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BLACK EARTH HUMIC LP

13044 Yellowhead Trail
Edmonton, Alberta,
Canada T5L 3C1
Phone: (780) 453 - 2100
Fax: (780) 421 - 4835

e-mail:
sales@blackearth.com

Web Site:
www.blackearth.com

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SOURCE CHARACTERIZATION OF HUMIFIED ORGANIC MATTERS

TITLE - Leonardite and Humified Organic Matter.
- Humic Acid Laboratory Analysis.

RESEARCH COOPERATOR – D. M. Ozdoba, J. C. Blyth, R. F. Engler, and M. Schnitzer (Luscar Specialty Products Division, Luscar, and ECORC – Agriculture and Agri-Food Canada) and A&L Plains Agricultural Laboratories.

STUDY OBJECTIVE – Characterize different geological deposits of humified organic matter containing materials in North America.

METHOD OF STUDY – Literature review and laboratory analysis.

RESULTS AND DISCUSSION

Humalite is a highly oxidized naturally occurring organic material. This material is brownish-black in color and found adjacent to sub-bituminous coal fields in Alberta. Wyoming and New Mexico products are associated with oxidized sub-bituminous coal fields and carbonaceous shales. Material found in Idaho originates from carbonaceous shales. Leonardite is an oxidized form of lignite. This material is a soft brown and coal like substance found in Saskatchewan and North Dakota.

Alberta humalite has the lowest ash content at 11%, while Idaho deposit has 85% due to carbonaceous shale origin. New Mexico deposit also has high ash content at 36% as it is associated with carbonaceous claystone, mudstone, and shale. Leonardite from North Dakota and Saskatchewan has about 20% ash content as the material is mixed with mineral matters.

Qualitative laboratory analysis using A&L method found that humalite from Alberta had high humic acid content at 83%. Products from North Dakota and New Mexico had lower contents at 75 and 58%, respectively.

