# QUEENSLAND FLOODS COMMISSION OF INQUIRY

Matters concerning the operation of Wivenhoe and Somerset Dams

Tuesday, 29 March 2011 at 3.00pm

At level 30, 400 George Street, Brisbane, Qld

Interview conducted by: Ms Lisa Hendy and Ms Susan Hedge

Private interview of John Tibaldi pursuant to sections of the Act

**QFCI** 

Date:

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Exhibit Number:

Ah

MS HENDY: This is Lisa Hendy. I'm a Principal Lawyer with the Queensland Floods Commission of Inquiry. I'm interviewing Mr John Tibaldi pursuant to a requirement to attend today at the Commission's offices, and I also have with me Susan Hedge who's a Commission lawyer and I'll just ask everyone else in the room, apart from our stenographer, to identify themselves please.

MR TIBALDI: My name is John Tibaldi, engineer with Segwater.

MR O'DONNELL: Brian O'Donnell, counsel for Seqwater.

MR ILOTT: Michael Ilott, solicitor from Allens solicitors for Seqwater.

MR POMERENKE: Adam Pomerenke, counsel for Seqwater.

MS HEDGE: Perhaps I should just say I'm Susan Hedge so that the voice. Thanks.

## <JOHN TIBALDI, interviewed:</pre>

MS HENDY: Q. Mr Tibaldi, just so you know the plan today is just to run through your statement and just obtain some clarification on a few points and a bit more information and then probably run through the event log and some of the report - when I refer to the report I mean the report in relation to flooding from Wivenhoe and Somerset dam dated 2 Just commencing with your statement, I just March 2011. wanted to get a little bit more background information from you about your present position at Seqwater as principal engineer of dam safety. I note that on page 2 of your statement you've listed some of the aspects of your role. I was wondering if you could just give me a bit more content in relation to those roles. For example, the first one is the establishment and management of Seqwater's dam safety management program. Can you just tell me a bit more about what that involves?

- A. Sure. Well, Seqwater owns 25 referable dams that are referable under the Queensland Water Supply Act 2008, and once a dam's referable under the Act, there's certain conditions that are issued by the State that dictate how the dam needs to be managed, and my role is about making sure that Seqwater complies with those conditions.
- Q. And then you have the management of Segwater's

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- That's right. Our hydrographic unit, what they're 2 3 about is that in our dam catchments we have rainfall stations and stream flow stations that record rainfall, not 4 5 just during flood events but at all times, and the same 6 with stream flow. They're used for different purposes, associated with resource operations reporting but also just 7 8 in association with the way we manage the dams and the 9 associated infrastructure and we have a unit of - it's only 10 two people - that I guess do the maintenance work 11 associated with ensuring that that network runs and they're 12 supported by Roadtech, which is a division of Main Roads, 13 some people in that, we employ them under contract to 14 assist our hydrographic people. The hydrology people, 15 they're about - I guess the hydrographic unit is about 16 gathering the data and then the hydrologists are about 17 analysing that data and making reports on the data in terms 18 of how much rainfall might occur or what's occurring in the 19 streams, that sort of thing. 20
  - Q. And then you've got the management of the preparation of resource operation plan reports and I have some? Α. Okay.
  - Q. So you're just really coordinating that within Segwater, are you?
  - The people that are responsible for that, there's a team of two ladies that the data gets sent to them, the data that's required for reports from the various parts of Seqwater, depending on whether it's water quality data or water quantity data, and they compile the reports and those two ladies report to me.
  - And then you're involved in the management of Seqwater's seismic monitoring unit? Α. Yes.
  - Q. Is that connected with dam safety, is it? Yes, it is. If earth tremors occur they can impact the structural safety of dams, so we do do seismic monitoring, but also Segwater has a bit of a role in terms of the State wide seismic network,
  - Q, Now I understand part of your role is to do with the staffing of the Flood Operation Centre. Are you involved in training and staffing for the Flood Operations Centre at a11?

1 2 3	A. Not the Flood Operations Centre. I don't do staffing for that.
4 5 6 7 8	Q. No. What about any of the training packages for that or training any of the new staff?  A. Not for the Flood Operations Centre. That wouldn't normally be done by me.
9 10 11 12	Q. What about the dam operators? A. I do do training for the dam operators for flood operations, yes.
13 14 15 16	Q. Any other training of anyone else for flood operations? A. No, it's only the dam operators.
17 18 19 20 21 22 23	Q. So the training for the Flood Operations Centre is run by SunWater, is it?  A. Well, the training is provided by I guess the senior flood operations engineers. I'm not totally familiar with the contract arrangements, what the wording of the contract is.
24 25 26 27 28	Q. No, that's all right. So you're not involved in it. It's just that I need to clarify?  A. No, I haven't given any training that I can recall to either data collectors or
29 30 31 32 33	Q. And when you say that you're involved in relation to the training for the dam operators is that - that's part of your day job, as it were?  A. Yes.
34 35 36 37 38	Q. So you would run all the standard induction type programs for dam operators and all the normal training programs?  A. Well, there's more aspects to dam operations than just flood operations.
39 40 41 42 43 44	Q. Floods, yes. A. So I run some training courses to do with the operator's responsibilities associated with dam surveillance and also emergency action plan training.
44 45 46	Q. Have you ever played any role in relation to the development of training at the Flood Operations Centre in

Q. For anyone else?

A. No.

- Q. At page 4 of your statement at paragraph 7 you mention that "prior to 2007 I gained considerable site experience in the operation of gated dams during flood events including at Wivenhoe dam". In what capacity was that, John?
- A. Well, in that position a position that I think is referred to in my statement.

Q. Yes?

A. Which would be from 1995 to 2006, I was the operations manager at SunWater. That's on page 2, paragraph (d) of the statement. And the first dot point under that is marked one, are the management that include the management and the operation and maintenance of 13 dams, seven of which had gated spillways. So I guess I was responsible for ensuring that the operators were sufficiently properly trained to operate the dams during flood events and I guess had there been an issue during a flood event with the operation of the dam, the responsibility of that would have come back to me in that role.

Q. So at that time was Wivenhoe owned by SunWater?
A. No. Wivenhoe at that time was owned by the old
Seqwater, but SunWater operated Wivenhoe under contract to
that organisation.

 Q. Did you keep any - and I'm just moving on to the operations of the Flood Operations Centre during the January 2011 flood event. Did you keep any record of times that you were present in the Flood Operations Centre apart from times that you were rostered on?

A. No.

Q. At paragraph 15 you speak about two of the engineers being designated as senior flood operations engineers and you say that "the senior flood operations engineers are responsible for, amongst other things, setting the overall strategy for management of the flood event in accordance with the objectives set out in the approved manual of operational procedures for flood mitigation". Those people, and as we know, engineer 1 and engineer 3, that's

A. No, not in my opinion.

- Q. In relation to the flood event report, were you the primary author of that?
- A. I drafted I did the initial drafting for all sections, apart from I think 5 to 8, based on discussions I had and information I gathered from the other guys. Yes, I didn't have a big input into the appendices.

- Q. Who had the main input into those?
- A. It varied. I mean, a lot of information is just information that existed, like say for example, the directives or situation reports or technical, so they were just gathered. I guess the main I guess most of it's in that category. It's the appendices consist of information that existed and we just collated and put into the appendices.

- Q. Who selected what material was to be included and not included in the appendices?
- A. Well, I suppose like any report, you make a decision as to what a person who's reading the report would want to see to read the report, and we would have I suppose discussed that amongst ourselves and made decisions about what goes in there.

Q. At the bottom of page 5 of your statement you refer to an error in the flood event report in the event summary at page 22 and that's in relation to the conversation between engineer 1 and dam safety regulator. You've said that you weren't a party to that conversation. Were you made aware of it at the time?

A. No, I wasn't in the room at that time. I was at home.

- Q. Was it discussed with you soon afterwards?
- A. Well, that would have been discussed when I came on to shift that morning. So that occurred at 9pm on Monday, 10 January, and I think I started my shift around about between 6.30 and 7 on the Tuesday morning. So that's when

I would have first heard of that conversation.

- Q. Was it a conversation that was forecast before you went off the shift the night before?
- A. No, I can't recall that being discussed the previous day that they would contact the regulator about that matter.
- Q. I just wanted to speak to you about page 9 of your statement, I'll start at page 8 where you start talking about strategy W4. When I spoke to you earlier about the training, I guess have you ever been involved in a simulation or training events where there was a W4 type situation?
- A. I haven't been involved in a specific training event associated with W4 but I have run models where W4's invoked.
- Q. And is that in the course of your normal work in relation to dam safety?
- A. Some would be in the course of that work, other would be in when the manual review occurred in 2009. An important part of that review was to have a look at the modelling under the look at a whole range of design storms and see how applying the rules in the manual to those design storms, what result that would produce in terms of outflows from the dam.
- Q. So just on the topic of that review, were you I guess were you the project leader in relation to that review or was there someone else that took that role?

  A. We're preparing like I think I've got this statement and then you've asked another 10 questions about the manual and specifically about that review, so we're working on that at the moment. I think that has to be in Friday, so I mean all the detail will be coming.
- Q. Okay.
- A. But just to answer your question about was I the project leader, I did the drafting for the review, but I guess being the least experienced person in terms of the the Brisbane River and the manual, I was taking information from the more experienced people and they would discuss different issues and then draft that into the report. That was the process.
- Q. And was it it was prior to that that you was it you and Mr Malone did that interactive, the targeting?

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Q. And were there other studies done at that time?
A. No. That would have - I mean, the changes in 2010 weren't extensive so, no, that would have been the only specific study that I can recall that was done at that time for the manual review.

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MS HENDY: Susan is just going to leave the room just for a moment to sort out an administrative matter?

A. Okay.

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Q. Just going to page 9, you talk there about some of the issues with rainfall across a catchment as large as the one involving Wivenhoe and Somerset. One of the issues I guess that's been ventilated in the press, for want of a better word, is this issue about the intense rainfall over Wivenhoe lake on that day that led to very rapid rises in the lake and there's been some suggestion that - I guess - well, the way I'd interpret it that that's been sort of invented down the track and I was just interested in what your methodology has been in relation to the calculations that have been produced in terms of the estimation of that rainfall?

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Okay.

Q. That very intense rainfall where there were no gauges? Yes, I know what you're referring to. I was just considering the question. Well, I mean, we know that the lake - during that time we know that the lake was rising rapidly, so the only thing that could produce a rise like that is rainfall. It's a similar situation to I guess the previous day and the flooding at Grantham where obviously there's a large flow of water but it's not necessarily recorded in the rain gauges, but you know it must be rain, It can't be anything else. So I guess how a hydrologist and I'm not a hydrologist - might model that rain is look at - and we've stated this in the report I think. probably refer you to the page. I'll find it. Here we go. Firstly on page 85 there's some explanation about that particular issue that you're referring to.

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Q. The gauge boards?

A. The gauge boards and the discrepancy between the gauge boards and the automatic recorder. Then in section 8.9 it talks about specifically you know that period of time and perhaps I refer you to page 147 and the paragraph under the

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- Q. So who actually did that interpretation? Was that Mr Malone?
- A. It was, yes.

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I guess I should ask him. Just for the record, Susan Hedges reentered the room. So in relation to paragraph 45 of your statement you talk about the margin of error in relation to prediction of flood models based on recorded actual rainfall probably being in the order of plus or minus 5 to 10 per cent. Obviously I'm not a hydrologist or an engineer. Just from the modelling that we've seen obviously there's just the one line on it, but is that just something that's taken for granted when you're looking at the models with predicted rainfall and without predicted rainfall that you factor that in automatically? Well, what I think - just separating first off the model with looking at just what rain's fallen and the rain on the ground, and I guess first off just thinking what the model is trying to do and it's trying to look at a drop of rain that might have fallen right at the top of the catchment and work out how long that's going to take to get into the dam, and I suppose just notionally people would say that you could never model that exactly. You're trying to model drops of rain and work out - well how long is it going to take for all those drops to flow into the dam and you think about the rainfall over the 7,000 square kilometre catchment it's patchy. It's not uniform. when you think about what the model is trying to do you must think that, well, there must be some error in there. It can't perfectly mirror or predict the actual situation. So there's got to be some sort of error in there and I guess that 5 to 10 per cent has got - I guess my experience of what you might expect with that error - when you look at the line on the graphs, that's just the line that the model It just spits out one line but you could just as easily make it if you wanted to spit out a thick line that sort of gave you maybe the bottom band and the upper

Again I'm not a modeller. That's not my background,

- and the other three guys are but I can still run models and understand I suppose what's happening. The other thing I'd say that the accuracy of models, like at the start of an event where you're trying to understand the catchment conditions there'll probably be a higher degree of uncertainty but as the event moves on that degree of uncertainty becomes less but it's always still there because you don't know how the rain's falling. It's just there. You can't avoid that and that's with not just these models but every sort of hydrological model that's operating around the world.
- Q. So when you say at paragraph 45, "The results of flood models have to be interpreted with this in mind, especially when making decisions as important as transitioning to strategy W4", are you saying that you would normally err on the side of I just don't quite understand?

  A. Yes.
- Q. You go on to say you'd probably do a couple of model runs?
- No, sorry. Thank you. The point I'm trying to make there I guess is that there's certain decisions that you make when you're operating the dam streaming event that you know are going to potentially put water over habitable floors and if you're going at any time to make that decision, I guess - well speaking for myself, I tend to err on the side of, well, just making sure you have to do it before you do it because you can't take it back. you've decided that you're going to flood properties, well, You can't say, oops. The rain that we thought might occur didn't occur and we didn't have to flood those properties. Once you make the decision to flood them it's too late, they're going to be flooded. So I suppose the point I'm making is that if you're going to make a decision like that you want to be very certain of your figures and a model run showing that you just might touch EL74 and might just go into W4 that wouldn't be sufficient for me to particularly at that time, the dam level was well below EL74 - that wouldn't be sufficient for me to invoke W4 because once you invoke W4 there's no turning back. got to increase the outflows until you stop - until you stop the rises, so you are going to flood properties, so you need to make sure that there's no other course of action that you can't hold the flood in the dam.
- Q: Was that an approach that was shared with the other

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- Q. No one voiced a different opinion, particularly about the 74?
- A. Whether we should go to W4 at 8 o'clock on the 11th, no, I haven't heard anyone voice an opinion that opposes that.

- Q. At page 10 of your statement you run through I guess the progression on the 9th of January, from paragraph 49 onwards?
- A. Yes.

- Q. And you mention in paragraph 50 that the first time any model run, excluding forecast, predicted that the level of Wivenhoe dam would exceed 74 metres AHD was run 35 conducted at 4am on Tuesday, 11 January, and I think you wouldn't have commenced duty until about 7 o'clock on that day or thereabouts?
- A. Yes, I haven't got the exact time but I believe I entered the room at around 6.30.

Q. About 7am. Righto. So at that stage do you remember what the nature of the discussion was? Was there a shift hand over?

A. There was a shift hand over and the - sorry, I just want to refresh my memory. There was a shift hand over and there was a discussion about the conversation that occurred with the dam safety regulator the previous night, and I guess the feeling was that we were on the edge of going to W4. We were - I guess - I'm just trying to think of the right word - maybe hopeful that we wouldn't have to transition but, you know, some heavy rain had commenced in the catchment and it was looking a possibility.

Q. And when you say - had you received information about rainfall overnight in the catchment?

A. The systems are such that when you enter the room they certainly talked about rainfall overnight but when you
enter the room you can log on to a computer that shows you can have a choice of rainfall in the last hour, two
hours, three hours, 12 hours, 24 hours, so you can fairly and I guess it shows you a catchment average, so you can
quickly have a look at that and that's part of hand over
generally. You'd come in and just see what the rain is

doing. I think some of the maps like, for example, those

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- I just wanted to take you to page 13 where you talk about a conference call with Brisbane City Council. is at paragraph 67. This is about this issue about the damage thresholds. Who was it at Brisbane City Council that you spoke with?
- My recollection is that that was Mr Ken Morris who I believe is their principal engineer, water and environment.

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- And what were his what concerns did he express during that call?
- 16 17 I think I've written about that in the flood event So just refer you to the flood event summary page summary. Under Background, the third paragraph down, and just the last sentence of that paragraph, this approach was -"following discussions with Brisbane City Council that 22 advised a flow of 3,500 cumecs at Moggill would fully submerge 322 properties and impact 7,000 properties". that's the information that I recall was provided by that telephone conversation.

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And you mention in your statement that "for five hours after this call we attempted to accommodate the BCC's concerns by maintaining the flow at Moggill at or below 3,500 cumecs in accordance with Strategy W3 that requires protecting urban areas from inundation". Did your fellow flood operations engineers, did they have the same surprise at hearing about this change in the damage levels from Brisbane City Council?

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Α. I believe they did, yes.

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And you've mentioned that the principal engineer, water and environment - I take it that's Mr Morris - he attended that meeting about the latest revision of the flood mitigation manual?

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Α. That's correct, yes.

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And that has stated within it that 4,000 cumecs, is that - it's clearly included in there in relation to the strategies, isn't it?

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Well, the 4,000 cumecs is listed in the manual and control copies of the manual have gone to the councils.

A. When I gave the presentation at that meeting on the manual update, I think it's likely I would have discussed or mentioned the 4,000 but I cannot recall specific discussions on the threshold of damage. I just cannot recall.

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Q. But was there any change to the 4,000 from the previous version of the manual?

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Q. So how did you attempt to accommodate the Brisbane City Council's concerns?

Well, I guess as we discussed before, knowing that a flow of 3,500 cumecs at Moggill would potentially put water over the floors, habitable floors, we - again once you make the decision to exceed that you can't go back because even if you try and reduce, once the floors have been inundated the damage has been done. So we attempted to hold the We did some modelling and I'd I guess refer you to I guess the model run at that period. So that would have been at 9am on the 10th of January and again the model results are on page 19 and you can see we did a model run I guess seeing if we could maintain - you know, not exceed a flow of 3,500 at Moggill. So if you look in the column titled Rainfall and Model Results, and firstly at the last dot point, so the estimated peak flow at Moggill, including Wivenhoe releases, was 3,420, so we were saying, well, can we stay under the 3,500. And then I refer you to the third dot point there in that column that says "estimated peak Wivenhoe dam level of 72.9". So that the model was showing us at that time that without further significant rain it was possible to keep the flow at Moggill maybe under 3,500 and not impact those 322 properties that we'd been told about.

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Q. So by 2.30pm that changed?

39 40 A. Yes, that's correct. Probably the two things to look at here would be the situation reports, which are --

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MS HEDGE: In the front of appendix 2.

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46 47 MR TIBALDI: Firstly, there's a situation report on page 28 of appendix 2 that was issued at 12.16 on the Monday, and at that time we still believed that with the flow of 3,500 at Moggill, we could keep it 3,500 at Moggill and as

you can see in page 29, the second paragraph, we were saying that the Wivenhoe peak would still be under 74. were estimating around 73.5. Must have had an updated model run at that time which should appear in appendix A. It's probably an additional model run which we could provide you. It possibly isn't in appendix A. No, there's just the 9 o'clock one and the 3 o'clock one. We didn't put every model run in because it was just getting too big but we could provide that if you wished that. So then at so we made the decision at around 9.30, between 9 and 9.30. I think if you look at the event log we discussed it at about 8.30 and we tried to ring the council at 8.30 to talk about it and then they rang us back at 9 and that's when I guess we formalised the decision but it was based on a model run done at 9 o'clock. So at 12 o'clock it was still looking okay and then - now there's a situation report that I understand from Michael that you've been provided but it didn't appear in the report. It was just an oversight. was a situation report that was issued at 3pm that day on. the 10th.

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MR ILOTT: If you've got Mr Malone's statement.

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MS HENDY: Yes.

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MR ILOTT: It's exhibit TM-5 to Mr Malone's statement, page 24.

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MS HENDY: Q. So there's one sent at 2.58pm? A. Yes, that's the one I'm referring to.

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Q. That is this one. Even though the heading - the heading on this one is still situation report at 12 on Monday, 10 January and 11. Looks like it was done it - it was sent at 2.58pm?

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A. And I believe the text is different.

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Q. Have any other situation reports been identified that didn't make it into the report?
A. I don't believe so.

