

SEDIMENTARY AND GEOCHEMICAL PROCESSES PANEL

MINUTES OF SPRING MEETING 6-8 MARCH 1992
MIAMI, FLORIDA

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EXECUTIVE SUMMARY

SGPP'S PRIORITIZED SHORT LIST OF NON-ENGINEERING ITEMS: Ans'd.....

I. Items Needing Further Engineering Development and Shipboard Testing.

1. Pressure Core Barrel: The instrument was run 12 times during Leg 141 (Chile Triple Junction) with moderate success. SGPP is encouraged by these results and requests that a second, if not even a third, system be authorized and constructed to be available for Leg 146 (Cascadia), the next opportunity for deployment and continued testing of this essential tool.

2. Vibra-PerCUSSIVE Corer: SGPP requests that the redesigning and testing of this instrument, which was last deployed during Leg 133, be expedited. It is anticipated that during Leg 150 (New Jersey Transect) extensive unconsolidated sands will be encountered and it is essential that every effort be made to recover this material without extensive loss or damage to the cores.

II. Items for Downhole Measurements and Sampling.

3. In-situ Pore Fluid Sampling Tool: SGPP acknowledges the establishment of the JOIDES Steering Group for in-situ pore fluid sampling and supports the generation of a RFP for a feasibility study of a downhole device, such as the Top Hat, with appropriate packer for multiple in-situ sampling of free-flowing water in lithified formations and measurement of pore-water pressure and permeability.

III. Items for Shipboard Laboratory

4. Whole core X-Radiography: SGPP recommends the purchase of a shipboard whole core X-radiography or CATSCAN system to be incorporated with the multi-sensor track (MST) for viewing sedimentary and structural features in cores prior to cutting.

5. X-Ray Laboratory Procedures: SGPP requests that an outside advisory committee be established to review the procedures used in the Shipboard X-ray Laboratory (XRD and XRF) in order to improve the acquisition and subsequent usefulness of the data generated onboard the JOIDES Resolution. It is suggested that new procedures manuals for both the X-ray and Chemistry Laboratories may be required.

IV. Computing Improvements

6. Data Retrieval: SGPP suggests that software needs to be developed to facilitate the retrieval and use of data on the CD-ROMs compiled from the earlier DSDP volumes.

RECOMMENDATIONS FOR ODP LEG 146, CASCADIA MARGIN:

Based on the results of the deployment of the pressure core barrel (PCB) during Leg 141, Chile Triple Junction, and evaluation of the data, SGPP recommends that **(1) two complete, totally independent PCB systems be assembled and send onboard the JOIDES Resolution for operation during Leg 146, Cascadia margin.** The PCB is apparently such a sophisticated instrument that it can best be prepared prior to deployment only by a well-trained expert. SGPP further recommends that **(2) Mr. Tom Pettigrew, the ODP engineer with the greatest PCB expertise, be invited to participate on Leg 146 to insure successful testing and operation of the PCB.**

REVIEW AND GLOBAL RANKING OF PROPOSALS

In preparation for the spring global ranking of all "active" ODP proposals, SGPP reviewed 7 new proposals and 6 revisions or addendums to previously reviewed proposals. Afterwards, a list of 44 "active" ODP proposals was compiled based on their having a high SGPP thematic interest. All of these proposals were briefly reviewed by the original watch dogs and a decision whether to include in the voting for Global Ranking was made. Under all circumstances, proponents were requested to leave the room during the discussion of their proposals. The list was pared down to 25 proposals, among which 13 considered drillable in FY 1994 were identified.

The Global Ranking was done in a two-step process because of the relatively large number of proposals being considered. A straw vote, with 25 being given to the highest ranked proposal and 1 for the lowest, was taken to pare down further the list of 25. Proponents were excluded from voting on their proposals. Scores were assigned by normalizing rank to number of votes cast. The top 16

proposals from this straw vote, listed below, were then considered in the final Global Ranking pool. Voting procedures were as described for the straw vote.

SGPP Spring Global Ranking 1992

Ref. No.	Proposal (ODP Number)	Drillable in FY94	Score	Ranking
----	Generic Gas Hydrates (inc. 355Rev2)	no	14.2	1
414	N. Barbados Ridge Accretionary Prism	yes	12.8	2
405	Amazon Fan	yes	11.5	3
391	Mediterranean Sapropels	yes	10.9	4
059Rev3	Maderia Abyssal Plain	yes	10.7	5
409	Santa Barbara Basin	yes	8.9	6
330	Mediterranean Ridge	yes	7.7	7
388	Ceara Rise	yes	7.5	8
354Rev	Benguela Current	yes	7.2	9
DPG	Sedimented Ridges II	no	7.1	10
404	N. Atlantic Sediment Drifts	yes	6.5	11
361	TAG Hydrothermalism	no	6.2	12
412	Bahamas Sea Level Transect	no	6.1	13
DPG	Cascadia II	no	5.9	14
337	New Zealand Sea Level	no	5.8	15
360	Valu Fa Sulfides	no	5.2	16

REEXAMINING SGPP'S DEEP DRILLING INPUT:

SGPP wishes to restate a strong interest to locate a deep hole in the Somali Basin and awaits the submission of a new drilling proposal from Millard Coffin (UTIG) et al. by the 1 August 1992 deadline. SGPP supports the generation by ODP/TAMU of a RFP to hire consultants to determine the feasibilities for deep drilling.

