SUBCOMMITTEE OF THE STANDING COMMITTEE ON PUBLIC ADMINISTRATION AND FINANCE

WATER SERVICES INQUIRY

TRANSCRIPT OF EVIDENCE TAKEN
AT BUNBURY
THURSDAY, 29 JULY 2004

SESSION 2

Members

Hon Barry House (Convenor)
Hon John Fischer
Hon Dee Margetts
Hon Norman Moore (Participating Member)
Hon Ken Travers

[10.45 am]

CALDER, MR GEOFF
General Manager, Harvey Water,
PO Box 456,
Harvey, examined:

Hon BARRY HOUSE: On behalf of the subcommittee, I would like to welcome you to the meeting. You will have signed a document entitled "Information for Witnesses". Have you read and understood that document?

Mr Calder: Yes, I have.

Hon BARRY HOUSE: These proceedings are being recorded by Hansard. A transcript of your evidence will be provided to you. To assist the subcommittee and Hansard, please quote the full title of any document you refer to during the course of this hearing for the record and please speak into the microphones. I remind you that the transcript will become a matter for the public record. 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 premature publication or disclosure of public evidence may constitute a contempt of Parliament and may mean that the material published or disclosed is not subject to parliamentary privilege. Would you like to make an opening statement to the subcommittee?

Mr Calder: Thank you very much for the opportunity to speak to you today. I am speaking on behalf of the 558 shareholders of the Harvey Water Cooperative, which is responsible for providing water services to the irrigation area that we control. Our statements today will specifically relate to a proposal that we have put to government regarding a means by which water can be best used in the State, particularly in the integrated water supply system and the irrigation system itself.

The issue that we are talking about is using the water from the south west, specifically the water that we have access to, in our irrigation area. It rests in two parts. The first is Wellington Dam and the issues there. Secondly, I will move on to the exact proposal that we have put to government and how that could work to provide better water use in the State. Salinity is a major problem for irrigators. In this slide of the PowerPoint demonstration, the little red dot on the bottom line of the graph represents the point at which the dams were basically constructed. The vertical blue lines represent the salinity that irrigators receive from the dams. The red line that runs through the middle represents the late 1960s and you can see that, for irrigators, there has been a huge increase in salinity in water coming from the dam. The red line represents two things: one is that it is about 500 parts per million, or about 100 millisiemens per metre and represents a point at which irrigation water is supplied to pastures in which subclovers will start to die. You can see that dairy farmers who are irrigating their pastures are faced with a very difficult situation; their cost of production will increase if they use that water. It is much higher than they can use effectively, so they are faced with a very difficult situation. The last eight lines on the right-hand side of the graph represent when we took over and you can see that there is a climbing trend in salinity. We are under great pressure from our irrigators to do something about it and have somebody else do something about it, because we have no authority or responsibility even in the catchment, which is where the problem comes from. The second point is that the red line represents approximately the standard for potability, which is about 500 parts per million. We are a long way from that in the Wellington Dam currently.