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Q. There's just that one?

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46 47 A. It was just that one. I guess Terry remembered sending it and it was - you know, it can be validated because it's gone to that distribution list but when we were looking for it the other day I don't think he could find it in the report and then we found it. I think what

1 2 3	confused us with this particular one is because the subject was the same.
4 5 6 7	Q. Yes. A. Which was an error and I think that's maybe why it got missed out.
8 9	Q. And at that stage obviously you've gone up to the 4,000?
10 11 12 13 14 15 16 17	A. That's right. Just under rainfall, the first sentence there, "significant rainfall has fallen in the Wivenhoe catchment over the last three hours with falls exceeding a hundred millimetres", and I guess that pushed us over the edge that if we had tried to maintain a flow at Moggill of 3,500, we definitely would have exceeded EL74 but by increasing the flow at Moggill to 4,000 cumecs we could still say under EL74. We were predicting
19 20 21 22 23 24	Q. 73.8? A. That's what the situation report said. I was just going to have a look at what the model here says. The model actually in here says 73.6 but it was certainly under 74. We felt we could - we felt there was still an opportunity not to transition to W4.
25 26 27 28	MS HENDY: We might just have a break for 10 minutes because Barrie needs to have a break about every hour, so we'll just recommence in 10 minutes.
29 30 31	SHORT ADJOURNMENT
32 33	MS HENDY: We might recommence.
34 35 36	Q. John, I wanted to take you now to the event log if I can find it.
37 38	MR ILOTT: M.
39 40 41	MS HENDY: Q. Sorry, I had another hand marked copy. I've put it somewhere between my interview with Mr Ruffini and here. It should be in this folder. Just remind me

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Q. The first thing in that log I wanted to take you to was an entry for 3.30pm on Sunday, 9 January. It's on page 82. Can you tell me anything more about what was discussed

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again, you're engineer 2?

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at that meeting or the process for that meeting?
A. Well, the process for the meeting was that engineer 1
I guess just wanted to have a bit of a discussion about
where the event might head and that's a normal thing, just
have it collectively so we all had a similar understanding
as to where - what was occurring. As a result of that he
called a meeting on that Sunday. I had returned from leave
early to do a shift the previous night, so I'd finished at
7am, and I just didn't - I was still unpacking from the
holidays, so I didn't wish to drive into town, so I rang in
and I can't recall a lot about the conversation. I
certainly can't recall the numbers that are listed - that
are shown there in the flood event log. I have nothing to
say that those numbers aren't correct.

- Q. Just moving on to the 11th of January, and I think you've spoken already about model runs that were done early on that date?
- A. Yes.

- Q. Now these conversations from about 7.35 onwards on this is page 89 of the flood event log you were, according to this event mobilisation and staffing roster in the flood report you were on from 7 to 7, 7am to 7pm on the 11th?
- A. That's correct.
- Q. No, you're number 4, aren't you, engineer 4? A. Yes.
- Q. No. So on the 11th you were on from 7pm to 7am?
- MS HEDGE: No, no, 7am to 7pm. He just stayed later until 11.
- MS HENDY: And then they assisted. Sorry, I'm misreading that.
- MS HEDGE: He stayed late.

  A. That's correct that day.
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  42 MS HENDY: Q. I'm just interested in the conversations
  43 with BoM from 7.30am on this is on page 89?
  44 A. Yes.
- Q. Was that you involved in the conversation with BoM there?

- Q. And was he, of the two of you was he the person that had more contact with BoM?
- A. Yes. The background to that is engineer 2 is a -formerly worked for BoM, so he has familiarity with the people there I guess, so if there's two of us calling in it'll generally be him.

Q. And then at 7.59 you called the Seqwater CEO? A. Yes.

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Q. Excuse me. I'm just going to stop the interview just for a moment to see if I can stop those people outside from --

MS HEDGE: They're testing the door.

## SHORT ADJOURNMENT

MS HENDY: Q. Just back to that issue about calling the CEO, that was simply to advise him of the situation that there'd be damaging - well floods basically reaching Brisbane?

 A. Correct. I mean at - the background is really - as I've said in my statement at 7 o'clock we did the model run. We just spent an hour making sure that there was no other option available other than to go to W4 because it is a serious step, and then by 8 o'clock we'd made the decision as soon as we really - well maybe just before 8 by the looks of that. Once the decision was made immediately notified the CEO that that decision had been made and notified a number of people there.

 Q. And so the process from there was - was that - I guess was the purpose of that so that he could make appropriate arrangements to notify people and manage things from - was there a procedure that you were supposed to - is there some sort of document or policy that requires you to ring him or was it just --

A. I don't believe anything in the manual suggests that we must ring the CEO when we go to W4. I could be wrong. But I guess we judged it was a prudent course of action because the CEO has contact with the Chairman and other people that would really - that would need to know that information. So, yes, he was our first port of call once

- Q. And I take it that that had already been discussed with the Bureau at 7.35?
- A. Yes. I guess the discussion with the Bureau was really just to check that our modelling results were matching. We didn't want to have a situation where we were making the decision to go to W4 and yet the Bureau's modelling results were showing that the flows we were anticipating were going to be less, so it was just the confirmation. We're not required to do that but we thought it was a prudent thing to do.

- Q. Did you discuss the modelling with Brisbane City Council or was it they weren't doing their own modelling. You were just informing them?
- A. Yes. They don't have a model as such. My understanding is the council are looking at flood levels downstream of Moggill, so we wouldn't have compared models with them because they don't have a model that looks at flows into Wivenhoe that I'm aware of.

Q. Obviously at the same time that you're managing the issues in relation to Wivenhoe, Somerset, you're dealing with North Pine. Did that create issues in itself?

A. No, I don't believe it did. We were busy but I wouldn't say we were under time pressure. I think we had sufficient time to make the decisions that needed to be made. I think if one - if only one engineer had been in the room he would have been under time pressure but having two of us there gave us sufficient resources.

Q. There's an entry for 11.04am on the 11th, "Engineer 4 called dam operator 7, discussed that if forecast rainfalls FEWS plug likely to go". Do you recollect that conversation?

A. I don't. I'm just wondering what the model run around that time might have said. So the closest model run is probably at 1pm and that's saying that including forecast Wivenhoe might get to 76 which would take out a FEWS plug.

Q. And what - the effect of a FEWS plug going is that about 2,000 cumecs added to the --

 A. There'll be an uncontrolled flow of 2,000 but I don't believe that would have been the purpose of that conversation with the operator. If I was having a discussion with the operator about FEWS plugs, I think I

- Q. And from your point of view the reason that you didn't want the FEWS plug to go, what were the reasons in your mind about why that shouldn't happen?
- A. We didn't try and stop a FEWS plug going. The manual requires you to have all gates fully open prior to the initiation of the first FEWS plug. After that point you have no control over outflows because and if the dam continues to rise because of rainfall, a FEWS plug will be initiated. If you get into that situation there's nothing you can do about it.

Q. At 1.26pm there's a phone call logged, "Seqwater CEO calls and requested the FOC requests the BoM to consider if Wivenhoe is releasing 9,000 cumecs"?

A. Yes.

 Q. Do you recall what that was about?

A. Yes, I think so. My recollection was that BoM are responsible for flood warnings in the Brisbane River downstream of Wivenhoe, so I think my recollection is the CEO wanted to get a feel for how big the flood would be if BoM ran their model with a Wivenhoe outflow of 9,000 cumecs. That would be for the purposes of emergency planning. If the flood was that big what would that mean in terms of evacuations and houses inundated.

Q. And then there seems to be a similar phone call at 3.14 where he's - the Seqwater CEO is calling to discuss the proposed release of 10,000 cumecs. So is that a similar thing where he's asking for modelling to be done about that?

A. My recollection of that is that - and you would need to speak to the CEO to confirm - was that in the discussions that the CEO was having outside the flood centre, they were again for emergency planning trying to

- Q. And so the following entry at 3.49 that's a conference about the same worst case scenario?
- A. I believe so. You know, I can't remember the conversation but looking at the notes there I assume that we would have said, if we're making releases at the range of 10,000 cumecs we can say that it might be an 1893 event which then gives us a bit of a feel for where the maximum height of the water levels in Brisbane City.

- Q. And do you remember who it was from BoM that you spoke with?
- A. Not specifically. I would guess it would either be Peter Baddiley or Jimmy Stewart but who it actually was I can't remember. They record all their telephone conversations as you may know.

Q. Who does?

The BoM.

Α.

Q. Okay. No, I didn't appreciate that. I knew they recorded the telephone calls from the public but I didn't know they recorded all their conversations. Now there's a telephone call at 4.46 from the Principal, Incident and Emergency Management Seqwater, call to request update inflow outflow of Wivenhoe dam. Who is that person at Seqwater and what's their role?

A. I don't know who that is.

Q. So you don't recall that conversation. It probably wasn't you?

A. Not - I can't recall that conversation at all.

 Q. There's an entry at 5.12pm in relation to North Pine, and from what we've heard there was an issue with access to the controls or some difficulty for the operators there at North Pine?

A. Yes. My understanding is they were standing in water while they were operating the gates.

A. Well, it only happened towards the end of the event when the outflows were reaching their peak.

Q. When you advised them - and I assume - is that an accurate reflection of what was said, first of all I should ask you?

A. Okay. So that must be after the peak, so the water level's peaked and it's starting to fall and he's asking me, well, when are we going to start closing, and I've said to him - I probably asked him if it was safe to go and close and my recollection is he thought it was, then I said probably just to wait till the water clears that area in case you have an accident and then we'll just start closing down.

Q. So is that something that's been looked at by Seqwater now?

A. Yes.

- Q. On page 94 there's an entry at 8.35pm, Seqwater CEO calls FOC to speak with all duty engineers on the operating strategies for Wivenhoe releases. Did you have a conversation did you and the other engineers have a conversation with the Segwater CEO?
- A. I can't recall. We may have. I guess no doubt we did if it's listed there in the log. The dam was still at its peak level at that time but I can't or it might have just started to fall but I can't recall a conversation.

- Q. There's an entry at 9.35pm which says, "Engineer 4 rang to discuss the latest directive to raise Wivenhoe dam. Engineer 4 suggested not raising". Can you tell me about that?
- A. What occurred there was that at around 9pm I realised that I was going to be wouldn't be able to get home for a few days because of the flood that was going to come to Brisbane, so I made a decision to go home and just get some clothes and things so I could stay there for the next several days. If you look at the directives, I think they're in appendix --

MS HEDGE: I think it's 3.

MR TIBALDI: Three.

- 1 MS HEDGE: Yes, front of 3?
- 2 The front of 3. I guess look at directive on page 26, 3 that directive was signed by myself, duty engineer 4 at 9 4 o'clock, and that directive was all the gates were prior to 5 that open at 12 metres and that directive was to close the 6 gates to 11 metres, so starting to shut off. Soon after I 7 issued that directive as I said I left the room because I 8 had to go home and get some clothes. When I was out of the 9 room, the engineers redid some model results and were concerned that the dam may begin to rise again if we went 10 11 to 11 metres, so at 9.30 they decided to open again 12 slightly to 11.5 metres. The dam operator at Wivenhoe, 13 because I'd been speaking to him during the day, he thought - he didn't realise I'd left the room. He rang me just to 14 15 confirm that we were closing and then opening again 16 slightly. So not being in the room I just rang the engineers to understand why they'd made the decision and 17 that's what the conversation was about. 18

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- Q. So it was just that you were clarifying that they'd made that decision?
- A. Yes. I just wanted to know why they'd gone open again and their explanation was, look, we've looked at the modelling and if we go to 11 we might that the dam level may commence to rise again. They were concerned about that. And so they just opened it a little bit just to make sure that before we started closing right down that we wouldn't have a rise. So then if you look at 11 o'clock, an hour and a half later, we went down a significant amount down to 10 metres.

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Q. There's an entry - I'll just check that you were on at this time. On the 12th of January you were rostered from 7am to 7pm?

A. That's correct.

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Q. And there's an entry at 4.20pm on the 12th. This is on page 97: "BCC called FOC and had phone conference with duty engineers". Who was that from Brisbane City Council, do you recall?

A. I can't remember.

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Q. Is there any other log or place that names of people calling in is recorded or is it simply in this flood event

45 log?46 A. This is the only place.

- Q. That is it, okay. On 19 January at 5.10am this is page 110 there's a phone call logged there. Can you tell me a bit more about the contents of that conversation? A. Okay. Well if you look at I don't believe that statement accurately reflects what was said. I don't think I would have been obtaining a government view on how long to maintain releases but what that's about is if you notice the entry at 5.05am when the dam operator phoned to advise of erosion in the vicinity of the plunge pool.
- Q. Yes?

- A. When I was advised of that erosion and it was described to me by the dam operator, I had I was concerned that it may indicate some damage to the dam. So my conversation at 5.10am was to advise the CEO of that and I'd say as part of that conversation we might have had some discussions about the final timing of gate closure. It might have been along the lines of Wednesday, the 19th, was the day that we were anticipating gate closure would occur. So we were anticipating final closure on that day and that's what did occur, but I guess I just wanted to talk to the CEO about that damage and how it may affect final closure, depending on what was found when we inspected the area.
- Q. And was that part of your job as dam safety manager to organise those inspections?
- A. Yes. I was I guess the person best placed to do that and my recollection is that I left that shift early and travelled out to Wivenhoe dam with another engineer and we inspected the area and the following day did diving inspections and surveys and didn't find an issue of concern.
- Q. I just have some general questions for you about I guess the response to this flood event and I guess if you have a view about whether there need to be further studies or investigations or inquiries, say of hydrological nature or any other sort of scientific nature to sort of look at the impacts of this event with a view to assessing whether the manuals need to be updated?
- A. Well, the manual I mean the way we operated, which was in accordance with the manual, produced outcomes that we expected under the rules in the manual. As we've written in the flood event report in the recommendations, the manual requires that when you have an event of this nature you undertake a review. Many issues have been

- Q. Mr Ruffini mentioned to us this morning, and I think it's mentioned elsewhere in the material, that Seqwater is in the process of upgrading the software for the Flood Operations Centre. How far advanced is that program?

  A. We have a prototype system but it uses exactly the same models. We're not upgrading the models, only the software platform. So instead of running on a UNIX system,
- Q. So you don't expect it would have any significant impact at all on the capacity to manage these flood events at all?

it runs under Windows, just easier to maintain and operate.

- A. No significant impact, no.
- Q. Are there any other I should ask you about the one issue which has been litigated not litigated, that's the wrong word aired in the press is this issue about whether the FEWS plugs reduced the capacity of the dam. Can you speak to that or do you have a view about that?
- A. I don't understand how they would reduce the capacity of the dam.
- Q. All right. I should also ask you.

MS HEDGE: Should we explain the allegation? I can explain the allegation.

 $\operatorname{MS}$  HENDY: Q. You're quite well aware of what the allegation is?

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Α. No.

MS HEDGE: Q. The allegation is that you couldn't - that the flood operations engineers wouldn't let the water go up to 75.5 comparatively to the situation without the FEWS plugs where you would, in the allegation, let the water go right up to 80, right up to lapping at the top of the wall. That's the allegation?

The flood manual requires that we must have all the gates open prior to the initiation of the first FEWS plug, whatever that level is. I think you'll find that previous manuals required the same - had the same thing in terms of having all gates fully open by a certain level.

MS HENDY: So it would have been a similar level you Q. think?

I believe so. Could have been lower. Once all gates are fully open you have no control, so you're really just hoping that the rain stops and the water level in the dam stops rising.

Apart from the construction of the saddle dam which I understand is scheduled to be completed by 2035, are there any other planned upgrades to Wivenhoe or Somerset?

- Nothing to do with spillway capacity. We undertake comprehensive inspections of the dams every five years. The most recent reports were done in 2010. They would have recommendations for works in there. Apart from those works there wouldn't be any other substantial works planned.
- Q. Unless there's anything else you want to add we'll leave it there for today. The time is about four --

MS HEDGE: Nine minutes to five.

AT 4.55PM THE INTERVIEW CONCLUDED.