CO-CHIEF NOMINATIONS:

SGPP regrets that the nomination and appointment of co-chiefs without first securing panel recommendations, particularly to legs of high thematic interest to the respective panels, have occurred. SGPP believes panel advice is an important component of this decision making process and should be taken into consideration by PCOM when making their nominations for co-chiefs. Thus, SGPP makes the following recommendation:

Along with the ranking of proposals in the Fall Prospectus, thematic panels should be requested to forward to PCOM names of individuals to be nominated as potential co-chiefs for the few highest ranked proposals of each thematic panel.

SGPP has no recommendations for Leg 151, but SGPP strongly recommends that the co-chief scientists for Leg 152 consist of an igneous petrologist/geochemist and a marine geophysist, as both expertises are essential for the success of the leg.

PROACTIVE VS. REACTIVE ROLE:

In order to proceed towards a more proactive vs. reactive advisory role in the planning stages of the Ocean Drilling Program, SGPP has initiated two new items to be placed on its agenda when deemed appropriate. The first item concerns the invitation of key shipboard geochemists, who have participated in the most recent legs, to attend SGPP meetings and report on the technologic and geochemical results of downhole fluid sampling. Such reports can inform SGPP directly of the scientific progress being made towards achieving goals set out in SGPP's white paper and assist SGPP in the making of recommendations to PCOM. Invitations to shipboard scientists need not be limited to geochemists. Secondly, to promote a more pro-active SGPP role in the development of proposals addressing questions of thematic interest, a period of time was devoted in this meeting to the discussion of selected scientific topics addressable by drilling. Three topics of long-standing interest to SGPP were put on the agenda, i.e. gas hydrates, sapropels - significance and origin, and bottom currents and contourites. The discussions, led by invited guests or selected panel members or liaisons, were welcomed and proved quite profitable, particularly for increasing the learning curves of new panel members. SGPP plans to continue these discussions at future meetings.

MINUTES OF SPRING MEETING 1992

DATES: 6-8 March, 1992

PLACE: Rosenstiel School of Marine and Atmospheric Sciences,
University of Miami, Miami, FL

HOST: Peter Swart

LIST OF ATTENDEES

SGPP Members:

Jeffrey Alt	Jean Bahr
Jacques Boulègue	Nicholas Christie-Blick
Paul Farrimond	Roger Flood
William W. Hay	Richard Hiscott
Judith McKenzie (Chair)	Jürgen Mienert
Charles Paull	Fred Sayles (Recorder)
Peter Swart	

Liaisons:

Peter Blum (JOIDES)
 Maria Cita Sironi (PCOM)
 Mitch Lyle (ODP/LDGO)
 Alistair Robertson (TECTP)
 Laura Stokking (ODP/TAMU)
 James Zachos (OHP) (8 March)
 Robert Zierenberg (LITHP)

Guests:

Philip Froelich (LDGO)
 Keith Kvendvolden (USGS/Menlo Park)
 Dorrick A.V. Stow (Univ. Southampton) (7 March)

Members unable to attend:

Henry Elderfield
 Alexander Lisitsyn
 Wonn Soh

1. WELCOMING REMARKS

Judy McKenzie, SGPP Chair, welcomed the participants to Miami. Introductions of all attendees were made. The agenda was discussed briefly. Peter Swart discussed logistics for the meeting.

2. REPORTS

a. PCOM - M. Cita

Cita discussed some of the history of interactions between SGPP and PCOM, noting some misunderstanding in the past and recent improvements. The decision making responsibility of PCOM was discussed, as well as changes in the roles and influence of the Thematic Panels. The panels could now be more proactive than reactive. She emphasized the resulting increase in responsibilities placed on the thematic panels as regards PCOM decision making process, noting that the top drilling priorities of each panel, plus the second priorities of two panels, were selected for the drilling schedule at the last PCOM meeting.

