JOINT SELECT COMMITTEE ON DRUG TESTING OF

MEMBERS OF THE LEGISLATURE

(Session 1 of 2)

THURSDAY, 13th MARCH, 2014

Chair Person:	Senator Joan Dillas-Wright
Deputy Chairman:	Mr Terry Lister, MP
Members:	Senator James Jardine
	Mr Jeff Sousa, MP
	Ms Nandi Outerbridge, MP
	Mrs Eudora Brown-Lister – Administrative Support
Guest Speakers # 1:	Dr Desiree Spriggs, Phd, FRSC
Guest Speaker # 2:	Mrs Nadine Kirkos, MSc
Recorder	Mrs Doris Goodman of Reporting & Transcription Services (Bermuda)

RECORDING SESSION BEGINS AT – 4:05 P.M.

SEN DILLAS-WRIGHT Good afternoon everyone, I just want to welcome everybody here but I would prefer everyone to introduce themselves that way… We will start and introduce ourselves and then we will have each of you.

I am Joan Dillas-Wright, I am the Chair of the Committee and I would just like to welcome each of you.

I am James Jardine, I am an independent Senator.

Terry Lister.

Eudora Browne-Lister.

CHAIR PERSON Ms. Goodman can you hear us alright we have done our introductions.

MS GOODMAN I can hear you. I just hope the transcriber could hear you.

CHAIR PERSON Alright, thank you.

I am Desiree Spriggs, Government Analyst.

And I am Nadine Kirkos, another Government Analyst. You have two Government Analysts here today.

CHAIR PERSON And Ms. Goodman you want to introduce yourself.

Doris Goodman, I will be doing the recording; and my colleague Verneil Simons.

CHAIR PERSON Thank you. So we will hand over to you then Dr. Spriggs to do your presentation.

DR SPRIGGS Good afternoon. Nadine, my colleague, and I have put together a presentation on Drug testing and what we do in the Central Testing Lab.

I will do the first 10 slides and then she will continue with the additional 10 slides and we are asking that you hold your questions until the end.

We have given handouts so that you can make notes of any questions that you may have and then we can answer those.

So, we're going to talk about overview; Is who we are, what we do, what's available, what is good protocol for good science, sample collection, screen testing confirmations and tampering techniques, drug detection windows and submission of samples to the Central Government Lab.

The **Central Government Lab** will be CGL throughout the rest of the presentation. We are equipped with knowledgeable Scientist. We are highly skilled and highly educated and trained. Nadine and myself are of Forensic Scientist background. We do Toxicology, Chemistry, Biology. Microbiology is also done in the Lab and it is a Forensic and Public Health unit so we do all Forensic issues and Public Health issues as far as like food and water testing; and forensics would be autopsy, post mortem. Examples – Chemistry, illicit and pharmaceutical drugs that come through police; Biology would be crime scene and preparatory stuff for DNA. CGL is the only lab on island that is equipped to do confirmation testing for drug testing. We have a lot of expensive and very intricate equipment that we

use, we are both authorized under the two Acts to carry out drug work and that would be Misuse of Drugs Act 1972 and the Road Traffic Act of 1947 where we do driving under the influence cases and the like. We also work to various other Acts, (e.g. PACE, Pharmacy and Poisons, Liquor Act) or anything that is illegal really that requires testing.

So **Drug Testing**. The reason for drug testing - random, pre-employment, driving under the influence, accidents. We use very clinical instruments as well as instruments, immunoassay techniques. There is Dipstick Tests but there are some drawbacks for that and we will discuss that a bit more. All positives that are found - e.g. the urine test - if it comes up positive that must be confirmed. It is not good science to say 'yes, according to this Dipstick Test it is positive. We can't say that. The CGL is the only Lab on island that would be able to confirm those results, and all positives should be confirmed.

Types of Specimens that can be used for drug testing are hair, saliva, sweat, finger prints, blood and urine, but in this piece we are really talking about urine drug testing.

Direct Observation of Urine Collection. Supervision is required with urine testing. First you should make sure that the person is removing the jackets, coats, empty your pockets because, as we will talk about later, there can be some tampering or issues surrounding collection so we want to make sure that all those things are taken care of.

Subject to wash your hands before providing a specimen because if they handled something it could be a contamination issue, so we want to make sure hands washing is done. The sample can be checked - Temperature, color, odor, particulate matter - and all those things should be checked by the nurse or person that is trained to collect the urine sample.

The urine sample should also be labeled correctly to make sure that we don't have the wrong person or urine; and to make sure it is random, it is unannounced and unpredictable because the whole idea of drug testing is, or random workplace drug testing, is you never know when it's going to be coming.

Screen Testing, it is usually immunologically based and provides a preliminary result only.

All screening test manufacturers states… most of the screening test it would state that it provides a preliminary result only, which basically means that it is just indicated, that it is possibly positive (and we will talk about some cross reactions and some proofs positives as we go along).

A more specific chemical method must be used to obtain a confirmed analytical result such as GAS Chromatography – Mass Spectrometry which again, we are the only ones that have that. Clinical consideration and professional judgment should be applied to any drug of abuse test result. So basically, that means if someone is using a Dipstick Test and they are giving you… Ok, Mr. Joe Blow, you are coming up positive for Cannabis. If it is positive, they're not to say to, you know, relay back to the employer. They are to make sure that they hand that over to CGL to get that confirmed because of the issues with medications or over the counter medicines; and, in some cases we've had maybe someone taking an herbal medication and it can cause cross reaction and affect everything. So you want to make sure that you get it right the first time.

So the on-site screening test devices we are talking about and they are also called rapid test, can be convenient and can be relatively cheap but all drug screening devices are not the same. You might see that some people may have, using a Dipstick test, there are many, many different types of Dipstick test and they are looking for a whole host of different drugs, but it all has to do with cut-offs; and we will talk a little about that and what are regulated and what might not be regulated.

Subjective reading, usually no quality controls, but you have to have quality checks to make sure that if it is positive or negative, that you have a control against that that would say okay, I can believe this result. You need to check expiry dates and storage conditions. As you know, Bermuda is very humid and some of your reagents or some of your Dipstick test opinion can have some issues with that. So, we always make sure that everything is in date.

In CGL, we use a clinical analyzer and basically this is reliable. It is accurate. We calibrate it daily and every time it is used it's calibrated, are checked and run in between samples. Reports on this would be a positive or negative. It's a screen test and very reliable. Any positives are confirmed.

We are down to the SAMSHA Regulations. SAMSHA is the Substance Abuse and Mental Health Services Administration and they have a host of guidelines to say what kind of cut-offs should be used. So cut-offs would be anything less than that would be deemed the negative, and anything greater than that will be the positive.

The drugs that would be screened for would be maybe a 5 panel/ml or maybe a 6 or 7 panel/ ml and they would be Cannabinoids which would be from the Cannabis Plant. Cocaine (metabolite); Opiates which would be comprised of Codeine, Morphine, Oxycodone, Pholcodeine or others. There is Ecstasy which is Amphetamine/Methamphetamine which would be the Ecstasy type tablets.

The **SAMSHA Regulations** have given these cut-offs and the lab adheres to these cut-offs… Probably doesn't make too much sense to you but in terms of the scientific information, you want to know that as long as these guidelines are being followed, then anything less than 50 would be deemed off the screen. Anything greater than 50 would be deemed to be positive and so on. Previously, it was 300. So now, actually, we are quite pleased it is lower.

Now there are onsite screening test like we said before. Onsite screening (rapid test) and they're like the Dipstick test and SAMSHA have listed two different types and that's Medtox Sure Screen and Premier Dip which you can see are, obviously low cut-offs, but as you obviously get lower with the Dipstick test you run into a chance of false positive or false negatives. So those are the reasons why we really have to confirm the presence of drugs.

Now these are just a picture of when we say Medtox and Premier Dip, what they actually look like, and it's just urine that will be at the bottom; and you put it in a cup

and the urine will come through the bottom and then absorb through the strips and then give you an indication with the absence of a line being positive and has a see through control line and test line whether or not the substance is positive or negative; and the same with the Premier Dip. It's the same principle.

It might look a little confusing and that's why we always say "if you don't know, then send it to the scientist and they can confirm it".

MRS KIRKOS I am going to continue on by talking about why it is important to confirm the test, that any positive test that would be indicated at the screening stage. The screening tests provide preliminary results so, basically, the question that the screening tests answers is, there could possibly be something there. So that is why you would confirm.

Also the science of the screening tests when you say *(immutable ?)* tests, it actually works like a pregnancy test. So it's an antigen and antibody binding. So it is a different mechanism, whereas the confirmatory test looks for the specific compound so there is no doubt when a urine sample is confirmed and we are looking for the specific substance. So when we see it, it is that specific substance that we would test in the confirmatory testing and we would also know the amount - although that is not that important but we do actually quantify as well as confirm.

The other reason why we confirm testing is because in the screening test you would have seen where it said Opiates. Opiates is a family of drugs and it includes Heroin, Morphine, Codeine and the rest of them there and, obviously, as a quick point out, Heroin is obviously illegal and is controlled by the Misuse of Drugs Act. And Codeine, you would be prescribed that if you had surgery or post operative surgery. So you can actually have something present in your body that you have a prescription for it. It's completely legal and you should be taking it to relieve your pain full stop. That would actually indicate a screening test that would actually say that it is positive, but at that point it's just showing you that you have an Opiate type of drug. You don't know which type of drug it is. No-one knows at that point. So when we actually then would confirm it, we would actually be able to see, is it

Codeine, is it Morphine, is it Dihydrocodeine; and we would be able to say exactly which specific Opiate is actually present in that sample.

That is explaining about the Antigen and Antibody reaction with the screening test, and the other reason we confirm is that we have cross reactions.

Cross reactions means that you can actually have a sample. You can actually have, for example, say, if someone is HIV positive and then they are taking Sustiva and then they go for a urine sample, while their own medication because of their condition, they provide a urine sample and then the Cannabinoid screening test would react with that and it's no cannabis there. When we confirm it, it's nothing there because there is none of the cannabinoids there or any of the breakdown products; and we will know that the person would have probably had their medicine. But, normally what is good protocol is that when a sample is taken, the person would be asked to disclose any prescription medication that they are on so that when it's through we would be able to see what prescription medications could possibly be in the body.

The confirmatory test, like I said, it confirms the presence of a specific drug or metabolite as confirmed by GCMS – Gas Chromatography – Mass Spectrometry. There is a picture of the machine there. It is important for confirmations to be performed because they can potentially have a legal use, for work place drug testing. For example, we have samples from the Ferry and from the Bus drivers. That they are in positions of trust with the Bermuda Public, you need to be sure that what the results will give back to the employers is actually accurate for disciplinary purposes. The results can seriously impact the client.

We had a case where a person went for a pre-performance screening, part of his pre-employment, and was sent to a lab, and it was a Dipstick test, and the results were released and it indicated that he was positive. And he was like absolutely *(legal ?),* I was not positive. And then the lab told the establishment, Well, maybe I will send it for confirming if he is saying that he's really not; and they sent it to us and it was nothing there. He almost didn't get a job and in this economic climate we all know that jobs are very precious. So for him to be penalized for something that was not there… He didn't take anything.

1 For us as Scientist where data is published or data is used, it is important that
2 confirmatory tests are being done. I mean, we had a discussion with the prisons who screen
3 the prisoners which they do it for a different reason which is fine, but if they don't confirm it
4 and then they release data to say that the prisoners are… We had so many of these on
5 Opiates and Ecstasy but, like I said before, those are families of drugs, so we don't really
6 know that other prisoners on medication with that number is half of them medications or
7 half illicit? We really don't know. So if your data is flawed, you can't really rely on it, you
8 can't use it.

9 So what happens? We come in, we do the screening and then we do the
10 confirmatory test and when we get a result, we actually get a number, so we confirm and
11 quantify. If the number - say we are doing cocaine - what we actually look for is the
12 metabolite in cocaine because by the time it gets to the urine the body has extensively
13 broken down the cocaine, but the specific metabolite cocaine is called BZE so we know that if
14 that is present it came from cocaine because it does not come from anywhere else. So that's
15 what we look for.

16 So if we see anything lower than 100 ng/ml of BZE then we will report it as
17 negative or not detected. Anything higher than 100, it is obviously positive or detected. One
18 of the reasons why we don't report the number is because it doesn't really indicate anything.
19 It doesn't indicate that the person used more or it doesn't give an indication of amount used
20 or when used, because our bodies are individual mechanisms and they break down
21 compounds the same but at different rates.

22 MR SOUSA Would that be like alcohol, depending on the size of the person?

23 NADINE KIRKOS Yes, very similar. Alcohol has a level of tolerance like everything else
24 and also alcohol is well more studied but it is the same idea.

25 Urine collects over time, so if you was to take a blood sample and we would
26 analyze the blood sample, the amount that we see in the blood is specifically what is there at
27 that time that the sample was taken; and we can actually give an opinion and an

interpretation on what the effect that it could be having on the body. Because urine collects over time in the body, then when you go to take your sample, the sample that you are giving could have been collecting for a period of hours, so when you drink water or take a drink, you may not actually, may not need, to use the bathroom for three or four hours later. So when you go it's been collecting for that period of time from when you last used the bathroom. So it doesn't really give you the information that you could really use, like to say that, Oh, they took that or they took it at that particular time. It just really lets you know that it was taken, it was consumed. So that is why we report it as positive or negative, and urine drug concentrations only indicate that that compound was used.

Ok, now this is the… I guess this would be the *(funded ?)* for the person whose task is collecting the sample because this is what they have to watch out for. We don't actually do any collection of samples. We are completely lab based so we get our hands dirty after the sample is taken and… But we will talk a little bit about adulteration techniques because they definitely do interfere with the result.

So dilution, when dilution occurs, if we… That type of technique adulteration occurs mainly before testing. So the person would actually bring large quantities of urine or liquid to try and dilute whatever's in your body so that their urine would be more dilute. We have had people that tried to use cleansing products to clean their system, coming down with a Gold Seal and Clean and Clear, but we can actually detect dilution by testing the creatinine levels.

So Creatinine is a compound that is in the body and is always there and it breaks down at a specific rate, so each of us has… A healthy person… Well, I know a live person… Well, I know we also do post mortem people but their creatinine levels are off. But if you are alive and you give a sample, then you would have a normal creatinine level and that would be above 20 mg/dl a year. So we would actually measure the creatinine when we do the urine sample and if it is below 20, we would still continue to do the testing but we will indicate on there that it read as a dilute sample. And we have had dilute samples where their creatinine level is less than 20 and it still confirms for a compound. Any creatinine level

that's less than 5, we actually don't do. We don't consider that as urine and, for the most part, it's substituted and you can almost have no… There would be some aroma that you recognize like Mr Rain or some type of menthol, or apple juice - too sweet - so we will just indicate that its unsuitable for analysis.

Other Adulteration Techniques would be if the person has added something to their urine sample after the urine has been collected. So they would add almost anything, vinegar, bleach or ammonia, nitrates any of those substances. I mean, if you did a search on-line "beat drug test" there is a plethora of things, ideas, and tried and tested ways to beat that, beat the test; and some of those do interfere with your screening results, particularly anything that alters the Ph they would have an effect on your…

Now, the **Drug Detection Window** refers to the length of time following the last drug use that the urine sample continues to produce positive test results, and many factors influence the detection window. It would be either the amount of drug that was taken, how frequently the person uses the drug, the rate of metabolism which is specific to each individual - how the body breaks down the compound; and then the last two border on, would be how sensitive the test is - or the Dipstick - how sensitive it is, and that refers to the level it can detect and the specificity of the test is how specific it is at knowing that that compound is the compound that you're looking for.

Based on standard methods and cut-off levels of the SAMSHA guidelines, we know that with cocaine the detection window is one to three days. Opiates are generally one to four days - and that's for the family. Amphatamines and Ecstasy is two to four days.

Now, the cannabinoids, they're a little bit unique in that they are a lymphomatic compound, which basically means they like fat. So when an individual smokes or ingests cannabis the body would actually store it in the fat. So generally what we have found, and what the research has indicated, is that acute use… So, somebody that uses once – infrequently - it would only be in the urine for a few days.

The chronic user, the window is about fourteen days and can be up to thirty days, but then they're also topping themselves up because they are using daily or multiple times during the day; and the next interesting thing about cannabis is that if you have a chronic user that's gone into treatment and they haven't used, what happens is the research has shown that the level decreases because it is not being put in the body, and then after a period of time it begins to increase again and that's because of the cannabinoids that's stored in the fat. The body starts releasing it back in the body. So a person could have had a period of time of abstinence and then be tested and test positive and still haven't used. So that compound is interesting of itself.

Submission of Samples to the Laboratory - Before you can be legally tested you should complete and sign a consent form and disclose all medications that you've taken.

Now normally, the establishment that is providing or instituting the urine testing would have that consent form. That's something that we don't have. We do provide urine kits, however, which is… And the urine kit basically looks like this. It involves a urine pot, bio hazard bag with a seal, a security seal, and a form that you will fill out to say with the - You could either have the persons' name or an ID. The person could be assigned a number. We don't really need to know who they are nor are we interested in them - medications taken and who the report should be sent to, and then you could either check or monitor; and if there is a specific compound that you're looking for, you can ask for that as well and then what's most important is the chain of custody. It may seem simple but that ends up being the most important thing.

What we've found going to Court, no one ever questions the science, no one ever questions, you know, what we have done. Everybody always questions, Who touched the sample? Who asked us do the sample? That is what we find pretty much all the time if a question is raised. So, do have the chain of custody, the date and who it was released to, who it was received; and when it comes into the lab, we check that the sample is sealed,. So, the person would have a urine sample and then a seal would be on it and then you would put it in here and then seal the bag as well (**demonstration of kit given).** We are not going to

accept a sample that's not sealed or that's not been provided in the correct way. It's no point. We don't know. All we can attest to is what happens in the lab. If the sample comes to us and like the security seal is not on it, I mean, it's not really worth us going to the trouble of analyzing it and giving a result because we don't really know. It's not fair to the person. It's not fair to the establishment because we're just not going, we're not even sure that the results going to be correct from the person. We know the result that we provide in the lab is going to be correct based on what we've done but it may not be even the right answer because we don't know the origin or what happened from the time it was taken to the time it got to us. So, that's quite important. I can leave that here and you can pass it around if anyone wants to have a look at it (**sample of kit).**

MRS EUDORA BROWNE-LISTER Can I keep this?

MRS KIRKOS Yes, you can keep it and if you didn't want to use it, there are other establishments that create their own. This is just… This would be, I guess, a template if you wanted to create your own, that's the bare minimum what we would expect to receive.

DR SPRIGGS So I believe that is our conclusion. Basically, we will take any questions now and thank you for listening to our presentation.

VOICES Thank you very much.

DR SPRIGGS And I just want you just to remember that we are talking about urine here and not blood or anything else, although we do, do blood. This is purely based on urine and there is a whole different, a lot of perimeters for blood if you're going to go that way.

SEN JARDINE I was going to ask that question, madam chair is… I guess if its urine all the test can be done in Bermuda. If it is hair, as I understand it, has to go overseas. Is that correct?

DR SPRIGGS Well, currently what happens it does go to Pharmo…what's it called? Pharmo… It will come to me.

SEN DILLAS-WRIGHT Who does that in Bermuda? I know the BHB – the hospital… Yes, hospital done hair.

DR SPRIGGS Well, BHB… Yeah, although we… For us. Although we can do hair testing, it's the exact same things that we do. It's just that we're understaffed and we are two people and we have quite a bit on and we have a lot of forensic work. So, we haven't actually had the time to set up our hair analysis section. But hair analysis is the same protocols as for when we are doing urine but it's ELIZA, which is another immunoassay technique. It is sent away and the hospital are the only ones, I think, that are doing hair.

SEN DILLAS-WRIGHT They are. Pre-employment, I think they are doing.

DR SPRIGGS Pre-employment. However, hair testing is more a longer window of drug use. It's not immediate. It's like several months. It's actually segmented and hair grows a centimeter every month and that is deemed to be… You would have to have… If you measure it out and say, 6 cm, that would be estimated 6 cm of hair growth for six months. However, if someone is going to be, get their hair tested, the protocol would be different than if it is urine testing, and it is really past use.

So urine and blood… Blood is like a snapshot as… Let's talk about what is in your blood, in your system now. Urine is… You consumed it at some point but we can't tell you when and here is, maybe six months ago you used cocaine, you know. So they are very different and it really depends on how you want to go. And then, even the cannabinoids in hair have a very different interpretation because of how it's *(laid ?)* - smoking, absorbents in hair - and the interpretation is very specific rather than, Oh, this person was using cocaine six months ago. I can tell that they were binging on this and now, you know, from root to maybe 2 cm because it's two months, Oh, they weren't using. You know, something like that. So it is kind of a longer detection window.

And there are some, not issues, but there are different challenges when you're looking at black Bermudians' hair versus Caucasian hair because of the time it

grows and how it grows, and there is not a whole lot of research in it based on what we know.

MR LISTER I have a question. How would you rate the different methods in terms of invasiveness to the individuals?

MRS KIRKOS Blood is the most invasive because you need a Phlebotomist. You need a trained person to take the sample. Urine, the only training the person needs is… Understanding that the individual can, the potential for adulteration… So you just have to have somebody that understands the potential for adulteration and then is also willing to observe somebody. That would be my favorite job. But you have to find somebody that's willing to do that.

Hair is probably the least invasive because you just sit down in a chair like you're at the Barber or the Hairdresser and they just take a piece of your hair.

SEN DILLAS-WRIGHT If someone was bald headed would you get it from…

MRS KIRKOS Well, there would be beard hair if a man or they would use other parts of hair and it would be indicated on their explanation, but it goes through a process of cleansing.

DR SPRIGGS Washing, that type of thing, so it's not, really been a problem.

MRS BROWNE-LISTER Also with marijuana or cannabis being stored in the fatty cells, and like Nadine indicated that somebody could not have used for a long period of time, but then the substance begins to be released in the system, what happens in a case of say (this is just hypothetical) an employee who had that issue, whereas they hadn't used, but the test is coming back. How do you prove to the employer, or what do you say to the employer to assure them that…

MRS KIRKOS I mean, well, to me that's where hair is important. Hair becomes an important tool because the person, you could… Hopefully they have hair.

SEN DILLAS-WRIGHT If they're bald then…

MRS KIRKOS If they have hair, that's what we would say. We would actually advise them to have a hair test because if they are saying that they did not use and it's showing up. The levels would also be low as well. So, you know, although we don't use the levels, but if someone has said they have been in treatment and that they haven't used, then I am expecting that the level I am going to get is going to be around that cut-off, you know. I am not expecting it to be 100, 200 when my THC cut-off is, I think, 15.

So it does give a little bit of information we can use; use the levels in unique circumstances - and that would be considered a unique circumstance - and then we would also… Hair would be a very valuable tool in that sense because hair, you know, you would actually, where the root is, where the end is and then you can actually see; and then there would be portions of the hair that would be empty, and then you would see it again.

DR SPRIGGS But also you can use blood as well because blood will give a snapshot. They said they hadn't used, so we would use blood as a tool because we definitely can see in blood. *If you've got Tetrahylorate Cannabinal, which is the active chemical constituent, we know that you have been recent use aldemandroxy whereas if the acid, we can be able to say in blood that, you know, it would be so many days or week off, rather than in urine.*

MRS KIRKOS To me, what I would find is that somebody that is trying to prove themselves, although blood is invasive, they would be willing to give a sample.

SEN JARDINE Is there a best test or I guess I am listening to all of your stories but your discussion here, is there a best test? Is like one, is the hair better than urine or is urine better than hair, is blood better - or it depends on the circumstance? Do you do, for example, urine test first and then if there is some question or doubt, you then move on to do a hair test, or is there anything you would suggest or recommend is the best out of the three?

DR SPRIGGS Well, mostly going forward, people use urine test and that seems to be sufficient for work-place testing. I really don't see going to hair testing unless you are…

SEN DILLAS-WRIGHT In the first instance anyway.

DR SPRIGGS Yeah. If there is a real issue and you're trying to get some back history or something like that, but going forward, to start with urine testing I think is fine. If there is an issue, then a blood test is sufficient enough. For hair testing, I would say it would be kind of your last resort or, in consultation with a toxicologist, we can say, Okay, we would recommend that. But, a urine test is sufficient. I think for us, we're not Dipstick people or Dipstick fans only because of a lot of the issues around Dipstick testing.

As Scientists, we would say Immunoassay testing is the Gold Star standard and - with all the regulations - and that's what should be used; and then a positive would be confirmed. We are a Government Agency and, obviously, our services are all free. However, this urine testing, I think, is $25.00 for an Immunoassay test and $60.00 for Confirmatory, and that's all kind of Government pot. The rest of the work that we are employed to do is all free for Government doctors, you know, Bermuda basically.

SEN DILLAS-WRIGHT Oh, that includes any Private Agency. If a Private Agency asks you would there be a charge?

MRS KIRKOS All of our forensic work is submitted to the Police, so we don't take calls from individuals.

SEN DILLAS-WRIGHT So a Private Agency, if they were, I mean, we have had presentations from a private firm and they actually do random testing for their organization in Bermuda now.

MRS KIRKOS Oh, do you mean, work-place drug testing? Yes, we do receive samples from agencies.

1 DR SPRIGGS And that goes under the $25.00 for Immunoassay, $60.00 for
2 Confirmatory. Government Agencies, we don't charge, because it's Government to
3 Government.

4 SEN DILLAS-WRIGHT Yes, of course.

5 MRS KIRKOS And to also answer the question, I always like to ask in terms of
6 which one is the best, well what question are you trying to answer, because each one of
7 them gives you a time detection window. So, if you want to know if someone's using, then
8 urine's fine. If you want to know if someone's previously using, continues to use… I mean,
9 when hair testing was first formulated and a lot of research was done, it was because of
10 custody issues. So they needed it if a child was taken from their parent because of drug use
11 and then the parent had to be clean for a particular time to get the child back, that's really
12 where the origin of hair testing came from, because it gave a picture of a longer length of
13 time and then to see if that person truly is not using. And then blood, of course is useful if
14 you need to know if someone is under the influence of a compound now, you know, or
15 within the hour or couple of hours.

16 MR SOUSA That's very helpful.

17 DR SPRIGGS That goes to your point of alcohol. We do alcohol testing and it's
18 blocked.

19 MRS KIRKOS And some work-place drug testings do include alcohol.

20 MR SOUSA The other question I had said it includes alcohol.

21 MRS KIRKOS No, it doesn't necessarily. There are some, for example…

22 DR SPRIGGS Our Immunoassay does include alcohol.

23 MRS KIRKOS It's not a standard one. They would have to ask for it if they are
24 purchasing.

25 DR SPRIGGS But that's an automatic cost to them.

1 MR LISTER I have a question that I am pondering and you should help me with
2 it.

3 The cannabis and its related substances can stay in a system 14 – 30
4 days. It's graduated, because it's alleged to be a gateway drug; and I don't do cannabis at all
5 anymore. I do cocaine. So it will be in my system for 4 days. So, therefore, if I've gone on to
6 a worse drug, the chances of catching me are significantly reduced of the chances of catching
7 me using the less dangerous drug. Am I right in thinking this, or am I just misunderstanding?

8 DR SPRIGGS I think you are misunderstanding it.

9 MR LISTER Ok help me then!

10 DR SPRIGGS Because what you're asking us is use of cannabis, is a gateway drug,
11 and stays in your system. It depends on the type of user you are. If you are a chronic user, it
12 can stay into your system, you know, for 14 – 30 days, and you will continue to break down
13 and eliminate. Now, what you're asking is, "Oh, now, I am a cocaine user"?

14 MR LISTER Finish with the cannabis.

15 DR SPRIGGS You're finished with cannabis and now I am a cocaine user. Now,
16 what you're asking is whether or not we'll catch you?

17 MR LISTER How is the likelihood of me being detected as a cocaine user versus,
18 sort of, James here being the marijuana user. Is it like he's eight times more likely to be
19 caught than I am?

20 DR SPRIGGS Okay, I understand what you're saying because it's…

21 MR LISTER You see what I am saying.

22 DR SPRIGGS You know, 1 – 3 days but however it's random. The test is random.
23 You never know when it's coming. Sooner or later you're going to get caught because other
24 symptoms can be there if you feel that somebody is using, and their whole body reaction,
25 you know, drug addicts and that type of stuff. You know, it comes to a point when

1 somebody is using, they've got a habit. You have a habit whether it's first day, couple of
2 days, you know, and cocaine breaks down pretty quickly – Amphetamines - but if you are a
3 frequent user, at some point in time for random test, you never know…

4 MRS KIRKOS If it's truly random.

5 DR SPRIGGS If It's truly random, yes; but then also to answer your…

6 SEN JARDINE But if it isn't random. Let's just say - and I am just to follow on from
7 your question because it's a good one - is, if you are a cocaine user, how long does that stay
8 in your system? If it's 14 days for cannabis, how long is it for cocaine?

9 DR SPRIGGS Well, it also depends on dose as well.

10 MRS KIRKOS What I think what your trying to probably say - if I could even be
11 more of the devil's advocate - I think probably what you're trying to allude to is that, say for
12 example, because I am thinking of the scenarios and the only scenario that I can come up
13 with that, that would potentially be a problem, is if you were a truly social weekend user and
14 say your test was on Friday, the following Friday. So if you're out with your friends at the
15 weekend, and you're truly just a social weekend user, and then they do a random test on the
16 Friday, you're probably going to *pass* and you're probably going to fail the test.

17 SEN JARDINE It's interesting to know the sort of time-frames.

18 MRS KIRKOS But, I mean, we're talking like all the conditions are got to be right.
19 You're got to truly be a…

20 DR SPRIGGS Drives a line for you, you know, that type of thing because from our
21 Immunoassay Technique…

22 MRS KIRKOS But that's about the only scenario I can come up with.

23 DR SPRIGGS But from our Immunoassay Technique which we use ELIZA, we
24 actually can see further down than the cut-offs that you see.

1 VOICE Ah, okay.

2 DR SPRIGGS So for us, our ELIZA curb could be 10, 20, 25 and 50ng. Now, even
3 though they're saying the cut-off is 50, we can still see on a screen down to 10 which is going
4 to indicate activity or indicate a low positive; and if we confirm our GCMS is actually we can
5 quantitative down to like 1ng. We can see pixel gram levels. So if you are using at any time,
6 it will come up positive and we might not be able to quantitate it but we can see it, but it will
7 be listed as a negative and we'll know.

8 MRS KIRKOS We'll know

9 DR SPRIGGS That you are a user. Right.

10 MR LISTER I am coming in for a test. I want to see.

11 MRS KIROS Nobody else may not know, but we'll know.

12 DR SPRIGGS But we'll know. Because of the type of science it is, you can say,
13 where, according to this SAMSHA - these are all urine testing regulations - Now, even
14 though those are the cut-offs, the actual laboratory can see down further. So, you
15 understand what I mean?

16 MR LISTER Yes.

17 DR SPRIGGS So we're looking way down at pixel gram levels and we know there's
18 a zero tolerance. Oh, well, we know this person's a user, but we're going to have to say it's
19 not detected because it's below the value, the international guidelines, that have to be
20 followed for urine use. Now, if it was blood and they came and said, Here's a blood sample,
21 you know, and it came up 20ng, that would be reported.

22 It is low but for cocaine use, you know, cocaine has no medicinal use
23 these days and whatever and now we use a calibration curve which is, we will quantitate
24 from 5ng, say, or 10ng up to 500ng, and if it falls on the curve somewhere in there, then it's
25 on your linear curve, then it's… We can quantitate it… So, it would be known as a positive.

1 Now, if it was urine and it fell below a certain level and it didn't meet our criteria in our
2 quality controls, then it would be reported as a negative.

3 MR LISTER Ok great, thank you. This allows me to step up and thank you ladies
4 for this presentation. It has been extremely helpful and enlightening. I have one other
5 question but it's going to eat up the time so I won't ask you and if I can catch you in the hall
6 one day I am going to ask you so, be prepared.

7 DR SPRIGGS, MRS KIRKOS If it's important, then ask the question.

8 MR LISTER Well, actually it's, it may be a little unfair because I am asking you
9 your opinion on what people do. But, many employers have pre-employment test and then
10 for cause thereafter and my behavior doesn't justify a for cause challenge. I can go through
11 my whole employment without being challenged. Given pre-employment is standard in the
12 company I am applying for, and I have made some friends that work there and make sure I
13 know, I can stay off my favorite drug for the required length of time, come through, pass the
14 test and then go back to my habits after. What's the wisdom of that from the employer's
15 point of view when he's saying he wants a drug free work-place, if it can be beaten that
16 easily? Are we just fooling ourselves when we say we want a drug free work-place when
17 testing for cause only?

18 DR SPRIGGS Well, I don't think they are fooling themselves. I think that it's pre-
19 employment and random drug testing continuous are quite different. Cause you can say I'm
20 just going to do pre-employment, so you know the person is going to stay off and get clean,
21 but if it's continued on within, say - and you'll have to go through checks every, we're doing
22 random drug testing - then you never know when it's going to come, which some employers,
23 they do, rather than to say, Oh, this is a one-off, because that's something that is the issue.
24 So, if you truly want a drug free work-place then you would have to say, Okay well, I am
25 going to make sure that every three months that we're doing these - and only certain people
26 that, you know, know about it - and we're going to have, you know, Lew and Matt and Sue
27 come in here.

So you have to have protocol in place that right up front that's going to say we're going to do this going forward and it's going to be every so many months. It's going to be urine testing and we're sending it to the Government Lab, and, you know, we're getting it confirmed and we know that all positives will be confirmed. You have to put protocol in place because that's, that is the biggest thing that we see that people are not doing.

And with the Dipstick test, you can beat a Dipstick test, but you are not going to beat the Government Lab.

MR LISTER Good, thank you.

SEN DILLAS-WRIGHT One of the things…

VOICE Madam, sorry go ahead…

SEN DILLAS-WRIGHT No, I was going to say that, other than that you're looking at the behavior, you know. Sometimes people are using and you see the behavior, because I know when I was at the Hospital it was… We didn't have… I think they introduced the system - because I left a number of years ago. But the behaviors that you see some people engage in, but that's at extreme levels, and they just don't control themselves and flare off and all the rest of it, and then you think, well, something… You send them to staff help and stop…

MRS KIRKOS Right. Well, what we've had, we've had incidents where, like with the Ferry and with the Bus drivers. If an incident occurs, then they would take a sample. At this point I don't think they do random testing but there is other private companies that do true random testing and, I mean, we don't get into conversations with them. I don't know how well it works for them but from the information that we have available it does appear to be true random testing. So if they are serious about a drug free work-place, true random drug testing would be the way for *(cost/cause ?)* testing, it's not going to give you a drug free work-place.

SEN JARDINE One very quick question. Something was asked to me a long time ago and I have no idea. If you're in the presence of somebody who is smoking cannabis, is that transmitted to the person who isn't? I mean, does the body absorb that and then if they have a test the subsequent day are they suddenly positive even though they haven't had any?

MRS KIRKOS Well, the research that has been done indicates that you would have to be in the room the size of a telephone box…

VOICES [Laughter]

MRS KIRKOS … and the smoke would have condensed where you couldn't see it and then you might get near the cut-off in a urine sample

VOICES [Chatter]

MR LISTER While you think that he's making a funny question or why your answer appears funny, it's real.

I had a fella when I was a Minister, whose parents had come to see me when I was in another Ministry because of a problem like that, and now here I am in the second Ministry and they come in there and just beside themselves, and they want a result or my head. Those were the only choices. He was in a program where he had to go overseas for training and get all his skills; and when he got there to the training, the first thing they do is drug test you and he failed the test and they kicked him out and he had to come back to Bermuda, and the parents were wild, and they said, Our son does not take drugs.

He and some of his friends, to get employment in the summer formed a security company - just a bunch of them doing security - at parties, and people were using drugs at the parties, smoking marijuana, and that may have gotten in his system but he never smoked, and the test was taken 10 days after he left Bermuda. And they were prepared to believe that and repeat it to me.

1 MRS KIRKOS I mean, we see that all the time, like with deaths and everything
2 where , you know, the family is like they never did drugs. I say the blood never lies, so…
3 When we do our toxicology sample we're just like, well, you may not of known, maybe you
4 were in denial but…

5 DR SPRIGGS Yeah.

6 MR SOUSA Johnny always was a good boy.

7 VOICES (Chatter). We have heard that way too much.

8 DR SPRIGGS That's the biggest thing, but that's not our job to say. That would be
9 the Coroner's job or, you know, the other job. The Toxicologist's job is to say, This is what it
10 is in the report and interpret it; and that's up for the medical doctors and the Coroner
11 because that's… That's… You know.

12 SEN JARDINE If hair samples, you know. I suppose if you're in the telephone
13 booth and it's just a…

14 VOICES [Laughter]

15 SEN JARDINE I suppose some might go in, that's why I asked the question
16 because…

17 MR SOUSA it's like being around a person who smokes cigarettes.

18 VOICES (Chatter). Smoke on your clothing.

19 MR LISTER It is on your clothing.

20 VOICES Thank you.

21 SEN DILLAS-WRIGHT Alright, ladies. We appreciate your comments, been absolutely
22 informative, thank you.

23 **RECORDING OF SESSION ENDED 5:03 P.M.**