42 43 44

1	3.14[1] - 19:40	8.30[2] - 14:12	6:40, 6:43, 7:4, 7:14,	15:22, 20:21
ı	3.30pm [1] - 15:46	8.35pm [1] - 21:22	7:20, 7:31, 7:38, 8:1,	Adam [1] - 2:17
	3.49[1] - 20:9	8.9[1] - 8:45	8:4, 8:11, 8:25, 8:44,	
1 [3] - 5:47, 6:37, 16:2	30[1] - 1:20	1	9:12, 9:25, 10:18, 10:22,	add [2] - 9:5, 25:31
1.26pm [1] - 19:24		80[1] - 25:7		added [1] - 18:43
10 [9] - 6:44, 7:32, 9:19,	<b>322</b> [2] - 12:23, 13:35	82[1] - 15:47	11:2, 11:6, 11:13, 11:21,	additional [2] - 9:5, 14:5
9:41, 11:10, 14:34,	35[1] - 11:17	85 [1] - 8:40	11:27, 11:39, 12:12,	ADJOURNMENT[2] -
	3pm [1] - 14:19	89 [2] - 16:22, 16:43	12:17, 12:35, 12:41,	15:30, 17:20
15:26, 15:28, 22:30			12:46, 13:3, 13:11,	administrative [1] - 8:10
10,000 [3] - 19:41, 20:3,	4	9	13:15, 13:39, 14:4, 14:6,	advanced [1] - 24:22
20:14	'	_	14:30, 14:36, 14:40,	advise [3] - 17:23, 23:9,
10th [2] - 13:23, 14:20			14:43, 15:5, 15:10,	23:15
11 [7] - 11:18, 14:34,	4[7] - 5:7, 16:28, 18:33,	9 [8] - 7:8, 8:13, 14:7,	15:20, 15:43, 16:2,	advised [3] - 12:22, 21:6,
16:34, 22:6, 22:11,	21:32, 21:34, 22:3	14:10, 14:13, 14:15,	16:19, 16:26, 16:29,	23:12
22:24, 22:28	4,000 [6] - 12:43, 12:46,	15:46, 22:3	16:40, 16:44, 17:1, 17:6,	· ·
11.04am [i] - 18:33	13:5, 13:9, 15:9, 15:16	9,000[2] - 19:26, 19:34	17:12, 17:26, 18:5,	advising [1] - 20:1
11.5[1] - 22:12	4.20pm [1] - 22:37	9.30[3] - 14:10, 22:11	18:17, 18:26, 18:37,	affect [1] - 23:22
110[1] - 23:2	4.46[1] - 20:31	9.35pm [1] - 21:32	18:44, 19:16, 19:27,	After[1] - 19:18
	4.55PM (1) - 25:36	94[1] - 21:22	1	after[3] - 12:28, 21:9,
11th [5] - 11:6, 16:16,			19:30, 19:44, 20:11,	22:6
16:25, 16:31, 18:33	400 [1] - 1:20	97[1] - 22:38	20:26, 20:35, 20:39,	afterwards [1] - 6:42
12[4] - 11:43, 14:15,	45 [2] - 9:15, 10:13	9am [1] - 13:23	20:45, 21:3, 21:9, 21:20,	again [10] - 13:17, 13:23,
14:33, 22:5	. 49[1] - 11:11	9pm [2] - 6:44, 21:36	21:27, 21:36, 22:2,	15:42, 19:47, 20:4,
<b>12.16</b> [1] - 13:45	4am [1] - 11:18	9th [ւ] - 11:11	22:22, 22:35, 22:41,	22:10, 22:11, 22:15,
12th [2] - 22:33, 22:37			22:46, 23:4, 23:12,	22:22, 22:25
<b>13</b> [2] - 5:20, 12:7	5	A	23:28, 23:42, 24:23,	Again [1] - 9:47
147 [2] - 8:47, 9:8	-		- 24:31, 24:38, 25:1, 25:9,	4
<b>15</b> [1] - 5:40			25:17, 25:25	AHD[i] - 11:17
1893[1] - 20:14	5[4] - 6:13, 6:34, 9:19,	a [130] - 2:1, 2:3, 2:5,	able [1] - 21:37	aired [1] - 24:35
<b>19</b> [3] - 12:19, 13:24,	9:41	2:26, 2:31, 2:35, 2:38,	about [73] - 2:32, 2:39,	all [24] - 3:5, 3:47, 4:24,
	5.05am [1] - 23:8	2:42, 3:9, 3:12, 3:27,	2:44, 3:3, 3:15, 3:16,	4:34, 4:35, 4:47, 6:12,
23:1	5.10am [2] - 23:1, 23:15	3:41, 5:12, 5:24, 6:15,	4:4, 4:9, 5:40, 6:6, 6:31,	7:35, 9:34, 16:5, 19:17,
<b>1995</b> [1] - 5:16	5.12pm [1] - 20:41	6:18, 6:28, 6:29, 6:38,	6:45, 7:5, 7:8, 7:10,	20:3, 20:22, 20:30,
19th [1] - 23:18	<b>50</b> [1] - 11:15	7:2, 7:11, 7:12, 7:14,		20:39, 21:7, 21:23, 22:4,
1pm [1] - 18:39	00(1) 11110	7:22, 7:23, 8:10, 8:14,	7:32, 7:33, 7:38, 8:13,	24:9, 24:29, 24:30, 25:9,
	- 6	8:16, 8:31, 8:32, 8:34,	8:17, 8:40, 8:46, 9:2,	25:13, 25:17
2	6	8:36, 8:37, 9:19, 9:28,	9:16, 9:35, 9:37, 11:4,	All [1] - 24:41
	_		11:19, 11:29, 11:37,	allegation [6] - 24:43,
	6.30[2] - 6:46, 11:22	9:45, 9:47, 10:5, 10:20,	11:40, 12:8, 12:9, 12:17,	24:44, 24:47, 25:3, 25:6,
<b>2</b> [8] - 2:29, 2:33, 5:17,	67[1] - 12:9	10:35, 10:36, 11:4,	12:33, 12:39, 13:36,	l i
13:42, 13:45, 15:42,	0/[1]-12.9	11:25, 11:27, 11:28,	14:12, 14:13, 15:27,	25:8
17:2, 17:6		11:29, 11:35, 11:41,	15:47, 16:3, 16:11,	Allens[1] - 2:14
2,000 (2) - 18:43, 18:44	7	11:42, 11:44, 11:45,	16:17, 16:21, 17:22,	along [1] - 23:18
2.30pm [1] - 13:38		12:2, 12:8, 12:22, 13:15,	18:43, 18:47, 19:6, 19:8,	already [2] - 16:17, 18:3
2.58pm [2] - 14:29, 14:35	7.55 5.7 6.46 11.10	13:24, 13:25, 13:44,	19:15, 19:22, 19:29,	also [5] - 2:4, 3:7, 3:41,
2006[1] - 5:16	7[7] - 5:7, 6:46, 11:19,	14:14, 14:16, 14:19,	19:43, 20:10, 21:34,	4:43, 24:41
	16:24, 17:27, 18:34	15:12, 15:14, 15:21,	22:18, 22:25, 23:3, 23:7,	always [1] - 10:7
2007[1] - 5:8	7,000 [2] - 9:35, 12:23	15:26, 15:27, 16:3, 16:4,	1	amongst [2] - 5:43, 6:31
2008[1] - 2:41	7.30am [1] - 16:43	16:5, 16:6, 16:7, 16:8,	23:17, 23:22, 23:35,	amount [1] - 22:29
2009[1] - 7:21	7.35 [2] - 16:21, 18:4	16:11, 17:6, 17:15,	23:37, 24:1, 24:13,	An [1] - 7:21
<b>2010</b> [2] - 8:4, 25:27	7.59 [1] - 17:11	17:30, 17:34, 17:39,	24:33, 24:35, 24:37,	1
<b>2011</b> [3] - 1:15, 2:30,	72[1] - 12:1	, , , ,	25:32	an [30] - 5:24, 6:35, 8:10,
5:35	72.9"[1] - 13:32	17:44, 18:7, 18:12,	About[1] - 11:24	9:20, 10:3, 10:47, 11:7,
2035 [1] - 25:23	73.5[1] - 14:3	18:17, 18:20, 18:40,	above [2] - 9:1, 9:2	14:3, 14:5, 14:18, 15:5,
22[1] - 6:36	73.6[1] - 15:22	18:42, 18:46, 19:4, 19:6,	access [1] - 20:42	15:23, 15:46, 17:28,
<b>24</b> [2] - 11:43, 14:27		19:7, 19:9, 19:16, 19:20,	accident [1] - 21:15	18:33, 18:44, 19:9,
	73.8 (1) - 15:19	19:24, 19:33, 19:34,	accommodate [2] -	20:14, 20:41, 20:42,
<b>25</b> [1] - 2:40	74[4] - 11:5, 11:17, 14:2,	19:39, 19:41, 20:2, 20:9,	12:28, 13:13	21:6, 21:15, 21:22,
26[1] - 22:2	15:23	20:15, 20:30, 21:24,	accordance [3] - 5:44,	21:32, 22:29, 22:32,
<b>28</b> [1] - 13:45	<b>75.5</b> [1] - 25:5	21:25, 21:30, 21:37,		22:37, 23:32, 23:46,
29 [2] - 1:15, 14:1	76[1] - 18:40	21:39, 22:26, 22:28,	12:30, 23:43	24:4
	7am [6] - 11:24, 16:9,	22:29, 23:2, 23:3, 23:6,	according [1] - 16:23	analysing [i] - 3:17
3	16:24, 16:31, 16:33,	23:37, 23:40, 23:47,	accuracy[1] - 10:3	
- 1	22:34	24:2, 24:3, 24:12, 24:13,	accurate [1] - 21:7	And [30] - 2:47, 3:21,
	7pm [4] - 16:24, 16:31,	24:23, 24:25, 24:37,	accurately [1] - 23:5	3:34, 4:29, 5:18, 7:18,
3 [5] - 5:47, 14:7, 21:44,	16:33, 22:34		across[1] - 8:14	7:46, 8:3, 11:15, 11:37,
22:1, 22:2	10,00, 22,04	25:13, 25:15	Act (3) - 1:38, 2:41, 2:42	12:15, 12:27, 12:37,
3,420[1] - 13:29		A [109] - 2:40, 3:2, 3:23,	action [3] - 4:43, 10:45,	12:43, 13:30, 14:36,
3,500 [9] - 12:22, 12:30,	8	3:27, 3:39, 4:1, 4:6,	17:44	15:8, 16:36, 17:4, 17:11,
13:16, 13:26, 13:30,		4:10, 4:15, 4:19, 4:26,		17:36, 18:3, 18:42,
13:34, 13:47, 15:15	9 to 6:12 7:0 11:0	4:32, 4:37, 5:1, 5:5,	actions [1] - 19:2	19:13, 19:39, 20:9,
3.00pm [i] - 1:15	8[5] - 6:13, 7:9, 11:6,	5:12, 5:16, 5:29, 5:38,	actual [2] - 9:18, 9:39	20:18, 22:26, 22:37,
ուսոխունի - է՝ (ն	17:30, 17:31	6:8, 6:12, 6:18, 6:28,	actually [4] - 6:2, 9:10,	23:26
	I	1	1	

.11/03/29

and [178] - 1:9, 1:26, 2:4, 2:5, 2:25, 2:26, 2:27, 2:29, 2:37, 2:41, 2:44, 3:1, 3:4, 3:5, 3:8, 3:9, 3:11, 3:16, 3:17, 3:22, 3:31, 3:46, 4:35, 4:43, 5:20, 5:23, 5:33, 5:41, 5:47, 6:1, 6:3, 6:14, 6:23, 6:26, 6:30, 6:31, 6:36, 6:37, 6:45, 6:46, 7:24, 7:32, 7:33, 7:41, 7:42, 7:43, 7:47, 8:15, 8:19, 8:21, 8:33, 8:37, 8:38, 8:44, 8:45, 8:46, 8:47, 9:1, 9:3, 9:4, 9:6, 9:23, 9:26, 9:27, 9:28, 9:30, 9:31, 9:33, 9:34, 9:40, 9:46, 10:1, 10:9, 10:26, 10:32, 10:36, 10:37, 11:18, 11:27, 11:28, 11:30, 11:35, 11:44, 11:45, 11:46, 12:2, 12:5, 12:13, 12:19, 12:23, 12:38, 12:46, 13:19, 13:21, 13:23, 13:24, 13:27, 13:35, 13:46, 13:47, 14:7, 14:10, 14:12, 14:13, 14:16, 14:34, 14:44, 14:47, 15:5, 15:13, 15:41, 16:4, 16:9, 16:11, 16:16, 16:23, 17:30, 17:33, 17:38, 17:45, 18:8, 18:39, 19:6, 19:16, 19:19, 19:25, 19:37, 19:44, 20:1, 20:4, 20:31, 20:34, 20:42, 21:6, 21:10, 21:11, 21:12, 21:13, 21:15, 21:25, 21:39, 21:40, 22:4, 22:5, 22:8, 22:9, 22:15, 22:17, 22:23, 22:24, 22:29, 22:38, 23:12, 23:15, 23:20, 23:22, 23:29, 23:30, 23:31, 23:32, 23:36, 24:2, 24:7, 24:15, 24:19, 24:26, 25:19 another [3] - 7:32, 15:39, 23:30 answer[1] - 7:38 anticipate [1] - 20:1 anticipating [3] - 18:10, 23:19, 23:20 any [21] - 4:4, 4:5, 4:26, 4:45, 5:33, 5:35, 6:5, 6:6, 6:28, 10:26, 11:16, 12:3, 13:9, 14:38, 19:2, 22:43, 23:39, 24:28, 24:33, 25:24, 25:29 Any[i] - 4:13 anyone [3] - 4:13, 5:4, 11:7 anything [6] - 8:36, 15:47, 17:42, 19:2, 19:10, 25:31 Apart [2] - 25:22, 25:28 apart [3] - 2:6, 5:36, 6:13

6:22, 6:24, 6:27 appendix [5] - 13:42, 13:45, 14:4, 14:6, 21:42 applying [1] - 7:24 appreciate [1] - 20:28 approach [2] - 10:47, 12:20 appropriate [1] - 17:37 approved[1] - 5:45 Are [2] - 3:45, 24:33 are [22] - 2:40, 2:43, 3:16, 3:26, 3:27, 5:19, 5:42, 10:1, 10:16, 10:25, 10:43, 11:39, 13:24, 13:40, 16:12, 16:13, 18:18, 19:30, 20:3, 21:11, 25:18, 25:23 area [4] - 19:2, 21:14, 23:24, 23:31 areas [5] - 12:31, 24:7, 24:9, 24:17 aren't [2] - 16:14, 16:28 around [7] - 6:45, 10:11, 11:22, 14:3, 14:10, 18:37, 21:36 arrangements [2] - 4:21, 17:38 as [24] - 2:32, 4:31, 5:41, 5:47, 6:4, 6:29, 8:14, 9:45, 10:6, 10:15, 13:15, 13:47, 16:6, 17:26, 17:31, 18:17, 19:1, 20:23, 22:7, 23:16, 23:26 As [3] - 16:6, 23:44, 24:12 ask [5] - 2:6, 9:14, 21:8, 24:33, 24:41 asked [2] - 7:32, 21:12 asking [2] - 19:42, 21:10 aspects [2] - 2:34, 4:37 assessing [1] - 23:40 assist [1] - 3:14 assisted [1] - 16:36 associated [5] - 3:7, 3:9, 3:11, 4:42, 7:15 association [1] - 3:8 assume [2] - 20:12, 21:6 at [128] - 1:15, 2:4, 2:32, 3:5, 3:46, 4:46, 4:47, 5:2, 5:7, 5:10, 5:17, 5:28, 5:29, 6:35, 6:39, 6:40, 6:44, 7:9, 7:22, 7:23, 7:34, 8:3, 8:6, 8:33, 8:38, 9:22, 9:26, 9:28, 9:29, 9:42, 10:3, 10:13, 10:26, 10:39, 11:6, 11:18, 11:22, 11:24, 11:45, 12:2, 12:3, 12:4, 12:9, 12:10, 12:22, 12:29, 12:33, 13:3, 13:16, 13:22, 13:23, 13:26, 13:27, 13:28, 13:33, 13:34, 13:40, 13:45, 13:46, 13:47,

appear[2] - 14:4, 14:18

appendices [4] - 6:15,

14:4, 14:9, 14:10, 14:11, 14:12, 14:13, 14:15, 14:19, 14:29, 14:33, 14:35, 15:8, 15:14, 15:16, 15:21, 16:1, 16:8, 17:11, 17:26, 17:27, 18:4, 18:18, 18:20, 18:23, 18:39, 19:7, 19:39, 20:9, 20:12, 20:13, 20:31, 20:33, 20:39, 20:41, 20:43, 21:18, 21:22, 21:28, 21:29, 21:32, 21:36, 21:41, 22:2, 22:3, 22:5, 22:11, 22:12, 22:23, 22:28, 22:32, 22:37, 23:1, 23:4, 23:8, 23:15, 23:39, 24:5, 24:10, 24:15, 24:29, 24:30, 25:7 AT[1] - 25:36 At [6] - 1:20, 5:7, 5:40, 6:34, 11:10, 19:24 attempt [1] - 13:13 altempted [2] - 12:28, 13:20 attend [1] - 2:4 attended (n - 12:39 author[1] - 6:11 automatic [1] - 8:45 automatically [1] - 9:24 available [1] - 17:29 average [1] - 11:44 avoid[1] - 10:9 aware [4] - 6:38, 18:21, 21:1, 24:46 Ayre [1] - 6:1

## В

back [6] - 5:26, 10:29, 10:41, 13:18, 14:13, 17:22 background [4] - 2:31, 9:47, 17:6, 17:26 Background [1] - 12:19 Baddiley [1] - 20:21 balance [1] - 24:6 band [2] - 9:46, 9:47 Barrie [1] - 15:27 based [3] - 6:13, 9:17, 14:14 basically [1] - 17:24 BCC[i] - 22:38 BCC's[1] - 12:28 be [45] - 2:44, 4:7, 5:16, 6:26, 7:20, 7:21, 7:34, 7:35, 8:35, 8:36, 9:38, 9:40, 10:5, 10:14, 10:34, 10:36, 10:38, 10:40, 13:40, 14:2, 14:44, 15:41, 17:9, 17:24, 17:43, 18:10, 18:28, 18:44, 19:9, 19:20, 19:33, 19:35, 19:39, 19:42, 20:2, 20:14,

21:38, 22:7, 22:13 become [i] - 21:1 becomes [f] - 10:7 been [30] - 5:24, 6:43, 7:11, 7:14, 8:5, 8:16, 8:19, 8:20, 8:22, 8:23, 13:19, 13:20, 13:23, 13:35, 14:17, 14:38, 17:33, 18:3, 18:29, 18:30, 18:45, 19:1, 21:18, 22:13, 23:6, 23:18, 23:47, 24:34, 25:15, 25:17 before [6] - 7:2, 7:3, 10:29, 13:15, 17:31, 22:27 begin [1] - 22:10 being [5] - 5:41, 7:4, 7:40, 9:18, 22:16 believe [13] - 11:2, 11:21, 12:13, 12:35, 14:36, 14:40, 17:1, 17:42, 18:26, 18:45, 20:11, 23:4, 25:17 believed [1] - 13:46 below [2] - 10:39, 12:29 best [1] - 23:28 better[1] - 8:16 between [6] - 6:36, 6:46, 8:44, 14:10, 15:40, 24:6 big [4] - 6:15, 14:8, 19:33, 19:36 blt [9] - 2:26, 2:31, 2:35, 2:38, 3:41, 16:3, 20:15, 22:26, 23:3 boards [3] - 8:43, 8:44, BoM [9] - 16:43, 16:46, 17:5, 17:7, 19:25, 19:30, 19:34, 20:18, 20:26 bottom [2] - 6:34, 9:46 break [2] - 15:26, 15:27 Brian (1) - 2:12 Brisbane [13] - 1:20, 7:41, 12:8, 12:10, 12:21, 12:34, 13:13, 17:25, 18:14, 19:31, 20:16, 21:39, 22:39 Bureau [2] - 18:4, 18:5 Bureau's [1] - 18:8 busy[1] - 18:26 but [39] - 3:5, 3:7, 3:41, 5:30, 7:15, 7:39, 8:34, 8:35, 9:21, 9:44, 10:1, 10:6, 10:7, 10:10, 11:21, 11:34, 11:40, 12:3, 13:5, 14:9, 14:14, 14:17, 14:45, 15:15, 15:22, 17:1, 18:11, 18:26,

20:20, 21:9, 21:37,

23:37, 23:41, 24:5,

10:29, 10:41, 13:18,

17:29, 17:45, 18:20,

19:7, 19:19, 19:20,

because [18] - 6:1, 10:8,

14:8, 14:45, 15:1, 15:27,

25:23, 25:29

18:30, 18:44, 20:12, 20:21, 20:29, 21:29, 21:30, 23:7, 23:21, 24:14, 24:23

But [4] - 7:38, 13:9, 17:44, 19:5

by [20] - 1:26, 2:43, 3:12, 4:7, 4:18, 4:19, 5:28, 5:29, 9:4, 12:24, 12:29, 13:38, 15:15, 17:30, 17:31, 21:18, 22:3, 23:13, 25:13, 25:29

#### С

calculations [1] - 8:22 call [9] - 12:8, 12:16, 12:28, 17:47, 19:24, 19:39, 20:31, 20:32, called [4] - 16:7, 17:11, 18:34, 22:38 calling [4] - 17:8, 17:22, 19:40, 22:44 calls [3] - 19:25, 20:29, 21:23 came [1] - 6:43 can [24] - 3:39, 4:26, 8:6, 8:38, 9:8, 10:1, 11:41, 11:42, 11:43, 11:44, 12:1, 12:3, 12:4, 13:24, 13:29, 14:1, 14:44, 15:35, 17:15, 19:22, 20:14, 24:8, 24:16, 24:43 Can [5] - 2:38, 15:47, 21:34, 23:2, 24:36 can't [18] - 7:4, 8:36, 9:39, 10:9, 10:29, 10:31, 10:45, 13:18, 16:11, 16:12, 20:11, 20:22, 20:39, 21:27, 21:29, 21:30, 22:41, 24:9 cannot [2] - 13:5, 13:6 capabilities [1] - 24:8 capacity [5] - 5:10, 24:29, 24:36, 24:38, 25:25 case [4] - 20:1, 20:2, 20:10, 21:15 catchment [8] - 8:14, 9:30, 9:36, 10:4, 11:35, 11:38, 11:44, 15:12 catchments [1] - 3:3 category [1] - 6:22 caused [1] - 9:4 cent [2] - 9:19, 9:41 Centre [9] - 3:45, 3:46, 4:1, 4:6, 4:17, 4:46, 5:34, 5:36, 24:22 centre [2] - 5:2, 19:47 CEO [14] - 17:11, 17:23. 17:33, 17:43, 17:45, 19:24, 19:33, 19:40, 19:45, 19:46, 21:22, 21:26, 23:15, 23:22