M. Cita briefly reviewed a number of decisions made by PCOM :

- (1.) A decision was made to increase shipboard technical capabilities on the

JOIDES Resolution;

- (2.) Add-on Supplemental Science Proposals were dropped;
- (3.) The feasibility of deep drilling is being pursued; a RFP for a technical feasibility study is in the works;
- (4.) The FY93 schedule as set was briefly reviewed;
- (5.) A feasibility study of fluid sampling and logging was authorized. This is more or less in limbo as a result of criticism from NSF of OPCOM priorities. At present there are no funds to proceed with this. PCOM established a JOIDES Steering Group on In-situ Pore Fluid Sampling. The group will meet in College Station, TX on 2 April 1992. P. Swart will attend as SGPP liaison.
- (6.) A data handling working group has been appointed (DH-WG) and charged with review of needs and development of plans to improve data accessibility.
- (7.) The next PCOM Chair will be Brian Lewis with the JOIDES Office moving to the University of Washington, Seattle.

b. JOIDES Office - P. Blum

Blum discussed review and ranking issues, noting that these are among the most important charges to panels. He viewed the cooperation between the panels and JOIDES office as having been excellent. As regards to proposal handling, he noted that the institution of a statute of limitations (three years since most recent update) has made the number of "active" proposals manageable at about 100 total. Submission deadlines, now fixed at 1 Jan and 1 Aug, have helped in the orderly review by panels.

Blum reiterated that the Global Ranking of the panels has a major impact on PCOM scheduling decisions. He reviewed the request to "flag" drillable proposals. There ensued a discussion of ranking strategies and the utility of "conceptual" proposals (i.e. not drillable) as a means of establishing overall scientific priorities.

Blum completed his JOIDES report with a review of the history of panel rankings and the regional dependences of proposed drilling, noting the very strong dependence on current ship location.

c. EXCOM - P. Blum

Blum discussed the renewal and post-renewal period briefly. Most countries appear to be moving towards renewal; The UK has formally renewed, whereas France and Japan are currently less certain. The organization and management structure are under review. In particular, more international representations in management and operations are being discussed. He reviewed the status of alternate drilling platforms, noting strong activity in this arena by Russia and France.

In addition, the performance evaluation committee seems to be favoring a move away from the JOI dominated structure, particularly a broader sourcing of subcontracts to other countries. Peter summarized the various aspects of renewal review as providing considerable support for a broader participation in the organization, management and operation of the program.

d. PANCH - J. McKenzie

McKenzie reviewed discussions among the Panel Chairs, in particular the decision to use a "unified" voting procedure. This procedure is essentially that adopted by SGPP at LDGO (June, 1992). A discussion of presence/absence of proponents at SGPP discussions followed. The decision was made that proponents would not be present. She also noted that all panels supported a pro-active role in developing thematic interests.

e. ODP/TAMU - L. Stokking

Staffing for Legs 142-152 was reviewed, including co-chief decisions through Leg 147. The appointment of co-chiefs without panel recommendations was discussed with some heat. Although SGPP was satisfied with the co-chiefs selected without their input for Leg 150, SGPP's No. 1 ranked proposal in the 1991 Fall Prospectus, SGPP believes panel advice is an important component of this decision making process and should be taken into consideration by PCOM when making their nominations for co-chiefs.

SGPP Recommendation: Along with the ranking of proposals in the Fall Prospectus, thematic panels should be requested to forward to PCOM names of

individuals to be nominated as potential co-chiefs for the few highest ranked proposals of each thematic panel.

Results from Leg 142 were presented. The design of the DCS was presented along with the results of its use. Accomplishment fell far short of objectives: attempts to drill 100 m with 50% recovery resulted in penetrations of 15 m and 7 m on two successive holes; recovery was low. There were problems with the secondary heave compensator. As a consequence, an alternative leg for the scheduled Engineering, DCS IIB Leg 148 is likely.

An overview of Leg 141 was presented along with a brief summary of the major accomplishment.

f. Leg 141 Geochemistry - P. Froelich

Froelich attended the SGPP meeting to review the shipboard geochemical results of Leg 141. The geologic setting of sites 860-863 was reviewed. A summary of equipment performance followed:

- i. High Pressure Core Barrel - used 12 times; retained hydrostatic pressure 2 times, partial pressure 4 times, complete failure 6 times. He concluded that well-trained operators or experts are essential for successful operation of the PCB. Further, due to long turnaround time, two working units are required.
- ii. Anodized Ti squeezers - appeared to work well with no problems. Trace metal results are forth coming.
- iii. WSTP---deployed 18 times; one-third misfired; one-third worked partially with some dilution by drill fluid; one-third worked satisfactorily. An attempt to use WSTP as a gas sampler was made, successfully.

A summary of the geochemical results was presented, particularly those relating to hydrate occurrence and sampling. At Sites 859 and 860, Cl dilution typical of hydrate occurrence was found. Two dilution spikes occur at Site 860, the deeper one lies well below the stability range of hydrate. At Site 861, there is a BSR but no dilution was found.

