

NOTES OF MEETING HELD AT PORT MORESBY, 18 OCTOBER 2004

Attendees:

| Members | Resource people |
|----------------------|-----------------------------------|
| Nigel Agonia (Chair) | Paul Greener |
| Michael Kiap | Bill Dietrich |
| Patricia Pepena | Charlie Ross |
| Fr Philip Gibbs | Bob Cogger |
| Brad Gordon | Arthur Hood |
| Graeme Batley | Mark Van Dusen (Minute Secretary) |
| Mel Togolo | |

Apologies:

- Lady Hilan Los - NGO (ICRAF)
- Peter Siba

Agenda Item 1

Introductions & Apologies

The chairman welcomed the group to the second and last meeting of the year.

Agenda Item 2

Notes of Previous Meeting

Minutes of the previous meeting were reviewed and accepted, moved M Togolo, seconded M Kiap.

Agenda Item 3

Action Items

Those responsible dealt with the Action Items from the previous meeting and out of the meeting new ones were introduced as follows;

Action Item 1

IPJV's Community Development Aquaculture project- on the recommendation of the Environment Dept., carp would no longer be introduced as a food or commercial fish, for fear that they would aggressively enter downstream rivers. Trout are being investigated as an alternate food and economic

opportunity, as they would not take over in the warmer, murky waters of the Strickland.

Action Item 2

Maintenance of mobile sawmills. Only one sawmill has been introduced as a business opportunity accompanying Aiyoko road construction. The purchase price included 2 days training in operations and maintenance. PJV Business Development was visiting the operation regularly, but milling has stopped due to a dispute over timber ownership.

Action Item 3

Canadian Hunger Foundation (CHF)/Partners in Rural Development update. A country manager, Nick Fog, has been recruited and has opened an office in Paiam. He also resides in Paiam. CHF have registered with IPA. They have presented an updated outline of work (Mark to send to Mel for distribution to PEAK members), concentrating on food security and capacity building, and are in the process of recruiting staff to deliver programmes.

Action Item 4

PEAK advice to CHF. Mel reported that there had been no feedback, but Nick Fog had been in contact with Fr Phil.

Action Item 5

Flood plain sedimentation. In progress, see 4.3, page 5.

Action Item 6

Archive system for studies on mine derived signatures. In progress, more discussion needed between Graeme and Charlie.

Action Item 7

PEAK Terms of Reference and related materials for discussions on PEAK roles. Prepared by Mel, for discussion at this meeting.

Action Item 8

Porgera Mine Closure Committee Bio-physical and Socio-Economic sub committees requested to make presentation to PEAK. DOM chairs committee, biophysical committee will prepare for June meeting in Wabag. The meeting was informed that the Porgera Mine Closure Committee passed a resolution

that PEAK will provide an independent third party review of technical and socio-economic studies.

Action Item 9

Members to update bio-data on PEAK website. Contact Mel. Fr Phil: is PEAK-PJV.com visibly independent? Agreed to drop the PJV from the name. Brad: is PEAK otherwise taken as a website name? Bill Dietrich: Google search of PEAK links to the right site, so probably OK.

Action Item 10

FPCD. Discussion between Yati Bun, Mel and Tim to be continued with Bob replacing Tim. General feeling was to work with Yati; FPCD has received a radio from another NGO; Charlie noted that PJV helps with transport and logistics.

Agenda Item 4

Agenda Item 4.1

Environmental Review/Progress Report

Charlie Ross was introduced as the new PJV Environment Manager. He outlined 5 areas of coverage:

2. Disposal of sediment from the west wall pit failure.

Runoff from above average rainfall has caused considerable problems due to failure of brown mudstone at the western end of the open pit, leading to greater than planned waste disposal (+ 5.0 m tonnes.) Much of the waste is incompetent and disposed of on the Anawe erodible dump, which is therefore overburdened and is damaging land adjacent to the dump. The toe of the Anawe erodible dump is being pushed toward the Porgera River. Trenches are being cut along the western rim of the open pit to divert water away from the area as an ameliorative measure.

Slides were shown. Cross-sectional comparisons (1990, 1999 and 2004) on the Porgera River showed river aggradations of +2 m at SG1; deposits on one side and scouring on the other side at 7 km downstream; and minimal effects at 20 km downstream.

Similar cross-sections of the Kaiya showed overall scouring.

