

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION**DETERMINATION
NO.:**

297

DATE:

8/13/24

ENGINEER:

Felix Trujillo, Jr.

Category/General Equip Description: Concrete Batch Plant**Equipment Specific Description:** Concrete Batch Plant \geq 5 Cubic Yards per Batch**Equipment Size/Rating:** Minor Source BACT**Previous BACT Det. No.:** 246

This BACT determination will update Determination #246 for concrete batch plants with a throughput greater than or equal to 5 cubic yards per batch.

Concrete batching operations involve the processing of concrete and the handling of concrete components. Concrete is a mixture of sand, coarse aggregate, portland cement, and water. Sand and coarse aggregate add strength and cement acts as a binding agent in the mixture. A cement supplement, such as potash, may replace a portion of the cement to influence the mixture's properties such as its permeability or strength. The concrete formula may vary depending upon the engineering specifications, its specific application, and the weather. Various types of equipment used in concrete batching operations can include hoppers, silos, conveyors, pumps, storage bins, front end loaders, trucks, engines, motors, generators, and boilers/water heaters. In general, the smaller concrete batch plants will only include the sand and coarse aggregate storage piles, loading hopper and loading conveyor to the aboveground bins prior to the material entering the concrete batch plant for processing. The larger concrete batch plants will normally include an underground grizzly that will be fed by bottom dump trucks and multiple conveyors to transfer the material to their respective storage areas and to transfer the material into the plant for processing.

There are two general methods of producing concrete: Wet-batching and dry batching. Wet-batching is a process whereby concrete is mixed at the plant and is then transported to a job site where it's poured. The concrete may also be mixed and poured into molds on-site to create pre-formed products such as concrete pipes, slabs, and beams. Dry-batching is a process whereby concrete components are loaded into a truck mounted mixer and then subsequently mixed by the truck enroute to a job site where it is poured.

BACT ANALYSIS

A: ACHIEVED IN PRACTICE (Rule 202, §205.1a)

The following control technologies are currently employed as BACT for Concrete Batch plants that produce greater than or equal to 5 cubic yards per batch by the following air pollution control districts:

US EPA

BACT

Source: EPA RACT/BACT/LAER Clearinghouse [RBLC ID: NV-0047](#) (02/26/2008), [RBLC ID: NV-0045](#) (12/11/2006)

Concrete Batch Plants (A)	
PM10	1. Maintain a min 1.5% moisture content in materials less than 0.25 inches in diameter for the entire process and control efficiency of 81.5%. Nellis Air Force Base Concrete Batch Plant 02/26/2008, and 2. Enclosure, control efficiency of 62%, Sloan Quarry 12/11/2006.
PM2.5	No standard

(A) The only criteria emissions of interest are PM10 and PM2.5. No standards are listed for VOC, NOx, SOx, or CO emissions.

RULE REQUIREMENTS:

None

CALIFORNIA AIR RESOURCES BOARD

BACT

Source: [California Air Resources Board BACT Determination Tool](#)

The BACTs listed in the CARB BACT Clearinghouse for concrete batch plants are the same BACTs that are listed for the SMAQMD, SJVAPCD, BAAQMD and SCAQMD under their respective BACT sections of this document.

RULE REQUIREMENTS:

None.

SMAQMD

BACT

Source: [SMAQMD BACT #246 issued on 8/17/21](#)

Concrete Batch Plant ≥ 5 Cubic Yards per Batch (A)	
PM10	<ul style="list-style-type: none"> a. Sand and Aggregate storage: outdoor storage piles adequately wetted to prevent visible emissions > 5% opacity b. Sand and aggregate handling (all transfer points): water sprays on all transfer points c. Sand and aggregate weigh batcher: material adequately wetted to prevent visible emissions > 5% opacity d. Storage silos for cement, flyash and other supplements: enclosed silo vented to a control device with 99% efficiency (baghouse, bin vent or equivalent) e. Cement weigh batcher: enclosed weigh batcher vented to a control device with 99% efficiency (baghouse or equivalent) f. Transit-mixed truck loading: loading operation enclosed by a flexible shroud which seals to the truck and is vented to a control device with 99% efficiency (baghouse or equivalent) <ul style="list-style-type: none"> 1. Central mixer loading: Enclosed mixer vented to a control device with 99% efficiency (baghouse or equivalent)
PM2.5	Equivalent to PM10 control standards

(A) The only criteria emissions of interest are PM10 and PM2.5. No standards are listed for VOC, NOx, SOx, or CO emissions.