.11/03/29

certain [4] - 2:42, 10:23, 10:36, 25:13 certainly [3] - 11:40, 15:22, 16:12 Chairman [1] - 17:45 chance [1] - 19:9 change [3] - 12:33, 13:9, 24:14 changed [1] - 13:38 changes [1] - 8:4 check [2] - 18:6, 22:32 choice [1] - 11:42 City [8] - 12:8, 12:10, 12:21, 12:34, 13:14, 18:14, 20:16, 22:39 clarification [1] - 2:26 clarify[1] - 4:25 clarifying [1] - 22:20 clearly [1] - 12:44 clears[1] - 21:14 close(2) - 21:13, 22:5 closest[1] - 18:38 closing [4] - 21:11, 21:15, 22:15, 22:27 closure [4] - 23:17, 23:19, 23:20, 23:23 clothes [2] - 21:40, 22:8 collated [1] - 6:23 collectively[1] - 16:5 collectors [1] - 4:27 column (2) - 13:26, 13:31 come [3] - 5:26, 11:46, 21:38 coming [1] - 7:35 commence[1] - 22:25 commenced [2] - 11:19, 11:34 commencing [1] - 2:30 COMMISSION [1] - 1:1 Commission [2] - 2:2, Commission's [1] - 2:4 comparatively [1] - 25:5 compared [1] - 18:19 compile (1) - 3:31 completed [1] - 25:23 complies [1] - 2:45 comprehensive [1] -25:26 computer[f] - 11:41 concern [1] - 23:33 concerned [3] - 22:10, 22:25, 23:14 concerning [1] - 1:8 concerns [3] - 12:15, 12:29, 13:14 CONCLUDED [1] - 25:36 conditions [3] - 2:43. 2:45, 10:5 conducted [2] - 1:26, 11:18 conference [3] - 12:8, 20:9, 22:38 confirm [2] - 19:45, 22:15

confirmation [1] - 18:11 confused [1] - 15:1 connected [1] - 3:38 consider[1] - 19:25 considerable [1] - 5:8 considering [1] - 8:29 consist[1] - 6:22 construction [1] - 25:22 contact [3] - 7:5, 17:5, 17:45 content [1] - 2:36 contents [1] - 23:3 continues [1] - 19:20 contract [4] - 3:13, 4:21, 5:30 control (3) - 12:47, 19:19, 25:18 controls [1] - 20:43 conversation [23] - 6:36, 6:38, 6:47, 7:2, 11:29, 12:25, 16:11, 16:46, 17:1, 17:2, 18:36, 18:46, 19:6, 20:12, 20:37, 20:39, 21:25, 21:26, 21:30, 22:18, 23:3, 23:15, 23:16 conversations [6] -16:21, 16:42, 19:8, 20:7, 20:23, 20:30 coordinating [1] - 3:25 copies [1] - 12:47 copy[1] - 15:39 correct [6] - 12:41, 13:39, 16:14, 16:26, 16:40, 22:35 Correct [1] - 17:26 Could m - 25:17 could [16] - 2:35, 8:31, 9:6, 9:32, 9:44, 13:25, 13:47, 14:5, 14:9, 14:46, 15:16, 15:23, 17:37, 17:43, 21:40, 24:5 couldn't(1) - 25:3 Council [6] - 12:8, 12:10, 12:21, 12:34, 18:15, 22:39 council [2] - 14:12, 18:18 Council's [1] - 13:14 councils [1] - 12:47 counsel [2] - 2:12, 2:17 couple [1] - 10:20 course [4] - 7:18, 7:20, 10:44, 17:44 courses [1] - 4:41 create [1] - 18:25 cumecs (12) - 12:22. 12:30, 12:43, 12:46, 13:16, 15:16, 18:43, 19:26, 19:35, 19:41, 20:3, 20:14 curious [1] - 6:1

D

d[1] - 5:17 dam [45] - 2:29, 2:33,

2:37, 2:44, 3:3, 3:38, 4:9, 4:10, 4:15, 4:30, 4:35, 4:37, 4:42, 5:1, 5:25, 6:37, 7:19, 7:26, 9:31, 9:34, 10:24, 10:39, 10:45, 11:17, 11:30, 13:32, 18:34, 19:19, 20:33, 21:28, 21:33, 22:10, 22:12, 22:24, 23:8, 23:13, 23:14, 23:26, 23:30, 24:1, 24:5, 24:36, 24:39, 25:19, 25:22 dam"[1] - 5:10 dam's [1] - 2:42 damage [6] - 12:10, 12:33, 13:6, 13:20, 23:14, 23:22 damaging [1] - 17:24 Dams[1] - 1:9 dams [7] - 2:40, 3:8, 3:40, 5:9, 5:20, 5:23, 25:26 data [8] - 3:16, 3:17, 3:28, 3:29, 3:30, 3:31, 4:27 date [1] - 16:18 dated | 11 - 2:29 day [12] - 4:31, 7:5, 8:18, 8:33, 11:20, 14:19, 14:46, 16:40, 22:13, 23:19, 23:20, 23:31 days [2] - 21:38, 21:41 dealing [1] - 18:24 decided [2] - 10:30, 22:11 decision [15] - 6:28, 10:27, 10:33, 10:35, 13:18, 14:10, 14:14, 17:31, 17:32, 17:33, 18:1, 18:8, 21:39, 22:17, 22:21 decisions [4] - 6:31, 10:15, 10:23, 18:28 definitely [1] - 15:15 degree [2] - 10:5, 10:6 depending [2] - 3:30, 23:23 described [1] - 23:13 design [2] - 7:23, 7:25 designated [2] - 5:41, detail [1] - 7:35 development [1] - 4:46 dictate [1] - 2:43 Did [7] - 5:33, 5:35, 6:5, 12:31, 18:14, 18:25, 21:24 dld[17] - 6:12, 7:39, 7:47, 9:10, 12:15, 12:32, 12:35, 13:13, 13:21, 13:24, 17:27, 18:26, 21:1, 21:25, 21:27, 23:21, 23:31 didn't [15] - 6:15, 10:32, 14:7, 14:18, 14:39, 16:9,

19:16, 20:28, 20:29, 22:14, 23:32 different [5] - 3:6, 7:43, 11:4, 12:2, 14:36 difficulty[1] - 20:43 directive [6] - 21:33, 22:2, 22:3, 22:4, 22:5, 22:7 directives [2] - 6:20, 21:41 discrepancy[1] - 8:44 discuss [4] - 7:42, 18:14, 19:40, 21:33 discussed [10] - 6:31, 6:42, 6:43, 7:4, 13:4, 13:15, 14:11, 15:47, 18:3, 18:34 discussion [5] - 11:25, 11:29, 16:3, 18:5, 18:47 discussions [6] - 6:6, 6:13, 12:21, 13:6, 19:46, 23:17 distribution [1] - 14:45 divide [1] - 24:8 divided [1] - 24:10 dividing [1] - 24:11 diving [1] - 23:31 division [1] - 3:12 Do [2] - 18:35, 19:29 do [24] - 3:10, 3:40, 3:44, 4:1, 4:10, 4:41, 9:6, 9:28, 9:37, 10:20, 10:28, 10:29, 11:24, 16:8, 18:11, 18:12, 19:22, 20:18, 22:40, 23:28, 24:37, 25:25 document [1] - 17:40 does [1] - 20:25 doing [2] - 11:47, 18:15 don't[18] - 4:1, 10:8, 10:17, 14:40, 14:46, 17:42, 18:17, 18:20, 18:26, 18:37, 18:44, 19:7, 20:35, 20:37, 23:4, 23:5, 24:28, 24:38 done[11] - 4:7, 6:6, 8:3, 8:6, 10:31, 13:20, 14:15, 14:34, 16:17, 19:42, 25:27 door[i] - 17:18 dot [3] - 5:18, 13:28, 13:31 doubt [1] - 21:27 down (6) - 8:21, 12:19, 21:16, 22:27, 22:29, 22:30 downstream [3] - 18:19, 19:32, 20:6 draft [1] - 7:43 drafted [1] - 6:12 drafting [2] - 6:12, 7:39 drive[1] - 16:10 drop[1] - 9:28 drops [2] - 9:33, 9:34 during [9] - 3:5, 5:9, 5:23, 5:24, 5:34, 8:30,

duty[4] - 11:19, 21:23, 22:3, 22:39

E

earlier [1] - 7:10 early [4] - 16:8, 16:17, 21:1, 23:29 earth [1] - 3:39 easier[1] - 24:26 easily[1] - 9:45 edge[2] - 11:31, 15:14 effect [2] - 6:6, 18:42 either[2] - 4:27, 20:20 EL74[4] - 10:37, 10:40, 15:15, 15:17 else [6] - 2:6, 4:13, 5:4, 7:30, 8:36, 25:31 elsewhere[1] - 24:20 Emergency [1] - 20:32 emergency [4] - 4:43, 19:35, 19:47, 20:5 employ[i] - 3:13 end [1] - 21:3 Engineer[3] - 18:33, 21:32, 21:34 engineer[17] - 2:9, 2:33, 5:47, 6:37, 9:20, 12:13, 12:37, 15:42, 16:2, 16:28, 17:2, 17:6, 18:29, 22:3, 23:30, 24:12 engineers (12) - 4:20. 5:40, 5:41, 5:42, 6:4, 11:1, 12:32, 21:23, 21:25, 22:9, 22:17, 25:4 engineers" [1] - 22:39 ensuring (2) - 3:11, 5:22 enter[2] - 11:39, 11:41 entered [1] - 11:22 entry [9] - 15:46, 18:33, 20:9, 20:41, 21:22, 21:32, 22:32, 22:37, 23:8 environment (2) - 12:13, erosion (2) - 23:9, 23:12 err[2] - 10:16, 10:27 error[6] - 6:35, 9:16, 9:38, 9:40, 9:42, 15:5 especially [1] - 10:14 establishment in - 2:37 estimated [2] - 13:28, 13.31 estimating [i] - 14:3 estimation [1] - 8:23 evacuations[1] - 19:37 Even [1] - 14:32 even [1] - 13:18 event [27] - 2:27, 5:24, 5:35, 5:44, 6:10, 6:35, 7:14, 10:4, 10:6, 10:24, 12:17, 12:18, 14:11, 15:34, 16:4, 16:13, 16:22, 16:23, 20:14, 21:2, 21:3, 22:44, 23:36, 23:40, 23:45, 23:46

-.11/03/29

12:16, 21:2, 22:13

16:10, 18:7, 19:13,

events 151 - 3:5, 5:9. 5:23, 7:12, 24:29 ever[2] - 4:45, 7:11 every [4] - 10:10, 14:8, 15:27, 25:26 everyone [1] - 2:6 exact [1] - 11:21 exactly [2] - 9:32, 24:23 example [3] - 2:36, 6:19, 11:47 exceed [3] - 11:17, 13:18, 13:25 exceeded [1] - 15:15 exceeding [1] - 15:12 excluding [1] - 11:16 Excuse [1] - 17:14 exhlblt[1] - 14:26 existed [2] - 6:19, 6:23 expect [2] - 9:42, 24:28 expected [1] - 23:44 experience (2) - 5:8, 9:41 experienced [2] - 7:40, 7:42 expert [2] - 24:16, 24:17 explain [3] - 9:8, 24:43, 24:44 explanation [2] - 8:40, 22:23 express [1] - 12:15 extensive [2] - 8:5, 24:11

## F

factor[1] - 9:24 fairly[1] - 11:43 fall [2] - 21:10, 21:30 fallen [3] - 9:26, 9:29, 15:11 falling [1] - 10:8 falls[1] - 15:12 familiar[1] - 4:20 familiarity [1] - 17:7 far[1] - 24:22 feel [2] - 19:33, 20:15 feeling [1] - 11:31 fellow[1] - 12:31 felt [2] - 15:23 few [3] - 2:26, 19:8, 21:38 FEWS [15] - 18:35, 18:40, 18:42, 18:47, 19:2, 19:4, 19:6, 19:9, 19:14, 19:16, 19:18, 19:20, 24:36, 25:5, 25:10 figures [1] - 10:36 final [3] - 23:17, 23:20, 23:22 find [5] - 8:39, 14:47, 15:35, 23:32, 25:11 finished [1] - 16:8 first [12] - 2:36, 5:18, 6:47, 9:25, 9:27, 11:15, 15:10, 15:45, 17:47, 19:18, 21:7, 25:10 firstly[1] - 13:27

5:34, 5:36, 24:21 flood [44] - 3:5, 4:10, 4:13, 4:20, 4:38, 5:9, 5:23, 5:24, 5:35, 5:41, 5:42, 5:44, 5:46, 6:10, 6:35, 9:17, 10:13, 10:30, 10:32, 10:33, 10:43, 10:45, 12:17, 12:18, 12:32, 12:40, 16:13, 16:22, 16:24, 18:18, 19:31, 19:33, 19:36, 19:46, 21:38, 22:44, 23:36, 23:45, 24:6, 24:12, 24:13, 24:29, 25:4, 25:9 flooded [1] - 10:34 flooding [2] - 2:29, 8:33 floods [i] - 17:24 FLOODS[1] - 1:1 Floods [2] - 2:2, 4:40 floor[1] - 6:4 floors [4] - 10:26, 13:17, 13:19 flow [14] - 3:4, 3:6, 8:34, 9:34, 12:22, 12:29, 13:16, 13:26, 13:28, 13:34, 13:46, 15:14, 15:16, 18:44 flows [2] - 18:9, 18:21 FOC [3] - 19:25, 21:23, 22:38 folder [1] - 15:41 following [3] - 12:21, 20:9, 23:31 For [2] - 2:36, 5:4 for [61] - 2:12, 2:15, 2:17, 3:6, 3:27, 3:29, 3:46, 4:2, 4:4, 4:6, 4:10, 4:13, 4:17, 4:30, 4:35, 5:1, 5:22, 5:43, 5:44, 5:46, 6:12, 6:19, 7:39, 8:7, 8:9, 8:16, 9:8, 9:14, 9:22, 9:34, 10:27, 10:38, 10:40, 11:47, 12:27, 14:46, 15:26, 15:46, 16:1, 16:2, 17:7, 17:15, 18:33, 19:3, 19:31, 19:33, 19:35, 19:42, 19:47, 20:4, 20:15, 20:43, 21:24, 21:37, 21:40, 23:35, 24:16, 24:21, 25:28, 25:32 forecast[4] - 7:2, 11:16, 18:34, 18:39 forecasting [1] - 24:15 formalised [1] - 14:14 formerly[i] - 17:7 found [2] - 14:47, 23:23 four [2] - 24:9, 25:32 Four [1] - 15:43 Friday [1] - 7:35 from [37] - 2:6, 2:14,

Firstly [2] - 8:40, 13:44

five [3] - 12:27, 25:26,

Flood [9] - 3:45, 3:46,

4:1, 4:6, 4:17, 4:46,

25:34

2:29, 2:31, 3:29, 5:16, 5:37, 6:13, 6:14, 7:26, 7:42, 9:20, 11:11, 12:31, 12:33, 13:9, 14:17, 16:7, 16:9, 16:21, 16:24, 16:31, 16:43, 17:16, 17:36, 17:38, 19:9, 19:13, 20:3, 20:18, 20:29, 20:31, 20:42, 22:33, 22:39, 25:22, 25:28 front [3] - 13:42, 22:1, 22:2 fully [5] - 12:22, 19:17, 20:4, 25:13, 25:18 further [2] - 13:33, 23:37 future [1] - 24:2

## G

gained [1] - 5:8 gate [2] - 23:17, 23:19 gated [2] - 5:9, 5:21 gates [8] - 19:17, 20:3, 20:46, 22:4, 22:6, 25:10, 25:13, 25:17 gathered [2] - 6:14, 6:21 gathering [1] - 3:16 gauge [3] - 8:43, 8:44 gauges [2] - 8:27, 8:35 gave [3] - 9:46, 13:3, 18:31 general [1] - 23:35 generally [2] - 11:46, George [1] - 1:20 get [9] - 2:31, 9:4, 9:30, 18:40, 19:21, 19:33, 21:37, 21:39, 22:8 gets [1] - 3:28 getting [1] - 14:8 give[1] - 2:35 given [1] - 4:26 gives[1] - 20:15 go [15] - 8:39, 10:20, 10:38, 11:6, 13:18, 17:29, 17:43, 18:8, 19:14, 21:12, 21:39, 22:8, 22:24, 25:4, 25:6 go"[1] - 18:35 goes[1] - 6:32 going [21] - 8:9, 8:13, 9:30, 9:34, 10:25, 10:26, 10:30, 10:34, 10:35, 10:43, 11:31, 12:5, 15:21, 17:14, 18:10, 18:42, 19:16, 21:11, 21:37, 21:38, 24:10 gone [4] - 12:47, 14:45, 15:8, 22:22 got [8] - 3:21, 7:31, 9:40, 9:41, 10:42, 11:21, 14:22, 15:5 government [1] - 23:6 granted [1] - 9:22 Grantham [1] - 8:33

graph [2] - 9:1, 9:7 graphs [1] - 9:43 ground [2] - 9:27, 19:10 guess [44] - 3:10, 3:15, 4:19, 5:21, 5:23, 6:21, 7:11, 7:29, 7:40, 8:15, 8:19, 8:32, 8:36, 9:7, 9:14, 9:27, 9:41, 10:23, 10:27, 11:10, 11:31, 11:32, 11:44, 13:15, 13:21, 13:22, 13:25, 14:14, 14:43, 15:13, 16:3, 17:8, 17:36, 17:44, 18:5, 20:20, 21:27, 22:2, 23:21, 23:28, 23:36 guys [2] - 6:14, 10:1

### Н

habitable [2] - 10:25, 13:17 had [24] - 5:21, 5:24, 6:14, 6:17, 9:5, 11:34, 11:37, 14:3, 15:14, 15:39, 16:5, 16:7, 17:5, 17:33, 18:3, 18:27, 18:29, 19:4, 19:7, 22:8, 22:38, 23:13, 23:16, 25:12 haif [1] - 22:29 hand [5] - 11:26, 11:27, 11:28, 11:45, 15:39 happen [1] - 19:15 happened [1] - 21:3 happening [1] - 10:2 has [10] - 3:41, 7:34, 8:22, 9:41, 12:43, 13:20, 15:11, 17:7, 17:45, 24:34 have [77] - 2:4, 2:47, 3:3, 3:9, 3:22, 5:25, 6:5, 6:6, 6:15, 6:30, 6:43, 6:47, 7:11, 7:15, 7:22, 8:4, 8:5, 8:23, 9:29, 10:14, 10:28, 10:32, 11:19, 11:33, 11:42, 11:45, 12:32, 12:47, 13:4, 13:19, 13:22, 14:3, 15:15, 15:21, 15:26, 15:27, 16:3, 16:5, 16:13, 17:1, 17:2, 18:7, 18:17, 18:19, 18:20, 18:30, 18:38, 18:45, 19:1, 19:4, 19:5, 19:17, 19:19, 20:13, 21:15, 21:24, 21:25, 21:27, 21:29, 22:28, 23:6, 23:16, 23:18, 23:35, 23:37, 23:46, 23:47, 24:13, 24:14, 24:23, 24:28, 24:37, 25:9, 25:15, 25:17, 25:18, 25:27 Have [2] - 4:45, 14:38 haven't [4] - 4:26, 7:14, 11:7, 11:21 having [4] - 18:30, 18:46,