A few observations with bearing on future legs with gas hydrate objectives were made:

- i. Drastic changes in physical properties of the sediments makes hydrate recovery during routine drilling very difficult.
- ii. A willful geochemist(s) onboard is a major ingredient for a successful geochemical program.
- iii. One possible strategy for successful recovery of gas hydrates - rapidly drill and log (velocity and resistivity) a pilot hole to plan a gas hydrate drilling strategy; rotary drill a second hole as fast as possible for specific hydrate targets. Plan strategy in real time.

Extreme chemical compositions in the bottom of hole at Site 863, high pH (10.5) with very low alkalinity, were reviewed and possible origins briefly discussed.

SGPP thanked Froelich for attending the meeting and presenting the shipboard geochemical results of Leg 141. It was felt that future reports at SGPP meetings by shipboard geochemists after the completion of legs with strong SGPP geochemical objectives would be beneficial.

SGPP Recommendation: SGPP recommends that two complete, totally independent pressure core barrel systems be assembled and send onboard the JOIDES Resolution for operation during Leg 146, Cascadia margin. SGPP further recommends that Mr. Tom Pettigrew, ODP engineer and PCB expert, be invited to participate on Leg 146 to insure successful testing and operation of the PCB.

g. Panel Liaison Reports

OHP - P. Swart

Swart reported that the long sought, oft postponed joint OHP-SGPP meeting at Kiel, Germany in September 1992 is unlikely. The cause was reported as scheduling problems and OHP's desire to have for review at the fall meeting the seismic data from the planned Ceara Rise cruise in late September. Panel discussions concluded with the decision to continue to pursue such a meeting. The panel chairs will attempt to find suitable dates for a joint meeting. Swart was unable to attend the OHP discussions of priorities and rankings due to a time conflict with this SGPP meeting.

OHP - J. Zachos (March 8)

Jim Zachos attended the meeting and filled in the gaps in Swart's report. He presented OHP's global ranking and discussed the failure of OHP to rank Mediterranean Sapropels, a proposal highly ranked by SGPP.

LITHP - R. Zierenberg

No meeting since last SGPP meeting.

TECTP - A. Robertson

No meeting since last SGPP meeting.

DMP - J. Mienert

Mienert enumerated 8 items of note from the DMP meeting he attended: (1.) DMP is seeking better guidance in the development of new tools. (2.) The Geoprops saga continued; TAMU is now working to complete it, possibly by Leg 146. (3.) Worthington reported improved correlation between logging results and core samples. (4-6.) New lists/publications from DMP due by end of 1992 include: Guidelines for 3rd party tool development. A list of available logging tools; the standard suite will be used for Atlantic legs. A brochure on new development goals. These include: high temperature tools; bore hole gravity meter; magnetic susceptibility logging tool. (7.) A meeting of the JOIDES Steering Group for In-situ Pore Fluid Sampling will be held to discuss pore fluid developments. SGPP Liaison P. Swart will attend. (8.) The characterization of the lithosphere and tools required to conduct appropriate experiments were discussed.

High temperature fluid sampling meeting - M. Lyle

Lyle summarized the discussions of a meeting held during the Fall, 1991 AGU meeting, which was called to discuss and coordinate high temperature fluid sampling efforts. DOE has a prototype instrument. NSF and DOE seek coordination on developments. John Edmond (MIT) agreed to submit a proposal for development and liaison with interested parties. The sampler characteristics include slim hole design; temperatures to 400 °C; pressure sealed to prevent boiling; on board P, T, conductivity; onboard recording; smart tool - programmable sampling.

3. NEW PROPOSAL REVIEWS

SGPP reviewed 7 new proposals and 6 revisions/addendums of previous proposals. The order of proposal reviewing was not in numerical order, but proceeded with thematic grouping of proposals whenever it was deemed appropriate, as follows. Proponents of proposals left the room during the discussion of their proposals.

Proposal 411 - Proposal for drilling the Caribbean Basalt Province - an oceanic basalt plateau, T.W. Donnelly, R. Duncan and C. Sinton. Of marginal interest to SGPP. Potential interest lies in the mass of volatiles released from such a huge volume of basalt as well as in alteration, as seen in exposures on Haiti. However, these issues are not pursued in the proposal.

Category 2

Proposal 403/Rev - Revised proposal to drill the K/T boundary, Gulf of Mexico Basin, W. Alvarez, J. Smit, E.M. Shoemaker, A. Montanari, R.T. Buffler, A.R. Hildebrand, S.V. Margolis, and Mexican proponents. Clear response was given to panel reviews of the original. However, concerns over recovery in the type of sediment to be drilled, as well as the siting of holes 5 and 6, were raised. Sediment objectives of interest to SGPP remain weak. Further discussion of proposal was combined with that for Proposal 415 with a similar scientific theme.

