Sirs,

I have been given a copy of the draft report of the inquiry into the Montara blow out. The following comments are mine and have not been directed by PTTEP or others. The comments are my attempt to improve the report and the commissions understanding of events.

The commission finds deficiencies in me and my execution of my duties as the PTTEP well construction manager. I do not and never have disputed that.

The damage that the Montara blow out has done to my reputation and that of several others is very significant. That is a fact of life. I don't know what the future holds for me personally but unemployment beckons. It would be a pity to go through all this and miss any of the learning's, potentially condemning others to similar mistakes. It seems that what I see as reasons, the Commission sees as excuses. Neither reasons nor excuses change what happened but reasons may lead to corrective actions where as excuses might not.

My first comment is in respect to process. I have never been involved in a process like this and hope never to repeat it. I found the opportunity to provide a written statement in advance helpful as it allowed me to set out my thoughts in what I thought was an appropriate manner. I had been advised that the objective of the Commission was not to lay blame on people but rather to work out what happened. My statement was framed to suit that objective. On the witness stand it was an altogether different experience. I was impressed by Mr Howe's memory and general understanding of the situation.It appears to me that a general conclusion had been reached prior to oral hearings commencing and that the oral hearings were designed to prove it. A skilled professional like Mr Howe had little trouble in causing the various witnesses to say what ever he wanted said. Once achieved, that proof was ticked off and the next point to prove raised.

If the objective of the oral hearings was to name and shame then mission accomplished. My regret is that a lot of emphasis was placed on who and not enough on why. Mistakes were made that led to the blow out at Montara. Individuals including me made those mistakes. To me the reasons why mistakes were made is at least as important as who made them.

I know that the Commission is very critical of PTTEP with respect to the initial submissions and I know that stark comparisons have been drawn with Atlas in that regard. I can understand the concern but I was there at the time and the companies resources were very keenly focused on stopping the leak. This focus was intense with many people working long hours to get the job done. Minister Fergerson stressed a number of times - stop the flow, don't hurt anyone and there will be an inquiry later. This prioritization was in the national interest and I agree with it. This prioritization also led to less accurate and less detailed initial reports, reports not rectified until the well was killed, people slightly rested and preparations made for the inquiry. Even during the Commission, discoveries and interpretations of data were made to modify views. This was an evolving view on what happened but that evolution was not intended to mislead the Commission or any other regulator.

1.3 ii

The report finds that the incorrect volume of tail cement contributed to compromising the casing shoe as a barrier. This theory is repeated several times throughout the document and there is even a footnote that states that evidence by Mr Wilson and myself is specifically rejected. Evidence was elicited from Gouldin, Millar and Jacob

supporting the commissions finding however I believe it to be incorrect. I will try to explain why I don't think it contributed to the problem in this case.

Imagine drawing honey into a big syringe (no needle). Then place the syringe into a test tube filled with water. Ideally the syringe reaches near the bottom of the test tube. As the syringe was inserted, some of the water is displaced from the test tube and some remains in the annulus created by the outside of the syringe and the inside of the test tube. Now imagine slowly pushing the syringe plunger down to discharge honey. The honey comes out of the syringe and moves up the outside of the test tube displacing more water. If it is a big syringe, a lot of honey is discharged and the water is displaced pretty efficiently. If we now retract the syringe plunger a little, we will probably draw back honey or at worst, honey and a little water if it was not displaced cleanly. Note the position of the honey on the outside of the test tube. It comes part way up the annulus. Now repeat the experiment using more honey in the syringe. The only credible difference is a change in the final level of the honey in the annulus. The conditions at the bottom of the test tube are not changed significantly whether the syringe started out 60% full or 100% full.

The syringe example above compares well with the cementing process. The lead cement is pumped first followed by the tail cement. Both slurries are liquid at this time. A change in the volume of tail cement is very unlikely to have any impact on what happens at the casing shoe because it is the last cement to be discharged. It will have an impact on the length of cemented casing. The length of casing cemented with tail cement could have been a problem but not at the shoe end, only at the top of tail cement, some hundreds of meters up hole. As the blow out did not occur in the annulus, my conclusion is that whilst the error in tail cement volume was a mistake, which could have contributed to the cause of a blow out, it was a mistake that did not cause or contribute to this blow out.

What is placed in the final report is of course up to you guys. This point does not change what happened.