22:14 he [16] - 12:15, 12:38, 14:46, 16:6, 17:4, 17:7, 17:37, 17:47, 18:30, 19:2, 19:4, 20:5, 21:13, 22:13, 22:14 he's [3] - 19:40, 19:42, 21:10 head [1] - 16:4 heading [2] - 14:32, 14:33 heard [4] - 6:47, 11:7, 17:1, 20:42 hearing [1] - 12:33 heavy[i] - 11:34 Hedge [3] - 1:27, 2:5, 2:19 HEDGE [10] - 2:19, 13:42, 16:33, 16:39, 17:18, 21:44, 22:1, 24:43, 25:3, 25:34 Hedges [i] - 9:15 height [1] - 20:16 Hendy [2] - 1:26, 2:1 HENDY [13] - 2:1, 2:24, 8:9, 14:24, 14:29, 15:26, 15:32, 15:39, 16:36, 16:42, 17:22, 24:46, 25:15 Here [1] - 8:39 here [4] - 13:40, 15:21, 15:22, 15:41 higher [1] - 10:5 him [8] - 9:14, 17:9, 17:23, 17:40, 19:1, 21:12, 22:13 his [1] - 12:15 hold [2] - 10:45, 13:20 holidays[1] - 16:10 home [4] - 6:40, 21:37, 21:39, 22:8 hopeful [1] - 11:33 hoping[1] - 25:19 hour [5] - 11:42, 12:4, 15:27, 17:28, 22:29 hours [8] - 11:43, 12:4, 12:5, 12:27, 15:12 houses [1] - 19:37 how [14] - 2:43, 3:18, 7:24, 8:36, 9:30, 9:33, 10:8, 13:13, 19:33, 23:6, 23:22, 24:1, 24:13, 24:38 How [1] - 24:22 hundred [1] - 15:13 hydrographic [4] - 3:1, 3:2, 3:14, 3:15 hydrologic [1] - 3:1 hydrological [2] - 10:10, 23:38 hydrologist (3) - 8:36, 8:37, 9:19 hydrologists [1] - 3:16

hydrology[1] - 3:14

19:46, 25:13

He [3] - 16:33, 16:39,

.11/03/29

I [222] - 2:4, 2:19, 2:28, 2:30, 2:33, 2:35, 3:10, 3:15, 3:22, 3:44, 4:1, 4:10, 4:19, 4:25, 4:26, 4:41, 5:8, 5:12, 5:16, 5:21, 5:23, 6:12, 6:13, 6:14, 6:18, 6:21, 6:28, 6:30, 6:40, 6:43, 6:45, 6:47, 7:4, 7:8, 7:10, 7:11, 7:14, 7:15, 7:28, 7:31, 7:34, 7:35, 7:38, 7:39, 7:41, 8:4, 8:6, 8:15, 8:19, 8:21, 8:28, 8:29, 8:32, 8:36, 8:38, 8:47, 9:6, 9:8, 9:14, 9:25, 9:27, 9:31, 9:40, 9:41, 10:1, 10:2, 10:17, 10:23, 10:27, 10:34, 11:2, 11:7, 11:10, 11:18, 11:21, 11:27, 11:30, 11:32, 11:44, 11:47, 12:7, 12:12, 12:17, 12:24, 12:35, 12:38, 13:3, 13:4, 13:5, 13:6, 13:15, 13:21, 13:22, 13:24, 13:30, 14:11, 14:13, 14:17, 14:36, 14:40, 14:43, 14:46, 14:47, 15:5, 15:13, 15:20, 15:34, 15:39, 15:45, 16:3, 16:7, 16:9, 16:10, 16:11, 16:13, 16:16, 17:1, 17:8, 17:15, 17:26, 17:36, 17:42, 17:43, 17:44, 18:3, 18:5, 18:26, 18:27, 18:29, 18:37, 18:44, 18:46, 18:47, 19:6, 19:7, 19:30, 19:32, 20:11, 20:12, 20:20, 20:21, 20:28, 20:29, 20:35, 20:39, 21:6, 21:7, 21:12, 21:13, 21:27, 21:29, 21:30, 21:36, 21:37, 21:39, 21:40, 21:41, 21:44, 22:2, 22:6, 22:7, 22:8, 22:16, 22:22, 22:41, 23:4, 23:5, 23:6, 23:12, 23:13, 23:21, 23:28, 23:29, 23:35, 23:36, 23:42, 24:2, 24:3, 24:12, 24:16, 24:19, 24:33, 24:38, 24:41, 24:43, 25:11, 25:17, 25:22 l'd [7] - 8:20, 10:2, 13:21, 16:8, 22:13, 22:14, 23:16 I'll [4] - 2:5, 7:9, 8:39, 22:32 I'm [19] - 2:1, 2:2, 2:19, 4:20, 5:33, 6:1, 8:37, 9:19, 9:47, 10:22, 10:35, 11:32, 14:30, 16:36, 16:42, 17:14, 18:21, 18:37, 24:17

l've [5] - 7:31, 12:17, 15:40, 17:27, 21:11 identified [1] - 14:38 identify[1] - 2:7 If [30] - 2:35, 9:45, 10:26, 10:35, 13:19, 13:25, 13:26, 14:9, 14:11, 15:14, 15:34, 17:8, 17:15, 18:29, 18:34, 19:6, 19:7, 19:19, 19:25, 19:33, 20:13, 21:12, 21:28, 22:10, 22:24, 22:28, 23:4, 23:7, 23:36 If [7] - 3:39, 14:22, 18:46, 19:21, 19:36, 21:41, 24:10 ILOTT[4] - 2:14, 14:22, 14:26, 15:37 llott[1] - 2:14 Immediately [1] - 17:32 impact [7] - 3:39, 12:23, 13:35, 24:7, 24:29, 24:31 impacts [4] - 20:6, 23:40, 24:12, 24:14 Important [2] - 7:22, 10:15 In [3] - 5:10, 6:10, 13:42 in [132] - 2:6, 2:28, 2:36, 3:3, 3:8, 3:13, 3:17, 3:18, 3:34, 3:41, 3:46, 4:24, 4:29, 4:45, 4:46, 5:9, 5:12, 5:13, 5:26, 5:36, 5:44, 5:45, 6:8, 6:21, 6:27, 6:32, 6:35, 6:36, 6:40, 7:11, 7:14, 7:18, 7:20, 7:21, 7:24, 7:25, 7:29, 7:34, 7:40, 8:4, 8:16, 8:18, 8:21, 8:22, 8:23, 8:35, 8:38, 8:45, 9:4, 9:15, 9:16, 9:18, 9:24, 9:38, 9:40, 10:14, 10:45, 11:15, 11:34, 11:38, 11:42, 11:46, 12:17, 12:27, 12:30, 12:33, 12:44, 12:46, 13:26, 13:31, 14:1, 14:4, 14:6, 14:8, 14:18, 14:47, 15:11, 15:22, 15:28, 15:41, 15:45, 16:10, 16:13, 16:23, 16:42, 16:46, 17:8, 17:27, 17:42, 18:24, 18:25, 18:29, 19:2, 19:3, 19:14, 19:31, 19:37, 19:45, 20:6, 20:16, 20:41, 20:45, 21:14, 21:28, 21:42, 22:16, 22:44, 23:9, 23:43, 23:44, 23:45, 24:1, 24:2, 24:5, 24:8, 24:13, 24:15, 24:17, 24:20, 24:21, 24:35, 25:6, 25:12, 25:19, 25:27, 25:28 Incident [1] - 20:31 Include [1] - 5:19

included [3] - 6:26, 6:27, 12:44 Including (3) - 5:10, 13:28, 18:39 increase [1] - 10:42 increasing [1] - 15:16 indicate [1] - 23:14 Induction [1] - 4:34 Infinite [1] - 24:4 inflow[1] - 20:33 Information [11] - 2:26, 2:31, 6:14, 6:18, 6:19, 6:22, 7:41, 11:37, 12:24, 17:47, 24:13 informing [1] - 18:16 infrastructure (1) - 3:9 initial [1] - 6:12 initiated [2] - 19:9, 19:21 initiation [3] - 19:3, 19:18, 25:10 input [2] - 6:15, 6:17 inquiries [1] - 23:38 INQUIRY[i] - 1:1 Inquiry[1] - 2:2 inspected [2] - 23:23, 23:31 inspections [3] - 23:27, 23:32, 25:26 instead [1] - 24:25 intense [2] - 8:17, 8:27 interactive [1] - 7:47 interested [2] - 8:21, 16:42 interpret [1] - 8:20 Interpretation [1] - 9:10 Interpreted [1] - 10:14 Interview [1] - 1:26 INTERVIEW [1] - 25:36 interview [3] - 1:37, 15:40, 17:14 interviewed [1] - 2:22 interviewing [1] - 2:3 into [11] - 6:15, 6:17, 6:23, 7:43, 9:31, 9:34, 10:38, 14:39, 16:10, 18:21, 19:21 inundated [2] - 13:19, 19:37 inundation" [1] - 12:31 invented [1] - 8:21 investigations [1] -23:38 invoke [2] - 10:40, 10:41 invoked [1] - 7:16 Involved [7] - 3:34, 3:45, 4:24, 4:29, 7:11, 7:14, 16:46 involves [1] - 2:39 involving [1] - 8:15 is [82] - 2:1, 2:9, 2:25, 2:37, 2:44, 3:3, 3:12, 3:15, 3:38, 3:39, 3:44, 4:17, 4:18, 4:19, 4:22, 4:30, 5:12, 5:18, 6:18, 7:18, 8:9, 8:17, 8:32,

9:37, 10:23, 10:35, 11:46, 12:9, 12:12, 12:13, 12:43, 12:46, 14:32, 14:33, 14:36, 15:1, 16:22, 16:43, 17:6, 17:26, 17:29, 17:39, 18:18, 18:38, 18:42, 19:10, 19:26, 19:32, 19:40, 19:41, 19:44, 20:3, 20:33, 20:35, 20:45, 21:6, 21:13, 21:18, 22:37, 22:44, 22:46, 23:1, 23:7, 23:29, 24:3, 24:9, 24:20, 24:22, 24:35, 24:47, 25:3, 25:11, 25:23, 25:32 Is [2] - 3:38, 22:43 Isn't [2] - 12:45, 14:6 issue [9] - 5:24, 8:17, 8:41, 12:9, 17:22, 20:42, 23:32, 24:34, 24:35 issued [4] - 2:43, 13:45, 14:19, 22:7 issues [6] - 7:43, 8:14, 8:15, 18:24, 18:25, 23:47 It[13] - 6:18, 8:36, 9:12, 9:39, 9:44, 14:6, 14:18, 14:43, 15:41, 19:6, 20:37, 23:17 it 1861 - 3:38, 3:39, 4:18, 4:24, 4:31, 6:39, 6:42, 7:2, 7:46, 8:20, 8:35, 8:39, 8:45, 9:6, 9:21, 9:33, 9:45, 10:28, 10:29, 11:35, 11:44, 12:2, 12:10, 12:38, 12:43, 12:45, 13:33, 13:47, 14:8, 14:11, 14:13, 14:14, 14:15, 14:17, 14:34, 14:39, 14:44, 14:46, 14:47, 15:5, 15:22, 15:35, 15:40, 16:5, 17:29, 17:41, 17:44, 18:3, 18:10, 18:12, 18:15, 18:26, 19:7, 19:8, 19:22, 20:14, 20:18, 20:20, 20:21, 21:1, 21:3, 21:12, 21:13, 21:29, 22:20, 22:26, 22:44, 23:1, 23:12, 23:14, 23:22, 24:11, 24:23, 24:26, 24:28, 25:15, 25:32 it'l[[1] - 17:9 it's [20] - 3:9, 3:30, 4:15, 6:21, 8:34, 9:1, 9:28, 9:36, 10:7, 10:31, 10:33, 12:44, 13:4, 14:45, 21:10, 21:28, 21:44, 24:10, 24:20 It's [8] - 4:25, 6:22, 8:32, 9:36, 10:8, 14:5, 14:26, 15:46 its [1] - 21:28

J

January [10] - 5:35, 6:45, 11:11, 11:18, 13:23, 14:34, 15:46, 16:16, 22:33, 23:1 Jimmy [1] - 20:21 job[2] - 4:31, 23:26 JOHN [1] - 2:22 John [5] - 1:37, 2:3, 2:9, 5:11, 15:34 judged [t] - 17:44 just [85] - 2:5, 2:19, 2:24, 2:25, 2:30, 2:35, 2:38, 3:5, 3:7, 3:25, 4:25, 4:37, 5:33, 6:1, 6:18, 6:21, 6:23, 7:8, 7:28, 7:38, 8:9, 8:21, 8:28, 9:21, 9:25, 9:26, 9:27, 9:31, 9:43, 9:44, 10:8, 10:9, 10:17, 10:28, 10:37, 10:38, 11:27, 11:32, 11:46, 12:7, 12:18, 12:19, 13:6, 14:7, 14:8, 14:18, 14:42, 14:43, 15:20, 15:26, 15:28, 16:3, 16:4, 16:9, 16:33, 16:42, 17:14, 17:28, 17:31, 17:41, 18:6, 18:10, 18:16, 18:37, 19:1, 21:14, 21:15, 21:29, 21:39, 22:14, 22:16, 22:20, 22:22, 22:26, 22:32, 23:21, 23:35, 24:26, 25:18 Just [8] - 2:30, 8:13, 9:14, 9:20, 15:10, 15:41, 16:16, 17:22

#### Κ

keep [4] - 5:33, 5:35, 13:34, 13:47

Ken [1] - 12:12
kilometre [1] - 9:36
knew [1] - 20:28
know [23] - 2:24, 5:47, 8:28, 8:29, 8:30, 8:35, 8:46, 9:3, 10:8, 10:25, 11:34, 13:25, 14:44, 17:46, 19:4, 19:7, 19:11, 20:11, 20:23, 20:30, 20:35, 22:22
knowing [1] - 13:15

#### L

ladies [2] - 3:28, 3:32 lake [4] - 8:18, 8:19, 8:30 lapping [1] - 25:7 large [2] - 8:14, 8:34 last [7] - 11:42, 12:4, 12:5, 12:20, 13:27, 15:12

itself [1] - 18:25

8:37, 9:21, 9:28, 9:33,

late [2] - 10:34, 16:39 later[2] - 16:33, 22:29 fatest [2] - 12:39, 21:33 lawyer[1] - 2:5 Lawyer [1] - 2:1 leader [2] - 7:29, 7:39 least [1] - 7:40 leave [3] - 8:9, 16:7, 25:32 led [2] - 8:18, 17:2 left [3] - 22:7, 22:14, 23:29 less [2] - 10:7, 18:10 let [2] - 25:4, 25:6 level [11] - 1:20, 10:39, 11:16, 13:21, 13:32, 21:29, 22:24, 25:11, 25:13, 25:15, 25:19 level's [1] - 21:10 levels [3] - 12:33, 18:18, like [9] - 6:19, 6:28, 7:31, 8:31, 10:3, 10:36, 11:47, 12:2, 14:34 likely [2] - 13:4, 18:35 line [5] - 9:21, 9:43, 9:44, lines [1] - 23:18 Lisa [2] - 1:26, 2:1 list [1] - 14:45 listed [4] - 2:34, 12:46, 16:12, 21:28 Iltlgated [2] - 24:34 little [2] - 2:31, 22:26 log [10] - 2:27, 11:41, 14:11, 15:34, 15:45, 16:13, 16:22, 21:28, 22:43, 22:45 logged [2] - 19:24, 23:2 long [3] - 9:30, 9:33, 23:6 look [19] - 7:22, 7:23, 8:37, 9:28, 9:42, 11:45, 12:3, 12:4, 13:26, 13:39, 14:11, 15:21, 21:41, 22:2, 22:23, 22:28, 23:4, 23:39, 24:10 looked [2] - 21:18, 22:23 looking [10] - 9:22, 9:26, 11:35, 14:16, 14:46, 18:18, 20:12, 24:5, 24:15 looks[2] - 17:32, 18:20 Looks [1] - 14:34 lot [4] - 6:18, 16:11, 24:2, 24:3 lower [1] - 25:17

### M

M(1) - 15:37 made [11] - 6:31, 6:38, 14:10, 17:30, 17:32, 17:33, 18:1, 18:29, 21:39, 22:17, 22:21 Main[1] - 3:12 main [2] - 6:17, 6:21

maintain [4] - 13:25, 15:14, 23:7, 24:26 maintaining [1] - 12:29 maintenance [2] - 3:10, make [13] - 6:28, 9:45, 10:23, 10:24, 10:26, 10:33, 10:35, 10:44, 13:17, 14:39, 17:37, 18:28, 22:26 making [8] - 2:44, 3:17, 10:15, 10:28, 10:35, 17:28, 18:8, 20:13 Malone [3] - 6:3, 7:47, 9:11 Malone's [2] - 14:22, 14:26 manage (3) - 3:8, 17:38, 24:29 managed [1] - 2:44 Management [i] - 20:32 management [8] - 2:37, 2:38, 2:47, 3:21, 3:34, 5:19, 5:44 manager [2] - 5:17, 23:26 managing [1] - 18:23 manual [20] - 5:45, 7:21, 7:24, 7:33, 7:41, 8:1, 8:7, 12:40, 12:46, 12:47, 13:4, 13:10, 17:42, 19:16, 23:42, 23:43, 23:44, 23:46, 24:9, 25:9 manuals [2] - 23:41, 25:12 Many [1] - 23:47 many [1] - 24:4 map [1] - 12:2 maps [2] - 11:47, 12:1 March [2] - 1:15, 2:30 margin [1] - 9:16 marked [2] - 5:19, 15:39 matching [1] - 18:7 material [2] - 6:26, 24:20 matter [2] - 7:6, 8:10 Matters [1] - 1:8 maximum[1] - 20:15 may [9] - 19:4, 19:9, 20:23, 21:27, 22:10, 22:25, 23:14, 23:22, maybe [5] - 9:46, 11:33, 13:34, 15:5, 17:31 me [16] - 2:5, 2:35, 2:38, 3:32, 4:7, 5:26, 10:38, 10:40, 15:41, 15:47, 17:14, 21:11, 21:34, 22:14, 23:3, 23:13 mean [8] - 2:28, 6:18, 7:35, 8:4, 8:29, 17:26, 19:36, 23:42 meant [2] - 20:6, 24:3 meeting (6) - 12:39, 13:3, 16:1, 16:2, 16:7 memory [i] - 11:28

mentloned [4] - 12:37, 13:5, 24:19, 24:20 methodology[1] - 8:22 metres [6] - 11:17, 22:5, 22:6, 22:11, 22:12, 22:30 Michael [2] - 2:14, 14:17 might [20] - 3:18, 8:37, 9:29, 9:42, 10:32, 10:37, 12:2, 15:26, 15:32, 16:4, 18:38, 18:40, 20:2, 20:14, 21:29, 22:24, 23:16, 23:18, 24:14 millimetres m - 15:13 mind [2] - 10:14, 19:15 minus [1] - 9:19 minutes [3] - 15:26, 15:28, 25:34 mirror[1] - 9:39 mlsreading [1] - 16:36 missed [1] - 15:6 mitigation [3] - 12:40, 24:6, 24:14 mitigation" [1] - 5:46 mobilisation [1] - 16:23 Model [1] - 13:27 model [29] - 8:37, 9:26. 9:28, 9:32, 9:33, 9:37, 9:43, 10:10, 10:20, 10:37, 11:16, 13:22, 13:23, 13:24, 13:32, 14:4, 14:5, 14:8, 14:15, 15:21, 15:22, 16:17, 17:27, 18:17, 18:20, 18:37, 18:38, 19:34, modeller [1] - 9:47 modelling [9] - 7:23,

9:20, 13:21, 18:6, 18:9, 18:14, 18:15, 19:42, 22:24 models [11] - 7:15, 9:4, 9:17, 9:23, 10:1, 10:3, 10:10, 10:14, 18:19, 24:24 Moggill [11] - 12:22, 12:29, 13:16, 13:26,

13:28, 13:34, 13:47, 15:14, 15:16, 18:19 moment[3] - 7:34, 8:10, 17:15 Monday [3] - 6:44, 13:45, 14:34 monitoring [2] - 3:35, 3:41

2:35, 2:38, 4:37, 7:42, 15:47, 17:5, 23:3 morning [3] - 6:44, 6:46, 24:19

more [9] - 2:26, 2:31,

Morris [2] - 12:12, 12:38 most [2] - 6:21, 25:27 moves[1] - 10:6 moving [2] - 5:33, 16:16

MR [9] - 2:9, 2:12, 2:14, 2:17, 13:44, 14:22, 14:26, 15:37, 21:46

Mr [13] - 2:3, 2:24, 6:1, 6:3, 7:47, 9:10, 12:12, 12:38, 14:22, 14:26, 15:40, 24:19 Ms [2] - 1:26, 1:27 MS [23] - 2:1, 2:19, 2:24, 8:9, 13:42, 14:24, 14:29, 15:26, 15:32, 15:39, 16:33, 16:36, 16:39, 16:42, 17:18, 17:22, 21:44, 22:1, 24:43, 24:46, 25:3, 25:15, 25:34 much m - 3:18 must [6] - 8:35, 9:38, 17:43, 21:9, 25:9 Must[1] - 14:3 my [15] - 2:44, 5:13, 6:8, 6:45, 9:41, 9:47, 11:28, 15:40, 17:27, 19:5, 19:32, 20:6, 21:13, 23:15, 23:29 My [6] - 2:9, 12:12, 18:17, 19:30, 19:44, 20:45 myself[3] - 10:27, 22:3,

8:37, 9:19, 9:36, 9:47, 10:9, 13:25, 13:35, 15:24, 18:11, 21:34, 22:16, 24:3, 24:16, 24:17, 24:24, 24:34 Not [4] - 4:1, 4:6, 20:20, 20:39 note[1] - 2:33 notes [1] - 20:12 nothing [2] - 16:13, 19:21 Nothing [1] - 25:25 notice [1] - 23:8 notified [2] - 17:33, 17:34 notify[1] - 17:38 notionally[1] - 9:31 now [3] - 14:16, 15:34, 21:19 Now [3] - 3:44, 16:21, 20:30 number [3] - 16:28, ... 17:34, 24:4 numbers [2] - 16:12, 16:14