The blue lines on this slide represent the capacity of the dams from which we take our water. From the left the graph refers to the Waroona, Samson, Logue Brook, Harvey, Stirling and Wellington Dams. Compared with Wellington Dam, the other irrigation dams are basically puddles, but there is a large quantity of water in Wellington Dam. The issue is the red line, which represents the salinity in the dam. You can see that, again, obviously the water quality in the Wellington Dam is way beyond anything else and is a major problem. The little red line on the right-hand side of the graph is from the Murray-Darling basin from a town called Morgan in South Australia, where they take the water from for the Adelaide water supply. You will be aware that enormous amounts of funding have been given to the Murray-Darling basin because of the problems with the salinity of the water, the quality of the water and the environmental problems it has. The base data that that comes from indicates that the salinity has not changed since the Second World War. It has gone up and come down a bit, but it has been that saline for a very long time. When that is compared with the water quality in Wellington Dam, we see that Wellington Dam is about three times as high, yet we have received negligible funding for it. Did anyone do anything about the water quality in the Wellington Dam? We think that is unfair. We have raised that with anybody who will listen, including the federal departments and so forth. It is quite surprising to people, because they think that the Murray-Darling is very saline. It is not in comparison with what we are dealing with at Wellington Dam. The problem at Wellington Dam is not only an agricultural problem that poor old irrigators have. It has an environmental dimension to it. This is a slide of an electromagnetic 38 survey of the irrigation area from which we supply water from Wellington Dam into the Collie River district. EM38 measures the salinity in the top approximately metre of the soil, which is the topsoil where plants are grown. Obviously the blue bits are the areas with the lowest salinity and the red bits are the areas with the highest salinity. The red bit at the top of the diagram is the Benger swamp and at the bottom left-hand corner are some other red bits that are Bungham clay, the heavy soils at the west end of the irrigation area. The rest of it has a speckled-type appearance. They are actually little squares. They are the irrigation paddocks. Through the water that is put on that area, irrigators typically put on 10 11, 12 or 14 tonnes of salt a hectare a year. You can see the building up of salinity in the soil, which is ruining the capacity of the soil to produce. They are destroying the soil with the water they are putting on their properties. The point we make all the time is that irrigators are not responsible for this; they have not caused this problem. It has been caused by clearing in the catchment. However, they are the ones who have suffered and who continue to suffer without any kind of state or federal support or help to get over this problem. It is unfair to say that about the State; some work has been done by the State. Further to that, the run-off water that now comes from this part of the irrigation area contains salinity that is higher than is recommended for receival into freshwater bodies. Again, there is an aspect of an environmental issue here, rather than just a simple agricultural problem.

There is a proposed solution. This slide is a bit of a tricky mud map. On the left of the map is Wellington Dam. Up in the hills, of course, is Harris Dam. The white line represents the Coalfields Highway, running through Collie and out to Darkan. The green lines represent the major rivers that flow into Wellington Dam. On the far right of the map is the east branch of the Collie River. About 10 per cent of the flow comes into the dam on average each year, but it contains about 40 per cent of the salt, so there is a disproportionate situation there; that is, a high level of salt in a small volume of water. That river passes coalmining voids just outside of Collie. I will focus on those coalmining voids in the situation there. The east branch of the Collie River goes past there. The proposal is to build some kind of barrage or a pumping facility - some kind of diversion - by which the saline flows can be diverted as they come down. With the first heavy rainfall, a pulse of high salt water comes down the creek. The idea is to try to grab that water and stick it into those voids before it can go any further down the creek. There are subsidiary pulses throughout the year, but the main salt pulse comes after the first main rainfall events. The idea is to divert that saltier water into those voids. We are talking about maybe three or five gigalitres of water a year. About 200 gigalitres of space is available in the Muja pit. It would be quite a number of years before those

voids were filled. It does not represent a problem from that perspective. We also believe that once we have water like that, it becomes a resource. There are a couple of issues. Wesfarmers, for example, is already using a filled void and it is running an aquaculture project next door to it, which uses the water and recycles it through. Both Wesfarmers and Griffin Coal, which is looking for a base-load power station in that vicinity, have said that they would desalinate that water and use it in their plant or perhaps return it to the system. We are saying also that it becomes a resource for the community and for the State as well. It could be used for recreation as well, if we are talking about the Wellington Dam recreational area being removed and a source protection zone applied. That is the simple proposal. This slide is a photo of a disused railway embankment where the water might be held back in a low barrage rather than in a dam of some kind.

One of the benefits of the voids proposal is that the modelling suggests that the salinity level can be reduced quite quickly, maybe to 700 milligrams a litre. That is yet to be tested, and, hopefully, it will be tested next year. It is not expensive. All that needs to be done is to build a pumping station and a pipeline - it does not have to be pumped up; it just needs to be pumped along - and a small diversion of some kind. There are some operating costs, but, again, if it is held back and time is taken with the pumping, rather than trying to pump it as it goes past, the operating costs would be quite low.