1.4 a i

This is a very minor point. To state that a poorly installed or faulty (ie non sealing) PCCC may explain the absence of any detectable pressure below the cap, prior to removal is a speculation that does not support critical examination. If there was pressure and no seal then there would have been flow. If there was flow it should have been visible at least when the cap was removed. If there had been flow such a condition would have been possible for a period of up to 5½ months. If a flow had been occurring, the only source of new fluid was the reservoir. As reservoir fluids are less dense than the displacement fluid, an influx of reservoir fluid into the well whilst the PCCC was installed would in due course have led to an underbalance situation. Once the reservoir fluids started to enter the wellbore, they would have naturally floated up through the displacement fluid to rest just below or in fact leak from the PCCC. Reservoir PI data for the two offset wells indicates that a reasonable well production rate for this reservoir could be around 50 bbls / day / psi. 1 psi of pressure below the cap would have been un detectable with the rig instrumentation however a 1 psi underbalance would flow at a rate of 5.5 litres a minute which should be easily observable. The bottom line is that the speculation about a faulty seal at the PCCC leading to an inability to detect pressure below the cap is not at all likely.

1.4 f

The term Simultaneous Operations normally refers to operations conducted by different facilities concurrently where actions on one facility could impact on the other facility. It does not normally refer to activities undertaken on one facility concurrently with other activities undertaken on one facility. Concurrent activities on the rig including activities to do with the wells on the WHP were all managed by the West Atlas OIM using the Atlas Permit To Work System. This comment may be referring to offline work. All work on the rig and WHP up until the time of the blow out was carried out under the Atlas PTW system.

1.57

Whilst it does not change things, the whole area around volumes bled off and pumped back is in error. This is best understood looking at the Halliburton chart of the casing pressure test and bleed off. The chart starts with about 780 psi trapped pressure. To increase pressure from 780 psi to 4000 psi took 9.25 bbls. One could easily extrapolate back and say that had the pressure test of the casing been from 0 ~ 4000 psi, the volume required should have been 9.25 + 9.25 x 780/4000 ie about 11 bbls. This means that the amount of fluid bled back in excess of reasonable expectation was only 5.5 bbls.

1.71

This is a reasonable statement. It comes down to a difference between what Halliburton is contracted to supply and what they are expected to supply. There are many service companies involved in a drilling operation and Halliburton are one of the bigger ones. They supply specialized services, knowledge and experience to their clients. To say that they are just machine operators is not correct and not what was meant, at least by me. They provide a service and are expected to provide advice. They are not however responsible for the decision. In the case of Mr Doig, he was not directly responsible for the decision to pump fluid back into the well. There is however one area that does not seem to have been explored very far and that is the communications between Mr Doig and Mr Treasure after the float valves failed.

If you assume that Mr Treasure was not completely incompetent the question in my mind is why did he get it so wrong in the pumping back sequence. The answer I come up with is communications. At a critical time, he had returned to the office and was not able to see the Halliburton chart located at the cement unit. If he was told that the floats failed he would know that float failure would result in some fluid entering the casing. He would have asked how much fluid was returned. To hear that the volume was 16.5 bbls could easily be interpreted as 16.5 bbls more than we should have just as it could have been interpreted as 16.5 bbls in total. How that conversation actually was we will never know however Mr Treasures actions were consistent with him thinking that we had 16.5bbls more fluid return than expected. That communication was critical and we got it wrong. I do not want to find fault with Mr Doig but that communication was inadequate either in transmission by Mr Doig or in interpretation by Mr Treasure. The best placed person to realize what was happening at the time was Mr Doig and we missed an opportunity at that time. Contractually, no fault but it could have been better.

1.94

The report comments that it is not clear why My Wilson may have suggested to Mr Treasure that he “pump it up a bit”. The reason could well be this:

If the fluid had been bled off to zero to check the floats and there was some return flow that would indicate that the floats were leaking but that the leak rate was not catastrophic. In that circumstance, the first action is to shut the valve and prevent further influx into the casing. As we know, it takes some volume to pressure up on the casing to the point of equilibrium being the final circulating pressure prior to plug bump. There are two choices at that time. One is to do nothing and wait on cement knowing that another 1.5 bbls of fluid or so will enter the casing via the leaking float valves before the pressures balance. The other choice is to reduce the influx through the leaking float but pumping some fluid at surface to quicker equalize pressures. That could well be conveyed as “pump it up a bit”. The above does not change anything but it does suggest that a concise description of what had happened may not have taken place and that Mr Wilson’s reply may have been a reasonable one given the information he had been told.