0

o'clock [10] - 11:6, 11:19, 14:7, 14:15, 17:27, 17:30, 22:4, 22:28 O'DONNELL[1] - 2:12 O'Donnell [1] - 2:12 objectives [1] - 5:45 obtain [1] - 2:25 obtaining [1] - 23:6 Obviously [2] - 9:19, 18:23 obviously [3] - 8:33, 9:21, 15:8 occur[6] - 3:18, 3:39, 10:32, 23:19, 23:21 occurred [4] - 6:44, 7:21, 11:29, 21:36 occurring [2] - 3:18, 16:6 OF[1] - 1:1 of [194] - 1:8, 1:37, 2:2, 2:27, 2:33, 2:34, 2:37, 2:47, 3:9, 3:12, 3:18, 3:19, 3:21, 3:22, 3:28, 3:29, 3:34, 3:40, 3:41, 3:42, 3:44, 3:45, 4:4, 4:5, 4:13, 4:21, 4:30, 4:46, 5:7, 5:9, 5:17, 5:20, 5:25, 5:34, 5:35, 5:40, 5:44, 5:45, 6:11, 6:18, 6:21, 6:22, 6:34, 6:39, 6:47, 7:8, 7:18, 7:20, 7:22, 7:23, 7:26, 7:28, 7:40, 8:1, 8:13, 8:15, 8:16, 8:20, 8:23, 8:34, 8:46, 9:5, 9:16, 9:17, 9:18, 9:28, 9:29, 9:33, 9:40, 9:42, 9:46, 10:3, 10:5, 10:6, 10:10, 10:13, 10:17, 10:20,

### Ν

24:17

name [1] - 2:9 names [1] - 22:43 nature [4] - 11:25, 23:38, 23:39, 23:47 near [1] - 20:4 necessarily [1] - 8:34 need [7] - 4:25, 10:44, 17:46, 19:11, 19:44, 23:37, 23:41 needed [2] - 18:28, 19:3 needs [2] - 2:44, 15:27 network [2] - 3:11, 3:42 never[1] - 9:32 new [1] - 4:5 next[1] - 21:40 night [3] - 7:3, 11:30, 16:8 Nine[1] - 25:34 no[11] - 8:5, 8:27, 10:41, 10:44, 11:7, 16:33, 17:28, 19:19, 21:27, 24:31, 25:18 No [22] - 4:4, 4:15, 4:24, 4:26, 5:5, 5:29, 5:38, 6:8, 6:40, 7:4, 8:4, 10:22, 11:4, 13:11, 14:6, 16:28, 16:31, 16:33, 18:26, 20:28, 24:31, 25:1 normal [3] - 4:35, 7:18, normally [2] - 4:7, 10:16 North [3] - 18:25, 20:41, 20:44 not [24] - 3:4, 4:20, 4:24, 5:1, 6:8, 6:26, 8:34,

.11/03/29

mention [3] - 5:7, 11:15,

12:27

10:28, 10:36, 10:44, 11:10, 11:11, 11:17, 11:25, 11:31, 11:32, 11:42, 11:45, 11:47, 12:1, 12:20, 12:22, 12:39, 12:47, 13:6, 13:10, 13:16, 13:23, 13:26, 13:32, 13:42, 13:45, 13:46, 15:14, 16:3, 16:6, 16:16, 16:22, 17:4, 17:8, 17:23, 17:32, 17:34, 17:37, 17:40, 17:44, 17:47, 18:19, 18:21, 18:31, 18:42, 18:44, 18:45, 19:3, 19:5, 19:10, 19:13, 19:18, 19:20, 19:32, 19:34, 19:35, 19:37, 19:41, 19:44, 20:3, 20:5, 20:6, 20:7, 20:14, 20:15, 20:16, 20:33, 21:1, 21:3, 21:7, 21:38, 22:1, 22:2, 22:8, 22:33, 22:43, 23:3, 23:9, 23:12, 23:15, 23:16, 23:17, 23:18, 23:26, 23:32, 23:38, 23:39, 23:40, 23:46, 24:2, 24:3, 24:4, 24:5, 24:12, 24:21, 24:25, 24:36, 24:39, 24:46, 25:7, 25:10, 25:13, 25:22, 25:26 off [4] - 7:3, 9:25, 9:27, 22:6 offices [1] - 2:4 Okay [8] - 3:23, 7:37, 8:11, 8:25, 20:28, 21:9, 23:4, 25:9 okay [2] - 14:16, 23:1 old[1] - 5:29 On [3] - 21:22, 22:33, on [72] - 2:26, 2:33, 3:17, 3:30, 5:17, 5:33, 5:37, 6:3, 6:4, 6:6, 6:13, 6:43, 6:44, 6:46, 7:28, 7:34, 8:18, 8:40, 9:7, 9:17, 9:21, 9:27, 9:43, 10:6, 10:16, 10:20, 10:28, 11:6, 11:11, 11:18, 11:19, 11:31, 11:41, 12:1, 12:5, 13:3, 13:6, 13:23, 13:24, 13:44, 13:45, 14:14, 14:19, 14:33, 15:46, 16:7, 16:16, 16:18, 16:21, 16:24, 16:31, 16:43, 18:33, 19:10, 21:1, 21:23, 22:2, 22:32, 22:37, 22:38, 23:6, 23:20, 23:23, 24:7, 24:25, 24:29 on-the-ground [1] -19:10 Once [4] - 10:29, 10:33, 17:32, 25:17 once [5] - 2:42, 10:41,

13:17, 13:19, 17:47 One[1] - 8:15 one [20] - 2:37, 5:19, 8:14, 9:21, 9:44, 11:4, 14:7, 14:29, 14:30, 14:32, 14:33, 14:42, 14:43, 15:1, 18:29, 20:2, 24:10, 24:33 only[11] - 3:9, 4:15, 8:5, 8:31, 9:6, 18:29, 21:3, 22:46, 24:8, 24:16, 24:24 onwards [2] - 11:12, 16:21 oops(i) - 10:31 open [8] - 19:17, 20:4, 22:5, 22:11, 22:22, 25:10, 25:13, 25:18 opened [1] - 22:26 opening [1] - 22:15 operate [3] - 5:23, 24:1, 24:26 operated [3] - 5:30, 23:42, 24:5 operating [4] - 10:11, 10:24, 20:46, 21:23 operation [5] - 1:8, 3:22, 5:9, 5:20, 5:25 Operation [1] - 3:45 operational [2] - 5:46, 19:10 operations (13) - 3:7. 4:11, 4:14, 4:20, 4:37, 4:38, 5:16, 5:34, 5:41, 5:42, 6:4, 12:32, 25:4° Operations [8] - 3:46, 4:1, 4:6, 4:17, 4:46, 5:34, 5:36, 24:22 operator [6] - 18:34, 18:46, 18:47, 22:12, 23:8, 23:13 operator's [1] - 4:42 operators [9] - 4:9, 4:10, 4:15, 4:30, 4:35, 5:2, 5:22, 19:8, 20:43 opinion [9] - 6:8, 11:4, 11:7 opportunity [1] - 15:24 opposes [1] - 11:7 option[1] - 17:29 or[32] - 3:18, 3:30, 4:5, 4:27, 6:6, 6:20, 7:12, 7:30, 9:18, 9:19, 9:39, 11:20, 12:29, 13:5, 16:1, 17:40, 18:15, 19:2, 19:4, 20:4, 20:21, 20:43, 21:29, 22:43, 22:44, 23:38, 23:39, 24:37, 25:24 order [2] - 9:4, 9:18 organisation [1] - 5:31 organise [1] - 23:27 other [22] - 4:13, 5:43, 6:14, 7:20, 8:3, 10:1, 10:2, 10:44, 10:47, 14:38, 14:46, 17:29, 17:45, 21:25, 22:43,

23:39, 24:11, 24:14, 24:33, 25:24, 25:29 Ourm - 3:2 our[6] - 2:6, 3:3, 3:14, 9:4, 17:47, 18:6 ourseives [1] - 6:31 out[13] - 5:45, 6:2, 8:10, 9:8, 9:30, 9:33, 9:44, 9:45, 15:6, 18:40, 22:8, 23:30 outcomes [1] - 23:43 outflow[2] - 19:34, 20:33 outflows [4] - 7:26, 10:42, 19:19, 21:4 outside [2] - 17:15, 19:46 over [13] - 8:17, 9:35, 10:25, 11:26, 11:27, 11:28, 11:45, 13:17, 15:12, 15:13, 19:2, 19:4, 19:19 overall [1] - 5:43 overnight [2] - 11:38, 11:40 oversight [1] - 14:18 own[1] - 18:15 owned [2] - 5:28, 5:29 owns[1] - 2:40

### Р

packages [1] - 4:4 page [27] - 2:33, 5:7, 5:17, 6:34, 6:36, 7:8, 7:9, 8:13, 8:39, 8:40, 8:47, 9:7, 11:10, 12:1, 12:7, 12:18, 13:24, 13:44, 14:1, 14:27, 15:46, 16:22, 16:43, 21:22, 22:2, 22:38, 23:2 paragraph [13] - 5:7, 5:17, 5:40, 8:47, 9:1, 9:15, 10:13, 11:11, 11:15, 12:9, 12:19, 12:20, 14:1 paragraphs [2] - 9:2, 9:7 part [7] - 3:44, 4:30, 7:22, 8:1, 11:45, 23:16, 23:26 particular [2] - 8:41, 15:1 particularly [2] - 10:39, 11:4 parts [1] - 3:29 party[1] - 6:38 past [1] - 4:47 patchy [1] - 9:36 peak [6] - 13:28, 13:31, 14:2, 21:4, 21:9, 21:29 peaked [1] - 21:10 people (15) - 3:10, 3:13, 3:14, 3:27, 5:47, 7:42, 9:31, 17:8, 17:15, 17:34, 17:38, 17:46, 22:43, 24:14 per [2] - 9:19, 9:41

17:4, 20:33, 23:28 Peter [1] - 20:21 phone [4] - 19:24, 19:39, 22:38, 23:2 phoned [1] - 23:8 Pine [3] - 18:25, 20:41, 20:44 place [2] - 22:43, 22:46 placed [1] - 23:28 plan [3] - 2:24, 3:22, 4:43 pianned [2] - 25:24, 25:29 planning [3] - 19:36, 19:47, 20:5 platform [1] - 24:25 played [1] - 4:45 please [1] - 2:7 plug [12] - 18:35, 18:40, 18:42, 19:2, 19:4, 19:6, 19:9, 19:14, 19:16, 19:18, 19:20, 25:11 plugs [3] - 18:47, 24:36, 25:6 plunge [1] - 23:9 plus (11 - 9:18 point [8] - 5:18, 10:22, 10:35, 13:28, 13:31, 19:10, 19:13, 19:18 points [2] - 2:26, 12:3 policy[1] - 17:40 POMERENKE [1] - 2:17 Pomerenke [1] - 2:17 pool [1] - 23:9 port[1] - 17:47 position [3] - 2:32, 5:12 possibility [1] - 11:35 possible [3] - 13:34, 19:3, 20:2 possibly[1] - 14:6 potentially [2] - 10:25, 13:16 predict[1] - 9:39 predicted [3] - 9:23, 11:16 predicting [1] - 15:17 prediction [1] - 9:17 preparation [1] - 3:21 preparing [1] - 7:31 present [2] - 2:32, 5:36 presentation (1) - 13:3 press [2] - 8:16, 24:35 pressure [2] - 18:27, 18:30 previous [6] - 7:4, 8:33, 11:30, 13:10, 16:8, 25:12 primary [1] - 6:11 Principal [2] - 2:1, 20:31 principal [3] - 2:32, 12:13, 12:37

perfectly [1] - 9:39

perhaps[1] - 8:47

Perhaps [1] - 2:19

13:22

period (3) - 8:46, 12:3,

person [5] - 6:29, 7:40,

prior [5] - 5:8, 7:46, 19:17, 22:4, 25:10 Private [1] - 1:37 Probably[1] - 13:39 probably [10] - 2:27, 8:39, 9:18, 10:5, 10:20, 14:5, 18:39, 20:37, 21:12, 21:14 procedure[1] - 17:39 procedures [1] - 5:46 process [6] - 7:44, 9:8, 16:1, 16:2, 17:36, 24:21 produce [2] - 7:25, 8:31 produced [2] - 8:23, 23:43 program [2] - 2:38, 24:22 programs [2] - 4:35, 4:36 progression (1) - 11:11 project [2] - 7:29, 7:39 properly [1] - 5:22 properties [5] - 10:30, 10:33, 10:43, 12:23, 13:35 properties"[1] - 12:23 proposed[1] - 19:41 protecting [1] - 12:31 prototype [1] - 24:23 provide [2] - 14:6, 14:9 provided [3] - 4:19, 12:24, 14:17 providing [1] - 24:13 prudent [2] - 17:44, 18:12 public [2] - 20:29, 24:1 purpose [2] - 17:37, 18:45 purposes [3] - 3:6, 19:35, 20:5 pursuant [2] - 1:37, 2:3 pushed [1] - 15:13 put [6] - 6:23, 10:25, 12:1, 13:16, 14:8, 15:40

## Q

Q[13] - 2:24, 4:29, 7:18, 10:20, 14:29, 15:39, 16:42, 17:22, 20:25, 22:32, 24:46, 25:3, 25:15 Qld [1] - 1:20 quality[1] - 3:30 quantity[1] - 3:31 QUEENSLAND[1] - 1:1 Queensland [2] - 2:2, question [2] - 7:38, 8:29 questioning[1] - 19:1 questions [2] - 7:32, 23:35 quickly [2] - 11:45, 12:4 quite [2] - 10:17, 24:46

.11/03/29

### R

rain [12] - 8:35, 8:37, 9:26, 9:29, 9:33, 10:31, 11:34, 11:46, 12:2, 13:33, 25:19 rain's [2] - 9:26, 10:8 Rainfali (1) - 13:27 rainfall [20] - 3:3, 3:4, 3:18, 8:14, 8:17, 8:24, 8:27, 8:32, 9:4, 9:6, 9:18, 9:23, 9:24, 9:35, 11:38, 11:40, 11:42, 15:10, 15:11, 19:20 rainfalls [1] - 18:34 raise[i] - 21:33 ralsed [1] - 24:1 raising"[1] - 21:34 ran [1] - 19:34 rang [5] - 14:13, 16:10, 21:33, 22:14, 22:16 range [2] - 7:23, 20:13 rapid [2] - 8:18, 9:2 rapidly[1] - 8:31 reaching [2] - 17:24, 21:4 read [2] - 6:30, 9:8 readiness [1] - 19:3 reading [1] - 6:29 realise [1] - 22:14 realised [1] - 21:36 really [7] - 3:25, 12:3, 17:26, 17:31, 17:46, 18:6, 25:18 reason [1] - 19:13 reasons[1] - 19:14 recall [14] - 4:26, 7:4, 8:6, 12:24, 13:5, 13:7, 16:11, 16:12, 19:29, 20:37, 20:39, 21:27, 21:30, 22:40 received [1] - 11:37 recent[1] - 25:27 recollect [1] - 18:35 recollection [8] - 12:12, 19:5, 19:30, 19:32, 19:44, 20:7, 21:13, 23:29 recommence [2] - 15:28, 15:32 recommendations [2] -23:45, 25:28 record [4] - 3:4, 5:35, 9:14, 20:22 recorded [5] - 8:35, 9:17, 20:29, 20:30, 22:44 recorder [1] - 8:45 redid [1] - 22:9 reduce [2] - 13:19, 24:38 reduced [1] - 24:36 reentered [1] - 9:15 refer [7] - 2:28, 6:34, 8:39, 8:47, 12:18, 13:21, 13:30 referable [3] - 2:40, 2:41, 2:42

14:30 reflection [1] - 21:7 reflects [1] - 23:5 refresh[1] - 11:28 regulator [3] - 6:37, 7:5, 11:30 relation [14] - 2:29, 2:36, 4:29, 4:45, 6:10, 6:36, 7:19, 7:29, 8:22, 9:15, 9:17, 12:44, 18:24, 20.41 release [2] - 19:41, 20:2 releases [4] - 13:29, 20:13, 21:24, 23:7 releasing [1] - 19:26 remember [5] - 11:24, 20:11, 20:18, 20:22, 22:41 remembered [1] - 14:43 remind [1] - 15:41 report [22] - 2:28, 3:32, 6:10, 6:28, 6:29, 6:30, 6:35, 7:43, 8:38, 12:1, 13:44, 14:16, 14:18, 14:19, 14:33, 14:39, 14:47, 15:20, 16:24, 23:45 reporting[1] - 3:7 reports [8] - 3:17, 3:22, 3:29, 3:31, 6:20, 13:40, 14:38, 25:27 request [1] - 20:32 requested [1] - 19:25 requests[1] - 19:25 require [1] - 24:11 required [3] - 3:29, 18:11, 25:12 requirement[1] - 2:3 requires [5] - 12:30, 17:40, 19:17, 23:46, 25:9 resource [2] - 3:7, 3:22 resources[1] - 18:31 response[1] - 23:36 responsibilities m -4:42 responsibility [1] - 5:25 responsible [4] - 3:27, 5:21, 5:43, 19:31 result [2] - 7:25, 16:6 results [5] - 10:13, 13:24, 18:6, 18:9, 22:9 Results [1] - 13:27 returned [1] - 16:7 review [8] - 7:21, 7:22, 7:28, 7:30, 7:33, 7:39, 8:7, 23:47 revision [2] - 8:1, 12:39 right[9] - 3:2, 4:24, 9:29, 11:33, 15:10, 22:27, 24:41, 25:7 Righto [1] - 11:24 ring[3] - 14:12, 17:40, 17:43

referred [1] - 5:13

referring [3] - 8:28, 8:41,

rise [5] - 8:31, 19:20, 22:10, 22:25, 22:28 rises [5] - 8:18, 9:2, 9:3, 9:5, 10:43 rising [2] - 8:30, 25:20 River[2] - 7:41, 19:31 Roads (1) - 3:12 Roadtech [1] - 3:12 role [9] - 2:34, 2:44, 3:41, 3:44, 4:45, 5:26, 7:30, 20:34, 24:13 roles [3] - 2:36, 4:47, 24:14 room [12] - 2:6, 6:40, 8:9, 9:15, 11:22, 11:39, 11:41, 18:30, 22:7, 22:9, 22:14, 22:16 roster [2] - 6:2, 16:23 rostered [4] - 5:37, 6:3, 6:4, 22:33 rostering [1] - 6:5 Ruffini [9] - 6:1, 15:40, 24:19 rules [2] - 7:24, 23:44 run [20] - 2:25, 2:27, 4:17, 4:34, 4:41, 7:15, 10:1, 10:37, 11:10, 11:16, 11:17, 13:22, 13:24, 14:4, 14:5, 14:8, 14:15, 17:28, 18:37, 18:38 running [1] - 24:25 runs [4] - 3:11, 10:21, 16:17, 24:26 rural [1] - 24:7

## S

saddle[1] - 25:22 safe [1] - 21:12 safety [8] - 2:33, 2:38, 3:38, 3:40, 6:37, 7:19, 11:30, 23:26 sald [10] - 6:37, 15:20, 17:27, 18:38, 20:13, 21:7, 21:11, 21:13, 22:7, 23:5 same [8] - 3:5, 12:32, 15:2, 18:23, 20:10, 24:24, 25:12 satisfy[1] - 24:9 say [18] - 2:19, 4:29, 5:42, 6:19, 9:32, 10:3, 10:13, 10:20, 10:31, 11:37, 12:1, 15:17, 16:14, 18:27, 20:14, 23:16, 23:38, 24:3 saying [7] - 5:1, 9:1, 9:3, 10:16, 13:29, 14:2, 18:39 says [5] - 9:2, 13:31, 15:21, 15:22, 21:32 scenario [3] - 20:1, 20:2, 20:10 scheduled [1] - 25:23 scientific [1] - 23:39

