STANDING COMMITTEE ON ENVIRONMENT AND PUBLIC AFFAIRS

INQUIRY INTO THE IMPLICATIONS FOR WESTERN AUSTRALIA OF HYDRAULIC FRACTURING FOR UNCONVENTIONAL GAS

TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
MONDAY, 31 MARCH 2014

SESSION ONE

Members

Hon Simon O'Brien (Chairman)
Hon Stephen Dawson (Deputy Chairman)
Hon Brian Ellis
Hon Paul Brown
Hon Samantha Rowe

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Hearing commenced at 10.19 am.

Dr PAUL VOGEL,
Chairman, Environmental Protection Authority, examined:

The CHAIRMAN: On behalf of the committee, I would like to welcome you to the hearing. Before we begin, I must ask you to take either the oath or affirmation.

[Witness took the affirmation.]

The CHAIRMAN: Dr Vogel, you would have signed a document entitled "Information for Witnesses". Have you read and understood the document?

Dr Vogel: I have indeed.

The CHAIRMAN: These proceedings are being recorded by Hansard and a transcript of your evidence will be provided to you. To assist the committee and Hansard, could you please quote for the record the full title of any document that you refer to during the course of the hearing. I remind you that your transcript will become a matter for the public record and if for some reason you wish to make a confidential statement during today's proceedings you should request that the evidence be taken in closed session. If the committee grants your request, any public and media in attendance will be excluded from the hearing. Please note that until such time as the transcript of your public evidence is finalised it should not be made public. I advise you that publication or disclosure of the uncorrected transcript of evidence may constitute a contempt of Parliament and may mean that the material published or disclosed is not subject to parliamentary privilege.

We have your submission here before us. I understand that you do not wish to make a further opening statement.

Dr Vogel: No, I do not.

The CHAIRMAN: On behalf of the committee, thank you for the submission and attachments that you have provided; we found these very informative. Incidentally, they will, of course, be placed on our website along with other submissions.

Dr Vogel: I understand.

The CHAIRMAN: This is for the benefit of any observers. That has only just been decided so they will appear a bit later on, perhaps today or tomorrow. Dr Vogel, one of the documents that you provided was a memorandum of understanding between your authority and the Department of Mines and Petroleum. Part of that memorandum of understanding defines the environmental safeguards that will be referred to you for consideration and the environmental safeguards that will be exercised through the Department of Mines and Petroleum. In your experience, how has that system been working since the MOU was signed?

Dr Vogel: Thank you for the question. It is probably worthwhile just recapping a bit about the Environmental Protection Act and one of the primary functions of the EPA which is to provide the Minister for Environment with independent advice about whether significant proposals can be implemented. That is, significant proposals are defined in the Environmental Protection Act as those proposals likely to have a significant effect on the environment if implemented. There are two concepts that are important. One is the concept of significance and the definition of environment. The EPA can only provide advice to the minister on environmental matters. It cannot go into social, economic or any other matters. It is very strictly confined to providing environmental advice.

The other thing I would say is that the concept of significance is sometimes in the eye of the beholder but we need to make a judgement about whether a proposal is significant or not. To assist us in doing that, we have in our administrative procedures of 2012, identified 10 key elements to that judgment. Some of these, for example, would be the environmental values of the receiving environment; the nature, extent, duration, frequency and intensity of impact and risks; whether there might be cumulative impacts present; the resilience of the environment and the presence of other statutory decision-making bodies that can further assess or evaluate and manage environmental impacts and risks.

They are the two very, very key concepts within the act. The EPA can only consider significant proposals. So, when it makes a judgement that a proposal is not so significant that it warrants formal assessment, it does not necessarily mean that there are not important environmental issues that need to be managed, but we have made a judgement that there are other regulators that can assess and manage those activities. That is what we have done with the Department of Mines and Petroleum. For those matters where we believe the proposal is not so significant that it warrants formal assessment, we have an memorandum of understanding with DMP that further defines those parameters for matters that should be referred to the EPA, recognising that the Department of Mines and Petroleum is a decision-making authority under the Environmental Protection Act and is required by law to refer significant proposals to the EPA. That MOU assists the DMP and provides some guidance to them about what proposals should be referred to the EPA. It has been in place for a few years now and, in my view, it is working very well. We also recognise the DMP is going through its own regulatory reform process to further improve the regulatory regime, but EPA's view is that it is working and is effective.