We are seeking funds from the National Action Plan for Salinity and Water Quality. That is a long and tortuous process. Hopefully it is getting close to resolution at this stage. We are not aware of any difficulties with it, except those people who are sulking. It seems to be pretty much on the way. Hopefully, we are operating on the time line so that we can have some pumping and diversion happening before next winter to test the theory. We believe everybody will win from it, because if the water quality is better, it must be an advantage. Mines must be rehabilitated and to fill them with water is a clear option. They are filling with water from rainfall anyway. The modelling that we have been exposed to suggests that the salinity will not be any worse. If they are filled quickly, it would be a lot better for the acidity. If they are filled slowly, a hyper-acidic situation will result; if they are filled rapidly, that does not occur. We believe that at this stage it is a worthwhile proposal to continue and experiment with.

I will now move on to our proposal. An issue that we need to make clear to begin with is that our licences are divided into two parts. There is an irrigator's entitlement, which is specified in the licence. Losses are also specified, and they include losses that occur between the dam and the farm because of the open-channel nature of our system. We lost more than 30 per cent when we first took over through seepage and leakage, channel fill flows out the back and a small amount of evaporation. That is unavoidable. That is common to all open-channel systems. Most of the world's systems are open channel in nature. What we are working with here is not the irrigators' water, which is the red area on this slide. We are working with the blue area. This is water that irrigators never would have had and never will get while we have an open-channel system. However, if we can bring those losses down, we are told that the way the system works means that that would then be available for transfer to somebody else. If we do the investment in saving, we can then get some benefit from it, and that is what we are proposing.

[11.00 am]

This is very important to irrigators. We are not trading irrigators' water; we are trading losses. People also ask why we do not just save the water and return it to irrigators. The cost of laying pipes to transfer it to the irrigators is too expensive for them to pay for. They could not afford to buy at the prices we are paying now. Another claim is that this is just a way to make farmers better off. In fact, it is not. All it will do is bring a pipeline to the border of their property. If they want to take advantage of that pipeline and use the water then under pressure, that will create costs for them on their property. They must pay to put in a trickle irrigation system or a centre pivot or any other kind of irrigation system. It is exactly the same as an urban block. Water comes to the edge of an

urban block and if a person wants to develop that, it is at that person's cost. There is no difference in that kind of benefit.

We have developed what we believe is a model for saving water, which is what we based our proposal on. We have spent a lot of money since we took over in 1996 - $18 million - but we have moved from an open-channel system, which we developed to about as good as we could get it. It was operating very well. We understood that we could not get any greater savings unless we invested much more money and made a quantum leap. We have moved through three stages in the past three years putting in 152 kilometres of pipe. We bit the bullet last year in Waroona and totally replaced the open-channel system with pipe at those costs shown on the chart. We demonstrated through this last irrigation season that we could reduce the losses by 20-odd per cent, which is a significant amount of water when applied across the full amount of water we have. We have said that this is not a dream, a scheme or a plan; it is something that we have demonstrated can and does work.

We have gone to government and said that there are two ways it can look at this. We have already saved by piping about nine gigalitres of water. We are saying to the Water Corporation in this case that we will sell that water to the corporation; it can give us the money and we will continue piping to save more water. There will be a rolling fund that will allow us to move down through the system and finish piping the lot. Alternatively, we could take a much more holistic approach to the whole situation and include the Wellington Dam. We believe that for about $250 million, we can make available about 50 gigalitres of water. That would be the result of a permanent trade of those losses from our licence to the Water Corporation's licence.

Hon JOHN FISCHER: Would that 50 gigs come from the Wellington Dam or are you talking about some of your other catchment areas?

Mr Calder: It would come from partly Wellington and partly Stirling and Samson Dams. We have done a design. The black marking on the PowerPoint slide indicates what we have already done. There is none at Waroona, but to demonstrate that it is not just an idea in the back of our heads; we have done a lot of work to develop it and some further work in the Harvey district. This has been checked hydraulically by an engineer in Victoria. It works according to our design. It has been reviewed by an external consultant. The technology, design and costs have also been given the tick.

