



# MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

14306 Park Avenue Victorville, CA 92392-2310  
760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

## AUTHORITY TO CONSTRUCT

B001083

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

**EXPIRES LAST DAY OF: JUNE 2026**

### OWNER OF OPERATOR (Co.#1)

CEMEX Construction Materials Pacific LLC  
16888 North E Street  
Victorville, CA 92392

### EQUIPMENT LOCATION (Fac.#5)

CEMEX - Black Mountain Quarry Plant  
25220 Black Mountain Quarry Road  
Apple Valley, CA 92307

### Description:

KILN (Q2) AND CLINKER COOLER SYSTEM consisting of: Coal milling, a pre-heater pre-calciner short cement kiln (operating with oxygen enrichment), and a clinker cooler assembly. Note that horsepower ratings have been converted to heat input assuming 2550 Btu per horsepower.

### EQUIPMENT

Capacity	Equipment Description
0.17	Blending System (67 hp)
0.1	Elevator (40 hp) - EF1
0.03	Calibration System (15 hp) - EFB
0.35	Dust Return System (140 hp)
1.02	Air Lift (400 hp) - EALF
240	Preheater-Precalciner - GPH2 (240 MMBTU/hr)
8.92	Preheater 7A (3500 hp) - GDF2
221.53	Kiln Q2 (600 hp) - GK2 (and 220 MMBTU/hr)
3.97	Clinker Cooler (1560 hp) - GCC2
0.03	Belt Conveyor (15 hp) - FBC3
0.19	Fifteen 5 hp Screw Conveyors - GGF2SC
0.01	Two 3 hp Feeders - FCM1, 2WF

Fee Schedule: 8 (f)

Rating: 481270000 Btu

SIC: 3241

SCC: 30500714

Location/UTM(Km):  
476E/3826N

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

CEMEX Construction Materials Pacific  
LLC  
16888 North E Street  
Victorville, CA 92392

By: **COPY**  
Eldon Heaston  
Air Pollution Control Officer

Capacity	Equipment Description
1.53	Coal Mills 2 and 3 (300 hp each) - FCM 2 & 3
1.27	Coal Mill 1 with cage and vane high efficiency classifier (500hp) - 33-CMI
0.28	Primary Air Fan (110 hp) - GK2BOF
0.02	Drag Conveyor (10 hp) - GCC2DC2
0.18	Roller Crusher (four 17.7 hp)
0.06	Bucket Conveyor (25 hp) - GPC1
0.07	Distribution Drag Conveyor (30 hp) - GG CDC
1.33	Seven 75 hp Cooling Fans - GGCF1 through GGCF7
0.07	Drag Conveyor (30 hp) - GCC2DC1
0.02	Discharge Gate Drive (10 hp) - GGCDG1B
0.03	Pan Conveyor (15 hp) - HPC1
0	Water Spray Cooling System (In the downcomer duct of Kiln Q2)

**CONDITIONS:**

1. The owner/operator (o/o) shall install, operate and maintain the equipment described on this permit in compliance with all data and specifications submitted with the application under which this permit is issued unless specifically exempted in other conditions hereon. [District Rule 204, 40 CFR 52.220(c)(39)(ii)(B), 40 CFR 70.6(a)(3)(B)]

2. This equipment shall not be operated unless it is vented to the functioning air pollution control equipment covered by valid District permits (C000094 (FBH1), C001090 (GBH2), C001091 (GGF2), C001297 (HBH1A/B001675), C001298 (HBH2/B001675), C001299 (EBH5), C005190 (GGCBH), and C010581 (FBH2)). [District Rule 204, 40 CFR 52.220(c)(39)(ii)(B), 40 CFR 70.6(a)(3)(B)]

3. The sulfur content requirements of Rule 431 shall be complied with through the SOx emissions limits presented below, in accordance with District Rule 431(g). [District Rules 204 and 431, 40 CFR 52.220(c)(39)(ii)(B), 40 CFR 70.6(a)(3)(B)]

4. The emissions from Kiln Q2, on any fuel or mix of fuels, shall not exceed any of the following mass limits in pounds per ton of clinker, calculated on a rolling 30 calendar day average basis and verified by CEMS and CERMS data:

- a. NOx - 1.95
- b. SOx (as SO2) - 0.35
- c. VOC - 0.12
- d. TSP (Kiln Stack) - 0.14 (Total PM; Filterable and Condensable)
- e. PM - 0.07 (Filterable PM; pursuant to Subpart LLL)
- f. CO - 2.9

[Case No. ED CV 07-00223-GW (JCRx) CONSENT DECREE, 40 CFR 63 Subpart LLL]

5. The combined NOx emissions from Kilns Q2 and Q3, on any fuel or mix of fuels, shall not exceed 19,314 lbs. per Day of Operation, defined as midnight to midnight. [Case No. ED CV 07-00223-GW (JCRx) CONSENT DECREE]

