

September 30, 2010

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Mail Stop 4631
Washington, D.C. 20549

RE: CEMEX, S.A.B. de C.V.
Form 20-F for the year ended December 31, 2009
File No. 001-14946

Ladies and Gentlemen:

On behalf of CEMEX, S.A.B. de C.V. (the "Company"), this letter provides responses to the comment letter from the staff (the "Staff") of the Securities and Exchange Commission (the "Commission") to Mr. Ramiro G. Villarreal, General Counsel of the Company, dated August 9, 2010 (the "Comment Letter"), in connection with the Company's annual report on Form 20-F for the year ended December 31, 2009 (the "2009 20-F"), filed with the Commission on June 30, 2010. The Company's initial responses to the comments raised by the Staff in the Comment Letter are set forth below. The Company is still in the process of collecting some of the numerical data to be included in the charts requested in the Comment Letter and will furnish such data to the Staff when available. The format and headings of the charts are, however, included in this response for the review of the Staff. For the convenience of the Staff, we have repeated each of the Staff's comments before the corresponding response.

FORM 20-F FOR THE YEAR ENDED DECEMBER 31, 2009

Health and Safety, page 39

- We note your statement regarding the critical importance your company places on the health and safety of your employees. In an appropriate section of your future filings, please include a discussion of your safety performance referencing your safety programs and statistical measures your organization utilizes to monitor performance, such as occupational fatality and injury frequency rates. Please expand your discussion related to safety and health to include these occupational injury frequency rates and other appropriate statistics, such as number of man-hours worked, number of reportable injuries, lost time injuries and fatalities preferably grouped by your business units. Your performance can be illustrated by a comparison of the respective national rates to your corporate or divisional rates.**
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RESPONSE: The Company notes and will comply with the Staff's comment in future filings, by including a discussion of its safety performance referencing safety programs and including statistical measures the Company utilizes to monitor such performance. The following discussion, with respect to 2009, is illustrative:

Health and Safety

The safety, health, and well-being of our employees are critical to our ability to conduct our business. This is why in 2009 we maintained our focus on the following programs related to safety training, driver and contractor safety and healthy living that can contribute to minimizing workplace and road hazards:

- **Global Safety Leadership Training:** In 2009, we developed LEGACY, the CEMEX Safety Leadership Program, which provides our managers around the world with the tools and skills they need to lead safer operations. LEGACY is a two-day program which covers seven behaviors of effective safety leadership. In 2009, have trained a total of 533 senior and mid-level managers from nine countries. As of September 2010, we had trained more than 1,600 managers and had 140 employees who had served as LEGACY trainers.
- **Driving and Contractor Safety:** To address one of the leading causes of fatalities within our industry –fatal injuries from road traffic incidents - we are participating in the Cement Sustainability Initiative (CSI), which is working to develop comprehensive guidelines for driving and contractor safety. In 2009, 97% of our operations had local safety training programs for drivers, compared with 81% in 2008. During 2010, we are setting a performance baseline and establishing a five-year plan of preventive action that focuses on improving our driving safety performance and the performance of high-risk contractors throughout our operations.
- **CEMEX Global Safety Awards:** Established in 2000, the CEMEX Global Safety Awards have promoted excellence in safety at our operations worldwide. We evaluate sites based on performance, safety leadership, risk-management, incident investigation, analysis and follow-up, and grant the annual awards to the best-performing and most improved facility in each business. During 2009, 10 businesses and two countries were recognized for their outstanding safety performance.
- **Health Essentials:** During 2009, we increased the percentage of our operations that have implemented a local health management system to 76%, from 47% in 2008. To complement these systems, we developed our global Health Essentials campaign, which provides managers in all business units with practical and easy-to-use materials on 12 key topics including heart and back health, stress management and nutrition. In 2009, 44% of our employees participated in annual medical exams. We are focusing our efforts in those countries whose performance is lagging with the objective of reaching a 100% employees' participation level by 2015.

