RICHARD H. MCLAREN, O.C.
INDEPENDENT PERSON
WADA INVESTIGATION OF SOCHI ALLEGATIONS

9 December 2016

Via Email: Olivier.Niggli@wada-ama.org to be forwarded

President Sir Craig Reedie
World Anti-Doping Agency
Stock Exchange Tower
800 Place Victoria (Suite 1700)
Montréal, QC H4Z 1B7
Re: Report to the President of WADA by the Independent Person

Dear President Reedie:

I, as the Independent Person, have completed the enclosed Report, dated 9 December 2016, which is submitted to you pursuant to the Terms of Reference that established the Independent Investigation. This Report fulfills the mandate of the Independent Person. I appreciate having had the opportunity to be of service.

Yours truly,

Richard H. McLaren
IP in Sochi Investigation

mclaren@mckenzielake.com

THE INDEPENDENT PERSON 2nd REPORT

Professor Richard H. McLaren, O.C.

9 December 2016

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Glossary

AAF	Adverse Analytical Finding
ABP	Athlete Biological Passport
ADAMS	Anti-Doping Administration & Management System
ARAF	All-Russian Athletics Federation
A samples and B samples	In doping control conducted under the World Anti-Doping Code, the urine collected from an athlete is divided into an A bottle and a B bottle. An initial screen is performed on the A bottle. If a suspicious result is found in that screen, then a confirmatory analysis is performed on the A sample. If the athlete requests, the B bottle is opened and a confirmatory analysis is performed on the urine in that bottle as well.
CAS	Court of Arbitration for Sport
Code	World Anti-Doping Code
CSP	Center of Sports Preparation of National Teams of Russia
DCC	Kings College Doping Control Centre
DCF	Doping Control Form
DCO	Doping Control Officer
EPO	Erythropoietin
FIFA	Fédération Internationale de Football Association
FINA	Fédération Internationale de Natation
FSB	Russian Federal Security Service
IAAF	International Association of Athletics Federations
IC	Independent Commission
IP	Independent Person
Investigative Committee of the Russian Federation	Main federal investigating authority in Russia answerable to the President of the Russian Federation.

IOC	International Olympic Committee
ISL	International Standard for Laboratories
ITP	Initial Testing Procedure
LIMS	Laboratory Information Management System
London Games	London Games of the XXX Olympiad
MofS	Ministry of Sport
NOC	National Olympic Committee
PED	Performance Enhancing Drug
ROC	Russian Olympic Committee
RUSADA	Russian National Anti-Doping Agency
SG	Specific Gravity
Sochi Games	XXII Olympic Winter Games
T/E	This refers to the ratio of testosterone to epitestosterone
TUE	Therapeutic Use Exemption
VNIIFK	Russian Federal Research Center of Physical Culture and Sport
WADA	World Anti-Doping Agency

Chapter 1: Executive Summary of 2nd IP Report

Key Highlights of 2nd Report

Institutionalised Doping Conspiracy and Cover Up

1. An institutional conspiracy existed across summer and winter sports athletes who participated with Russian officials within the Ministry of Sport and its infrastructure, such as the RUSADA, CSP and the Moscow Laboratory, along with the FSB for the purposes of manipulating doping controls. The summer and winter sports athletes were not acting individually but within an organised infrastructure as reported on in the 1st Report.

2. This systematic and centralised cover up and manipulation of the doping control process evolved and was refined over the course of its use at London 2012 Summer Games, Universiade Games 2013, Moscow IAAF World Championships 2013, and the Winter Games in Sochi in 2014. The evolution of the infrastructure was also spawned in response to WADA regulatory changes and surprise interventions.

3. The swapping of Russian athletes' urine samples further confirmed in this 2nd Report as occurring at Sochi, did not stop at the close of the Winter Olympics. The sample swapping technique used at Sochi became a regular monthly practice of the Moscow Laboratory in dealing with elite summer and winter

athletes. Further DNA and salt testing confirms the technique, while others relied on DPM.

4. The key findings of the 1st Report remain unchanged. The forensic testing, which is based on immutable facts, is conclusive. The evidence does not depend on verbal testimony to draw a conclusion. Rather, it tests the physical evidence and a conclusion is drawn from those results. The results of the forensic and laboratory analysis initiated by the IP establish that the conspiracy was perpetrated between 2011 and 2015.

The Athlete Part of Conspiracy and Cover Up

5. Over 1000 Russian athletes competing in summer, winter and Paralympic sport, can be identified as being involved in or benefiting from manipulations to conceal positive doping tests. Based on the information reported to International Federations through the IP to WADA there are 600 (84%) summer athletes and 95 (16%) winter athletes.

London Summer Olympic Games

6. Fifteen Russian athlete medal winners were identified out of the 78 on the London Washout Lists. Ten of these athletes have now had their medals stripped.

IAAF Moscow World Championships

7. Following the 2013 IAAF Moscow World Championships, 4 athletics athletes' samples were swapped. Additional target testing is in progress.