What is the pipe scheme? The idea is to replace the open channels with high density polyethylene pipes, which are big black pipes. It is a very simple process - just a matter of digging a hole, butt-welding the pipes together, putting them in and covering them over. The technology is very basic; it is not rocket science. We do not put the pipes in the channels because the channels are at the higher ends of the system on contours. However, we can save a lot of effort by putting the pipes in the road reserves in particular. Irrigators get the same service as they got before, which is water. They can still surface-irrigate if they want to. We are obviously trying to move them away from that but they get the water under scheduling as they currently do. One of the key issues from this is that if it is done the way we want it to be done, it will supply water under gravity-head pressure. That means that, in the longer term, when it is fully developed, the cost of the energy to drag water out of bores and pump it across properties will not occur in this system. Over time, the competitive advantage of this irrigation system will be very much better than that of anywhere else in Australia. It is unique in Australia to our situation and in the world. That is a major positive. Basically, the water is constantly available at the turn of a tap. It allows greater opportunity for better enterprises to use water more efficiently on farms, produce higher-value crops and so forth, all at cost to the irrigators. It will be an all-or-nothing system. There will not be any possibility of having a channel supply. Everyone will have to connect to the system to get water.

We covered the benefits to irrigators generally. Their entitlements will not be affected. They will get the same service. They will have an opportunity but it will be at their cost. It will be a gravity-

driven system. We will not get anywhere unless there is a win for everybody in adopting it. There are also benefits for the integrated water supply system. We are promoting it at all times as complementary to all the other things that we will have to do in this State to make water available, and that includes the desalination plant, water-efficient shower heads and the raft of other things that must happen. This is just another one. We believe it is a very commonsense approach. It is simple and logical. It saves water that we already have. It does not create new sources. It simply makes better use of the water we have. We think that is a very commonsense way to approach things. We have looked at the triple bottom line considerations and we are not aware of any significant deal breakers in the triple bottom line approach to it. It is a pretty positive approach. It is cheaper than what is currently proposed and will get more water for the integrated water supply system. Part of the package we are offering is that we are prepared to guarantee in the first few years of the project that 42 gigalitres will be available for the city's integrated water supply system. If you do your numbers, you will learn that that is about as much as a desalination plant will provide after three years of construction. We are looking at, if you like, a window of opportunity to make up water while the desalination plant, announced today, is being constructed. We do not know where that sits at the moment but we hope it is still on the table. We think that is a very good idea. It is a gravity-driven system.

We mentioned that we saw it as a third approach in the major options that have been discussed. I refer to the top line on the chart of each category and the dollars per gigalitre. We understand the desalination plant operating costs will be somewhere around $12 million a gigalitre. The south west Yarragadee costs were published at about $8 million a gigalitre. We believe our costs are about $5 million a gigalitre. On that basis it is worth looking at and has been looked at by an independent consultant appointed by government and given the tick. This is the answer to Hon John Fischer's question. The first thing to do if this project is accepted is to improve the water quality in Wellington Dam as soon as possible because it will take some time to test and to prove. It is a relatively cheap project if the diversion proposal is used. At the same time, there is no reason we could not start piping the Harvey district, and we have calculated that, in the next three years, we can obtain about 18 gigalitres of water for about $56 million. That is pretty attractive. We have structured that by saying to the Water Corporation that we will provide that 18 gigalitres on the basis of a front-loaded approach so that there will be 10 gigalitres in the first year, 14 in the second year and 18 in the third year as the piping progresses, which guarantees a total of 42 gigalitres over the first three years. If there is any risk, it will be to the irrigators themselves, and that has been accepted by the irrigators. We have been to public meetings with them and they are prepared to go down that road. If we improve Wellington Dam's water quality, it will make sense to start piping the irrigation area. The Water Corporation has already applied for a licence of 12 gigalitres from Wellington Dam and it could then start accessing that water. We have estimated some costs to the Water Corporation of $75 million. Treatment and transfer costs are involved. We are not privy to those costs at this point but they are in the order of $75 million. No-one in the Water Corporation shot us down in flames when we mentioned them, but it is an unknown figure to us. We can add that up and as the top two lines show, 40 gigalitres could come from piping and 34 gigalitres could come from Wellington Dam. The water from Harvey would come from the Samson and Stirling Dams. The Wellington Dam is scoured every year. It can use up as much as 40 gigalitres a year to scour the salt out of it, but averages about 15 gigalitres. If we save that scour by improving the quality of the water, we also improve the reliability of the supply.