Category 3

Proposal 415 - Proposal for drilling the Cretaceous-Tertiary boundary in the Caribbean Sea, H. Sigurdsson, S. Carey and S. D'Hondt. Focus is primarily in field of interest of OHP but sedimentation rates are likely to have produced inadequately thin sequences of the

desired material. Some concern should be shown for the location of the plates during the periods of interest. Diagenetic considerations are only peripheral. There is, however, considerable overlap with Proposal 403.

Category 3

Proposals 403/Rev and 415 - The number of proposals dealing with various aspects of the Caribbean and especially the K/T boundary in the Caribbean led to the suggestion of forming a DPG (or organization of a workshop of regional experts) to consider the most effective approach to a broader spectrum of questions in the Caribbean region. Although a highly controversial topic, the K/T boundary alone is not sufficient: secondary objectives are needed. What other problems can be solved by effective siting of holes to solve the primary objective?

Proposal 409 - High resolution late Quaternary paleoclimatic and sedimentary record, Santa Barbara Basin, CA., J.P. Kennett. The excellent potential return for only 36 hours of drilling was considered very positive. The site location is nonexistent and should be made using abundant available seismics. The proposal may stand or fall on safety considerations.

Category 5

Proposal 354/Rev - Neogene history of the Benguela Current and Angola/Nambia upwelling system, G. Wefer, W.H. Berger, L. Diester-Hass, W.W. Hay, P.A. Meyers, and H. Oberhänsli. There is potential for strong SGPP interest. The sites are well suited for studying early diagenesis and composition and origin of organic matter in and upwelling zone. This scale of the drilling program (>13,000 m of drilling) is not needed to address SGPP interests in paleocean chemistry and diagenesis.

Category 4

Proposal 410 - A proposal for deepening Hole 504B to core and log the dike/gabbro, layer 2/3 boundary, J. Erzinger, J. Alt, and K. Becker. Although the site is very worthwhile, the inability to obtain good recovery continues to leave the question open concerning what material is not being recovered. Important rock information may be systematically lost and this could justify waiting for improved drilling technology to continue deepening the hole. Although recovery has been marginal, the problems with DCS appear to mean no real change in the drilling capabilities of the JR can be expected in the near future.

Category 5

Proposal 412 - The Bahamas transect: Neogene/Quaternary sea-level fluctuations and fluid flow in a carbonate platform, G.P. Eberli, E.F. McNeill and P.K. Swart. Proposal is of high interest to SGPP in that it provides an opportunity to pursue numerous outstanding questions related to sea level fluctuations within an end-member (carbonate) environment. Several deficiencies were identified; including the need for a denser seismic array and deeper objectives to obtain older sediments to be correlated with New Jersey margin transect. The possibility of more shallow drilling on the platform should be considered.

Category 4

Proposal 413 - Magmatic and tectonic evolution of oceanic crust: The Reykjanes Ridge, J. Cann, C. German, B.J. Murton, L.M. Parson, R.C. Searle, M. Sinha and S. Spencer. The research overlaps SGPP interests in the area of hydrothermal circulation and alteration of the crust. These are of relatively low priority in the proposal and the ability to achieve these ends is uncertain. How will the measurements be made? Concern was expressed about phase separation with release of steam in these shallow waters. Heat flow measurements were not mentioned.

Category 3

Proposal 414 - Rates, effects, and episodicity of structural and fluid processes, Northern Barbados Ridge Accretionary Prism, J.C. Moore, B. Carson, M. Kastner, X. Le Pichon, G. Moore and G. Westbrook. Addresses high priorities of SGPP. The proposal is highly focussed and straight forward building on the results of a previous leg. It was felt that the addition of a third site would greatly aid the definition of flow field and testing of models indicating water budget deficit. The need for a feasibility study was also felt to be high due to potential hole instability.

Category 5

Proposal 59/Rev3 - Continental margin sediment instability: Global sealevel history and basinal analysis through drilling abyssal plains, P.P.E. Weaver, R.B. Kidd, J. Thompson, s. Colley, I. Jarvis, R. TR.E. Schuttenhelm, G. de Lange, R.E. Cranston and D.E. Buckley. Of strong interest to SGPP on several counts, including sedimentary mass balances, transport of terrigenous material to the deep sea, diagenesis and preservation of organic matter, and sea level issues. Proposal received strong support . SGPP encourages more interaction with proponents of Proposal 380 - VICAP, Gran Canaria.

