**Correnso (CEPA) / Slevin Underground Project Area (SUPA) Community Meeting**

**Friday 24 March 2017**

The following is a record of the Correnso/SUPA community meeting held at 2.30pm on 24 March 2017. Where possible, we have tried to capture individual contributions at the meeting but these do not purport to be verbatim notes. Tim welcomed everyone and introduced himself as the independent facilitator of the community engagement meetings. As always the meeting is being recorded and a link to the recording of the meeting will be provided so that those who want to can listen to the actual discussion at the meeting. Minutes of the meeting are prepared by Tim and Louise (independent secretary), emailed out to attendees and are also available from the i-Site, the Gold Discovery Centre, HDC Service Centre at the Library, and Oceana Gold office.

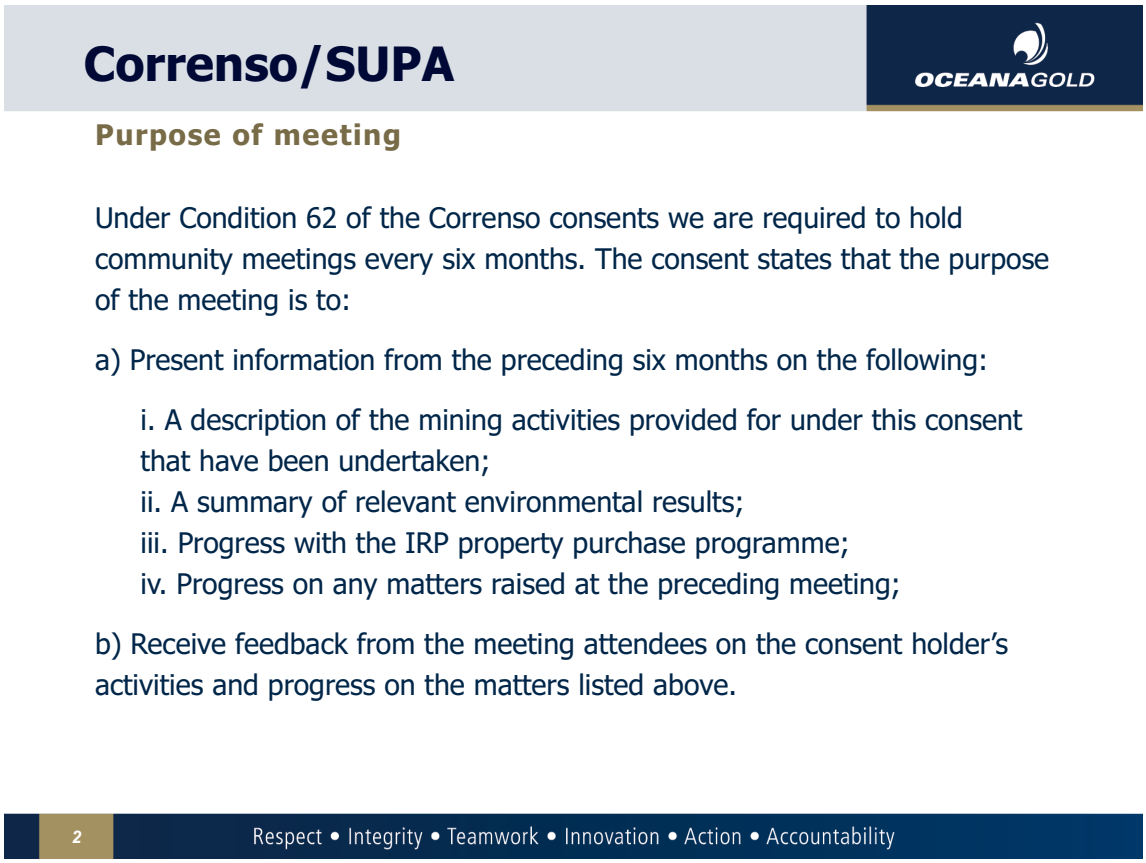
Tim reminded those present that this is the first combined meeting for the CEPA and SUPA consent requirements and that the purpose of these meetings is to hear Oceana's updates on progress, to ask questions and raise any issues that you have so that these can be taken away and addressed and taken into consideration as the company works forward in a way that acknowledges and respects the people that are affected by the mining.

**Introductions and Apologies**

Those present were asked to introduce themselves. Those present were: Helga and Eric Schmidt, Sheena Gardiner (here to listen as her son is looking at buying a property), Max McLean, Jeannine Wiki (Oceana), Danielle Crawford (Oceana), Graham Wilkinson, Mark Burroughs (standing in for Kerry at Oceana), Donna Fisher (Oceana), Mark Buttimore (Hauraki District Council – HDC), Phil Salmon (Oceana), David Carrington, Dianne and Alan Purvis, Vivienne Pickford (lives on this side of Waihi, her first meeting), Sue Moore (Professionals Real Estate), Peter Sherman (Professionals Real Estate), Eric Rhodes (east side of Waihi), Bev Ireland, Nancy McGuire.

The following apologies were tendered: Clive Hallam, Maggie Wilkinson and Kerry Watson.

**Project Overview**



# Correnso/SUPA

OCEANAGOLD

## Outline

- **PROJECT**

  Martha | Correnso | Near mine exploration

- **SOCIAL/COMMUNITY**

  Communication | AEP | IRP | SIMP

- **ENVIRONMENT**

  Dewatering & Settlement management | Vibration management



Kit said: As usual this is why we're here, under the consent conditions that's the stuff we have to talk with you about – mining activities, environment results (which is what Mark will do), report on progress of IRP, progress on any other matters and receive and discuss feedback. We have these meetings every 6 months. Today we will work through some information about the project, Martha, Correnso and near mine exploration. Also I will talk about comms, AEP, IRP and SIMP and then hand over to Mark.

# Correnso/SUPA

OCEANAGOLD

## Martha open pit, North Wall

- Working to get as much done as possible during 'construction season'
- Work involves drilling, blasting, carting, stockpiling
- Activities covered by Martha consent conditions
- These cover noise, dust, vibration, hours of work

**Martha Open Pit – North Wall**

Kit said: It is just after 2.40pm and at 2.30pm we had a blast on the North Wall. The blasts that we're having on the North Wall are because we are taking weight off the top of the North Wall. We are doing that for two reasons. One, because the more weight we take off the top the less likely we are to have more material fall, and every time we have a big rain we are getting more bits and pieces dribble down. The technical mining term is "frittering", they talk about "material frittering off the wall". The other reason we're taking the weight off there is because we wanted to get down to the underlying rock, which would then allow us to put drills up there, drill into the rock and then start blasting and figure out what on earth is happening in this area here.

The blasts that we are doing there are remarkably small, they're really tiny to remain within consent conditions. That leads to a problem for us in that sometimes we aren't getting the rock fragmentation that we would like. This just means that some of the rocks turn out to be quite big so we're working on that. But we are continuing to work there. The work we are doing there is under the resource consent for Martha – the same conditions regarding noise, dust, vibration levels and hours of work. Because we are working right at the top of the North Wall here rather than down in the pit that means we have to be even more careful.

I think I may have mentioned it last time, but we've actually been successful in talking to Work Safe and getting the reversing beepers taken off the trucks because that is the biggest noise. Instead we've been able to disconnect the beepers and use a "spotter". We use the beepers elsewhere but not on the North Wall.

Donna said: And we used a light system at the mill because it was dark, so when the loaders reversed the light flashed.

Kit said: So we'll keep going here (removing the overburden off the top of the North Wall) as long as we can. That (vacant) house (in the photo on the PowerPoint slide) does look precarious sitting there like that and it is getting a bit close there. We're blasting and digging here, some of the material is going down to a stockpile and some of the material is going this way and we're dumping it over here (pointing on PowerPoint). Team, have we started the conveyor up to move stuff across?

Mark Burroughs said: That is the plan, we're not allowed to truck it.

Kit said: So that means the conveyer will start again at some stage in the not too distant future, taking material over to the development site, but it wouldn't be continuous in the way it was when we were actively mining down the bottom.

Tim said: Did that blast at 2.30pm happen?

Later in the meeting Donna said: We did blast at Martha at 2.30pm, the blast was 1.17mm/s.

Tim asked: Did anybody feel it? [Nobody at the meeting felt it.]

Eric Schmidt asked: How much rock is down in the hole?

Kit said: My understanding is about 2.5 million cubic metres of rock, that's our best estimate. Here's some maths for you – before the slip happened on 26 April 2016 we knew we had 75,000 ounces of gold in the bottom of the pit. We know that because we've drilled it and we know it's there. 75,000 ounces of gold at say NZ$1,900, or for ease of mathematics NZ$2,000, is $150 million worth of gold at the bottom of the pit that we know is there. Now what you've got to figure out is 2.5 million cubic metres of rock, how much would it cost to get that out, even assuming that you could, because we can't put a haul road in where we are now because we can't go wide enough, so the haul road's totally gone and we can't find a way of getting a haul road in there at the present time, we can't get down there.