6. The combined emissions from all permitted combustion sources, including but not limited to Kilns Q2 and Q3 and Burners on Roll Press 1 and 2, on any fuel or mix of fuels, shall not exceed the following daily (midnight to midnight) limits, calculated on a rolling thirty (30) day arithmetic average basis:

- a. NOx - 19,314 lbs (verified by CEMS and CERMS for kiln and Source Test and Production Logs for Roll Press Burners and other combustion sources) on and after October 1, 2009
- b. SOx - 4,220 lbs (verified by CEMS and CERMS for kiln and Source Test and Production Logs for Roll Press Burners and other combustion sources)
- c. CO - 27,522 lbs (verified by CEMS and CERMS for kiln and Source Test and Production Logs for Roll Press Burners and other combustion sources)

- d. VOC - 2,139 lbs (verified by annual source test and CERMS for kiln and Source Test and Production Logs for Roll Press Burners and other combustion sources)
- e. Main Stack TSP - 1,435 lbs (verified by annual source test and CERMS for kiln and Source Test and Production Logs for Roll Press Burners and other combustion sources)
- f. Clinker Cooler Stack TSP (Q2 clinker cooler only) - 699 lbs (verified by annual source test and clinker production)  
[District Rule 204]

7. The daily emissions for each operating day for kiln Q2 shall be recorded and/or calculated in a manner approved by the District. The data shall be submitted to the District within 30 days of the end of each calendar quarter.

8. The emissions of CO, NO<sub>x</sub>, SO<sub>x</sub> and O<sub>2</sub> for kiln Q2 shall be monitored using a Continuous Emissions Monitoring System (CEMS). The stack gas volumetric flow rate shall be monitored using a Continuous Emission Rate Monitoring System (CERMS). This equipment shall be operated in compliance with a District-approved 40 CFR 60 Appendix F CEMS/CERMS quality assurance and operational protocol.

9. The following are the acceptability testing requirements for the CEMS, and CERMS:

- a. For SO<sub>2</sub> and NO<sub>x</sub> CEMS - Performance Specification 2 of 40 CFR 60, appendix B;
  - b. For O<sub>2</sub> CEMS - Performance Specification 3 of 40 CFR 60, appendix B;
  - c. For CO CEMS - Performance Specification 4 of 40 CFR 60, appendix B; and
  - d. For CERMS - Performance Specification 6 of 40 CFR 60, appendix B.
- CEMS and CERMS have the same meaning as in condition 4 above.

10. The o/o shall submit a written report of excess emissions to the District Compliance Supervisor for every calendar quarter. All of these quarterly reports shall be postmarked by the 30 day following the end of the quarter.

11. The o/o shall maintain a current, on-site daily operational log for Kiln Q2 for a minimum of five (5) years, and shall provide the operations log to District, State or Federal personnel on request. The operational log shall, at a minimum, contain the information specified below:

- a. Hours of operation, including specific hours in start-up and shutdown;
- b. Dates of routine maintenance;
- c. Dates of major repairs, replacements and scheduled shut-downs;
- d. For each hour: Type of fuel being used, the Btu/h of each fuel, and the percent of total Btu feed for each fuel;
- e. Tons of raw material, excluding coal, charged to the kiln;
- f. Mass of alternative, engineered and supplemental fuel burned, by type;
- g. Tons of clinker produced (this datum shall be calculated by an equation similar to the following, which is used for kiln Q2:  $\text{Clinker, t/h} = \text{kiln feed scale reading} \times 0.89 \times F / 1.575$ ; where 0.89 is the known efficiency of stage 1, F is a correction factor for the actual weight of clinker and 1/1.575 is the conversion factor from ton of feed to ton of clinker all of which will be incorporated into the software for the emissions measurement instrumentation).
- h. Daily NO<sub>x</sub>, SO<sub>x</sub>, CO, VOC emissions of Kiln Q2 (in units of pounds and pounds per ton of clinker).
- i. Missing CEMS data substituted as per 40 CFR 75 Subpart D.

12. The District shall approve of the number, placement, access to, and the material of construction for all sampling ports, lines and permanent probes. The District shall also approve any and all utilities which may be necessary for any and all sample collections and measurements required for compliance demonstrations.

