Summary of Recommendations of Deep Biosphere PPG Meeting
College Station, Texas
12-13 March 1998

1) Assessment of Drilling Contamination

a) The full drilling and sampling systems used by ODP were described and the potential for contamination discussed.

b) The application of contamination assessment (Quality Assessment and Quality Control, QA/QC) approaches used for land based sampling for microbiological analysis to ODP coring was considered. Due to the large volumes of surface seawater used during drilling (plus potential contamination from drilling muds when used), which has a bacterial population around 10^5 to 10^6/ ml, it was considered essential to detect and assess the contamination of deep sediments during drilling.

c) The use of fluorescent beads (0.2 to 0.55m), ionic species and perfluorocarbons to provide a comprehensive assessment of contamination were discussed.

d) It was considered that the application of these tracers would require relatively simple modifications and could fit in with normal drilling procedures. Accepting the mandate given to the Deep Biosphere PPG by SCICOM "To develop a plan of drilling and downhole sampling and experimentation to investigate ... the deep Biosphere", the Development Engineering Team Drilling Services will begin to develop systems to enable the use of tracers during drilling. This would be a stepwise development starting with the use of fluorescent beads. It was appreciated that the Deep Biosphere PPG would like these developments to take place as soon as possible, especially as microbiological research is to be conducted on Leg 180. However, it was also recognized that Drilling Services were already fully committed and that they would have to fit developments for contamination assessment in with existing activity.

e) The Deep Biosphere PPG requests that SCICOM supports the above recommendations and gives them a high priority so that developments can be implemented as soon as possible.

2) Microbiological Facilities on board the ship.

a) Currently there are no microbiological facilities or appropriate laboratory space on the ship. If the Deep Biosphere initiative is to proceed then this has to be rectified.

b) The Deep Biosphere PPG has already given a list of CORE equipment required for microbiological research to SCIMP and it is recommended that this is fully funded. If less than full funding is allocated then it is requested that the Deep Biosphere PPG is

informed of the funding available and they will then consider the best way to use this finance. Please note that this is a much reduced list based on the microbiological equipment list previously produced by ODP. These basic facilities would still require microbiologists to bring specialist equipment onto the ship and would subsequently require to be supplemented to provide a comprehensive microbiological facility. This CORE microbiological equipment could be set up within existing laboratory space, with minor re-arrangements. Although less than ideal this at least would provide some microbiological facilities. The intention would be to then subsequently supplement this CORE facility with a container to enable radioactive work and an "Advanced Microbiology Laboratory" container with more specialist equipment (non- ODP funding would be sought for this). (For full details of these plans please refer to the Notes of the Deep Biosphere PPG Meeting 13-15 December 1997). Both of these containers would require some modification to the ship during dry dock e.g. strengthening, access etc.

c) Various plans for creating a microbiological laboratory on the ship during dry dock were presented by Brad Julson. It was clear that the only existing space that was being considered was inappropriate. A suggested way forward was to create new laboratory space with extension of the laboratory stack at dry dock (however, see previous item b). As ODP is in a unique position in Deep Biosphere Research in terms of access to a range of extreme and novel environments it is possible that some funding for microbiological facilities may be available from non-ODP organizations such as relevant NSF, DOE and EC programs. It is recommended that ODP explores these potential funding opportunities.

John Parkes 17/3/98