11:46, 12:5, 13:24, 14:1, 17:15, 24:12 seeing [1] - 13:25 seems[1] - 19:39 seen [1] - 9:20 seismic [3] - 3:35, 3:40, 3:42 selected [1] - 6:26 sending [1] - 14:44 senior [4] - 4:19, 5:41, 5:42, 6:4 sent [3] - 3:28, 14:29, 14:35 sentence [2] - 12:20, 15:10 separating [1] - 9:25 Seqwater [20] - 2:10, 2:12, 2:15, 2:17, 2:32, 2:40, 2:45, 3:26, 3:30, 3:41, 5:30, 17:11, 19:24, 19:40, 20:32, 20:34, 21:18, 21:22, 21:26, 24:20 Segwater's [3] - 2:37, 2:47, 3:35 serious[1] - 17:30 set [1] - 5:45 setting [1] - 5:43 seven [1] - 5:20 several [1] - 21:41 shared [1] - 10:47 shift [8] - 6:44, 6:45, 7:3, 11:25, 11:27, 11:28, 16:8, 23:29 SHORT[2] - 15:30, 17:20 should [8] - 2:19, 9:14, 11:6, 14:4, 15:41, 21:7, 24:33, 24:41 Should [1] - 24:43 shouldn't [1] - 19:15 show [2] - 9:5, 12:2 showing [3] - 10:37, 13:32, 18:9 shown [1] - 16:13 shows [2] - 11:41, 11:44 shut [1] - 22:6 side [2] - 10:17, 10:28 signed [1] - 22:3 significant [5] - 13:33, 15:11, 22:29, 24:28, 24:31 similar [5] - 8:32, 16:5, 19:39, 19:42, 25:15 simply [2] - 17:23, 22:44 simulation[1] - 7:12 site [1] - 5:8 situation [16] - 6:20, 7:13, 8:32, 9:39, 13:40, 13:44, 14:16, 14:19, 14:33, 14:38, 15:20, 17:23, 18:7, 19:21, 20:4,

second [1] - 14:1

section [1] - 8:45

see [9] - 6:30, 7:24,

sections [2] - 1:37, 6:13

security [2] - 24:6, 24:16

25:5

slightly [2] - 22:12, 22:16 so [43] - 2:19, 2:24, 3:40, 5:1, 6:20, 7:33, 7:35, 8:5, 8:31, 9:1, 10:43, 11:2, 11:43, 11:44, 12:4, 13:28, 13:29, 14:10, 14:40, 15:27, 16:5, 16:8, 16:10, 17:7, 17:8, 17:36, 17:37, 18:10, 18:19, 19:30, 19:32, 20:9, 20:11, 21:9, 21:39, 21:40, 22:6, 22:11, 22:26, 25:17, 25:18 So [46] - 3:25, 4:17, 4:24, 4:34, 4:41, 5:21, 5:28, 6:44, 6:46, 7:28, 8:36, 9:6, 9:10, 9:15, 9:36, 9:40, 10:13, 10:34, 11:24, 12:18, 12:23, 13:13, 13:20, 13:22, 13:26, 13:32, 13:38, 14:9, 14:15, 14:29, 16:31, 17:47, 18:38, 19:41, 20:37, 21:1, 21:9, 21:18, 22:16, 22:20, 22:28, 23:14, 23:20, 24:25, 24:28, 25:15 software [2] - 24:21, 24:25 solicitor[1] - 2:14 solicitors[1] - 2:14 Some[1] - 7:20 some [23] - 2:25, 2:27, 2:34, 3:13, 3:22, 4:41, 8:13, 8:19, 8:40, 9:5, 9:38, 9:40, 11:34, 11:47, 13:21, 17:39, 20:43, 21:39, 22:8, 22:9, 23:14, 23:16, 23:35 someone (1) - 7:30 Somerset [5] - 1:9, 2:29, 8:15, 18:24, 25:24 something [2] - 9:22, 21:18 somewhere [1] - 15:40 soon [2] - 6:42, 17:31 Soon[1] - 22:6 Sorry [2] - 15:39, 16:36 sorry [2] - 10:22, 11:27 sort [10] - 3:19, 8:10, 8:20, 9:5, 9:40, 9:46, 10:10, 17:40, 23:39 speak [6] - 5:40, 7:8, 19:45, 21:23, 24:16, 24:37 speaking [2] - 10:27, 22:13 specific [3] - 7:14, 8:6, specifically [3] - 7:33, 8:46, 20:20 spent (11 - 17:28 spillway [1] - 25:25 spillways [1] - 5:21 splt[1] - 9:45 spits [2] - 9:44

-.11/03/29

spoke [3] - 7:10, 12:11, 20:18 spoken [1] - 16:17 square [1] - 9:35 staff [1] - 4:5 staffing [4] - 3:45, 3:46, 4:1, 16:23 stage [2] - 11:24, 15:8 standard [1] - 4:34 standing [1] - 20:45 start [5] - 7:9, 10:3, 21:11, 21:15 started [3] - 6:45, 21:30, 22:27 starting [2] - 21:10, 22:6 State [2] - 2:43, 3:42 stated [2] - 8:38, 12:43 statement [16] - 2:25, 2:30, 2:34, 5:7, 5:13, 5:18, 6:34, 7:9, 7:32, 9:16, 11:10, 12:27, 14:22, 14:26, 17:27, stations [2] - 3:4 stay [2] - 13:30, 21:40 stayed [2] - 16:33, 16:39 stenographer [i] - 2:6 step [1] - 17:30 Stewart [1] - 20:21 still [10] - 10:1, 10:7, 13:46, 14:2, 14:15, 14:33, 15:17, 15:23, 16:9, 21:28 stop [5] - 10:42, 10:43, 17:14, 17:15, 19:16 stops [2] - 25:19, 25:20 storms [2] - 7:24, 7:25 strategies [3] - 6:7, 12:45, 21:24 Strategy [1] - 12:30 strategy [4] - 5:44, 6:6, 7:10, 10:16 stream [2] - 3:4, 3:6 streaming [1] - 10:24 streams [1] - 3:19 Street [1] - 1:20 structural [1] - 3:40 studies [3] - 8:3, 23:37, 24:11 study [1] - 8:6 subject[1] - 15:1 submerge[1] - 12:23 substantial m - 25:29 such [2] - 11:39, 18:17 sufficient [4] - 10:38, 10:40, 18:28, 18:31 sufficiently [1] - 5:22 suggested [1] - 21:34 suggestion[1] - 8:19 suggests [1] - 17:42 summary [3] - 6:35, 12:18 Sunday [2] - 15:46, 16:7 SunWater [4] - 4:18, 5:17, 5:28, 5:30 Supply[1] - 2:41

supply [2] - 24:6, 24:15 supported [1] - 3:12 suppose [5] - 6:28, 6:30, 9:31, 10:2, 10:34 supposed [1] - 17:39 Sure [1] - 2:40 sure [5] - 2:45, 10:28, 10:44, 17:28, 22:27 surprise [1] - 12:32 surveillance [1] - 4:43 surveys [1] - 23:32 Susan [5] - 1:27, 2:5, 2:19, 8:9, 9:14 system [2] - 24:23, 24:25 systems [1] - 11:39

#### Т

take [10] - 9:30, 9:34, 10:29, 12:7, 12:38, 15:34, 15:45, 18:3, 18:40, 19:3 taken [1] - 9:22 taking [1] - 7:41 talk [6] - 8:13, 9:2, 9:16, 12:7, 14:12, 23:21 talked[1] - 11:40 talking [1] - 7:9 talks [1] - 8:46 targeting [1] - 7:47 team [1] - 3:28 technical [1] - 6:20 telephone [4] - 12:25, 20:22, 20:29, 20:31 tell [4] - 2:38, 15:47, 21:34, 23:2 tend [1] - 10:27 terms [9] - 3:17, 3:41, 7:26, 7:40, 8:23, 19:37, 20:6, 24:5, 25:13 Terry[1] - 14:43 testing [1] - 17:18 text[1] - 14:36 than [2] - 4:37, 17:29 Thank [1] - 10:22 Thanks [1] - 2:20 That [8] - 4:6, 7:43, 8:1, 8:4, 8:27, 14:32, 19:35, 23:1 that [327] - 2:20, 2:33, 2:39, 2:40, 2:43, 2:45, 3:3, 3:4, 3:10, 3:11, 3:13, 3:17, 3:19, 3:25, 3:27, 3:28, 3:38, 4:2, 4:4, 4:25, 4:26, 4:29, 4:30, 5:8, 5:10, 5:12, 5:18, 5:19, 5:22, 5:25, 5:26, 5:28, 5:29, 5:31, 5:36, 5:37, 5:42, 6:2, 6:5, 6:11, 6:19, 6:22, 6:23, 6:31, 6:37, 6:38, 6:40, 6:43, 6:44, 6:47, 7:2, 7:4, 7:5, 7:18, 7:20, 7:22, 7:25, 7:28, 7:29, 7:30, 7:33, 7:34, 7:43, 7:46, 7:47, 8:3, 8:5, 8:6,

8:29, 8:30, 8:31, 8:32, 8:37, 8:40, 8:41, 8:46, 9:2, 9:6, 9:8, 9:10, 9:20, 9:21, 9:24, 9:29, 9:32, 9:38, 9:41, 9:42, 9:43, 9:46, 10:3, 10:6, 10:9, 10:16, 10:23, 10:24, 10:26, 10:30, 10:31, 10:35, 10:36, 10:37, 10:38, 10:39, 10:40, 10:44, 10:45, 10:47, 11:7, 11:8, 11:15, 11:16, 11:19, 11:24, 11:29, 11:31, 11:33, 11:39, 11:41, 11:45, 12:2, 12:11, 12:12, 12:16, 12:17, 12:20, 12:21, 12:24, 12:27, 12:30, 12:37, 12:39, 12:43, 12:44, 13:3, 13:15, 13:18, 13:22, 13:31, 13:32, 13:33, 13:35, 13:38, 13:45, 13:46, 14:2, 14:4, 14:9, 14:16, 14:17, 14:19, 14:38, 14:42, 14:43, 14:45, 15:8, 15:13, 15:14, 15:45, 16:1, 16:2, 16:6, 16:7, 16:12, 16:14, 16:17, 16:18, 16:37, 16:40, 16:46, 17:2, 17:4, 17:6, 17:22, 17:23, 17:28, 17:32, 17:33, 17:36, 17:37, 17:39, 17:40, 17:42, 17:46, 18:3, 18:6, 18:9, 18:11, 18:20, 18:21, 18:23, 18:25, 18:28, 18:34, 18:35, 18:38, 18:39, 18:42, 18:45, 19:2, 19:7, 19:13, 19:15, 19:18, 19:21, 19:29, 19:30, 19:36, 19:41, 19:43, 19:44, 19:45, 19:46, 20:2, 20:4, 20:6, 20:12, 20:14, 20:18, 20:28, 20:33, 20:35, 20:37, 20:39, 21:1, 21:6, 21:9, 21:14, 21:18, 21:29, 21:35, 21:36, 21:37, 21:38, 22:3, 22:4, 22:5, 22:7, 22:10, 22:15, 22:20, 22:21, 22:24, 22:26, 22:27, 22:32, 22:39, 22:43, 23:3, 23:4, 23:12, 23:14, 23:15, 23:16, 23:19, 23:20, 23:22, 23:26, 23:28, 23:29, 23:43, 23:46, 24:3, 24:4, 24:8, 24:12, 24:16, 24:20, 24:22, 24:37, 25:3, 25:9, 25:11, 25:19 that's [31] - 3:29, 4:24,

8:18, 8:19, 8:20, 8:23,

10:10, 11:45, 12:24, 12:38, 13:39, 14:13, 14:30, 15:5, 16:4, 18:39, 19:5, 20:9, 21:18, 22:18, 23:7, 23:21, 24:34 That's [11] - 3:2, 5:17, 9:47, 12:41, 15:10, 15:20, 16:26, 16:40, 20:6, 22:35, 25:8 THE[1] - 25:36 the [522] - 1:8, 1:38, 2:2, 2:4, 2:6, 2:20, 2:24, 2:27, 2:28, 2:34, 2:36, 2:37, 2:41, 2:42, 2:43, 2:44, 2:47, 3:5, 3:8, 3:10, 3:15, 3:16, 3:17, 3:18, 3:21, 3:28, 3:29, 3:31, 3:34, 3:40, 3:42, 3:44, 3:45, 3:46, 4:1, 4:4, 4:5, 4:6, 4:9, 4:10, 4:15, 4:17, 4:19, 4:21, 4:30, 4:34, 4:35, 4:41, 4:45, 4:46, 5:1, 5:2, 5:9, 5:16, 5:18, 5:19, 5:20, 5:22, 5:23, 5:24, 5:25, 5:29, 5:33, 5:34, 5:36, 5:40, 5:42, 5:43, 5:44, 5:45, 6:1, 6:2, 6:3, 6:5, 6:6, 6:10, 6:12, 6:14, 6:15, 6:17, 6:19, 6:21, 6:22, 6:23, 6:27, 6:29, 6:30, 6:34, 6:35, 6:36, 6:39, 6:40, 6:46, 7:3, 7:4, 7:5, 7:10, 7:18, 7:20, 7:21, 7:22, 7:23, 7:24, 7:26, 7:28, 7:29, 7:33, 7:34, 7:35, 7:38, 7:39, 7:40, 7:41, 7:42, 7:43, 7:44, 7:47, 8:1, 8:4, 8:5, 8:7, 8:9, 8:13, 8:14, 8:15, 8:16, 8:17, 8:19, 8:20, 8:21, 8:22, 8:23, 8:29, 8:30, 8:31, 8:32, 8:33, 8:35, 8:38, 8:39, 8:44, 8:45, 8:47, 9:1, 9:6, 9:7, 9:8, 9:14, 9:15, 9:16, 9:18, 9:20, 9:21, 9:23, 9:25, 9:26, 9:27, 9:29, 9:31, 9:34, 9:35, 9:37, 9:39, 9:43, 9:46, 10:1, 10:3, 10:4, 10:6, 10:8, 10:11, 10:17, 10:24, 10:28, 10:33, 10:34, 10:39, 10:42, 10:43, 10:45, 10:47, 11:5, 11:6, 11:11, 11:15, 11:16, 11:21, 11:22, 11:25, 11:27, 11:29, 11:30, 11:31, 11:32, 11:35, 11:38, 11:39, 11:41, 11:42, 11:46, 11:47, 12:1, 12:2, 12:4, 12:9, 12:17, 12:18, 12:19, 12:20, 12:24, 12:28, 12:29, 12:32, 12:33, 12:37, 12:39, 12:44, 12:46, 12:47,

13:3, 13:5, 13:6, 13:9, 13:10, 13:13, 13:17, 13:18, 13:19, 13:20, 13:22, 13:23, 13:26, 13:27, 13:28, 13:30, 13:32, 13:34, 13:39, 13:40, 13:42, 13:45, 13:46, 14:1, 14:2, 14:7, 14:10, 14:11, 14:12, 14:14, 14:18, 14:20, 14:30, 14:32, 14:36, 14:39, 14:46, 14:47, 15:1, 15:2, 15:8, 15:10, 15:11, 15:12, 15:13, 15:16, 15:20, 15:21, 15:34, 16:1, 16:2, 16:4, 16:8, 16:9, 16:11, 16:12, 16:13, 16:16, 16:22, 16:24, 16:31, 16:42, 16:46, 17:1, 17:4, 17:7, 17:11, 17:14, 17:18, 17:22, 17:23, 17:26, 17:27, 17:30, 17:32, 17:33, 17:36, 17:37, 17:42, 17:43, 17:45, 18:1, 18:4, 18:5, 18:8, 18:9, 18:10, 18:14, 18:18, 18:23, 18:28, 18:30, 18:33, 18:37, 18:38, 18:42, 18:43, 18:45, 18:46, 18:47, 19:3, 19:5, 19:8, 19:10, 19:13, 19:14, 19:17, 19:18, 19:19, 19:25, 19:31, 19:32, 19:33, 19:35, 19:36, 19:40, 19:41, 19:45, 19:46, 20:1, 20:3, 20:4, 20:9, 20:10, 20:11, 20:12, 20:13, 20:15, 20:16, 20:29, 20:31, 20:43, 20:46, 21:3, 21:4, 21:9, 21:14, 21:23, 21:25, 21:26, 21:28, 21:33, 21:38, 21:40, 21:41, 22:4, 22:5, 22:7, 22:8, 22:9, 22:10, 22:13, 22:14, 22:16, 22:17, 22:18, 22:23, 22:24, 22:33, 22:37, 22:46, 23:3, 23:8, 23:9, 23:13, 23:14, 23:15, 23:17, 23:18, 23:19, 23:22, 23:23, 23:28, 23:31, 23:36, 23:40, 23:41, 23:42, 23:43, 23:44, 23:45, 23:46, 24:1, 24:2, 24:3, 24:5, 24:7, 24:9, 24:12, 24:20, 24:21, 24:23, 24:24, 24:29, 24:33, 24:34, 24:35, 24:36, 24:38, 24:39, 24:43, 24:44, 24:46, 25:4, 25:5, 25:6, 25:7, 25:8, 25:10, 25:12, 25:19, 25:22, 25:26 The [22] - 3:14, 3:27, 8:43, 8:44, 10:2, 10:13,

4:30, 5:1, 5:2, 5:47,

6:36, 6:46, 8:16, 8:20,

9:22, 9:30, 9:43, 10:9,

10:22, 10:31, 11:39, 15:21, 15:45, 17:6, 19:16, 20:26, 21:28, 22:2, 22:12, 24:9, 25:3, 25:9, 25:27, 25:32 their[8] - 12:13, 18:15, 19:34, 20:22, 20:30, 20:34, 21:4, 22:23 them [6] - 3:13, 3:28, 10:33, 18:16, 18:20, 21:6 themselves [1] - 2:7 then [22] - 2:27, 2:47, 3:16, 3:21, 3:34, 7:32, 7:43, 9:3, 13:30, 14:9, 14:13, 14:16, 14:47, 16:36, 17:11, 17:30, 19:39, 20:15, 21:13, 21:15, 22:15, 22:28 Then [1] - 8:45 There [2] - 11:27, 11:28 there [49] - 5:24, 6:32, 7:12, 7:30, 8:3, 8:13, 8:27, 9:1, 9:7, 9:38, 9:40, 10:7, 10:9, 10:23, 11:25, 11:29, 12:44, 13:9, 13:31, 15:11, 15:23, 16:13, 16:47, 17:8, 17:28, 17:34, 17:36, 17:39, 18:31, 19:1, 19:4, 19:10, 19:39, 20:12, 20:42, 20:43, 21:28, 21:36, 21:40, 22:43, 23:2, 23:37, 24:33, 25:23, 25:28, 25:29, 25:32 there'd [1] - 17:24 There'll [1] - 18:44 there'i([i] - 10:5 there's [27] - 2:42, 3:27, 4:37, 8:19, 8:34, 8:40, 9:21, 9:40, 10:23, 10:41, 10:44, 13:44, 14:6, 14:16, 14:29, 17:8, 19:9, 19:21, 19:24, 20:30, 21:22, 22:37, 23:2, 24:2, 24:4, 25:31 There's [6] - 14:42, 18:33, 20:41, 21:32, 22:32, 24:4 thereabouts[1] - 11:20 these [5] - 9:2, 9:3, 10:9, 16:21, 24:29 They [4] - 18:17, 20:22, 22:25, 25:27 they [20] - 3:31, 3:39, 6:20, 7:5, 7:42, 11:40, 12:32, 12:35, 14:13, 16:36, 18:15, 18:20, 19:47, 20:28, 20:30, 20:45, 20:46, 22:11, 22:26, 24:38 they'd [3] - 22:17, 22:20, 22:22 they're [5] - 3:2, 3:11, 3:15, 10:34, 21:42

thick[1] - 9:45 thing [8] - 3:19, 8:31, 10:2, 15:45, 16:4, 18:12, 19:42, 25:12 things [5] - 5:43, 6:2, 13:39, 17:38, 21:40 think [33] - 5:12, 6:13, 6:45, 7:31, 7:34, 8:38, 9:25, 9:35, 9:37, 9:38, 11:18, 11:32, 11:47, 12:17, 13:4, 14:11, 14:46, 14:47, 15:5, 16:16, 18:27, 18:29, 18:47, 19:7, 19:30, 19:32, 21:41, 21:44, 23:5, 24:2, 24:19, 25:11, 25:16 thinking [1] - 9:27 third [2] - 12:19, 13:30 this [24] - 7:31, 8:17, 8:38, 10:14, 12:9, 12:20, 12:28, 12:33, 14:32, 14:33, 15:1, 15:41, 16:22, 16:23, 16:43, 21:2, 22:33, 22:44, 23:1, 23:36, 23:40, 23:46, 24:19, 24:35 This [5] - 2:1, 12:8, 12:9, 22:37, 22:46 Those [1] - 5:46 those [18] - 2:36, 2:45, 3:31, 6:17, 7:25, 9:5, 9:7, 9:34, 10:32, 11:47, 13:35, 16:14, 17:15, 20:7, 23:27, 24:9, 24:17, 25:28 though [i] - 14:32 thought [4] - 10:31, 18:11, 21:13, 22:13 Three [1] - 21:46 three [5] - 9:7, 10:1, 11:43, 12:5, 15:12 threshold[1] - 13:6 thresholds[1] - 12:10 through [3] - 2:25, 2:27, 11:10 Tibaldi [4] - 1:37, 2:3, 2:9, 2:24 TIBALDI [4] - 2:9, 2:22, 13:44, 21:46 till m - 21:14 time [25] - 5:28, 5:29, 6:39, 6:40, 8:3, 8:6, 8:30, 8:46, 10:26, 10:39, 11:15, 11:21, 12:3, 13:33, 13:46, 14:4, 18:23, 18:27, 18:28, 18:30, 18:38, 19:7, 21:29, 22:33, 25:32 times [3] - 3:5, 5:35, 5:37 timing [1] - 23:17 titled [1] - 13:27 TM-5[1] - 14:26 to [250] - 1:37, 2:3, 2:7, 2:25, 2:28, 2:29, 2:31,