1.95

The Commissions conclusion in 1.97 is in accordance with my own views. Ie that Mr Treasure made up details in a phone conversation to spread the blame around. I am now of the opinion that he made that conscious or sub conscious choice soon after the blow out occurred. I suspect that he made that statement when he was interviewed soon after the blowout as part of the companies internal investigation under legal privilege. Perhaps that is why the statement subsequently ended up in the initial PTTEP submission to the Commission.

1.99

I do feel sorry for Mr Wilson for this comment. As you would have seen, he is one of the better note takers. What is reported in 1.99 is correct but the guy with the best notes is in trouble for the day he did not take any. FYI – some 6 weeks before the Commission started hearings, NOPSA took Mr Wilson’s and my notebooks as evidence. If there is any doubt about Mr Wilsons notes I would fully expect that an inspection of the originals would demonstrate no edits or page removals were made.

1.107 Ref 16

The IADC report is not a jointly prepared report. It is the drilling contractors report prepared by the two drillers. It is used as a basis for payments against the contract so it is signed by the Drilling Supervisor and the OIM to demonstrate concurrence.

1.118 Ref 25

This may sound like sour grapes but I am very confident that the guys do understand what an inflow test is. What was done on 7 March was the actions taken at surface to conduct an inflow test. That the test was inadequate is unquestionable. That we should have identified that at the time is without a doubt. Describing it as an inflow test is more a description of what actions were taken on the day, not the validity of those actions.

1.131

The intent of this paragraph is reasonable. As you know, the information was there to be interpreted. Nobody interpreted it accurately at the time. What I failed to convey was that the packaging of that information was not conducive to alerting people to look for a problem. That is not an excuse but it is a reason why. Many of us looked at the data and yet nobody saw the problem. To simply say that we are all incompetent

may be tempting but that will not save anyone in the future. This is where the question why is important.

1.144

I have not checked Mr Gouldin's statement but does this sentence mean Mr Millar or should it be Mr Truman?

1.145

This was touched on above earlier in my comments. These comments suggest that we, the witnesses, did not properly convey the relationship between the title holder PTTEPAA and the contractor Halliburton. You can see from the many emails between Mr Wilson and Mr Guest that there was a lot more to the cementing than just a machinist on the day. Halliburton are an important part of the cementing process and they really design the slurries, perform the lab tests and also run the equipment. What happened on 7 March was that something went wrong and the problem was not identified. PTTEPAA onshore and offshore, Atlas onshore and offshore and Halliburton onshore and offshore all received the reports from which it was possible to identify the problem. None of us did.

1.147

Elsewhere it is identified that proper analysis of the DDR etc would allow one to fully evaluate what happened. I only met Mr Ross after the incident and respect him. This extract from his report has errors in it. For example it suggests that the 16.5 bbls of backflow was in addition to any fluid bleed off due to the pressure test. "not an insignificant volume and arguably recklessly high". Here, with all the reports and adequate time to evaluate them, Mr Ross, a PhD engineer, has got it a little bit wrong. He figures that we got 16.5 bbls of cement back where as we probably only got 5.5 bbls back, the balance being displacement fluid used to do the pressure test. I raise this for two reasons. 1) If removing this reference is not a problem to the Commission then it could avoid a little embarrassment for Mr Ross. 2) If a top guy can get this wrong with lots of time to think it through, spare a thought for the guys on the rig who made a call based on less data and much less time or also for the guys in town who were not looking for a problem and did not see one.

This does not change the fact that we should have shut in and waited without pumping any more that required to reach circulating pressure and in the circumstances that too was not necessary.

1.150.3

This is a case where an attempt to explain what happened has been interpreted as an attempt to avoid what happened. Why did nobody realize at the time that another test was required? One reason could be that an Atlas procedure dealt with the circumstance inadequately and that lulled people into a false sense of security. Did that happen? I don't know. Was it a factor? I don't know. Might it have been a factor? Possibly. Is it something that we can perhaps learn from and rectify for the future? Yes.

1.151

You are correct, not pressure testing when we should have is inexcusable.

1.152 Ref 37

I am not sure that I agree with the statement about who has the primary role for well control. In normal circumstances well control is managed by procedures and Atlas owned equipment including the BOPs. Atlas personnel operate that equipment. This arrangement is reflected in the rig contract between PTTEPAA and Atlas. In the safety case there are sections which describe the interfaces between the two companies. In this it is specifically stated that for the purposes of this campaign, the parties agree to use the Atlas well control procedures. This is normal as it allows the front line personnel to use their company's policies and procedures for well control. In terms of well construction it is the other way around, PTTEPAA certainly has the primacy.