2. Tailings.

Charlie explained the tailings mixing system and the importance of pH adjustment to 6.5 using lime. This complexes and binds metals and promotes co-precipitation, leading to a tenfold decrease in dissolved zinc outflows, which are currently at <10 mg/litre SG2 and 4 mg/litre at SG3. Michael asked about the use of zinc vs. cadmium as an indicator; Charlie replied that Zn was a better indicator for dissolved metals because it more easily dissolved.

Compliance levels are:

Zn- Zinc 50 mg/litre; PJV actual c 5 mg/litre.

Pb- Lead 3 mg/litre; PJV actual <0.5 mg/litre.

As- Arsenic 50 mg/litre; PJV actual c 5 mg/litre.

Paul asked about compliance at SG3 against other sites; Charlie explained that SG3 was selected because compliance at that location provides protection for river food resources taken by villagers downstream of that area.

3. Progressive Rehabilitation. Charlie explained the use of brown mudstone to seal substrates and prevent potentially harmful oxidation of sulphide bearing waste rock stored within the dump, and also because it is a growing medium for rehabilitation work. However, it has a high pH, few nutrients and is clayey. Di-ammonium phosphate fertiliser is added to adjust pH and add nitrogen and phosphorus.

Twelve-week grass trials have shown rye grasses and legumes to be most successful, vetiver grass to be poor.

Contour planting with in-fill planting is most effective; broadcast seeding with fertilizer works well. Slopes are planted first (to prevent erosions) and then benches.

Highest rehab area: 2710m; lowest 2500m.

Bill asked about planting on erodible dumps; Charlie replied that no planting would be done until the dump surface stabilised (mass movement of material had ceased).

4. Closure Planning. The Porgera Mine Closure Committee (PMCC) has endorsed the work plan in its June and October meetings. Workshops are being held to identify and prioritise bio-physical and socio-economic issues such as waste rock dump and post-PJV underground mining. It is also looking at the issue of small scale alluvial mining during and post-mine.

5. Projects.

- **Health Risk Assessment (HRA)** This project has provided high quality data on air, food, drinking water, river water, soils and sediments. High quality diet data, but time/activity data not recorded, e.g., how often/long exposed to soils, recreational use of rivers, which lead to Dr Bentley making worst case assumptions of potential ingestions. This will be remedied by re-visiting and collecting time/activity data which will be linked to other HRA data.
- **Monitoring Program.** The current program, unchanged since 1990, and based on compliance rather than eco-risk assessment will be reviewed, evaluated and optimised. The new approach will include eco-risk and HRA concepts. Outcomes will include:
 - A model of the river system and cause-effect pathways;
 - Eco-system and human health protection;
 - Use of newer statistical designs and long term data trend analysis;
 - Site specific water quality criteria, to be included in closure planning and closure criteria.

It is planned that a group of specialists will meet in November to decide the scope of work. Pat: How soon to be implemented? Charlie: tasks will be generated from the initial monitoring review meeting, implementation of the review work program probably Feb/Mar 05. Government will be involved.

There are some specific monitoring problems, such as the requirement to catch and sample metals in 100 barramundi at Lake Murray- local fishermen resent the large take.

Water Quality Model. The purpose is to develop a better understanding of long term (5, 10 and 15+ years) outflows from the Porgera site and dumps. Once water quality criteria are established, the model predictions will be evaluated against them. CSIRO will develop the conceptual model of Porgera valley drainage. Will require river monitoring data to validate model. Charlie to provide Mel with design information and data for the chairman and PEAK members.

4.2 Operational Performance

Brad gave verbal briefing.

Production stood at just under 750,000 oz at the end of the third quarter, not quite as good at the first and second quarter. There were 3 cases of Hides power line sabotage, taking from 1-4 days for recovery. Causes include disputes indirectly linked to our selection of SHP VLOs, payment distribution and one a dispute going back 15 years to mine construction days. There were also two days down to a process water line failure. Main issue: west wall failure, 5 million tonnes total, up to 50,000 tpd waste removal. Costs stood at just under US\$ 200 per oz, partly due to higher than expected fuel costs.

Highway. The highway is in good shape. Shell's risk assessment stopped deliveries, but they are back to normal now. Jet A1 was delivered in drums to ensure flights. K ¾ million TCS spent on Daulo and Chuave. Fr Phil had driven the road recently and reported it in good shape.

Underground The picture is improving, with 2005 production expected in the 200-250,000 oz range, making it a large underground mine in its own right.