13. This equipment may be fired with alternative, engineered and supplemental fuels. Any use of alternative, engineered or supplemental fuels shall be reflected on the daily log on an individual category basis, including date of use, amount used, rate of use, and cumulative annual use to date. Alternative, engineered and supplemental fuels shall be limited to those materials which can be characterized as not solid waste when combusted non-hazardous secondary materials as defined by 40 CFR section 241.3(b), verified by written certification from the supplier (or the equivalent), and which certification will be retained as part of the log. The following materials and rates are allowed:

- a. From Cemex California operations including containers: dust collector bags, absorbents, adsorbents, lubricants, shop rags, used oil filters and LUST remediation sand - as up to 5.5 lb/ton of kiln feed.
- b. Tire Derived Fuel (TDF) (including whole and shredded tires with or without the steel belt material (tire fluff)) - as up to 29% of the total

Btu kiln feed rate for any hour or 26% on a 24-hour average basis (the TDF may be injected/catapulted into the front end of the kiln, or introduced at the kiln feed shelf via a chute, or suspended in the tertiary air combustor (TAC) in the tertiary air duct (TAD)).

- c. Plastics\* (including polyethylene plastics used in agriculture and silviculture which may include incidental amounts of chlorinated plastics).
- d. Biosolids - at up to 10.5 tons per hour (introduced into the kiln pneumatically with fully enclosed ducts or tubing).
- e. Cellulosic Biomass Untreated\* (including untreated lumber, tree stumps, tree limbs, slash, bark, sawdust, sander dust, wood chip scraps, wood scraps, wood slabs, wood millings, wood shavings and processed pellets made from wood or other forest residue) - as up to 40% of the total Btu kiln feed rate on a 24 hour average basis (injected/catapulted into the front end of the kiln, or introduced at the kiln feed shelf via a chute, or suspended in the TAC in the TAD).
- f. Refuse Derived Fuels (RDF) (generated from residential domestic waste and other non-hazardous waste, and including post-recycled paper, cardboard, plastics, and fabrics) - at up to 15 tons per hour (introduced pneumatically with fully enclosed ducts or tubing into the calciner or kiln front end).
- g. Horse Bedding\* (including wood chips, horse urine and horse manure that is blended with saw dust as needed).
- h. Cellulosic Biomass Treated\* (including preservative treated wood (which may include treatments such as creosote, copper-chromium-arsenic (CCA), alkaline-copper-quaternary (ACQ)), painted wood, resinated woods (plywood, particle board, medium density fiberboard, oriented strand board, laminated beams, finger-jointed trim and other sheet goods).
- i. Roofing Material\* (including non-asbestos containing roofing shingles and related roofing materials with the bulk of the incombustible grit material removed).
- j. Agricultural Biogenic Materials\* (including pistachio shells, almond shells, peanut hulls, rice hulls, corn husks, citrus peels, cotton gin by-products, animal bedding and other similar types of materials).
- k. Carpet Derived Fuel\* (including shredded new, reject or used carpet materials).
- l. Alternative Fuel Mix\* (including a blended combination of otherwise allowed materials).
- m. Engineered Fuel\* (fuel engineered to have targeted, consistent fuel properties such as caloric value, moisture, particle size, ash content and volatility. Controlled through blending of non-hazardous combustible materials or through separation of non-hazardous incombustible materials from combustible materials. Engineered largely from post recycled paper, cardboard, plastics, fabrics, animal meal, automotive manufacturing secondary material, clean-up debris from natural disasters, processed municipal solid waste, paint filter cake, non-infectious hospital materials, pharmaceuticals, cosmetics and confiscated narcotics).
- n. Additional Non-Hazardous Alternative Fuels Not Specifically Listed\* (non-hazardous alternative fuels not otherwise listed that burn with similar characteristics to the fuels already authorized, do not cause an increase in any regulated pollutant emissions, and do not contain hazardous metals or chlorine in concentrations above those found in the fuels already authorized).
- o. Kiln Q2 may use furnace ash generated from incineration of sewage and spent abrasive blasting material as alternate sources of silica, iron or alumina. Authority for this condition is subject to the conditions included in California Department of Toxic Substances Control Variance, serial number V-091-2 ATD/ATU and is valid only when the variance is in effect. A protocol for the air emissions testing at the conclusion of the demonstration period shall be approved by the District and the District shall be notified 10 days prior to the actual start of the testing.

14. This unit may be fueled or fired with coal, natural gas, fuel oil, petroleum coke, alternative fuel, supplemental fuel and engineered fuel (as specifically allowed in these conditions). All emission limitations specified in these conditions apply irrespective of fuel or fuel mixture. A source test is required for each alternative, supplemental or engineered fuel at the maximum hourly burn rate to ensure continued compliance with 40 CFR 63, Subpart LLL and to quantify toxic emissions for the AB2588 Hot Spots program. This source test is required prior to the introduction of 30,000 tons of each alternative, supplemental or engineered fuel marked with an asterisk (\*) in these conditions.