Issues people have raised include security of supply. Basically it is as secure as people's licences because we are talking about a transfer from our licence to the Water Corporation's licence. Reliability is another issue. Basically it is a surface water supply so it is dependent on the reliability of rainfall and other surface water storages, linked currently with Water Corporation operations. It is still hoped that the national action plan will happen. It has been supported by Treasury, which we believe is a major plus, and has been reviewed by an independent consultant supported by government, as I said. It was approved and said that this was a viable option worth following up.

We believe threats to this proposal are environmental releases. That is not something we are objecting to. We are quite happy to accept our environmental responsibilities. We are talking about the quantum. When we did the Waroona project, the Water and Rivers Commission said that it was beaut, but from all that water we save, something must go back into the environment. We do not know how much that will be in the Harvey and Collie districts. We have not made all the savings available for transfer or release to the Water Corporation because we must reserve some water for environmental releases, whatever that may be. Dry winters affect everybody. We are concerned there could be cherry picking. The corporation might say that one part of the project is good but it will not worry about another part. The major pay-off from this will be improvement of water quality in the Wellington Dam. That is the major cost, of course, because it is the major supply. We would be very disappointed if only half of it went ahead, but we would be happy enough to have half of it to begin with. Some of the processes go to administration because this is all new territory for people. Trading water externally, piping, water savings and all that sort of stuff is new country for the Department of Environment and it is taking great care to make sure it gets it right. However, it does not speed things up. That is basically the proposal.

Hon BARRY HOUSE: Thanks Geoff. To put it in context, the Wellington Dam is the biggest catchment in the south west area.

Mr Calder: Yes, surface water.

Hon BARRY HOUSE: What is the total capacity of the Wellington Dam, what is the recharge into the Wellington Dam currently and what and how will those figures change under your proposal?

Mr Calder: The capacity of the Wellington Dam is 186 gigalitres, but the yield is 105 gigalitres. The inflow depends on the rainfall, but by and large, it satisfies our requirements of about 50 gigalitres each year. We have never had any shortages down there. It is rainfall dependent each year. We can get 50 gigalitres a year out of the dam without any problems plus the scouring, which averages 15 gigalitres, so there is at least 65 gigalitres and whatever else there may be. If we were to divert maybe three or five gigalitres of water, it would be a very small percentage of the total that goes into the dam each year.

Hon DEE MARGETTS: Can you explain whether water from Muja Pit, Chicken Creek and so on drains to anywhere else? Is any salt going into those areas likely to get down to the Yarragadee?

Mr Calder: No; our understanding is that, geologically, the whole basin is like a cup. Water does not move outside that basin in a larger sense. The three voids we are talking about are within that and there may be some movement outside those voids. That is one of the environmental issues people are concerned about. Those voids - Chicken Creek, etc - are already part filled with water and a bore monitoring program is assessing any water movement. The Muja pit is basically mined out on one side and there is a bund down the middle. That is slowly filling up with rainfall and drainage into the dam, but we are being told that the actual movement of water from the aquifer into the dam is very minor, so we could assume that water going out will be minor. Those things will be monitored as part of next year's trial program when we put the first lot of water into those voids. There will be monitoring bores around the outside of those voids to make sure it is not going anywhere.