The BACT threshold for SMAQMD is 0 lb/day.

The SMAQMD evaluates the entire concrete batch plant as an emissions unit to determine if BACT is triggered. Whereas, some other districts may break up the concrete batch plant into separate emissions units. Due to the SMAQMD's evaluation of concrete batch plants for BACT purposes and the SMAQMD's 0 lb/day BACT threshold, means that concrete batch plants in Sacramento County would be subject to the strictest requirements that are posted on other district's BACT guidelines. Yet, some of those same district's may not impose those strict requirements on their concrete batch plants, since BACT may not be triggered due to the separation of the concrete batch plant into separate emissions units. In review of other district's guidelines, the use of water sprays was required for sand and aggregate handling (transfer points). Most of the BACTs (as will be seen in the BACT sections of the districts evaluated under this BACT document), don't state that water sprays are required at all transfer points. Only the SJVAPCD includes this requirement (see Appendix F of this document), which is where SMAQMD's requirement came from under the previous BACT (#246). The SJVAPCD requirement is for water sprays on all transfer points to prevent visible emissions > 5% opacity. The last part was omitted under the previous BACT (#246). Other sections of the SJVAPCD that handle sand and aggregate, just state the material must be adequately wetted to prevent visible emissions > 5% opacity. According to AP-42, Section 11.19.2 - Crushed Stone Processing and Pulverized Mineral Processing (8/04) Table 11.19.2-2 footnote b, water sprays are not required at each transfer point due to the carry over moisture in the material. Also, the

background document for AP-42 Section 11.19.2 (Background Information for Revised AP-42 Section 11.19.2, Crushed Stone Processing and Pulverized Mineral Processing (5/12/02)) Reference 1 indicates that materials with less than 1.5 moisture content were considered uncontrolled and materials with $\geq 1.5\%$ moisture content were considered controlled. The coarse aggregate and sand used by concrete batch plants in Sacramento County have been thoroughly washed to remove deleterious material at the wash plants of the aggregate plants where the materials come from. It has been proven, that clean sand and aggregate provide more durability and strength in concrete (<https://onlinepubs.trb.org/Onlinepubs/hrr/1968/226/226-003.pdf>). Also, Sacramento County has three large aggregate plants that can supply these materials without having to travel long distances outside of Sacramento County. So, the material received has enough moisture to prevent any dust from becoming airborne. That is normally the case for the smaller concrete batch plants that only include a loading hopper and loading conveyor to the aboveground storage compartments. The sand and coarse aggregate stockpiles do not remain at the sites for extended periods of time (less than a week), since they are constantly being used to produce concrete. The use of water sprays would most likely be used by the larger concrete batch plants, which may include an underground grizzly and multiple conveyors to transfer the materials to their respective storage areas. But as previously stated, the use of water sprays at all of the transfer points is not necessary. Therefore, it will be assumed that the moisture in the material and low silt, due to the washing process, will be equivalent to the use of water sprays at all transfer points. A five percent opacity standard will be included for the sand and aggregate transfer points to ensure the particulate emissions at these points are minimized, as required for the sand and aggregate storage piles and sand and aggregate weigh batcher. Item b in the table above will therefore, be revised by the requirement down below:

- b. Sand and aggregate handling: water sprays on transfer points as necessary to prevent visible emissions > 5% opacity or material adequately wetted or with enough moisture to prevent visible emissions > 5% opacity

RULE REQUIREMENTS:

None

South Coast AQMD

BACT

Source: [SCAQMD BACT Guidelines for Non-Major Polluting Facilities \(Updated 2/2/24\), Page 32](#)

Concrete Batch Plant \geq 5 Cubic Yards/Batch (A)	
PM10	Central Mixed: Baghouse for Cement and Handling and Adequate Moisture in Aggregate (1988) <u>Transit-Mixed:</u> Baghouse Venting the Cement Weigh Hopper and the Mixer Truck Loading Station. Adequate Aggregate Moisture (07-11-97)
PM2.5	No standard

(A) The only criteria emissions of interest are PM10 and PM2.5 No standards are listed for VOC, NOx, SOx, or CO emissions.

The SCAQMD has a BACT threshold of 1 lb/day.

