

# CLEAN COAL BIOTECHNOLOGY FOR MONTANA<sup>1</sup>

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**Abstract:** Coal Black Liquids LLC (“CBL”) is advancing a project to construct a commercial plant in Montana based on a patented CO<sub>2</sub>-neutral bioconversion technology that uses naturally occurring microorganisms (derived from wood-eating and humus-eating termites) to convert coal into methane gas as well as humic acid products for agriculture and environmental remediation. CBL is conducting applied research, including lab and field trials, to investigate the benefits of the organic humic acid fertilizer product on plant growth, nutrient availability, yield response and other plant production characteristics. CBL is also conducting research on the effectiveness of the environmental remediation products in the removal of organic and inorganic pollutants from environmental, industrial, and municipal waste/production streams.

Lab and field research currently under way is investigating the efficacy of the organic fertilizer for Montana wheat and alfalfa crops, as well as in the reclamation of acid metalliferous mine tailing. Further research is planned on its effects in establishing growth on nutrient poor soils on cut and fill slopes, increasing plant nutrient availability over time, and in preventing the accumulation of toxic heavy metal soil contaminants by plants.

Additional research is also planned in the treatment of industrial and environmental waste streams with the environmental remediation product. This research will evaluate product effectiveness in comparative side by side evaluations with competing sorbent and ion exchange technologies. Tests will evaluate complete life cycle of the product from treatment through regeneration/disposal. These test results will allow a comparative economic evaluation of the proposed technology.

Preliminary design and cost analysis of a commercial plant are underway. Three Montana coals (leonardite , lignite, and sub-bituminous) are undergoing lab scale bio-conversion analysis to establish plant design parameters. Scale up issues from current lab and pilot scale production will be clearly analyzed in the commercialization plan.

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