Hon DEE MARGETTS: If you had to cut a channel to facilitate the process, would there be any risk of acid sulfate soils occurring in that area?

[11.15 am]

Mr Calder: I do not think we would be cutting a channel. We would just use HDPE pipe for pumping because it is quicker, easier and simpler to do. It is pretty flat country. You are not lifting water over anything; it will go straight along the top of the surface.

Hon JOHN FISCHER: It is very interesting. Parts of it are encouraging and parts of it are extremely concerning. That increase that you showed us over eight years is very concerning. Whether just taking the water out of the river and putting it into coal voids will fix anything in the long term appears to be highly dubious. I know there are time constraints, but do you consider there is anything long term with that? If we accept those graphs, we realise that the question of putting and building up a high salt content in mining voids is a short-term problem. Obviously, it will get worse, not better. At 1 400, how much of that water can you use at the moment for irrigators?

Mr Calder: There are declining amounts. That is because it is poor quality. Irrigators are saying that they stop irrigating around February or January when it starts to get hot because of the increased evaporation and the salinity effects on the plants. They say it is not worth it after that, so they are being affected that way as well.

Hon JOHN FISCHER: Has Harvey Water looked at any other options? I am sure it has. For a long-term project, do you see past putting salt water into those coal voids?

Mr Calder: We would love to be able to get up there and have some control, but we do not have any. There is quite a history up here. What is called the Collie recovery team has been operating for seven or eight years. It came up with 15 different options for doing what you are talking about - solving the salinity problem in the catchment. Those options include revegetation, planting trees, taking land out of sheep or cropping production and returning it to natural vegetation, changing the farming systems and diverting with a dam - one of the major salinity sources up there. There is a range of different things, with different costs and speeds of reaction. This is the cheapest, quickest and easiest one to do. They say that if we are lucky, we might get the same result with trees by 2015. That has been assessed by URS Corporation, one of the consulting firms around. It did some analysis of the top six options and only three had a positive NPV after 30 years. The most positive NPV by far was the diversion option. If you are looking for a rapid solution, this is the way to go.

Hon KEN TRAVERS: I have a number of questions that perhaps would be best answered by writing to you, but I will ask a couple now. Will the water that is currently getting lost in the channels go into surface aquifers?

Mr Calder: Yes.

Hon KEN TRAVERS: As part of the research, has there been any work on what would be the impact if you started to withdraw that water from the superficial aquifers? What impact would it have on the aquifers, the water levels and the run-off? Those aquifers would be flowing out into this river and the like. I presume it has now become a part of the balance of the system. If you withdraw that water, it would have some impact. Have you done some work on that?

Mr Calder: With the Waroona project, we were required to release some water for environmental purposes, which we have done. We are in the hands of the Department of Environment. We said that we had done that and asked what we had to do to satisfy its requirements to allow us to continue, and it released water for that purpose. It is satisfied with what the result has been.

Hon KEN TRAVERS: What percentage of the water did it require?

Mr Calder: It is a relatively small amount. I think it is about 600 megalitres a year. We have created an unnatural environment by surface irrigation. By drying it out, we are coming back to a more -

Hon KEN TRAVERS: It has created an unnatural environment, which is now the normal environment, and to change it you alter the balance again.

Mr Calder: It was a wetland initially and we dried it out to irrigate it. We made it wet again by irrigation and now we are drying it out again by piping. It goes around in circles a bit.

Hon KEN TRAVERS: Are all the dams that you were talking about sourcing the water from currently potable water supply dams or are some of them purely for irrigation purposes and therefore subject to recreational activities? Would there be any impacts in that regard?

Mr Calder: The only dams from which they take water for potable purposes are Stirling and Samson Dams. Waroona and Drakesbrook Dams are the major recreational dams and are used by speedboats and for waterskiing. Harvey is available for passive recreation but not for any motorised boating, sailing, canoeing and that sort of thing; and speedboats and that sort of thing are currently allowed at Logue Brook Dam. We have said to the Water Corporation that because Logue Brook is high in the catchment and has good-quality water, we are prepared to talk to the corporation about some capacity sharing, which would mean that the dam would no longer be available for recreation but could be used for the IWSS.