RULE REQUIREMENTS:

None

San Diego County APCD

BACT

Source: [SDCAPCD NSR Requirements for BACT \(Updated November 2023\), Page 40](#)

Concrete Batch Plants (A)	
PM10	<ul style="list-style-type: none">• 99% efficient Fabric or Cartridge type vent filters on silos.• Enclosed cement weigh hoppers, screw conveyors and concrete batcher vented to a 99% efficient fabric filter baghouse.• Flexible shroud which seals to the truck along with a water sprinkler system used when dry products are mixed. Shroud vented to 99% efficient filter baghouse.• Water spray system for sand and aggregate transfer points.• Sand and aggregate storage piles adequately wet to maintain a minimum moisture content of 4% by weight.• Open areas maintained adequately wet to prevent fugitive emissions in excess of 20 percent opacity or Ringlemann 1.
PM2.5	No standard

(A) The only criteria emissions of interest are PM10 and PM2.5. No standards are listed for VOC, NOx, SOx, or CO emissions.

The SDAPCD has a BACT threshold of 10 lb/day. A facility may choose to limit the Potential to Emit (PTE) from the equipment to less than 10 pounds per day for each pollutant in lieu of meeting the stated BACT requirement.

RULE REQUIREMENTS:

None

Bay Area AQMD

BACT

Source: [BAAQMD BACT Guideline 49.3 \(7/27/21\)](#)

Concrete Batch Plants ≥ 5 cubic yards per batch (A)	
PM10	<ul style="list-style-type: none">• Water spray system for aggregate handling, aggregate storage piles, and site road surfaces; and• Enclosure and venting of cement handling and storage to baghouse emitting < 0.0013 gr/dscf; and• Truck loading operations completely enclosed by a double shroud achieving ≥ 99% capture or equivalent, venting to baghouse emitting < 0.0013 gr/dscf.

Concrete Batch Plants ≥ 5 cubic yards per batch (A)	
PM2.5	No standard

(A) The only criteria emissions of interest are PM10 and PM2.5. No standards are listed for VOC, NOx, SOx, or CO emissions.

The BAAQMD has a BACT threshold of 10 lb/day. A facility may choose to limit the Potential to Emit (PTE) from the equipment to less than 10 pounds per day for each pollutant in lieu of meeting the stated BACT requirement.

RULE REQUIREMENTS:

None

San Joaquin Valley APCD

BACT

Source: [SJVUAPCD BACT Guideline 6.2.2 \(Updated 7/31/18\)](#)

Concrete Batch Plants ≥ 5 cubic yards per batch (A)	
PM10	<ol style="list-style-type: none"> 1. SAND/AGGREGATE STORAGE: Outdoor storage piles adequately wetted a) to prevent visible emissions > 5% opacity, or b) with minimum moisture content of 2% for aggregate and 4% for sand 2. SAND AND AGGREGATE HANDLING (ALL TRANSFER POINTS): Water sprays on all transfer points to prevent visible emissions > 5% opacity. 3. SAND AND AGGREGATE WEIGH BATCHER: Material adequately wetted to prevent visible emissions > 5% opacity 4. STORAGE SILOS FOR CEMENT, FLYASH AND OTHER SUPPLEMENTS: Enclosed silo vented to a control device with 99% efficiency (baghouse, bin vent or equivalent) 5. CEMENT/FLYASH/SUPPLEMENTS WEIGH BATCHER: Enclosed weigh batcher vented to a control device with 99% efficiency (baghouse or equivalent) 6. TRANSIT-MIXED TRUCK LOADING: Loading operation enclosed by a flexible shroud which seals to the truck and is vented to a control device with 99% efficiency (baghouse or equivalent) 7. CENTRAL MIXER LOADING: Enclosed mixer vented to a control device with 99% efficiency (baghouse or equivalent)
PM2.5	No standard

(A) The only criteria emissions of interest are PM10 and PM2.5. No standards are listed for VOC, NOx, SOx, or CO emissions.

The SJVAPCD has a BACT Threshold of 2 lb/day.

RULE REQUIREMENTS:

None

The following control technologies have been identified and are ranked based on stringency:

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES (A)	
PM10	<ol style="list-style-type: none"> 1) <ol style="list-style-type: none"> a. Sand and Aggregate storage: outdoor storage piles adequately wetted to prevent visible emissions > 5% opacity b. Sand and aggregate handling: water sprays on transfer points as necessary to prevent visible emissions > 5% opacity or material adequately wetted or with enough moisture to prevent visible emissions > 5% opacity c. Sand and aggregate weigh batcher: material adequately wetted to prevent visible emissions > 5% opacity d. Storage silos for cement, flyash and other supplements: enclosed silo vented to a control device with 99% efficiency (baghouse, bin vent or equivalent) e. Cement weigh batcher: enclosed weigh batcher vented to a control device with 99% efficiency (baghouse or equivalent) f. Transit-mixed truck loading: loading operation enclosed by a flexible shroud which seals to the truck and is vented to a control device with 99% efficiency (baghouse or equivalent) g. Central mixer loading: Enclosed mixer vented to a control device with 99% efficiency (baghouse or equivalent) – [SMAQMD, SJVAPCD] 2) <ol style="list-style-type: none"> a. Enclosed cement weigh hoppers, screw conveyors and concrete batcher vented to a 99% efficient fabric filter baghouse. b. Flexible shroud which seals to the truck. Shroud vented to 99% efficient fabric baghouse on silos. c. Water spray system for sand and aggregate transfer points. d. Sand and aggregate storage piles adequately wet to maintain a minimum moisture content of 4% by weight. e. Open areas maintained adequately wet to prevent fugitive emissions in excess of 20 percent opacity or Ringlemann 1. - [SDCAPCD] 3) Water spray system for aggregate handling, aggregate storage pile and site road surfaces; and enclosure and venting of cement handling and storage to a baghouse – [BAAQMD] 4) <ol style="list-style-type: none"> a. Maintain a min 1.5% moisture content in materials less than 0.25 inches in diameter for the entire process and control efficiency of 81.5% , and b. Enclosure of Aggregate/Cement Mixing with a control efficiency of 62%, – [US EPA]
PM2.5	Equivalent to PM10 control standards – [SMAQMD]

(A) The only criteria emissions of interest are PM10 and PM2.5 No standards are listed for VOC, NOx, SOx, or CO emissions.

The following control technologies have been identified as the most stringent, achieved in practice control technologies:

BEST CONTROL TECHNOLOGIES ACHIEVED		
Pollutant	Standard	Source
VOC	No Standard	
NOx	No Standard	
SOx	No Standard	
PM10	<ul style="list-style-type: none"> a. Sand and Aggregate storage: outdoor storage piles adequately wetted to prevent visible emissions > 5% opacity b. Sand and aggregate handling: water sprays on transfer points as necessary to prevent visible emissions > 5% opacity or material adequately wetted or with enough moisture to prevent visible emissions > 5% opacity c. Sand and aggregate weigh batcher: material adequately wetted to prevent visible emissions > 5% opacity d. Storage silos for cement, flyash and other supplements: enclosed silo vented to a control device with 99% efficiency (baghouse, bin vent or equivalent) e. Cement weigh batcher: enclosed weigh batcher vented to a control device with 99% efficiency (baghouse or equivalent) f. Transit-mixed truck loading: loading operation enclosed by a flexible shroud which seals to the truck and is vented to a control device with 99% efficiency (baghouse or equivalent) 1. Central mixer loading: enclosed mixer vented to a control device with 99% efficiency (baghouse or equivalent) 	SMAQMD
PM2.5	Equivalent to PM10 control standards	SMAQMD
CO	No Standard	

B. TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (Rule 202, §205.1.b.):

Technologically Feasible Alternatives:

Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible by the Air Pollution Control Officer. As fabric filters are generally considered to achieve the highest level of particulate control for processes that they may be applied to, and since the achieved in practice BACT determination has been determined to be the use of 99% efficient fabric filter, no additional technologies were analyzed as technologically feasible.

C. SELECTION OF BACT:

Based on the fact that no other technologically feasible control technologies were identified as being more appropriate with a higher level of control efficiency than a fabric filter for particulate control for this application, BACT for PM10 will be the highest level of control that has been achieved in practice that used this technology. As PM2.5 is a subset of PM10, BACT for PM2.5 will be set to the same standard as is set for PM10.

BACT FOR CONCRETE BATCH PLANTS ≥ 5 CUBIC YARD PER BATCH		
Pollutant	Standard	Source
VOC	No Standard	
NOx	No Standard	
SOx	No Standard	
PM10	<ul style="list-style-type: none"> a. Sand and Aggregate storage: outdoor storage piles adequately wetted to prevent visible emissions > 5% opacity b. Sand and aggregate handling: water sprays on transfer points as necessary to prevent visible emissions > 5% opacity or material adequately wetted or with enough moisture to prevent visible emissions > 5% opacity c. Sand and aggregate weigh batcher: material adequately wetted to prevent visible emissions > 5% opacity d. Storage silos for cement, flyash and other supplements: enclosed silo vented to a control device with 99% efficiency (baghouse, bin vent or equivalent) e. Cement weigh batcher: enclosed weigh batcher vented to a control device with 99% efficiency (baghouse or equivalent) f. Transit-mixed truck loading: loading operation enclosed by a flexible shroud which seals to the truck and is vented to a control device with 99% efficiency (baghouse or equivalent) <ul style="list-style-type: none"> 1. Central mixer loading: enclosed mixer vented to a control device with 99% efficiency (baghouse or equivalent) 	SMAQMD
PM2.5	Equivalent to PM10 control standards	SMAQMD
CO	No Standard	

D. SELECTION OF T-BACT:

Toxics are in the form of PM matter. The control of particulate matter through meeting the BACT standard will also control toxics found in the PM. Therefore, meeting the BACT controls for the control of PM will be considered equivalent to meeting the T-BACT requirements.