[District Rule 1303]

15. The o/o shall perform the following compliance test in accordance with District approved test plan and the MDAQMD Compliance Test Procedural Manual. The following compliance tests are required once every twelve (12) months:

- a. VOC (Q2 main kiln stack) as CH<sub>4</sub> in ppmvd, lbs/hr and lbs/ton of clinker (measured per USEPA Reference Methods 25A and 18 or the equivalent); and,
- b. TSP (Q2 main kiln stack) in mg/m<sup>3</sup>, lbs/hr and lbs/ton of clinker (measured per USEPA Reference Method 5 and 202, or CARB Method 5)
- c. Dioxins/Furans (D/F) tests shall occur at a minimum of once every 30 calendar months from the date of the preceding test; fuel input to Kiln Q2 shall NTE 15 tph [40 CFR 63 Subpart LLL 63.1349]. These tests shall be conducted per USEPA Reference Method 23 of Appendix A to 40 CFR Part 60, the limit is 0.20 ng/dscm (8.7 x10<sup>-11</sup> gr per dscf) toxic equivalency factor (TEQ); results shall be provided in ng per dscm (TEQ).

[District Rule 204; 40 CFR 63 Subpart LLL]

The owner/operator must submit a compliance/certification test protocol at least thirty (30) days prior to the compliance/certification test date. The owner/operator must conduct all required compliance/certification tests in accordance with a District-approved test protocol. The owner/operator must notify the District a minimum of ten (10) days prior to the compliance/certification test date so that an observer

may be present. The final compliance/certification test results must be submitted to the District within forty-five (45) days of completion of the test. All compliance/certification test notifications, protocols, and results may be submitted electronically to [reporting@mdaqmd.ca.gov](mailto:reporting@mdaqmd.ca.gov).

Source testing for alternative, supplemental and engineered fuels shall be performed at the maximum desired hourly feed rate of each fuel and:

- a. Shall include dioxin/furan (and HCl when HCl emissions are not continuously monitored) using EPA method 23 and otherwise pursuant to 40 CFR 63 Subpart LLL.
- b. Shall include all other air toxic emissions pursuant to 40 CFR 63 Subpart LLL and/or CARB/EPA test methods for those compounds associated with cement manufacturing per the AB2588 Hot Spots Program.
- c. If the results of the source test indicate that there is no increase in air toxic emissions, then no further action is required. If the results of the source test indicate that there is an increase in air toxic emissions, the o/o shall conduct a Prioritization Score analysis pursuant to the most recently approved CAPCOA Facility Prioritization Guidelines, the most recently approved OEHHA Unit Risk Factor for cancer potency factors, and the most recently approved OEHHA Reference Exposure Levels for non-cancer acute and non-cancer chronic factors. If all Prioritization Scores indicate that the Kiln is categorized as Low or Intermediate Priority no further action is required. If the Prioritization Score indicates that the Kiln is categorized High Priority, the o/o shall conduct a Health Risk Assessment pursuant to District Rule 1320 and adhere to the requirements and procedures of that rule.  
[District Rule 1302; District Rule 1320; 40 CFR 63 Subpart LLL]

16. The o/o shall comply with good pollution control practices at Kiln Q2 in accordance with 40 CFR 60.11(d) during kiln operation (kiln combustion).  
[District Rule 204, 40 CFR 60.11(d)]

17. By January 30 and July 30 of each year, the o/o shall submit a semi-annual report to the District and USEPA for the preceding six months that includes the following (and shall retain on-site and provide to District, State or Federal personnel upon request this information until directed to cease such retention by the above-referenced consent decree):

- a. All CEMS data;
- b. Demonstration of compliance with all applicable rolling 30-day average limits;
- c. Demonstration of compliance with all daily limits;
- d. Status of permit (including FOP) applications and permit modifications, and
- e. The description of any non-compliance with the above-referenced consent decree, the cause, and remedial steps taken or proposed.

[District Rules 204 and 1203, 40 CFR 52.220(c)(39)(ii)(B)]

18. The o/o shall introduce sufficient 19% aqueous ammonia as part of a selective non-catalytic reduction (SNCR) system at injection points shown on Cemex Drawings 530-16-02-002 and 530-16-02-003 to ensure compliance with the NOx emission limits specified above.  
[District Rule 204, 40 CFR 52.220(c)(39)(ii)(B)]

19. The emissions from this Kiln Q2 on any fuel or mix of fuels, shall not exceed the following daily (midnight to midnight) limits:

- a. SO<sub>2</sub> - 1,540 lbs (verified by CEMS and CERMS)
- b. CO - 12,760 lbs (verified by CEMS and CERMS)

[Case No. ED CV 07-00223-GW (JCRx) CONSENT DECREEE]

20. A facility wide Comprehensive Emission Inventory (CEI) for all emitted criteria and toxic air pollutants must be submitted to the District, in a format approved by the District, upon District request.  
[District Rule 107(b); H&S Code 39607 & 44341-44342; 40 CFR 51, Subpart A]