1.155

Note that there is confusion here between Measured Depth and True Vertical Depth. With cementing, the volumes and tops are worked out using Measured Depth and when the program was originally issued, the plan was to have just over 100m from top reservoir to top of tail cement. The revision to the DP with regard to cementing added another 100m of cement to the plan which took TOC to 69m TVD above top reservoir.

1.159

When I wrote my Statuary Declaration for the Commission, all I had was that the DP had given a number for top of cement, that the program revision had a brief explanation for what was important and that a cement program from Halliburton in town a few days prior to cementing reflected the correct revised top of cement and the original pre drill shoe depth. I think that the commission had just started hearings when Halliburton released revised Statuary Declarations. When I read the Stat Dec from Peter Guest, I noted that he mentioned providing the cementer offshore with his cement calculations. In that Stat Dec, he quoted the volumes that he calculated and they were consistent with those from offshore. Up until that time, I had thought that the guys offshore had just made a mistake but for the same mistake to come from Halliburton in town, there had to be more of a reason.

Anyone familiar with an operation like this would know that the cement is intended to isolate particular formations and that to that extent it is the top, not the bottom of cement that needs to be honored. In our case, we drilled much further horizontal that originally planned. All parties who did the cement calculations came up with roughly the same answer. They all made the same error which was to honor the bottom of cement and not the top. This meant that the error was an input error not a math calculation error. My comment about what we could have done better was a result of seeing the Stat Dec from Peter Guest. If he got it wrong too, then either the problem occurred in one place and was propagated from there (ie copied inputs or copied answers) or everyone mis interpreted the DP.

My comment as a witness was an observation that despite the DP having sufficient cement programmed as per our standards and that being further increased by change control in which a description was added as to the objective of the change, the mistake got through. What we could have done better in the DP was to further highlight the key depths for cement by not only having a number but also a description of the relevance of that number. Ie TOC "xxxx m - xxm TVD above top reservoir". What was in the DP was correct and clear but as people did not follow it

there is something that can be learned and an improvement made. It should be noted that the change control form did give an objective for top of cement, the change control was implemented as the length of tail cement was increased by 100m but the logic of the description in the change control note still did not make it through to the final result.

1.162

As per description for 1.3ii, this may be the Commission's conclusions but seek some other advice as well. If the blow out had been up the annulus, then the cement calculation error would have been a likely cause. The blow out was not up the annulus and the top of tail cement was far removed from the shoe, isolated by a substantial volume of cemented casing. It is very unlikely that the calculation error played any part in the blow out.

On the cementing, the chemicals in the cement slurry for both lead cement and tail cement reduce free water thus inhibiting gas movement. This is a positive condition and may have helped avoid a problem in the annulus.

1.191

This point has been mis understood. The point I tried to make was that removal of the PCCC was either safe or not safe. At the time we (incorrectly) thought that the shoe track was competent. At the time we assumed that had there been any change in circumstances that would be evident prior to cap removal. We thought that cap removal was safe. If we had recognized that the cap removal was not safe, we would have worked out a plan to remove it later via the BOP.

The point about one barrier not being exceptional has also not gained any acceptance. There are two main types of wellhead systems for land and jack up operations. One type is a unitized wellhead system in which successive casing strings are landed within a single wellhead spool. The other, more common type is where casing is set in the wellhead on a slip and seal assembly. On this type of wellhead system, the BOP is removed to allow wellhead work to be done prior to re installation of the BOP. In this circumstance there are periods of several hours where there are only one set of barriers in place.

1.215

Perhaps reconsider the position regarding a fault in the PCCC resulting in no detectable pressure.

1.250

As per 1.191 above.

1.261

Note that well operations are not considered to be SIMOPS. All well operations are managed by the Atlas system. This includes well operations on the WHP.

1.273

Suggest that PCCC manufacturer be asked if installation using chain tongs to apply torque was acceptable.

1.275

As the reference to AWT, a third party contractor is included, I have attached an email received by me from AWT addressing some of the issues raised. Cameron Manifold is a principal of AWT and when I saw the emails in 2007 concerning AWTs departure I got a response that was geared towards AWT's strategic desire to place themselves in the industry as a value adding company instead of just a supplier of personnel. It was not as black and white as portrayed at the hearings. I only found this email afterwards. It does not make any real difference to the report.

Regards

Craig Duncan