APPROVED BY: Brian F Krebs DATE: 10-04-2024

Attachment A

EPA BACT Determinations

http://cfpub.epa.gov/rblc/index.cfm?

action=PermitDetail.PollutantInfo&Facility_ID=26652&Process_ID=106068&Pollutant_ID=171&Per_Control_Equipment_ID=146605 updated on 10/2/2015



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FINAL

RBLC ID: NV-0045
Corporate/Company: AGGREGATE INDUSTRIES
Facility Name: SLOAN QUARRY
Process: AGGREGATE/CEMENT MIXING

Pollutant: Particulate matter, filterable < 10 µ (PM10) **CAS Number:** PM

Pollutant Group(s): Particulate Matter (PM), **Substance Registry System:** Particulate matter, filterable < 10 µ (PM10)

Pollution Prevention/Add-on Control Equipment/Both/No Controls Feasible: P
P2/Add-on Description: ENCLOSURE

Test Method:	Unspecified	EPA/DOAR Method	All Other Methods
Percent Efficiency:	62.000		
Compliance Verified:	Yes		
EMISSION LIMITS:			
Case-by-Case Basis:	LAER		
Other Applicable Requirements:			
Other Factors Influence Decision:			
Emission Limit 1:	0.0038 LB/T		
Emission Limit 2:	0.3800 LB/H		
Standard Emission Limit:	0.0038 LB/T		
COST DATA:			
Cost Verified?	No		
Dollar Year Used in Cost Estimates:			
Cost Effectiveness:	0 \$/ton		
Incremental Cost Effectiveness:	0 \$/ton		
Pollutant Notes:	THE ANNUAL EMISSION LIMIT FOR THIS UNIT IS 0.29 TONS PER YEAR.		



http://cfpub.epa.gov/rblc/index.cfm?action=PermitDetail.ProcessInfo&facility_id=26652&PROCESS_ID=106068
Last updated on 10/2/2015

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FINAL

RBLC ID: NV-0045

Corporate/Company: AGGREGATE INDUSTRIES

Facility Name: SLOAN QUARRY

Process: AGGREGATE/CEMENT MIXING

Primary Fuel: N/A
Throughput: 100.00 T/H
Process Code: 90.012

Pollutant Information - List of Pollutants

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Pollutant	Primary Emission Limit	Basis	Verified
Particulate matter, filterable < 10 μ (FPM10)	0.0038 LB/T	LAER	YES

Process Notes: THE EMISSION UNIT (AP12) IS THE MIXER OPERATED BY AGGREGATE/CEMENT PRODUCTS. THE ANNUAL PROCESS CAPACITY IS LIMITED TO 150,000 TONS PER YEAR.



http://cfpub.epa.gov/rblc/index.cfm?action=PermitDetail.ProcessInfo&facility_id=26873&PROCESS_ID=106717
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FINAL

RBLC ID: NV-0047

Corporate/Company: 99 CIVIL ENGINEER SQUADRON OF USAF

Facility Name: NELLIS AIR FORCE BASE

Process: CONCRETE BATCH PLANT

Primary Fuel: N/A
Throughput:
Process Code: 90.012

Pollutant Information - List of Pollutants

[Help](#)

Pollutant	Primary Emission Limit	Basis	Verified
Particulate matter, filterable < 10 μ (FPM10)	0.0514 LB/T PRODUCTION	Other Case-by-Case	NO

Process Notes: THE PROCESS CONSISTS OF THIRTEEN (13) EMISSION UNITS INCLUDING ONE DIESEL GENERATOR. THE CONCRETE BATCH PLANT (UNIT A015) IS SELECTED TO SHOW THE BACT DETERMINATIONS. PRODUCTION FOR THE PLANT IS LIMITED TO 200 TONS/HR AND 15,000 TONS/YR.