4:29, 4:37, 4:41, 4:45, 5:8, 5:13, 5:16, 5:23, 5:26, 5:30, 5:33, 6:10, 6:13, 6:26, 6:29, 6:30, 6:34, 6:36, 6:38, 6:43, 7:8, 7:10, 7:19, 7:22, 7:24, 7:29, 7:34, 7:38, 7:46, 8:9, 8:10, 8:13, 8:18, 8:22, 8:28, 8:32, 8:39, 8:41, 8:47, 9:4, 9:5, 9:15, 9:17, 9:19, 9:28, 9:30, 9:33, 9:34, 9:37, 9:40, 9:41, 9:45, 10:4, 10:14, 10:15, 10:20, 10:22, 10:25, 10:26, 10:27, 10:28, 10:30, 10:32, 10:33, 10:34, 10:35, 10:36, 10:38, 10:40, 10:42, 10:43, 10:44, 11:6, 11:28, 11:31, 11:32, 11:33, 11:41, 12:7, 12:18, 12:28, 12:44, 12:47, 13:9, 13:13, 13:18, 13:20, 13:21, 13:30, 13:34, 13:39, 14:12, 14:26, 14:30, 14:45, 15:8, 15:14, 15:16, 15:21, 15:24, 15:27, 15:34, 15:45, 16:3, 16:6, 16:8, 16:10, 16:13, 16:16, 16:23, 16:24, 16:31, 16:33, 17:6, 17:14, 17:15, 17:22, 17:23, 17:29, 17:38, 17:39, 17:40, 17:43, 17:46, 18:6, 18:7, 18:8, 18:10, 18:11, 18:12, 18:24, 18:28, 18:35, 18:40, 18:43, 19:1, 19:3, 19:11, 19:14, 19:17, 19:20, 19:25, 19:33, 19:39, 19:40, 19:42, 19:45, 19:47, 20:5, 20:32, 20:41, 20:42, 21:10, 21:11, 21:12, 21:14, 21:23, 21:30, 21:33, 21:37, 21:38, 21:39, 22:4, 22:5, 22:6, 22:8, 22:10, 22:11, 22:12, 22:13, 22:14, 22:17, 22:22, 22:24, 22:25, 22:26, 22:30, 22:34, 23:7, 23:8, 23:13, 23:14, 23:15, 23:21, 23:26, 23:28, 23:30, 23:36, 23:37, 23:39, 23:40, 23:41, 24:3, 24:10, 24:12, 24:19, 24:26, 24:29, 24:37, 25:5, 25:7, 25:10, 25:23, 25:24, 25:25, 25:31, 25:34 today [3] - 2:4, 2:24, 25:32

too [2] - 10:34, 14:8 took[1] - 7:30 tools[1] - 19:4 top [2] - 9:29, 25:7 topic[f] - 7:28 totally [1] - 4:20 touch [1] - 10:37 towards [1] - 21:3 town[i] - 16:10 track[1] - 8:21 trained [1] - 5:23 training [18] - 3:46, 4:4, 4:5, 4:10, 4:13, 4:17, 4:19, 4:26, 4:30, 4:35, 4:41, 4:43, 4:46, 5:1, 5:2, 7:11, 7:12, 7:14 transition [2] - 11:34, 15:24 transitioning [1] - 10:15 travelled [1] - 23:30 tremors [1] - 3:39 tried [2] - 14:12, 15:14 try[2] - 13:19, 19:16 trying [9] - 9:28, 9:32, 9:37, 10:4, 10:22, 11:32, 19:47, 20:5 Tuesday (3) - 1:15, 6:46, 11:18 turned [1] - 6:2 turning [1] - 10:41 two [11] - 3:10, 3:28, 3:32, 5:40, 6:3, 11:42, 12:4, 13:39, 17:4, 17:8, 18:31 type [2] - 4:34, 7:12 typically [1] - 12:1

#### U

uncertainty [2] - 10:6, 10:7 uncontrolled [1] - 18:44 under[18] - 2:41, 2:42, 3:13, 5:18, 5:30, 7:23, 8:47, 9:7, 13:30, 13:34, 14:2, 15:10, 15:17, 15:22, 18:27, 18:30, 23:44, 24:26 Under[1] - 12:19 understand [9] - 3:44, 10:2, 10:4, 10:17, 14:17, 20:5, 22:17, 24:38, 25:23 understanding [3] -16:5, 18:18, 20:45 undertake [2] - 23:47, 25:25 uniform [1] - 9:36 unit [4] - 3:2, 3:9, 3:15, 3:35 units [1] - 3:1 UNIX [1] - 24:25 Unless [1] - 25:31 unpacking[1] - 16:9 until [4] - 10:42, 11:19, 16:33

up[8] - 12:1, 15:8, 24:8, 24:10, 24:11, 25:4, 25:7. update [2] - 13:4, 20:32 updated [2] - 14:3, 23:41 upgrades [1] - 25:24 upgrading [2] - 24:21, 24:24 upper[1] - 9:46 urban [2] - 12:31, 24:7 us [9] - 13:33, 14:13, 15:1, 15:13, 17:8, 18:31, 20:15, 24:19 used [1] - 3:6 uses [1] - 24:23

## V

valid [2] - 24:2, 24:3 validated [1] - 14:44 varied [1] - 6:18 various [1] - 3:29 ventilated [1] - 8:16 version [1] - 13:10 very [3] - 8:18, 8:27, 10:36 vicinity [1] - 23:9 view [6] - 19:10, 19:13, 23:6, 23:37, 23:40, 24:37 voice[2] - 2:20, 11:7 voiced [1] - 11:4

#### W

W3[1] - 12:30 W4[13] - 7:10, 7:12, 7:15, 10:16, 10:38, 10:40, 10:41, 11:6, 11:32, 15:24, 17:29, 17:43, 18:8 W4's [1] - 7:15 wait[i] - 21:14 wall [1] - 25:7 want [8] - 6:29, 8:16, 10:36, 11:28, 12:3, 18:7, 19:14, 25:31 wanted [10] - 2:31, 7:8, 9:45, 12:7, 15:34, 15:45, 16:3, 19:33, 22:22, 23:21 warnings[i] - 19:31 Was [7] - 6:42, 7:2, 9:10. 10:47, 11:25, 16:46, 21:1 was [120] - 2:35, 5:10, 5:16, 5:21, 5:28, 5:29, 6:5, 6:26, 6:40, 7:2, 7:12, 7:22, 7:30, 7:38, 7:41, 7:44, 7:46, 8:1, 8:6, 8:21, 8:28, 8:30, 9:6, 9:12, 10:39, 10:47, 11:17, 11:25, 11:27, 11:28, 11:29, 11:31, 11:35, 12:10, 12:12, 12:20, 12:24, 13:9,

.11/03/29

They're [2] - 3:6, 17:18

2:36, 2:44, 3:13, 3:28,

3:32, 3:44, 4:25, 4:26,

together (1) - 6:5

told [1] - 13:35

13:29, 13:32, 13:34, 13:45, 14:8, 14:14, 14:15, 14:18, 14:19, 14:34, 14:35, 14:43, 14:44, 15:2, 15:5, 15:20, 15:22, 15:23, 15:46, 15:47, 16:2, 16:6, 16:9, 17:4, 17:23, 17:28, 17:32, 17:36, 17:37, 17:38, 17:41, 17:44, 17:47, 18:1, 18:5, 18:10, 18:12, 18:15, 18:46, 19:1, 19:6, 19:7, 19:8, 19:29, 19:30, 19:36, 19:45, 19:46, 20:5, 20:18, 20:21, 20:42, 21:7, 21:12, 21:13, 21:28, 21:36, 21:37, 21:38, 22:3, 22:4, 22:5, 22:8, 22:18, 22:20, 22:23, 22:39, 23:5, 23:12, 23:13, 23:15, 23:18, 23:23, 23:26, 23:28, 23:43 wasn't [2] - 6:40, 20:38 water[16] - 3:30, 3:31, 8:34, 10:25, 12:13, 12:38, 13:16, 20:16, 20:45, 21:9, 21:14, 24:6, 24:15, 25:4, 25:6, 25:19 Water[1] - 2:41 way [8] - 3:8, 6:1, 6:5, 8:20, 9:6, 23:42, 24:9, 24:10 ways [4] - 24:4, 24:8, 24:11 We [15] - 11:32, 13:21, 14:2, 14:7, 15:17, 15:23, 15:26, 15:32, 17:28, 18:7, 18:26, 19:16, 21:27, 24:23, 25:25 we [77] - 3:3, 3:8, 3:9, 3:13, 3:40, 5:47, 6:23, 6:30, 8:29, 8:30, 8:39, 9:3, 9:5, 9:6, 10:31, 10:32, 11:6, 11:31, 11:33, 12:28, 13:15, 13:17, 13:20, 13:24, 13:25, 13:29, 13:30, 13:46, 13:47, 14:1, 14:5, 14:9, 14:10, 14:11, 14:12, 14:14, 14:45, 14:47, 15:14, 15:15, 15:16, 15:23, 16:5, 17:27, 17:31, 17:43, 17:44, 18:7, 18:9, 18:11, 18:19, 18:27, 19:11, 20:1, 20:13, 20:14, 21:11, 21:27, 22:10, 22:15, 22:24, 22:27, 22:29, 23:16, 23:19, 23:20, 23:23, 23:30, 23:42, 23:44, 24:43, 25:9 we'd [3] - 13:35, 17:30, 24:12 we'li [3] - 15:28, 21:15,

25:31 We're [3] - 7:31, 18:11, 24:24 we're [5] - 7:33, 9:3, 20:13, 24:10, 24:16 we've [5] - 8:38, 9:20, 20:42, 22:23, 23:44 Wednesday [1] - 23:18 well [16] - 8:20, 9:3, 9:33, 9:38, 10:27, 10:28, 10:30, 10:39, 13:29, 17:24, 17:31, 19:6, 19:8, 21:11, 24:16, 24:46 Well [14] - 2:40, 4:19, 4:37, 5:12, 6:28, 6:43, 8:29, 9:25, 12:46, 13:15, 16:2, 21:3, 23:4, 23:42 went [3] - 7:3, 22:10, were [51] - 4:31, 5:22, 5:36, 5:37, 6:2, 6:3, 6:4, 6:10, 6:20, 7:28, 7:29, 8:3, 8:27, 9:4, 11:31, 11:32, 12:15, 13:29, 14:1, 14:3, 14:46, 15:17, 16:17, 16:22, 16:24, 16:31, 17:39, 18:6, 18:7, 18:9, 18:10, 18:16, 18:26, 18:27, 19:14, 19:47, 20:1, 20:45, 20:46, 21:4, 22:4, 22:9, 22:15, 22:20, 22:25, 22:32, 22:33, 23:19, 23:20, 25:27 Were [1] - 6:38 weren't [3] - 6:38, 8:5, 18:15 what [40] - 2:39, 3:2, 4:21, 5:10, 6:26, 6:29, 6:32, 7:25, 8:21, 8:28, 9:1, 9:25, 9:26, 9:27, 9:37, 9:42, 11:25, 11:46, 12:15, 14:47, 15:20, 15:21, 15:47, 16:6, 18:37, 18:42, 19:5, 19:14, 19:29, 19:36, 20:6, 20:42, 21:7, 22:18, 23:5, 23:7, 23:21, 23:23, 24:46 What [3] - 4:4, 4:9, 21:36 what's [4] - 3:18, 10:2, 12:5, 20:34 whatever[i] - 25:11 When [5] - 7:10, 13:3, 21:6, 22:8, 23:12 when [23] - 2:28, 4:29, 6:43, 6:46, 7:21, 9:22, 9:37, 9:42, 10:13, 10:15, 10:24, 11:37, 11:39, 11:40, 14:13, 14:45, 17:43, 21:1, 21:4, 21:11, 23:8, 23:23, 23:46 where [14] - 7:9, 7:12, 7:15, 8:27, 8:33, 10:4, 12:7, 16:4, 16:6, 18:7, 19:40, 19:42, 20:15,

which [12] - 3:12, 5:21, 13:40, 14:4, 14:5, 18:40, 20:3, 20:15, 21:32, 23:42, 24:34, 25:22 while [1] - 20:46 who [6] - 6:3, 9:10, 12:12, 20:18, 20:21, 20:35 Who [6] - 6:17, 6:26, 12:10, 20:25, 20:33, 22:39 who's [2] - 2:5, 6:29 whole [1] - 7:23 why [4] - 15:5, 19:15, 22:17, 22:22 wide [1] - 3:42 will [3] - 7:35, 19:20, 24:11 Windows [1] - 24:26 wish[1] - 16:10 wished [1] - 14:9 with [59] - 2:2, 2:5, 2:9, 2:30, 2:45, 3:6, 3:7, 3:8, 3:11, 3:38, 3:44, 4:20, 4:41, 4:42, 5:24, 5:45, 6:2, 6:3, 6:42, 7:15, 8:14, 9:23, 9:26, 9:42, 10:9, 10:14, 10:47, 11:30, 12:8, 12:11, 12:21, 12:30, 13:46, 15:1, 15:12, 15:40, 16:43, 16:46, 17:5, 17:7, 17:45, 18:4, 18:5, 18:14, 18:20, 18:25, 18:46, 18:47, 19:8, 19:34, 20:19, 20:42, 21:23, 21:26, 22:38, 23:30, 23:40, 23:43, 25:25 within [2] - 3:25, 12:43 without [3] - 9:23, 13:33, 25:5 Wivenhoe [28] - 1:9, 2:29, 5:10, 5:28, 5:29, 5:30, 8:15, 8:18, 11:17, 13:29, 13:32, 14:2, 15:11, 18:21, 18:24, 18:40, 19:26, 19:32, 19:34, 20:3, 20:33, 21:24, 21:33, 22:12, 23:30, 24:1, 24:5, 25:24 Wivenhoe's [1] - 24:8 wondering [2] - 2:35, 18:37 word[4] - 8:17, 11:33, 24:3, 24:35 wording [i] - 4:21 work[5] - 3:10, 7:18, 7:20, 9:30, 9:33 worked [1] - 17:7

Whether[1] - 11:6

whether [4] - 3:30,

23:37, 23:40, 24:35

Which [2] - 5:16, 15:5

20:10 would [46] - 4:34, 5:16, 5:25, 6:29, 6:30, 6:43, 6:47, 7:5, 7:20, 7:25, 7:42, 8:4, 8:5, 9:31, 10:16, 11:17, 12:22, 13:4, 13:16, 13:22, 13:40, 14:2, 15:15, 17:1, 17:2, 17:46, 18:30, 18:40, 18:45, 19:1, 19:33, 19:35, 19:36, 19:44, 20:13, 20:20, 23:6, 23:19, 24:28, 24:38, 25:6, 25:15, 25:27 wouldn't [11] - 4:6, 10:38, 10:40, 11:19, 11:33, 18:19, 18:27, 21:37, 22:28, 25:4, 25:29 written [2] - 12:17, 23:45 wrong [2] - 17:43, 24:35

Υ

years [1] - 25:26 Yes [31] - 3:36, 3:39, 3:42, 4:32, 5:15, 6:14, 8:28, 10:18, 10:22, 11:13, 11:21, 13:2, 13:39, 14:24, 14:30, 15:4, 16:19, 16:29, 16:44, 17:6, 17:12, 18:5, 18:17, 19:27, 19:30, 20:45, 21:20, 22:1, 22:22, 23:11, 23:28 yes [6] - 4:11, 4:40, 9:12, 12:35, 12:41, 17:47 yet [1] - 18:8 You [7] - 10:9, 10:20, 10:31, 18:16, 19:4, 20:11, 24:8 you [165] - 2:24, 2:32, 2:35, 2:38, 2:47, 3:26, 3:45, 4:29, 4:34, 4:45, 5:7, 5:33, 5:35, 5:36, 5:37, 5:40, 5:42, 6:2, 6:10, 6:28, 6:34, 6:37, 6:38, 6:42, 7:2, 7:8, 7:9, 7:10, 7:11, 7:28, 7:29, 7:46, 7:47, 8:13, 8:35, 8:39, 8:46, 8:47, 9:3, 9:16, 9:24, 9:32, 9:35, 9:37, 9:42, 9:44, 9:45, 9:46, 10:8, 10:13, 10:16, 10:22, 10:24, 10:25, 10:28, 10:29, .10:33, 10:36, 10:37, 10:41, 10:42, 10:43, 10:44, 10:45, 11:10, 11:15, 11:18, 11:24, 11:34, 11:37, 11:39, 11:40, 11:41, 11:42, 11:43, 11:44, 12:1, 12:2, 12:3, 12:4, 12:7, 12:11, 12:18, 12:27, 13:13, 13:17, 13:18, 13:19, 13:21,

13:24, 13:25, 13:26, 13:30, 14:1, 14:6, 14:9, 14:11, 14:44, 15:34, 15:45, 15:47, 16:22, 16:24, 16:28, 16:31, 16:46, 17:4, 17:11, 17:39, 17:40, 18:14, 18:35, 19:5, 19:13, 19:17, 19:18, 19:21, 19:22, 19:29, 19:44, 20:18, 20:23, 20:37, 20:38, 21:1, 21:6, 21:8, 21:15, 21:24, 21:25, 21:34, 21:41, 22:20, 22:28, 22:32, 22:33, 22:40, 23:2, 23:4, 23:7, 23:35, 23:36, 23:46, 23:47, 24:1, 24:28, 24:33, 24:36, 24:37, 24:41, 25:3, 25:6, 25:15, 25:18, 25:31 You'd [1] - 11:46 you'd[1] - 10:20 you'll [1] - 25:11 You're [3] - 5:1, 9:32, 24:46 you're [17] - 3:25, 3:34, 4:24, 4:29, 8:28, 8:41, 9:22, 10:4, 10:24, 10:26, 10:30, 10:35, 15:42, 16:28, 18:23, 18:24, 25:18 You've [2] - 6:37, 10:41 you've [9] - 2:34, 3:21, 7:32, 10:30, 12:37, 14:17, 14:22, 15:8, 16:17 your[22] - 2:25, 2:30, 2:32, 2:33, 2:34, 3:44, 4:31, 4:47, 5:7, 6:34, 7:8, 7:18, 7:38, 8:22, 9:16, 10:36, 11:10, 12:27, 12:31, 19:13, 19:14, 23:26

25:6

working [1] - 7:34

world[1] - 10:11

works [3] - 25:28, 25:29

worst [3] - 20:1, 20:2,

11: