

Community Meeting at Yarloop Hall 25 October 2008

Department of Environment and Conservation Presentation Regarding the Winter 2006 Wagerup Air Quality Investigation

Introduction - Robert Atkins

This is a follow up to the information session held in June 2007, which provided preliminary information regarding the Lidar study, ie. laser / radar work and some plume behaviour under certain weather conditions. Since then further work has been done to collate all the gathered information, to integrate information from community logbooks and complaint registers and to correlate plume behaviour with reactions in the community. Arizona State University and CSIRO were engaged in this work. John Sutton, Manager of DEC Air Quality Branch to present an overview of the work. Anthony Stuart and Ken Rainer also from the Air Quality Branch to present results of the study. To be followed by question and answer session. Representatives from the Health Department, Lindsay Gillam and Marilla Goetzmann are in attendance. Lindsay Gillam will have an opportunity to provide a summary comment before question time and they will be able to answer any questions the audience may have.

Overview - John Sutton

The role of the air quality branch within DEC is to provide advice to regulators and to the EPA. Wagerup is one of five or six major initiatives the branch is currently running. The group has had a fair amount of engagement with Wagerup over the last five or seven years, looking at technical documents provided by Alcoa and sub-consultants, so DEC is very familiar with the background of the issues. The group started getting proactive in terms of air quality monitoring at various locations around the state, including Wagerup in about 2002. A lot of the work has focussed on looking at air chemistry, learning skills, testing different technologies, with intention of trying to get an understanding of what might be happening at Wagerup in terms of air quality, also in places like Kwinana and Port Hedland, so it is a broad program. Part of the work that commenced about two or three years ago is canister work, working with community members to capture events and doing analysis. That work has continued and is still current. Two or three years ago the group started looking at meteorology, trying to get a better understanding of how plumes behave and meteorology works in the Wagerup area. This understanding was needed to assist in assessing whether or not the air quality models that Alcoa and a range of other industrial people use, very advanced air quality models, how well they actually work under various circumstances. DEC understands the limitations of models, but needed a better understanding so that when Alcoa or anyone comes to Government with the output of models, DEC will know how they work, what they are good at and what they are not so good at.

DEC instigated a major field program in 2002, assembling a large and very sophisticated collection of instruments. This was an exploratory exercise. Arizona State University was a subset of that work and they provided a report in June last year. DEC provided preliminary results of that work, which was a work in progress. That report said: the equipment works, we can see the plumes, we can track them five to seven kilometres. This did not mean they did not go further, this simply meant they went beyond the range of that particular radar system, and, we saw some interesting features in the meteorology. At that stage we said we would consider the output of that work and would look at some modelling work, and engaged the CSIRO to work with us in testing the models, because it

was their tool, they built it. We had competent people in house doing the same work and we integrated all the data that we had, from all the equipment, so that we could draw conclusions as to what we were seeing. Three or four years of normal work has been condensed into eighteen months, it is still on-going, but we are here to give an update as to what we are thinking, as part of that process.

Yesterday DEC released publicly four documents:-

- the DEC Summary Progress Report;
- the Arizona State University Final Lidar Report;
- a Peer Review of the Lidar Report; and
- the CSIRO report on the Modelling.

In addition to those technical documents, DEC has done a lot of work in house and worked through a lot of technical data. We are here now to talk about this, where we are at, our thinking, the kinds of messages we are seeing from the information put together, and to discuss how we are going to move forward with the issues.

Ken Rainer, Senior Environmental Scientist within our group is a very competent and experienced modeller.

Presentation of Results - Ken Rainer

One of the key backgrounds from our point of view has been the Wagerup Unit Three proposal. I have been involved in looking at all of Alcoa's work in relation to that. At the back end of that, there were ministerial conditions requiring Alcoa to:-

- measure the meteorology;
- measure emissions;
- investigate some stack dispersion issues; and
- re-evaluate the modelling that they did for the ERMP.

We have a role in advising the EPA and the Minister in relation to Wagerup 3, also the regulatory people in relation to existing operations of the refinery.

Alcoa has in terms of their operations :-

- been continuously operating four meteorological stations;
- conducting daily weather balloon releases during 2006;
- ran detailed chemistry on one site;
- monitored oxides of nitrogen; and
- had contractors conduct odour surveys around the refinery for particular forecast meteorological conditions. DEC was involved in that.

The sorts of experiments undertaken in 2006 were:-

- the Yarloop monitoring station, ie. the Lidar;
- canister sampling;
- community logbooks in relation to observations of odour;
- reviewing emissions data from Alcoa;
- monitoring of cloud height and various other things including field odour surveys.

The SODAR is a unit that uses sonar to measure wind speed at various heights, in this instance at 25 metre intervals, a bit like a boat with an echo sounder upside down, but more sophisticated.

The LIDAR was mounted on a tray back, with laser instrument in a turret at the top. The turret rotates through 360 degrees and swivels up and down, so can point anywhere in the sky. It shoots out the laser, then measures the light reflected back and from that it can tell where the aerosols or particles are in the air. It can also tell the speed or the radial velocity in the atmosphere. It has two modes of operation. It can rotate around its vertical axis at a fixed angle to horizontal, tracing out a shallow cone. This is called a PPI or Plan Position Indicator. In the other mode, it stays at one fixed angle around its vertical axis and takes a vertical cut, so it can slice through and take a cross section of a plume.

We integrated data from a wide variety of sources and got it into a form where it is able to be analysed. So we have ended up with graphical output of the LIDAR, the log sheets that have been analysed, the canisters that have been analysed and all the meteorological data, primarily gathered by Alcoa. We have had an exchange of information with Alcoa.

Ken demonstrated a dynamic visualisation of the Wagerup area using the software tool developed by DEC, wherein the view can be rotated in three dimensions, the topological features are visible, the refinery and other geographical features can be seen and there are yellow arrows in the air. The direction of the arrows indicates the direction of the wind, while the lengths of the tails of the arrows indicate the speed of the wind. The wind data recorded by the SODAR extends upwards to about 200 metres.

Using the visualisation software, it is possible to step through time and see the arrows move as the wind changes. When a blue circle appears, I can double-click on it to access additional data associated with that point in time. In this instance it indicates that someone recorded a health complaint at that location at that time. Five minutes later an odour complaint was recorded further downwind, at an intensity of four, out of a possible six maximum. This tool is very helpful for analysing.

In terms of the work that CSIRO and DEC have done, the questions we are seeking to answer are:-

- What are the important refinery sources of odour in terms of community observations, be they complaints or entries in logbooks;
- What are the important pathways, ie. How do the plumes disperse under certain meteorological conditions; and
- Can the computer model simulate those.

We selected days for analysis based on the community observations, seeing if we could explain them. We looked at thirty five days, CSIRO looked at eight days in depth. These cover a broad cross section of the conditions in the area. I am going to show you three types of day.

First is a simple day with straight line plume transport in fresh winds, 14th August 2006. Everything is blowing in the same direction with northerly winds. These are straightforward and easy to understand. Such conditions were associated with over 50% of the verified community observations. On this day, there were three complaints up until 11 am.

The LIDAR uses colour to tell us the wind direction relative to its position: blue indicates wind travelling towards the LIDAR, while red indicates wind travelling away from the LIDAR station. Looking at what the LIDAR is seeing in terms of what is coming from the refinery, the plume can be seen travelling towards Yarloop. Where it stops doesn't indicate that the plume ends there, because the LIDAR is looking outwards at a shallow

angle, as you look further away from the centre where the LIDAR is located, you are looking higher into the atmosphere and at some point, the laser will pass above the plume.

Taking a vertical cut through the plume with the LIDAR, you can see the red dot of the concentrated plume, and you can see plume material mixing to ground underneath. This coincides with a community complaint.

What we are doing is seeing that we can understand the linkages between the meteorology and the community observations and we then want to see whether the model can do a good job of simulating that, which it can. The model does a very good job of simulating these sorts of conditions.

Sunday 27th August 2006 was a much more complex day, some of you might remember this. It was cited as being one of the worst events in years. It was a cold morning with very light winds, variable in space and time, with multiple observations. Main observations were between 9:00 AM and 9:45 AM. These sorts of events we found were associated with about 25% of community observations. A snapshot of the simulation at 7am shows the wind shifting in all directions. At Bancell Road, the wind at 10 metres is pointing one way, at 30 metres it is pointing the other way. The wind at one height doesn't know what the wind at the other height is doing. There is a complete disconnection of the air over that small height. The SODAR shows that the plume from the tall stacks should be heading of towards Perth, but down at the bottom, it's a completely different picture. The LIDAR wind velocity plot, unlike in the previous example where there was uniform transition from blue going to red, now what we are seeing is a spiral structure, as you go from lower down to higher up, from 50m through to 150m, lower down the plume is moving from north to south, whereas higher up, it is moving to the north west. On this slide, we have shown all the community complaints for the period 9 O'clock to 9:45 AM on this day so that you can see them all. You can see they are distributed over quite a wide area. Two anemometers at the Bancell Road station are showing the wind as being from the West, whereas the impacts are to the south. This is a good example as to why under these complex meteorological conditions, you cannot rely on seeing what the wind was doing at the time of the complaints. It isn't what the wind was doing at the time of the complaints, what matters is what the wind was doing for the couple of hours before the complaints and where it took the plume. Looking at a LIDAR shot at 8:40 AM, it is seeing a broad spread of emissions and there is a layer of concentrated emissions at around 70 metres above the ground, that has been spread out by these winds that are fanning out over this area. At 9:00 AM, we are seeing mixing down to the ground. As the sun has heated the ground, bubbles of air have caused mixing down to ground level and that is when you started to smell the emissions. That is convected down-mixing of emissions. Using the LIDAR records to identify where the air at this location at 9:30 AM has come from, at the 70 metre level, which is where we know the layer was, it tracks back pretty much to the refinery. This is a very complex day, and to understand what is going on, it is critical that you have the wind information. Looking at output from the Model: the Model cannot handle these sorts of conditions, it is simply pushing the plume out (*in a south westerly direction*), which is very different to the layering that we saw.

In the course of the investigations, it has become apparent to us that there are other emissions from the southern end of the refinery. There are a few study days where we have observed this. In this example, you were smelling a wet cement smell, which we know was not from the tall stacks, the LIDAR can see emissions coming across to the point where we were measuring on the corner of Bancell Road and South West Highway. This is not odour that is being measured, it is particles, but it is telling us where the air is travelling. If the particles are travelling in that direction, then the odour is travelling in that direction too, they are all in the same air stream.

Here is a shot taken from south of the refinery, looking at the multi-flue stack and there is calciner four, both of those plumes are rising high. So there are other emissions at low level that were being smelled at that location on that day.

On another occasion, these locations are down on Baggot Road, right across near Brockman, we were smelling a reasonably strong, distinct odour there, on one of these odour study days. Stepping forward in time, here is the same thing. If you look at the trajectory of the wind and where things have come from, it is clear that it is not from the odorous sources that we know about in the north of the refinery, you can see them tracking across and going the wrong side of the intersection from where we were located. Doing a trajectory analysis shows the odours were coming from somewhere around the south end of the refinery.

These are just two examples showing this.

