

BWI ETN LLC dba Blue Water Industries – BWWI Grasselli Quarry
 Facility ID: 45-0220
 Combined Permit No. 082074

Calculations

Emission factors are from AP-42, Table 11.19.2-2

The company has agreed to a limit of 450,000 tons per year of production.

Process Weight Rate (ton/hr) = 450

app dated January 4, 2024

Hours:

1000

app letter dated January 4, 2024

Potential Emissions

	number of pieces of equipment	Design Operating rate (ton/hr)	Operating rate (ton/hr)	Controlled PM Emission factor (lb/ton)	Uncontrolled PM Emission factor (lb/ton)	Potential Controlled PM Emissions (lb/hr)	Potential Controlled PM Emissions (ton/yr)	Potential Uncontrolled PM Emissions (lb/hr)	Potential Uncontrolled PM Emissions (ton/yr)
Primary/Secondary(s)	3	450	350	0.0012	0.0054	1.620	0.810	7.29	3.645
Secondary/Tertiary Crusher(s)	1	385	360	0.0012	0.0054	0.462	0.231	2.079	1.0395
Secondary/Tertiary Crusher(s)	1	350	325	0.0012	0.0054	0.420	0.210	1.89	0.945
Screen(s)	7	450	350	0.0022	0.025	6.930	3.465	78.75	39.375
Conveyor(s)	18	450	350	0.00014	0.003	1.134	0.567	24.3	12.15
Conveyor(s)	2	50	35	0.00014	0.003	0.014	0.007	0.3	0.15
Conveyor(s)	2	385	360	0.00014	0.003	0.108	0.054	2.31	1.155
Conveyor(s)	2	350	325	0.00014	0.003	0.098	0.049	2.1	1.05
Conveyor(s)	23	225	200	0.00014	0.003	0.725	0.362	15.525	7.7625
Feeders Box/Hopper	10	450	350	0.00014	0.003	0.630	0.315	13.5	6.75
Potential Emissions (controlled)						12.1	6.1		
Potential Emissions (uncontrolled)								148.044	74.022

Equations used in calculation:

[Potential Controlled Emissions (lb/hr)] = [pieces of equip.] x [Design rate (ton/hr)] x [Controlled PM Emission factor (lb/ton)]

[Uncontrolled Potential PM Emissions (lb/hr)] = [pieces of equip.] x [Designrate (ton/hr)] x [Uncontrolled PM Emission factor (lb/ton)]

[Annual PM Emissions (ton/yr)] = [PM Emissions (lb/hr)] x [Operating hours (hr/yr)]

[2000 lb/ton]

Actual Emissions

	number of pieces of equipment	Design Operating rate (ton/hr)	Operating rate (ton/hr)	Controlled PM Emission factor (lb/ton)	Uncontrolled PM Emission factor (lb/ton)	Actual Controlled PM Emissions (lb/hr)	Actual Controlled PM Emissions (ton/yr)	Max PM Emissions (lb/hr)	Max Uncontrolled PM Emissions (ton/yr)
Primary/Secondary(s)	3	450	350	0.0012	0.0054	1.260	0.630	1.62	0.81
Secondary/Tertiary Crusher(s)	1	385	360	0.0012	0.0054	0.432	0.216	0.462	0.231
Secondary/Tertiary Crusher(s)	1	350	325	0.0012	0.0054	0.390	0.195	0.42	0.21
Screen(s)	7	450	350	0.0022	0.025	5.390	2.695	6.93	3.465
Conveyor(s)	18	450	350	0.00014	0.003	0.882	0.441	1.134	0.567
Conveyor(s)	2	50	35	0.00014	0.003	0.010	0.005	0.014	0.007
Conveyor(s)	2	385	360	0.00014	0.003	0.101	0.050	0.1078	0.0539
Conveyor(s)	2	350	325	0.00014	0.003	0.091	0.046	0.098	0.049
Conveyor(s)	23	225	200	0.00014	0.003	0.644	0.322	0.7245	0.36225
Feeders Box/Hopper	10	450	350	0.00014	0.003	0.490	0.245	0.63	0.315
Actual Emissions (operating rate)						9.69	4.84		
Actual Emissions (design rate)								12.14	6.07

Equations used in calculation:

[Actual Emissions (lb/hr)] = [pieces of equip.] x [Operating rate (ton/hr)] x [Controlled PM Emission factor (lb/ton)]

[Max Actual PM Emissions (lb/hr)] = [pieces of equip.] x [Design rate (ton/hr)] x [Controlled PM Emission factor (lb/ton)]

[Annual PM Emissions (ton/yr)] = [PM Emissions (lb/hr)] x [Operating hours (hr/yr)]

[2000 lb/ton]

Allowable Emissions

Subject to 40 CFR Part 60, Subpart 000

$$E = 17.31 (P)^{0.16}$$

$$E = 17.31 (450)^{0.16}$$

$$E = \text{lb/hr}$$

$$\mathbf{46.01}$$

$$E = [46.1 \text{ lb/hr}] \times [1000 \text{ hr/yr}] / [2000 \text{ lb/ton}]$$

$$E = \text{ton/yr}$$

$$\mathbf{23.01}$$

Note: Potential Emissions will be set equal to Allowable Emissions since Potential (uncontrolled) > Allowable