



Alternative Fuel | WorleyParsons Re-Evaluation of 2009 Human Health Risk Assessment

Lafarge is currently investigating the possibility of replacing a portion of the coal and natural gas used to fire its kilns with processed engineered fuel (PEF).

The practice of using supplementary alternative fuels in cement production, also known as co-processing, has been in use since the 1970s.

What is Processed Engineered Fuel (PEF)?

PEF is a three-component fuel made up of: construction wood waste (Plywood, particle wood, manufactured wood products); non-chlorinated plastics (non-recyclable plastics); and asphalt shingles. The proportions of PEF components will be in the range of:

- 70-95% construction wood waste
- 5-25% non-chlorinated plastics
- 0-10% asphalt shingles.

Lafarge is proposing that 20% of fuel burned at the cement plant be PEF (80% would remain coal).

What is Lafarge investigating?

In 2009, Lafarge performed a human health risk assessment associated with exclusively burning coal at the Exshaw plant. Since the use of PEF would alter the chemical emissions Lafarge retained WorleyParsons Canada Services Ltd. to determine if the use of alternate fuels would change conclusions from the 2009 assessment.

The reassessment looked at risks associated with long-term and short-term exposure through inhalation of chemicals in the air and exposure via soil, vegetation, wild game, surface water, and fish.

What were the results?

The review indicated the efficiency of cement kilns to effectively destroy potential hazardous organic compounds in non-standard fuels has been widely established. The findings suggest that burning PEF would not result in significant increases in toxic organics from the kiln stack. The review also indicates the use of PEF would not lead to substantial changes in predicted risk by any route of exposure (air, soil, vegetation, wild game, water or fish).

Further recommendations of the study:

- Lafarge should control and monitor mercury levels in any PEF and exclude certain types of plastics from the PEF
- It is necessary to ensure the Lafarge kiln is suitable for co-processing and that good standard practices are implemented to ensure proper combustion while using PEF
- While the use of asbestos is not an issue for combustion within the kiln, singles that contain asbestos should not be used to prevent exposure to workers during handling
- Emissions monitoring and trial burns should be considered to confirm results of this study.