Presentation re Community Observations – Anthony Stuart

Ken has given a few examples of how we put the data together, I will talk about some of the summaries of that information. We spent a lot of time on the community observations database, because that allowed us to maximise the information we could get from the meteorological measurements we had taken. We looked at the period between June and October (2006) which was when the instrumentation was running. We had three sources of information: the Logbook program, the DEC Regional Office database and the Alcoa complaints database. In total we had over 200 observations from about 30 people in the community. The number of complaints per person was very variable: people may have made a single complaint, right up to 50 complaints, so there is quite a range in complaints per person. The observations range from a single person who detected a weak odour, to a number of people who detected a strong odour. 27th August is an example of that.

That data set was very important to us, because it gave us key information about the position and dispersion of refinery plumes. I would like to thank the people who participated in building that database. An important finding is that when you consider the plume height and wind data, which is the wind data not just at ground level, but up to some hundreds of metres above the ground, we think that a high percentage of the observations made by most members of the community are reasonably attributable to the refinery. However, for a few community members, we found that a significant portion of the observations appeared to relate to other sources, or some other effects. The analysis we are presenting, is based on the results that we believed were reasonably attributable to the refinery.

To summarise the important dispersion conditions, I have technical descriptions here, but most of you will know what I mean when I talk through them one by one.

Light and stable conditions: You think of a cold winter's day, there may be mist around, very still, with fine cloud.

Non-uniform surface wind conditions: For example a strong Easterly wind at the scarp, and a very light westerly on the plain. So you have a big difference in both wind speed and direction at different paths across the area.

Post-stable conditions, shallow convective mixing: Following the cold winter's morning, when everything is very still. The sun will heat the earth, which in turn heats the air. You get air movement, and that causes the mixing down of emissions that Ken referred to.

The 27th August (2006) was a combination of light and stable conditions, followed by post-stable conditions.

Near neutral dispersion conditions: Straight line conditions, with fresh winds, clouds, plumes, travel in generally uniform direction, as Ken described for 14th August (2006).

They were the key dispersion conditions that we could link to community observations.

The next slide shows how many observations occurred during the different types of meteorological conditions. You can see that the near neutral dispersion conditions, accounted for over 50% of the observations. The post-stable conditions about 25% of the observations, the light and stable conditions and the non-uniform surface conditions each accounted for about 10% of the observations. This is one way of looking at it, a deeper question is: What conditions are most important in terms of the reported impacts in the community observation database.

We did an event-based assessment. What that meant was that observations were compiled into events. The event might be a single complaint or a number of complaints that occurred in the same area over the same time period, during the prevailing dispersion pathway. A good example is the 27th August (2006) that Ken has already covered, where we had multiple complaints between 9 and 10 O'clock, during post-stable conditions.

We also classified the events in terms of their impact, we assigned them as either low, medium or high, based on the descriptions of the events that the community members reported.

I have tried to summarise in this slide. There were 85 events in total. Of these there were 71 events that we assigned as low impact, there were 12 events that we believed were medium impact and two events that we thought were high impact. 27th August was one of the high ones. The slide also shows the different dispersion conditions for the different levels of impact and you can see that for the low and medium there is a mix of conditions, with near neutral conditions accounting for most of them, but the key message from our study, is that for the more significant events as reported by the community, it was the post-stable conditions that prevailed. So the 27th August and the day in July had similar conditions. That is reflected in the number of observations over those events, for example, there were 81 observations spread across 71 events for the low impact, 29 observations for the 12 events in the medium category and 15 observations over 2 events in the high impact category. The key message is that these more complex conditions, from our study look to be associated with the more significant impacts as reported by the community.

Some conclusions about the tall stack, the multi-flue stack: From the data that we collected in the 2006 study, we think that the height and buoyancy of these plumes is highly beneficial, in general the plumes are transported well away from where the highest concentrations of other refinery emissions occur. We base that on the evidence we have from the LIDAR, the wind data and other measurements. We looked at each observation in terms of possible contributions, in terms of the refinery sources and concluded that the multi-flue contributed to only one complaint during the winter, and in that case, it was one of a number of sources. So it really didn't play a big role in the observations we had during 2006. Part of the reason for that, is that the wind shear, which is the wind direction changing as you go up higher, increases the effectiveness of the multi-flue stack. To illustrate that point a little better, in this view we are looking down from the south west, the winds at the lower levels are moving through in a southerly direction, you can see that the wind at a greater height is turning and going towards the scarp (*to the east*). This was the 29th July, there were two complaints, which you can see line up with the lower level winds, whereas at the higher level, at the level where the multi-flue would be emitting, the plume from the multi-flue is heading towards the scarp, so couldn't have been implicated in the complaints that were recorded here (*south of the refinery*). This is a photograph of that day, which shows the same thing. The plume from the multi-flue is coming out to the left of the observer (*to the south*), then shearing and moving across this way (*to the east*), whereas emissions from the lower level sources will be tending to move in a more

southerly direction. The rapid separation of emissions is one of the reasons why the multi-flue stack seems to be very effective.

Key findings of the study:-

- The winter 2006 study has significantly improved our understanding of the often complex meteorological conditions of the area, and this improved understanding provides opportunities for improvements in environmental management.
- For our model investigation, which is on-going, Ken has already mentioned that the model does a good job in those straight line near neutral conditions, it also does a reasonable job for some of the post-stable conditions, however, the model cannot simulate the complex conditions, which includes some post-stable conditions, such as what happened on 27th August, the light wind stable conditions, and those non-uniform conditions, where you might have a strong easterly at the scarp and a light westerly on the plain.
- The conclusion is that supplementary methods of assessment will be required to assess the model.
- The model appears to over-predict odours in very light wind stable conditions, with the highest concentrations predicted at night. That is important in terms of strategies to reduce emissions. We need to be sure that the model is actually showing the most important conditions.
- The model generally under-predicts daytime odour. We have based that on doing model runs when we or other people were in the field taking odour observations. We have matched what was detected at ground level, with what the model predicts is going on, and the general theme is that the model seems to under-predict the odour levels.
- This suggests that there may be some underestimates in the emissions inventory, or that there could be other sources that have not been included. To further investigate this, Alcoa will provide emissions data for 2006 and this will be part of the investigation.
- For the current operations, our analysis has shown that there are significant odour impacts under complex meteorological conditions, that includes the 27th August 2006, that cannot be assessed using only simple meteorological measurements. During that event, a couple of air samples were taken with canisters and the results were below World Health Organisation standards, as has been published previously and reported to you. To make the point again, you must have knowledge about the wind speed and direction throughout the first 200 metres of the atmosphere, to understand the plume dispersion and the processes that are occurring.
- There is evidence of significant calciner type odour that has not been quantified to date.
- The multi-flue stack appears to be highly beneficial, and high level wind shear is part of the reason for that

Summary – Robert Atkins

In terms of what this means for us, we are going to require Alcoa to review its emissions inventory, to make sure that it is picking up all the low level emissions from the refinery.

It is important to understand that the LIDAR tracking identifies emission sources based on particles rather than odours, so although we have identified a number of low level sources, it needs to be confirmed whether they contribute to odours or not. So the next step is for the emissions inventory to be reviewed, to make sure that we are clear on which sources

are contributing to odours that are not already picked up. We will then need to have Alcoa look at its odour management plan, to look at ways of mitigating any of these additional odour sources, particularly that are coming from these low level sources, other than what is going up the multi-flue.

Clearly the meteorological monitoring that is used to manage the complaints and understand the events is inadequate based on our new understanding of how the meteorology operates under these conditions, so we will be asking Alcoa to upgrade its meteorological station, to collect the sort of information that we have been collecting, to measure these events. Once all that has been done, Alcoa will need to do an evaluation of mitigation options, for better managing the odours.

The other implications of this is that the Ministerial approval for the Wagerup Three expansion required Alcoa to do twelve months additional monitoring to validate the model and predictions that were submitted as part of the Wagerup Three assessment. Clearly this information and the work that Alcoa has been doing in parallel, will be used to re-work the model to affirm the predictions or otherwise. That then needs to go into the detailed design report, that will be reviewed by an independent expert panel, prior to any further work going on.

So that's encapsulating if you like, the next actions for this. There is obviously more data analysis going on in parallel with this, but there are clear some actions that come out of the work that has been presented today.

Before I hand over to Amanda to field questions, I just invite Lindsay Gillam from the Health Department to make a few comments.

Lindsay Gillam – Health Department of WA

Today very is much about DEC's presentation of it's 2006 air monitoring program, not about the Department of Health, so I don't intend to say much, other than there has been a task force which has been working in an inter-agency capacity, it sounds a bit Governmenty I'm sorry, what it means if that DEC and Department of Health medical staff and toxicological staff have been working together for a number of years on this. Whilst we have not been directly involved in the monitoring program, we have been very much involved in providing our take on what those results mean and our advice to the DEC, which I believe has allowed them to enhance it's interactions with Alcoa.

We are going to be sticking around after the main presentation and the main questions, myself and Mirella Goetzmann, one of our senior scientific people from the toxicological branch, will be very happy to take questions. I don't think I will take any now if you don't mind, I don't see this as being a Department of Health presentation, but very good to be here, very interested in the results. They are taking us in a direction that I think is the way of the future and will provide a very strong background for further improvement. So thanks very much and we will be around after the show.

Questioning Time – coordinated by Amanda from DEC

Amanda: Now we are going to open up for question time. Any questions or comments, we are going to write those up and collect those from you.

Glen: You keep referring to odour problems and keep referring about Alcoa having to fix an odour problem. It is an emission problem, causing health problems. If Alcoa is required to fix an odour problem, they are going to cover it up, they are not going to fix the health, so it has to be pushed to them stating to fix the emissions, not the odour. Point two: The definition of short term exposure rates – what is it? What is the timeframe between exposures to keep within the definition, because if you continually get short term exposures, isn't that long term exposure?

Amanda: Who is able to address what is a short term exposure definition?

Mirella Goetzmann: I'll have a go at that. Short term exposure rates are looking at anything from minutes to hours, it could be months, it depends very much on what you are being exposed to.

Glen: In other words it means nothing. If it's minutes to months, it is meaningless.

Mirella: Well, no, it depends. The exposure rates depend on the symptoms. So you have a particular chemical, um, I am just trying to think of something that's an irritant, that's an odour problem, that's producing, um, an illn- (*Lindsay Gillam says something to Mirella that stops her in mid-word*), formaldehyde, toluene, some of the volatile chemicals that produces irritation of the eyes, nose and throat, if you're exposed to that for short terms of time, that could be, ten minutes, fifteen minutes, you'll have that effect. So that's what's termed a short term exposure. There might be other chemicals that we could be exposed to low levels over very long periods of time, up to years and months, that's a long term exposure, and we may never develop any health symptoms from those and it depends very much on people's sensitivity, how different people are differently sensitive to chemicals. I know that if I breathe something that's highly irritant, immediately I get a reaction. My husband for example, he says, "Oh don't be silly, there's nothing there." So we have different reactions to those exposures. So these are very individual things, but certainly we know from a science basis that there are some chemicals that you can be exposed to for ten minutes, - (*Glen interjects*).

Glen: What sort of break do you have to have between them? Can I have a ten minute exposure now, only wait ten minutes and then have another ten minute exposure?

Mirella: Certainly you can, and it depends again upon the chemical.

Glen: Well that's called a long term exposure then, if I keep on getting exposed for ten minutes.