In 2009, as a result of our efforts, we decreased total lost-time injuries (LTIs) for employees by 43%, achieving an LTI rate of 3.3 for the year (based on 1,000,000 hours worked). We are on track to reach our short-term target LTI rate of 2.5 by the end of 2010. Despite this improvement, 33 people, including employees, contractors and other third parties, died in incidents related to our operations in 2009. During 2010 we will maintain our focus on preventing incidents by conducting root cause analysis and taking preventative actions to address the findings. In addition, we expect to launch our updated global safety management system in line with the internationally recognized OHSAS 18001 in order to get closer to our goal of zero incidents.

The following table sets forth our performance indicators with respect to safety by geographic location as of December 31, 2009 (excludes our operations in Venezuela and Australia):

For the year ended as of December 31, 2009

	North America	Europe	South America, Central and the Caribbean	Africa and Middle East	Asia	Total CEMEX
Total Fatalities, employees, contractors and other third parties (#)	16	6	3	4	4	33
Fatalities Employees (#)	3	2	1	1	1	8
Fatality Rate Employees	1.21	1.22	2.50	3.98	7.35	1.63
Lost-Time Injuries (LTI), Employees (#)	209	54	71	5	5	344
Lost-Time Injuries (LTI), Contractors (#)	48	36	46	8	7	145
Lost-Time Injury (LTI) Frequency Rate, employees per million hours worked	3.7	1.7	7.0	0.9	1.5	3.2

* From January 1, 2009 to September 30, 2009, we had zero total fatalities (with respect to employees, contractors and other third parties), 16 and 9 incidents with LTI of employees and LTI of contractors respectively, and a LTI frequency rate for employees of 3.7 per million of hours worked, in our Australian operations.

Description of Properties, Plants, and Equipment, page 48

2. **In future filings please include the appropriate Industry Guide 7 disclosure for your mining and processing properties. Please segregate and group your facilities by salable product and/or source material such as sand & gravel, clay, crushed rock, limestone, etc. and with the large number of facilities, you may wish to aggregate or group them based on your business units, geographic location, region, country or continent. In the event you believe Industry Guide 7 does not apply, please provide us supplementally a materiality assessment comparing a valuation of your total assets as compared to your mining and related processing assets. Vertically integrated businesses, such as your cement facilities are evaluated based on the mining and all processing operations to the point of significant external sales and not the mining assets alone.**

RESPONSE: The Company notes and will comply with the Staff's comment in future filings, by including the relevant information in the charts attached as Annex A hereto.

3. **You also disclose that you have aggregate reserves sufficient for many years production in several locations in your filing. Industry Guide 7 requires that you disclose material information concerning production, proven and probable reserves, locations and the nature of your mineral interests. Industry Guide 7 may be reviewed on the Internet at <http://www.sec.gov/divisions/corpfin/forms/industry.htm#secguide7>. In future filings please disclose the following information in a table for your mines and/or quarries. Please group your mining properties in a similar manner to your operating divisions and indicate the following in your future filings:**

- **Number of quarries, mines, and processing facilities**
- **Location and type of facility**
- **Indicate the total acreage of your properties that are owned compared to those which are leased**
- **Total proven and/or probable reserves (quantities or tonnage)**
- **Reserve quality (grade) information, if that is applicable**
- **Material types or salable product produced**
- **Annual production and plant capacity**
- **Number of years until reserve depletion at current production rates.**

Please include only material that can be produced during the life of the lease for reserves that are leased. Also include only those materials that have environmental permits for extraction.

RESPONSE: The Company notes and will comply with the Staff's comment in future filings, by including the relevant information in the charts attached as Annex A hereto.

Please insert a small-scale map showing the location and access to your properties in your future filings. See Instruction No. 3(b) to Item 102 of Regulation S-K. Please note that the EDGAR program now accepts digital maps. So please include these in any future amendments that are uploaded to EDGAR. It is relatively easy to include automatic links at the appropriate locations within the document to GIF or JPEG files, which will allow the figures and/or diagrams to appear in the right location when the document is viewed on the Internet. For more information, please consult the EDGAR manual, and if you need additional assistance, please call Filer Support at 202-942-8900. Otherwise provide the map to the engineering staff for our review.