Hon KEN TRAVERS: What about the rest of the community, including the tourism industry? Is it supportive of that?

Mr Calder: Those decisions have been made externally from us. We just take the water. What the water is used for before that does not really have an impact on us. We have been cooperating with the Waroona shire. The Samson Dam has been changed from a recreational dam that is available for marroning and so forth to one that is now source protected. That transfers all the recreational activity to Waroona dam, and there are 60 speedboats and waterskiing boats a day down there. The problem Waroona shire has is that its peak time is Easter, which is April, when the dam level starts to get to its minimum. We have been trying to work with the shire to have a local responsibility so that the value of that recreational activity to the shire is still there without us taking all the water. It is a bit of a balancing act. Recreational activities are more concentrated on fewer dams.

Hon KEN TRAVERS: This proposal would increase that to some degree.

Mr Calder: Only if you took out Logue Brook Dam. Yes, that is right.

Hon NORMAN MOORE: I think this project is well worth having a very hard look at. You said that there has been some independent assessment of it. Can you tell us by whom and can we have a copy of their findings?

Mr Calder: It was done by ACIL Tasman and GHD Pty Ltd. They are local companies - ACIL Tasman is Victorian, but its local branch did the work. It is now at the point of final draft under the irrigation review. We have put up this proposal as part of the irrigation review run by Ross Kelly out of the office of Premier and Cabinet. This was sort of a subpart of that. We were speaking to them yesterday. It is just about finished, so that should be available to you through Jordan Li, who is the project manager.

Hon NORMAN MOORE: You also indicated that Treasury expressed some support. Can you tell us how it has done that, and can we have a copy of that?

Mr Calder: It is not on paper, unfortunately. A Treasury representative was at a meeting of this review by the external consultants. At the end, he could not spend much time there but said that Treasury agreed that this was a good proposal and that it supported it. It was a verbal comment at the meeting, but not on paper.

Hon NORMAN MOORE: With Treasury, you need to get it in writing!

Mr Calder: Yes; preferably on a cheque!

Hon BARRY HOUSE: In case I have missed it, did I hear correctly that under this proposal, in eight years the mine voids would be full?

Mr Calder: The Muja pit has a 200-gigalitre capacity. If we took, say, five gigalitres a year, that would be full in 40 years. It is quite a long time. That is if the volumes that we are talking about are applied. This is modelling stuff; experimental stuff. The inflow from the Collie River east

branch is about 14 gigalitres a year. We are focusing on taking high salinity pulses that are coming down, not the fresher flows. The volumes of that depend on the rainfall events. The modelling that we have done suggests that removing about five gigalitres a year, strategically timed, would take out those high salinity pulses. It would also take out the greater part of the salt. The rest would flow into the dam. It would take 40 years to put five gigalitres a year into a 200-gigalitre void. It is quite a deal of time.

Hon JOHN FISCHER: Am I correct in believing that the 15 to 40 gigalitres a year that is let out of the bottom of Wellington Dam is done to flush out the salt node?

Mr Calder: Yes.

Hon JOHN FISCHER: It is done to improve the quality of the water for irrigators.

Mr Calder: That is correct.

Hon JOHN FISCHER: Have you heard of the proposal to drop water over the scarp through the reverse osmosis system?

Mr Calder: Yes.

Hon JOHN FISCHER: What do you think of that?

Mr Calder: There are a number of issues there. Our understanding is that to do reverse osmosis properly, you need very good-quality water coming in and a very consistent quality of salt. If you get it from the sea, it is 33 000 parts a million standard-quality water. Water coming into the dam and over the dam is going to vary up and down quite a bit. Our understanding of the technology is that it does not work very well that way. I am not a desalination expert, but I know a little bit about it. The input feed is a critical part of it, and if the quality is variable, it has to be cleaned up. To start with, you have to get all the gunk out of the water. It has to be clean water. My understanding is that variable salt is not an easy thing to deal with. There is that problem. The second is that that does not take the salt out of the water in sufficient volume. We are interested in irrigation. We supply 400 megalitres a day from Wellington Dam. There is no desalination plant around that would give us that.