[http://cfpub.epa.gov/rblc/index.cfm?](http://cfpub.epa.gov/rblc/index.cfm?action=PollutantInfo&Facility_ID=26673&Process_ID=106717&Pollutant_ID=1715&Per_Control_Equipment_ID=14000)
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Pollutant Information

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FINAL

RBLC ID: NV-0047

Corporate/Company: 99 CIVIL ENGINEER SQUADRON OF USAF

Facility Name: NELLIS AIR FORCE BASE

Process: CONCRETE BATCH PLANT

Pollutant: Particulate matter,
filterable < 10 µ (FPM10)

CAS Number: PM

Pollutant Group(s): Particulate Matter (PM),

Substance Registry System: Particulate Matter, filterable < 10 µ (FPM10)

Pollution Prevention/Add-on Control Equipment/Both/No Controls Feasible: F

P2/Add-on Description: MAINTAINING A MINIMUM OF 1.5% MOISTURE CONTENT IN MATERIALS LESS THAN 0.25 INCHES IN DIAMETER FOR THE ENTIRE PROCESS

Test Method: Unspecified

[EPA/OSM Method](#)
[All Other Methods](#)

Percent Efficiency: 81.500

Compliance Verified: No

EMISSION LIMITS:

Case-by-Case Basis: Other Case-by-Case
 Other Applicable Requirements: SIP, OPERATING PERMIT
 Other Factors Influence Decision: No
 Emission Limit 1: 0.0514 LB/T PRODUCTION
 Emission Limit 2: 10.2900 LB/H
 Standard Emission Limit: 0.0514 LB/T PRODUCTION

COST DATA:

Cost Verified? No
 Dollar Year Used in Cost Estimates:
 Cost Effectiveness: 0 \$/ton
 Incremental Cost Effectiveness: 0 \$/ton
 Pollutant Notes:

http://cfpub.epa.gov/rblc/index.cfm?ac=PermitDetail.PollutantInfo&Facility_ID=26652&Process_ID=106098&Pollutant_ID=171&Per_Control_Equipment_ID=14602



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Pollutant Information

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FINAL

RBLC ID: NV-0045
Corporate/Company: AGGREGATE INDUSTRIES
Facility Name: SLOAN QUARRY
Process: AGGREGATE/CEMENT MIXING

Pollutant: Particulate matter,
 filterable < 10 µ (FPM10)

CAS Number: PM

Pollutant Group(s): Particulate Matter (PM),

Substance Registry System: Particulate matter, filterable < 10 µ (FPM10)

Pollution Prevention/Add-on Control Equipment/Both/No Controls Feasible: P

P2/Add-on Description: ENCLOSURE

Test Method: Unspecified

[EPA/600/M-90/046](#) [A/C 014/M-90/046](#)

Percent Efficiency: 62.000

Compliance Verified: Yes

EMISSION LIMITS:

Case-by-Case Basis: LAER

Other Applicable Requirements:

Other Factors Influence Decision:

Emission Limit 1: 0.0038 LB/T

Emission Limit 2: 0.2800 LB/H

Standard Emission Limit: 0.0038 LB/T

COST DATA:

Cost Verified? No

Dollar Year Used in Cost Estimates:

Cost Effectiveness: 0 \$/ton

Incremental Cost Effectiveness: 0 \$/ton

Pollutant Notes: THE ANNUAL EMISSION LIMIT FOR THIS UNIT IS 0.29 TONS PER YEAR.

http://cfpub.epa.gov/rblc/index.cfm?action=PermitDetail.PollutantInfo&Facility_ID=26873&Process_ID=1067176&Pollutant_ID=1718&Per_Control_Equipment_ID=140658



Technology Transfer Network

Clean Air Technology Center RACT/BACT/LAER Clearinghouse
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FINAL

RBLC ID: NV-0047

Corporate/Company: 99 CIVIL ENGINEER SQUADRON OF USAF

Facility Name: NELLIS AIR FORCE BASE

Process: CONCRETE BATCH PLANT

Pollutant: Particulate matter,
filterable < 10 µ (FPM10)

CAS Number: PM

Pollutant Group(s): Particulate Matter (PM),

Substance Registry System: Particulate matter, filterable < 10 µ (FPM10)

Pollution Prevention/Add-on Control Equipment/Both/No Controls Feasible: F

P2/Add-on Description: MAINTAINING A MINIMUM OF 1.5% MOISTURE CONTENT IN MATERIALS LESS THAN 0.25 INCHES IN DIAMETER FOR THE ENTIRE PROCESS