Category 5

Proposal 332/Rev3 - Florida escarpment drilling transect, C.K. Paull, M. Kastner, and D. Twichell. The response to prior criticisms is very limited despite extensive comments. Certain objectives have been removed to create am more mature but less comprehensive proposal. Questions of defining flow with the proposed sites were raised, as well as the correctness of the circulation pattern show in the figures. In addition, the objectives were felt to be unnecessarily restricted.

Category 4

Proposal 361/Add - Site Survey, TAG hydrothermal field, MAR 26 °N, G. Thompson. Proposal is a site survey proposal and was deemed inappropriate for SGPP review. The original proposal was highly ranked and interest remains high; however, the necessity for a site survey remains, as the proposal has not been funded by NSF.

Category 4

Proposal 333Add - Update to: Tectonic and magmatic evolution of a pull-apart basin: A drilling transect across the Cayman Trough, Caribbean Sea, P. Mann. The proposal is not within panel mandate, unchanged with addendum.

Category 1

4. DISCUSSION OF "NON-ENGINEERING" NEEDS

There was more than a little puzzlement over the meaning of "non-engineering" needs. McKenzie reviewed the PANCH discussion of this topic and presented the list S. Humphris compiled from input of all panels. SGPP considered two categories of instruments: (a) previously identified instruments/tools which still require engineering effort to complete and (b) shipboard laboratory needs.

a. Tools requiring additional engineering

The original priorities put forth by SGPP [(1) pressure core barrel; (2) coring equipment for unstable formations; (3) packer with multisampling device and permeability test capability] were discussed. In addition, (4) high resolution geochemical tool and (5) high resolution magnetic susceptibility tool were considered. A discussion of priorities left the original SGPP list unchanged:

1. Pressure core barrel
2. Corer for unstable formations (= vibra percussive corer)
3. In-situ pore fluid sampling

It was noted that the first two items have been given top priority by PCOM. For the third item, SGPP acknowledges the establishment of the JOIDES Steering Group for in-situ pore fluid sampling scheduled to meet in College Station, TX on 2 April 1992.

SGPP supports the generation of a RFP for a feasibility study of a downhole device, such as the Top Hat, with appropriate packer for multiple in-situ sampling of free-flowing water in lithified formations and measurement of pore-water pressure and permeability.

b. Shipboard laboratory needs

Both shipboard procedural and instrument needs were discussed, leading to the following recommendations with a lower priority than the above three listed items:

1. The addition of an adjustable, digital recording whole core X-radiograph or CATSCAN system should be added to the standard core processing scheme. This would provide a wealth of accessible, standardized structural and textural data almost entirely missed by present procedures.
2. The view that the XRD facility produces "utterly useless" data was expressed. The XRD procedures need to be reviewed and adequate standardization and use insured.
3. Concern over the effectiveness of use of the Chemistry Laboratory instrumentation, generally, was expressed by several recent leg participants. The procedures should be reviewed, updated, and adequate standardization implemented. This should include review of the training and level of expertise required to meet the needed analytical quality.
4. A very useful improvement would be the development of CO₂/organic carbon analyses that approach real time.

Finally, there was some discussion for much needed software to retrieve and use data stored on CD-ROMs compiled from previous DSDP volumes.

5. SCIENTIFIC TOPICS OF SGPP INTEREST

To promote a more pro-active SGPP role in the development of proposals addressing questions of thematic interest, a period of time was set aside for the discussion of science addressable by drilling. Three topics of long standing interest to SGPP were put on the agenda.

a. Gas Hydrates

A summary of previous studies of hydrates, their occurrence, hypotheses of origins, and strategies for drilling was presented by K. Kvenvolden and C. Paull. The review included assessment of the relative importance of clathrates as a potential resource; the carbon tied up in them exceeds that in known fossil fuel reserves. Clathrates also present a variety of hazards: pipeline plugging, slope failure on continental margins, potential climate effects from releases of CH₄. Occurrences are world-wide on continental margins and Arctic shelves. Most are composed of biogenic CH₄ but thermogenic sources have been seen.

Drilling programs need to investigate nearly all aspects of the occurrence of hydrates. Currently there is only limited direct observation of hydrate occurrence and characteristics. We need to define composition, abundance, lithologic characteristics of hydrate bearing sediments, origins of CH₄, mechanisms of CH₄ concentration, relation to acoustic signals, characteristic pore water signals, and relation to regional structures. Kvenvolden outlined how a potential drilling program for gas hydrates might be designed.

b. Sapropels - Significance and Origin

M. Cita reviewed the current status of research on sapropels occurring in Mediterranean sediments. The relationship of occurrence to the timing of glacial-interglacial transitions as well as various hypotheses of origin were presented. Maria argued strongly for the need for drilling in sapropel research, the rationale included greatly extending the record, back to the Messinian (Late Miocene), determining the relationship to the hydrologic cycle and climate, and the relationships to nutrient budgets in the Mediterranean.