Sochi Winter Olympic Games

8. Sample swapping is established by 2 female ice hockey players' samples with male DNA.

9. Tampering with original sample established by 2 [sport] athletes, winners of four Sochi Olympic Gold medals, and a female Silver medal winner in [sport] with physiologically impossible salt readings.

10. Twelve medal winning athletes (including the above 3) from 44 examined samples had scratches and marks on the inside of the caps of their B sample bottles, indicating tampering.

11. Six winners of 21 Paralympic medals are found to have had their urine samples tampered with at Sochi.

This Report explains these key findings.

1.1 Introduction

This Chapter contains a summary of the principal outcomes of the work of the independent investigation conducted under the direction of Professor Richard H. McLaren, O.C. the Independent Person ("IP") appointed by the World Anti-Doping Agency ("WADA") President. Background and detailed findings of the investigation in a narrative format covering a period from 2011 onwards are provided in subsequent chapters of this Report ("2nd Report").

This 2nd Report details the work of the investigative team conducted between July and November of 2016. In doing so, it sharpens the picture and confirms the findings of the 1st Report and identifies summer, winter, and Paralympic athletes involved in the doping cover-up and manipulation.

Accompanying this second and Final Report is a release of the non-confidential evidence the IP has examined. See the Evidence Disclosure Package ("EDP") at www.ipevidencedisclosurepackage.net. Where practical, this 2nd Report cross-references to the EDP.

Early in the investigation the IP recognised that there was more going on within Russia concerning doping than just what happened in Sochi and involved summer, winter and Paralympic athletes. The 1st Report brought much of the systemic Russian doping control manipulation and cover up into the public purview. This 2nd Report expands upon the scope of the 1st Report and presents the evidence the IP investigative team used to reach its conclusions.

This 2nd Report reflects the work of the IP in concluding the review of all of the information it was able to obtain including witness interviews, databases, emails, and the review of over 4,317 Excel spreadsheets. The pertinent and relevant spreadsheets to support some of the contents of the 2nd Report are included in the EDP. The IP investigative team has examined evidence that identifies over 1000 Russian athletes who appear to have been involved in or benefited from systematic and centralised cover up and manipulation of the doping control process.

1.2 Appointment of the IP

WADA announced the appointment of Professor McLaren as the IP on 19 May 2016. As described in the Terms of Reference, the IP was to conduct an investigation of the allegations made by the former Director of the Moscow Laboratory, Dr. Grigory Rodchenkov ("Dr. Rodchenkov") published in *The New York Times* on 12 May 2016 and aired as a segment of the *60 Minutes* television program on 08 May 2016.

The mandate of the IP was to establish whether:

"…

1. *There has been manipulation of the doping control process during the Sochi Games, including but not limited to, acts of tampering with the samples within the Sochi Laboratory.*
2. *Identify the modus operandi and those involved in such manipulation.*
3. *Identify any athlete that might have benefited from those alleged manipulations to conceal positive doping tests.*
4. *Identify if this Modus Operandi was also happening within Moscow Laboratory outside the period of the Sochi Games.*
5. *Determine other evidence or information held by Grigory Rodchenkov."*

The mandate to the IP from WADA required a report by 15 July 2016. Within the 57 day deadline, the IP published its 1st Report in an effort to provide a factual basis upon which all interested parties might act prior to the Olympic Games in Rio. The reason for having a short reporting deadline was validated early in the investigation when it was realized that the cover up and manipulation of the doping control processes involved many different Olympic sport, both summer and winter, and Paralympic sport and resulted in an early preliminary report to the International Associations of Athletics Federation ("IAAF").

This very compressed time frame prevented the investigation team from examining all of the data it had and more particularly, fulfilling point 3 of the mandate: identifying athletes that may have benefited from manipulations to conceal positive doping tests. As a result, both the IOC[1] and WADA[2] supported the extension of the mandate of the IP to engage in the work that is now represented in this 2nd Report.

1.3 1st Report Key Findings

The 1st Report key findings were:

1. *"The Moscow Laboratory operated, for the protection of doped Russian athletes, within a State-dictated failsafe system, described in the report as the Disappearing Positive Methodology.*

[1] International Olympic Committee (IOC), 2016. *Statement of the Executive Board of the International Olympic Committee on the WADA Independent Person Report*. [press release] 19 July 2016. Available at: https://www.olympic.org/news/statement-of-the-executive-board-of-the-international-olympic-committee-on-the-wada-independent-person-report [Accessed 19 July 2016].
[2] World Anti-Doping Association (WADA), 2016. *WADA acknowledges IOC decision on Russia, stands by Agency's Executive Committee recommendations*. [press release] 24 July 2016. Available at: https://www.wada-ama.org/en/media/news/2016-07/wada-acknowledges-ioc-decision-on-russia-stands-by-agencys-executive-committee [Accessed 24 July 2016].

