



Manure Produced By Livestock

## Technology Summary

The invention comprises a three-step process for treating high-P fluid involving 1) providing a high P containing stream; 2) chemically treating the high P stream such that a majority of dissolved P in the stream is transformed into a solid form via sorption of P onto particles placed or precipitated within the stream; and 3) removing the solid form containing P from the chemically treated fine solids stream, such that greater than about ninety percent (90%) of the total P is removed from the high P fluid. The N remains in the treated liquid and may be used by the farmer to fertilize crops. The invention's processing equipment is compact and mobile, being completely contained on two semi-trailers.

## Application & Market Utility

Managing manure phosphorus (P) has become a priority environmental concern due to cumulative effect of concentrated livestock operations. Liquid Manure typically contains more than two-thirds of consumed feed P. Stored liquid manure may enter the watershed to enrich and foster downstream eutrophication. This causes the most pervasive water quality problem in the U.S. accounting for sixty-six percent (66%) of the impaired conditions of US rivers. This problem is compounded when manure is spread on fields, due to the imbalance of nitrogen (N) relative to P.

## Next Steps

Full-scale version has been built and tested at several dairy facilities. Seeking licensing opportunities to commercialize. CRADA may be available through USDA.

### TECHNOLOGY READINESS LEVEL

4-7

#### Seeking

Investment | Licensing | Research

#### Keywords

- mobile working prototype
- animal waste management
- MAPHEX
- USDA co-inventors/co-ownership
- US Pat. Nos. 9,790,110 and 10,737,958

#### Researchers

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