



GBI CELEBRATES SIX YEAR ANNIVERSARY

GBI is proudly celebrating its 6th year anniversary. Year 7 is promising to be *the* break out year for new butane-related technologies in industries such as odor control, turf management, lawn care, enhanced plant growth, and wastewater.



New GBI Patent Issued December 28, 2004

Patent No. 6,835,312, *Method and Apparatus for Treatment of Septic Systems with Alkane-Utilizing Bacteria*, issued on December 28, 2004.



(12) **United States Patent** (16) **Patent No.:** **US 6,835,312 B2**
 Perriello et al. (45) **Date of Patent:** ***Dec. 28, 2004**

(54) **METHOD AND APPARATUS FOR TREATMENT OF SEPTIC SYSTEMS WITH ALKANE-UTILIZING BACTERIA.**
 (75) Inventors: **Felix Anthony Perriello**, Norwood, MA (US); **Ralph J. Perriello**, Lynnfield, MA (US)
 (73) Assignee: **Global BioSciences, Inc.**, North Attleborough, MA (US)
 (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
 This patent is subject to a terminal disclaimer.
 (21) Appl. No.: **10/324,663**
 (22) Filed: **Dec. 20, 2002**
 (65) **Prior Publication Data**
 US 2003/0234217 A1 Dec. 25, 2003
Related U.S. Application Data
 (63) Continuation in part of application No. 10/886,607, filed on Dec. 2, 2002, which is a continuation-in-part of application No. 09/528,791, filed on Aug. 28, 2001, now Pat. No. 6,609,846.
 (60) Provisional application No. 60/344,917, filed on Dec. 21, 2001, and provisional application No. 60/291,193, filed on May 25, 2000.
 (51) **Int. Cl.** **C02F 3/00**
 (52) **U.S. Cl.** **210/610**
 (58) **Field of Search** **210 610**
References Cited
U.S. PATENT DOCUMENTS
 3,242,071 A 3/1966 Walker
 5,016,240 A 10/1991 Hegner
 5,741,803 A 6/1993 Drake et al. 210 195.4
 3,846,291 A 11/1972 Raymond
 3,969,449 A 7/1976 Franklin, Jr.
 4,033,763 A 7/1977 Markes, Jr.
 4,111,808 A 9/1978 Fain
 4,236,175 A 5/1982 Kessel et al.
 4,454,077 A 6/1984 Ito
 4,522,728 A 6/1985 Kaufman et al.
 4,529,701 A 7/1985 Seely 435,244
 4,644,603 A 2/1987 Frankel
 4,665,378 A 9/1987 Arkona et al.
 4,832,562 E 12/1987 Ito
 4,713,345 A 12/1987 Wilson, Jr. et al.
 4,737,286 A 4/1988 Costaki et al.
 4,780,478 A 12/1988 Reiss et al.
 4,790,081 A 12/1988 Costaki et al.
 (List continued on next page.)
FOREIGN PATENT DOCUMENTS
 DE 4142063 12/1991
 EP 0968138 1/1984
OTHER PUBLICATIONS
 Wilson et al., "Biotransformation of Trichloroethylene in Soil," *Applied and Environmental Microbiology*, Jan., 1985, p. 242-243, vol. 49, No. 1.
 Nelson et al., "Aerobic Metabolism of Trichloroethylene by a Bacterial Isolate," *Applied and Environmental Microbiology*, Aug., 1986, p. 383-386, vol. 52.
 (List continued on next page.)
Primary Examiner—Robert A. Hopkins
(74) Attorney, Agent, or Firm—Alan G. Towson, Esq.; Pietragallo, Bosack & Gordon
ABSTRACT
 Septic systems are treated with alkane-utilizing bacteria. Alkanes such as butane, are injected into septic system wastewater in order to enhance growth of alkane-utilizing bacteria which degrade wastes. Aerobic processes may be achieved by injecting an oxygen-containing gas into the septic system. Alternatively, anaerobic processes may be used. The alkane and oxygen-containing gas may be injected at any suitable stage of the septic system, such as injection into a septic tank, float tank and/or gas- or oil interceptor tank.
34 Claims, 1 Drawing Sheet