c. Bottom Currents and Contourites

D. Stow revisited SGPP and, along with Roger Flood, led a discussion of the occurrence and significance of contourite deposits. It was pointed out that contourites are widespread and most commonly occur on continental margins. They are associated, most often, with currents of a high latitude, deep origin. Scientific discussion focussed upon the nature of the sediments (not well defined at present), variations in architecture, significance in deep ocean fluxes, and their relation to

climatic forcing functions and use in paleocirculation reconstruction. The surface morphology of drifts, in particular large scale sediment waves, and their relation to currents, was also discussed. The conclusion was that drifts and contourites not only present an opportunity to pursue important sedimentological and paleo-oceanographic questions but also are easily identifiable, readily drillable targets.

6. Spring Global Ranking 1992

The ODP proposals (44) considered in the SGPP Global Ranking 1992 exercise are listed in Appendix I. This list was compiled after panel consideration of the "Active" ODP Proposals list, circulated by the JOIDES Office, UTIG (Feb. 5, 1992). It includes proposals ranked in the Spring (Summer) SGPP Global Ranking 1991, as well as any old or new proposals designated as having a high SGPP thematic interest including those most recently reviewed at this meeting. The status of all proposals on this list was reviewed to cull those already drilled, now on the schedule, or inactive. All proposals in the final pool were briefly reviewed by the original watch dogs and a decision whether to include in the voting for Global Ranking was made. Proponents were not in the room during the discussion of their proposals. The original list (Appendix I) was pared down to 25 proposals, identified by a check mark in the right-hand column. Among the 25 proposals, 13 were considered drillable in FY 1994 were identified (those with asterisk in right-hand column).

The Global Ranking was done in a two-step process because of the relatively large number of proposals being considered. A straw vote, with 25 being given to the highest ranked proposal and 1 for the lowest, was taken to pare down further the list of 25. Proponents were excluded from voting on their proposals. Scores were assigned by normalizing rank to number of votes cast. The top 16 proposals from this straw vote, listed below, were then considered in the final Global Ranking pool. Voting procedures were as described for the straw vote. The SGPP Spring Global Ranking 1992 is basically consistent with the results of previous global rankings. Any perceived inconsistencies in the ranking can be explained by the changing panel membership and the submission of many new drilling proposals of SGPP thematic interest into the system.

SGPP Spring Global Ranking 1992

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DPG	Cascadia II	no	5.9	14
337	New Zealand Sea Level	no	5.8	15
360	Valu Fa Sulfides	no	5.2	16

7. Old and New SGPP Business

a. New Members Three US SGPP members are due to be replaced in Spring, 1993. They are: Nicholas Christie-Blick (sequence stratigraphy, sealevel and ocean history), Roger Flood (sediments, sealevel and ocean history), William W. Hay (modeling and mass balance, sediments, ocean history). It is essential to have new members with equivalent expertise to maintain the panel's scientific balance. Panel members are requested to submit names of possible nominees to

the SGPP Chair prior to the fall meeting. Nominations should consider the fact that the panel's expertise is currently strong on the geochemical side, but needs to be strengthened on the sediments side. Also, with the replacement of Hay, SGPP will lose his invaluable knowledge derived from the many years experience he has had as an active participant in the ocean drilling programs.

b. SGPP Liaisons The importance of liaisons among the various panels and DPGs and WGs cannot be overemphasized. The following SGPP members have agreed to serve as liaisons:

OHP - P. Swart
 LITHP - J. Alt
 TECTP - C. Paull (temporary for 1992)
 DMP - J. Mienert (J. Bahr after 1992)
 SMP - F. Sayles (one meeting per year after Spring SGPP meeting)
 TEDCOM - J. Alt (whenever possible)
 OD-WG - J. Boulègue
 Sealevel-WG - N. Christie-Blick, R. Flood
 JOIDES Steering Group for In-situ Pore Fluid Sampling - P. Swart

c. Deep Hole in Somali Basin In anticipation that ODP/TAMU will be generating an RFP to hire consultants concerning deep drilling, SGPP wishes to restate its strong interest to locate a deep hole in the Somali Basin. Upon inquiry, the Chair has been informed by the principal proponent for deep drilling in the Somali Basin, Millard Coffin, UTIG, that a new proposal is in preparation to be finalized and submitted to the JOIDES office by 1 August 1992. In addition, a site survey proposal will be submitted to NSF in 1993 because the existing data are not adequate for a final site selection. Coffin estimates that the site will require 2500 to 3000 m of sediment penetration.

