



IN REPLY
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United States Department of the Interior

GEOLOGICAL SURVEY

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DENVER, COLORADO 80225

Office of Energy and Marine Geology
Branch of Petroleum Geology

October 30, 1992

Memorandum

To: Brian Lewis, Chairman, JOI-PCOM

From: Mahlon M. Ball, Chairman, JOI-PPSP *MMB*

Subject: PPSP meeting of 10/22-23/1992

This meeting was held in a conference room of British Petroleum, Building 5, Stockley Park, West Drayton, London, U.K.

Attendance:

JOI-PPSP

Yutaka Aoki
Mahlon Ball (Chair)
George Claypool
Claude Delas
Mimi Fortier
George Gamsakhurdia
Lou Garrison
Dietrich Horn
Barry Katz
David Mackenzie
Ed Purdy
David Roberts

Leg 149, Co-Chief Sci.

Dale Sawyer
Bob Whitmarsh

Leg 150, Co-Chief Sci.

Kenneth Miller
Greg Mountain

JOI-SSP

Robert Kidd

TAMU-ODP-SP

Kevin Burke
Thomas Thompson
Henk Worries

ODP-TAMU

Tim Frances

JOI-PCOM

James Austin
Brian Lewis (Chair)

Mahlon Ball opened the meeting by requesting self introductions and circulating a signature list to attendees.

David Roberts, British Petroleum, host for the meeting, greeted the attendees and made housekeeping announcements.

Tim Francis reported on ODP's successful negotiations with the Mineral Management Service (Department of Interior, USA) maintaining the precedent of waiving requirements for environmental impact statements for ODP drilling in the US Exclusive Economic Zone. Francis then reviewed drilling activities since the last PPSP meeting. Atoll drilling (Legs 143-144) included the establishment of a single leg depth record of 1.8 km. The North Pacific Transect drilling (Leg 145) determined an onset of high latitude glaciation, 2.6×10^6 yrs. ago, that agrees in timing with a pulse of volcanic activity. Leg 146 drilling on the Cascadian Margin off Vancouver involved successful negotiations with Canadian authorities regarding sites in proximity to explosive disposal areas. The major concern was potential for encountering mustard gas bearing ordinance. ODP is inspecting sites in question with bottom T.V. scans and has mustard gas detection kits on the drilling vessel. Drilling is in progress on this leg. A bottom simulating reflection (BSR) has been penetrated without encountering discernible solid ice above the BSR or perceptible free gas below. A twinned hole to the BSR penetration is underway for deploying monitoring and re-entry equipment. Francis expressed Glen Foss' concern regarding the use of corks to facilitate re-entry at sites VI-5 and OM-3 (Leg 146). Foss emphasized the fact that corking holes is a departure from standard abandonment procedures. PPSP decided to wait until information is available, based on experiences of those connected with the return of Alvin to the corked sites, before deciding whether it may be necessary for the Resolution to return to these holes, remove the corks, and plug the holes with cement.

The following corrections to the PPSP minutes of the 3/10-11/92 meeting at LDGO are noted:

page 1, line 4: 3 km should be 2 km.

page 5, Site VI-2A: Corrected location: $48^{\circ}16.58'N$ and $126^{\circ}27.38'W$.

Site VI- 3: Approved to a sub-bottom penetration of 600 m subject to further processing. This site was moved to SP 836 on line 89-04 as a result of analysis of reprocessed data.

page 6, Site OM-2A: Should read $44^{\circ}40.42'N$ and $125^{\circ}21.53'W$.

Site OM-2B: Should be added and read approved to a sub-bottom penetration of 500 m at $44^{\circ}41.10'N$ and $125^{\circ}22.00'W$.

Site OM-3A: Should be added and was approved to a sub-bottom penetration of 585 m or bit destruction at $40^{\circ}40.46'N$ and $125^{\circ}19.57'W$.

page 7, Site OM-7B: location should read 44°41.11'N and 125°07.80'W.

The corrected minutes were accepted.

Jamie Austin and Brian Lewis described PCOM activities affecting PPSP responsibilities. Austin reported that the revised Safety guidelines were at the printers and would soon be available for distribution. Francis, Lewis, and Ball agreed to formulate procedures for proper distribution. Lewis described top-ranked proposals for 1993-1994 drilling. Rob Kidd, SSP liaison, reported that site surveys for these legs were adequate but that several involved thick sediment sections and potential hydrocarbon risks and should therefore be submitted for PPSP previews prior to safety reviews.

Co-Chief Scientists, Leg 149; R.B. Whitmarsh and D.S. Sawyer; led a discussion of scientific objectives and regional geology and geophysics of the Iberia Abyssal Plain. The main objective of this Leg is to drill a transect of holes into basement rocks across the oceanic-continental crustal transition. Whitmarsh and Sawyer then proceeded to describe proposed drilling locations on a site-by-site basis. Barry Katz, Claude Delas, and Dietrich Horn noted that the sediment sections at these sites generally thickened down dip and therefore had increased potential for presence of hydrocarbons so that moving sites off structural crests was desirable.

