THE COMPANY GOODS AND SERVICES

BV SORBEX, Inc. has a clear product strategy driven by the realization that the output of new production-scale wastewater purification systems must necessarily meat the regulatory standards and the treatment costs should not provide a major burden on the operators. In terms of introducing the new biosorbent technology and building an enterprise based on it the goal involves the enabling technological and engineering advances in three areas:

- **PRODUCTS**
- **EQUIPMENT**
- **SERVICES**

The three are interrelated; for example, new and highly competitive "products" - biosorbent materials enable application of the "equipment" - sorption systems - in the treatment process which has not been feasible up to this point in time when based on conventional metal-sorbing materials. The "services", in turn, are to help convince the clients that the new "products" in the process "equipment" will work for them effectively and economically, helping them to solve their waste problems and, eventually, even help to offset the treatment costs by recovering the useful metal commodity.

Correspondingly, during its first three years the Company will bring to market:

• PRODUCTS

At least three unique and proprietary SORBEX-family biosorbent products:

1) A broad-range metal-sorbing material based on waste industrial microbial biomass;
2) A broad-range metal-sorbing material based on marine algal biomass;
3) A metal-specific biosorbent for high-value metal recovery.

• EQUIPMENT

A unique, possibly portable, pilot plant facility for the use and biosorbent technology demonstration on the location of the client production plant:
"*BeePS*" - Biosorbent Pilot System

• SERVICES

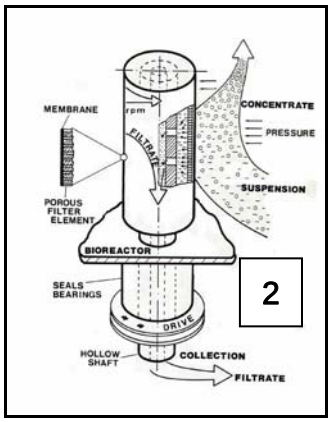
A range of environmental engineering services and analytical capabilities necessary for the review of the customer's wastewater problem, leading to and including the treatability study aimed at assessment of the new biosorbent technology potential for the particular customer.

SORBEX BIOSORBENTS *The family of new biosorbent materials for metal removal/recovery*

The SORBEX-family biosorbents are based on a rigid and chemically robust formulation of highly metal-sorbing biomass raw materials. The biosorbent granules of 0.5 to 2 mm allow their convenient use in the sorption process contact equipment (columns). Their macroporous and hydrophilic structure makes them resistant to fouling and allows easy and rapid penetration of metallic ions from the surrounding solution and their binding. Biosorbents are easy to regenerate and suitable for multiple-cycle use in repeated metal uptake and sorbent regeneration cycles. BV-SORBEX family of metal biosorbents are quite specific for binding heavy metals, removing thus the toxicity and enabling metal recovery.

The Company has an exclusive know-how for producing and exploiting biosorbent materials discovered and developed over almost two decades of research into biosorption. The overall benefit to the customer of using BV-SORBEX materials will be an important reduction in costs of wastewater treatment resulting from the use of effective metal-sorbent materials of exceptionally low costs. In certain client cases the application of new biosorbents will enable to simplify the treatment process making it possible to accomplish satisfactory treatment of wastewaters, impossible with the conventional technologies. Undoubtedly, this factor will be the key to a significant expansion of the existing markets.

EQUIPMENT *BeePS - Biosorbent Pilot System:*

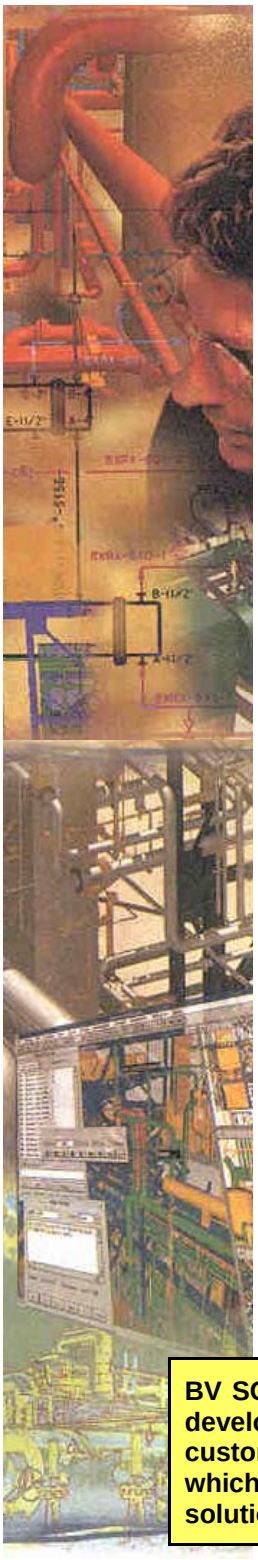


"BeePS" is a partially automated, self-standing pilot-scale equipment module for the sorption process. Its centre piece is the flow-through sorption column and it is to be marketed for pilots early in the Company development stages. Two basically different designs of the contactor element available for the *BeePS* make the pilot system extremely flexible and suitable for testing of a wide range of sorbents as well as different types of effluent solutions. Apart from the contactor heart of the system, each *BeePS* module is equiped with appropriate pumps, flow-control devices, valves and basic controls. As accessories there will be holding tanks for the fresh column-regenerating solution and the concentrated metal-laden regenerant. The system is designed for the use of both conventional ion exchangers and new SORBEX biosorbents.

1) One type of the *BeePS* contact system is based on the use of two sorption fixed bed columns operating in a standard alternating uptake/regeneration mode.

2) The other type of the BeePS contact system is based on a novel and *proprietary design* which allows continuous purification of an *unclarified* incoming stream containing suspended particulate matter. This feature eliminates not only the often required clarification pretreatment of the feed stream but allows also for the possibility of using of non-granulated and thus much cheaper biosorbents. The non-packed nature of the contactor allows a long-term continuous-flow operation without fouling. It offers faster kinetics of the sorption process which can be based on much smaller active particles allowing their more efficient utilization. This unique contactor is a substantially advanced form of a process equipment that prevents clogging and enables a different mode of biosorption process configuration. Extensive experimental evidence already exists of its technical feasibility and particle-separation performance in process use. .

ENGINEERING SERVICES *Environmental Engineering Services by BV SORBEX* for Wastewater Treatability Studies and Treatment Plant Operation.



This most general of the BV SORBEX business opportunities is anticipated to be the source of the first *cash flow* for the Company and may grow to a substantial part of its business.

The industries discharging metal-bearing wastewaters are hard pressed by the new environmental regulations. In most instances their expertise is far remote from that required to control their wastewater qualities. This situation creates enormous business opportunities for consulting companies active in environmental engineering. Those companies, however, have mastered and offer, almost as a rule, only very conventional water control and management technologies. As much as they try to keep abreast of new technological development, they are not necessarily the prime movers and carriers of it.

When a new technology is developed, such as biosorption for treatment of metal-bearing wastewaters, it offers a rare opportunity for the pioneers of it to enter an otherwise very competitive field of environmental engineering with a head start and a great deal of advantage in possessing a new know-how and a *proprietary new technology* which fuel the success of a new enterprise in an otherwise conventionally competitive field.

It is also extremely advisable to maintain the control over the introduction and operation of the new technology out in the field in order to eliminate blunders of uninitiated operators which can prove costly and rather dangerous to the new technology and its reputation, possibly tarnishing also the credibility of the new enterprise. It is therefore mandatory that BV SORBEX be intimately involved with the introduction of its new biosorbent technology and its applications. The close involvement with client customers and good understanding of their processes as well as wastewater composition and flow patterns is a prerequisite for the decision on the treatment scheme which may or eventually may even not involve the new technology of biosorption. Particularly in the field of pollution control, the most rewarding advances and related sales are usually made in a very *close contact with the client* who may not even have been well aware of what his actual pollution related problems were to start with.

BV SORBEX plans to aggressively follow up on the client industry contacts and develop the solution to the wastewater treatment in close collaboration with the customers in a series of steps known as the wastewater "treatability study" which will not be elaborated upon here. The result is a tailor-made effective solution to the problem, satisfied client and a business opportunity well fulfilled.