Mirella: That's a very good question, and some of those chemicals come out of your system very, very quickly, so you can have multiple short term exposures, then have a break, and the chemicals will be cleared out of your system and you'll have no long lasting effects. A lot of the (???) chemicals are like that: you'll have an immediate effect, you know, that will blow off into the atmosphere, or you'll move away from it, move inside or somewhere protective and - (*Vince interjects*).

Vince: Can I ask a question? What do you call a 24 x 7 exposure, 365 days of the year? That's what we've got here.

Mirella: John, do you want to say something to that?

John Sutton: I'd like to respond to the first part of the question, if I may. We obviously get some learnings from this, we learn some things, then we turn around and say "How do we deal with the issue? What can we do that's different?" So our strategy here will be to work with Alcoa, where we have a community complaint, someone saying "Hey, I've been exposed to odour", we now have the capacity to trace it back to a particular source. The intention will be to work with Alcoa to see if shut down – not literally switch the facility off, but of course see if we can abate the odour, the source of the odour - the odour is just one measure of what's in the plume - whether we can actually turn that off at that stage. And we know we can see that with our technology. We will know when it's turned off, and we'll know it's been turned off when the community stop ringing up and saying "We've been hit by an odour". We will work with Alcoa within that kind of strategy to see if we can effect a real change in the real world, that way, as opposed to getting caught up in complex arguments on chemistry and science.

Glen: You missed the point on Alcoa - we've been dealing with them for many years now – if they can cover up the smell, then that's it, that's all they will do. People will still be

getting sick, but they will reduce the complaint levels by not having the odour side of it. We want the health side of it fixed, not just the smell. So if you keep referring to it as odour, that's all Alcoa will turn off if they think they can get away with it. It needs to be referred to as emissions, and Alcoa do not want that word to be used, but that's what it is - emissions.

Vince: There was a parliamentary enquiry that actually deleted the word odour and asked for the word emission to be included.

John Sutton: The point I am making is, that we've got an opportunity here, to use some of our knowledge, to actually see if we can make a difference now, in a way that traces it back to where the primary source of that emission is coming from. We are thinking of odour, as just the tracer, the red light that flashes, to allow us to go back to that point and try and see if we can deal with the total gas complex there, if it is that.

Carol: Just to reinforce the issue of odour, there is a scientific review of multiple chemical sensitivity, it's a federal study, happening on the 30th, in which I am participating. All through the report, is odour perception and psychological. There is a deeper and nastier side, to the terminology of odour instead of emission. We are sick. We are calling out for the Health Department, and for your department, to do something about the ongoing health effects. And by going along, with this calling it an odour, it's putting labels on people that get sick, as psychological, and it's going along with the two doctors that have been employed by Alcoa, and are writing things about odour perception. And I wish to say that I take exception to the fact that we are calling it odour, even in this study. I can back that up. I have the paperwork with me today to back up what's been said, calling it odour perception.

John Sutton: I suppose from where we're sitting, using the word odour as just another name for a tracer, as it essentially just tells us – (*Carol interjects*).

Carol: Well we're asking you to change it to emissions.

John Sutton: We're not going to get caught up arguing about words. That doesn't help.

Carol: They're not impacting you, they're impacting us. When we go to a hospital, they say it's a psychological illness, so they won't accommodate us in fragrance free areas. They won't stop nurses wearing perfume. We can't get ceramic oxygen masks, instead of having plastic put on our faces. Once we get MCS out of this, it's a life sentence. We need proper health management. The word odour, plays along with the Company's tag of odour perception, and I think it's a valid request, because the impacts aren't on your study, but they are on us, and we can't get proper medical care, or diagnosis even, while they call it psychological, and it's all being based on odour.

Amanda: Did anyone want to comment further on that?

Robert Atkins: Point taken.

Bob: What do you mean by saying "Point taken"?

Robert Atkins: We are going to follow through the process I've got up on the board there.

Bob: So you're not going to change that word odour?

Robert Atkins: Not at the moment.

Bob: Can you explain that?

Robert Atkins: The next step is to go in and characterise the emissions from the refinery, from the low level sources that the LIDAR work has undertaken. Characterise means to do an analysis of those emissions sources and see what's in the emissions.

Bob: Also, do you realise that a lot of people moved, that were closer to Alcoa. For example, we lived 800 metres from the tall stack, and the word “Odour”, was used instead of the word “Health”. My wife would vomit, and the monitor would come in and write “Odour problem, 4”, instead of “Health, 6”. These guys are correct in what they are saying. Alcoa will love that word “Odour”, because it doesn’t mean that they have to take care of any health problems, because you guys have given them an “out” with the word “Odour”. They’ll just say “OK, we’ll get rid of that”.

Carol: When we phone our complaints in to the Mandurah office, they’re not classed as health complaints, so when it appeared in the Harvey Reporter, it wouldn’t be a health complaint, it would be an odour complaint. In the meantime, we phoned in saying that we’d collapsed, that we lost balance, or we were sick, or that we had metallic taste in our mouth, all of it was just an odour complaint, so to the rest of the public – and I think that misleading the public in matters of health is pretty serious, and this actually does it – the fact that it’s not a health complaint, it’s an odour complaint, and so you have a nought in that column.

John Sutton: Can I respond to that: As part of our community survey work, which a lot of people here were involved in, we were asking them to collect information on the basis of odour and health impacts, so, the point I am trying to make is that we’ve clearly demonstrated that we acknowledge that it manifests itself in two different ways, and we’re not just dealing with an odour.

Amanda: I think Mirella would like to respond.

Mirella Goetzmann: Personally, from my point of view, from the Department of Health point of view, we take the odour issue very, very seriously, because we don’t see it, as you say, just words, but if the word odour is perceived in the community or by individuals as a psychological problem, or a problem that triggers a health effect, then it is a health effect. It’s a health effect, whether it’s a physiological health effect, or whether it’s a health effect that’s built up over time, because of the issues that are being unresolved.

Carol: Then you’re saying psychiatric first, instead of secondary.

Mirella Goetzmann: No. No, no. We’re saying: whatever the odour is, or the emission problem that is causing the health issue, it’s ultimately the health issue that we’re concerned with. We’re not concerned with the words that are attached to it, but actually what the health issue is, and if the health issue is that this is a cumulative effect, that people are being ill, whatever the reason is, then that’s what we want to deal with, that’s what we want to treat. So lets call it emissions if you like, that’s fine with us, that’s the way we’ll deal with it – as an emission from a source, or from whatever it is that’s causing it, and that’s the bottom line for us. That’s what we would like to investigate.

Lindsay Gillam: And Carol, one last thing to add to that, of course we’ve known from the health history down here, that people can have an odour event without feeling ill, and they can feel ill without smelling any odour at all. So yep, and I think DEC will acknowledge that as well.

Amanda: This gentleman had a question before, did you?

Community member: Yeah, some chemicals don’t have odours, is that right? So if you say to Alcoa to get rid of the odours, there’s chemicals could still be coming through?

John Sutton: Very good point, and in terms of our strategic thinking, how we move with this is, we will be going back to our logbook program, and when people are reporting that they have an irritation effect, or a health effect, we still go back and track where it comes from, we go back to the source.

Community member: So if you ring up, you don’t say “I smell an odour”, you say “I’m irritated in the eyes, or the ears, or something.”

John Sutton: Indeed, our logbooks that we were running, a number of people were saying exactly that – they were saying “We’re not smelling an odour, this is what our effects were.” So we go back, look at it, trace it back and say it’s possibly there, let’s go and see what’s happening at that source.

Community member: I’ve got another one. You know the canisters you mentioned, you never mentioned what chemicals they tested for out of the canisters. Did you do that? Can you tell us what was in there? You just didn’t mention it in the – (*John Sutton interjects*).

John Sutton: Apologies for that, there’s a fair amount of material. There is in fact a slide there, (*points to printed poster on display panel*). As most of us are aware, there’s been a lot of chemistry done down here over the last five – seven years. The program that DEC was running was involved with the canisters. We were, community members were taking samples when there was an either or a health recording event and that was noted on the tags and it’s in our database. I’m not trying to hang it on the odour stuff. We sent this material to overseas laboratories, I’m not sure the total number of cans analysed, Anthony help me; how many, it was over 100 – 150 cans.

Anthony Stuart: Yes, it’s shown there (*points to poster*), we’ve got, at the moments there’s about 50 event samples that were taken by the community.

John Sutton: Yes we took background samples as well, to see what’s in the ambient level. The reoccurring message that we get sampling this group of compounds, and we’ll talk about why this group of compounds, we were seeing three compounds sticking their heads up: Formaldehyde, Acetaldehyde and Acetone. The Formaldehyde levels were consistently, a number of them were above what we would naturally see in the background environment, but most of them were bouncing around where we would expect them to be in the natural environment like here. Acetaldehyde and Acetone were very low, with some, obviously range within them. But the critical message is that the numbers we were seeing were consistently below the relevant health standard as advised by the Department of Health and in the scientific literature. Parallel with that, - (*Gary interjects*).

Gary: Which standard was that for John: long term exposure, short term exposure, or what?

John Sutton: It was a thirty minute short term standard. The challenge here is, the technology we use in the field, we grab an event, and that might take three minutes to get into the can, then we measure that against the relevant short standard. I’ll come back in a minute, but parallel with that work, CSIRO was working by itself, Alcoa was funding this work, CSIRO was working by itself, using a Proton Transfer – a very sophisticated piece of equipmentation. The program went on for four weeks?

Anthony Stuart: Eight weeks.

John Sutton: Eight weeks, continuously sampling, over hours and hours and hours and hours. That analysis came back, three of four key messages in that:-

- It was telling us that the ambient levels were bouncing around as we would expect in the natural environment;
- It told us that there was one compound that they thought that was linked to refinery emissions was Acetone was it? I think it was Acetone.
- It also made the point that the low VOC levels didn’t really explain what the odour was. VOC’s: Volatile Organic Compounds. It’s a group of compounds which are generally the product of the refinery process and which would have been measured in the flues. So the message is, that for this important group of compounds, the numbers that we are seeing, are well below the health standards.

There's been work done on other compounds as well, by Alcoa and it's consultants, and we were still getting the same types of message back, that we're way down there.

Now we accept and we know from reality out here, that we smell things and we get effects, so that was the whole rationale for stepping sideways, and starting to look at the meteorology, trying to get a better understanding of what's going on, so that we can attack the issue at a different level. Now I make a really strong point here: There's been a serious effort to look at the chemistry by CSIRO and the Department. This isn't ducking and diving. We've been trying. We've got our own PTMRS installed out the back here. We ran it during our experiments. It's a state of art instrument. We had troubles with it: we didn't know how to drive the car properly, we had to learn. We've skilled up on that. We've got competent people who know what they're doing now, and the machine's been running for the last month and a half. We will continue to run it, and continue to understand. One of the advantages of having the machine running here twenty four hours a day, seven days a week, is also that when we're in the field and we capture a sample, we can use the machine to sample for a broader range of compounds than we have in the past, and we can do it virtually straight away. So the point I am making is that we are continuing to look at the chemistry, it's dead serious, but the messages are that we are down within these health standards. I'm not going to comment beyond that, there's a really – that's the domain of the Health Department, to explain about the toxicology.

Tony (Dairy Farmer): We're interested in what you're doing there. We live just this side of the mud lakes and it's pretty simple: most people know what it really is. As farmers, we look forward to the rain, anybody knows that before we decent get rains, we get the north wind. And it's come to our attention now over a period of time that twenty four hours, forty eight hours you know, the north winds get around that way, you can guarantee, GUARANTEE, that most members of our family, within twelve to twenty four hours will get a headache, sinuses, and if we're exposed for a long time, people say they get a blood nose. Bullshit, it's the sinuses bleeding. And if you inhale stuff, then you get the chest infections or whatever. So I'm telling you that our case is pretty simple, no bullshit attached, no fancy whatever, that's the long and the short of it. Now two years ago, we got covered in white dust. Five neighbours made complaints, those complaints went nowhere. We continued to complain. Eventually investigators came out. Those investigations were finished a long time ago. Rumour has it that Alcoa should have been charged. They haven't been charged. We don't know anything. We can't find out anything. So what is the good, of you people doing those studies, we make complaints, the stuff's in the air, everybody see's it, it's photographed, it's caustic that blows off the mudlakes. So what are the Departments doing about it? Now there's a clear cut case here, it's been going about two years.

John Sutton: I'm happy to respond.

Tony: You want to respond as we go? Cos I really need to go.

John Sutton: There's two things, as I mentioned before. This is work in progress. Right? We're back here for the second time. In our previous presentation we said we saw stuff blowing off the mudlakes and that area with the LIDAR system. We've got more work to do there. We're also from our own odour surveys and our own experience, have been aware of those irritation effects off the RDAs. That's noted. That's work, we will look at that.

Tony: But what's happening about it.

John Sutton: Well, for a start, the question's really better directed to Alcoa, but from – *(Tony interjects)*.

Tony: The Department... We made the complaint to the Department. The Department investigators came out. They did their report. We don't know what's in the report.

John Sutton: I apologise – I can't answer that here, but I will get back to you by close of business on Monday with a response to see what happened with that. I don't know – it's not in my area.

Tony: Thanks for that. Can I move on? I can just tell you how it works in my business. If we contaminate our milk with antibiotics, we are gone. We are gone, we are doomed, we are fined. No court cases, no studies, no nothing. That's the industry I'm in. What I want to say to you people is: You know, in agriculture, we don't relate anymore, we're just nobodies. But if the average baby in Perth, drinks a litre of milk a day, I don't know that the do or they don't, but if they drink a litre of milk a day, we feed, my family feeds seven thousand babies a day, every day, three hundred and sixty five days a year. Yet we're nobodies. We've got a dirty, stinking, filthy, lying Company up the road, and they get away with it.

I've made my point, I'm getting agitated, but a question I want to ask is: All these compounds and whatever, call them smells, call them odour, I call them Caustic. What's it doing to our immune system?

Amanda: Is that something for the Health Department to – (*Mirella Goetzmann stands*).

Mirella Goetzmann: I'm going to try. Um, I don't have the answers, but I'll try. It's true that what science we have, what toxicology we have, is sort of restricted to single chemicals. We don't really know what happens to a lot of these things when they get in the air and mix and so on. The toxicology of the chemicals out of these canisters, we know about. We can work with guidelines, just like you have to work with guidelines with relation to your milk. If you measure that and it's above a guideline, you know you've got to throw the stuff out. It's like that here too. We're measuring the guidelines in the air. That's all we've got. We've just got the guidelines to compare to. We take Acetone or Formaldehyde and say: Yep, it's below the health guidelines. I'm afraid for the moment, that's what we've got, and this information's really going to help us, to get a better understanding of what's going on, and some people will react, for sure, because there are, there will be times when there'll be pockets, where you'll have more of the concentration of the chemicals, you'll get a reaction, you'll have nausea. At the lower end of all the possible things that can go wrong, in a human body, these sort of symptoms are at that lower end, and we will feel them, almost wherever we are. And the science is really, really trying to kind of answer some of your questions, I'm afraid sometimes, we just don't have the answers. And that's the best we can do at the moment.

Tony: So what you're saying is, you really don't know, what it's doing to our immune systems.

Mirella Goetzmann: We do that, um, the toxicology of these chemicals, if you're below a certain level, as they appear to be here, then there is, what the effects are, we know that, and that's why we've been saying that, you know, the Health Department has said it's not a, that the levels are not above a dangerous level, because science is backing that up. It's saying that if the chemical exposure is at this level, then for the most of the population, then the effect on the immune system or whatever it is, will be this much.

Glen: Only for a single thirty second to thirty minute exposure.

Mirella Goetzmann: Yes, it's for – (*Glen interjects*).

Glen: Only for one single thirty minute exposure.

Mirella Goetzmann: No, No. There is a lot of information on long term exposures as well, and the effects will be different over a long term. We can go into that, you know, a bit later if you want.

Alex: But there's hundreds of people in this community getting sick daily.

Mirella Goetzmann: Yes.

Vince: There's unexplained cancers that associate with that, so how do you work that out?

Mirella Goetzmann: Yes and – (*Alex interjects*)..

Alex: This has been going on for years, it's not the last couple of years, since you've been doing the testing.

Mirella Goetzmann: We understand that and the symptoms that are coming through to us in the Health Department, as I say, are at those irritant levels and I believe there's a health study that's coming out soon that will try to, will have a look and see what the longer, what that shows in terms of the longer health effects like the cancers that you're talking about.

Tony: So the Department of Health here really can't tell me and my family whether this constant, constant northerly wind – (*Mirella interjects*).

Mirella Goetzmann: No, no, well, we can say that, um, from the measurements that were coming back to us, and applying them to the guidelines; just like you apply your pesticide guidelines and your antibiotic in milk guidelines. If we say, ok, well this, the DEC is bringing us results, and they are saying this is how much is in the air at the time, and we look at them and assess all the different health effects, we can say; Yeah, from all the scientific knowledge that we've got, these, these are within the guidelines. (*a number of community members interject*).

Amanda: Sorry, excuse me people, can we just have one person speak at a time, um, because I think we are starting to get caught up in – (*Tony interjects*).

Tony: Well, I've been pretty patient, waiting here, and I have to go, so I would like my questions answered. So you really can't tell me, whether the Health Department knows that, call them odours, call them emissions, call them whatever; I'd like to repeat myself and call it caustic. You can't tell me, whether our immune systems are being shot daily.

Lindsay Gillam: Tony, we can only look at the science. The science is presented to us as a series of individual compounds, there are individual guidelines for those compounds, we look at them, and none of them exceed. So what the DEC tell you in that respect, is completely right. But we have no, no, um, hesitation in saying we know there are people who are getting sick through the refinery emissions. You might be one of them, I don't know. I'm simply pointing out, that we're not disputing that there are sick people here, um, attributing them back to the refinery is harder than you think.

Tony: Lindsay, you're not answering my question.

Lindsay Gillam: Yeah I am.

Tony: No, you're not telling me whether it's doing anything to our immune system.

Lindsay Gillam: Well I can only do that if you go to a doctor Tony, and if somebody says your immune system is shot to pieces, they are the people who are going to tell you that. Lindsay Gillam, sitting in a committee like this, has no idea what your immune system is. I have no idea what my own immune system is.

Murve: And there's not one doctor who will tell you that, cos they've all been spoken to, by Alcoa.

Community Member: Why don't they do blood tests on everybody.

Mirella Goetzmann: Because it's not possible.

Community Member: I rang the laboratories in Bunbury and they said – (*Lindsay Gillam throws his hands up and interjects*).

Lindsay Gillam: Amanda, we're getting distracted here, I mean.

Amanda: I'm just, I'm just feeling like everyone's butting in and, I'm sorry to be like a school teacher, but if we just put our hands up and we can have one person at a time, that will just be really helpful to everyone. Carol?

Carol: My question is: Why are the Australian health standard levels lower, I mean higher, sorry, than Americans, and is an American life more precious than an Australian life, because our health standard is higher, like, a level of Formaldehyde is acceptable, um, in America it wouldn't be tolerated anywhere near what it is here. Are we, I mean we've already seen the way we're getting treated, but is anybody, like the milk for instance, Yarloop and Cookernup, is that milk tested? You know, are there levels in that as well? Why are your chemical levels so acceptable where they are, but in America, it would be absolutely front page news, the parliament would be getting onto it. It, it's just wrong. I think we should be seen as just as precious and just as worthwhile and our life worth as much as an American life, and be protected by world health standard levels that are the same as the Americans. To me it's just shocking that we have to have this, and therefore anything higher is dismissed, whereas in America it wouldn't be dismissed. Sorry, that's the best way I could say it.

Amanda: And I think that's a very difficult question for any of us to answer Carol, but are there, is there – *(Carol interjects)*.

Carol: Who's setting them and what can we do about it?

Mirella Goetzmann: Sorry Carol. I'm not aware that actually American standards are any tighter for a lot of these things, in fact we take a lot of our standards from European and World Health Organisation levels that are quite tight, and I know for instance for cancer levels, that we are tighter than the American standard, across the board.

Vince: Well I can tell you one thing: for Benzene, in the US it's about 12.5, in India it's 2.5 but in Australia it's 75, now you tell me how you work that one out.

Mirella Goetzmann: Well the new air monitoring studies that are coming out are addressing those issues.

Vince: Well I can't see how they are, because the guidelines are out of whack, so you need to do something with the guidelines.

Amanda: May I just suggest, um, that we are getting caught up in a lot of health discussions, this was *(Carol interjects: I wonder why?)* can I just suggest, unless we've actually got health, let's talk about, let's go one on one with the Health Department when we break - *(Carol interjects)*.

Carol: It's absolutely appalling, saying it's all low, so everybody, happy day, this is fine, because it's all below this level.

Amanda: May I just ask that if we've got questions that are about the studies, and about the science that we've talked about, we ask those questions now? If we do have any health questions, please can we address them one-on-one with the Health Department afterwards, cos we are getting beyond what our study is addressing here.

Vince: I've got a question: The onus of proof has thus far been with the community. Seeing that it's been established that it's being impacted by Alcoa's Wagerup operation, will the regulator change industry approval processes in future, forcing companies to prove beyond doubt that their operations are benign, or do communities need to continue to suffer from industry impacts, before the Government takes action on industry.

Amanda: Could everybody hear what Vince just said? Robert, is that something that you can address?

Robert Atkins: For future industry assessments, one of the requirements that's come out of a number of Parliamentary inquiries over the last couple of years, is that the EPA gets a Health Impact Assessment / Health Risk Assessment done by the Health Department on any projects that it's considering. The Environmental Protection Act, doesn't include health impacts, basically environmental issues. One of the very clear recommendations that came from, that has come out of two Parliamentary inquiries that I can think of, is that the EPA seeks health impact assessment advice from the Health Department. So I hope that answers the question.

Glen: With reference to the canisters and Formaldehyde levels etc., and you said that's got a thirty minute exposure rate that's quite well below the level, you've also said some things about long term health effects at certain levels as well. Is there a graph, which shows the difference between, like the thirty minute exposure rate at this level, an hour exposure rate at this (*lower*) level maximum, and so on, for a week, two weeks, or whatever, is there anything like that in existence?

Mirella Goetzmann: That's an issue, we need to know whether VOC or – (*Glen interjects*).

Glen: From a standard rate, for these canisters, a thirty minute exposure is fine, do you have a graph that shows the exposure level rates acceptable over one hour, two hours, three hours, four hours, cos obviously you should decrease the exposure level.

Mirella Goetzmann: Yes, you've got an accumulative effect, at the end of the day there is an annual guideline for many of these things like Formaldehyde, and the shortening of effects, you need to fit within that guideline.

Glen: So for example we have a graph that shows this is thirty minutes, that's twenty four hours, this is the rate you're allowed to have here, do you actually have that graph?

Mirella Goetzmann: No. We don't have a graph like that.

Glen: Can you get one?

Mirella Goetzmann: That would depend very much on what the monitoring in the area is.

Glen: Wouldn't that be useful to tell us, it's been shown that we've been exposed for eighteen hours on different occasions, wouldn't that then set the minimum standard that we're allowed to be exposed to, and that would obviously be a lot less than the thirty minute exposure rate?

Mirella Goetzmann: Yes. There is, but I suppose we have to look in terms of what the annual exposure rate is, how much exposure you're getting throughout the twelve month period.

Glen: It's been proven by this equipment here that that plume sits on us for up to eighteen hours at a time, that's by the LIDAR. What is the exposure rate for eighteen hours?

John Sutton: Can I just respond to that question? Not putting words in the Health Department's mouth, but we've had a hard look. There are various standards for different times and we're familiar with them. The numbers we're seeing are below, fit within that, not withstanding what hap, we, in terms of running our continuous instruments, that will give us some information to assist us to answer that long term question.

Glen: Have you ever seen an exposure rate more than a short term exposure rate, have you seen information showing what the rate should be for twelve hours for example, or two hours? Why can't we see that graph?

Mirella Goetzmann: Because I think what you're asking about is the health effects at different levels of exposure, and the short – (*Glen interjects*).

Glen: I want to know what the maximum exposure rate is for a six hour term, or a twelve hour term, for that particular item, that's all, because you are always quoting thirty minutes. Basing on a thirty minute exposure rate is a big flaw and there needs to be work done.

Mirella Goetzmann: That's because when we look at the individual chemicals, we look at how long does it take for a chemical to have an effect, how long that effect lasts, and it could be that the short, then we sort of work out what the time is, so thirty minute, a chemical like Formaldehyde has a quick effect on the body and a thirty minute exposure time covers, it might you know cover up to twelve hours or longer. But there are some chemicals that we need twenty four hours of exposure at. I am probably not explaining it well. Maybe we can talk about it later.

Amanda: There are some people up the back – could you perhaps continue that discussion with Mirella afterwards. We do have a couple of people up the back who would like to ask questions.

Murve: The DEC finding demonstrates widely recognised conflict of land uses between the residents, farmland surrounding the Wagerup refinery. The question is, how does DEC propose to eliminate bias associated with industrial self regulation practices, specifically their compliance with the operating license and conditions.

Amanda: Robert, is that something that you can address?

Robert Atkins: I don't quite understand what you mean by self regulation, there is no self regulation. There is self monitoring.

Vince: I know self regulators though. They do their own regulating and they do their own monitoring.

Robert Atkins: They do their own monitoring, - (*Murve interjects*).

Murve: If you have a problem with foxes in my chook pen, you don't put foxes in the chook pen to look after them, do you?

Robert Atkins: The license requires Alcoa to undertake monitoring in accordance with NATA, which is National Australian Testing Association standards, which are the standards that are applied to all monitoring across the country, and we carry out odd monitoring of our own, and work with these studies. Pedantic monitoring that the Department has done, which is paralleling similar monitoring that Alcoa has done. The Department doesn't continuously monitor all the stacks of all the licenses that are issued. It simply can't do that. It relies on monitoring done by the licensee to Australian standards.

Community Member: I'd just really like to know. We've got an organic farm just up the road, that's still classified as organic, how can that be if there's this air pollution problem? Also, we still have lots of wildlife etcetera. Wouldn't that all diminish if there was problems? I'd just like to understand it.

Murve: Get some vegetables tested, then you'll find out whether it's organic or not.

Community Member: Well he does, I'd say that he does, his grounds have to be tested to keep organic.

Amanda: I'm not sure that anyone here could answer that for you, I'm sorry.

Community Member: So, like you know, with your milk, surely, your milk gets tested? I know all the milks, well they do when they go off. It would have to be tested.

Tony: It doesn't get tested for any of what we're talking about. They only test for what they can penalise me, they will not test for what they can penalise Alcoa, I can guarantee you that. Just like all you people working who've got a job, if you came up with a bad reading at my place, there is no way on the world that you would release that to me. Cos it

would have to go to the minister, and the minister would say (*stops*). Question, can I have it?

Amanda: There was a lady here.

Kathy: It's to respond to what that lady (*community member*) was saying. Isacrificed some sheep when all this was happening, they were suffering similar symptoms to the humans, and I actually videotaped while the vet did the autopsy. I had the Department of Agriculture vet out to have a look at the sheep. No one could give me answers – this is well managed young ewes. One of the results of the pathology was to remove the animals from the district, from the source of irritation, which meant from the district. So we did move the primary stud flock, to another farm that is out at Uduc, fifteen kilometres south west, and they are improved health wise. But there was, from the results of those reports in that pathology, (*turns to address comment to community member*) that would interest you, and I have also have farmed organically since coming here twenty six years ago. The chemicals we're talking about, which Tony said a bit on, there's no one in Australia to test the organs of my animals, for what we are seeing in the results that DEC's finding in tests. I did one of the very first canisters here in town, and it was refuted that we had dimethylchloride coming out of the stacks. They have since found out that it does. We were fighting for many may years about the meteorological conditions. So in summary, there was no way I could get the organs of my animals tested, or the tissue, for the things that we're looking for in humans, and in saying that. The prognosis and the pathology reports were sent in with my appeal against the expansion. I've had a couple of politicians show some interest, but nobody ever gave me any feedback as to why the really abnormal and really rare findings in their kidneys, lungs and livers weren't further looked at, or why nobody took an interest in them. I have never had any feedback. But that will answer, the organic produce, our food produce, a lot of people use the argument; "well why does Alcoa breed quality beef and send it to the export market?". None of these things are tested for, the things that are causing the health issues and irritations, they are not tested for. I am a food producer as well as a local fruit producer and a livestock producer. I've just been audited by the livestock processing, for food safety type of thing and I have to fill in documentation, I have to provide the batch numbers of the chemicals I apply not only to my livestock but to my ground, which Tony would have to do the same thing. Same with the citrus orchard, same with the hay I buy in, same with the lupins I buy in. I am actually trying to back-track some of that, because people don't realise how much you have to do. But there are no tests to find out. No one here, and I was told no one in Australia that can test organs and tissues. I'm willing to sacrifice more animals, but fortunately at the moment I've pretty much gotten rid of or sacrificed all the ones that having recurring, which showed up as being just like we humans, some are more susceptible than others. The cancers that I was getting: I've had someone tell me recently about a herd of cattle that came from just up the road here, that are showing abnormally high levels of cancer.

Tony: Two dairy herds left the district and went to Scott River.

Kathy: They can find them straight away in the paddock from the tags.

Tony: Most of them ended up getting sold, because they had more cancer and more cervical cancer than everybody else's herds, and they went to Scott River.

Kathy: They all know down south what – (*Amanda interjects*).

Amanda: Thank you for those comments, I think – (*Tony interjects*).

Tony: Question for John Sutton.

At this point the video camera battery ran out, so missed Tony's question while setting up another video camera.

Terry: I understand from this report, that you have now actually been able to track emissions from the refinery and link those o specific emission and health complaints in the community. If this is right, is the Government now going to take notice of the Medical Practitioners' Forum, which recommended that there was a link, and that link to health problems should be taken seriously and people of this town should be moved out of harm's way? That's the first question, I'll come back on that one.

The second question is that we'd like to know, is the DEC going to conduct further studies into heavy metals and particulate matter. PM2.5s are the real thing in question. They are extremely dangerous and nobody seems to be talking about them.

Amanda: John, I don't know that we can answer the first part, but can you address the second part?

John Sutton: The second part where we're looking at heavy metals and PM 2.5, we're doing that. We have two projects working in parallel, with some monitoring that is continuing today. This is work in progress, so that stuff is on-going, we are looking at all angles in terms of the chemistry. I hate to sound like a broken record, but the challenge for us is to see if we can address, identify the exact problem in the refinery that relates, now we've got that connectivity, agreed, that's what a key part of the work comes out with. Some of the events, we've been able to demonstrate the connectivity, we can move on from there. The basic strategy now is to use that knowledge to be able to go into the refinery and see on those events, what might have been happening and how we can stop it happening again. We will do the chemistry in parallel with that. I hope we're here to demonstrate, that we've demonstrated that we're serious, we've been doing the yards. I would hate for people to leave this meeting and think that somehow we're pulling back on this. In parallel with that, in all fairness, I am not here to defend Alcoa, but they've been working bloody hard on other aspects of it, it's in their own business interests to make this go away, in terms of dealing with the issues.

Tony: I disagree with that John. That last deed of undertaking that the elected mongrel Carpenter signed off, on page 26 of the Deed, if you don't like where you are, piss off, you will get it valued by valuers, the Harvey - Waroona Index will not apply. It's in my pocket if you want to read it. We don' have a choice. We can stay here ant rot, or we can go at their valuation.

Amanda: May I suggest that if we don't have any more questions on the Study, that we actually break for coffee and tea. And chat to all our staff one-on-one if you do have further questions, cos I just think we could be here for hours.

Vince: I have some questions, but Alex, you go first.

Alex: I'd like to talk about buffer zones. Now we have conclusive evidence that Alcoa is polluting over Yarloop, and I know the process, cos I work for them. They will not fix seventy five percent of those emissions from the refinery. People are sure of it. They reckon they made big gains in calcination. Nothing's changed there except the multi-flue stack. The only effect that's done now, the multi-flue stack, I can smell it in Yarloop, could never smell it before. Since they put them up, I can smell it, so, it's certainly doing it's job, as far as the emissions from those stacks. It might be going over a wider area, so probably not as concentrated, but certainly I couldn't smell it before. To my mind, this is conclusive evidence that they need a buffer zone. Worsley Alumina's got a twenty kilometre buffer zone. Pinjarra, five – six kilometre buffer zone. Kwinana, they've moved all the people out from the area. Yarloop is still here, Hamel is still there, although Hamel is further away. (*Amanda interjects*).

Amanda: I think that is a plan, a planning issue. (*Alex interjects*).

Alex: So does it have to be a recommendation, after the LIDAR tracking.

John Sutton: We can note it. It's outside the promise of DEC.

Gary: Are you talking on behalf of Yarloop or on behalf of Alcoa Alex?

Alex: I want a buffer zone. I want to get out of here.

Gary: I want them to contain their emissions.

Alex: They're not going to fix it, Gary, you know that.

Tony: But Alex, they'll tell you that you have the choice to leave.

Alex: I haven't got the choice.

Tony: But that's what the Government has said.

Alex: I'm a B Class citizen.

John Sutton: I can't answer it, I'm sorry, it's a broader issue.

Amanda: I think that unless there are any technical questions, we do break and – (*Vince interjects*).

Vince: I've got a question. Was the information the air monitoring brought to light, previously known to Government and industry. If not, should it have been known? And if so, why was no action taken? What else should be known that we currently don't know?

The next part is, relating to question four: Should industry with large harm potential, be allowed to operate, if not enough is known about their impacts. If so, does that mean that the economic development is seen as more important than health and well-being? What does that say about Government's duty of care, and the Company's social responsibilities?

Robert Atkins: A lot of that I can't comment on, because you're really talking about political issues that take up with Government, but in terms of trying to predict how an industry is going to impact on the environment, all we can rely on is predictive modelling, what's known in other places, and doing some kind of assessment. Now sometimes those assessments get it right, sometimes they don't get it right. When they don't get it right, you have a long and protracted process of regulatory intervention, further investigation and corrective works. What we are seeing here, is the latter. So the sort of behaviour that we've described in terms of these peculiar meteorological events, and related low level emission sources, to where people are feeling the effects, clearly was not part of the original assessment for Wagerup refinery, and certainly wasn't picked up in the Wagerup Three modelling, which is why Alcoa has to go back and review it's Wagerup Three predictions, before it can move forward with that.

Vince: The thing is it wasn't picked up in the ERMP because it wasn't put in there, number one, and number two: how much do people have to suffer, before the Government does something about it. If the problem is still going to be there, then how about moving people out of harm's way while you fix the problem? If you can't fix the problem, what's the next step?

Robert Atkins: I think you're asking a question that is much beyond my remit to answer, it's a broader Government issue and I think as the gentlemen over here said, the whole buffer and land acquisition program is subject to the Deed of Agreement between the Government and Alcoa, and this Department is not part of that.

Vince: I can appreciate that and I appreciate that this is the first time that a link, a causal link has been made, but the thing is, people here are still suffering. Where to, and who can we bring this to?

Alex: The buffer zone. You didn't put it up there on the board. It's there, it's number 11.

Vince: I have one final question.

Tony: Just while we're on that buffer Alex, for anybody that doesn't know, that buffer, SPPP thing is about to be wound up, or has been wound up. So if you didn't know about the change in what time the bus was going past, the bus has already been.

Alex: I'm a B Class citizen, I'm not eligible.

Vince: I just want to finish off with one more question: Why was, despite our MOU in place, the community, as a major stakeholder, not given the latest air monitoring data, before the media received it? Now CAPS is the biggest stakeholder here, we never received any calls on this, and yet I get calls from the media, detailing just about everything that's been said here.

Robert Atkins: This information was released yesterday.

Vince: Not to us.

Robert Atkins: This information was released to the public yesterday.

Vince: Well how come we didn't get it?

Glen: I had a media interview on Thursday and they knew what was going on. They interviewed me about this thing going on here.

Robert Atkins: The information was released to the media yesterday, so I don't know how they knew about it before.

Glen: A few of us here got interviewed on Thursday.

John Sutton: May I just have a say on that: My understanding is that it was advertised that we were presenting at the Tripartite yesterday, that was a couple of weeks back, so the media would have picked up on that.

Vince: No, the media gave me point for point as you've got there. They wouldn't know unless they had the report.

Amanda: I can tell you that for one hundred percent, we did not release anything to anyone, until 1 O'clock yesterday. The media wanted it before, and we gave them an undertaking that we are not releasing it to anyone before or after. It's everyone: the community, media, stakeholders, get the information at 1 O'clock yesterday.

Alex: Alcoa put their statement out at 12:35 yesterday. Their response. Obviously they were briefed before. So someone's blabbed to the media obviously.

John Sutton: We have a data sharing agreement with Alcoa. Our work is done one hundred percent independent of them. Our summary report was released yesterday, Alcoa had not seen that. Some of the technical documents that underpin them, we had conversations with Alcoa last week, as they needed to understand the messages that were in them.

Alex: You saw the document I gave you yesterday, have you read it?

John Sutton: Yes I have. I can't comment on that.

Alex: Well they were squeaky clean. You would have read it, and that's what they're saying.

Amanda: There was a gentleman here, sorry did you have a question that you wanted to ask before?

Vic: It seems to me, that you people are quite prepared, to go on, and on, and on, trying to come to conclusions, and meanwhile, you're using residents in this area, the cattle, as guinea pigs. Cos you're not helping them, and they're telling you what's happening on their properties. People are getting sick, and you just accumulate the information, saying,

“Look, there’s somebody else sick”. Are we just being classified as B Class citizens, used as guinea pigs, while you sort out the emissions problems?

Robert Atkins: No we’re not treating you as guinea pigs.

Vic: Weekly!

Robert Atkins: We are operating within the powers of the legislation that we have, and we can only operate within that.

Vic: Well, shouldn’t the licenses be revoked until these troubles get sorted out? They are quite willing to keep going, to make their money, keep their shareholders up. What about the damage they are doing by the community?

Robert Atkins: As John’s explained, and Mirella’s explained from the Health Department, all of the chemistry, is within health and environmental limits. What we are talking about here, are effects at levels that are below those limits. So in terms of the license, the Company is complying with its license. We’re talking about the – (*Community member interjects*).

Vic: How come there are couples here that are getting sick? I am getting sick. I’m on a course of tablets that lasts nine months, and I’ve never had a day’s sickness in my life. I’ve got the papers in my back pocket. The doctors will not say what the cause of it is, but they have advised me to move out, I mean you can’t afford to! I can’t afford to move out.

Tony: Can I ask a question? If there was to be, if it was proven that some reading was high, would you people be allowed to tell the public of it?

Robert Atkins: Yes, absolutely.

Tony: You are one hundred and one percent sure of it?

Robert Atkins: Any monitoring data that is provided particularly through the license, the license conditions, is public information as far as I’m concerned.

Tony: I will ask the question again: If your department, with all the equipment you’ve got here, was to pick up, on my property, his property, whoever’s property, that something was to be outstandingly high, would you be allowed to make that public? No! Because you’d get told to go home, you only get paid to work here, not to tell people – (*Robert Atkins interjects*).

Robert Atkins: If any of the levels had exceeded any of the recognised standards, we would have presented that information here today.

Tony: Well, what would you say if I presented some readings to you that we had done and they were high? What would you say?

Robert Atkins: Well we’d be happy to have them. We’d need to understand under what conditions you’d collected them and how they were treated, all that sort of thing. If you’ve got any data, any information, we’re certainly happy to have it.

Tony: What would you say if a drug company said to you: “It is very common knowledge that the aluminium levels on your farm, are above the accepted levels”.

Robert Atkins: Well I would have to look at the data, and look at the statements that sit behind it.

Tony: But that’s what you’re doing here, going looking! We told you, we got covered in dust. We told your Department that we got covered in white caustic. Two years later, I have it on record, I will have that information by Monday.

John Sutton: I will chase it.

Tony: Thank you.

Vince: Last question: If they can't do anything with this air monitoring and that, are you going to allow the Third Stage to go ahead?

Robert Atkins: There's a number of things that have to be done, including all of this (*points to last slide of presentation, still on screen*), Alcoa has to demonstrate they are not going to have any additional impact on the community with Wagerup Three, and that's written into the Ministerial Statement. So they have to demonstrate that through not only picking up on the work we have done, but parallel studies that Alcoa has been doing over the last twelve to eighteen months as well.

Vince: How do you explain that there has been a change in the State Agreement Act, going from four million Tonnes to six Million Tonnes? How is that going to impact on this community?

Robert Atkins: I don't know the details of the State Agreement Act, all I know is what are the conditions that are in the Ministerial Statement.

Vince: My point is, that instead of going to 4.7, they are going to go to six (*million Tonnes*).

Robert Atkins: Which then, in terms of what they're allowed to go to, under the Environmental Protection Act, is the limits that are set in the conditions through the minister, through the EPA approval process. So you could have the State Agreement Act go to ten million Tonnes, if the Ministerial Statement only says four million or three million or whatever, then that's the limit, to go beyond that, they'd have to go through another EPA process, irrespective of what the State Agreement Act says.

Amanda: We've got a few more questions, we had Carol, Glen, this gentleman here, and here, I'm not sure who was first.

Terry: My question relates to something that was said a few seconds ago, so it will lose its impact. You said, provided Alcoa don't increase their impact on the community, is that correct or something like that? Say that bit again?

Robert Atkins: There's a commitment made by Alcoa, that's picked up in the Ministerial Statement, going from memory, there's no increase in impact.

Terry: No increase in impact: So as long as they keep the impact as it is, where it's affecting people's health, and irritating people, that's ok. They must not go to killing people otherwise you'll stop them from expanding, is that correct?

Robert Atkins: I wouldn't put that interpretation on it.

Terry: Well, what they're doing now is far and above what's tolerable for people, and you're saying: "Oh that's ok. Don't get any worse."?

Robert Atkins: I didn't say that. I'm quoting, I'm attempting to quote from memory what's in the Ministerial Statement. What we are dealing with here, in terms of the actions out of this, is the current refinery and the current refinery's operations, irrespective of what happens with the Wagerup Three expansion.

Terry: But shouldn't they be trying to reduce their emissions, which are obviously out of hand, rather than saying: "Oh, just hold them at that, don't get any worse"?

Robert Atkins: In terms of the findings of this work, the priority to that statement is yes. That there are low level emission sources, that we've got to reasonably identify and reduce.

Amanda: Carol, did you?

Carol: I can identify about eight people in this room who have MCS, and I don't know everybody that's here, right? So when you say it's below a certain level, I want to know,

when you're talking about this certain level, whether it's going to be alright for people. We're still stuck here, because there wasn't enough done that, when - I won't go into it - you all know those of us, I mean, if you could move away and you had money, you went, but, not everybody was able to go with the buy-out. So what I am saying is that with this, what, you seem to be satisfied that it's all down here, that's probably the thing that I taken most in from today, that the levels are down here as expected, so that's ok. Alright, well I can't live in my house. I spend five days a week in Perth. I'm out of my home, because I can't live there, it's intolerable. I guess what I'm saying is that, I think at least eight people in this room have MCS. I don't actually think that that is a rare disease, and that's not talking about whoever's outside here either. Are we sub-human, that it's ok, because it's down there and the rest of the population don't get it? There are quite a few people here with MCS and are we sub-human, that it doesn't apply to us? I hope I am getting across what I am trying to say, because that's the thing that has taken me today: It's that, it's ok, it's down here, but if you've got MCS, it's not ok, because we react to levels much lower than what you are talking about being something that you act on.

Robert Atkins: Can I say that, what we've said is that, the chemistry we've done, the chemicals are below recognised health standards. What I am also saying is that there are impacts on the community, linked back through this work, to low level emission sources in the refinery. We want those emission sources identified. We want to understand why they're impacting on the community and we want to know how those emission sources can be abated. So we are not saying that because the levels are down here it's all ok, because if we were saying that, we'd be packing up our toys and going home.

Carol: You don't know what the synergistic, stuff comes out the stack, and there's like two hundred or three hundred, I don't know what it is, different chemicals, you don't actually know how they all interact yet. That's on the borderline of science, and I take the comment that someone made about the guinea pig. You guys are really trying, and John, you are a hero. That's the way we feel about you, we do. But, I guess the point is, where is enough, enough? Can this go on for five years? We haven't got five years. We can't live in our homes now. And I don't know about everybody else, but those of us who've got some liver damage, we're not real happy about it. It sits in our bones, this stuff. There isn't anybody from the health department knocking on our doors, of people who have put submissions in, saying "How's your health?" The doctors over town don't even recognise our health issues, so we're in this horrible spot, where we're getting no quality of life. I do take your point, and I'm very glad to hear that out of your mouth Sir, that you do care, about the people who react at levels that are lower, but we're in a desperate situation, so that you understand, we've got no life. This rubber band is stretched as far as it can go.

Glen: Adding on to what Vic and Carol said... At the end of next month, I am going. I am losing between a hundred and a hundred and fifty thousand dollars to get out of here. I can't afford that, that's my superannuation. What am I going to do now, with no house, and no job? The question I am going to ask is: You do environmental reports that work out whether a certain industry is able to be there. The gas co-generation plant that is right in the middle of Alcoa: Why are the emissions from that treated separately to Alcoa, when it's right in the middle? With DEC's standards for co-generation power plants, this is from your own records; a fifteen megawatt gas generation power plant requires a three to five kilometre buffer zone. This plant is three hundred and fifty megawatts. At three kilometres you're at Johnson Road, five kilometres all this town - that's just for fifteen megawatts. This is smack bang in the middle of this big plume up there. Why do you treat it differently, why can't you - I mean it's there for Alcoa obviously, so why isn't it all put together into one environmental report for the whole plant? Why do you allow them to get away with it?

Alex: As an emissions source, apparently it's burning diesel, if you weren't aware of it.

Glen: I wasn't aware of that, that wasn't in the environmental report either, it was for a gas fired plant, there was nothing about diesel.

Robert Atkins: As I understand it is gas fired.

Alex: It's not, it's burning diesel.

Vince: You also get PM2.5 particulate matter coming out of the co-generation plant. 2.5 and less. That should be fully included in the one source.

Glen: If you take the co-generation plant all by itself, then you really have to turn all of Yarloop into a buffer zone, just based on the power plant alone, from your own regulations. Obviously we know that the scarp affects it, it creates an inversion layer, you've shown the unusual weather patterns, just purely on that co-generation plant, this town shouldn't be here, and Alcoa's worse than that, so it amazes me.

Robert Atkins: The emissions problem, the alumina refinery has a different emissions profile to the co-generation plant.

Glen: You've got one bad one, and another bad one, put two bad ones together and that's ok?

Alex: The co-generation plant is burning fuel oil currently right? Wagerup during the gas strike was burning fourteen litres a second of oil, forty thousand litres an hour, and that went on for six weeks I think, to give you some idea of the pollution.

John Sutton: I'll make an undertaking to get back to you. I can't answer you here regarding the buffer zone, but we can follow up and get back to you with an answer.

(Some dialog takes place regarding issuing of the license for the co-generation plant, that is difficult to make out).

Vic: That Wagerup (co-generation) plant, why was that allowed to start, without an established buffer zone? Why was it allowed to be built and it's running now, it's in use. Who's got the answers. I mean I went with various people here to Waroona, we sat for three hours discussing it with those people. They assured us that everything was in order etcetera, etcetera, and I think it was Mr Cockerham had the (???) about the particular buffer zone for that amount of electricity. They didn't even know it. They didn't know about buffer zones, is that correct?

Terry: That's correct, or they claimed not to know it.

Vic: Ah no, they didn't know, one man did.

Terry: Oh yes, one of their advisers knew, but the people at Alinta didn't know, so I stand corrected.

Vic: He stood there and said nothing. They expected us to know nothing. They assured us they would explain it to us, but I have heard nothing and it's up and running.

Robert Atkins: That's a process undertaken by the EPA, and um, we're not able to comment.

Howie: You've said that they've indicated that the southern part of the refinery was the source of the odour complaints, and John said if you could source the destination of the odour complaints, coming from a certain part of the refinery, you would endeavour to shut it down. So at the moment I gather you're endeavouring to shut the southern part of the refinery down, until the odour complaints are resolved.

Robert Atkins: No, that's not what he said. What John was saying was that, when you can identify the odour sources, you can shut the sources of the odour down, through better emission controls. We've identified using the LIDAR, the plume tracking back to those sources, as I think I said earlier on, the LIDAR identifies based on particle trails, where the

plume is going, it doesn't actually measure the chemistry, so what we don't know from all of those points in the southern part of the refinery, which ones are odour sources and which ones maybe just dust.

Howie: Once you know where they're coming from, will you shut down that part of the refinery?

Robert Atkins: We need to go into the refinery, validate that they're the sources – (*Howie interjects*)

Howie: Is that happening at the moment?

Robert Atkins: That will be happening following this meeting. This information has only just been released. We've only just completed the report. We've only just provided the report to Alcoa. The next part of the job is to go through that exercise.

Alex: Alcoa's got the report, so I'd say they'd be straight out there looking to see where the emissions problem is.

John Sutton: We would hope so.

Alex: I doubt it! I very much doubt it.

Howie: I've been told in the past I have to expect to smell the refinery occasionally. Is that going to be a thing of the future now? Because I don't think I should have to, expect to smell the refinery occasionally. I don't think I should ever smell the refinery.

Robert Atkins: It is very unlikely, that you're ever going to get to the situation where you can't smell something like that, in the same way that you can smell a diesel road train driving down the highway.

Howie: With the odour sources shut down, does that mean that I will only smell it occasionally, say once every two years, rather than on a regular basis like happened last year?

Alex: The odour smell is only a warning, it's what's with the odour, right, so if you can't smell it and the wind is blowing from the north, then there's a problem, right, a potential problem, which is why you need the buffer zone.

Kathy: That, that you've got up on the screen now, your response to research, that's up to date is it? I came in late sorry. So I'm interested in the dot points three and four: Understand the meteorology, because I've been having this kind of argument about which way the wind's blowing at my place, which is on the south side of the town site, to where it's blowing up on the hill. I am very pleased that everybody is now coming to an understanding that meteorological events, between the refinery and the town are quite different to what everyone's expectations were, and Alcoa is now accepting that, because Trevor himself knows that I don't like it when I get one of Alcoa's responses that says the wind up there was blowing south-south westerly, so the noise, odour whatever, that I'm being impacted with, can't be coming from the refinery, when I know it is, and other farmers in Waroona will agree with me. We all know how to watch weather patterns, air movement patterns, and we know where things are coming from. So, I want to know about that: "Expand Meteorological Network", what you mean by that, additional surface stations, measuring the winds at different heights, because that's something we were arguing about in the early days, before you started doing all the research. Are there going to be some stations further afield, as has been done with spot surveys, or permanent weather stations, is that going to be part of the recommendation? Or is it to be somewhere up there, which will still defeat the purpose, because what's happening on Tony's farm, or my farm, or Angie's farm will be totally different to what's actually happening meteorological wise up on the hill.

John Sutton: Dr Raine might answer that.

Kathy: That's one point, I have a second question that's an important one as well.

Robert Atkins: Ken might want to add to this, but the simple answer is that the current meteorological station that Alcoa uses, doesn't see the things that the stations that we set up to for the study see, so we want to move to a meteorological network that sees what our meteorological stations see.

Kathy: There was one in my orchard for a while. There were big differences, really big differences in half a kilometre, let alone four kilometres.

Robert Atkins: If you like a routine on-going monitoring network will be different to a research one, where you put stuff at different places at different times to understand what's going on. Once you understand what's going on, you can design an on-going long term monitoring network, using less than the bigger one you put around to tell you what's going on. And that's what we want. We want to get away from your complaint of smelling a wet cement smell, or whatever it is, and the weather station saying the wind's going in the opposite direction from you, when we know now that there's a cork-screwing effect moving over, and coming down. So does that answer your question?

Kathy: To a degree. I just wanted to know if your suggestion was to cover a greater area, so people on the flats, you know, I mean we've already acknowledged that our meteorological effects on the flats is different. I mean, just a short distance from one of our neighbours to mine, there's a twelve foot difference in ground level, this is on the flat. That in itself affects air movement at ground level, which can change what's happening in my orchard quite dramatically, or when I spray. I'm thinking about the small particles, whereas a lot of people probably don't understand. I find that that's good, if there's going to be more acknowledgement of that or better acknowledgement of people, when we do complain.

Robert Atkins: The details of how that's done, will need to be worked out, based on the work that we've done, the times that we've done.

John Sutton: And what we are trying to achieve. What we are trying to achieve is to find the sources and switch them off. The network's got to be set up to be able to do that. It's also got to be set up so that when Alcoa, or anyone else runs their models in the future, working on a broader area, that we've got the right data, at the right place, at the right time.

Vince: Just on that point, when there's a complaint made, you won't get the normal standard reply from Alcoa?

Robert Atkins: I hope not. I think the next dot point is probably where you were moving to, that's changing the complaint management response procedures, based on what we now know about behaviour of winds and plumes.

Kathy: That, that's what I wanted to ask about, because it's probably more Alcoa can answer it, but I want to know that if I ring up, I'm going to get treated in a more professional manner, because I've gotten to the point where the latest complaint I made, the bit about the response I received to it from DEC, that bugs me, is the copy of the response provided by Alcoa, received 23rd tenth – a couple of days ago, your department sent it out on the 20th tenth, it's in response to a complaint that was lodged on the 2nd April 2008, that's quite a long period of time. I do plenty of reports on all of these things, but it's just a standard response form, which says the wind was blowing this way, which at the time of the event, was east – south east, which therefore – previous times they would have said it couldn't have come from the refinery because the wind was blowing east south east, when it probably was north east, to north - north west. I have raised the issue before, and I think someone else has already brought it to your attention today and you already know anyway, but I think there should be more of a look, at what is coming off the RDAs,

because from my observations over the years, it has led me to believe that a lot of what I thought was coming from the refinery, was possibly more to do with evaporation, and then transportation by wind action, not necessarily minimal breezes, of evaporative matter.

John Sutton: Work in progress.

Kathy: Good, thank you.

Bob: Apart from all the chemicals that you've basically been working on, what about elements that have got their own atomic number? Like Boron for example, that's in the mix. How do you get to that? I know that there's an ex Alcoa worker, who got paid off for having Boron (???), and I know my bride did have it, whether she still has, I don't know, but they need to run tests. I also know that it's possible that if it's an element with its own number, that it stays in your body and it can't get any lower than it is, but it can get worse.

Robert Atkins: That's a health problem.

John Sutton: I know from memory past that Alcoa had contractors screened across a whole range of compounds, I'm not sure whether Boron was in that mix. There was a broader net thrown out earlier on because we had a look to see what we could see in the ambient environment, I can't comment obviously on the human environment. The screening process was done to see if there were any stand-out compounds and we are continuing to do that as well, as I said, we've been running Hivol machines, doing chemical analysis, that's work in progress.

Vic: This is all in relation to fall-out, fumes, call it what you like. It's always been a concern to me, especially with the increase in production, which is going to literally hammer the rail tracks running through this town. Even today, on a Friday night, when there's some really long trains going through, the whole of the railroad stinks, because they're pulling a big payload, sixty seven wagons. Actually it's forty times. Some go sixty. Those trains are not just one way, they've got to come back, so instead of twelve trains, we get twelve times four, which are dropping big lumps of pollution right through the middle of town. The trains park down here for half an hour sometimes, they don't shut off the engines, apart from the noise factor, they're discharging fumes, over a dense, residential area. They go along here, right through the middle of town. That should surely be considered, as a major pollution level, as well as all this high tech stuff. Will that be done, anything be considered about that, in relation to the rail being a polluter? It's not going to decrease, it's going to increase.

Robert Atkins: Yeah, unfortunately that's not part of this work and it's beyond the powers of the Department.

Vic: I realise that, but this is an issue I will raise every time, I won't let it go, because it's an issue, that's based upon Alcoa's production, they are the ones that are going to be the reason for it increasing tenfold.

Robert Atkins: Yeah, no you're right about that, but it's beyond our powers to deal with that.

Vic: I realise that, I just wanted to make the point.

Glen: My question is for the Department of Health, but just a comment on Kathy's talking about her response from DEC, Alcoa always says that everything was operating under normal operating conditions. If they're operating normally, and it's bad, turn it off. If that's normal, I'd hate to see what's abnormal. But anyway, on the Department of Health side of it, I believe from all that we've got going on here, we have worked out that, with the

meteorological effects, that we are being affected by Alcoa's emissions and some people are getting sick, it's got to be Alcoa. What are you doing about that directly to help people to leave town? To stop people getting sick? People here cannot afford to go without severe financial loss. I'm losing a hundred to a hundred and fifty thousand dollars, by the time I get out of here. The Health Department is there to protect the people – I believe that is one of the main purposes for it?

Lindsay Gillam: Yep.

Glen: Why aren't you here helping people who're getting sick? Why aren't you helping them get out of here, so they can get on with life? People like Vic, he's a brilliant fellow – I'm not sure how old you are Vic?

Vic: Sixty Four.

Glen: If he moves, he's going to be under a financial burden. Now talking about market values, talking about a willing buyer and a willing seller, that definition – there is no other buyer. If he goes somewhere else, he's got to pay stamp duty, real estate fees, who's going to pay for it? On my place, if I wanted to relocate to Harvey, I could get half the size of block of land, and a dodgy house, with what I could get for this place. At least I've still got another twenty years work in me I hope, but people in Vic's situation, retired people, they can't do it. So what are you going to do, to help these people relocate? And I believe it should be at no financial loss for these people.

Amanda: Glen, I think we acknowledge that people are suffering and going through some pain, but a lot of these questions are beyond, they are for our politicians to address, and we can't do that in this space.

Glen: We don't see you people very often, and I'd just like to know, what they are going to do! What are they going to do?

Tony: Glen! They can't do anything.

Glen: Well tell us you can't do anything.

Tony: They can't do anything, because this document has been signed by the Premier of Western Australia, and already the bloody thing – the Harvey – Waroona index will not apply, in determining the fair market price, of the eligible properties, to be sold and purchased through the SPPP. Alan Carpenter, gave Alcoa, the right – (*Glen interjects*).

Glen: I want to hear it from these people's lips, that they can't do anything, in front of all of us, and things like you'll go back to the Minister, say "There are problems. We need to help these people out." and keep pushing them to try and help. That's what I want to hear. I don't want to hear "I can't do anything", sit there, because of whatever.

Lindsay Gillam: Thanks for that. Look, the answer probably lies somewhere between what Tony's been saying and what you've been saying. The fact of the matter is that the Health Department doesn't have some sort of magic wand so it can move people out. The Government will say that it has obligations to Alcoa, however limited you think they should be, that's our obligation to the community and we accept all of those as well. What you're asking me is: Am I going to go back and inform the Minister? Yes of course we will do that. We will write a very strong briefing note saying: "This is what's happened. We've got the same issues. There doesn't seem to have been a lot of resolution of those issues in the years since, I think 2004", when the Minister was last down here, there were three

Ministers here. A change of Government might bring a change of opinion, look I don't know. You asked me will I tell the Minister, the answer is a very resounding "Yes".

Glen: Will you keep telling the minister - *(a number of people speak at once)* people are getting sick, we've got to look after them.

Vince: This briefing note, that you're going to write, can we get a copy of it?

Lindsay Gillam: Look I don't mind Vince, but you're asking about a political process. I'll send it up to the Minister, you ask the Minister for a copy of it. Lindsay Gillam leaking something to Vince Puccio in the community, means a very short life for Lindsay Gillam.

Vince: We'd like to see that it gets done.

Lindsay Gillam: Those are political processes. I don't have a problem. We don't come down here and write some secretive sort of memo back to the Government, which says: "Gosh there's no problem" or "We haven't got an issue" or "Everything went hunky dory", we don't write those sort of, but, but, I, we, will tell him how it is. What happens after that, Bob's made the point and others have made the point, it's a political process, and that's out of my hands.

Tony: It will go up from you. Somebody rubs this bit out. Somebody else goes up and rubs another bit out. When it gets to the Minister: No worries mate, yep, that's good.

Lindsay Gillam: I don't think that's true. Look. If you don't believe me now, you'll never believe me, but that's not been the case in the past mate. We write very thorough briefing notes to the Government. The Government will say: "We are looking at an issue that's a lot wider than just a few people". There was never more eloquent, I think Terry brought it up, what the Medical Practitioners' Forum said, and D'Arcy Holman gave a very eloquent response to the Ministers when he said: "This is a whole of Government thing and the Government needs to decide what's in the best interests of Western Australia". I'm not defending any Government, I'm not defending D'Arcy Holman, I'm simply saying, decisions will be made under those, and that's out of the hands of Robert Atkins, or Lindsay Gillam or anyone.

Tony: Lindsay, did the Health Department have any input, obviously they would have had, when Alcoa applied for expansion, they threw it out in the open, to anybody who wanted to oppose it, we all had our own submissions, or whatever. We had people come to our home, listen to what we had to say, wrote it all down. Gee I can't understand why Alcoa hasn't done this. I can't believe why Alcoa hasn't done that. That's what you're here for mate, write it all down. They wrote a report, it went back, the big announcement was made, there were guidelines, deadlines, whatever, it was one big pack of cards, which the Health Department must surely have contributed to.

Lindsay Gillam: Yep.

Tony: That pack of cards, has got Alcoa written all over it. It's all stacked to work out with Alcoa.

Carol: They did do a submission saying, against the refinery.

Lindsay Gillam: *(to Carol)* You can help me with that.

Tony: So all the work, all the research and everything that you people do, it goes to Government. They don't do what you, tell the Parliament to say. What do you do? Do

you just go home, open up another can of beer and say, oh well, another hard day's work, they don't want to listen anyway?

Robert Atkins: That's the Westminster system, that's the Government. Can I say – (*Glen interjects*).

Glen: The more mud you throw at the wall, some will stick. So if you keep throwing mud, eventually someone's going to say, hey, maybe there is a problem, so what we are asking you is to push it.

Tony: Lindsay, are you aware, are you aware? Alcoa has spent over a hundred million dollars buying land, and the Deed says, relocate anybody out of the area. Are you aware that Alcoa has actually bought land off some people in Harvey, and replaced it with land in Cookernup? There's three cases, three cases, three cases, where Alcoa has bought land further out, as far as Harvey for God's sake, and brought them back closer to the industry, closer to the refinery. Are you aware of that? The Deed clearly says: To assist people to move out of the area.

Amanda: May I suggest, Tony, the gentleman here has a point to make, then I think we're actually getting to the point where we're not actually getting any value from this Forum, and we're going to be here, the officers will stay here, if you'd like to continue any discussions one-on-one. Please do, stay and have some tea and coffee, but after this gentleman's comment, we really do need to wind it up, and thank you for coming, please hear this gentleman, then we'll wind up.

Kingsley: Lindsay, my comments are addressed to you. If you're going to be writing a briefing for the Minister, in case you're not aware, our understanding is that there was a motion put in Parliament, for the SPPP process to be looked at –

Lindsay Gillam: For the what Kingsley?

Kingsley: The Supplementary Property Purchase Program, to be looked at, to be investigated, because there were a lot of complaints and a lot of anomalies happening, I can't remember the actual day, but it's on record in Hansard. That motion got dismissed, because the Parliament was informed, that the SPPP program was successful, that people were happy, and everything was going smoothly, which is clearly not the case.

Tony: Kingsley, the Minister that moved that, was Robyn McSweeney from Albany. It sat on the table for nearly twelve months – ten months. She voted against her own motion. Has this ever been heard of in the history of politics? She was told to go home, shut up and do what she was told. Robyn Mcsweeney voted against her own motion!

Kingsley: The point I am making Lindsay, is that you have an opportunity here, to ensure that Parliament is properly informed of what the true situation is.

Lindsay Gillam: Well. Yeah, yeah Kingsley, I told you, I don't talk crap. I'll tell you seriously, I don't know if I can do that. I don't know if I can do that, because the Health Department had no involvement and has no say over the SPPP program. I can put it into the briefing note and say that were some of the concerns that were raised, over the SPPP program, but they'll need to be referred back to the appropriate agency. I don't comment on air monitoring issues like, and DEC doesn't comment on health issues. I won't get involved, I can't get involved in the issues of another Government department.

Kingsley: I'm simply saying that you have an opportunity, not to comment, not to make recommendations, but to report what you have seen today.

Lindsay Gillam: Yeah. And I think there is a very good overview there on the board, of all the issues that have been raised, and that will be one of them, including buffer zones and a whole wide range of other things. So if you are asking me if I will put it in the briefing note, yes. If you're asking me can I sway, the answer is probably no.

Amanda: Thank you Lindsay.

Robert Atkins: That's probably a good point for me to grab the moment and make some closing comments, cos I think we are starting to go around in circles, and we're also getting into the political realm that is beyond our remit to comment on.

The fact that this presentation today, and the release of these reports, comes so soon after a new Government has been sworn in, we've got new ministers, has certainly captured the attention of the Government, and particularly my Minister, who's new to the portfolio, Donna Faragher, and I can tell you that John and I did I think three hours of briefings, to her personally, and to Senior ministerial policy staff, from the Minister for Mines, the Premier's Department, and the Minister for Health's office. Unfortunately those Ministers didn't come to the briefing even though they were invited, however, their senior staff and policy advisors were there. Certainly, and my Minister has given the Premier, I think it was on Thursday afternoon, a personal briefing on all of this. So I am quite confident that the senior Ministers in Government are aware of the findings, and aware of where we're going with this. My Minister has asked me, or asked the Department through me, to report to her in three months time on progress with all this and where we are going to with Alcoa, which is something ministers don't normally do. So that demonstrates to me, the interest that she's taken in this. Hear your comment about our job of keeping Ministers informed, we certainly will do that, and we will certainly be talking to the senior officials of the I guess what's now the Department of Mines, whatever DIOR is turning into, because we do have a group that has myself, Lindsay and some of his colleagues from Health and Mines Department, on a group that looks at Alcoa issues and issues in other industries around the state as well.

So I'll just close by saying that certainly today is very much in the minds of several ministers, they all know about it, the Premier knows about it, and I am quite sure that we will be using this information here to provide a feedback briefing on what happened here this afternoon.

While I'm still breathing, I'll say to you, thank you very much for coming this afternoon, for your time. Thank you for your frank and honest feedback, keeping calm, not getting angry. A bit of passion is good, it makes people like me listen. I certainly won't go to sleep while you're on your feet Vince, and that's good, and I respect the fact that nobody lost their cool, and we all remained civil and have hopefully from your point of view, certainly from my point of view, a very useful afternoon in terms of getting your reaction to the work that we are doing. So thank you very much on my behalf, and on behalf of my Department and colleagues.

This typewritten record was prepared from a video recording of the meeting.

The items in italics have been added to inform the reader where deemed appropriate.

Question marks in braces identify where words were unable to be identified from the video recording.

The acoustics in the Yarloop Hall were not ideal for the audio recording on the day, so there is a possibility that an occasional word may have been misinterpreted in the transcription process, however, as far as possible this is an honest, verbatim transcription of what was said at the meeting.

Kingsley Dyson, 14th December 2008