Test Method: Unspecified

[EPA/CAR Methods](#)

[All Other Methods](#)

Percent Efficiency: 81.500

Compliance Verified: No

EMISSION LIMITS:

Case-by-Case Basis: Other Case-by-Case
 Other Applicable Requirements: SIP, OPERATING PERMIT
 Other Factors Influence Decision: No
 Emission Limit 1: 0.0514 LB/T PRODUCTION
 Emission Limit 2: 10.2900 LB/H
 Standard Emission Limit: 0.0514 LB/T PRODUCTION

COST DATA:

Cost Verified? No
 Dollar Year Used in Cost Estimates:
 Cost Effectiveness: 0 \$/ton
 Incremental Cost Effectiveness: 0 \$/ton
 Pollutant Notes:

Attachment B

SMAQMD BACT Determination

SMAQMD BACT CLEARINGHOUSE

ACTIVE

CATEGORY Type:

CONCRETE BATCH PLANT

BACT Category: MINOR SOURCE

BACT Determination Number:	246	BACT Determination Date:	12/3/2021
Equipment Information			
Permit Number: N/A -- Generic BACT Determination Equipment Description: Concrete Batch Plant ≥ 5 Cubic Yards per Batch Unit Size/Rating/Capacity: Equipment Location:			
BACT Determination Information			
District Contact: Quintin Phan Phone No.: 279-207-1143 email: qphan@airquality.org			
ROCs	Standard:	No Standard	
	Technology Description:		
	Basis:	Achieved in Practice	
NOx	Standard:	No Standard	
	Technology Description:		
	Basis:	Achieved in Practice	
SOx	Standard:	No Standard	
	Technology Description:		
	Basis:	Achieved in Practice	
PM10	Standard:	See Page 8 of 9 of BACT 246	
	Technology Description:		
	Basis:	Achieved in Practice	
PM2.5	Standard:	Equivalent to PM10 control standards	
	Technology Description:		
	Basis:	Achieved in Practice	
CO	Standard:	No Standard	
	Technology Description:		
	Basis:	Achieved in Practice	
LEAD	Standard:	No Standard	
	Technology Description:		
	Basis:	Achieved in Practice	
Comments: This is a generic BACT determination based on BACT determinations made, and published, by other air agencies in California and/or other States.			

Printed: 12/7/2021

C. SELECTION OF BACT:

Based on the fact that no other technologically feasible control technologies were identified as being more appropriate with a higher level of control efficiency than a fabric filter for particulate control for this application, BACT for PM10 will be the highest level of control that has been achieved in practice that used this technology. As PM2.5 is a subset of PM10, BACT for PM2.5 will be set to the same standard as is set for PM10.

BACT FOR CONCRETE BATCH PLANTS ≥ 5 CUBIC YARD PER BATCH		
Pollutant	Standard	Source
VOC	No Standard	
NOx	No Standard	
SOx	No Standard	
PM10	<ul style="list-style-type: none"> a. Sand and Aggregate storage: outdoor storage piles adequately wetted to prevent visible emissions > 5% opacity b. Sand and aggregate handling (all transfer points): water sprays on all transfer points c. Sand and aggregate weigh batcher: material adequately wetted to prevent visible emissions > 5% opacity d. Storage silos for cement, flyash and other supplements: enclosed silo vented to a control device with 99% efficiency (baghouse, bin vent or equivalent) e. Cement weigh batcher: enclosed weigh batcher vented to a control device with 99% efficiency (baghouse or equivalent) f. Transit-mixed truck loading: loading operation enclosed by a flexible shroud which seals to the truck and is vented to a control device with 99% efficiency (baghouse or equivalent) <ul style="list-style-type: none"> 1. Central mixer loading: Enclosed mixer vented to a control device with 99% efficiency (baghouse or equivalent) 	SMAQMD
PM2.5	Equivalent to PM10 control standards	SMAQMD
CO	No Standard	

Attachment C

SCAQMD BACT Determination

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0

Equipment or Process: Concrete Batch Plant

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Central Mixed, < 5 Cubic Yards/Batch					Water Spray (1988)	
Central Mixed, ≥ 5 Cubic Yards/Batch					Baghouse for Cement Handling and Adequate Moisture in Aggregate (1988)	
Transit-Mixed					Baghouse Venting the Cement Weigh Hopper and the Mixer Truck Loading Station; and Adequate Aggregate Moisture (07-11-97)	

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

Attachment D

SDAPCD BACT Determination

CONCRETE BATCH PLANTS

Fee Schedule 08A

Review the BACT Control Option listed below. The applicant must propose the Control Option listed or perform a Top-down BACT Analysis as described in Section 4 to justify the selection of another Control Option. The applicant will be required to provide documentation that the Control Option selected meets the requirements listed in the table.