d. Red Sea Drilling R. Zierenberg updated the panel on the renewed potential for Red Sea drilling with the improved political atmosphere in the region. Drilling in the Red Sea could address one of SGPP's 5 main thematic objectives, i.e. metallogenesis. Large scale hydrothermal alteration and mineralization and associated hydrothermal circulation of hypersaline fluids are known to occur in the Red Sea. SGPP therefore requests that 1) the U.S. State Department be contacted to assess the possibility of future Red Drilling and 2) PCOM provide some feed-back to the thematic panel regarding the potential of Red Sea drilling. With a favorable response from the State Department, SGPP would support an announcement to be printed in JOIDES Journal soliciting proposals for Red Sea drilling.

e. Co-chief Nominees for Legs 151 (NAAG-I) & 152 (NARM volcanic - I) SGPP has no recommendations for Leg 151, but SGPP strongly recommends that the co-chief scientists for Leg 152 should be an igneous petrologist/geochemist and a marine geophysist, as both expertises are essential for the success of the leg.

f. Future SGPP Meetings

26-28 September, 1992, Kiel, Germany, Hosts - J. Mienert/K. Emeis
 possible joint meeting with OHP

late February/early March, 1993, Menlo Park, CA, Host - R. Zierenberg,
 possible joint meeting with LITHP

early October, 1993, St. John's or Corner Brook, Newfoundland, Host - R. Hiscott
 possible field trip to see ophiolite complex

The meeting was adjourned in the early afternoon of Sunday, 8 March. Peter Swart was applauded for his excellent effort in organizing the meeting and his gracious hospitality. His secretary and graduates students, who sacrificed their week-end to help with the meeting, were thanked for their assistance throughout, for providing shuttle service, and for the preparation of Saturday's beach-side barbecue.

APPENDIX I

PROPOSALS FOR SPRING GLOBAL RANKING 1992

<u>No. Proposal (SGPP theme score)</u>	<u>Spring 1991</u>	<u>Summer 1991</u>	<u>Spring 1992</u>
355/R2 - Gas Hydrates (4) or Generic Proposal	1	not ranked	√
391 - Mediterranean sapropels (4)	2	2	√ *
DPG - Sedimented ridges II (4)	3	not ranked	Leg 139 √
348/A - New Jersey margin (5)	4	1	Leg 150
380A - VICAP (4)	5	5	√
DPG - Cascadia margin II (4)	6	not ranked	Leg 146 √
354Rev - Benguela Current (4)	7	7	In review √ *
59/Rev3 - Maderia Abyssal Plain (5)	8	9	In review √ *
DPG - East Pacific Rise II (4)	9	not ranked	Leg 142/147 √
337 - New Zealand sealevel (4)	10	not ranked	√
360 - Valu Fa sulfides (4)	11	not ranked	√
388 - Ceara Rise (4)	12	8	√ *
368 - Return to 801 (4)	13	not ranked	√ *
361/A - TAG hydrothermalism (4)	14	6	In review √
340/B - NW Australian margin (3)	15	not ranked	
330/A - Mediterranean Ridge (5)	16	4	√ *
378/A - Barbados accretion (4)	17	3	
367/C - South Australian margin (4)	18	not ranked	
275/E - Gulf of California (4)	19	not ranked	Inactive
372 - N. Atlantic water mass evol. (4)	20	11	
323 - Atl./Med. gateway (3)	not ranked	10	
345 - W. Florida margin (4)	not ranked	12	
332/Rev3 - Florida escarpment (4)	not ranked	13	√
379 - Mediterranean drilling (4)	not ranked	14	
313 - Equatorial Atl. pathway (4)	not ranked	15	Inactive
327 - Argentine Rise (3)	not ranked	16	
341 - Global climatic change (3)	not ranked	17	
253/Rev - Pac. carbon-rich strat. (5)	not ranked	not ranked	√ *
325 - High T/hydrotherm. Endeavor R. (4)	not ranked	not ranked	
338 - Sea-level fluct., Marion Plateau, NE Aus.	not ranked	not ranked	√
365 - Geothermal measurements (3-4)	not ranked	not ranked	
369 - MK-2 Deep Hole (3-4)	not ranked	not ranked	
373 - Site 505 Revisited (4)	not ranked	not ranked	
400 - Mass Balance/Costa Rica (4)	-----	-----	√ *
404 - N. Atl. sediment drifts (4)	-----	-----	√ *
405 - Amazon Fan (5)	-----	-----	√ *
407 - N. Atl. mantle anomaly (5)	-----	-----	√
403/R - K/T boundary, G. Mexico (3)			In review
409 - Santa Barbara Basin (5)			In review √ *
410 - Return to Hole 504B (5)			In review √ *
412 - Bahamas sealevel transect (4)			In review √
414 - Northern Barbados Ridge (5)			In review √ *
415 - K/T boundary, Caribbean Sea (3)			In review

√ Proposals included in the 1992 global ranking. * Proposals considered drillable in FY1994.