--	No
	Naphthalene	91-20-3	3.74E-03	2.7E+01	--	No	2.4E+00	**Yes**
	Propene (Propylene)	115-07-1	5.13E-04	3.7E+00	--	No	1.2E+05	No
	Styrene	100-42-5	1.75E-03	1.2E+01	9.3E+00	No	3.5E+04	No
	Toluene	108-88-3	2.53E-03	1.8E+01	2.2E+00	No	1.6E+04	No
	Vinyl acetate	108-05-4	5.10E-04	3.6E+00	--	No	7.7E+03	No
	Xylenes	1330-20-7	7.48E-04	5.3E+00	9.7E+00	No	2.7E+04	No
	Ammonia	7664-41-7	1.80E-03	1.3E+01	1.4E+00	No	7.7E+03	No
	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	1.9E+01	--	No	1.2E+02	No
S-6 Unprocessed Wood Stockpile	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	1.1E+01	--	No	1.2E+02	No
S-7 Sorted C&D Stockpile	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	6.4E+01	--	No	1.2E+02	No
S-11 Process Wood Stockpile	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	1.0E+01	--	No	1.2E+02	No
S-12 Ground ADC Stockpile	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	3.1E+01	--	No	1.2E+02	No
S-14 Sorted Concrete Stockpile	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	3.1E+01	--	No	1.2E+02	No
Project Total Emissions	1,4-Dichlorobenzene	7440-38-2	7.72E-04	1.8E+00	--	No	7.2E+00	No
	2-Propanol (Isopropyl alcohol, IPA)	7440-41-7	3.96E-02	2.8E+02	1.4E+00	No	2.7E+05	No
	Acetaldehyde	7440-43-9	1.03E-01	7.2E+02	2.1E-01	No	2.9E+01	**Yes**
	Allyl Chloride (3-Chloropropene)	18540-29-9	3.48E-04	5.6E-01	--	No	1.4E+01	No
	Benzene	7440-50-8	7.29E-04	3.2E+00	1.2E-02	No	2.9E+00	**Yes**
	Carbon disulfide	7439-92-1	1.28E-03	1.1E+00	2.7E+00	No	3.1E+04	No
	Chloroethane	7439-96-5	3.43E-04	8.2E-01	--	No	1.2E+06	No
	Chloroform	7440-02-0	5.37E-04	8.3E-01	6.6E-02	No	1.5E+01	No

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	Ethylbenzene	7782-49-2	8.87E-04	3.7E+00	--	No	3.3E+01	No
	Ethylene Dichloride (1,2-dichloroethane)	--	4.46E-04	7.0E-01	--	No	4.0E+00	No
	Hexane	--	4.06E-03	2.7E+01	--	No	2.7E+05	No
	Methanol (Methyl alcohol)	7630-86-9	3.55E-01	2.5E+03	1.2E+01	No	1.5E+05	No
	Methyl Ethyl Ketone (2-butanone)	78-93-3	6.59E-03	4.5E+01	5.8E+00	No	--	No
	Naphthalene	91-20-3	4.28E-03	2.7E+01	--	No	2.4E+00	**Yes**
	Propene (Propylene)	115-07-1	1.11E-02	7.8E+00	--	No	1.2E+05	No
	Styrene	100-42-5	2.25E-03	1.3E+01	9.3E+00	No	3.5E+04	No
	Toluene	108-88-3	3.82E-03	2.0E+01	2.2E+00	No	1.6E+04	No
	Vinyl acetate	108-05-4	8.71E-04	4.0E+00	--	No	7.7E+03	No
	Xylenes	1330-20-7	1.76E-03	7.2E+00	9.7E+00	No	2.7E+04	No
	Ammonia	7664-41-7	2.48E-02	6.1E+01	1.4E+00	No	7.7E+03	No
	Respirable Crystalline Silica (Fugitive Dust)	7631-86-9	--	1.9E+02	--	No	1.2E+02	**Yes**

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