RESPONSE: The Company notes and will comply with the Staff's comment in future filings, by inserting a small-scale map showing the location and access to the Company's properties.

- 4. Please disclose the extent your reserve estimates have been reviewed by third parties in your filings. If you have not used any third parties to review your reserves within the last three years, disclose this fact in your future filings.**

RESPONSE: The Company notes and will comply with the Staff's comment in future filings.

- 5. Please note that proven reserves presented in accordance with Industry Guide 7 may be combined with probable reserves only if the difference in the degree of assurance between the two classes of reserves cannot be readily defined and a**

statement to that effect is included in your filing. Absent this condition, proven and probable reserves should be segregated.

RESPONSE: The Company notes and will comply with the Staff's comment in future filings in accordance with Industry Guide 7.

6. In future filings, please disclose your annual production as required by Instruction No. 3 to Item 102 of Regulation S-K.

RESPONSE: The Company notes and will comply with the Staff's comment in future filings, by disclosing the Company's annual production as required by Instruction No. 3 to Item 102 of Regulation S-K.

7. High quality and purity limestone and gypsum deposits are generally defined by the mineral content, such as calcium carbonate (CaCO₃) content, percentage or another appropriate measurement. Does this apply to your limestone and gypsum properties? If so, please disclose the appropriate measurement for each mining operation in future filings. If not, disclose this fact and present the challenges presented to control plant feed quality, define the impacts on the ore reserve estimates, mining and processing recoveries, and your processing operations in future filings.

RESPONSE: The Company notes and will comply with the Staff's comment in future filings, by disclosing the appropriate measurement of quality and purity limestone and gypsum deposits for the Company's mining operations.

Sources and Uses of Cash Flows, page 127

8. We note your disclosure on page 16 that the ability of your subsidiaries to pay dividends may be restricted by the laws of the jurisdictions under which such subsidiaries are incorporated. In future filings, please disclose the nature and extent of any legal or economic restrictions on the ability of subsidiaries to transfer funds to the Company in the form of cash dividends, loans, or advances and the impact such restrictions have had or are expected to have on the ability of the Company to meet its cash obligations. See Item 5.B.1(b) of Form 20-F.

RESPONSE: The Company notes and will comply with the Staff's comment in future filings, by disclosing the nature and extent of any legal or economic restrictions on the ability of the Company's subsidiaries to transfer funds to the Company in the form of cash dividends, loans, or advances and the impact such restrictions have had or are expected to have on the ability of the Company to meet its cash obligations.

9. **We note your disclosure of the definition of disclosure controls and procedures; however, your definition does not conform to the definition contained in Exchange Act Rule 13a-15(e) since you do not state that such information is "accumulated" before it is communicated to management. Please revise accordingly in future filings or simply state an effectiveness conclusion without including a definition.**

RESPONSE: The Company notes and will comply with the Staff's comment in future filings by conforming the Company's disclosure to the definition contained in Exchange Act Rule 13a-15(e).

10. **We note your statement that you "maintain a system of disclosure controls and procedures designed to provide reasonable assurance that the information required to be disclosed in the reports...." Please confirm to us supplementally that your principal executive officer and principal financial officer concluded that your disclosure controls and procedures are effective at the reasonable assurance level. Please comply with this comment in future filings.**

RESPONSE: The Company supplementally confirms to the Staff that the Company's principal executive officer and principal financial officer concluded that the Company's disclosure controls and procedures are effective at the reasonable assurance level. The Company will comply with this comment in future filings.