Eric Schmidt said: Go underground, from SUPA in, and then you are in.

Kit said: It might be that that's the way we do it but right now we're still figuring it out. There's enough ore from Correnso to keep us busy although it's not keeping us going 24 hours a day all the time. It is going to have to be done carefully, we're going to have to seriously figure out what we're doing. It's not an easy one to fix but we'll see how we go. The other thing is that come winter when the construction season ends, the North Wall is going to be ridiculously difficult to work on too, so we're doing as much as we can now. Phil you're quite happy that that's happening because you've got more Ed Centre people looking over and there's

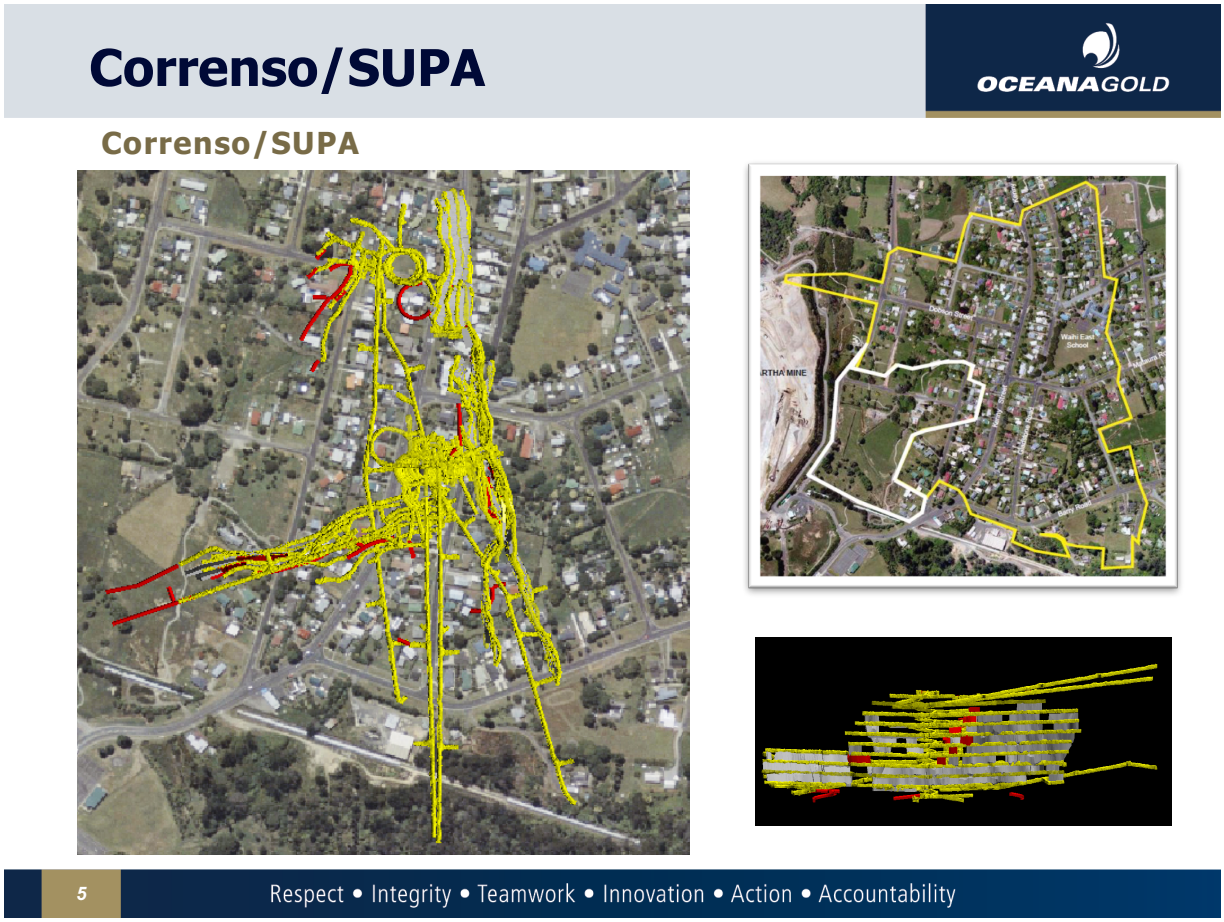
actually trucks there and we look like we're doing something which is good because our Ed Centre numbers had dropped.

David said: That looks quite greasy that (North Wall) formation. Is there any likelihood of that breaking out again and going back further?

Kit said: Bear in mind I'm not a geologist, and I'm not sure if I explained this to you last time, but this is how it was explained to me. We've got one layer of rock and then on top of that we've got the carbon sheer which is made up of million year old forest which was compressed and on top of that we've got another layer of rock. So two layers of rock with a 1mm thick layer of carbonaceous stuff and squashed forest in between and that's your slip face. So this layer here (the bottom one on the photo – see the PowerPoint slide above) to the very best of our knowledge based on all the work we've done, is competent ground. The bit that fell was because of the carbon sheer. The big question is, is that the only one that's there? Because it's only 1mm thick, when we drill and get the core out it will be hard to see a fraction of a millimetre of it.

David said: That was the reason for my question, I wondered whether or not you have done any test drilling and know what's behind there?

Kit said: That's my understanding of why we're doing the work up there, because it will take weight off the top and also then we'll be able to drill to make sure we know what we're doing. We can't drill through the soil and the clay because we need to get something reasonable there. Everything they've got is telling them that this is competent but when this bit went of course bits go around the outside. I think last time I gave you the example of if you were making a pie with pastry, the (lip of the) pastry will hold until you take one little bit out of it and then the whole thing starts to fall. That's what happened over here in the east and also over here in the west. But this is competent ground and this over here is competent ground. It's that elliptical piece in the middle that's still causing us grief.




**Correnso/SUPA**

Kit said: There's not much I can tell you about Correnso and SUPA other than what you're getting from the maps in the Eastender. This (above) is the map that we handed out in March and my apologies for the delay in that – it was due out on the first Friday of March but the photocopier broke down and we couldn't

photocopy until the Monday which means you probably didn't get it until Tuesday. All we are doing is making sure you understand where the boundaries are, and we're giving you the map like this (showing progress on the development). And, as you know, several months ago we also started showing where the backfill is going in so you can see where things are. My question for you is, "Are you still getting enough information about this?" This is the information that I get given from the geologist and I just pick up those photos and drop them in the Eastender. I'm not sure that we can provide you with more but is that still useful for you?

[There was general consensus that it is.]

Kit said: By consent condition we have to provide the current information and I think it's great that we have to tell you what we're doing. The other map, that I haven't got on there, is the one that clearly shows the section boundaries, so that you know exactly what and where.

You can see the work that we're doing in SUPA out here.

Tim said: Have you started? What stage are you at in SUPA?

Kit said: Yes. Given that we're only there between 6 to 9 months we must be almost half way through. The day that the SUPA consent condition came through we were literally right at the edge waiting to go.

Tim said: So are people noticing a difference? Is anybody living in that corner of the east?

[There was general consensus that people are not noticing a difference.]

Graham said: There's a difference we're noticing – we're hearing a lot more blasts down the west, down this end, than we were previously.

Tim said: Hearing as opposed to feeling?

Graham said: You do feel them to a certain degree but we're hearing them more than feeling them.

Kit said: One of the things that we've tried to communicate, and we probably haven't done it particularly well, is that on any given day we could be working in the north and the south and the west and over here and when we blast it doesn't just mean one blast in one place. It could be that we blast in several places. Also it could be that the type of blasts we do are different. It could be that we're blasting here and doing one thing and then we could be over here or doing the floor strip, which we know has a slightly different blast signature and also gives a different vibration signature. When I come to AEP I'll explain a little bit about what that means, but yes it is different depending on how deep we are and how far away we are from where you are. It will continue to be different bearing in mind that if we were working in one place the blast vibration will be very different on the surface compared to the vibration from another.

Eric Schmidt said: Sometimes the music starts and there is no blast.

Kit said: That was in the last minutes too and I read the minutes before we came. Do you know what time of the day that's happening?

Eric Schmidt said: Mid-day.

Kit said: If it is happening at midday, that 1-2pm time, then we are blasting. We had this conversation before.

Eric Schmidt said: No.

Tim said: So Eric you don't think it's happening and you don't feel it?

Eric Schmidt said: No, I know on the internet, on your blasting sheet, nothing is happening. The music was playing so it should blast and then you sit and wait and nothing. Half an hour later you go on the computer and there is nothing.

Tim said: Eric, how many times has that happened?

Eric Schmidt said: One or two.

Kit said: So when you say you go on the internet, do you mean that you're looking at the blast vibration monitors and not picking anything up?

Eric Schmidt said: Yes because there is no number.

Kit said: I talked to Russell about that and the only thing he could think of was ants. Russell thinks there's ants in the machine. That's the only thing we can think of. We have had ants' nests in some of the machinery. For the blast vibration monitor to go off someone has to stand at the portal and physically press a button, that's the only way it can go off, unless there's an extraneous signal from somewhere else.