The CHAIRMAN: At face value, one observing from the outside might see the EPA as the advocates for the environment, and possibly the Department of Mines and Petroleum as advocates for the furtherance of mining and petroleum and, therefore, potentially two agencies that might come to loggerheads on certain matters. I gather that the MOU is a prime instrument to help define what your respective roles are. So, in effect, the EPA, through the legislative processes or the legislative machinery that you have just summarised, has some of what would otherwise be its functions taken care of by the other decision-maker—in this case DMP; is that correct?

Dr Vogel: If in the EPA's view the proposal is not significant and there is another agency that can assess, manage and regulate the potential environmental effects of that proposal—we have to form a view about that. In the absence of a DMP, it may well fall to the EPA, but at the moment we have a Department of Mines and Petroleum that has those functions of environmental regulation as well as facilitating economic development. That is what we have and that is what we have to deal with.

The CHAIRMAN: Indeed, DMP are required and do require environment management plans from proponents for mining and so on.

Dr Vogel: Precisely.

The CHAIRMAN: In the EPA's view, are they discharging that broad requirement adequately and competently?

Dr Vogel: Thanks for the question, chairman. Let me answer that in a couple of ways. One is we have the MOU, which is in place and, as I said, effective. There are also interagency working groups working at improving that regulatory regime across government so that we have a cohesive, integrated regulatory regime that can manage those impacts and risks, and that is working well in terms of identifying critical issues that need resolving. I think that the regime that we have, when EPA makes judgments about significance and lets DMP get on with the job, is working well. I do not see that we need to change that at this stage.

The CHAIRMAN: What would be your stance if you formed the view that in one case or in a series of cases DMP was not discharging their responsibilities to the environment?

The Witnesses: The other thing I would say is that just as recently as last week I was briefed by the DMP senior officials on the contents of EPs, how they are working, how they adopt risk-based approaches, how they have environmental performance objectives, how they ensure compliance et cetera. That gave me a great deal of confidence that there is a lot of rigour and a lot of scrutiny about the environment plans that must be approved by DMP before a hydraulic fracturing activity can occur. They go through a number of loops, as they explained to me, and they will not accept an inadequate environment plan, and they are going through that process right at this stage with a particular company, going through a number of loops to make sure it is right. Included in that environment plan is well integrity testing. That needs to be conducted and must meet their requirements before any hydraulic fracturing activity can occur. We have a number of mechanisms. We have got the interagency groups; we have got a very strong and growing environmental regulatory regime within DMP; and we have got close communication at very senior levels across agencies to ensure that there is communication and dialogue about significant environmental issues.

[10.30 am]

I understand that the Department of Mines and Petroleum has had external reviews done of its regulatory regime and they have found that while it is adequate there needs to be some improvement, and it is already undertaking those improvements through changes to regulations. The EPA, at this stage, is only talking about exploration here because it has been determined that the six hydraulic fracturing exploration proposals are not so significant that they would warrant assessment and can be managed by other regulators. That is not to say that at some point in the future the EPA would not assess a hydraulic fracturing proposal, but based on the concept of significance.

The CHAIRMAN: That then leads me to a couple of other questions. Referring to your submission, to which you appended some correspondence with proponents in several cases, there is a reflection there that the EPA had chosen not to formally assess those proposals. Obviously in doing that, you made an assessment, and that leads me to ask, for the record, if you could briefly outline what is a formal assessment.

Dr Vogel: Thanks for the question; I understand there might be some confusion. When a proposal is referred to the EPA—and anybody can refer a proposal to the EPA, but decision makers, as I said, must refer significant proposals—the EPA has to make a judgment against its significance test about whether that proposal is significant. If it forms a view that it is not—it seeks advice from experts and other agencies to assist to formulate that judgment—if it forms a view that it is not so significant that it warrants formal assessment and can be managed by other regulators, it will document that in a statement of reasons. The statements of reasons that we have issued are, in my view, fairly lucid explanations of the advice that we have sought and how and why we made those decisions. They do not lend themselves to 10-second sound bites unfortunately, but they are very clear explanations of the advice that we have sought, how we have considered it and the judgment that is made against our significance test criteria, of which there are 10. That is what the not-assessed decision is. I have to say that the not-assessed decision is appealable—the EPA's advice is contestable—so aggrieved persons can appeal and the minister can consider those appeals. If he is of that view, he can uphold those appeals and direct the EPA to assess those proposals. That deals with the not-assessed decisions and the appeals process.