Illegal miners. Currently at about 1500 per week, has been as high as 3000 per week. Serious safety issues because of in-pit dangers, work on walls, potential for injury or death and confrontation with employees at work. A forum was held in Cairns to look for solutions to outsider inflows to the pit. Part of problem may be within the community, which benefits from illegal mining activities.

Community Affairs. There is an internal leadership squabble at IPI among directors.

Governor Ipatas has been talking about "compulsory acquisition" of more of the PJV mine. This will have a negative impact on potential PNG investors, as well as PJV and PDI.

AIDS/HIV - regional programs are being linked. Internally, HR and Safety working together; voluntary testing has been implemented. Fr Phil: Is Porgera's HIV+ rate highest in PNG? Brad: no data to substantiate that at this time. Arthur: whatever we find may be most complete data in country. Brad: we are working with provincial health, the PAC (Provincial AIDS Council, which is committed to free retroviral and more testing) and will promote a mobile testing facility. Brad to update at next meeting.

Human Resources has a great new team in place, many new faces. Fewer than 200 expatriate employees, first time ever. Attracting more good national employees with a re-structured reward system. Goal is to be the best employer in PNG, with the best employees.

The chairman thanked Brad for the report.

Discussion: Arthur- there are disclosure requirements under Sarbanes-Oxley regarding reserves and resources. Fr Phil: Will underground change mine life? Brad: Stockpiles remain the same, the underground would only add about 1 year at most; the mine closing date is still the published 2012. Arthur noted that the underground makes the mine richer and more robust.

4.3 Briefings

Bill Dietrich- Strickland Flood Plain Deposition. Bill explained the “Source to Sink” concept and program and work supported by the US National Science Foundation, Simon Apte of CSIRO, PJV, Lihir Mining and OTML. The point is to understand sediment transport from the mountains sources, across plains to the coastal shelves and slopes and finally deep waters. We can have a “snapshot” of the Fly River mouth 18,000 and 21,000 years ago. Understanding the factors controlling sedimentation on plains may assist in greater understanding of climate and tectonics. The gravel-sand transition point can be the start of a flood plain. Sediment plumes from Strickland can flow up its tributaries and can back up the Fly River. Silver and lead are used as tracer elements.

PJV mine-derived sediments make up 20-29% of the sediment load at SG3, and 12-13% at SG4 on the Strickland low land. Mine derived silt and clay is about 11.4 M tonnes per year, about 29% of that load. Lead is elevated near the river, at about 10 mg/g but tapers off with distance.

The sediment deposition rate on the floodplain is 0-7 cm/year, most <500 m from the river, some at 1000 m and 1 (site? Or 1 mg/g) at 2000 metres. 1997-deposition rate 0.94 cm; 2003 deposition of 1.1 cm. Total sediment deposition on the Strickland flood plain is about 7.8 M tonnes/annum, about 10% of the load.

Lead and silver levels are elevated in the Mamboi, of which 10-30% may be mine derived (raises question why levels are not diluted more?)

To be done: Analyse more and deeper sediments to get an understanding of river deposition history back 100 years; trace lead 210 isotope; build better deposition model from suspended sediments, velocity profile and grain size; access PJV data.

Conclusion: 7-13% of Pb/Ag and sediment load is mine derived. Mine derived sediments can appear up to 1000 m from the river. Annual sediment load is 70 M tonnes, of which 10% is deposited on the Strickland flood plain. Mine derived sediments are probably not a cause of backflows into the Mamboi.

Discussion: Fly River compared to Strickland- Fly has about 10 Mt/a natural load, increased to about 40 Mt/a by OTML (4-5 fold), a big addition compared to relatively small PJV addition to the much larger background sediment load (80 Mt/a) of the Strickland River. Need more information on Herbert River and L Murray deposition. Need better understanding of pyrite sands, and their potential for oxidation of sulphides , especially if dredged and exposed.

Agenda Item 5

Community Consultation

5.1 Paul Greener PEAK review

The chairman introduced the topic as the main agenda item, based on the initial review of 26/07/04, from which a background paper was circulated.

Paul: two working documents- meeting notes and a suggested revised TOR for PEAK. The purpose of this item is to discuss and review issues arising from the July review, agree the issues and agree next action steps.

1. PEAK needs to respond to a complex mandate.
2. It needs to interact with a wider range of partners and stakeholders.
3. PEAK roles are to review, advise and inform.
4. It needs greater independence from PJV.

Vision: PEAK is an independent association promoting long term environmental, social and economic sustainable development outcomes, consistent with international best practice.