* * * *

Acknowledgment Statement

The Company acknowledges that:

- the Company is responsible for the adequacy and accuracy of the disclosures in its filings;
- Staff comments or changes to disclosures in response to Staff comments, do not foreclose the Commission from taking any action with respect to the filings; and
- the Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

If you should have any questions about this letter or require any further information, please contact Jill Simeone, CEMEX General Counsel NA, at 590 Madison Avenue, 41 Floor, New York, NY 10022, Tel: 212-317-6015 or our U.S. legal counsel Robert M. Chilstrom (Skadden, Arps, Slate, Meagher & Flom LLP) at 212-735-2588.

Very truly yours,

By: /s/ Ramiro G. Villarreal
Name: Ramiro G. Villarreal
Title: General Counsel

Note	1	2	3	4	5, 6	5, 6	7	8	9	10	11	12	13	
REGION/COUNTRY	# of quarries	Type of mine	Property surface (hectares)		Proven reserves	Probable reserves	Total reserves	Years to depletion	Fiscal Year Annual Productions	Own use/Cement Production	Safeable products	Reserve quality	Reserves estimates reviewed	
Type of quarry by mineral	#	O/P Open Pit O/C Open Cut U/G Under Ground D/O Dredging Operation	Owned	Leased	millions of metric tones	millions of metric tones	Proven + Probable	calculated at current production rates	millions of metric tones	% over annual production	% over annual production	mineral content percentage	within last 3 years by third parties	within last 3 years by internal experts
Limestone quarries														
North America							-							
Mexico							-							
United States							-							
Europe							-							
Spain							-							
United Kingdom							-							
Germany							-							
France							-							
Rest of Europe							-							
Central and South America and the Caribbean							-							
Colombia							-							
Rest of Central and South America and the Caribbean							-							
Africa and Middle East							-							
Egypt							-							
Rest of Africa and Middle East							-							
Asia							-							
Philippines							-							
Rest of Asia							-							
Others							-							
Total Limestone quarries	-		-	-	-	-	-		-					
Clay quarries							-							
North America							-							
Mexico							-							
United States							-							
Europe							-							
Spain							-							
United Kingdom							-							
Germany							-							
France							-							
Rest of Europe							-							
Central and South America and the Caribbean							-							
Colombia							-							
Rest of Central and South America and the Caribbean							-							
Africa and Middle East							-							
Egypt							-							
Rest of Africa and Middle East							-							
Asia							-							
Philippines							-							
Rest of Asia							-							
Others							-							
Total Clay quarries	-		-	-	-	-	-		-					

Note	1	2	3	4		5, 6	5, 6	7	8	9	10	11	12	13	
REGION/COUNTRY	# of quarries	Type of mine	Property surface (hectares)		Proven reserves	Probable reserves	Total reserves	Years to depletion	Fiscal Year Annual Productions	Own use/Cement Production	Safeable products	Reserve quality	Reserves estimates reviewed		
Type of quarry by mineral	#	O/P Open Pit O/C Open Cut U/G Under Ground D/O Dredging Operation	Owned	Leased	millions of metric tones	millions of metric tones	Proven + Probable	calculated at current production rates	millions of metric tones	% over annual production	% over annual production	mineral content percentage	within last 3 years by third parties	within last 3 years by internal experts	
Other mineral quarries							-								
North America							-								
Mexico							-								
United States							-								
Europe							-								
Spain							-								
United Kingdom							-								
Germany							-								
France							-								
Rest of Europe							-								
Central and South America and the Caribbean							-								
Colombia							-								
Rest of Central and South America and the Caribbean							-								
Africa and Middle East							-								
Egypt							-								
Rest of Africa and Middle East							-								
Asia							-								
Philippines							-								
Rest of Asia							-								
Others							-								
Total other mineral quarries	-		-	-	-	-	-		-						
Total	-		-	-	-	-	-								

Notes:

- 1 This column presents the type of mineral extracted by country.
- 2 Describes the number of existing quarries of the corresponding mineral by country.
- 3 Describes the type of quarry, please include the defined code for each type preceded by the number of existing facilities (ex. 2O/P): O/P Open Pit, O/C Open Cut, U/G Under Ground, D/O Dredging Operation
- 4 Includes the amount of hectares (1 hectare = 2.47 acres) of quarry surface classified by property ownership as owned or leased.
- 5 Proven or Probable Reserves are reserves that it is either "reasonably certain" or "reasonably probable", respectively, that the product can be produced, mined, or drilled given current technology at current prices, with current commercial terms.
- 6 If property is leased, include only material which can be produced under the life of the contractual commitment inherit in the lease.
- 7 The arithmetic sum of Proven Reserves plus Probable reserves.
- 8 Years estimated by internal or external geologists/engineers to deplete the quarries, taking in to account level of production, technology available and development projects
- 9 Annualised production of the sites quoted in millions of metric tones.
- 10 Represents the percentage from the total annual production of the quarries that was used for own consumption to produce cement and/or other product which is later sold to the public market.
- 11 Represents the percentage from the total annual production of the quarries that is later sold directly to the public market.
- 12 Quality and purity of limestone and other mineral deposits are generally defined by the mineral content percentage. If another type of measurement is used or if it is not possible to assess please describe.
- 13 Reserves estimates are normally reviewed periodically by internal or third-party experts. Please fill the column with "Yes/No" in each case, and if review was not performed within the last three years please type the number of years when the estimates were reviewed by either internal or external experts.

Note	1	2	3	4		5, 6	5, 6	7	8	9	10	11	12	13	
COUNTRY	# of quarries	Type of mine	Property surface (hectares)		Proven reserves	Probable reserves	Total reserves	Years to depletion	Fiscal Year Annual Productions	Own use/Cement Production	Safeable products	Reserve quality	Reserves estimates reviewed		
Type of Country name here	#	O/P Open Pit O/C Open Cut U/G Under Ground D/O Dredging Operation	Owned	Leased	millions of metric tones	millions of metric tones	Proven + Probable	calculated at current production rates	millions of metric tones	% over annual production / total avg % over annual production	% over annual production / total avg % over annual production	mineral content percentage	within last 3 years by third parties	within last 3 years by internal experts	
Limestone quarries															
							-								
							-								
							-								
							-								
							-								
							-								
Total Limestone quarries	-		-	-	-	-	-		-						
Clay quarries															
Total Clay quarries	-		-	-	-	-	-		-						
Other mineral quarries (please describe)															
Total other mineral quarries	-		-	-	-	-	-		-						
Total	-		-	-	-	-	-		-						

- Notes:**
- This column presents the country and the location of the quarry by type of mineral extracted. Insert any number of rows as locations may find for each type of mineral.
 - Describes the number of existing quarries of the corresponding mineral by each location.
 - Describes the type of quarry, please include the defined code for each type preceded by the number of existing facilities (ex. 2O/P): O/P Open Pit, O/C Open Cut, U/G Under Ground, D/O Dredging Operation
 - Includes the amount of hectares (1 hectare = 2.47 acres) of quarry surface classified by property ownership as owned or leased.
 - Proven or Probable Reserves are reserves that it is either "reasonably certain" or "reasonably probable", respectively, that the product can be produced, mined, or drilled given current technology at current prices, with current commercial terms.
 - If property is leased, include only material which can be produced under the life of the contractual commitment inherit in the lease.
 - The arithmetic sum of Proven Reserves plus Probable reserves.
 - Years estimated by internal or external geologists/engineers to deplete the quarries, taking in to account level of production, technology available and development projects
 - Annualised production of the sites quoted in millions of metric tones.
 - Represents the percentage from the total annual production of the quarries that was used for own consumption to produce cement and/or other product which is later sold to the public market.
 - Represents the percentage from the total annual production of the quarries that is later sold directly to the public market.
 - Quality and purity of limestone and other mineral deposits are generally defined by the mineral content percentage. If another type of measurement is used or if it is not possible to assess please describe.
 - Reserves estimates are normally reviewed periodically by internal or third-party experts. Please fill the column with "Yes/No" in each case, and if review was not performed within the last three years please type the number of years when the estimates were reviewed by either internal or external experts.