	VOC	NO _x	SO _x	PM*
BACT Emission Rate Limit	(N/A)	(N/A)	(N/A)	<0.008 grain/dscf
BACT Control Option	(N/A)	(N/A)	(N/A)	<p>99% efficient Fabric or Cartridge type vent filters on silos.</p> <p>Enclosed cement weigh hoppers, screw conveyors and concrete batcher vented to a 99% efficient fabric filter baghouse.</p> <p>Flexible shroud which seals to the truck along with a water sprinkler system used when dry products are mixed. Shroud vented to 99% efficient fabric filter baghouse</p> <p>Water spray system for sand and aggregate transfer points.</p> <p>Sand and aggregate storage piles adequately wet to maintain a minimum moisture content of 4% by weight.</p> <p>Open areas maintained adequately wet to prevent fugitive emissions in excess of 20 percent opacity or Ringlemann 1.</p> <p>(A/P)</p>

The applicant may choose to limit the Potential to Emit (PTE) from the equipment to less than 10 pounds per day for each pollutant in lieu of meeting the stated BACT requirement.

* The BACT emission rate limit is based on TSP which is used as a surrogate for PM10.

Attachment E

BAAQMD BACT Determination

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guideline

Source Category

Source:	<i>Concrete Batch Plants</i>	Revision:	1
		Document #:	49.2
Class:	<i>≥ 5 Cubic yards per batch</i>	Date:	09/04/91

Determination

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	TYPICAL TECHNOLOGY
POC	1. n/a 2. n/a	1. n/a 2. n/a
NO_x	1. n/a 2. n/a	1. n/a 2. n/a
SO₂	1. n/a 2. n/a	1. n/a 2. n/a
CO	1. n/a 2. n/a	1. n/a 2. n/a
PM₁₀	1. Water spray w/ chemical suppressants for aggregate handling and storage piles; and Paving of site road surfaces; and Enclosure and venting of cement handling and storage to baghouse w/ ≤ 0.0013 gr/dscf ^{a,b} 2. Water spray for aggregate handling, aggregate storage piles, and site road surfaces; and Enclosure and venting of cement handling and storage to baghouse w/ ≤ 0.01 gr/dscf ^a	1. BAAQMD Approved Design and Operation ^a 2. BAAQMD Approved Design and Operation ^a
NPOC	1. n/a 2. n/a	1. n/a 2. n/a

References

- a. BAAQMD
b. BAAQMD A #4770

Attachment F

SJVUAPCD BACT Determination

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 6.2.2*

Last Update: 7/31/2018

Concrete Batch Plant

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10	<p>1) SAND/AGGREGATE STORAGE: Outdoor storage piles adequately wetted a) to prevent visible emissions > 5% opacity, or b) with minimum moisture content of 2% for aggregate and 4% for sand</p> <p>2) SAND/AGGREGATE HANDLING (ALL TRANSFER POINTS): Water sprays on all transfer points to prevent visible emissions > 5% opacity</p> <p>3) SAND/AGGREGATE WEIGH BATCHER: Material adequately wetted to prevent visible emissions > 5% opacity</p> <p>4) STORAGE SILOS for CEMENT, FLYASH and OTHER SUPPLEMENTS: Enclosed silo vented to a control device with 99% efficiency (baghouse, bin vent or equivalent)</p> <p>5) CEMENT/FLYASH/SUPPLEMENTS WEIGH BATCHER: Enclosed weigh batcher vented to a control device with 99% efficiency (baghouse or equivalent)</p> <p>6) TRANSIT-MIXED TRUCK LOADING: Loading operation enclosed by a flexible shroud which seals to the truck and is vented to a control device with 99% efficiency (baghouse or equivalent)</p> <p>7) CENTRAL MIXER LOADING: a) < 5 yd³ batch capacity: enclosed mixer with water sprays, b) > or = 5 yd³ batch capacity: enclosed mixer vented to a control device with 99% efficiency</p>	<p>1) SAND/AGGREGATE STORAGE: Enclosed storage (building, silo, or equivalent) vented to a control device with 99% control efficiency (baghouse or equivalent)</p> <p>2) CENTRAL MIXER LOADING: < 5 cubic yard batch capacity: enclosed mixer vented to a control device with 99% control efficiency (baghouse or equivalent)</p>	