Partners and stakeholders include PJV, community based organisations, various levels of government, NGOs and donors.

PEAK roles

1. Independent monitoring and review of mine closure process, compliance and related issues.
2. Advisory services by identifying issues.
3. Information brokering - a clearing house or one-stop information shop on Porgera mine issues.

A PEAK Secretariat.

Why? To provide an on-going presence between meetings; provide continuity; an independent force.

What will it do? Provide services through a half-time position; support PEAK meetings (logistics, materials, minutes); develop a knowledge bank; provide public communications.

Membership- 15 maximum.

Discussion: Graeme- why more independent and socially focussed? Brad- more social and economic issues coming to the fore in closure planning, they are the greatest challenges to PJV. Graeme- Suggested a group of NGOs be selected to do what technical experts did for PEAK.

Reduce the presence of PJV at meetings: make presentations and then leave?
Social and environmental committees to sit separately?

Outcomes. Long term SD is very different from advisory role.

As an association PEAK would need to register (as legal entity) and could raise independent funds.

At present PEAK does not appear to be at "arms length" from PJV or other members, and therefore has trouble putting pressure on any of its stakeholders.

PEAK members to deal with minutes, agendas and logistics- Does PJV set the agenda too much? Graeme- If anyone disagrees, speak up; it is important that the chairperson is seen as independent and represents the views of the committee. Will only be tested when stakeholders want PEAK to deliver something at odds with some members' wishes, e.g., some studies may not have everyone's support.

Paul noted the lack of a community representative. Bob and Nigel - do not lose the environmental focus. Mel- need social expertise for social closure issues. Paul- the list of issues requires completion through involvement of more stakeholders. Michael- PEAK could be a model for Ramu and other projects; Paul suggested that PEAK could extend its services to other mines, becoming a more general watchdog. Commercial ventures could also become partners.

The PMCC could ask PEAK for independent reviews of environment, social and technical issues. Pat- How will PEAK sustain its sustainability outcomes? It will need planners e.g., as do the national and provincial governments.

Secretariat discussion. The secretariat would promote greater independence, but needs temporary funding from PJV. It will answer to the chair. Consensus will be important, not just one member demanding a study, etc. An overly demanding watchdog might lead to PJV reluctance to provide information. PEAK has no mandate to "tell anyone what to do," and gets its credibility from sensible advice. Members were agreeable to the development of a secretariat. Mel suggested an NGO which already has an office (independent from PJV) could take on the role of secretariat service provider.

Action Item 1. Nigel tasked Mel and Bob to develop TOR for a group, individual or agency to provide secretariat services. Nigel to review the advertisement for service provider before placement in papers. Members to please comment via the chairman.

Action item 2. It was also agreed that PEAK would proceed with registration as an association.

Membership discussions. It was suggested that government presence would increase, since DOM and DEC do not cover all issues. Bob said the Enga province should be represented, via the Provincial Planner, or chair of the planning group; Nigel mentioned the Community Justice Liaison Unit (CJLU) in the Welfare Dept, funded by AusAID, and with a portfolio covering law and order and community development issues.

Membership would be composed of the chairperson plus

- up to seven stakeholder organisation representatives (DOM, DEC, National Planning, CJLG (?) Enga Planner, PJV and Placer Dome PNG, PDWA) and
- up to seven individuals from civil society, NGOs, community and experts. Discussions suggested 3 biophysical members, 3 socio-economic and 1 from the community, or alternately 2 biophysical, 2 socio-economic, 2 generalists, possibly 1 from NGOs and 1 from the community.

The term of membership would be 2 years, renewable.

Fr Philip suggested a search committee for members, generating a list of names for next meeting.

Action item 3 Mel to coordinate the search, and finalise a short list for member comment/vetting. Mel to make an initial approach to likely new members, get them on board by next meeting.

Action item 4. Paul to revise notes in light of discussions.

Agenda Item 6

PEAK reporting

The annual report has not yet been written, to be prepared for next meeting.

Action item 5. Mel to prepare annual report.

Agenda Item 7

Administrative Issues

Informal dinner at Asia Aroma.

Agenda Item 8

Any Other Business

None.

Agenda Item 9

Future Meetings

1. The next meeting will be on Feb 28, 2005 in POM, 1 day starting in morning.
2. There will be a meeting in Porgera in June, approx June 9, but date tba.
3. October meeting will be held in POM, data tba.

There being no further business, the meeting closed at 3:05 pm, with thanks from the chairman to all for attendance, participation and briefings.