If the EPA forms the view that the proposal is potentially significant, it can then decide to formally assess. That means that there is a requirement that a level of assessment is set, and that level of assessment can be either an assessment on proponent information or it can be a public environmental review, or it could be on referral information that the answer is environmentally unacceptable on referral information and then the procedural fairness process ensues if the EPA recommends no.

If it falls into the formal process, depending on whether it is an assessment on proponent information or a public environmental review, there will be an environmental review document that

will either have to be consulted with key stakeholders or the community will need to be consulted more extensively for the public environmental review process. It then goes to consideration for EPA. There is a response to submissions. There is a very lengthy—not too lengthy at times, depending on the proposal—process in place where the community gets to have a say about the environmental risks and impacts. Those matters need to be considered by the EPA. The EPA then forms a view and makes recommendations to the minister about the environmental acceptability of that proposal and recommends conditions if it recommends approval. There is then another two-week appeal process; then the minister will consult with ministerial colleagues and make the final decision. The EPA provides advice about whether a proposal can be implemented; the minister makes the final decision. That is a very formal process. It is legislated. It is in our administrative procedures. It has been around for a quite number of decades now so we have vast experience as an institution in that.

The CHAIRMAN: How long will that process take?

Dr Vogel: Anything from six months to two to three years, depending on the complexity of the project, the contentious nature of the issues, the scale of the project et cetera. Some of the uranium mining proposals and the Browse LNG proposal took a long time because they were complex proposals.

The CHAIRMAN: When you have a case that a decision has resulted in not to assess, concerned members of the public would have an avenue to voice their concerns via the mechanism of the appeal to the minister; is that correct?

Dr Vogel: Correct, chairman; they have an opportunity to appeal the EPA's recommendation to the minister. If the minister is of the view to uphold those appeals, this is one of the circumstances where he can direct the EPA to assess—that is true.

The CHAIRMAN: Conversely, with the more formal mechanism, there is an invitation for public submissions.

Dr Vogel: Yes, there is. If it goes for the full-blown public environmental review, there will be a public comment period of anything between four to 12 weeks and then the public can comment. The proponent must respond sensibly to those issues and those responses to submissions and the environmental review document are considered by the EPA in forming its view about whether that proposal is environmentally acceptable and it would then provide advice to the minister. That is also appealable; so the EPA's advice is contestable and the minister will form a view about that as well.

The CHAIRMAN: Thanks, Dr Vogel. I have two other questions. We have some information here, which we have referred to already, in respect of a number of fracking proposals, to use the vernacular, that have not gone on to formal assessment. I do not know any that have gone to formal assessment.

Dr Vogel: No, there are none.

The CHAIRMAN: You have given us the reasons why that was not appropriate, and we have copies of the public advices and so on. My question then is: at what point would the EPA consider the aggregate of effects of a whole series of small proposals that are not formally assessed?

Dr Vogel: That is a good question, chairman, and it is an issue that the EPA frequently turns its mind to, whether it is iron ore in the Pilbara or the nascent industry of hydraulic fracturing for tight gas. In my and the EPA's view it is inevitable that we will formally assess a hydraulic fracturing proposal, but it will be based on our determination about whether that proposal is significant. In the meantime, while government is getting its regulatory house in order, isolating those critical issues will be important in understanding whether there are cumulative impacts and risks and how they might be managed. One of those that is a particular challenge for government is that there are some parts of the state that are not terribly well understood in terms of groundwater basins, aquifer connections and what have you. The question will be: who should fill those knowledge gaps?

Should it be industry, government or some partnership? They are particular challenges that we will need to confront. Industry is acutely aware of that issue, as are government agencies. The EPA raised this a couple of years ago in discussions with the Australian Petroleum Production and Exploration Association and the industry and, indeed, in our environmental protection bulletin where we provide some guidance around exploration proposals, we identified that there are going to be other issues—cumulative impacts and risks—that will need to be managed over time. But the industry is a nascent one and we are in good shape to manage the issues and risks associated with that activity.