Eric Schmidt said: It is also on the website that you would blast, only there's no blast.

Tim said: Can I clarify Kit, when you're saying that there might be an interruption do you mean there is actually a blast and the ants have interfered?

Kit said: No the reverse. I can quite happily accept that we blast and you don't feel it, that just means we've had a good day, that we've actually blasted and you haven't felt it. We did have one where the music played at something like 9am which was weird, and we knew we hadn't blasted, and all we could think of was that we had ants in the system and that was something Russell was looking at. Eric can you talk to me afterwards and I will provide that information to Russell?

*<u>After meeting answer</u>*
*In response to Eric's question from the September 2016 and March 2017 meetings about the difference in readings between vibration monitors. The apparent disparity between monitors was the topic of considerable discussion at the vibration workshop in November. Which monitors are triggered during a blasting event depends on numerous factors (including: proximity to a blast, relationship to multiple blasts within one event, charge weights, geology, water levels, blasting methodology). Two key factors in this list (proximity to a blast and charge weights) are probably the most influential reasons behind the considered disparity between monitors. Main South was much closer (proximity) to the larger production blasts (higher charge weights); by comparison, only smaller development blasts were near Secondary Southwest.*

Max said: How soon is the blast information put on the website?

Jeannine said: It depends, it could be five minutes or it could be half an hour or it could be two days.

Kit said: It really does vary for a number of reasons. And I'm now going to explain to you the reason that Russell explained to me and this will be as simple as the geology. When the blast vibration monitor records a blast it has a modem as part of the system and it immediately rings in to central control. If three or four of the blast vibration monitors all ring in at the same time it gets an engaged signal and so it waits and rings back later on. If we blast here and these two vibration monitors go off and a Kenworth truck goes past that one over there and someone's horse does something dumb over there and we've got four happening all at once, sometimes the blast vibration monitor which has picked up the blast doesn't get to ring in for five minutes, it might take longer than that, but it does get there. This means that whether it's five minutes or half an hour it will still get there. So you see the problem? We've suddenly got four sets of data there – Kenworth truck, horse and two blasts and that becomes the issue.

Tim said: Is it fair to say that in half an hour all the information should be in?

Jeannine said: Sometimes.

Kit said: Yes all things being fair and equal within half an hour all the information should be in. But we've had times where it has been longer than that.

Eric Rhodes said: We're getting more vibration and noise from the blasts now than we got out of the pit but that's only because of the formation of the ground isn't it? Because the blast can travel through the ground at a different rate.

Kit said: Eric if the ground was all the same and there were no faults in it and the geology and rock were exactly the same we would only need one blast vibration monitor, because it would record everything that we needed it to. But the reality of any geology is that the ground isn't the same, it's made up of different types of rock, within those types of rock there are different densities, within that there are fractures, faults and folds in the rock, then add to that in some areas there are water channels and there are layers of water which means that in the same way that when you look through air into water you get that refraction, the sound does exactly the same thing. What the blast vibration monitors are doing in those areas, and Mark will show you that later on, is trying to get the average of all those things. Because the ground is so variable what we're trying to do is get that average and get to the stage where we have an understanding of what we're doing.

Eric Rhodes said: I agree, I worked in the quarry up in Auckland and when they set off the blast it wouldn't affect people who were fairly close, but you'd get complaints from people further over. It depends on the ground formation.

Graham said: The one other thing you overlook is the amount of explosive being laid in the charge.

Kit said: Yes and the depth, but bearing in mind that what we're trying to do is get maximum rock fragmentation of the area determined with the minimum amount of vibration because we have to meet that 95$^{th}$ percentile which we'll talk about later on, as in we don't deliberately set out to create vibration, we'd prefer we didn't. If we aren't careful (though) we end up with things like rocks that are too big to fit on trucks, or the one that's a real curse is we end up with a thing called a bridge which means that we end up with rock that hasn't gone at all but we've got a gap between here and there and there's a bridge of rock over here. So we are trying to get the maximum fragmentation with minimum vibration on the surface. Have we talked about decking? [Yes] And floor strips have a totally different blast signature.

So we'll keep doing Eastenders. When some people did the survey that Phoenix did one of the responses was that "the stuff in the Eastender is too generic and they never tell us stuff". I try not to take things to heart but I took that one to heart, as in it was only one person saying that. But if you think I'm writing stuff in the Eastender that's just fluffy stuff and you don't want to know then tell me and I'll change it. If you want the really technical stuff tell me and I'll give it to you but I won't pretend to understand it. What I'm trying to give you is the stuff that I think you might be interested in, bearing in mind that under the consent conditions this is what we have to give you, and we just thought we'd add the other stuff. So if you don't want it let me know. I'm trying to give you stuff that I think you might be interested in on a month by month basis.

Tim asked: Are people happy with the way things are described? Does it make sense and is it clear?

[The general consensus was “yes”.]

Helga Schmidt said: Should I tell Jeannine we didn’t get the Eastender last month or this month?

Kit said: Yes – Jeannine we’ve got a problem.

Jeannine said: Is that two months in a row now?

Helga Schmidt said: Yes and I think Ferg and Sandra our neighbours also didn’t get it. I don’t know about other neighbours.

Jeannine said: I will sort that out.


**Near Mine Exploration**

Kit said: When we were Newmont, the previous owners 18 months ago, we were getting ready to shut down. If we were still Newmont today, the open pit would have been shut and we’d be moving into rehab and we’d have 6, or maybe 8, months of work left, maybe a fraction more, and then we’d been shutting down Correnso. We were bought by Oceana Gold and they have bought this operation to keep it running not shut it down. The example I can give you is, when we were Newmont, at the end we had just a few geologists and now we’ve got about 30 and they are getting remarkably busy. Last year we did 35,000 metres of surface and underground exploration drilling, as in, we are looking everywhere. The person who’s looking the hardest is our manager Bernie O’Learie who has a drill rig in his back yard in Martha Street. He’s had a rig there for over a year now. It’s called “living the job”, so he works on site and when he goes home he pulls a shift on the rig or at least goes out and sees how they’re doing [laughter]. Right now we’ve got three underground rigs and five surface rigs. We prefer underground rigs for several reasons – it doesn’t matter what the weather is but more importantly it doesn’t matter how noisy they are because they’re underground. With surface rigs you’ve got to be careful. Donna didn’t you have to shut one down the other day?

Donna said: Yes.

Kit said: And that’s because at night time, on autumn nights, it stays nice and calm, we’ve got a rig that’s 50-55db or whatever and people are sitting out on their deck at night and they can hear it and so it gets shut down. What you need to know is this – we are investigating deeper and broader extensions of known veins.

In other words you know where we are at Correnso, you know where we are at SUPA, you know where we've been at Favona, you know where we've been at Trio and you know where we've been at Martha. We're looking in all of those areas, every one of those. There will be a rig there some time this year having a good look around. Recently we had a rig just up here on the North Wall. We will be continuing to look. We've got significant funding from Oceana Gold Corporate to keep on looking so you will see rigs and you will see them busy and they will be busy for quite some time yet.

That picture on the PowerPoint slide is a close-up of the core and according to Lawrence that's a really good piece of core. So there's the gold there, this stuff. When you get gold in core, the good stuff, it turns up as little black bands.

Nancy said: How much longer will Correnso go?

Kit said: Right now, and guys correct me if I'm wrong, but it's mid-2019. That's when the ore that we've got now will run out, and I may be a couple of months out it might be Q2, it might be Q119 or it might be Q3.

Nancy said: So if you find something by going deeper and broader within Correnso will you apply for an extension?

Kit said: Yes and already we're starting to look deeper. When we were Newmont we stopped at this level, and already we're seriously looking at how much deeper we can go. We've just spent a lot of money on more dewatering pumps because we've gone as low as we can go, so as well as outwards we're also looking downwards.

Tim said: When does the consent finish?

Mark Buttimore said: Both the Correnso and the SUPA consents expire on 20 December 2025.

Tim said: So Nancy, your question was partly about whether they have to apply for another consent?

Nancy said: So you wouldn't have to apply for an extension until past 2025?

Kit said: Correct, but we do have to apply for a consent if we go deeper because the consent we've got says you can go to a specific depth. If we went lower than that we'd be back into consenting again, in the same way if we went wider than the SUPA/Correnso boundary that's there now.

Nancy said: Would that mean a whole hearing?

Kit said: Yes indeed. If (the mining) is within the Correnso boundary to a certain depth, I think it's 780RL, we can mine, but beyond that would be the consenting process again.

Graham said: Would that be a notifiable consent if you went deeper?

Kit said: Would it be notifiable Mark?

Mark Buttimore said: I can't answer that, it would be a Regional Council consent, it's not one that we do.

Kit said: The reason I'm puckering my brow and looking confused is because we had the SUPA one which was on land that we owned therefore we did that non-notified which caused a bit of consternation, because we owned that. What I don't know is if we go deeper in an area that we're already at, whether that is notified or non-notified.