- IAP- 2: Approved at SP 475 on line SO-75-17 to a sub-bottom penetration of 1150 m.
- IAP-3c: Approved at SP 310 on line SO-75-16 to a sub-bottom penetration of 980 m. This site was moved to the west off a structural crest.
- IAP- 4: Approved at SP 752 on line SO-75-16 to a sub-bottom penetration of 980 m.
- IAP- 5: Approved at SP 3980 on line LG-12 to a sub-bottom penetration of 1210 m. This site was moved to the west off a structural crest and is to be drilled after IAP-2.
- GAL- 1: Approved at SP 1536 on line LG-6 to a sub-bottom penetration of 650 m.

K.G. Miller and G.S. Mountain, Co-Chief Scientists of Leg 150, led a discussion of the scientific objectives and regional geology and geophysics of the U.S. Middle Atlantic Margin (New Jersey Sea Level Study). The principal objective of this leg is to increase understanding of sea level changes during the Late Paleogene and Neogene.

An extensive discussion developed among safety panel members concerning the general advisability of drilling in areas of shallow water (less than 100 meters) and thick sediments, using sea water as a drilling fluid with limited capability for blow-out prevention. Tommy Thompson emphasized the fact that the Resolution was clearly not designed for drilling in shallow water areas with potential for hydrocarbon occurrence.

By a vote of 6 to 3, safety panel members expressed a willingness to consider drilling with the Resolution in shallow water and thick sedimentary sections assuming that adequate high resolution seismic data were available to rule out existence of shallow gas accumulations.

Miller and Mountain then commenced a site-by-site discussion of proposed New Jersey margin drilling locations.

MAT-12: Approved at CDP 645 on line 1027 to a sub-bottom penetration of 550 m.

MAT-11: Approved at CDP 9140 on line 1005 to a sub-bottom penetration of 1000 m.

MAT-10: Approved at CDP 1532 on line 1027 to a sub-bottom penetration of 1000 m.

The three above sites are positioned on the slope in water depths greater than 400 m in a region where canyons breach the section to be penetrated.

MAT-8A: Approved at CDP 3425 on line 1002 to a sub-bottom penetration 1100 m. This site twins the COST B-2 well.

MAT- 9: Approved at CDP 3680 on line 1002 to a sub-bottom penetration of approximately 830 m. The exact penetration depth will be supplied later by Mountain. This site is 3.5 km from the COST B-2 well.

In the course of the site-by-site descriptions, a number of remarks were made relative to the poor quality of the Conservation Division's contracted data. Dietrich Horn and Claude Delas said their respective companies, Deminex and Total, would not consider drilling under the above conditions with high resolution seismic data of the relatively poor quality available from the Conservation Division.

Lou Garrison proposed establishment of a sub-committee to determine current procedures and requirements for high resolution drill site surveys. Garrison agreed to contact David Prior, an internationally recognized authority on this subject. Lewis

proposed inclusion of discussion of requirements for high resolution shallow-shelf drill site surveys on the agenda of the December PCOM meeting. Ball agreed.

Ed Purdy posed the question: "If a blow out occurred on the Resolution, in shallow water, using seawater as a drilling fluid, without blow-out preventers, what could the Safety Panel say?" There were no satisfactory answers.

David MacKenzie said that in light of remarks concerning the inadequacy of the high resolution seismic data at the remaining shallow water sites, he felt that he could not approve any of the remaining sites. A poll of panel members revealed unanimous agreement with MacKenzie's statement and site-by-site consideration of remaining Leg 150 proposed drilling locations was suspended.

George Claypool led a review of shallow gas problems with emphasis on clathrates. Geochemical considerations favor the conclusion that gas trapped beneath a clathrate base should not exceed normal hydrostatic pressures. Claypool showed a seismic section provided by a major oil company in which a BSR separated an upper, inferred, clathrate zone with damped (surpressed) reflection amplitudes and a lower zone of high amplitude reflections and attending "bright spots" inferred to be gas bearing strata. Francis said that the relief of the inferred gas column was sufficient to expect a significant pressure increase stemming from the bouyant force related to the lower density of the gas. It was agreed by panel members that drilling through BSRs above bright spots would most likely be disapproved.

Jamie Austin presented results of a high resolution, 3-d, reflection seismic survey on the New Jersey Margin. Survey dimensions were 0.5 by 5 km. Penetration depths were measured in 10's of meters. Channel fills were clearly delineated.

Henk Worries led a discussion of the regional geology and geophysics of the Santa Barbara Channel. Industry-provided seismic data demonstrates the separation of the nearshore, shallowly structured oil and gas producing area from the deep topographic basin which lacks shallow structural highs and is the proposed region for obtaining a 200 m piston core. Worries then led a site-by-site discussion of the three proposed sites. The southern site was ruled out because of proximity to a major fault along which the occurrence of hydrocarbons has been established. The central site was discarded because it lies in the parkway between major ship traffic lines. The northern site was selected as follows:

SB-1A: Approved at 34°17.0'N and 120°02.2'W to a maximum sub-bottom penetration, using a piston corer, of 200 m. The shipboard seismic system will be used to enable Martin Houland to select the exact position of this site in an area of continuous well-defined, sub-bottom reflections.

The date and location of the next PPSP meeting were discussed. March 25-26, 1993 in Kiel, Germany were selected. Roland Von Huene (of Geomar, Kiel) has agreed to host this meeting, but it has been necessary to shift the meeting dates to April 1-2, 1993.

On the occasion of Jamie Austin's completion of his term as chairman of JOI-PCOM, PPSP extended an expression of appreciation, admiration, affection and respect to Jamie for a job well done!

Following a request for discussion of new and old business this PPSP meeting was adjourned.