**Whither regulation, risk and water safety plans? Case studies from Malaysia and from England and Wales**

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**Supplementary Data**

This set of supplementary data illustrates the methodological approach (Corbin and Strauss 2015) and detail for interested readers. The example reported below follows Strauss and Corbin's (2015) approach to open, axial and selective coding and from one interview transcript alone (not reported, to retain anonymity), there were 694 open codes, 59 axial codes; and 10 selective codes.

**INTERVIEW TRANSCRIPTION – OPEN CODING LISTING**

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| **Code No.** | **Open Code** | **Excerpt from Transcript** |
|  | Consolidating everything | Because we’re always consolidating everything.  |
|  | Having less space | So, ummm…we’ll probably have less space.  |
|  | Working more from home now | But you know, we do work more from home these days. |
|  | Manageable | So, I kind of – you know, it’ll be okay, we can manage. |
|  | Government savings | Government savings. |
|  | Working flexible hours now | We have flexible working. Which we didn’t have, you know, six or seven years ago. So, I would ordinarily just be in the office about two or three days a week.  |
|  | Convenient | Yeah, so that’s very convenient … |
|  | Helpful during train strike | …and it helps obviously when there’s a train strike. |
|  | Working flexibly from home | We can work from home, so [chuckles] again, it’s flexible as long as you do your hours. You can start and finish pretty much when you like, but there’s a core between 10 and 4, which people try to stick to… |
|  | Living quiet far away | …but again we have Inspectors that live all over the country. So some of them, even though they leave home at 6 in the morning, they don’t get here till 10, you know, so, they live quite far away, some of them. |
|  | Working from all over the country | Yeah, there’s people living in Birmingham or further away, or Dorset. Yeah, they’re all over the country. |
|  | Working in the regulation’s team as an Inspector | And then, I joined the Inspectorate as an Inspector and I worked in the…what was then the regulation’s team, mostly.  |
|  | Working with a range of regulatory programme | So, the regulations team worked on interpreting the regulations, providing guidance on how to meet the regulations, and also…ummm…legal programmes of work, which is where we have a range of legal instruments which we can use, which formalise programmes of work for the water companies to deliver. So, these programmes of work can be anything from creating procedures, right up to building a new treatment works. And so, a part of that work was…ummm…in that team was implementing new regulations. |
|  | Involving in the risk assessment and risk management projects | So, whilst I was in that team, we had the new regulations for risk assessment and risk management came into force in 2007 and so, I ran the project on implementing a process for the industry and for us, of how that would work. Ummm…and then after that, I continued to work on that particular work area and we developed new database system to hold risk assessment data. So, that’s the kind of latest development.  |
|  | Working as the Head of the enforcement team | And since then, I became Head of the enforcement team, which is a small group within the regulations. So, I headed up enforcement for about a year and a half.  |
|  | Dealing with taking actions towards water companies | So that deals with taking legal actions against companies, really.  |
|  | Working as a Principal Inspector | And then most lately…ummm…as a Principle Inspector… |
|  | Responsible for European matters and dealing with risk-based regulations. | …I have been responsible for European matters. And also out and still doing our regulations. So, I’ve always had regulations as part of my core and I’ve worked on the most recent consolidation of the Water Quality Regulations, which came out in 2016. And I’m also one of the leads on a project board for the new revision, which will come out in October 2017. So I go to all the European meetings, the expert groups on Drinking Water Directive. I go to ENDWARE meetings, which is the informal group of European RUK2s and we have a UK network of RUK2s, which meets slightly more regularly. And so…ummm…I sort of head up all that. And I’m also the key contact with the World Health Organization because we are a WHO collaborating centre, and so we have a work programme with them. Ummm…and I’m responsible for delivering that programme, so, we contribute to all sorts of things, such as capacity building in other European countries, mostly. Although we have done further afield like South Africa before, and we’re just about to start work on a new manual for – which is gonna be – I’m not sure what it will ultimately be called, but at the moment the working title is ummm…“A risk-based approach to water quality surveillance.” So, it’s everything to do with water quality regulations. So, monitoring, auditing, checking and how you do that with a risk-based approach. So, WHO have just called the initiating meeting for that in February and we will be one of the key contributors to that. |
|  | Distinguishing between different legislations | So, we have to distinguish between England and Wales, and the rest of the UK because they’re different; there are different legislations. |
|  | Separate legislations set up | So, the set-up in Scotland particularly is very different to for us, you know because they have one company and they were even financed to do their water safety planning, so they’re very, very separate. |
|  | Dealing with mixed water safety planning progress | So, we just deal with England and Wales, and progress has been mixed, I think. |
|  | Not just business as usual | We’re definitely not – we’re not in a place where I’d say, it’s just business as usual. |
|  | Still in a learning process | We’re still in a place where we’re learning how to get the best out of the process, how to get the most value and benefit from the process. |
|  | Varying reasons for water companies’ advanced progress | And I think some water companies have advanced better than others for varying reasons. |
|  | Implementation cost | …which can include purely the cost of implementing new things. |
|  | Capacity for creating new technology | Also, their capacity for creating new technology because that’s also expensive. |
|  | Complexities of existing risk assessment frameworks | And the complexities of existing risk assessment frameworks within water companies. |
|  | Mixed progress | So, it has been mixed… |
|  | RUK2 tried to make a very close connection between risk assessment and risk management and the funding mechanism | …but what we did do right at the beginning was we tried to make a very close connection between risk assessment and risk management, and the funding mechanism that the water companies have to operate under. |
|  | Operating two periodic reviews | So, we have already operated two periodic reviews.  |
|  | Two periodic reviews | So, two periodic reviews – PR9 and PR14… |
|  | RUK2’s main role to look at potential water quality scheme to be incorporated in the water company’s business plans | …and part of that, our main role is to look at any water quality scheme that will be included in the company’s business plans. |
|  | RUK2 reviews water quality schemes | So, we look at all of those schemes and we look at…ummm…whether or not there’s a need, whether the solution is appropriate…ummm…all of those sorts of things. |
|  | Using legal instruments through a formalised contract for delivery of water quality schemes | If we agree that the scheme is necessary, we’ll use one of our legal instruments and make it a formalised contract for delivery.  |
|  | The need to be supported by the risk assessment | But one of the key elements there is that the need needs to be supported by the risk assessment. |
|  | Early connection to incorporate risk assessment and funding mechanism | So, that connection was made very, very early – as soon as the new requirement came out in 2007 because PR9 started around in 2008.  |
|  | One of the newest requirements to incorporate risk assessment and funding mechanism | So, that was one of the newest requirements.  |
|  | RUK2 reviews water quality schemes incorporating risk assessments | So as soon as the new regulations came out, we said, “If you want to have a water quality scheme reviewed by us for your business plan, you must be supported by a risk assessment.” |
|  | Instant change for water companies to risk assessment and risk management | So, that was a really good driver for companies to embed risk assessment and risk management as quickly as possible.  |
|  | Varying degrees of achievement | Ummm…and so, you get varying degrees of…ummm…achieving that… |
|  | Capability of different sized water companies | …because as I said, the capability of different sized water companies to do that in a short space of time. |
|  | Challenging to some water companies | Ummm…it was really, really challenging to some companies.  |
|  | Iterative process for improvement by water companies | So I think since then, it’s been very much an iterative process of improving on those first attempts |
|  | Evidence to RUK2 in a form of submitted methodologies | And we have evidence of that happening because we had methodologies submitted to us.  |
|  | Starting with the methodology for the water safety planning | Right at the start, a methodology for the water safety planning, or also known as risk assessment and risk management.  |
|  | Changing and refining of methodologies | It’s that process for each company and over the years, they have made changes and refinements to their methodologies. So, that’s clear that, you know, what was put in place at the beginning is not necessarily what is in place now.  |
|  | RUK2 is compromising at the beginning | Ummm…and I think you have to accept that you won’t get it completely right the first time.  |
|  | True benefits of the risk assessment and risk management processes through AMP-cycles | Now, the benefits of the risk assessment and risk management processes themselves, again we can see that by what was delivered in each of the AMP-cycles.  |
|  | Showing changes in water quality in each periodic review | Because you have your periodic review, you determine your business plan, which includes all your water quality in previous schemes and then, you deliver your schemes. |
|  | Sixth Asset Management Plan (AMP) | So, we’re just coming to the end of…ummm, well, about midway through our sixth AMP actually.  |
|  | Evidence of delivered schemes partly identified by risk assessment | But, you know, we can show that those schemes that have been delivered were partly identified by risk assessment.  |
|  | Releasing the company from legal obligation once completed | And then, when they were completed, part of our criteria for closing the instrument down because the company will have to be released from the obligation.  |
|  | Continuous bilateral actions between RUK2 and water companies  | We have to review the new risk assessment, so they have to carry out the risk assessments again.  |
|  | RUK2 to check whether the water operators achieving true benefits of WSPs | And we have to check that they’ve actually achieved the benefits that they set out to achieve, in so far as a reduction in risk.  |
|  | Harvesting small true benefits from risk assessment and risk management | So, we can show that benefit in that scenario, but that is only a small part of the benefits that I think can be reaped from risk assessment and risk management.  |
|  | Difficult for RUK2 to demonstrate true benefits | So, the rest of it is a little bit more difficult for us to demonstrate… |
|  | Clear cause and effect through the periodic review and AMP-cycle processes | …but certainly from the periodic review and AMP-cycle processes, there’s clear cause and effect in that area. |
|  | Difficult to compare | Ummm…well, again it’s difficult to compare… |
|  | Some water companies haven’t got good risk assessment and risk management process | …because some of the companies that…ummm…you know, haven’t got quite as good risk assessment and risk management processes in place.  |
|  | Does not necessarily manifest itself through not having the right quality schemes | It doesn’t necessarily manifest itself in – in not having the right quality schemes in the business plan. |
|  | Manifesting in different ways | So, it can manifest itself in lots of different ways.  |
|  | Comprehensive view on the impact | So, when you look at the impact of risk assessment and risk management on our water industry, you actually have to look at everything.  |
|  | WSP is about everything | And that is the right thing to do because water safety planning is about everything. Ummm, so, you’re also looking at things like, well, what is the compliance like against the standards? How far do they go beyond the compliance? Ummm, how many water quality events are they having and why, because usually the reason water quality events will happen is because the risk assessment process was not done properly, or their continuity plans, which are part of water safety planning are not suitable, or not good enough.  |
|  | A breakdown at any point in what is classed as a full WSP | So at some point, there’s a breakdown in what is classed as a full Water Safety Plan.  |
|  | A breakdown somewhere along the line | There’ll be a breakdown somewhere along that line, which can manifest absolutely anywhere.  |
|  | A breakdown manifesting in failures of WSP | It can even manifest itself in incorrect design of processes and treatment works because again, the point of risk assessment and hazard operability studies, all of that is part of water safety planning.  |
|  | Water operators’ performance reflecting the breakdown in their risk assessment methodologies | So, for some of the other companies, maybe that we can’t see that nice, neat cause and effect in quality schemes because they might not – might not really necessarily need any big, good water quality schemes. You’d have to look at what’s their performance in other areas like events and where can we see the breakdown in their risk assessment methodologies.  |
|  | Not an exact science yet very difficult for water industry to demonstrate clear benefits | So, it’s not an exact science, might be – it’s very, very difficult, I think, to – for our industry particularly to say, “Yeah, this is the clear benefit of any one thing – one element in the water safety planning process,” because there are so many different elements.  |
|  | Benefits should be seen but difficult to measure | Really, you should be seeing benefit from water safety planning in all areas, in training, in procedures, in policies, in maintenance, in operations. It should manifest in all those areas. So, how do you measure it?  |
|  | Gap analysis | …and then, the gap analysis is something that again, doesn’t just happen once, you know.  |
|  | A need for water companies to have a review strategy for WSPs | We’ve said that each company must have a review strategy for their Water Safety Plans.  |
|  | RUK2’s expectation on voluntary reviewing frequency. | And the review strategy really should have a minimum frequency for reviewing information, or certain types of information. And whilst we don’t prescribe anything, we would expect that certain site-specific risk assessment might take place, at least annually. And that reviews of datasets, or policies might take place at least every five years, or something like that.  |
|  | Gap analysis during periodic review | So, each time you do that review cycle, you should, again be identifying, “Well, what are my gaps? Have I got gaps in the data that I’m collecting? Have I got gaps in the competency of my staff? Have I got gaps in my management procedures?” |
|  | Iterative cycle for improvement | So, all of those things need to be reviewed on an on-going basis and each time you do review, you’d find something that you could improve, and so that’s why I’m saying it’s an iterative cycle.  |
|  | Difficult to quantify the overall benefit | And it is very difficult to say at any one point in time, how you quantify the overall benefit.  |
|  | From catchment to tap | Yeah, they go from catchment to tap, yeah, so. |
|  | RUK2 is not facilitating water operators | We don’t facilitate them to do anything.  |
|  | Water operators’ responsibility to do risk assessments | Ummm, I mean, it’s their responsibility to do their risk assessments… |
|  | An initial need to communicate with different stakeholders | …and they have – well, it was quite hard work, I think, in the beginning to strike up the right relationships with all the different stakeholders. But you would need to talk to, to get the information that you need.  |
|  | Water operators to define the water catchments | So for catchments, ummm, each water company actually defines the catchment…ummm, and that actually tell us, you know, what the catchment is represented by.  |
|  | Water operators to identify the stakeholders within water catchment area | And then, in that catchment, they identify who are the stakeholders that they need to be involved with.  |
|  | Holders of information | So, who are the people that are either the holders of information… |
|  | Groups with impact on source water quality | …or the groups that have an impact on source water quality in that catchment area.  |
|  | Vary from catchment to catchment depending on complexity | So, all vary from catchment to catchment.  |
|  | Hardly nothing within a catchment | Some catchments, there are just nothing in them hardly. So, there’s not a lot going on, so, you know, that’s not a lot to see here. |
|  | A lot of stakeholders and loads of impact on source water quality in urban water catchments | Other catchments, like urban catchments, would have an awful lot of stakeholders, loads of impact on source water quality. So, those catchment areas would need a lot of stakeholder engagement.  |
|  | Groups with impact on source water quality | So, obviously there are some obvious ones, which are the EA, and the – I think, probably the NFUs, the Farmer’s Union and all those sorts of things.  |
|  | Groups that collect data | There are groups that collect data, so, the people, like the BGS and there are some – I forget all the names now… |
|  | Groups that have datasets | …but there are groups that have datasets, which show you some uses of pesticides, or other things. |
|  | Water operators’ responsibility to identify the catchment stakeholders | So, the water company is responsible for identifying who those people are and getting the information that they need from those groups and those people in order to form their risk assessment.  |
|  | Water operators to collaborate with the catchment stakeholders | So, they have to collaborate with any catchment stakeholders.  |
|  | Water operators as one of the catchment stakeholders | I mean, some of the catchment stakeholders are water companies themselves because they might have wastewater treatment works upstream. So, they might have to actually get information from a neighbouring water company.  |
|  | Difficulty to undertake zone-specific risk assessment | So, that’s how a catchment works and then for the customer side, so, beyond the boundary of the – ummm, property and the tap, it is possible to do some site-specific, or zone-specific risk assessments, but that’s very, very difficult because for the most part, water quality zones are made up of varying types of property. |
|  | Difficult to find a water quality zone with property-specific similar problems | So, there’s not really – it would be very rare to find a water quality zone where all the properties suffer from the same problems.  |
|  | Generic risk assessment for a water quality zone | So, what you tend to have is a generic risk assessment for a water quality zone, which will cover all eventualities.  |
|  | Water companies alter the likelihood of issues within a water quality zone | And then, what water companies will do is they will obviously alter the likelihood of certain issues depending on what their compliance and operational monitoring tells them about that zone. So, they will have – they are there for the whole of that information.  |
|  | Not many stakeholders on consumers’ side | There aren’t really that many other stakeholders in the customer’s side… |
|  | Certain stakeholders depending on the specific water quality issues | …although from a communication point of view, there are certainly stakeholders because depending on the water quality issues that might be faced in a zone.  |
|  | Water operators to proactively communicate with health professionals and vulnerable groups | Water companies might need to proactively communicate with, say, local health authorities, or with certain vulnerable groups, such as pregnant mothers…  |
|  | Very old housing stock prone to lead issues | …ummm…because if you do have a zone, which is say, more prone to lead issues because there might be very old housing stock… |
|  | Proactive programme from water operators | …then you might have a more proactive programme of either activity from the company’s part, or so… |
|  | Groups with impact on water quality | …either…ummm…actually doing some kind of treatment, or going in and replacing pipes to sort of having a proactive communication programme with, you know, health professionals and others to get advice and information to people that need to use it, really.  |
|  | Stakeholders not necessarily for information gathering | So there are stakeholders, but not necessarily for any information gathering point of view.  |
|  | More generic risk assessment | But you will find that the risk assessments are more generic. |
|  | Not risk assessment for a household | They’re not just for a household… |
|  | Risk assessment for a water quality zone | …they’ll be for more likely a water quality zone. |
|  | Groups of specific properties | Yeah, I mean there’s actually that these properties are listed as groups of properties. So, you’ll see them defined as – so, hospitals – hospital [low tone] I think just comes under its own category of healthcare facilities, but you also have school’s nurseries; they might come under another category. |
|  | Specific risk assessments that is generic for the area | So, they will have their own specific risk assessments, but again it will be generic for the area. So, all hospitals and all schools will be risk assessing roughly the same way, unless they have other information that tells them otherwise, which they can do because they will go and inspect and take samples from public buildings, hospitals, not just hospitals, and schools.  |
|  | Some locations will have specific information | So, for some of those locations, they will have specific information, but not for all of them.  |
|  | Fluid risk categories | No. That’s…ummm…the groupings – I think, I can’t remember where groupings come from now. There’s the one that covers…ummm…the nature of the commercial property. So the type of water that it uses, so you’ll have things like launderettes because they use chemicals. So I think, there’s a category of 1 to 5 or something and it puts all of these – I think hospitals are quite high because they have obviously, you know, blood waste and that kind of stuff. So, some of the categorisations come from that fluid risk category. And I’m not sure where that – I can’t remember where that comes from now, but if you look up fluid risk categories…ummm, some of it comes from there.  |
|  | Categories resonate from other legislation | Some of it, I think, comes from other legislation.  |
|  | Not from water quality legislation but widely accepted | I don’t think it’s water quality legislation, but it’s quite widely accepted groupings of types of property. |
|  | Accepted grouping | So you’ve got, you know, obviously domestic is one, then you’ll have everything else – you have commercial, you have industrial, you have hospitals, and there’s, I think, that’s an accepted kind of groupings. |
|  | Water operators to take samples everywhere | Yes. Public buildings. They have to take samples from them, well not – yeah, not just public, offices. Everywhere.  |
|  | Sampling from all properties | So, the compliance programme is…ummm…sampling from all properties where water is used for drinking or other domestic purposes. |
|  | Sampling at the first drinking water tap in the property | Ehmmm, yup. [affirms] From the first drinking water tap in the property. |
|  | Raw water sampling | Samples will be taken from the river, or wherever… |
|  | Sampling before the abstraction points | …before the – can be taken before the abstraction points.  |
|  | Manual and online sampling instruments | And sometimes these samples are not taken by hand and they’re taken by online instruments.  |
|  | Information on the abstraction points | And then, you might have the map of the abstraction points as well. And then, it depends what information I need… |
|  | Pristine source requires less online sampling | …again if the source is a really pristine source that’s not subject to any pollution influence, then, you know, arguably you don’t really need lots of high-tech online instruments upstream of your intake. |
|  | Risk assessment | So, it is done by some risk assessment as well.  |
|  | Manual and online sampling instruments through treatment process | And obviously the samples through treatment process again, sometimes, some taken by hand, some taken by online instruments… |
|  | Mostly manual than online sampling instruments through distribution system although scarcely | …and then, in distribution; mostly taken by hand, some use online instruments in distribution, but not mass – not widely.  |
|  | Customer tap sampling at the first drinking water tap in the property | And then, obviously customer tap sample, which is the first tap that can be used for drinking water in any building.  |
|  | Compliance sampling at treatment plant outlets | There’s usually online monitors at the – as the water exits the treatment works as well as samples that were taken by hand because those ones are our compliance samples. |
|  | Compliance sampling at service reservoirs | And within distribution, there are compliance samples that have to be taken at service reservoirs… |
|  | The only compliance sampling within distribution | …but that’s the only compliance sample that has to be taken in distribution.  |
|  | Operational sampling for the rest within distribution | All the other samples taken within distribution will be operational samples.  |
|  | Operational sampling | And those will be taken purely for the company to be able to operate properly.  |
|  | Samples taken anywhere | So those samples can be taken anywhere; from hydrants, from service reservoirs.. |
|  | Limited online sampling instruments | …and they also have some – well, I say some limited online instruments. They do have things like pressure loggers…that I think flow and pressure is the sort of online instruments that you get within distribution. You don’t get that many online quality monitors, although they do exist and they are starting to be used now.  |
|  | Most of the quality sampling within network is done by samplers | So, most of the quality parameters taken within the network will be done by samplers. |
|  | Limited uptake from water companies using online sampling instruments | For quality samples, ummm, I think WSU8 are. Ummm……[long pause] the two companies are TyraTech and Hydraclam that make these online products. |
|  | Limited uptake from water companies using online sampling instruments | I think they’re using the Hydraclam. Though I think WSU10 – WSU8 – I think WSU6, but there’s not…ummm…there’s not been a huge amount of uptake just at the moment… |
|  | Less cutting edge technology | …because the technology is not quite there…  |
|  | Growing uptake from water companies using online sampling instruments | …but I think within the next five years, I think we’ll see a lot more in the way of in-line, online water quality monitoring within networks. |
|  | Online sampling instruments for operational monitoring | That would be for operational monitoring. Yeah. |
|  | Manual or online sampling for compliance samples | Ehmmm. [affirms] Ehmmm! Correction, you don’t have to do it manually. You can use online instrumentation for your compliance sample results. |
|  | Online sampling must meet ISO 17025 or 17024 requirements | However, your online instrumentation must meet the requirements of ISO 17025 or 17024.  |
|  | Water companies hardly use online sampling for compliance samples | In order to be able to do that, and again, I think that’s why water companies aren’t really using their online instrumentation very much for compliance samples… |
|  | Difficulty in meeting the requirement | …because meeting that requirement is a little bit onerous…  |
|  | Growing to be common practice | …but I think it will – I think it will become more common of that happening in the next five years.  |
|  | Allowing to accept online results for compliance | Yeah. So in the regulations, we’ll see that it is allowed to accept online results for compliance… |
|  | Not commonly used | …but it’s just not commonly used. |
|  | Not to reduce the number of samplers | It’s not, I don’t think they’re trying to reduce samplers.  |
|  | Coordinating the way of gathering more information | I think it’s that if they have…ummm, it’s the logistics of it. If you have an online monitor which is telling you data every minute, it’s gonna give you much more information about how that system is operating rather than having one sample per day. So you know, it’s about how much information you can get.  |
|  | Not to reduce the number of samplers | I don’t think it’s about reducing the number of samplers that they have. |
|  | Real-time online monitoring | Yeah, they’re all real-time. |
|  | Some are non-real-time online monitoring | Some of it. Sometimes you have to upload it… |
|  | It can be real-time online monitoring | …but I think, again, I’m not massively up-to-date with the technology, but I understand it can be real-time… |
|  | Using telephone network to transmit data | …but as for how easy that is to achieve, I don’t know, so they use the telephone network basically, to transmit the data.  |
|  | A problem in an area with no telephone network | So I would imagine that, you know, if you’re in an area where there is no phone network, then obviously that’s going to be a problem.  |
|  | Technology is not widespread | So, the actual ins-and-outs of the technology and how it works, I don’t fully understand, but it will be problems like that, which is why it’s not widespread yet. |
|  | Water companies use them for a specific reason | And until they get those things resolved, I think it will only because the companies that have them use them for a specific reason. |
|  | Water companies not use them as a general rule | So, they’re not used as a general rule.  |
|  | Further investigation within bad areas | They’re used because the company has a particularly bad area that they’re doing investigation on, and then, they would install these units.  |
|  | Not routine use | So, it’s not routine use… |
|  | Investigatory use | …it is investigatory use at the moment.  |
|  | Experiencing discolouration problems | Yeah. Well, so, an example would be areas where they’re experiencing discolouration problems.  |
|  | Effective real data modelling  | And you know, you can model a network, but it’s still not as good as having real data from the network. |
|  | Putting online monitors within strategic places | So, if you have your trunk mains and end-zones coming off, you can put these online monitors within strategic places. |
|  | Better understanding on what’s actually going on | And then, you can better understand what’s actually going on with the…ummm, sort of levels of iron, manganese, or turbidity under all normal and other conditions that you might experience.  |
|  | Computer modelling alone might not give all the information | But just doing a computer model might not give you all that information  |
|  | Control measures to improve quality parameters | and it also allows you to actually demonstrate – if you’ve done some improvement work – that’s actually resulted in an improvement to those quality parameters… |
|  | Computer modelling won’t provide that evidence | …whereas modelling won’t actually give you that evidence.  |
|  | Water operators are using online monitoring sampling | So, that’s what they’re used for at the moment. |
|  | Mandatory risk-based monitoring | Yes, so that’s the regulations that will come out next October.  |
|  | Compliance monitoring programme established by risk assessment | So, there will be compliance monitoring programme will be established by risk assessment. |
|  | A set of compliance monitoring programme | So, at the moment, we have the compliance monitoring programme – is a set of programme… |
|  | Set frequencies for parameters and site combinations | ...so it has set frequencies for parameters and site combinations.  |
|  | Frequencies set by the Drinking Water Directive | And those frequencies are set by the Drinking Water Directive, the European Directive.  |
|  | Frequencies can be altered according to the basis of risk assessment | So, the Annex to that Directive is now changed to say that those frequencies can actually be established by risk assessment – not set or – but they can still be set as the frequencies that are in the Directive, but you could change them on the basis of your risk assessment.  |
|  | The industry is ready with risk assessments | So, we have all the risk assessments here already… |
|  | Water companies understand risk assessments | …and water companies will understand the associated risks of a certain parameter at a certain location.  |
|  | Logic for on-site frequency setting | So for example, if you have a treatment works that has never had a nitrate problem, never detected nitrate in the raw water, the catchment risk assessment shows that there is no source of nitrate anywhere in the catchment, then your water quality result shows that you always detect hardly any nitrate in that water. Then, why would you do compliance monitoring for nitrate?  |
|  | Water companies eligible to apply for reduction of monitoring frequency with support from risk assessment | So, if the risk assessment supports the conclusion that actually this parameter is not the risk at this site, then, the company can apply for a reduction in that monitoring frequency for nitrate. |
|  | Less intention for low risk parameters in compliance monitoring | Yeah, sort – yeah, kind of, ummm…you have to remember, we’re just talking about compliance monitoring.  |
|  | RUK2’s expectation for the water companies to undertake operational monitoring | We still expect the company to do operational monitoring. |
|  | Water companies to take operational samples | So, they will still have to do nitrate monitoring as part of their operational samples to understand when – because you still – just because you don’t have a nitrate problem and you know you never have a nitrate problem, doesn’t mean that one day you won’t have one. |
|  | Water companies to take low level of sampling | So, you still have to take a low level of sampling.  |
|  | Not a regulatory requirement | It’s just that we won’t require it to be submitted as part of the compliance dataset against the Drinking Water Directive, yeah. |
|  | Laboratory accreditation | 17025 is for the lab accreditation.  |
|  | Individual samplers’ accreditation | 17024, I think is for individual samplers who actually take samples. |
|  | RUK2 takes the compliance results | Results, yeah. |
|  | RUK2 undertakes risk-based audits | Yup. |
|  | UKAS undertakes audit for laboratory accreditation | Well, not for laboratory. UKAS does laboratory orders, yeah. |
|  | UKAS undertakes audit for samplers accreditation | Again, samplers are audited by UKAS.  |
|  | RUK2 undertakes vertical audit | Although we do, I think we have done our own sampler audits, I think as well, where we might go and do – well, we do what we call the vertical audit, where we follow a sampler from the point when, you know, they go out to take the samples, and then, follow the sample through to the laboratory until it gets put on a public record.  |
|  | Vertical audit is not one of RUK2’s cores | We don’t do that as much as we use to because of UKAS’s programme, I think, I think pretty much covers that. So we do a bit of it, but that’s not one of our cores.  |
|  | RUK2 carries out technical audits | Yeah, we have…ummm…so, we carry out technical audits…  |
|  | Driven by a number of different things | …and they’re driven by a number of different things.  |
|  | RUK2 selects the top ones from general risk-based database | We have a general risk-based database, which takes lots of different bits of information and data, and gives us a risk ranking of all of the assets of each company. Ummm, and we pick the top ones of that list |
|  | RUK2 selects the most risky ones for technical audit | Yeah, the most risky ones. And we will do technical audit.  |
|  | Technical audits as a regulatory requirement | We are required to do that by the regulation…  |
|  | All RUK2’s activities are risk-based | …because any of all of our activities have to be carried out by a risk-based approach.  |
|  | Not a disorganised regulator | So, the whole point about being a regulator is that you don’t go and audit everything all the time.  |
|  | RUK2 audits risky things | We just audit the most risky things.  |
|  | Any regulator works similarly | So, any regulator will work in the same way.  |
|  | RUK2 undertakes other audits branched from a water quality event | Ummm, but as well as that sort of on-going risk-based programme, we have other audits that we carry out and they can branch from a water quality event.  |
|  | RUK2 undertakes proactive technical audit  | So if there’s been an issue, we will go and proactively do a technical audit on those particular sites, or on that particular subject because it might be something to do with, like emergency planning or could be – so, not necessarily a physical asset |
|  | RUK2 undertakes themed audits | And we also have themed audits… |
|  | Themed audits stemmed from a common weakness | …which take place and themes come from…ummm…where we find there’s a common weakness.. |
|  | Themed audits stemmed from a common weakness among most water operators | Yes, so there’s a common weakness, which we – so, if we find something more than a couple of times, we think, “Oh!” Yeah, we might need to do an audit, which will actually touch on all companies – most companies.  |
|  | Guidance or information notes as a result of themed audit | And then, what we would do as a result of that is we would then issue, you know, guidance or you know, an information note to say we felt that there might have been a more widespread issue with this. |
|  | Distributing audit findings | We’ve gone out and audited, and here are our findings.  |
|  | RUK2 expects water industry to take note and make improvements | We’d like the industry to, you know, take note of these things and make improvements, or what have you,  |
|  | Example of themed audits | so for example, we’ve done themed audits in the last couple of years on…ummm……[long pause] on disinfection processes and chemicals. So, everything to do with chemicals, like the use of chemicals, the storage of chemicals and the checking that they meet the standards, et cetera. So chemicals in general, ummm…and there was another one – the year before that, [softer voice] but I can’t remember what we did now – it’ll come to me later.  |
|  | Frequency of themed audits | So those will be our themed audits, so, probably managed to do about one themed audit per year, which would mean going to all – every company.  |
|  | The whole RUK2 audit programme | So that’s the whole audit programme, I think.  |
|  | Risk-based audits | So, it’s made up of the rolling risk-based element… |
|  | Random audits | …and then an element of other audits, which could be classed as random audit… |
|  | Part of the RUK2’s code | …because again, it’s part of the RUK2’s code.  |
|  | Audit categories | We have to do most – the bigger proportion is a risk-based programme and then, this all portion of random which can be selected for any reason. Yeah, that’s basically it for audits. |
|  | Small number of staff | Magic. [laughs] I think, yes, we have slightly less than 30. We’re actually short-staffed by six people at the moment. |
|  | Struggling | Yes, it really – we really do struggle  |
|  | Prioritising the works | and so, we do – we just have to prioritise what we’re doing and be very clever about it.  |
|  | Audit programme is a very important part for RUK2 | The audit programme is something that doesn’t usually suffer because it is seen as a very, very important part of what we do. |
|  | Streamlining audit process | But we have streamlined some of the processes that we follow to carry out audits,  |
|  | Quick and time saving | so, to make them a bit quicker and, you know, to save a little time. |
|  | Disorganised auditing | So, we have – whereas in the past, we might go to the site and audit it end-to-end regardless of why we’re there – we look at absolutely everything. |
|  | Focused audits | Sometimes now, particularly if it's a themed audit, we will mainly just concentrate on that theme. |
|  | Coordinated audits | So if I’m going to review a disinfection process, I’ll go to site and I’ll probably just really look at the disinfection process. I might quickly look around the rest of the site, but I wouldn’t go into detail on absolutely everything.  |
|  | Time saving | So that saves us a little bit of time… |
|  | Writing summary report rather than lengthy report | …and also we used to write very, very lengthy reports. And so now, we’ve cut that down so that we really just produce a – it’s almost like a summary report with just the key findings and any actions that need to be taken. |
|  | Streamlining by cutting out the unnecessary long reports | So we’ve streamed – it’s not report writing for report writing’s sake, which I think, you know, 10-15 years ago we might have been accused of, you know, producing very long reports, which aren’t really necessary.  |
|  | Streamlining procedures and working a little bit smarter | So, a little less things have been, you know, achieved by streamlining our own procedures and working a little bit smarter, you know.  |
|  | No part-timers | No.  |
|  | RUK2 used to employ consultants | Well, we used to employ consultants quite a lot… |
|  | Unfavourably expensive | …ummm, but…ummm…the – I think, it’s generally civil service don’t really like that because they’re very expensive. [chuckles]  |
|  | Increased the number of staff | So, what we did instead was we increased our own staff numbers. So we’re really today, we do great with more staff than we used to 15 years ago.  |
|  | Secondment programme from the water industry | We do have a secondment programme from the industry, yeah.  |
|  | Two secondees from water companies at a time | So, we do have at any one time two people who are from water companies.  |
|  | Secondees from the water quality departments within water companies | They’re usually from the water quality departments within those companies.  |
|  | More than communicating with RUK2 | And they have more than likely interacted with us.  |
|  | Write and submit reports to RUK2 | So, they might actually write – may have been writing reports for us, submitted to us. |
|  | Secondees are temporarily attached | Yes, and they come to us for six months. |
|  | Secondees as Inspectors | Yes. One of them is here today, and so then, for six months, they will see what it’s like from our side. So what they will then do is they become an inspector.  |
|  | Secondees work as Inspectors | They do have a temporary card, which allows them to do all of the things that we can do, and they have to sign confidentiality agreement because again, they will be seeing information from other companies that they mustn’t divulge.  |
|  | Secondees are temporarily attached | So, they’re with us for six months… |
|  | Secondees are paid by water companies | …and they’re paid for by the water company.  |
|  | RUK2s didn’t pay for secondees’ salary | So we don’t pay for them…  |
|  | RUK2 always have an extra two people | …so, we always have an extra two people.  |
|  | Secondees as productive as the RUK2 | Although they’re only here for six months, so you can’t consider them as productive as an inspector would be.  |
|  | Competent secondees | But nevertheless, they are very good at what they do. They are water quality people, so, they’re very knowledgeable.  |
|  | Secondees can pick up RUK2’s process | But the main reason for them being with us is that they can pick up our processes; how we do things, why we do things and then, take it back to their company.  |
|  | Water company can learn to better co-operate with RUK2 | So, the company can then learn how to better co-operate with us because it’s – sometimes we are – we keep telling the water company, “This is not helpful, you need to change this,” because you know, it’s not helping us do our job.  |
|  | Avoiding miscommunication | And then, there’s a miscommunication.  |
|  | Secondees can learn by taking part | So, it was felt that if they actually came to us and stayed with us for six month, and actually learn by taking part. |
|  | Secondees to be in RUK2’s shoes | Yeah, being in our shoes and actually seeing – because also they only work with their company.  |
|  | Secondees are exposed to RUK2’s way  | So, they have their way of doing things and they don’t understand that there are 28 ways of doing things. And some of those 28 ways are better than others. So, they can come in and they can see the 28 ways for doing things… |
|  | Secondees can learn and take the learning back | …and they can learn and take the learning back to their own company.  |
|  | Secondees as an extra pair of hands | So, we do have those people who in effect are giving an extra pair of hands, which is good, but we don’t have any additional help apart from them. |
|  | Secondi programme | I think we’ve been running it for about three or four years now. |
|  | Performance depending on the quality of the person | I think…ummm…for us, it depends on the quality of the person… |
|  | Had very good secondees | …because we’ve had very good secondees.  |
|  | Few examples of non-performed secondees | We have a few examples of secondees that perhaps haven’t been as effective as others… |
|  | Expected performance | …but I suppose that’s to be expected.  |
|  | Very good, positive impact former secondees | And equally, we have seen some secondees go back to their companies and have a very good, positive impact…  |
|  | No impact former secondees | …and others had gone back and had no impact.  |
|  | Not necessarily to the secondees’ fault | But again, it’s not necessarily due to their own fault… |
|  | Secondees have less power to make change | …because sometimes they are in a position – in a job position, where actually they don’t have a lot of power to make any change.  |
|  | A shame | So that’s a shame… |
|  | Water companies not utilising the value | …because what it means is that the water company is not really seeing the value in the asset and not utilising it.  |
|  | Disappointing | So that’s disappointing… |
|  | Will be improving  | …but I think we will be improving on that… |
|  | Secondment process review | …because we had a review of the secondment process just recently. |
|  | RUK2 to improve | And I think we’re gonna try and improve that…  |
|  | RUK2 wants water companies to benefit | …because we do want the companies to benefit.  |
|  | RUK2 wants secondees to have a positive impact | So, when we’ve seen secondees go back and then, they’ve not been able to, for whatever reason, have a positive impact – we want them to have a positive impact. |
|  | RUK2 is thinking on the ways for improvement | So, we’ve been trying to think of ways we can facilitate that more.  |
|  | Will improved again by various means | So I think, it will be improved again by various means…  |
|  | Generally a positive impact on both sides | …but yeah, I think it – you know, it’s generally been a positive impact for both sides.  |
|  | Fulfilling one requirements as a RUK2 | And it means that we are again fulfilling one of the requirements as a RUK2…  |
|  | Educating the industry | …which is to educate the industry that you’re regulating. |
|  | Multidisciplinary | Yeah, we’ve got full range of disciplines.  |
|  | Multidisciplinary | So, we’ve got like microbiologists, chemists, engineers… |
|  | Lateral entry exercise | …we have ex-water quality staff who could either be, you know, microbiologist or otherwise. We have ex-lab people, who have managed laboratories, and we’ve got others from other areas of the industry like…ummm……[long pause] WRAS, we have a chap who used to work for WRAS. So, these people that regulates the fixtures and fittings that are used inside properties. And they regulate the water fitting regulations, so, got one of those guys with us.  |
|  | Multidisciplinary | So, it’s multidisciplinary.  |
|  | A need for those disciplines to operate | I think it has to be because there’s – even with the water company, you have to have all those disciplines in order to operate. |
|  | A need to understand how water operators are operating | And we need all those disciplines in order to understand how water companies are operating. |
|  | All inspectors including secondees go for audits | Yeah, we all do audit.  |
|  | Dictation of audit team depends on the magnitude of the audits | So, depending on what the audit is about and the site – the size of the site and where the site is – that will kind of dictate who’s in the audit team… |
|  | All inspectors including secondees go for audits | …but we all do have to go out and audit.  |
|  | Staged audit training programme | Yeah, we have a training programme, which sort of in stages. |
|  | Intensive initial induction programme | So, we have an initial induction programme, which lasts for about three weeks, which is quite intensive. And you meet everybody and understand all the different work areas that we have.  |
|  | Longer audit training session with competence assessed | And then, we have sort of a longer stint, which is four months, and then, eight months, and you’re supposed to cover all of the processes and procedures for all of the work areas within those stages and each stage, your competence is assessed.  |
|  | Audit training matrix maintained by direct line manager | And we have a matrix, which your line manager will maintain with you, which shows your competency level and the evidence of you achieving that competency.  |
|  | Audit training is divided into different types of audits | And, you know, audit is one of the main areas, but audit is split into things because there are different types of audits. |
|  | Lab audit is separate from treatment works audit | So, again, lab audit is separate from say, treatment works audit.  |
|  | RUK2 needs a different skill set | You need a different skill set… |
|  | Different levels of competency among RUK2s for different set of skills | …and then, there are some of us that will all – will never be – so say, the competency top is 5 – I will never be a 5 for a treatment works audit because I don’t have the background or the experience.  |
|  | Low competent RUK2 will be a support team member during audits | I will only ever be a support auditor for water treatment works audit.  |
|  | Top competent RUK2 will lead the audit team | Somebody else would always have to be the lead…  |
|  | More experienced RUK2 will lead the audit team in a specialised area | …so, we would have our – sort of – more, what I’d call maybe, more experienced auditors, would be the lead in that case, whereas I could lead an audit in a different area |
|  | Each RUK2 is fully understand on the competency levels of each person and their skill set | So, we fully understand what the competency levels are of each person and their skillset, and that’s how we come up with our audit teams. |
|  | On the job audit training | So, the training – actually – well, the audit training itself is done on the job.  |
|  | RUK2s go out on audit and make observation | You have to go out, so, you will go out on audit and you will observe.  |
|  | New Inspectors act as observer | So, the first few audits will be as an observer… |
|  | New Inspectors get exposed on different types of audit | …and we try and make sure that new people are exposed to the different types of audit that we do.  |
|  | Desktop training on the process and procedure | Training about the process and the procedure, which could be done, you know, at your desk…  |
|  | Done by the Principal Inspector | …is done by the Principal Inspector for audits.  |
|  | Each Principal Inspector is responsible for each work area | So, each work area has a Principal Inspector, you’re just responsible for that work area.  |
|  | Principal Inspector will lead the new Inspectors for desktop training | And they will lead you through what the processes are that we follow, you know, what documentation you have to produce, what’s the conduct when you’re going to sites, the rules and regulations, all that kind of stuff. |
|  | On the job audit training | But you do basically learn on the job. |
|  | RUK2s are not accredited auditors | Yeah. We’re not accredited auditors, we don’t follow a scheme. |
|  | RUK2s are not accredited auditors | So, we’re not accredited auditors, we are RUK2s.  |
|  | Responsible for own training and competency | And that’s why we are responsible for our own training and competency.  |
|  | Mostly in-house training | So, it’s all done in-house, but we do have what sort of, I’d say the management of it is all done in-house… |
|  | External training | but we do a lot of external training as well.  |
|  | Some trainings need external trainer | So, just yesterday I was doing training on expert witness training. [low tone] So in court, we have to be trained to be able to give evidence in court, so, that’s provided by an external trainer. |
|  | Secondment of RUK2 inspectors | So, we do all sorts of things – we send our staff out to – for secondments the other way around as well, not necessarily six months, but we have gone out for two weeks or four weeks. |
|  | Secondment to water company | If somebody has a particular weakness in an area, then we will send them to a water company, yeah. |
|  | Benefits of lateral entry exercise | So, this is how we do it, and then, you know, some of the guys who are the top competent auditors are the people who were auditors in their own water companies when they worked for water companies. So, we have poached their staff basically. |
|  | Audit training matrix | Matrix? |
|  | Classified document | I don’t think I can share that way, [chuckles] it’s an internal thing. |
|  | Classified document  | I’ll check though and see if I’m allowed to share one…  |
|  | Elements in the audit training matrix | …but it just states all of the elements of carrying out an audit.  |
|  | Levels of measurement and scaling | And then, it just gives you a scale of 1 to 5…  |
|  | Evidence for such measures | …and then what evidence have I got that you are a 1 to 5.  |
|  | Applies to everything | So it applies to everything, it’s even on your knowledge of the regulations.  |
|  | Knowledge and skills increase proportionately | So when you first start the job, your knowledge of the regulations is going to be not great, or be about 1 probably, but as the time goes by and you’re utilising the regulations more, your knowledge will increase. You know, with any luck, after about – probably would take about a year to two years, you might get up to level 5.  |
|  | Classified document  | So…I’ll see if I’m allowed to share it. I’m not sure I will be… |
|  | No high hopes for classified document | Don’t get your hopes up. |
|  | Difficulty to share documents | Because the difficulty with that is [sighs] with all of these things.. |
|  | RUK2s keep it private from the industry | …we don’t want the industry to know how we measure ourselves.  |
|  | Difficulty to share documents | Because it’s [sighs] – it’s a difficult one.  |
|  | RUK2’s due diligence to MUK1 | It’s…ummm…it’s our responsibility to – this is our due diligence, internally, to MUK1 as a RUK2  |
|  | Not RUK2’s responsibility towards the industry | …not to the industry.  |
|  | Inward facing criteria rather than outward facing criteria | So, it’s our inward facing criteria rather than any outward facing criteria. |
|  | Independent RUK2 | Yes. We’re an independent RUK2, yeah. |
|  | Chief Inspector is a creature of statute | Well, the Chief Inspector of Drinking Water is a creature of statute. |
|  | Sole power | So, the powers are vested in him rather than a Secretary of State or anyone else. |
|  | Staff wages from MUK1 | The budget is…ummm…the staff wages comes from the MUK1 central budget. |
|  | Other budgets reclaimed from water companies | Everything else is reclaimed from companies by recharging. |
|  | Statutory obligation | So we have the Fees Order, which I think is a statutory instrument, so, it’ll be on statutory instrument library.  |
|  | Detailing on charges | And that details what we charge companies for.  |
|  | RUK2 reclaims the regulatory charges | So, we reclaim the cost of things like reviewing compliance results and going out to audit. |
|  | Regulatory charges to water companies | No. The companies are charged for that.  |
|  | Staff wages from MUK1 | So, the government only pays for our wages, that’s it.  |
|  | Other budgets reclaimed from water companies | So, everything else is reclaimed. |
|  | Government pays for travel | Oh, actually the government still pays for travel. I think, they still pay for our travel |
|  | Water companies charged for regulatory costs | …but for everything else to do with the audit, they are charged. |
|  | Standard regulatory fee | Yeah, there are standard breaks and timings for audits.  |
|  | Flat charging regime | So, depending on how many – you might do a three – if you do a three-day audit, then it will be three times, and then, you’ll have to work out all – did I have an inspector there, how many? How many PIs, and then, there’s like a flat – it’s almost like a flat rate. It’s not done by sort of time sheets and hours. It’s done by…you know, just high level quantities. And again, for compliance results, we charge, you know, I think it’s something like £5 per hundred results, or something like that. So, it’s not done by – I spent 28 hours looking at 10 results, it’s just done by – well, we say 10, so it’s a flat rate of £5 or whatever. |
|  | Not a detail charging structure | It – well, it’s not done by any sort of small increments of hours, or how many people.  |
|  | Simple charging strategy | It’s done by just sheer numbers. So, it’s a very simple charging strategy. |
|  | Not complicated charging form | It’s not a complicated one. |
|  | Statutory obligation | I think the Fee Order itself should be on the government’s statutory instrument site. So, dot gov dot uk. I think all of the regulations and instruments are listed down there. |
|  | Water sampling is done by water operators | Yes. |
|  | RUK2 don’t do any sampling | No. We don’t do any sampling at all.  |
|  | Water companies do all the sampling and analysis | The companies do all the sampling and the analysis.  |
|  | RUK2 don’t do any sampling | We don’t do any… |
|  | RUK2 didn’t have any equipment to do sampling | …we don’t have our in-labs or anything. |
|  | Water companies provide testing results to RUK2 | Yes. Which about three – between three or four million results a year, I think.  |
|  | RUK2 do data analysis for the submitted testing results | Yeah, that’s a lot, yeah. Ummm, well, we just do some data analysis.  |
|  | RUK2 look onto individual failures | Obviously maybe not looking at any individual result, but we do some data analysis and we do look at any individual failure.  |
|  | Each individual failure leads to RUK2 investigation | So, each individual failure has its own investigation by us. |
|  | Mean zonal compliance for companies’ performance | Yeah, we’ve got an index that we use, called the mean zonal compliance.  |
|  | Only looking at compliance figures | Again, this is only looking at compliance figures though.  |
|  | Doesn’t look on other performance indicator | So, it doesn’t look at any other performance, like events or anything.  |
|  | Worst company in compliance performance might not be the worst company in other performance indicator | So, you know, the worst company in compliance performance might not necessarily be the worst company in another performance indicator.  |
|  | Compliance results based on mean zonal compliance is published annually | So, produce mean zonal compliance, which is just a calculation based on compliance results and that’s published annually.  |
|  | Small element of all performance indicators | And yeah, we can see which companies are performing badly or well, or have a deteriorating trend or an improving trend, but it’s only a small element of telling us how well a water company is doing. |
|  | RUK2 investigate each compliance failure | Ummm, well, each compliance failure is investigated by us…  |
|  | Company understood and put control measures | …and we ensure that the company have understood what the cause was, and put measures in place to make sure that it’ll never happen again.  |
|  | RUK2 to make sure each compliance failure is resolved and prevented from occurrence | So, that’s our job is to make sure that each of those compliance failures is resolved and as I said, is prevented from occurring again.  |
|  | Reactive way of improving compliance | So, that’s how we try and improve compliance from – as a reactive way.  |
|  | Proactive way of improving compliance through improving general operation | Ummm, the other way of improving compliance is by improving your general operation. So, that is something that we do proactively…  |
|  | Risk-based approach | …and that is by risk assessment, so through the risk assessment process, and by identifying where risk is manifesting itself.  |
|  | Proactive way of improving compliance by working with companies before the compliance failures | And then, working with companies to do something about that before we have the compliance failure.  |
|  | Improves compliance | So, that in turn improves compliance as well.  |
|  | Annual reports | Ummm, all the mean zonal compliance figure they use for any purposes – ummm, and obviously they have our annual reports…  |
|  | On-going dialogue | …and we have an on-going dialogue…  |
|  | Deputy Chief Inspector is the key liaison | …so one of our Deputy Chief of Inspectors is key liaison with RUK3.  |
|  | Regular meetings | And we have, yeah, regular meetings with them, discuss any concerns or issues with any of the water companies.  |
|  | Not in huge amount of detail | But it’s not a huge amount of detail because RUK3 is mainly concerned with the financing the industry and we are the water quality RUK2s… |
|  | There is cross-over | …so, there is not – well, there is cross-over…  |
|  | Fair level of engagement | …but it’s not to the point where we work on projects together or anything like that.  |
|  | Water companies are the middlemen | Ummm, well [sighs] [long pause] It’s – the companies are the middlemen, you see.  |
|  | Funding approval from RUK3 | So, it tends to be, if we’ve got problems, the companies might say, “Oh, we haven’t got funding to do it.”  |
|  | On-going issues on funding | We always have to find the funding, so we just find another way. So, most of the issues are on-going ones… |
|  | The challenges of having an economic regulator | …which are just – they’re basically the challenges of having a regulator to finance your mechanism.  |
|  | On-going issues on funding | So, those issues will always be there. There will never be enough money to do all the things that we would like water companies to do.  |
|  | Prioritisation | So, there always has to be prioritisation going on.  |
|  | Trade-offs | So, there’s no – I don’t think – I can’t think of any examples of big issue, but there’s – the constant issue of it is always a trade-off that has to be had.  |
|  | Constant fight for each RUK2’s interest | And we are always fighting the fight for water quality. And then, you have all the other RUK2s and all the other parties fighting their fight. So, it’s just a constant fight. [chuckles]  |
|  | Positive competition among regulators | Yeah, but that’s the whole purpose of the framework itself is to have that fight because the belief is that with competition and with financial regulation breeds innovation and efficiency. Apparently.  |
|  | No such issues among regulators | Not any – not any one thing, I don’t think.  |
|  | Water companies’ issues which influenced regulators | I mean, we’ve had issues with water companies perhaps not being effectively financed, but that’s their own fault really.  |
|  | Water companies’ failure | I mean, they can’t operate themselves properly and come up with good business plans, then that’s their failure.  |
|  | RUK3 functions with the given information | Because RUK3 only really work with the information that they’re given. So…you know.  |
|  | No such issues among regulators | So, no, I can’t think of any one major issue.  |
|  | Upcoming difficulty comes from the water industry competition | This difficulty with the upcoming carving up of the water companies, so the retail side of the business is being separated from the operational side of the business. And so, you’ll have people like TESCO will be able to be your – not your water provider, but they’ll be the seller.  |
|  | Changes of water industry competition | Yes, so, the competition changes.  |
|  | Challenges to RUK2 | I mean, that’s going to be challenging for us.  |
|  | RUK2 prefers it is not to happen | I think, you know, if we were – our opinion would be we’d rather it wasn’t going to happen.  |
|  | Challenges to RUK2 | But you know, we will deal with it and it does mean that our job will become increasingly difficult. So that’s again, it’s a challenge.  |
|  | Not a major issue | It’s not to say a major issue.  |
|  | RUK2 to accept and to cope with it | We just – we accept the reasons why it’s happening and we will just cope with it. |
|  | RUK2’s concern on the increasing number of involved parties | Ummm, from the health point of view – the only thing we’re concerned with is that you’re increasing the number of involved parties with water.  |
|  | Water quality incidence and events impact consumers | And obviously, water quality incidence and events are really what impact on consumers.  |
|  | Originally between water company and consumers | And so, when you’ve got – originally you just have the water company and the consumer, and they would talk directly to each other.  |
|  | Retailer in the middle | Now, you’re going to have a retailer in the middle.  |
|  | RUK2 is hoping for the line of communication to be maintained | So, we just hope that line of communication can still be maintained, even though there’s going to be another party involved.  |
|  | The risk on delivering information to consumers | So, that’s a risk because obviously when there are water quality events and things, you have to be able to get information to customers, you know.  |
|  | Communication is vital during big water quality event | If it’s a really big water quality event and you need to make sure that they’re boiling their water, or you need to get alternative supplies of water to them, or anything like that, communication is vital in those instances.  |
|  | RUK2’s concern | So, that’s been a concern… |
|  | RUK2 involvement in the working group for the new arrangement on water competition | …but we have got somebody who is on the working group, which is developing the codes of conduct for this new arrangement.  |
|  | An Inspector goes to all meeting to “Make sure it’s always flying the flag for water quality.” | So, we will have an inspector who goes along to all of those meetings, and as I said, “Make sure it’s always flying the flag for water quality.” “Don’t forget, you know, you must make sure that this is still in place and that is still in place, and it’s very important for water quality.”  |
|  | RUK2 involvement in the new arrangement | So we are involved…  |
|  | RUK2 have not campaign against it | …but as for it being something that we – you know, we haven’t campaign against it or anything.  |
|  | RUK2 accepts water competition as a new challenge | We accept that it will happen and it will be a challenge, but ummm, you know, that’s life. [chuckles] |
|  | A challenge | It’s a challenge for us…  |
|  | A change in the norm | …in that it’s a change in the norm…  |
|  | The change to risk-based compliance monitoring | …just like the change to risk-based compliance monitoring…  |
|  | A change from what used to be | …is a change from what we’re used to.  |
|  | Challenging to deliver | So again, I mean they’re just challenging to deliver…  |
|  | RUK2 will deliver the challenge | …but we will deliver them.  |
|  | RUK2 trying to do the best | And we’re still trying to do the best job we can.  |
|  | RUK2 to accept things will never stay static | Ummm, yeah, you have to accept that things will never stay static.  |
|  | RUK2s can’t operate the same process similarly years ago | And you can’t operate the same process that you did 20 years ago…  |
|  | Things change | …because things change…  |
|  | Regulators need to be innovative | …and you have to innovate.  |
|  | Manageable challenge | So yeah, it’s a challenge, but we’ll manage. |
|  | Regulations transferred to Drinking Water Directive | Ummm, at the moment, we…because our regulations are transferred to Drinking Water Directive.  |
|  | No plan to change regulations because of Brexit | Our regulations, there’s no plan to change our regulations just because we’re exiting the European Union.  |
|  | Doubt of any change | So, I doubt there’ll be any changes at all.  |
|  | Might be changes as years go by | There might be changes as years go by…  |
|  | Following each direction with slight differences | …because the Drinking Water Directive will develop in one direction, we might develop in a slightly different direction as the years roll by… |
|  | Nothing significant | …but I don’t think there will be anything significant. |
|  | Most of the changes have been agreed with | For the most part, any of the changes that have been brought in by the Drinking Water Directive, we have agreed with. So, there’s nothing in there that we’ve always thought, ughhh, that’s really not good.  |
|  | No rush to remove any requirement from the regulations | Ummm, you know, so we won’t be rushing to kind of remove any requirements from our regulations. |
|  | National parameters are already in place | Oh, we already have them because we already have the national parameters.  |
|  | Drinking Water Directive allows tailor-made compliance programme and national parameters | So, because the Drinking Water Directive allows you to…ummm…you know, tailor-make your compliance programmes and we have national parameters.  |
|  | No reason for amendments | I don’t think any of reason that we’d like to add particularly. [clearing her throat]  |
|  | New Annex allows for risk-based approach to add parameters and to reduce frequencies | Our new Annex to the [coughs] – to the current Directive, which we’re implementing by October, also allows you with this risk-based approach to add parameters, ummm, so, as well as reducing frequencies, you can actually add new parameters as well.  |
|  | Great risk-based approach | So we think that’s great… |
|  | RUK2 is embracing risk-based approach | …and we’re embracing that…  |
|  | RUK2 will carry on with risk-based approach even after Brexit | …and we’re likely to carry on with that, even after Brexit. |
|  | No drastic change | I don’t think they’ll be – well, not – from the water quality regulations themselves, we don’t think there’s going to be any drastic change.  |
|  | Changes in years to come | Ummm, so, it will be – the only changes that might happen are as the years go by… |
|  | To periodically review regulations | …because obviously we have to review our regulations periodically as a requirement.  |
|  | Occurrence of new emergence substances | We might find that…ummm, you know, science and technology has revealed new things, or we might have, you know, new emerging substances that occur.  |
|  | Make changes that have not come from a Directive | So we might, as the years go by, make changes that haven’t come from a Directive.  |
|  | Less significant changes | But, ummm…as I said, they would be, I reckon, very minor in the grand scheme of things. |
|  | RUK2’s risk category refining water operator’s risk matrices | Yes. Although we might be refining it because we had all these initial set of categories, which have worked to a point, but the interpretation of the categories by the water industry is differing.  |
|  | Still in progress | So, we’re still not quite there…  |
|  | RUK2 is reviewing the readiness for annual submission | …and we are reviewing that in readiness for the annual submission, which takes place in October.  |
|  | RUK2 might be making some changes | So, we might be making some changes to that.  |
|  | Water companies will get informed of the possible changes | We’ll let the industry know in, maybe March, of what those changes might be.  |
|  | Helped RUK2 to analyse the data | But it has helped us to analyse the data…  |
|  | 28 different ways of expressing risks | …because up until that point, we had 28 different ways of expressing risks… |
|  | Incomparable ways | …and you just couldn’t compare one company to another.  |
|  | RUK2 could try to understand issues across the industry | So yeah, with the categorisation, it meant that we could try and understand across the industry where are the issues, you know… |
|  | One issue with different ideas | …because one company’s idea of an issue is different to another.  |
|  | Helped RUK2 to analyse the data | And so, it has helped…  |
|  | RUK2 is not quite there yet | …but so, we’re still – we’re not quite there yet.  |
|  | New process | I mean that this process not even in a place for just over a year, so, it’s very young still… |
|  | Still ironing out the issues | …and we’re still ironing out the issues with it.  |
|  | In the right direction | Well, that’s good to hear. [chuckles] Well, the thing is it’s definitely in the right direction.  |
|  | Still have problems | But not, nevertheless it still has its problems.  |
|  | A good idea to normalising the results across the industry | So I think, we’ll agree that having a way of normalising the results across the industry is a good idea.  |
|  | The idea is good | So the idea is good… |
|  | Categorisation needs improvement | …but as whether or not our categorisation is quite the right set yet are not – I don’t think so. I think we’ve got a little bit – little way to go.  |
|  | RUK2 and water industry have similar interpretation on the risk categories | And we also have to make sure that the industry are interpreting those categories in the same way…  |
|  | Certain anomalies in the data | …because we have, you know, when we have the first stage set in, we did an analysis of that and thought, well, clearly there are some issues because one company has got vast numbers of this category, whereas another company has none of them. So, why is that? So, we’ve been going through the process of understanding why there are certain anomalies in the data… |
|  | Series of meetings for improvement | And we’re going to – we actually got a series of meetings with companies over the next few months. So, I’ve got one in January and one in February to discuss this very thing and what changes we need to make ready for next October.  |
|  | Still an unfinished process | So, yes, so it’s…ummm – it’s certainly not a process that is finished… |
|  | Still on-going process | Still on-going. [affirms]  |
|  | Risk categorisation is iterative in nature | I mean I would like to be – next iteration to be almost right. That would be great. So, when I leave to go on maternity leave, if we’ve achieved that, and it’s set up for next October, that would be good. And then when I come back, it might be that we just have to make some small adjustments, but not any major adjustments because I think this time – after January and February meetings, we might have to make some quite major adjustments.  |
|  | Totally new categories or refining of the definitions | So, we might be actually may be including totally new categories, whereas after this, I would like to think that we only have to maybe refine the definitions to make them more clear. |
|  | More accurate risk category | Yeah, more accurate. [affirms]  |
|  | Categories are meant to be mutually exclusive | So, that the…ummm – because the categories are meant to be mutually exclusive. So, your risk, your residual risk, or your assessment for that hazard at that site should only fall into one category – should not be more than one.  |
|  | Problem with definitions | I think that’s the problem that we have at the moment, is that there is a little bit of – or it could be a category A, or it could be a category E. So I think, we need to definitely add more guidance and more definitions.  |
|  | Plan for improvement | So, yeah, so, that’s the plan is to get – kind of get that process almost, almost perfect within the next year would be great.  |
|  | Allows for the best data reporting | And then, that would allow us to best report on the data… |
|  | Aspiration to share the categorisation process with others | …and then, we can start actually generating information, which we can report to others and other countries, and say, now we’ve got this categorisation process we can show you the risk profile of our industry and how they change over time. That’s our aspiration, but we’re not there yet.  |
|  | The ultimate aim is to demonstrate the true benefits of water safety planning process | So, yeah. So, no, the ultimate aim would be to, you know, use it to demonstrate how we are benefitting from the process… |
|  | Showing that a lot of water quality and water safety planning can be disclosed through this extra information | …to show that we now have this extra information, which tells us a lot about our water quality and our, you know, our water safety planning processes.  |
|  | Showing that the performance of each water company can be measured | And also to use it as a measure to say, well, you know, companies – this is our analysis of the data. You can see where you are in the dataset; are you performing well.  |
|  | Lots of things can gain from | So, there’s lots of things that we can gain from, you know… |
|  | Getting the process sorted out | …really getting this process sorted out… |
|  | Taking a long time | …but it just takes a long time.  |
|  | How the risk being progressing through the categories | Yes! Because it will progress through the categories, how it’s been dealt with.  |
|  | Good approach | So yeah, I mean that was the aim and I think part of the – well, part of the reason why it’s a good approach…  |
|  | Challenging | …and partly why it’s so challenging as well.  |
|  | Good approach | So, it’s good… |
|  | Very challenging | …also very challenging… |
|  | Develop the risk categories alongside with the water companies | …it’s because we did develop it alongside with the companies.  |
|  | Not an in-house produce | So, we didn’t just produce it ourselves.  |
|  | Working groups and trials | We had a working group of about six water companies and we trialled lots of different ways of doing it.  |
|  | Consensus agreement | And this was the way that we all agreed could be done.  |
|  | Something that is not perfect | It was again not something that was perfect and you know, some companies said, “Well, you know, it’s not great, but out of the other options, it’s probably the better one.”  |
|  | Scaling up | And then, it was rolled out to the industry after that.  |
|  | Practical user friendly approach | So, we really were careful not to impose something that would’ve been impossible, or would’ve given us rubbish information.  |
|  | Mutual collaboration with water companies | So yes, I think the fact that we collaborated with water companies on that means that we’ve, you know… |
|  | Some water companies look at it as a tedious challenge | …some people will still say, “Oh, it’s very onerous,”… |
|  | RUK2 expects something from water companies | …but you know, we need something. |
|  | Difficult but achievable | Whenever we put in place, there’s always going to be onerous, but this is probably the best fit we could get.  |
|  | Aware of the few critics on the risk category | [laughs] That’s good. Well, I’m sure there will be a few that will say it’s not brilliant.  |
|  | Knowing the weakness | But I think, the other thing is we know why, we know why, and we know its weaknesses.  |
|  | Not going to get it right the first time | So, and I’ve said, we’ve tried to make sure the industry knows that we appreciate that we weren’t going to get it right the first time.  |
|  | Making further refinements | And that we will have to make further refinements.  |
|  | Accepting the critics | So, it’s always to understand that and I don’t mind that they might say or [chuckles] you know, it’s not great, so, I say, yeah, it’s okay.  |
|  | Making for improvement | We’re going to improve it, we’ll improve.  |
|  | Water operator’s initial pain | Initial pain. Yeah, at least.  |
|  | A bit easier when the systems are already in place | I think, once the systems are in place and it’s a little bit easier…  |
|  | Appreciating the acceptance | …but we do absolutely appreciate…  |
|  | RUK2’s initial pain | …because you see, we have to do the same thing because we have to create a database.  |
|  | RUK2 spending money to create new database | We have to spend part of the money on an IBM projects, you know, to create this database.  |
|  | Mutual initial pain | So, have the system in place and the water companies had to do the same thing.  |
|  | Some water operators create brand new database | Some of them had to create brand new, you know, databases in order to be able to do this…  |
|  | Big matter for water companies | …which is…ummm, is not a small thing, you know, finding the money, finding the resources to actually do that.  |
|  | A big request from the RUK2 to the water companies | So, it was a big ask of the industry… |
|  | Mostly the water operators managed to deliver | …and mostly they’ve managed to deliver, which is great…  |
|  | Similar challenges | …but we all have the same challenges. And it wasn’t just us saying, “Yup! You’re going to do this and send us all this information,” we had to do.  |
|  | RUK2 needs to set up themselves | So, we had to set up ourselves… |
|  | RUK2 needs to have the right people to do the assessments of the data from water companies | …we had to have the people, right people in order to do the assessments of the data coming in. |
|  | Hard work for all parties | So, it’s been hard work for us as well. |
|  | Starting with discussions with a wide set of companies | We have discussions with more than six, with quite a wide set of companies…  |
|  | Asking for volunteers | …and then, we ask for volunteers for a working group. |
|  | Trials | Yeah, a trial.  |
|  | Pilot group | We had a pilot group, we call it a pilot group.  |
|  | All water companies are aware | So, all of the companies would’ve known that we were doing this.  |
|  | Six volunteers | And I think we have six volunteers…  |
|  | Two rounds of pilot | …and we – I mean, for example, so, what we did was we actually ran, I think, we did two rounds of pilot.  |
|  | Tested for two main different ways | So we tested, for the most part, two main different ways of doing it…  |
|  | The outcome is the refinements of the two main ways | …but they were refinements of the two main ways.  |
|  | The volunteers would try to populate the datasets | So, the water companies would go away, the volunteers, and they would actually try and populate the datasets.  |
|  | RUK2 getting the feedback from the volunteers | And then, they come back and we convene and we say, “Were you able to populate the dataset?”  |
|  | Discuss for the undeliverable | And then, [clearing her throat] we discuss why they were all not able to deliver… |
|  | Sharpen the final datasets for deliverables | …and then, we basically hone in on what would be our final datasets, but all companies could deliver.  |
|  | RUK2 to compromise massively | And that meant that we had to compromise massively…  |
|  | RUK2 requested a lot | …because what we wanted – we wanted a lot of stuff.  |
|  | Water operators reject a lot | And then, the water companies kept saying – coming back saying, “We can’t give you that, can’t give you this, we can’t do that, we can’t standardise that.”  |
|  | RUK2 compromising on the final data set and format | So, we kept oscillating around a final set of data and format that most companies could achieve by doing a bit of work… |
|  | Acceptance from water operators | …given a year and a half, and they could just about manage it.  |
|  | RUK2 to compromise severely | And so because we’re compromised so severely…  |
|  | Starting point | …we always say that this is our starting point, this is the baseline.  |
|  | Progressing in stages | We will want to move up from here, but we will do it in stages…  |
|  | Do it together | …so, that we can all do it together…  |
|  | Unfair to put tough requirements on companies | …because it’s not fair to put requirements on companies that are so hard to achieve…  |
|  | Tough requirements especially to small companies | …especially when some of our companies are very small. And they really don’t have lots of stuff…  |
|  | Big companies able to absorb certain things | …ummm…so companies like, maybe like WSU7 that has lots of money – not lots of money, but they have. Because they’re big, they’re able to absorb certain things. So you know, they just spent an awful lot of money on a new database, but they were able to… |
|  | Some companies had to do everything manually | …whereas some companies have had to stick with doing everything manually.  |
|  | RUK2 have to produce one-size-fits-all solution | So, we have to produce something that would fit everybody, from the people that do it manually all the way up to the people that have amazing database system. And that’s what we’ve delivered… |
|  | RUK2 makes water companies aware this is a starting point for further improvement | …but as I said, there was…ummm, maybe not an agreement, but we certainly made it clear to companies that this was a starting point and we will further refine this.  |
|  | Water companies with manual practice need to start looking for an IT solution | So, unfortunately for those companies that are still doing it manually, they might find that they will have to start looking at an IT solution, maybe in the next year or two, and progress from where they are. But I mean, I would argue that that’s a good thing…  |
|  | Anything done manually has an element of risk carried with | …because anything that’s done manually has an element of risk carried with it. So, you are better off having some kind of system in place, I think. |
|  | Companies agreed conditionally for financial support | I think companies would agree with that. It’s just that they’ll say, “Yes, but we need the money.” |
|  | RUK2 concentrates on the risk categories | Yeah, I mean that’s what we concentrate on as well. We do concentrate on those categories.  |
|  | The first thing the RUK2 does | That’s the first thing we do is we look at the – what are in those categories.  |
|  | Risk-based approach  | And then we will, again it’s a risk-based approach.  |
|  | RUK2 does not look at all of the categories | So, we don’t look at all of the categories.  |
|  | RUK2 is focusing on control measures | We look at mostly the, you know, [inc., not clear] which are where they’ve declared that there’s a mitigation measure that’s under investigation, or whether they know that something else needs to be included as an additional mitigation.  |
|  | RUK2 looks into the control measures more detail | For those two categories, our database will flag them up straight away, you know, we will look at those in more detail.  |
|  | Driving the water companies’ processes | And so, it draws out our process, I mean, it seems like it’s driving these companies’ processes as well, which is good.  |
|  | RUK2’s objective | I mean that’s what we wanted. So, we’ve achieved one of our objectives, which is good.  |
|  | Risk categories improve reliability | It improves the reliability.  |
|  | Approach that is easier to understand | It does make it easier to understand because if you’ve just got lots of scores, then, you know, what does it mean?  |
|  | Water operators’ idea | I think we took the idea from water companies themselves…  |
|  | Water operators producing categories through a RAG (Red, Amber, Green) status | …because they were producing things that like a RAG status, so, red, amber and green, which is in fact three categories.  |
|  | A really good idea | So, you know, we thought, “Oh, that’s a really good idea.”  |
|  | RUK2 is looking into more innovative categorisation | Maybe we can use categories, but you know, we were looking at three is probably not enough for us. I actually say three is not enough for the company, but I think if red, it might be your highest priority risks and then, amber and green, but I think there should be more delineation within that.  |
|  | Handful of water companies are using categorisation | So, ummm, so were a handful of companies that were using a categorisation process themselves already.  |
|  | RUK2 just build on that | So as we just build on that… |
|  | Water companies without a categorisation can adopt RUK2’s risk categorisation | …and I think, perhaps it’s the ones that weren’t using a categorisation process that I have seen are actually. So that’s a good idea, and now, just adopt ours, you know, instead of creating their own, which is fine.  |
|  | A good approach by water operators | This is…ummm…good, whatever gives them visibility of where their risks are and where they need to concentrate their effort.  |
|  | RUK2 is fine as long as they get the outcome | Then, that is fine by us, as long as we get the end outcome, you know, in submissions that they give to us.  |
|  | Up to the water operators | How they break up their risk assessments is up to them.  |
|  | RUK2 never prescribed a particular risk assessment methodology | So, I mean that’s why we never prescribed a particular risk assessment methodology…  |
|  | Freedom for water companies to spread out their risk assessments | …because we didn’t want to lose that…that way that some companies actually spread – spread out their risk assessments to give them better visibility.  |
|  | RUK2 never dictate the water companies how to do risk assessments | We didn’t want to say, “No, you can’t do that. You’ve got to do it this way.”  |
|  | RUK2 never prescribed a particular risk assessment methodology | So, that’s why we never prescribed a methodology… |
|  | Most countries prescribed a methodology | …whereas lots of other countries – most other countries prescribe a methodology. |
|  | Comprehensive WSPs | Ummm, no, it’s – it’s…ummm, well, any hazards that can impact on water quality. So, and that includes pesticides. |
|  | Comprehensive WSPs | Yes, anything. Yeah, anything.  |
|  | A catch-all standard | Because our regulations, don’t forget, are written in a way that we have a catch-all standard as well.  |
|  | Risk-based regulation | So, as well as having the parameters for PCVs in these schedules, we have a regulation that says there shouldn’t be anything in the water at any concentration that might cause a risk to health.  |
|  | A catch-all standard | So, that catches everything… |
|  | Comprehensive WSPs | …and we consider that sufficiency is also a risk to health because if you don’t have water coming out of your tap, you have no drinking water which is a risk to health. So, anything that affects pressure supply…any of those things are included in our risk assessments.  |
|  | PCV level for pesticide standards | Ummm, it’s 1 for total pesticide. Yeah, I think 0.1 per individual, I think. |
|  | Potential problem with precautionary approach | Ehmmm…yeah. Potentially they have a problem.  |
|  | A risk to compliance | But it’s still a risk to compliance, essentially… |
|  | To reminisce why it is precautionary principle | …and I think that you have to kind of to track back to why it’s a precautionary principle.  |
|  | Pesticides are toxic | The reason it’s a precautionary principle is because pesticides are toxic… |
|  | Pesticides are designed to be toxic | …they’re designed to be toxic…yup?  |
|  | Pesticides are toxic | They are toxic to animals and humans, okay.  |
|  | Precautionary because people do not wish to have toxic substances in the drinking water | And the reason we have a precautionary principle is because people do not wish to have toxic substances in their drinking water that we put it there.  |
|  | Not from nature | It didn’t come from nature… |
|  | Artificial | …we put it there.  |
|  | Logic for precautionary principle | So that’s why the precautionary principle exists.  |
|  | Should not accept synthetic toxic substances in the drinking water | So, if you think about that and then why we have those standards in our regulations, it’s because we should not accept that synthetic toxic substances are in our drinking water… |
|  | Artificial | …because we put them there.  |
|  | Should not be there | Yeah, they shouldn’t be there in the first place…  |
|  | Should be able to remove them | …or we should be able to remove them.  |
|  | The standards are in the Drinking Water Directive | So that’s why the standards are in the Drinking Water Directive.  |
|  | Some merit | So, it has some merit… |
|  | Argument on it is not a health-based standard but precautionary-based | …although I do understand the argument about it not being a health-based standard, but it is understood that it is a precautionary principle.  |
|  | Distraction from investment | The detracting from investment – that’s an interesting one…  |
|  | Health-based risk assessment | …because in a risk assessment, if you’re risk assessing with respect to health impact, you know, your micro and health parameters should always come out higher than metaldehyde.  |
|  | Metaldehyde is a compliance risk | However, metaldehyde is nevertheless a compliance risk…  |
|  | Compliance risk should not rank the same way as health risk | …but compliance risk shouldn’t rank the same way as health risk.  |
|  | Metaldehyde should always come lower | So, metaldehyde should always come lower… |
|  | Water companies should spend their money on health risk rather than metaldehyde | …which means the company should be spending their money on health risks and not spending on metaldehyde.  |
|  | Priotisation should be in order | But the risk – the prioritisation should be in that order.  |
|  | All should be in the same pot for being resolved | However, they should all be in the pot for being resolved.  |
|  | Metaldehyde should be in the overall pot that need to be resolved | So, metaldehyde would be in the overall pot for water quality problems that need to be resolved.  |
|  | Should not rank higher than the health-based parameters | But it shouldn’t rank higher than – in the risk assessment than – health-based parameters.  |
|  | Depends how you look at it | So, it depends on how you look at it. It’s how the companies… |
|  | Don’t think water operators try to say that metaldehyde is more of a risk than health parameters | …imagine the company saying metaldehyde is…I don’t think they’re trying to say that metaldehyde is more of a risk than health parameters.  |
|  | Investment will be higher | What they’re saying is that the investment will be higher… |
|  | More costly to resolve | …because it’s more costly to resolve.  |
|  | The nature of metaldehyde | And that’s just, I guess, is the nature of metaldehyde… |
|  | Not more expensive to resolve | …it’s not because – it’s not more expensive to resolve because it’s a more risky parameter. |
|  | Risky parameter | It’s just difficult to treat.  |
|  | Difficult to treat | So, it’s just an unfortunate situation…  |
|  | Unfortunate situation | …and that’s why we have encouraged companies to…ummm – well, not just companies, but other stakeholders, like MUK1, to look at alternatives to treatment, which is abstraction management and blending from the water companies point of view, but from an environment – our RUK1 and MUK1 point of view.  |
|  | Encourage stakeholders to look at alternatives | A better usage – not usage instructions, but usage in general. So, either banning it, not banning it entirely, but maybe banning its use near water sources – that kind of things.  |
|  | Looking for better control measures | So, we think there’s an intelligent way of dealing with the issue at source… |
|  | Ultimate issue | …because that’s the ultimate issue. |
|  | Should be in the water supply system | It shouldn’t be there, you know, in our water supply system. |
|  | Tackling at source | So, really, we need to be tackling at source. |
|  | Cheaper way | And it is the cheaper way of dealing with it as well. |
|  | Difficult to measure | This is what I’ve said earlier, it’s difficult to measure…  |
|  | Varied outcomes | …because the outcomes will be so varied.  |
|  | No one-size-fit-all solution | It’s hard to say it’s – the measure is that one item.  |
|  | RUK2 will be able to formulate measures | I think we will be able to formulate some measures… |
|  | RUK2 is collecting data | …now that we’re collecting data.  |
|  | Not sure how it would look like | Ummm, but what that would look like, I’m not sure yet.  |
|  | RUK2’s day-to-day work with water companies | But, we have to acknowledge that in our day-to-day work, and when we do audits, and we go to sites, and we talk to companies, do all our day-to-day activities… |
|  | Water companies are better in understanding their risks | …they better understand the risks that they have.  |
|  | Cannot be quantified | And I know that you can’t quantify that… |
|  | Better understanding now than before | …but just knowing that has got to be better than before, and not having the full visibility of all your water quality risks.  |
|  | Achieving risk management | So, having that visibility and understanding the contribution that each of your elements of water supply brings to achieving risk management.  |
|  | Everything has a contribution to controlling risks | So, everything, as I said, from staff training to the quality of your – ummm, your treatment processes, the technology that you use – all of that has a contribution to controlling risks.  |
|  | Better understanding now than before | And so, just the sheer fact that we’ve better understand that now…  |
|  | Using information to better target investment | …and we’re using that information to better target investment is a better way of doing things.  |
|  | Not being able to measure benefit | But as for being able to measure that benefit, I don’t think we’re quite there yet.  |
|  | A better approach than what they have before | But from a point of view of an approach being a better approach to what we have before, yes, I think we will all accept that, yeah. |
|  | Talking a common language | Oh, yeah, I think so because now we’re all talk a common language.  |
|  | Talking the language of risk | We all talk the language of risk now… |
|  | Really good change | …which is really good.  |
|  | Help RUK2 to avoid a scenario where purely rely on outcome data | And I said, the – ummm, it has avoided or has started to help us avoid a scenario where we purely rely on outcome data.  |
|  | Compliant works | So, you know, this works has always been compliant…[scratchy noise]  |
|  | Should be fine but not | …it must be fine, but it’s not. Sometimes, it’s not and it’s just luck that those samples that you take just happen to never pick up the problem. And that water treatment works could be literally falling over on its last legs, and you wouldn’t know.  |
|  | Proactive risk assessment | Now that you would have to go and proactively risk-assess things…  |
|  | The risk is now visible which is wasn’t before | …that risk is now visible, whereas it wasn’t visible before, perhaps.  |
|  | The risk is visible to some water companies | But it might have been visible to some companies, who are very diligent and do their own on-site audits, you know, things like that, but not for all companies.  |
|  | A requirement that all water companies understand their risks | Now it’s a requirement, all companies will have to understand the risk at every site.  |
|  | A much better place than they are | So, you know, arguably that’s a much better place than we were…  |
|  | Talking the same language | …and means we’re all talking about the same language and approach, and the same objective. The objective is to know where that is so that we can do something about it – not know where it is and then, be punished or something.  |
|  | Proactive approach | But to proactively make sure that, “Oh! Actually, we do need to do some work here, let’s do it now before it gets bad.”  |
|  | Proactive approach | Yeah, it’s about – so, it’s about a proactive approach…  |
|  | Not just be reactive | …and not just reacting to things when they go wrong.  |
|  | Understanding on how to manage risk | And understanding that actually, if you’re clever about how you use your resources, and how you manage risk.  |
|  | The best way to avoid when things go wrong | That’s the best way to avoid when things go wrong. So then you avoid the RUK2s coming, having to come along and say, “Ah!” you know, that didn’t go very well.  |
|  | Achieving the balance | Ummm, as if you are constantly reviewing your risk assessments, being proactive, and getting the right level of, you know, investment, maintenance, care, operation, training – if that balance is achieved, then, nothing should fall over.  |
|  | Perfect world | That would be a perfect world… |
|  | Not a perfect world | …but it’s not a perfect world…  |
|  | Big challenge with the finances available | …and as we said, there’s a big challenge with the finances available.  |
|  | Always a trade-off | So there will always be this trade-off. And unfortunately, there will always – I think there will always be sides that sadly, never get the right amount of maintenance.  |
|  | Ending up having problems | And they do – will end up having problems at some point.  |
|  | Risk-based regulation | Yes, yeah. [affirms] Risk-based regulation.  |
|  | Using more sticks | Ummm, I think – well, in my view, I think we are having to use the sticks a bit more, unfortunately.  |
|  | Pressure of operating and the financial side | But that is because……[long pause] it’s because of the pressure of operating and the financial side.  |
|  | Not a bad thing | So when I say more sticks, that’s not necessarily a bad thing…  |
|  | Water companies can demonstrate to RUK3 that they need more money | …because if we use more sticks, the companies can demonstrate to RUK3 that they need more money.  |
|  | Using more sticks can actually work | So, in a perverse way – in a perverse way, using more sticks can actually work in the favour of the water companies.  |
|  | RUK2 is using their power a bit more intelligently | So we’re probably using our powers a little bit more intelligently then we were.  |
|  | Still maintaining that co-operative | Although we still maintain that co-operative…  |
|  | Most part is proactive work | …proactive working should be the 99%.  |
|  | Using sticks for the right reason | The 1%, which is us using the stick should be done for the right reasons.  |
|  | Using sticks intelligently | And I think we’re being much more intelligent about how we do that now.  |
|  | RUK2 is using more of their suit of powers | So, what we’re doing is we’re using more of our suit of powers. We used to just limit it to a few things, but now we haven’t because we have full suits of powers, all the way up to enforcement orders. And we still shy away from using those, but then we thought why, you know, why we’re shying away from using those.  |
|  | A good tool for RUK2 and water companies | Actually, they could be a good tool for us and for the companies.  |
|  | Using sticks more | So, we’re using those a little bit more now… |
|  | RUK2 is using a co-operative approach as a carrot | …but yeah, we still would like it to be more of a co-operative approach, which is the carrot. And that is, if you co-operate with us, if you follow these processes that we require of you, such as risk assessment, you know, then hopefully you shouldn’t see us. [chuckles] |
|  | Stick as a useful tool | Yeah. That is what I’m getting at. I think – I think the stick is – can be a useful tool as well. This is what I’m saying.  |
|  | A different view before | I think that ummm – but this is a different view point to maybe 10 years ago.  |
|  | Using stick is not necessarily a bad thing | So, I think now the companies and us see that using the stick is not necessarily such a bad thing.  |
|  | Helpful tool | It can actually be helpful and from the water companies’ point of view… |
|  | Water companies can demonstrate to RUK3 that they need some funding | …if we have given them a legal notice, then they can go to their people who hold the money in the company and say, “Well, look! The RUK2 has taken action. We need to have some funding for this.”  |
|  | Using sticks intelligently | So, I think they can be used in a much more, I’d say, intelligent way. |
|  | Different types of sticks | There are different types of sticks. Yes. And we’ve got lots of different types of sticks.  |
|  | Some are stronger than others | Some are stronger than others…  |
|  | Better usage of sticks than RUK2 used to | …and as I said, we are now using them much better than we used to.  |
|  | Using sticks by looking at the situation | And you know, really looking at the situation and saying, “Well in this instance, what kind of stick do we need to use? Do we need to just give a warning letter?” Which is just acknowledging that there may be an issue, but we’re not going to use the stick. So, it’s just a warning, or do we use something which is more like a notice, where we’d be giving instruction to do something. Do we go up to an Order, which is really – that can end up in court, you know… |
|  | Where RUK2 positioned themselves | …where do we position ourselves… |
|  | The most helpful for RUK2 | …which is the most helpful to us…  |
|  | RUK2 in getting the preferable outcomes | …because we will get the outcome we want… |
|  | Helping the water companies in getting the outcome they want | …but also will it help the company get the outcome they want.  |
|  | Better usage of sticks than RUK2 used to | And we will basically use – as use that full suite in a much better way than we used to.  |
|  | **Total = 694 open codes** |  |

**INTERVIEW TRANSCRIPTION – OPEN CODING CATEGORISATION TO AXIAL CODING**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Open Coding** |  | **Axial Coding** |
| 1. | Consolidating everything | 1. | Government savings |
| 2. | Having less space |  |  |
| 5. | Government savings |  |  |
| 215. | Small number of staff |  |  |
| 216. | Struggling |  |  |
|  | **5 open codes** |  |  |
| 3. | Working more from home now | 2. | Work life balance |
| 4. | Manageable |  |  |
| 6. | Working flexible hours now |  |  |
| 7. | Convenient |  |  |
| 8. | Helpful during train strike |  |  |
| 9. | Working flexibly from home |  |  |
| 10. | Living quiet far away |  |  |
| 11. | Working from all over the country |  |  |
|  | **8 open codes** |  |  |
| 12. | Working in the regulation’s team as an Inspector | 3. | Long-standing working experience as a regulator |
| 13. | Working with a range of regulatory programme |  |  |
| 14. | Involving in the risk assessment and risk management projects |  |  |
| 15. | Working as the Head of the enforcement team |  |  |
| 16. | Dealing with taking actions towards water companies |  |  |
| 17. | Working as a Principal Inspector |  |  |
| 18. | Responsible for European matters and dealing with risk-based regulations |  |  |
|  | **7 open codes** |  |  |
| 276. | Multidisciplinary | 4. | Lateral entry practice |
| 277. | Multidisciplinary |  |  |
| 278. | Lateral entry exercise |  |  |
| 279. | Multidisciplinary |  |  |
| 280. | A need for those disciplines to operate |  |  |
| 281. | A need to understand how water operators are operating |  |  |
| 314. | Benefits of lateral entry exercise |  |  |
|  | **7 open codes** |  |  |
| 331. | Independent RUK2 | 5. | Independent regulator |
| 332. | Chief Inspector is a creature of statute |  |  |
| 333. | Sole power |  |  |
| 334. | Staff wages from MUK1 |  |  |
| 335. | Other budgets reclaimed from water companies |  |  |
| 336. | Statutory obligation |  |  |
| 337. | Detailing on charges |  |  |
| 340. | Staff wages from MUK1 |  |  |
| 341. | Other budgets reclaimed from water companies |  |  |
| 342. | Government pays for travel |  |  |
| 343. | Water companies charged for regulatory costs |  |  |
| 344. | Standard regulatory fee |  |  |
| 345. | Flat charging regime |  |  |
| 346. | Not a detail charging structure |  |  |
| 347. | Simple charging strategy |  |  |
| 348. | Not complicated charging form |  |  |
| 349. | Statutory obligation |  |  |
|  | **16 open codes** |  |  |
| 19. | Distinguishing between different legislations | 6. | Separate legislations set up |
| 20. | Separate legislations set up |  |  |
|  | **2 open codes** |  |  |
| 21. | Dealing with mixed water safety planning progress | 7. | Mixed WSP progress |
| 22. | Not just business as usual |  |  |
| 23. | Still in a learning process |  |  |
| 28. | Mixed progress |  |  |
|  | **4 open codes** |  |  |
| 24. | Varying reasons for water companies’ advanced progress | 8. | Reasons for mixed WSP progress |
| 25. | Implementation cost |  |  |
| 26. | Capacity for creating new technology |  |  |
| 27. | Complexities of existing risk assessment frameworks |  |  |
| 40. | Varying degrees of achievement |  |  |
| 41. | Capability of different sized water companies |  |  |
|  | **6 open codes** |  |  |
| 29. | RUK2 tried to make a very close connection between risk assessment and risk management and the funding mechanism | 9. | Initial action by RUK2 |
|  | **1 open code** |  |  |
| 30. | Operating two periodic reviews | 10. | Periodic reviews |
| 31. | Two periodic reviews |  |  |
| 50. | Sixth Asset Management Plan (AMP) |  |  |
|  | **3 open codes** |  |  |
| 32. | RUK2’s main role to look at potential water quality scheme to be incorporated in the water company’s business plans | 11. | RUK2 roles and responsibilities |
| 33. | RUK2 reviews water quality schemes |  |  |
| 38. | RUK2 reviews water quality schemes incorporating risk assessments |  |  |
| 54. | RUK2 to check whether the water operators achieving true benefits of WSPs |  |  |
| 185. | RUK2 takes the compliance results |  |  |
| 186. | RUK2 undertakes risk-based audits |  |  |
| 189. | RUK2 undertakes vertical audit |  |  |
| 191. | RUK2 carries out technical audits |  |  |
| 193. | RUK2 selects the top ones from general risk-based database |  |  |
| 196. | All RUK2’s activities are risk-based |  |  |
| 198. | RUK2 audits risky things |  |  |
| 200. | RUK2 undertakes other audits branched from a water quality event |  |  |
| 201. | RUK2 undertakes proactive technical audit  |  |  |
| 202. | RUK2 undertakes themed audits |  |  |
| 218. | Audit programme is a very important part for RUK2 |  |  |
| 274. | Fulfilling one requirements as a RUK2 |  |  |
| 275. | Educating the industry |  |  |
| 356. | RUK2 do data analysis for the submitted testing results |  |  |
| 357. | RUK2 look onto individual failures |  |  |
| 358. | Each individual failure leads to RUK2 investigation |  |  |
| 365. | RUK2 investigate each compliance failure |  |  |
| 367. | RUK2 to make sure each compliance failure is resolved and prevented from occurrence |  |  |
| 409. | RUK2 involvement in the working group for the new arrangement on water competition |  |  |
| 511. | RUK2 spending money to create new database |  |  |
| 559. | RUK2’s objective |  |  |
| 565. | RUK2 is looking into more innovative categorisation |  |  |
| 632. | RUK2’s day-to-day work with water companies |  |  |
|  | **27 open codes** |  |  |
| 34. | Using legal instruments through a formalised contract for delivery of water quality schemes | 12. | Regulatory instruments |
| 35. | The need to be supported by the risk assessment |  |  |
| 52. | Releasing the company from legal obligation once completed |  |  |
| 195. | Technical audits as a regulatory requirement |  |  |
| 338. | RUK2 reclaims the regulatory charges |  |  |
| 339. | Regulatory charges to water companies |  |  |
| 350. | Water sampling is done by water operators |  |  |
| 351. | RUK2 don’t do any sampling |  |  |
| 353. | RUK2 don’t do any sampling |  |  |
| 359. | Mean zonal compliance for companies’ performance |  |  |
| 407. | Communication is vital during big water quality event |  |  |
| 579. | A catch-all standard |  |  |
| 580. | Risk-based regulation |  |  |
| 581. | A catch-all standard |  |  |
| 584. | Potential problem with precautionary approach |  |  |
| 630. | RUK2 is collecting data |  |  |
| 651. | A requirement that all water companies understand their risks |  |  |
| 677. | A good tool for RUK2 and water companies |  |  |
| 678. | Using sticks more |  |  |
| 679. | RUK2 is using a co-operative approach as a carrot |  |  |
|  | **20 open codes** |  |  |
| 39. | Instant change for water companies to risk assessment and risk management | 13. | Regulatory benefits |
|  | **1 open code** |  |  |
| 42. | Challenging to some water companies | 14. | Challenges facing by water operators |
| 93. | Difficulty to undertake zone-specific risk assessment |  |  |
| 94. | Difficult to find a water quality zone with property-specific similar problems |  |  |
| 498. | Some water companies look at it as a tedious challenge |  |  |
| 507. | Water operator’s initial pain |  |  |
| 514. | Big matter for water companies |  |  |
| 515. | A big request from the RUK2 to the water companies |  |  |
| 661. | Not a perfect world |  |  |
| 662. | Big challenge with the finances available |  |  |
| 663. | Always a trade-off |  |  |
| 664. | Ending up having problems |  |  |
|  | **11 open codes** |  |  |
| 43. | Iterative process for improvement by water companies | 15. | Iterative and reflective process |
| 44. | Evidence to RUK2 in a form of submitted methodologies |  |  |
| 45. | Starting with the methodology for the water safety planning |  |  |
| 46. | Changing and refining of methodologies |  |  |
| 74. | Iterative cycle for improvement |  |  |
| 471. | Risk categorisation is iterative in nature |  |  |
|  | **6 open codes** |  |  |
| 47. | RUK2 is compromising at the beginning | 16. | RUK2 behaviour |
| 77. | RUK2 is not facilitating water operators |  |  |
| 197. | Not a disorganised regulator |  |  |
| 217. | Prioritising the works |  |  |
| 219. | Streamlining audit process |  |  |
| 220. | Quick and time saving |  |  |
| 221. | Disorganised auditing |  |  |
| 224. | Time saving |  |  |
| 225. | Writing summary report rather than lengthy report |  |  |
| 226. | Streamlining by cutting out the unnecessary long reports |  |  |
| 227. | Streamlining procedures and working a little bit smarter |  |  |
| 228. | No part-timers |  |  |
| 229. | RUK2 used to employ consultants |  |  |
| 230. | Unfavourably expensive |  |  |
| 231. | Increased the number of staff |  |  |
| 413. | RUK2 accepts water competition as a new challenge |  |  |
| 505. | Accepting the critics |  |  |
| 506. | Making for improvement |  |  |
| 518. | RUK2 needs to set up themselves |  |  |
| 519. | RUK2 needs to have the right people to do the assessments of the data from water companies |  |  |
| 534. | RUK2 to compromise massively |  |  |
| 535. | RUK2 requested a lot |  |  |
| 537. | RUK2 compromising on the final data set and format |  |  |
| 539. | RUK2 to compromise severely |  |  |
| 548. | RUK2 makes water companies aware this is a starting point for further improvement |  |  |
| 552. | RUK2 concentrates on the risk categories |  |  |
| 553. | The first thing the RUK2 does |  |  |
| 570. | RUK2 is fine as long as they get the outcome |  |  |
| 571. | Up to the water operators |  |  |
| 572. | RUK2 never prescribed a particular risk assessment methodology |  |  |
| 573. | Freedom for water companies to spread out their risk assessments |  |  |
| 574. | RUK2 never dictate the water companies how to do risk assessments |  |  |
| 575. | RUK2 never prescribed a particular risk assessment methodology |  |  |
| 620. | Encourage stakeholders to look at alternatives |  |  |
| 639. | Using information to better target investment |  |  |
| 644. | Really good change |  |  |
| 645. | Talking a common language |  |  |
| 646. | Talking the language of risk |  |  |
| 671. | RUK2 is using their power a bit more intelligently |  |  |
| 672. | Still maintaining that co-operative |  |  |
| 673. | Most part is proactive work |  |  |
| 674. | Using sticks for the right reason |  |  |
| 675. | Using sticks intelligently |  |  |
| 676. | RUK2 is using more of their suit of powers |  |  |
| 679. | RUK2 is using a co-operative approach as a carrot |  |  |
| 685. | Using sticks intelligently |  |  |
| 688. | Better usage of sticks than RUK2 used to |  |  |
| 689. | Using sticks by looking at the situation |  |  |
| 690. | Where RUK2 positioned themselves |  |  |
| 691. | The most helpful for RUK2 |  |  |
| 692. | RUK2 in getting the preferable outcomes |  |  |
| 694. | Better usage of sticks than RUK2 used to |  |  |
|  | **51 open codes** |  |  |
| 232. | Secondment programme from the water industry | 17. | Secondment programme |
| 233. | Two secondees from water companies at a time |  |  |
| 234. | Secondees from the water quality departments within water companies |  |  |
| 235. | More than communicating with RUK2 |  |  |
| 236. | Write and submit reports to RUK2 |  |  |
| 237. | Secondees are temporarily attached |  |  |
| 238. | Secondees as Inspectors |  |  |
| 239. | Secondees work as Inspectors |  |  |
| 240. | Secondees are temporarily attached |  |  |
| 241. | Secondees are paid by water companies |  |  |
| 242. | RUK2s didn’t pay for secondees’ salary |  |  |
| 243. | RUK2 always have an extra two people |  |  |
| 244. | Secondees as productive as the RUK2 |  |  |
| 245. | Competent secondees |  |  |
| 246. | Secondees can pick up RUK2’s process |  |  |
| 247. | Water company can learn to better co-operate with RUK2 |  |  |
| 248. | Avoiding miscommunication |  |  |
| 249. | Secondees can learn by taking part |  |  |
| 250. | Secondees to be in RUK2’s shoes |  |  |
| 251. | Secondees are exposed to RUK2’s way  |  |  |
| 252. | Secondees can learn and take the learning back |  |  |
| 253. | Secondees as an extra pair of hands |  |  |
| 254. | Secondi programme |  |  |
| 255. | Performance depending on the quality of the person |  |  |
| 256. | Had very good secondees |  |  |
| 257. | Few examples of non-performed secondees |  |  |
| 258. | Expected performance |  |  |
| 259. | Very good, positive impact former secondees |  |  |
| 260. | No impact former secondees |  |  |
| 261. | Not necessarily to the secondees’ fault |  |  |
| 262. | Secondees have less power to make change |  |  |
| 263. | A shame |  |  |
| 264. | Water companies not utilising the value |  |  |
| 265. | Disappointing |  |  |
| 266. | Will be improving  |  |  |
| 267. | Secondment process review |  |  |
| 268. | RUK2 to improve |  |  |
| 269. | RUK2 wants water companies to benefit |  |  |
| 270. | RUK2 wants secondees to have a positive impact |  |  |
| 271. | RUK2 is thinking on the ways for improvement |  |  |
| 272. | Will improved again by various means |  |  |
| 312. | Secondment of RUK2 inspectors |  |  |
| 313. | Secondment to water company |  |  |
|  | **43 open codes** |  |  |
| 48. | True benefits of the risk assessment and risk management processes through AMP-cycles | 18. | WSP true benefits |
| 49. | Showing changes in water quality in each periodic review |  |  |
| 51. | Evidence of delivered schemes partly identified by risk assessment |  |  |
| 55. | Harvesting small true benefits from risk assessment and risk management |  |  |
| 56. | Difficult for RUK2 to demonstrate true benefits |  |  |
| 57. | Clear cause and effect through the periodic review and AMP-cycle processes |  |  |
| 58. | Difficult to compare |  |  |
| 59. | Some water companies haven’t got good risk assessment and risk management process |  |  |
| 60. | Does not necessarily manifest itself through not having the right quality schemes |  |  |
| 61. | Manifesting in different ways |  |  |
| 68. | Not an exact science yet very difficult for water industry to demonstrate clear benefits |  |  |
| 69. | Benefits should be seen but difficult to measure |  |  |
| 75. | Difficult to quantify the overall benefit |  |  |
| 642. | Talking a common language |  |  |
| 643. | Talking the language of risk |  |  |
| 644. | Really good change |  |  |
| 649. | The risk is now visible which is wasn’t before |  |  |
| 650. | The risk is visible to some water companies |  |  |
| 652. | Talking the same language |  |  |
| 669. | Water companies can demonstrate to RUK3 that they need more money |  |  |
| 693. | Helping the water companies in getting the outcome they want |  |  |
|  | **21 open codes** |  |  |
| 53. | Continuous bilateral actions between RUK2 and water companies | 19. | Mutual collaboration |
| 497. | Mutual collaboration with water companies |  |  |
| 521. | Starting with discussions with a wide set of companies |  |  |
| 522. | Asking for volunteers |  |  |
| 523. | Trials |  |  |
| 524. | Pilot group |  |  |
| 526. | Six volunteers |  |  |
| 527. | Two rounds of pilot |  |  |
| 532. | Discuss for the undeliverable |  |  |
| 533. | Sharpen the final datasets for deliverables |  |  |
| 540. | Starting point |  |  |
| 541. | Progressing in stages |  |  |
| 542. | Do it together |  |  |
|  | **13 open codes** |  |  |
| 273. | Generally a positive impact on both sides | 20. | Mutual experience |
| 512. | Mutual initial pain |  |  |
| 517. | Similar challenges |  |  |
| 520. | Hard work for all parties |  |  |
|  | **4 open codes** |  |  |
| 36. | Early connection to incorporate risk assessment and funding mechanism | 21. | Requirements to be fulfilled by water operators |
| 37. | One of the newest requirements to incorporate risk assessment and funding mechanism |  |  |
| 71. | A need for water companies to have a review strategy for WSPs |  |  |
| 78. | Water operators’ responsibility to do risk assessments |  |  |
| 79. | An initial need to communicate with different stakeholders |  |  |
| 80. | Water operators to define the water catchments |  |  |
| 81. | Water operators to identify the stakeholders within water catchment area |  |  |
| 90. | Water operators’ responsibility to identify the catchment stakeholders |  |  |
| 91. | Water operators to collaborate with the catchment stakeholders |  |  |
| 92. | Water operators as one of the catchment stakeholders |  |  |
| 96. | Water companies alter the likelihood of issues within a water quality zone |  |  |
| 99. | Water operators to proactively communicate with health professionals and vulnerable groups |  |  |
| 101. | Proactive programme from water operators |  |  |
| 180. | Water companies to take operational samples |  |  |
| 181. | Water companies to take low level of sampling |  |  |
| 182. | Not a regulatory requirement |  |  |
| 350. | Water sampling is done by water operators |  |  |
| 352. | Water companies do all the sampling and analysis |  |  |
| 355. | Water companies provide testing results to RUK2 |  |  |
| 366. | Company understood and put control measures |  |  |
|  | **20 open codes** |  |  |
| 62. | Comprehensive view on the impact | 22. | Comprehensiveness |
| 63. | WSP is about everything |  |  |
| 76. | From catchment to tap |  |  |
| 577. | Comprehensive WSPs |  |  |
| 578. | Comprehensive WSPs |  |  |
| 582. | Comprehensive WSPs |  |  |
| 637. | Everything has a contribution to controlling risks |  |  |
| 659. | Achieving the balance |  |  |
| 660. | Perfect world |  |  |
|  | **9 open codes** |  |  |
| 64. | A breakdown at any point in what is classed as a full WSP | 23. | WSP failures |
| 65. | A breakdown somewhere along the line |  |  |
| 66. | A breakdown manifesting in failures of WSP |  |  |
|  | **3 open codes** |  |  |
| 67. | Water operators’ performance reflecting the breakdown in their risk assessment methodologies | 24. | Water operators’ performance |
| 95. | Generic risk assessment for a water quality zone |  |  |
| 391. | Water companies’ failure |  |  |
| 513. | Some water operators create brand new database |  |  |
| 516. | Mostly the water operators managed to deliver |  |  |
| 525. | All water companies are aware |  |  |
| 545. | Big companies able to absorb certain things |  |  |
| 546. | Some companies had to do everything manually |  |  |
| 558. | Driving the water companies’ processes |  |  |
| 563. | Water operators producing categories through a RAG (Red, Amber, Green) status |  |  |
| 566. | Handful of water companies are using categorisation |  |  |
| 568. | Water companies without a categorisation can adopt RUK2’s risk categorisation |  |  |
| 641. | A better approach than what they have before |  |  |
| 652. | A much better place than they are |  |  |
|  | **14 open codes** |  |  |
| 70. | Gap analysis | 25. | RUK2 expectations |
| 72. | RUK2’s expectation on voluntary reviewing frequency |  |  |
| 73. | Gap analysis during periodic review |  |  |
| 179. | RUK2’s expectation for the water companies to undertake operational monitoring |  |  |
| 499. | RUK2 expects something from water companies |  |  |
| 549. | Water companies with manual practice need to start looking for an IT solution |  |  |
| 635. | Better understanding now than before |  |  |
| 636. | Achieving risk management |  |  |
| 638. | Better understanding now than before |  |  |
| 657. | Understanding on how to manage risk |  |  |
| 658. | The best way to avoid when things go wrong |  |  |
| 659. | Achieving the balance |  |  |
| 684. | Water companies can demonstrate to RUK3 that they need some funding |  |  |
|  | **13 open codes** |  |  |
| 82. | Holders of information | 26. | Stakeholders within water catchment area |
| 83. | Groups with impact on source water quality |  |  |
| 87. | Groups with impact on source water quality |  |  |
| 88. | Groups that collect data |  |  |
| 89. | Groups that have datasets |  |  |
|  | **5 open codes** |  |  |
| 84. | Vary from catchment to catchment depending on complexity | 27. | Level of stakeholders engagement |
| 85. | Hardly nothing within a catchment |  |  |
| 86. | A lot of stakeholders and loads of impact on source water quality in urban water catchments |  |  |
|  | **3 open codes** |  |  |
| 97. | Not many stakeholders on consumers’ side | 28. | Stakeholders on consumers’ side |
| 98. | Certain stakeholders depending on the specific water quality issues |  |  |
| 102. | Groups with impact on water quality |  |  |
| 103. | Stakeholders not necessarily for information gathering |  |  |
|  | **4 open codes** |  |  |
| 100. | Very old housing stock prone to lead issues | 29. | Health risk issues |
|  | **1 open code** |  |  |
| 104. | More generic risk assessment | 30. | Risk assessment for buildings |
| 105. | Not risk assessment for a household |  |  |
| 106. | Risk assessment for a water quality zone |  |  |
| 108. | Specific risk assessments that is generic for the area |  |  |
| 107. | Groups of specific properties |  |  |
| 109. | Some locations will have specific information |  |  |
| 110. | Fluid risk categories |  |  |
| 111. | Categories resonate from other legislation |  |  |
| 112. | Not from water quality legislation but widely accepted |  |  |
| 113. | Accepted grouping |  |  |
|  | **10 open codes** |  |  |
| 114. | Water operators to take samples everywhere | 31. | Water sampling process |
| 115. | Sampling from all properties |  |  |
| 116. | Sampling at the first drinking water tap in the property |  |  |
| 117. | Raw water sampling |  |  |
| 118. | Sampling before the abstraction points |  |  |
| 125. | Customer tap sampling at the first drinking water tap in the property |  |  |
| 351. | RUK2 don’t do any sampling |  |  |
| 353. | RUK2 don’t do any sampling |  |  |
| 354. | RUK2 didn’t have any equipment to do sampling |  |  |
|  | **9 open codes** |  |  |
| 119. | Manual and online sampling instruments | 32. | Manual and online water sampling |
| 120. | Information on the abstraction points |  |  |
| 121. | Pristine source requires less online sampling |  |  |
| 123. | Manual and online sampling instruments through treatment process |  |  |
| 124. | Mostly manual than online sampling instruments through distribution system although scarcely |  |  |
| 132. | Limited online sampling instruments |  |  |
| 133. | Most of the quality sampling within network is done by samplers |  |  |
| 134. | Limited uptake from water companies using online sampling instruments |  |  |
| 135. | Limited uptake from water companies using online sampling instruments |  |  |
| 136. | Less cutting edge technology |  |  |
| 137. | Growing uptake from water companies using online sampling instruments |  |  |
| 138. | Online sampling instruments for operational monitoring |  |  |
| 139. | Manual or online sampling for compliance samples |  |  |
| 149. | Real-time online monitoring |  |  |
| 150. | Some are non-real-time online monitoring |  |  |
| 151. | It can be real-time online monitoring |  |  |
| 152. | Using telephone network to transmit data |  |  |
| 153. | A problem in an area with no telephone network |  |  |
| 154. | Technology is not widespread |  |  |
| 155. | Water companies use them for a specific reason |  |  |
| 156. | Water companies not use them as a general rule |  |  |
| 157. | Further investigation within bad areas |  |  |
| 158. | Not routine use |  |  |
| 159. | Investigatory use |  |  |
| 160. | Experiencing discolouration problems |  |  |
| 161. | Effective real data modelling  |  |  |
| 162. | Putting online monitors within strategic places |  |  |
| 163. | Better understanding on what’s actually going on |  |  |
| 164. | Computer modelling alone might not give all the information |  |  |
| 165. | Control measures to improve quality parameters |  |  |
| 166. | Computer modelling won’t provide that evidence |  |  |
| 167. | Water operators are using online monitoring sampling |  |  |
|  | **32 open codes** |  |  |
| 122. | Risk assessment | 33. | Risk assessment |
| 648. | Proactive risk assessment |  |  |
|  | **2 open codes** |  |  |
| 126. | Compliance sampling at treatment plant outlets | 34. | Compliance sampling |
| 127. | Compliance sampling at service reservoirs |  |  |
| 128. | The only compliance sampling within distribution |  |  |
| 140. | Online sampling must meet ISO 17025 or 17024 requirements |  |  |
| 141. | Water companies hardly use online sampling for compliance samples |  |  |
| 142. | Difficulty in meeting the requirement |  |  |
| 143. | Growing to be common practice |  |  |
| 144. | Allowing to accept online results for compliance |  |  |
| 145. | Not commonly used |  |  |
| 146. | Not to reduce the number of samplers |  |  |
| 147. | Coordinating the way of gathering more information |  |  |
| 148. | Not to reduce the number of samplers |  |  |
| 184. | Individual samplers’ accreditation |  |  |
| 188. | UKAS undertakes audit for samplers accreditation |  |  |
|  | **14 open codes** |  |  |
| 129. | Operational sampling for the rest within distribution | 35. | Operational sampling |
| 130. | Operational sampling |  |  |
| 131. | Samples taken anywhere |  |  |
|  | **3 open codes** |  |  |
| 168. | Mandatory risk-based monitoring | 36. | Mandatory risk-based monitoring programme |
| 169. | Compliance monitoring programme established by risk assessment |  |  |
| 170. | A set of compliance monitoring programme |  |  |
| 171. | Set frequencies for parameters and site combinations |  |  |
| 172. | Frequencies set by the Drinking Water Directive |  |  |
| 173. | Frequencies can be altered according to the basis of risk assessment |  |  |
| 174. | The industry is ready with risk assessments |  |  |
| 175. | Water companies understand risk assessments |  |  |
| 176. | Logic for on-site frequency setting |  |  |
| 177. | Water companies eligible to apply for reduction of monitoring frequency with support from risk assessment |  |  |
| 178. | Less intention for low risk parameters in compliance monitoring |  |  |
|  | **11 open codes** |  |  |
| 183. | Laboratory accreditation | 37. | Water sampling analysis |
| 187. | UKAS undertakes audit for laboratory accreditation |  |  |
| 352. | Water companies do all the sampling and analysis |  |  |
| 355. | Water companies provide testing results to RUK2 |  |  |
|  | **4 open codes** |  |  |
| 190. | Vertical audit is not one of RUK2’s cores | 38. | Vertical audits |
|  | **1 open code** |  |  |
| 203. | Themed audits stemmed from a common weakness | 39. | Themed audits |
| 204. | Themed audits stemmed from a common weakness among most water operators |  |  |
| 205. | Guidance or information notes as a result of themed audit |  |  |
| 206. | Distributing audit findings |  |  |
| 207. | RUK2 expects water industry to take note and make improvements |  |  |
| 208. | Example of themed audits |  |  |
| 209. | Frequency of themed audits |  |  |
| 222. | Focused audits |  |  |
| 223. | Coordinated audits |  |  |
|  | **9 open codes** |  |  |
| 210. | The whole RUK2 audit programme | 40. | RUK2 audit programme |
| 213. | Part of the RUK2’s code |  |  |
| 214. | Audit categories |  |  |
| 218. | Audit programme is a very important part for RUK2 |  |  |
| 282. | All inspectors including secondees go for audits |  |  |
| 283. | Dictation of audit team depends on the magnitude of the audits |  |  |
| 284. | All inspectors including secondees go for audits |  |  |
|  | **7 open codes** |  |  |
| 285. | Staged audit training programme | 41. | Audit training programme |
| 286. | Intensive initial induction programme |  |  |
| 287. | Longer audit training session with competence assessed |  |  |
| 288. | Audit training matrix maintained by direct line manager |  |  |
| 289. | Audit training is divided into different types of audits |  |  |
| 290. | Lab audit is separate from treatment works audit |  |  |
| 291. | RUK2 needs a different skill set |  |  |
| 292. | Different levels of competency among RUK2s for different set of skills |  |  |
| 293. | Low competent RUK2 will be a support team member during audits |  |  |
| 294. | Top competent RUK2 will lead the audit team |  |  |
| 295. | More experienced RUK2 will lead the audit team in a specialised area |  |  |
| 296. | Each RUK2 is fully understand on the competency levels of each person and their skill set |  |  |
| 297. | On the job audit training |  |  |
| 298. | RUK2s go out on audit and make observation |  |  |
| 299. | New Inspectors act as observer |  |  |
| 300. | New Inspectors get exposed on different types of audit |  |  |
| 301. | Desktop training on the process and procedure |  |  |
| 302. | Done by the Principal Inspector |  |  |
| 303. | Each Principal Inspector is responsible for each work area |  |  |
| 304. | Principal Inspector will lead the new Inspectors for desktop training |  |  |
| 305. | On the job audit training |  |  |
| 306. | RUK2s are not accredited auditors |  |  |
| 307. | RUK2s are not accredited auditors |  |  |
| 308. | Responsible for own training and competency |  |  |
| 309. | Mostly in-house training |  |  |
| 310. | External training |  |  |
| 311. | Some trainings need external trainer |  |  |
| 315. | Audit training matrix |  |  |
| 316. | Classified document |  |  |
| 317. | Classified document  |  |  |
| 318. | Elements in the audit training matrix |  |  |
| 319. | Levels of measurement and scaling |  |  |
| 320. | Evidence for such measures |  |  |
| 321. | Applies to everything |  |  |
| 322. | Knowledge and skills increase proportionately |  |  |
| 323. | Classified document  |  |  |
| 324. | No high hopes for classified document |  |  |
| 325. | Difficulty to share documents |  |  |
| 326. | RUK2s keep it private from the industry |  |  |
| 327. | Difficulty to share documents |  |  |
| 328. | RUK2’s due diligence to MUK1 |  |  |
| 329. | Not RUK2’s responsibility towards the industry |  |  |
| 330. | Inward facing criteria rather than outward facing criteria |  |  |
|  | **43 open codes** |  |  |
| 211. | Risk-based audits | 42. | Risk-based audits |
|  | **1 open code** |  |  |
| 212. | Random audits | 43. | Random audits |
|  | **1 open code** |  |  |
| 192. | Technical audits are driven by a number of different things | 44. | Technical audits |
| 194. | RUK2 selects the most risky ones for technical audit |  |  |
|  | **2 open codes** |  |  |
| 359. | Mean zonal compliance for companies’ performance | 45. | Mean zonal compliance |
| 360. | Only looking at compliance figures |  |  |
| 361. | Doesn’t look on other performance indicator |  |  |
| 362. | Worst company in compliance performance might not be the worst company in other performance indicator |  |  |
| 363. | Compliance results based on mean zonal compliance is published annually |  |  |
| 364. | Small element of all performance indicators |  |  |
| 373. | Annual reports |  |  |
|  | **7 open codes** |  |  |
| 365. | RUK2 investigate each compliance failure | 46. | Reactive approach |
| 366. | Company understood and put control measures |  |  |
| 367. | RUK2 to make sure each compliance failure is resolved and prevented from occurrence |  |  |
| 368. | Reactive way of improving compliance |  |  |
|  | **4 open codes** |  |  |
| 369. | Proactive way of improving compliance through improving general operation | 47. | Proactive approach |
| 371. | Proactive way of improving compliance by working with companies before the compliance failures |  |  |
| 372. | Improves compliance |  |  |
| 407. | Communication is vital during big water quality event |  |  |
| 648. | Proactive risk assessment |  |  |
| 654. | Proactive approach |  |  |
| 655. | Proactive approach |  |  |
| 656. | Not just be reactive |  |  |
|  | **8 open codes** |  |  |
| 374. | On-going dialogue | 48. | Engagement with RUK3 |
| 375. | Deputy Chief Inspector is the key liaison |  |  |
| 376. | Regular meetings |  |  |
| 377. | Not in huge amount of detail |  |  |
| 378. | There is cross-over |  |  |
| 379. | Fair level of engagement |  |  |
| 380. | Water companies are the middlemen |  |  |
| 381. | Funding approval from RUK3 |  |  |
| 382. | On-going issues on funding |  |  |
| 383. | The challenges of having an economic regulator |  |  |
| 384. | On-going issues on funding |  |  |
| 385. | Prioritisation |  |  |
| 386. | Trade-offs |  |  |
| 387. | Constant fight for each RUK2’s interest |  |  |
| 388. | Positive competition among regulators |  |  |
| 389. | No such issues among regulators |  |  |
| 392. | RUK3 functions with the given information |  |  |
| 393. | No such issues among regulators |  |  |
| 408. | RUK2’s concern |  |  |
| 410. | An Inspector goes to all meeting to “Make sure it’s always flying the flag for water quality.” |  |  |
| 411. | RUK2 involvement in the new arrangement |  |  |
| 412. | RUK2 have not campaign against it |  |  |
| 413. | RUK2 accepts water competition as a new challenge |  |  |
|  | **23 open codes** |  |  |
| 390. | Water companies’ issues which influenced regulators | 49. | Challenges facing by RUK2 |
| 394. | Upcoming difficulty comes from the water industry competition |  |  |
| 395. | Changes of water industry competition |  |  |
| 396. | Challenges to RUK2 |  |  |
| 397. | RUK2 prefers it is not to happen |  |  |
| 398. | Challenges to RUK2 |  |  |
| 399. | Not a major issue |  |  |
| 400. | RUK2 to accept and to cope with it |  |  |
| 401. | RUK2’s concern on the increasing number of involved parties |  |  |
| 402. | Water quality incidence and events impact consumers |  |  |
| 403. | Originally between water company and consumers |  |  |
| 404. | Retailer in the middle |  |  |
| 405. | RUK2 is hoping for the line of communication to be maintained |  |  |
| 414. | A challenge |  |  |
| 415. | A change in the norm |  |  |
| 416. | The change to risk-based compliance monitoring |  |  |
| 417. | A change from what used to be |  |  |
| 418. | Challenging to deliver |  |  |
| 419. | RUK2 will deliver the challenge |  |  |
| 420. | RUK2 trying to do the best |  |  |
| 421. | RUK2 to accept things will never stay static |  |  |
| 422. | RUK2s can’t operate the same process similarly years ago |  |  |
| 423. | Things change |  |  |
| 424. | Regulators need to be innovative |  |  |
| 425. | Manageable challenge |  |  |
| 510. | RUK2’s initial pain |  |  |
| 511. | RUK2 spending money to create new database |  |  |
| 547. | RUK2 have to produce one-size-fits-all solution |  |  |
|  | **28 open codes** |  |  |
| 426. | Regulations transferred to Drinking Water Directive | 50. | After Brexit |
| 427. | No plan to change regulations because of Brexit |  |  |
| 428. | Doubt of any change |  |  |
| 429. | Might be changes as years go by |  |  |
| 430. | Following each direction with slight differences |  |  |
| 431. | Nothing significant |  |  |
| 432. | Most of the changes have been agreed with |  |  |
| 433. | No rush to remove any requirement from the regulations |  |  |
| 434. | National parameters are already in place |  |  |
| 435. | Drinking Water Directive allows tailor-made compliance programme and national parameters |  |  |
| 436. | No reason for amendments |  |  |
| 440. | RUK2 will carry on with risk-based approach even after Brexit |  |  |
| 441. | No drastic change |  |  |
| 442. | Changes in years to come |  |  |
| 443. | To periodically review regulations |  |  |
| 444. | Occurrence of new emergence substances |  |  |
| 445. | Make changes that have not come from a Directive |  |  |
| 446. | Less significant changes |  |  |
|  | **18 open codes** |  |  |
| 370. | Risk-based approach | 51. | Risk-based approach |
| 437. | New Annex allows for risk-based approach to add parameters and to reduce frequencies |  |  |
| 438. | Great risk-based approach |  |  |
| 439. | RUK2 is embracing risk-based approach |  |  |
| 554. | Risk-based approach  |  |  |
| 555. | RUK2 does not look at all of the categories |  |  |
| 556. | RUK2 is focusing on control measures |  |  |
| 557. | RUK2 looks into the control measures more detail |  |  |
| 621. | Looking for better control measures |  |  |
| 622. | Ultimate issue |  |  |
| 623. | Should be in the water supply system |  |  |
| 624. | Tackling at source |  |  |
| 625. | Cheaper way |  |  |
| 626. | Difficult to measure |  |  |
| 627. | Varied outcomes |  |  |
| 628. | No one-size-fit-all solution |  |  |
| 629. | RUK2 will be able to formulate measures |  |  |
| 630. | RUK2 is collecting data |  |  |
| 631. | Not sure how it would look like |  |  |
|  | **19 open codes** |  |  |
| 447. | RUK2’s risk category refining water operator’s risk matrices | 52. | Risk category |
| 448. | Still in progress |  |  |
| 449. | RUK2 is reviewing the readiness for annual submission |  |  |
| 450. | RUK2 might be making some changes |  |  |
| 451. | Water companies will get informed of the possible changes |  |  |
| 452. | Helped RUK2 to analyse the data |  |  |
| 453. | 28 different ways of expressing risks |  |  |
| 454. | Incomparable ways |  |  |
| 455. | RUK2 could try to understand issues across the industry |  |  |
| 456. | One issue with different ideas |  |  |
| 457. | Helped RUK2 to analyse the data |  |  |
| 458. | RUK2 is not quite there yet |  |  |
| 459. | New process |  |  |
| 460. | Still ironing out the issues |  |  |
| 461. | In the right direction |  |  |
| 462. | Still have problems |  |  |
| 463. | A good idea to normalising the results across the industry |  |  |
| 464. | The idea is good |  |  |
| 465. | Categorisation needs improvement |  |  |
| 466. | RUK2 and water industry have similar interpretation on the risk categories |  |  |
| 467. | Certain anomalies in the data |  |  |
| 468. | Series of meetings for improvement |  |  |
| 469. | Still an unfinished process |  |  |
| 470. | Still on-going process |  |  |
| 472. | Totally new categories or refining of the definitions |  |  |
| 473. | More accurate risk category |  |  |
| 474. | Categories are meant to be mutually exclusive |  |  |
| 475. | Problem with definitions |  |  |
| 476. | Plan for improvement |  |  |
| 477. | Allows for the best data reporting |  |  |
| 478. | Aspiration to share the categorisation process with others |  |  |
| 479. | The ultimate aim is to demonstrate the true benefits of water safety planning process |  |  |
| 480. | Showing that a lot of water quality and water safety planning can be disclosed through this extra information |  |  |
| 481. | Showing that the performance of each water company can be measured |  |  |
| 482. | Lots of things can gain from |  |  |
| 483. | Getting the process sorted out |  |  |
| 484. | Taking a long time |  |  |
| 485. | How the risk being progressing through the categories |  |  |
| 486. | Good approach |  |  |
| 487. | Challenging |  |  |
| 488. | Good approach |  |  |
| 489. | Very challenging |  |  |
| 490. | Develop the risk categories alongside with the water companies |  |  |
| 491. | Not an in-house produce |  |  |
| 492. | Working groups and trials |  |  |
| 493. | Consensus agreement |  |  |
| 494. | Something that is not perfect |  |  |
| 495. | Scaling up |  |  |
| 496. | Practical user friendly approach |  |  |
| 497. | Mutual collaboration with water companies |  |  |
| 498. | Some water companies look at it as a tedious challenge |  |  |
| 499. | RUK2 expects something from water companies |  |  |
| 500. | Difficult but achievable |  |  |
| 501 | Aware of the few critics on the risk category |  |  |
| 502. | Knowing the weakness |  |  |
| 503. | Not going to get it right the first time |  |  |
| 504. | Making further refinements |  |  |
| 505. | Accepting the critics |  |  |
| 506. | Making for improvement |  |  |
| 507. | Water operator’s initial pain |  |  |
| 508. | A bit easier when the systems are already in place |  |  |
| 509. | Appreciating the acceptance |  |  |
| 528. | Tested for two main different ways |  |  |
| 529. | The outcome is the refinements of the two main ways |  |  |
| 530. | The volunteers would try to populate the datasets |  |  |
| 531. | RUK2 getting the feedback from the volunteers |  |  |
| 550. | Anything done manually has an element of risk carried with |  |  |
| 551. | Agreed conditionally for financial support |  |  |
| 552. | RUK2 concentrates on the risk categories |  |  |
| 555. | RUK2 does not look at all of the categories |  |  |
| 556. | RUK2 is focusing on control measures |  |  |
| 557. | RUK2 looks into the control measures more detail |  |  |
| 559. | RUK2’s objective |  |  |
| 560. | Risk categories improve reliability |  |  |
| 561. | Approach that is easier to understand |  |  |
| 562. | Water operators’ idea |  |  |
| 563. | Water operators producing categories through a RAG (Red, Amber, Green) status |  |  |
| 564. | A really good idea |  |  |
| 565. | RUK2 is looking into more innovative categorisation |  |  |
| 566. | Handful of water companies are using categorisation |  |  |
| 567. | RUK2 just build on that |  |  |
| 568. | Water companies without a categorisation can adopt RUK2’s risk categorisation |  |  |
| 569. | A good approach by water operators |  |  |
|  | **83 open codes** |  |  |
| 536. | Water operators reject a lot | 53. | Water operators’ behaviour |
| 538. | Acceptance from water operators |  |  |
|  | **2 open codes** |  |  |
| 199. | Any regulator works similarly | 54. | RUK2 perceptions |
| 543. | Unfair to put tough requirements on companies |  |  |
| 544. | Tough requirements especially to small companies |  |  |
| 545. | Big companies able to absorb certain things |  |  |
| 546. | Some companies had to do everything manually |  |  |
| 551. | Companies agreed conditionally for financial support |  |  |
| 576. | Most countries prescribed a methodology |  |  |
| 633. | Water companies are better in understanding their risks |  |  |
| 640. | Not being able to measure benefit |  |  |
| 647. | Should be fine but not |  |  |
|  | **10 open codes** |  |  |
| 579. | A catch-all standard | 55. | Standards for drinking water quality |
| 580. | Risk-based regulation |  |  |
| 581. | A catch-all standard |  |  |
| 583. | PCV level for pesticide standards |  |  |
| 584. | Potential problem with precautionary approach |  |  |
|  | **5 open codes** |  |  |
| 406. | A good approach by water operators | 56. | A risk to compliance |
| 585. | A risk to compliance |  |  |
| 634. | Cannot be quantified |  |  |
|  | **3 open codes** |  |  |
| 586. | To reminisce why it is precautionary principle | 57. | Precautionary principle over health-based risk assessment |
| 587. | Pesticides are toxic |  |  |
| 588. | Pesticides are designed to be toxic |  |  |
| 589. | Pesticides are toxic |  |  |
| 590. | Precautionary because people do not wish to have toxic substances in the drinking water |  |  |
| 591. | Not from nature |  |  |
| 592. | Artificial |  |  |
| 593. | Logic for precautionary principle |  |  |
| 594. | Should not accept synthetic toxic substances in the drinking water |  |  |
| 595. | Artificial |  |  |
| 596. | Should not be there |  |  |
| 597. | Should be able to remove them |  |  |
| 598. | The standards are in the Drinking Water Directive |  |  |
| 599. | Some merit |  |  |
| 600. | Argument on it is not a health-based standard but precautionary-based |  |  |
| 601. | Distraction from investment |  |  |
| 602. | Health-based risk assessment |  |  |
|  | **17 open codes** |  |  |
| 603. | Metaldehyde is a compliance risk | 58. | Compliance risk over health-based risk |
| 604. | Compliance risk should not rank the same way as health risk |  |  |
| 605. | Metaldehyde should always come lower |  |  |
| 606. | Water companies should spend their money on health risk rather than metaldehyde |  |  |
| 607. | Priotisation should be in order |  |  |
| 608. | All should be in the same pot for being resolved |  |  |
| 609. | Metaldehyde should be in the overall pot that need to be resolved |  |  |
| 610. | Should not rank higher than the health-based parameters |  |  |
| 611. | Depends how you look at it |  |  |
| 612. | Don’t think water operators try to say that metaldehyde is more of a risk than health parameters |  |  |
| 613. | Investment will be higher |  |  |
| 614. | More costly to resolve |  |  |
| 615. | The nature of metaldehyde |  |  |
| 616. | Not more expensive to resolve |  |  |
| 617. | Risky parameter |  |  |
| 618. | Difficult to treat |  |  |
| 619. | Unfortunate situation |  |  |
|  | **17 open codes** |  |  |
| 665. | Risk-based regulation | 59. | Risk-based regulation |
| 666. | Using more sticks |  |  |
| 667. | Pressure of operating and the financial side |  |  |
| 668. | Not a bad thing |  |  |
| 670. | Using more sticks can actually work |  |  |
| 680. | Stick as a useful tool |  |  |
| 681. | A different view before |  |  |
| 682. | Using stick is not necessarily a bad thing |  |  |
| 683. | Helpful tool |  |  |
| 686. | Different types of sticks |  |  |
| 687. | Some are stronger than others |  |  |
|  | **11 open codes** |  |  |
| **Total = 694 open codes** |

**INTERVIEW TRANSCRIPTION – AXIAL CODING**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Independent regulator | 1. | Government savings |
|  |  | 2. | Work life balance |
|  |  | 3. | Long-standing working experience as a regulator |
|  |  | 4. | Lateral entry practice |
|  |  | 5. | Independent regulator |
|  |  | 6. | Separate legislations set up |
|  |  | 17. | Secondment programme |
|  | Challenges facing by water operators | 7. | Mixed WSP progress |
|  |  | 8. | Reasons for mixed WSP progress |
|  |  | 14. | Challenges facing by water operators |
|  |  | 23.  | WSP failures |
|  |  | 24. | Water operators’ performance |
|  | Regulators’ roles and responsibilities | 9. | Initial action by regulators |
|  |  | 11. | Regulators’ roles and responsibilities |
|  | Regulatory instruments(Periodic reviews) | 10. | Periodic reviews |
|  | Regulatory instruments | 12. | Regulatory instruments |
|  | Regulatory instruments(engagement) | 19. | Mutual collaboration |
|  | Regulatory instruments(engagement) | 20. | Mutual experience |
|  | Regulatory instruments(engagement) | 26. | Stakeholders within water catchment area |
|  | Regulatory instruments(engagement) | 27. | Level of stakeholders engagement |
|  | Regulatory instruments(engagement) | 28. | Stakeholders on consumers’ side |
|  | Regulatory instruments(engagement) | 48. | Engagement with other regulators |
|  | Regulatory instruments (regulatory auditing) | 36. | Mandatory risk-based monitoring programme |
|  | Regulatory instruments (regulatory auditing) | 38. | Vertical audits |
|  | Regulatory instruments (regulatory auditing) | 39. | Themed audits |
|  | Regulatory instruments (regulatory auditing) | 40. | Regulators’ audit programme |
|  | Regulatory instruments (regulatory auditing) | 41. | Audit training programme |
|  | Regulatory instruments (regulatory auditing) | 42. | Risk-based audits |
|  | Regulatory instruments (regulatory auditing) | 43. | Random audits |
|  | Regulatory instruments (regulatory auditing) | 44. | Technical audits |
|  | Regulatory instruments(mean zonal compliance) | 45. | Mean zonal compliance |
|  | Regulatory instruments(risk category) | 52. | Risk category |
|  | Regulatory instruments(standards for drinking water quality) | 55. | Standards for drinking water quality |
|  | Regulatory instruments(standards for drinking water quality) | 57. | Precautionary principle over health-based risk assessment |
|  | Regulatory instruments(standards for drinking water quality) | 58. | Compliance risk over health-based risk |
|  | Regulatory instruments(risk-based regulation) | 59. | Risk-based regulation |
|  | WSP outcomes | 13. | Regulatory benefits |
|  |  | 18. | WSP true benefits |
|  | The comprehensiveness of the risk assessment | 15. | Iterative and reflective process |
|  |  | 22. | Comprehensiveness |
|  |  | 29. | Health risk issues |
|  |  | 30. | Risk assessment for buildings |
|  |  | 33. | Risk assessment |
|  |  | 46. | Reactive approach |
|  |  | 47. | Proactive approach |
|  |  | 51. | Risk-based approach |
|  |  | 56. | A risk to compliance |
|  | Regulators’ response to change | 16. | RUK2 behaviour |
|  |  | 25. | RUK2 expectations |
|  |  | 54. | RUK2 perceptions |
|  | Water operators’ roles and responsibilities | 21. | Requirements to be fulfilled by water operators |
|  |  | 53. | Water operators’ behaviour |
|  | Water sampling | 31. | Water sampling process |
|  |  | 32. | Manual and online water sampling |
|  |  | 34. | Compliance sampling |
|  |  | 35. | Operational sampling |
|  |  | 37. | Water sampling analysis |
|  | Challenges facing by the regulators | 49. | Challenges facing by the regulators |
|  |  | 50. | After Brexit |