*After meeting answer*
*Our current consent condition at Correnso allows us to dewater to 700RL. This dewatering and mining to this depth was considered and provided for in the Correnso consent conditions. Dewatering and mining below this depth would require new consent conditions. The decision to treat these applications as notified or non-notified is made by the Waikato Regional Council and the Hauraki District Council.*

Kit said: The key take-away from this is we're still looking.

# Correnso/SUPA

OCEANAGOLD

## Communication/Events

### Meeting time
- At September meeting we agreed to canvas the community re meeting times
- Published in October *East Ender*
- No responses

### Transport
- Need help getting to these meetings?
- No responses

### Audio Files
- Download instead of CD

**SUPA meeting** 21 November. 3 people attended

**Blast Vibration Workshop** 21 November. 18 people attended

**Mining Licence 32 2388** proposal to vary conditions (this is Martha, not Correnso)



**Communication / Events**

Kit said: Remember at the last meeting we talked about the fact that when these meetings started we used to have them every 3 months because in the first year the consent conditions required us to. Then we moved them out to 6 months and the first meetings we had down in the hall – there were lots of people there and then slowly just you hardy people turned up. We talked about there being not much point in having two meetings because when we have two meetings we get 14 people at one and three or four at another. There was a discussion about whether it should be an afternoon meeting or an evening meeting. In the last minutes the suggestion was that maybe this one should be afternoon and the September one should be 5.30pm. You're the people that turn up, but when I put it in the Eastender and asked for a response I got nothing from anybody. So have a think about what you want – if you want them to keep happening at 2.30pm on whatever day. The reason we had it today was because it was the only day this week that Phil didn't have a school in this room at the Education Centre. In September we'll find a day that there isn't a school and we'll do the same thing. But if you want it at 5.30pm that's fine, it doesn't matter, it's nothing to us, it's just we don't really want to do two when all we end up doing is splitting the audience of exactly the same people who would have turned up. If you've got an opinion on that now let me know.

Eric Rhodes said: Is it worth having your staff stay later in the day if you only get two or three people turn up?

Kit said: We have to have a meeting and we're more than happy to have a meeting, it's important that we do. It just seems a bit strange having everybody here at 5.30pm for three people. If you're saying you prefer not the 2.30pm and we should have a 5.30pm and we should alternate it that's fine, that's no problem at all, if that's what you'd like to do.

Graham said: What time can you get the audio out?

Kit said: I could have that within 48 hours. That's the other thing I want to talk about, that's no problem at all.

Tim said: Can I just run through a decision-making process? Has 2.30pm today worked? Are there people who aren't here because of the timing of the meeting?

Nancy said: I know that some people have children and this is a terrible time for anybody who's got to pick up their kids at 3pm. Maybe an afternoon meeting, but at 2pm, or 1.30pm.

Tim said: That's a good idea. Any other suggestions?

Bev said: It doesn't work for me because I work at the college.

Kit said: What if we split it and went 4pm, by then people who've got kids are at home and you guys look like most of you're in the grandparent territory. No offence, I am too.

Graham said: Generally if you have children you're at home with them, unless they've got a babysitter they'd have to look after them in any case. There's no easy answer.

Kit said: What was your thought on getting the audio out quickly?

Graham said: If anyone can't make it if you could get it to them pretty quickly.

Kit said: We can.

Tim said: The only trick with that is being able to answer people's questions if they are not here to ask them.

Kit said: We probably wouldn't get the answers to the questions within 48 hours because sometimes the questions have to be answered by technical specialists that we can't always get to as quickly.

Graham said: So anyone can contact you with a question?

Kit said: Yes and that's the other thing. Don't wait for 6 months to ask us a question. If you've got something that's burning your brain, as in what are they doing and why, then come and talk to us. That's what we're there for. Don't just sit there for 6 months and wait – please ask.

Donna said: Just ring the 0800 number.

Tim said: And they'll end up talking with you?

Donna said: Yes.

Tim said: Great. And Bev you were saying that you couldn't make it until after school finished. Are there other people in that situation as well do you think, that would come?

Bev said: Possibly.

Tim said: It's hard to know. Is there a particular day of the week that would be better?

Bev said: I don't work Wednesdays at the moment but then that could change.

Tim said: Right okay. And we notify the dates of the meetings quite a long way in advance.

Kit said: About a month in advance.

Tim said: I get the sense that it would be better not to have it either side of school finishing, sort of what we've done today is crossed over, so before school finishes or after school's finished would probably make it easier for people.

Donna said: Should we just have it in the evening then?

Kit said: I get the feeling we're going to be "darned if we do and darned if we don't". What I'm going to suggest is how about 1pm in September, whatever the date is, and that way you will have had your lunch.

Tim said: So 1pm in September and the day will depend on whether Phil has a gap in the Ed Centre.

[There was general consensus that this was a good idea.]

Kit said: The other thing that was brought up at the last meeting was why we are using this venue. One person said it was difficult getting from the east to here and we offered to pick that person up. This works so well for us because firstly we don't have to hire the hall which is really difficult to get, so is the supper room,

and secondly it doesn't matter how long we take because there's no-one else coming in, and thirdly we can set it up really early. If you have trouble getting here, for whatever reason, ring us because Donna and Jeannine are itching to be Uber drivers and pick you up.

About the audio recording of these meetings, I used to put the audio files onto DVD and CD and take them to the Gold Discovery Centre, i-Site and HDC Service Centre and they've got a drawer full of them at the Service Centre because they weren't being picked up. That doesn't worry me because the whole idea was that they are accessible. Last time I put them on the internet and emailed everyone with instructions on how to download them. I'd prefer to do it that way, but need your feedback.

Eric Rhodes said: Quite a while back now I called into the library and asked if they had the minutes from this meeting and they said no.

Kit said: The written minutes?

Eric Rhodes said: I just asked if they had the information.

Kit said: That would mean that the copies we gave them had gone. We give about four or five written copies to the library and to the i-Site. It just means they've got them, which is great.

Tim said: Eric do you get them emailed or posted to you?

Eric Rhodes said: Yes I can get them emailed.

Kit said: And they're also on the website. But some people prefer to have them printed. Similarly if you would prefer a printed copy and we've emailed it to you, we will print it for you and you can pick it up. A lot of people want it early, other people want it printed, we'll do whatever we need to do to make sure you get it.

Helga said: I went to the council office and asked for a copy of the minutes and she said it was her last one, but she printed it for me. But I don't know where to find it on the internet.

Kit said: We are struggling with the structure of our website at the present time. Things are in place, as even we have trouble finding them at times. In a few months we are going to rearrange that so that the things people want the most often are more easily accessible – rather than four clicks in they'll be one click in. You're absolutely right, it takes about five clicks to find them. They are there, but it's not intuitive. We will fix that.

Danielle said: Jeannine will send out a link to you, so you just click the link.

Kit said: Jeannine and Danielle are going to rearrange the website and modify it so that the things that are used are a lot more accessible. The re-shuffling of the website will be done so that the minutes are more accessible by the September meeting.

Jeannine said: in the meantime we'll drop off more copies at the library.

Tim said: So Kit's question was, are you okay to click on a link on your computer to listen to the meeting rather than him burning CD's and DVD's?

[All present agreed that it is okay to receive a link.]

Peter Sherman said: So you'll send out a link once they're available?

Kit said: Yes absolutely and you've then got the option of either listening to it and not downloading it, in which case you're using band width, or you just download it and because it's only minutes it's quite small. We had the SUPA meeting at 1pm on 21 November and that was the first one, we had to have it under the consent conditions. We had three people turn up, it was pretty uneventful but a lovely meeting. Staff and helpers outnumbered members of the public about six to one. At 11am on 21 November we also had the blast vibration workshop, that's now three that we've had of those. That one went well.

Peter said: Have the minutes of those two meetings been sent out to people?

Kit said: There are no minutes from the blast vibration workshop because it is just a workshop, and the SUPA minutes are on the website in that "five clicks in" place.

The other thing that happened, and you probably saw it in the paper, was that we applied for a variation to the mining licence in Martha. If you saw it in the Waihi Leader it looked fairly intimidating because there was a map of the Martha open pit and there was a whole half page of text. Some people looked at that and thought what it meant was we were heading into the main street. All it really meant was that the original Martha consent conditions which were written in 1987 with a typewriter, there were some typographical errors that needed tidying up. There have been some changes in the way we monitor sound and the technology and we were required by the old consent conditions to use an old style of measuring stuff when we had new stuff and so there was a total tidy-up thing to do with Martha, it had nothing to do with Correnso and now that's pretty much done and dusted and that's out of the way too.

## Correnso/SUPA

OCEANAGOLD

### Amenity Effect Programme (AEP)

- Payments to qualifying residents delivered last month
- 371 payments totalling $225,054
- AEP explained in detail in February *East Ender*

### Independent Review Panel(IRP)

- Waihi Community Forum has reviewed the scheme
- Decided that as properties are selling well they would not appoint a new panel until any next purchase round has been confirmed or arbitration is required

8 Respect • Integrity • Teamwork • Innovation • Action • Accountability

**Amenity Effect Programme**

Kit said: If you get AEP you would have been paid about a month ago. I understand Jeannine you handed out the last cheques about a week ago? We paid out $225,000. Phil calculated those payments. We explained AEP in great detail in the Eastender in February, as in how it works. The big deal for AEP is people saying, "My boundary of my section is here and I got paid x, my neighbour got paid x plus $100 and that's not fair". It might not be fair, I'm not suggesting it is, but there's no way round it. If I haven't given you this example, and even if I have I'm going to give it to you again, where I live there's a boundary. I live on that side and I pay for my water because that's where I live. On this side of the boundary, all my neighbours don't pay for their water because they live on this side. There's just a line. It's the same water provided by the same people except I live on that side. We can't do it any other way. With AEP you can't have bands that grey out and become fuzzy at the edges. We've got to put a line somewhere. But I also understand it's human nature that the day you get your AEP cheque you hang over your fence and say, "I got this, what did you get?" And you look at it and say, "That's not fair". It's as good as we can do with the system. That sounds remarkably defensive doesn't it? It's not meant to.

Graham said: I would be too embarrassed to tell people what we got.

Kit said: Was it that high Graham?

Graham said: Yes *RIGHT*…., you would be embarrassed if I told you.

Kit said: And that's the other thing I need to explain. We've got people who are getting heaps of money and we've got people who think they're getting hardly anything at all. If you saw the calculations that go into getting to that stage you'd have a vague understanding of how it works, and I'd have an even more vague understanding of how it works. AEP depends on where we have been working at any time – if we're way up one end or way down the other end. The other thing we're bumping into quite a bit is remember that this AEP payment was from 1 July 2016 to 31 December 2016. We get people ring up and say, "My AEP cheque is x ($300 or $500 or whatever), you guys are shaking me far more than that", and we say, "Yes we are right now because it's February or March but the AEP that you got then was because we weren't then". I understand that there is a human perception element, but in terms of the objectivity and the science this is the best we can do and given that we're handing out $225,000 I know there will always be people who aren't happy with it. And Graham I take it on board, I understand what you're saying. We've had people who one month get $2,000 and then 6 months later they get $250 and think the shaking feels the same, but the maths is telling us that it isn't.

Tim said: Can I ask those who are on the AEP scheme, does it help?

Graham said: I'd prefer no vibration and no payment.

Tim said: Yes, given that there is vibration and it's been approved by the council, does it help to have the payment? Does it really make a difference?

Eric Rhodes said: I feel the problem with the AEP payment comes in because they talk with their neighbours and they all compare what they get. What we get is between my wife and myself.

Eric Schmidt said: The thing is – nobody can calculate themselves how much he will get and that is the worst thing.

Tim said: So it's a matter of having to trust the mechanism that Oceana use.

Eric Schmidt said: Yes and this gets done in Australia on a computer. They sent me all this crap that I need for it and calculate it myself.

Tim said: So you know how many holidays you can book in for each year?

Eric Schmidt said: Yes and can I afford a new car.

Tim said: Is there any other feedback on AEP? I know a lot of effort goes into it by Oceana and I'm curious about the impact of it. Is it something? Does it help, or does it make no difference?

David said: Am I correct in saying that as of right you weren't compelled to pay anything?

Kit said: When we were Martha and Favona we instituted it as a voluntary initiative, and then when Correnso happened it was folded into the consent conditions. That was great because that meant irrespective of who owned the mine it was in the consent conditions, because consent conditions are specific to the site not the owner. That meant that if the XYZ Mining Company came along and bought us out they couldn't say, "We're not going to pay that", it's in the consent conditions. It's also in the SUPA consent conditions. The interesting thing with that is, there's this thing called "consent creep" and by that what I mean is when you apply for a consent you always try and offer something more, as in, "Hey this is what the consent says but we could do this", and that's what we did with the original AEP. Now it's in the consent conditions so if ever we go for another consent it will be, "Well you're definitely going to put AEP into there, what's the next thing?" The other thing that worries me a little bit is that, and there's no way around this but this is just my sociologist training, we seem to be equating amenity effect with money. Some people go, "Wow that's cool". I'm a member of the heritage group, and one of the guys in the heritage group says, "That money isn't mine", and he's built this amazing little mine cart that we're going to put on display because he said it's not his money. And I'm saying, "Mate it is" and he's saying, "No it's not". And we've got other people who say, "It doesn't matter how much money you pay me that will not be enough for what you are doing to me". And so between those two. Whenever you offer money it always brings up a whole range of feelings.

Eric Rhodes said: When you look at the AEP payment, the company originally wasn't obliged to pay it.

Kit said: Originally yes, but we are now.

Eric Rhodes said: But even so, whatever you get it's like a bonus for us and that's how we accept it.

Kit said: Well yes except other people would argue that it's not a bonus but it's a mitigation from the company for the effect on your amenity – whether your house is vibrating or whatever happens, as in you can feel it. From there where do you go? If you accept that money is a viable mitigation then it's fine. As Graham quite correctly says he'd prefer no money and no vibration. The reality is that we've got the permit and that's what the permit says and that's what we're doing.

Helga said: Why is the money you pay out not divided equally between the families that receive it? Then nobody can complain. Then everybody should get the same amount of money.

Kit said: Because this year we may be way down the other end and you feel nothing and later in the year we might be right under your house and you feel more than the person down the other end. People might say, "I felt more than my neighbours did because they're way down the other end".

Tim said: So it's an attempt to proportion it to the effect.

Kit said: Yes, based on the results and the readings we get from the vibration monitors.

Tim said: Thank you for that. I just want to get a bit of an idea about whether AEP works for you.

Kit said: Here's a question. If there are six people flatting in a house and they get AEP, who gets it? Well the person who has the tenancy agreement, who's the head tenant. But what if that head tenant leaves and forgets to tell the person who owns the house? Now you've got five people in the house and the head tenant technically isn't there and then they ring up and say, "Can I have the AEP?" So this mining, it's hard work. Anyway, anything else about AEP?

So, Independent Review Panel (IRP). Under the consent conditions we have to report on the IRP and I have nothing to report because right now there is no IRP because there is nothing to do. Donna you can probably explain this better than I can because you're on the forum.

Donna said: So the IRP has been doing all of the property purchases in the Correnso and East End area. We've done about three rounds of that. Because of the way that the real estate market has been of late there's been no need really to hold another round. The Forum have decided that they won't be holding another round for a little while because the market is so good at the moment, houses are selling quickly which wasn't the case 18 months or 2 years ago. We thought rather than have a round for the sake of having a round we'll save that money because that is all we have for further down the track and perhaps when other areas are mined then it might be a little bit different and we may need that money to purchase houses further down the track. So currently we are not employing the IRP because it would be a waste of money, but if we have a property complaint where we need to have arbitration using the IRP we still have those people there that we can call on.

Kit said: And remember the IRP is exactly that – it is totally independent of us here at the mine. It has nothing to do with us. I don't even know who's on there. What's the make-up of the three groups of people?

Donna said: One is a lawyer and she has quite a lot of arbitration background, one has a psychology background and the other one has a building background. So it's quite a good mix of people. That doesn't necessarily mean to say that when we do another property round we probably will advertise for candidates for the panel. None of them live in Waihi and they're not allowed to have any association with anyone living here so they can't be biased in their decision-making.

Tim said: Sue and Peter is it the case that the market is quite buoyant at the moment? Because Kit and Donna are saying there is no impediment to the market, what do you think?

Peter said: There's certainly been a reasonable period where the market has been strong and buoyant.

Nancy said: Donna when you said that it might be needed if you move into another area, is that still the Correnso area?

Donna said: Yes.

Kit said: But one would imagine Nancy that if we found something else somewhere and we went for another permit, because the IRP had proved itself to be a useful mechanism that anybody with half a brain would be saying, "Hey you'd better make sure you've got an IRP in there as well" – in the same way you're going to make sure you've got an AEP and all those other things as well. So while it is in abeyance and could be quickly reactivated for Correnso, one would assume that if we went somewhere else and applied for a permit, if we weren't putting it in there somebody else would put it in.

Nancy said: But what if you never need to use that money because of the market being quite buoyant? It's quite a few million dollars – what will happen to it?

Kit said: I'm not a money person and I have no idea what would happen to that.

## Correnso/SUPA

OCEANAGOLD

### Social Impact Management Plan (SIMP)

- SIMP is required by Correnso U/G Mine Conditions of Consent 38-45
- A number of indicators have been established to assess, monitor, manage and re-assess the social impacts of Correnso
- Six main themes: Economy | Employment | Property | Community | Health & Wellbeing Future of Waihi including Waihi Gold's legacy
- Data required to be reviewed and reported on annually by SIA specialist (KPMG Banarra) approved by Hauraki District Council
- Annual perception & employee surveys are required by the SIMP
- Focus for the 2016 SIMP is property which will be covered in detail in the perception survey with less attention being paid to the remaining themes
- **Date change for completion of report**
- **Report completed, will be delivered to HDC by end of month**

9 Respect • Integrity • Teamwork • Innovation • Action • Accountability

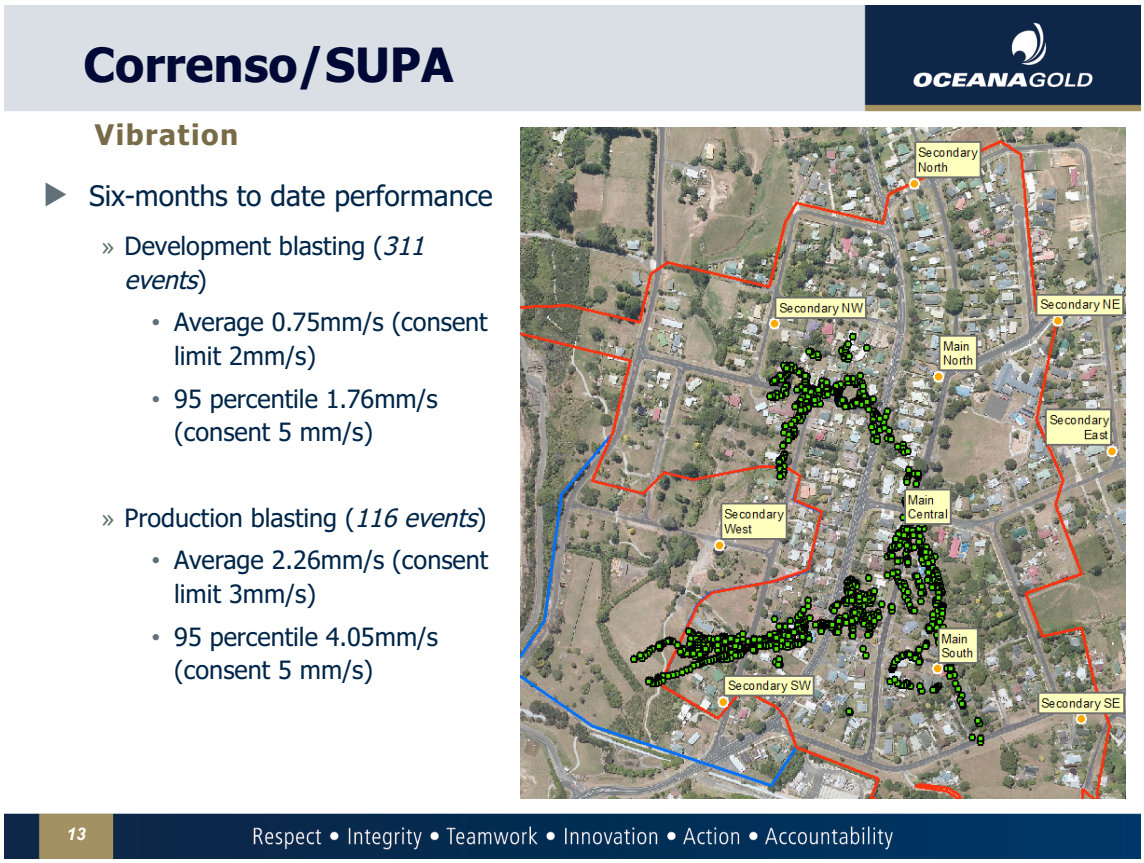
**Social Impact Management Plan**

Kit said: And finally the Social Impact Management Plan, the SIMP. Some of you may have been interviewed for the SIMP and that was before the last meeting, from memory. That's all the stuff I gave you last time. The date has been changed. We were originally meant to hand over all the data for the SIMP to Hauraki District Council at the end of February. We haven't and we can't and the reason is quite simple. SIMP data covers the calendar year 1 January 2016 to 31 December 2016 and it is remarkably detailed and complex. We then don't go to work much in the first couple of weeks of January, you come back part way through January and you try and get the data from people and they haven't got it and they have to find it which means we don't even get it until the end of January if we're lucky, usually half way through February. Then we have to get a service provider, in this case KPMG Banarra in Melbourne, to crunch that data for us and provide the independent quality assurance on that data before they produce a report. That's Danielle's job, all that Danielle has done for the last 6 months is talk about SIMP. When she comes in in the morning we just say, "Are you SIMPering today?" It's all she does. Yesterday Danielle and I had a teleconference with the SIMP people and we are still a couple of weeks away. Mark I hope Kerry rang you and said, "We're going to be a week late". If he didn't, "We're going to be a week late". So we thought we could have it done

by the end of March. It turns out we can't. We're going to be a week late. It's going to be the first week into April which means it's taken forever to do. If you haven't seen one, when it comes out we'll put it on the website. The data is incredibly detailed and complex, and it's just taking forever but we will get there. And that's it for that.

Tim said: What does that last bullet point mean?

Kit said: "Report completed, will be delivered to HDC by the end of the month". That was because I wrote that on Monday and then we changed the date yesterday after talking to the people so I should actually change that. It really means 6 April now. If I had a felt pen I'd change it now. And I think that's me. Now Mark – as I said Mark was not our first choice. Russell did the slides, Kerry was going to present, Mark got shown them this morning.




**Mark Burroughs Environmental Officer – Vibration**

I do a lot of monitoring and reporting that we have to do for the councils. I mainly deal with water. Russell deals more with the vibration. I do the required water monitoring and required reporting of that data as well. This [slide shows] the vibration, this is the previous 6 months where they have been blasting. We've got the main Correnso ore body they've been in there, top middle and then the Correnso area here, coming down here towards Daybreak. The blue line is the SUPA boundary. I believe the first blast in the SUPA boundary was mid-January this year, when they first entered the SUPA area. These are the vibration monitors we have in place around CEPA and also here in SUPA as well. There are 10 monitors. So far in terms of compliance it's been going really well. We have limits on our development blasting and on our production blasting – the two different kinds of blasting – development being the smaller ones and production being the bigger ones when they do the stopes and they get the gold out. There are two different types of limits we have for both development and production. We have an average that has to be under 2. The 6 month average there is .75 and the 95 percentile is 1.76 for the development blasting. Whereas production, the bigger blasts, averages 2.26. The limit is 3. Here you can see it's a lot higher because of the production blasting. The 95$^{th}$ percentile is around 4 and the limit is 5.

Graham said: So it's actually getting up there?

Mark Burroughs said: But it's a 6 month roll-in so it will change as time goes on. There were 116 stope blasts in the last 6 months and 311 of the smaller ones, when they're doing drives in the development and things like that.

Tim said: Will that ratio change as the life of the mine continues? Will there be less development blasting and more production?

Mark Burroughs said: Yes probably, once they've done most of the development and all the roads and things to get access there should be mainly production. They would have been doing a lot of development coming out here because you can see they've been working their way up here and also coming down here, I think that's Empire and Christina veins coming down this way and then SUPA, or Daybreak, over here.

Bev said: I'm sometimes at home for the production blasting in the afternoon, not often, but once or twice. You know how they blast really quick, one day they weren't blasting as quick and my house felt as if it was twisting apart because it usually goes boom, boom, boom, boom (faster) and then one time I was home it went boom, boom, boom (slower) and my house felt like it was actually twisting. Does that happen often? It seemed like the blast and vibration pushed my house one way and the next minute it seemed to be pulling back against it because it wasn't really quick.

Mark Burroughs said: So do you mean the duration, the length of time, of the blast?

Bev said: Between the relay of blasting it's usually really quick but I know once it wasn't as quick and my house felt like it was being pulled one way and then the other. I'm over Daybreak, that area going through there.

Mark Burroughs said: That could have been development blasts – they're the ones that can go on for longer. They will be boom, boom, boom, boom, boom, whereas the stope blasting is usually just boom, boom – quite short. They both have limits on their duration but you can get combinations as well where they might do a stope blast and a development blast at the same time so you'll get a mixture of both.

Bev said: One day I felt my house was being pulled apart because it wasn't as quick.

Tim said: So Bev was that a one-off?

Bev said: I'm not often at home so how would I know it's a one-off? It was my day off and I just felt that surely to goodness they're not actually changing how they blast.

Kit said: Bev it's more likely to be that we have several blasts at the same time, but a couple of seconds apart. So for example we could have had one way up to the north and there might have been one to the south and there might have been one out to the west and so blast events, I think it's 18 seconds in total, but it could be there are three different blast events within that time and so what you're hearing is the difference in time between one set of blasts in one place and another set in another.

Bev said: But it's not the hearing it's the twisting of the house.

Kit said: The vibration will be the same, so even if it's vibration … when we blast we often blast in more than one place and so that's more than likely.

Bev said: Well I asked the last time I was here, "Did you relay them all together?" and they said yes they were all blasting together. It just so happened on this one day, and I didn't even take note of what day it was, but it just seemed to be my house was being pulled every which way.

Tim said: If the vibrations are coming from different directions and coincide, does the combined vibration get picked up by the monitors and does it still have to meet the consent conditions?

Mark Burroughs said: Yes they will pick it up. They are set to go off at the same time, that's how it's designed, but the delay would be very small. They capture <u>all</u> of the blasts, and all vibration because you also get other things that happen at the same time as the blast, it all gets captured.

Tim said: So what Bev felt was different but it still would have been within the limits that council has said are a safe limit for the blasting in this area?

Mark Burroughs said: Yes of course.

Graham said: The point Bev's trying to make is you get one blast over here and the waves are coming this way, there's one out here and the waves are coming this way and you get two different movements. Individually they're probably both within the consent.

Tim said: And I was very clumsily trying to ask whether individually they were within the consent, but isn't it the case that combined they still have to be?

Graham said: Combined they have a different effect than in one blast. Sequential they're normally pop, pop, pop – you'll get different ones.

Tim said: Combined do they still have to be within the consent?

Mark Burroughs said: Yes, that's why we have so many monitors.

Graham said: But it feels different.

Tim said: Right so you feel it rock backwards and forwards. My other question, and this is my ignorance I'm sorry Mark, but in terms of that 95 percentile – that means that 95% of the blasts have to be within that?

Mark Burroughs said: It is the top 95%. If you took the levels of those and put them in an ordered list, so, 6, 5.5, 5.3 something like that, a long list like that, it's the top, the worst case.

Tim said: The worst case, not the best case?

Mark Burroughs said: No, worst case for residents. So it's the highest.

Tim said: Right so it's not that you're allowed to sneak 5% in on the top of the limit, it works the other way?

Mark Burroughs said: No it's the top ones and the lowest ones are not considered.

Peter said: Why are there two limits?

Mark Burroughs said: For development blasting and production blasting?

Peter said: Yes, but in each one you've got a consent limit of 2mm/second and below.

Mark Burroughs said: One is at a single monitor, you have a limit for a single monitor, and the other one is for all monitors, what they pick up. We take the worst monitor there is to get the average. That will be at the monitor which is most affected which is normally Main Central, the one that gets the highest results. So it's not like this one, which is further away, it's the Main Central result. So it's the average results for this one and then you've got the 95 percentile being picked up by all monitors.

Graham said: Do they just sense the vibration or a blast? They don't sense which direction it's come from do they?

Mark Burroughs said: No.

Graham said: So if you're in central, there's one in central and one in say northern, the blasts coming this way and one coming this way could, and do, actually occasionally cross, ie they're within the limits but they cause the movement that Bev's describing.

Mark Burroughs said: It just has three axes that it records on and that will give you the average amount of movement it experienced at the time. It measures horizontally, vertically and then transverse.

Graham said: So it does measure transverse?

Mark Burroughs said: Yes.

Tim said: So if there were two blasts and it pushed the monitor one way and then the other, that would all show up in the reading?

Mark Burroughs said: Yes, measuring in 3D, all the movement.

Peter said: So directional as well?

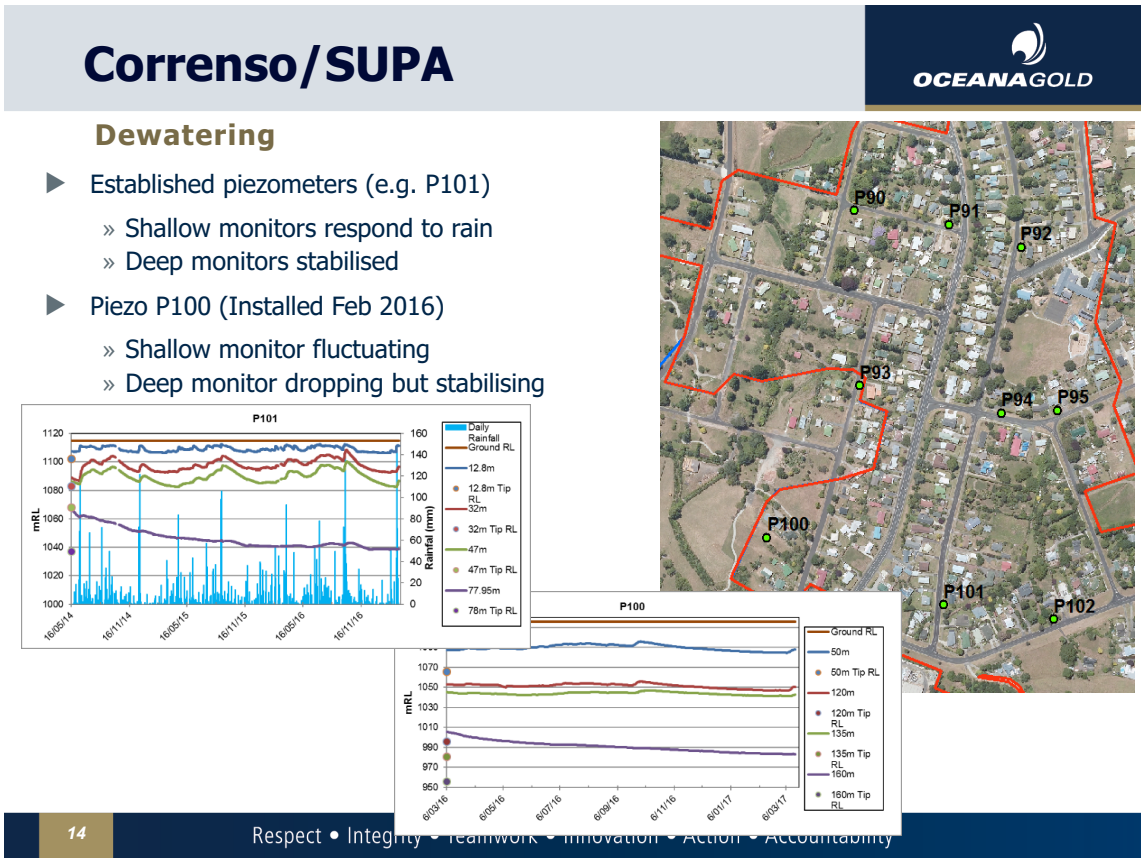
Mark Burroughs said: Sometimes they can show one of those has a stronger amount of movement whether it's the vertical, horizontal or diagonal. But it's pretty hard to interpret. For example, the North Wall is a good one, when we started blasting there they were showing more horizontal because it's the pit. They were blasting here and then you've got the hill like that and the monitor's sitting here, so it was getting it from the side. So it was having more of a horizontal movement.

Nancy said: Did you say there is a vein called Christine? Is that new?

Mark Burroughs said: Christina isn't it? It's one of the smaller ones just in here I believe.

Nancy said: Yes but where is Grace?

Mark Burroughs said: It's somewhere around here, sorry. There's a group of them and they've all got different names, they're just little ones. That's the main Daybreak coming down.




**Mark Burroughs Environmental Officer – Dewatering**

Mark Burroughs said: This is just a couple of graphs. We have what's called vibrating wire piezometers all around in the CEPA area. We've got nine of them.

Graham said: How long have they been installed?

Mark Burroughs said: They were installed pre-Correnso.

Tim said: Was there an additional one being installed, in the last couple of years?

Mark Burroughs said: Yes this one just over here was installed in March last year.

Graham said: Pre-Correnso, are you talking 12 months?

Mark Burroughs said: I can't remember when they were installed. These ones here are both newish ones. Initially these six here were installed and then these two were installed later on and then this one last year. We also have lots of other ones that have been around since 1980's, from the original Martha.

Donna said: They were there when I used to be a technician 15 years ago.

Tim said: So Graham can I ask you why you're wondering how long the piezometers have been in place? Because Donna's saying 15+ years.

Graham said: I talk to different people about dewatering and the effects and it's very hard to get answers on how they were measuring it in the early days. That's why I'm asking when they were first installed.

Mark Burroughs said: These are the new modern kind but then you've got the other ones where you might see a guy walking around town sometimes with a tape measure, he takes the cap off and he lowers a tape down. We've done that every month for 20 years ever since modern Martha started. They write down the level and that's how we know if there's been any change in the water levels. There's about 70 of the old ones, coming all the way round. There's one just across the road here, but that was from the original Martha and then we've got some over Favona as well and these are the more modern ones for Correnso.

Tim said: So these are all vibrating wire ones? So that's not putting the tape measure down the hole?

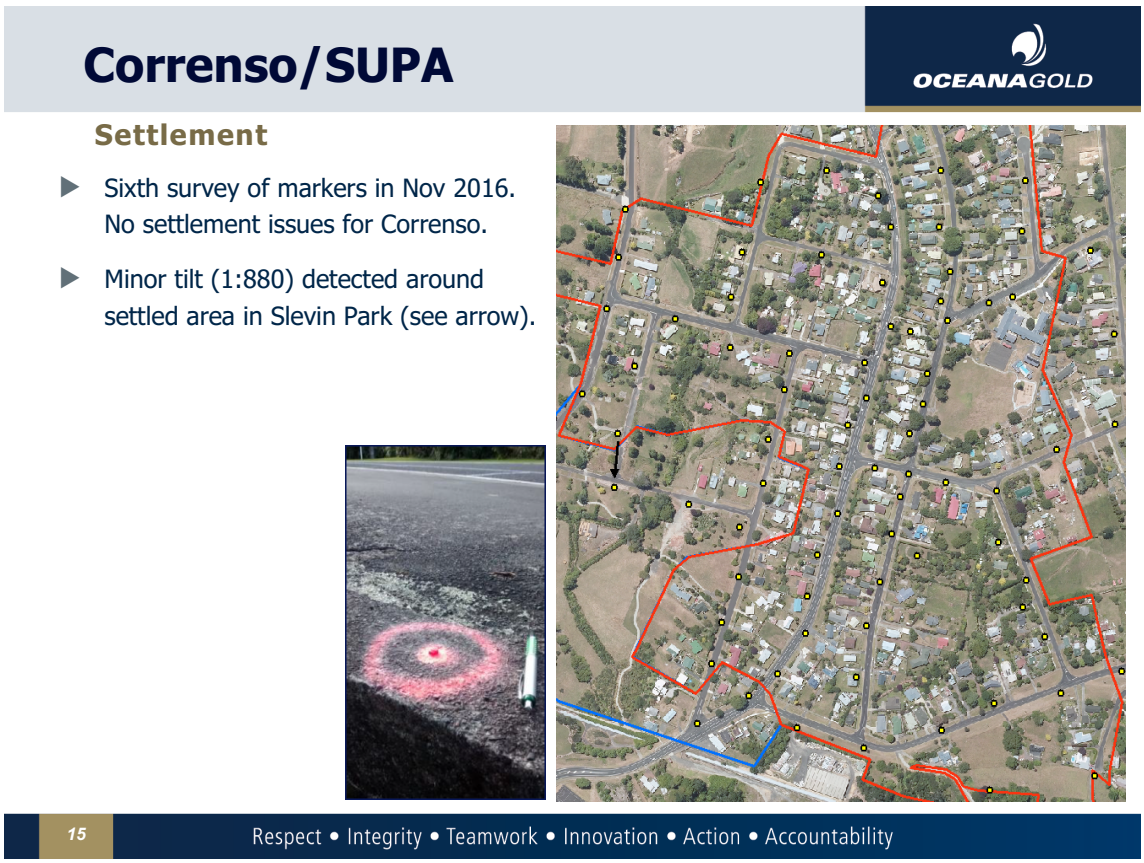
Mark Burroughs said: No these are plugging a computer into a little box, it sits there recording every hour if you want it to. The good thing about these ones is, there's not just one water table there's multiple water tables underground. So this is the ground surface and we've got a water table here and we've got two here that are very close together in this particular spot and then down here is another water table. The old ones could only measure one level but these ones have four different wires coming down so it can tell you what the different water tables are doing. We de-water to mine. You've got to take the water out to mine. We de-water down here at the deep layer in the hard rock, not these ones. These little bumps on the graph here is pretty much rainfall. You can see what happens, this one here (P100) is levels of rain and you can see this one jumps with rainfall and then it starts dropping off again, jumps, big rainfall, jumps, and this is that rain we had just recently 250mm in 24 hours and you can't quite see but you can see these ones starting to shoot up again because they've got more water in them now because of the rain.

Tim said: Mark somewhere in there is what's been described to me as the andesite layer. Is that like a barrier between the two layers?

Mark Burroughs said: Yes, this one is only 5 metres into the andesite layer. The bottom sensor usually goes 5 metres into the andesite, into the hard rock, so this one here is a little bit special where they put it down 20 metres into the andesite, and then this one is 5 metres down. They put two in the andesite on this one because our experts wanted to compare the difference between this one and this one.

Tim said: And the critical thing is the water level above that layer of rock?

Mark Burroughs said: Correct. These ones here, if there were changes in this that's where it might affect settlement where you live. Changes down this far will not affect these. These ones are doing this naturally, that was our dry summer, dropping right off, and then rainfall coming back. It's in our consent conditions we have to have these. These locations were picked in conjunction with council and their experts and we have to monitor them.




**Mark Burroughs Environmental Officer – Settlement**

Mark Burroughs said: Settlement is related to dewatering. We have all those little pins around town, about 400 of them, and they are surveyed every 6 months. You see the surveyors out there in May and November. In the November survey they found no issues at all. They are looking at what happened in the last 6 months, whether they've gone up or down. We got one minor tilt, where the slump is in Slevin Park – you've seen the fences all around it – which is related to all the old workings. There's historic workings right here. That's the one tilt that we picked up. This mark here is lower than this one here and causes a gradient. We put it down to this big slump that's right here in the middle of the park. There is no indication of strange gradients between markers there in Correnso.

Eric Schmidt said: There's this big thing at the netball court.

Mark Burroughs said: The settlement marks as you can see follow footpaths and roads. If the netball court just had a little hole appear there and it doesn't affect the marks nearby we're not going to pick it up.

Max said: Those marks at the netball court were because there was a hollow there and they dumped a whole lot of old bricks there from the old brick works and it's been washed out underneath.

Mark Burroughs said: It's a leaking water main. Yes I remember that hole opening up.

Max said: There's an old stream under there and they just filled the gully with rubble and then pressed it over.

Mark Burroughs said: Similar things happened in Slevin park. I think they used to use it as a rubbish dump. Some of the old shafts got filled in. They keep on surveying 400 of these settlement markers every 6 months. They are all around Waihi and Favona.

Kit said: Just to put that into perspective, our consent conditions require us to do that and they have a specific measurement as to how much differential settlement we're allowed. Settlement in itself is not the issue. The ground rises and falls as it gets wet and as it dries out. If you've ever driven to Taupo and seen the big cooling tower at Ohaaki that pushes the steam out, the ground in that area has dropped by 1.5 metres since they started taking geothermal out of there. So settlement is an issue when you start taking things out so therefore under our consent conditions we have to monitor settlement. But it's not overall

settlement that we're interested in, it's differential settlement. In other words, what's the difference between this marker and that marker? The 1 to 880, to put that into context, over a 1 metre long ruler that means one end is 1mm lower than the other end. Talking to Russell it turns out that it isn't actually 1mm lower it's about .5mm lower because the other end has actually gone up. So we're keeping an eye on that because differential settlement, not overall settlement because all lands rises and falls, is the area of our specific interest and the area that's covered in the consent condition.

Mark Burroughs said: We have markers way out coming from the road nowhere near any mining and they will fluctuate between summer and winter because the soil gets wet and swells in the winter and it will dry out during the summer. It's just natural ground movement. One thing that Kit was talking about around Taupo, after the Kaikoura earthquake we got a phone call from our hydro geologist, he's our independent expert, and he asked if there were any changes to our water levels. I said they were fine. He said in Taupo some of the water levels had raised 30cm, the water levels here all of a sudden just jumped up after the earthquake, even in Taupo, that far away. Ours didn't show any change.

Nancy said: Just with the area with the tilt, I know you're monitoring, but is there something that you're going to do about it? I know your consent conditions ask you to monitor it but what beyond that are you required to do?

Mark Burroughs said: It's related to the old historic workings. At the moment it's been secured, fenced off, no-one's allowed in there, and it's just being regularly surveyed and monitored.

Mark Buttimore said: It actually falls under our auspices really. We are running CCTV cameras down the sewer lines to see if they are reacting to the settlement. Potentially it could be reacting to old fill, it could potentially be another sink hole forming, potentially it could be a broken stormwater line washing things out. So at the moment we're on a monitoring only basis with it fenced off. If it was potentially a sinkhole there's not a lot we can do. It would be too dangerous to try and dig it out and see what it was. At the moment it's not causing any harm and it doesn't present a danger to the public providing they stay outside the fenceline and we should see an indication if anything is happening long term because our pipes will react to any significant movement.

Tim said: So the system works and you're keeping an eye on it, and if there's more change or you're worried then you'll look more closely?

Mark Buttimore said: Yes and the company is keeping an eye on it also through their monitoring of the settlement markers so between us we should be able to pick up any further changes.

**Conclusion**

Tim reminded all that the next meeting will be on a date to be confirmed in September 2017.

Kit said: So don't wait 6 months. You know what the 0800 number is, you know that we're available pretty much all the time so come and see us, or ring, or email, or text. If it's within our power to fix it we will do so.

**The meeting concluded at 4.20pm.**

| **Attendance Register** | |
|---|---|
| Eric and Helga Schmidt | David Carrington |
| Eric Rhodes | Sheena Gardiner |
| Nancy McGuire | Dianne and Alan Purvis |
| Vivienne Pickford | Mark Buttimore |
| Graham Wilkinson | Max McLean |
| Sue Moore | Peter Sherman |
| Bev Ireland | |