

TO: Staff Scientists
ODP Headquarters
ODP Managers

SUBJECT: Notes from Deep Biosphere PPG meeting, Wellington, Oct. 10-11, 1998

The Deep Biosphere PPG met last weekend in Wellington, New Zealand, in conjunction with the Wellington port call. The meeting consisted of two grueling, 12-hour sessions, and included a visit to the ship. Despite the cost of getting people to New Zealand, the visit to the ship was critical in giving the PPG members a sense that their plans could, indeed, become a reality, and at the same time making them aware of the limitations within which we have to operate. Following are the main points to emerge from the meeting:

- 1) **Space.** Although envious of the lab space already allotted to geoscience activities, the PPG concluded that a 20-ft van and the current Second Look lab. would be sufficient for their needs. The existing Engineering Van can be made available and requires minimal modification to be used as a working lab. The van should be placed on top of the lab. stack, forward of the Downhole lab., but a temporary location on top of the Core Tech Shop would be acceptable if this cannot be arranged prior to dry dock. The Second Look lab. would initially be used for static equipment (refrigerator, incubators, autoclave). If a solution can be found to the noise problem, then this space could beneficially be converted to a working lab.
- 2) **Contamination Tests and Sampling.** The most critical needs continue to be contamination testing and development of a standard sampling procedure. If these two things can be accomplished satisfactorily, they will add substantially to the credibility of ODP deep biosphere observations.

A sampling device (promptly dubbed the Bristol Sampler) has been designed and is being tested in Parkes' lab at Bristol University (UK) right now. If successful, it can be duplicated for use on JR at minimal cost and effort.

The contamination tests need to be conducted on APC, XCB, and RCB cores. They involve introducing a tracer (latex beads) at the mouth of the core barrel as the core is cut (to determine the amount of mixing created by the coring process), and also introducing a second tracer (fluorocarbon) into the drilling fluid (to determine the extent to which the core is contaminated by drilling fluid). The presence of the tracers can be detected in the core under a fluorescence microscope. The use of fluorocarbons is of concern to scientists in other disciplines, and will be discussed at the upcoming SCIMP meeting. Aside from this issue, there seemed to be no reason that the contamination tests could not proceed without further delay. Mark Robinson assured the PPG that from an engineering standpoint very little preparation was required and the cost should be relatively small (i.e. a few thousand dollars); it's simply a matter of allocating resources.

- 3) **Lab equipment.** The PPG's shopping list originally totaled \$240K for lab equipment. SCICOM had expressed the hope that this could be reduced to \$150-180K, and purchased out of FY99 yearend savings. In fact, since ODP already has an epifluorescence microscope, and will be getting new gas chromatographs (thus freeing up the existing GCs for Deep Biosphere-related work), the cost of basic equipment needed for Deep Biosphere work is likely to be significantly less than \$100K. The PPG asked that on cruises with a microbiology component, the microbiologist(s) should have priority use of the epifluorescence microscope. For the remaining

equipment, the PPG opted for a staged approach to outfitting the labs, on the assumption that funds are likely to be found in “bits and pieces” rather than a lump sum of “new” money. This is reflected in the attached table.

Jody Deming (U. Washington) agreed to serve as contact person to work with ODP in specifying equipment and designing the layout of the lab. spaces.

The long term plan calls for outfitting a separate additional space for radio isotope studies, however the PPG recognized that it was premature to push for this at this time, beyond requesting that appropriate space be set aside in any plans for enclosing an area of the lab stack roof. Plans to use radio isotopes on JR will have to be discussed in detail with other users of ODP before anything is put in place.

- 4) **Programs.** Recognizing the realities of time required for purchasing and shipping equipment, supplies, etc., the PPG targeted Leg 185 as the next feasible leg for a significant microbiological effort. This has the support of the Leg 185 co-chief scientists. The minimal program for Leg 185 would include the contamination tests and developing standard sampling procedures. With the addition of the van and minimal equipment, some microbiological lab. studies could also be done.

Coming out of dry dock, the PPG would expect to have the van installed on the roof of the lab stack (or equivalent space in a more permanent structure) and outfitted as a basic microbiological facility (BMF). Post drydock legs with potential high microbiological interest include Legs 190 and 192.

Other drilling plans of interest, which are still in the proposal or pre-proposal stages, include a deep hole in the Somali Basin, and a return to the Blake Ridge.

With regard to shipboard staffing, the PPG understood that ODP is not familiar with the microbiological community. PPG members will encourage colleagues and experienced graduate students to apply directly to ODP to participate aboard JR (i.e. applications will not come via the PPG). PPG members, acting as individual scientists, will help ODP and the co-chiefs in evaluating applications, as needed.

- 5) **Future meetings.** The PPG would like to have joint meetings with both the Gas Hydrates PPG and the Long Term Observatories PPG, since they have some overlapping interests with those groups. Parkes will follow up on this with the chairs of those groups.

The next meeting of the Biosphere PPG will be in late January or early February at either Bristol (UK) or College Station. This will be after the SCIMP meeting and about the time of final preparations for Leg 185.

The Japanese member of the PPG (Takeshi Naganuma) would like the PPG to meet in Tokyo in mid June 1999, at the end of Leg 185, both to review the results of the contamination tests and because this would coincide with important annual Earth Science meetings in Japan. The PPG was interested in this and encouraged Naganuma to provide more specific information.

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