Hon JOHN FISCHER: I asked that question because I have seen a proposal. There are two things I would like to know. Firstly, has Harvey Water been approached with that proposal? Secondly, one of the reasons I was interested in your answer is that if that would take up to 40 gigalitres a year out of the dam, would it not do the same thing as the flush?

Mr Calder: We need 400 megalitres of water a day in the irrigation season, and that would need to be desalinated if it is to be of any benefit to us. There is not a desalination plant in the world that will do that.

Hon JOHN FISCHER: Perhaps I did not express myself correctly. At the moment, between 15 and 40 gigalitres are being let out of Wellington Dam in the scour system each year in winter. My query is: if instead of the water just being scoured into the river it was dropped over and used for another purpose, would that not lower the salt content in the dam so that the irrigators would get a benefit from it?

Mr Calder: No, because you have to lower the salt in the water coming into the dam, and we are talking about lowering the salt as it leaves the dam. That scour is done in winter when we do not irrigate, so there is no benefit for us at all. Certainly there would be a benefit if the water were desalinated. One of the proposals was to run a pipe down the hill, generate some hydro to run a desalination plant at the bottom and that water could then be used for potable purposes. The volumes you are talking about are not sufficient for what we would need in our system.

Hon DEE MARGETTS: Obviously there is a notable increase in the level of salinity and especially, according to your figures, since the 1970s. What was the time lapse between the

clearing and that occurring; or was there any particular event that increased the salinity in your catchment and when did that occur?

Mr Calder: I will go back to the graph I showed you earlier. I believe the clearing started in the 1960s. You can see from the graph that it started to pick up in the mid 1960s. It had an effect very rapidly. You can see it is more of a straight curve starting from the mid 1960s onwards.

Hon DEE MARGETTS: It may have increased your water flow into the Wellington Dam but it has been very disastrous for water quality.

Mr Calder: That is correct; yes.

Hon DEE MARGETTS: Thank you very much.

Hon BARRY HOUSE: There was a big flood in 1982. Does that account for that peak on that graph?

Mr Calder: It may do. Basically, they say that in drier years you get higher salt level because of the concentrating effect on the surface. The next winter flush moves down a lot of salt.

Hon NORMAN MOORE: You mentioned the possibility of desalinating the water that you will put into the mine voids. Bearing in mind you have a very significant power source alongside it, has any work been done on the economics of that?

Mr Calder: As a sweetener, Griffin Coal Mining Company Pty Ltd has said that if we give it a base-load power station, it is prepared to desalinate that water as part of the total package. We have not looked into the economics of that at all. That is for Griffin Coal, I guess, but we think it is an attractive option. If it plans to use that for itself or put it into the integrated water supply system and take it out to the great southern towns or something like that, it must be worth looking at.

Hon BARRY HOUSE: Can you provide us with a hard copy of your visual display and the other documents that you are able to provide to the subcommittee? If that final analysis you mentioned a while ago becomes available in the near future, we would appreciate a copy, if you could provide it to us. Is there anything that you want to add in conclusion?

Mr Calder: No. Relative to the announcement this morning about the desalination plant, we believe that that is the Government's decision and that it is up to it. We think that the proposal we are talking about is very logical. It is cheaper, it makes a lot of sense, saves water and should not be discounted. It should be on the table currently. It is something that we see could provide water in the short term while the desalination plant is being built, and the pay-off is the improvement of Wellington Dam in the longer term. Our view is that, as it is the largest storage dam in the south west, you cannot ignore it as a source of water.

Hon BARRY HOUSE: Thanks very much, Geoff.