I would have to say there is a lot of information out there already. You would be familiar with, no doubt, the Australian Council of Learned Academies report which came out at the end of last year; the New South Wales' Chief Scientist and Engineer report—also a recent document. So I think we have a very good understanding about what the environmental impacts and risks are and I think we are in very good shape to manage those as a state. The EPA, as an institution, is very, very familiar with identifying and characterising impacts and risks, and there is a very strong regime across the state and cooperation amongst the relevant regulators to continue to improve that regime.

[10.40 am]

The CHAIRMAN: Thank you for that. Can you indicate what might be the scale of proposal that would generate that formal assessment?

Dr Vogel: It is difficult to talk about scale because it is really related to the significance of the impact. If there is large quantities of water going to be taken from aquifers about which we know little; there is going to be a lot of disturbance of the terrestrial environment in terms of vegetation clearance; there is going to be flaring; there is going to be lots of surface water management, they are the sort of issues that we will turn our mind to in terms of groundwater quality, in terms of terrestrial impact on biodiversity values. All those things will need to be taken into consideration when making a judgement about significance. So it is difficult to put a number and say, "Well, it will be 10 production wells that will trigger EPA's assessment", because I want to be very clear that it has to be based on the significance test. But industry, I think, is well aware that sooner or later there will be a formal assessment and is gearing up for it. But in the meantime, we just need to progress the regulatory regime to make sure that it is world's best practice.

The CHAIRMAN: Finally, for now, could I ask you a more general question, which is based on a repeated major concern that has been expressed to this committee in connection with this inquiry, and that relates to the health of our groundwater generally. My question is: what are the biggest risks to groundwater integrity in the EPA's experience?

Dr Vogel: I think there are two sources of risk to groundwater quality. One would be the integrity of the wells, and I will come back that to in a minute; and the other is how surface water is managed. So production water—the ponds that might be required for storage of production water, how they are stored, treated and disposed of; how much recycling of water can occur et cetera.

The CHAIRMAN: Yes, doctor, you have covered that very thoroughly in your submission. I, perhaps, did not phrase my question very well. I was referring to the risks to groundwater from all sorts of activities, not just the matter before the current inquiry. For example, we have heard that petrol tanks are a menace; that various forms of agriculture are of concern, and that was what my question is about. What are the major risks for groundwater contamination that exist around the state? My reason for asking that is to try to put the potential for contamination from unconventional gas operations into a context that we could more clearly understand.

Dr Vogel: Yes, I understand. Yes, thanks for the question. I think there are a number of issues. There is still a legacy in this city, as there is in every other city in the world, of previous contamination from industrial activity in urban environments that will have contaminated groundwater. We have a regulatory regime and a policy regime and huge amount of research being

undertaken to, I guess, undertake cost-effective remediation of those sites so that we can have that land returned to productive use. So that deals with the history of site contamination and how we need to deal with that. There is a massive program going on nationally and each state has its own legislation dealing with remediating contaminated sites.

In terms of the current practice, sources of risk to groundwater will be industrial activities, and there is a very strong regulatory regime in place for that through the Department of Environment Regulation through its works approval and licensing process, a bunding of tanks, et cetera, et cetera. So that deals with industrial facilities that would pose a risk to groundwater. They also then have a very clear response mechanism, so if there are spills of tankers, there is a response mechanism in the state that involves the Department of Environment Regulation, the health department and others in managing those risks. And then there would be risks from fertiliser contamination or other sorts of chemicals, and there are other policies and procedures in place to deal with that. For example, the state is investigating the use of low-phosphorous fertilisers et cetera to reduce the risk of nutrient contamination to groundwater. But the serious risks to groundwater contamination, if that was a matter that was before the EPA, that would be one of things we would look at. If there was a serious risk from this activity to groundwater quality, then that would be one of the matters that the EPA can look at in determining whether or not there is a significant risk to the groundwater.

So we will look at all the sources of risks and impacts to groundwater in a catchment sense because fracturing will be one source of risk and will have its own regulatory regime, and there are other regulatory regimes for other sources of risk, but they are pretty comprehensive—I think some of the more significant risks to groundwater, are indeed the legacy issues that we have as a state in terms of site contamination.

The CHAIRMAN: Where would the risks that you have identified in several places in your submission fit in a scale that also contemplated, for example, intensive horticulture and the addition of fertilisers and so on as a source of groundwater contamination?

Dr Vogel: It is a difficult question, chairman. The matter you are talking about really is around strategic land use planning and environmental resource allocation. There are not necessarily questions that the EPA can go into because it needs to have a referral presented to it so it can make those sorts of judgements. But the issues around competing land uses and competing uses of the water is a matter for other parts of government to grapple with. They are important issues, but not one that the EPA can easily provide independent advice to the minister about because they are competing, and sometimes conflicting land uses, and the government needs to make a judgement about the use of those resources and how they should be protected.

Hon STEPHEN DAWSON: Chair, I have got a couple of questions, they are not necessarily related so if you will indulge me. Dr Vogel, can I just first of all ask: does the EPA have a view on whether hydraulic fracturing, can or should occur in public drinking water source areas?

Dr Vogel: The policy response to whether that should occur is really a matter for government based on the advice of its agencies, and I would imagine that the EPA would be one of those. So I think the risks and potential impacts to groundwater sources could be dealt with through an assessment process, and the EPA would provide advice to the government about the nature of those risks and impacts and whether they were manageable or not. So if that was a matter that was before the EPA, that we had determined it was significant and it was in our assessment process, we could provide advice to government about whether we thought those risks could be managed through the setting of conditions or not. So rather than having a view about whether or not I think that you should have fracking in areas of public water drinking supplies, it would be based on significance and a formal assessment by the EPA, if that was something before the EPA, and then we would provide the independent advice to the minister about what we thought about that activity, whether it was environmentally acceptable. So I think it is premature to form a view about whether or not it should occur.

Hon STEPHEN DAWSON: Thank you. My second question relates to Buru Energy's Kimberley proposal. Obviously, this is one that the committee has been looking at. We have had an opportunity to talk to Buru, as well as to fly over the site last week. Can you, just for the committee's benefit, explain to us why the EPA decided not to formally assess this proposal? There is obviously lots of concern in the community in relation to this proposal and the community, or certain elements of the community, would say that there are significant environmental concerns attached to it. So if you can, just for the record, explain why you chose to not formally assess.

Dr Vogel: Thanks for the question. That proposal is still in the minister's appeal process, we have only just provided advice to the minister about the not-assess decision. We formed a view that that proposal is of such a small scale and limited duration that it does not raise significant issues of environmental risk or impact. That is not to say, as I said before, that there are not issues that need to be managed. They will have to have an environment plan; the environment plan will need to be produced and approved by the Department of Mines and Petroleum. If they require water, they may well require an extraction licence from the Department of Water, and they will be subject to any works approval licensing by the Department of Environment Regulation.

[10.50 am]

There is a pretty comprehensive regulatory regime in place already. The EPA does not want to trip over all this, and it does not want to unnecessarily duplicate or replicate what the regimes that are already in place are. We are very clear about that; we do not want to replicate or duplicate existing regulatory processes where there are not significant matters. If there are significant matters, we will get involved—we absolutely will—but based on that significance test. That is a pretty clear view about how we would manage that.

Hon BRIAN ELLIS: Can I just go back to the memorandum of understanding you have with the DMP. I want to get the process clear in my mind. Under the significance test, the memorandum of understanding states —

> DMP will consult with the Office of the EPA on any proposal considered likely to have a significant impact …

Who makes that decision? The way I am reading it, DMP decides whether it is going to be a proposal that needs to be considered under what it considers to be a significant impact? If the DMP considers it not to be a significant impact, that is the end of it. Do you have any other input?

Dr Vogel: Thank you for the question. The other thing that does happen is that they pick up the phone. There is substantial guidance in both our environmental protection bulletin on hydraulic fracturing and the MOU, but if there is any doubt in the DMP officer's mind, we have said to them, "Pick up the phone", and that is indeed what happens. They pick up the phone and have a discussion: "This is likely to occur there. This is our view. Do you think we should refer it?" There is a discussion, and a judgement is made about whether it needs to be referred or not. They have generally erred on the side of referring, because we are in this fairly nascent stage of the industry. There is discussion; there is guidance; and I think generally it is working very well.

Hon BRIAN ELLIS: I would have thought that is how the process would have worked. I just wondered if there was an opportunity—or there could be some conflict at some stage when the phone never gets picked up, and down the track you think you should have been involved. Do you feel as though everything is pretty well covered?

Dr Vogel: I do for another reason too. There is a lot of cooperation amongst environmental regulators at very senior levels. Richard Sellers and I; Kim Taylor, the general manager of the Office of the EPA; and all the relevant agencies talk frequently about this issue. That philosophy has percolated through those agencies that we need to talk about these things; we need to align ourselves. The EPA from time to time might have a different view about what is significant, but it will convey those views to the DMP and expect it to be referred. If there is a difference of views

about significance, the EPA's view will prevail, and we will make a judgement about significance and whether or not it needs to be formally assessed. The level of cooperation at this stage is very good. The regulatory regime—I have worked in a couple of states in regulatory regimes—is very good, considering the issues that we are dealing with and the vast amount of experience that exists in the state in regulating these sorts of activities, both offshore and onshore petroleum. We have an EPA that has been around for 40-plus years that, as an institution, is well versed and experienced in identifying and managing environmental risks.

Hon BRIAN ELLIS: I have another question. You have a draft proposal that you have had some input into. The DMP has a draft proposal about the regulations on shale gas fracking. Do you feel as though fracking deserves stricter regulations than any other mining? The other mining that is happening around the country may not have as strict regulations as are proposed for fracking. What is the reason for fracking, in your view, having tougher regulation?

Dr Vogel: It is a very good question, and I think we have all turned our minds to that. I think the DMP and others have already decided that we will have a world's best practice environmental regulatory regime. That is now a given and they are moving towards that. I have to say that every industrial activity, including every human activity, has an element of risk associated with it. Whether it is an industrial facility on the Kwinana coastal strip or an iron ore mine in the Pilbara, they are subject to assessment from time to time, if there are significant impacts and risks that need to be managed. I think we need to ensure that the regulatory regime and response are proportionate to the risks that exist out there. In some people's minds those risks are perhaps greater than we would believe. I think we have a very clear idea about what those environmental risks and impacts are. I stress that they are environmental risks and impacts, not the issues to do with land use planning and allocation of water resources et cetera. I think we have a very clear idea from the reports from the Australian Council of Learned Academies and the New South Wales Chief Scientist and Engineer. There are a number of recurring themes in both those documents, which are common. They both form a view that these risks and impacts are manageable subject to a number of preconditions. One is it that you have to have a best practice management by the proponent. You need to have a robust integrated regulatory regime; you have to have a very sound knowledge base about groundwater basins and aquifers; and you have to have—they are very strong about this—very good community engagement—transparent, open communication with affected communities and the broader community. There is a lot of information and there is a lot of misinformation out there about the risks and impacts of this activity. I think it is incumbent eventually for all these things to be brought together and provide some sound advice to the affected communities about those risks and impacts. We manage this for every industrial activity in this state, and have done for a long time, and I think we can manage the risks and impacts of this activity with the existing and the improving regulatory regime that we are working on.

Hon BRIAN ELLIS: In the submission, you referred to maintaining a watching brief on the United States EPA's study of hydraulic fracturing and its potential impact on water practices. Given the differences in the two countries, what do you hope to gain from that monitoring, because it has been going since 2011?

Dr Vogel: Thanks for the question. I think we will have to see it within the context of Western Australia's groundwater systems and terrestrial environment and communities, but, nonetheless, I think there will be important learnings from that study that we will need to analyse to see what is relevant for our situation over here. The US EPA is a highly respected organisation that will conduct an incredibly thorough investigation, but it will also pull together, as part of that, all the incidents where there has been well integrity failure, what have been the environmental consequences of that and how have they been managed. I think that many well point the way to whether there needs to be a strengthening of the regulations and whether there needs to be more innovation in the way that we manage this activity or not. It is another source of information that

needs to be brought together, and that, together with the other two seminal documents, I think, will be important documents that will provide guidance to the state and to the EPA.

Hon PAUL BROWN: We have had a number of comments made throughout our hearings with regard to the baseline information that we have been receiving, or not receiving. Environmental groups and opponents of the industry of fracking have said there is not enough baseline information and, obviously, the industry and proponents have said that they conduct a wide range of activities to assess or obtain that baseline information. Can I get some comments from you about your thoughts on where we are at with the baseline information that we have with regard to the environmental background?

Dr Vogel: A good question. Baseline information is absolutely critical to these activities, as it is to a lot of other activities where there might be risks posed to the environment. My understanding is that, through the environment plan, they are required to conduct baseline water quality monitoring, induced seismiscity et cetera. Some companies are very advanced in that sort of thinking. It must be a requirement, because if something happens, what are you going to assess any potential contamination against? So, having baseline information is in the interests of the regulator and the interests of the proponent and the interests of the community to have that information. We will be very strong about that view to ensure that baseline monitoring is included in environment plans and, indeed, if we ever do undertake a formal assessment, we would be very, very strong about that particular view. My understanding is that it is happening. But what is not happening at this stage is that environment plans are not public documents, and that is the result of the existing legislation. But my understanding is that there are changes afoot in the regulations to ensure that those environment plans are public documents, and the information that comes out of that in terms of baseline monitoring should be available publicly.

Hon PAUL BROWN: I have one more comment, not so much a question, and I think you have probably answered it. You have determined that the regulatory regime that we have in place at the moment with the Department of Water, the Department of Health and DMP is basically able to mitigate the risks that fracking proposes at the moment in its nascent state.

[11.00 am]

Dr Vogel: Yes, I think it is for where we are, but recognising that the industry is scaling up, and there will be important challenges for government in dealing with some parts of the state that we do not understand terribly well and we will need to put in place measures—whether it is industry or whether it is the government that puts in place measures—to improve our understanding of those matters—for example, groundwater basins. At the moment I think it is working very well. Everybody is working towards improving it already to make sure that we do have our house in order so that we can deal with the impacts of this when industry does scale up and presents a proposal to the EPA, and the EPA makes a judgement that it is significant and decides to formally assess it.

The CHAIRMAN: Dr Vogel, you mentioned that we need to observe and draw from the experiences of the United States and other jurisdictions that have lengthier experience in these matters. One that comes to mind is the South Australian experience in the Cooper Basin, where I understand there are many examples of fracking for unconventional gas taking place. I am sure you have got a passing familiarity with South Australia as well. Could you comment on what you have observed about the South Australian experience?

Dr Vogel: Chairman, I cannot really comment on that. The EPA in South Australia at the time was not playing a strong regulatory role in hydraulic fracturing in the Cooper Basin, largely by Santos. That was left to the equivalent of their Department of Mines and Petroleum, but with consultation with the EPA in terms of environmental objectives et cetera. It is largely regulated by the equivalent of the Department of Mines and Petroleum over there.

The CHAIRMAN: Incidentally, we have representatives from Santos coming in later this morning for another public hearing, so we will learn a bit more there.

At this point we can draw our hearing for today to a close, Dr Vogel. I would again thank you on behalf of the committee for the material that you have provided, which has been very illuminating, and also thank you for your attendance here today.

Dr Vogel: Can I add one final observation, Mr Chairman?

The CHAIRMAN: I was just about to invite you to do that; if you wanted to make some closing remarks.

Dr Vogel: I am an old scientist from many years ago. In talking to industry people and contractors to the industry, there will be, as there is in every industry that has risks and impacts, a very serious and important role for technology and innovation. I have no doubt—and, indeed, there is work going on right now to reduce the risks further from contamination through the use of food-based products for hydraulic fracturing fluid—not chemicals used in the food industry, but food-based products—and using technologies like UV instead of biocides. That work is already going on and I think will continue to go on. There is not an industrial activity that has not benefited from investment in technology and innovation on the one side, and then further improvements and innovations in the regulatory regime. I am confident that over time those risks will be reduced even further. So I think we are in a pretty good place.

The CHAIRMAN: Thank you very much for that. No doubt we will have an opportunity to meet in our respective roles again. We look forward to that. For now, I thank you and bid you good morning.

Hearing concluded at 11.03 am