2. *The Sochi Laboratory operated a unique sample swapping methodology to enable doped Russian athletes to compete at the Games.*

3. *The Ministry of Sport directed, controlled and oversaw the manipulation of athlete's analytical results or sample swapping, with the active participation and assistance of the FSB, CSP, and both Moscow and Sochi Laboratories."*

1.4 Constraints of the 1st Report

The condensed timeframe to produce the 1st Report prevented the IP investigation team from examining all of the data available to it at that time. Some of that data was acquired only days before finalizing the 1st Report in July. Therefore, the IP made the decision to restrict the 1st Report to the data it had fully examined. The IP advised WADA that it would not have time to fulfill the 3rd requirement of the mandate.

The evidence reviewed up to the time of the 1st Report established, beyond a reasonable doubt the conclusion that a systematic cover up and manipulation of the doping control process was going on in Russia and at the Sochi Games.

1.4.1 Response to 1st Report Findings

The fundamentals of what was described in the 1st Report have neither been the subject of criticism nor contested by anyone engaging in a careful and full reading of that report. The world's media, including the Russian media, the various federations and organisations involved, and the Ad Hoc division of the Court of Arbitration for Sport ("CAS") at the Rio Olympic Games, have not disputed the

essential findings or merits of the 1st Report. Indeed, corrective actions announced by the Russian Federation following the issuance of the 1st Report implicitly confirm the contents of the 1st Report.

There was an immediate suspension of the Deputy Minister of Sport Yuri Nagornykh, Anti-doping Advisor to the Minister of Sport, Natalia Zhelanova, and the Deputy Director of the Center of Sports Preparation of National Teams of Russia ("CSP"), Irina Rodionova.[3] By the time of writing this Report, those suspensions turned into formal discharges from office.[4]

As stressed above, the 1st Report dealt with the systemic cover up and manipulation of the doping control process. It did not report on individual athletes. After its release, the IOC chose to take actions based upon the Report from the perspective of individual competitors, in contrast to the International Paralympic Committee ("IPC"), which chose to take actions based upon the Report for what it was – a description of a systemic system of cover up and manipulation of the doping control process.

The 1st Report set off a chain reaction that resulted in the IP receiving dozens of information requests from International Federations and the IOC. These requests were particularly critical as the Rio Olympic Games were only days away.

[3]Luhn, A., 2016. *Russian officials claim athletes were targeted unfairly in Wada doping*. The Gaurdian [online] 18 July 2016. Available at: https://www.theguardian.com/sport/2016/jul/18/russia-athletes-targeted-unfairly-wada-doping-report [Accessed 06 December 2016].
[4] Ziegler, M., 2016. *Russia must admit doping programme.* The Times [online] 20 November 2016. Available at: http://www.thetimes.co.uk/article/russia-must-admit-doping-programme-g3nnld76h [Accessed 06 December 2016].

In addition, the investigative team responded to 9 cases that were before the Ad Hoc division of CAS at the Rio Olympic Games and the CAS regular division[5]. Responding to this litigation absorbed the investigative team's efforts for the month of August 2016 before, during and after the Rio Olympic Games.

1.5 Completion of the IP's Mandate

The mandate from the outset has been to examine evidence to determine if:

i. There had been a manipulation of the "doping control process" used at the Sochi Games; and,

ii. The *Modus Operandi* of the Moscow Laboratory outside the period of the Sochi Games.

In addition the IP was requested to identify those involved in such manipulations and athletes that may have benefited therefrom.

[5] See: (i) Arbitration CAS anti-doping Division (OG Rio) AD CAS OG 16/02 & 03 Vladimir Morozov and Nikita Lobintsev v. International Olympic Committee (IOC) & Fédération Internationale de Natation (FINA),case was withdrawn, http://www.tas-cas.org/fileadmin/user_upload/Report_on_the_activities_of_the_CAS_Divisions_at_the_2016_Rio_Olympic_Games__short_version__FINAL.pdf [Last Accessed on 1 December 2016];
(ii) Arbitration CAS ad hoc Division (OG Rio) 16/004 Yulia Efimova v. Russian Olympic Committee (ROC), International Olympic Committee (IOC) & Fédération Internationale de Natation (FINA), award of 5 August 2016 (operative part of 4 August 2016); (iii) (iv) Arbitration CAS ad hoc Division (OG Rio) 16/012 Ivan Balandin v. Fédération Internationale des Sociétés d'Aviron (FISA) & International Olympic Committee (IOC), award of 6 August 2016 (operative award of 4 August 2016); (iv) Arbitration CAS ad hoc Division (OG Rio) 16/019 Natalia Podolskaya & Alexander Dyachenko v. International Canoe Federation (ICF), award of 8 August 2016 (operative part of 7 August 2016); (v) Arbitration CAS ad hoc Division (OG Rio) 16/018 Kiril Sveshnikov, Dmitry Sokolov & Dmitry Strakhov v. Union Cycliste Internationale (UCI), award of 8 August 2016 (operative part of 5 August 2016); (vi) Arbitration CAS ad hoc Division (OG Rio) 16/021 Elena Anyushina & Alexey Korovashkov v. International Canoe Federation (ICF) & Russian Canoe Federation (RCF), award of 11 August 2016; (vii) CAS OG 16/10 Andrey Kraytor v. IOC & International Canoe Federation (ICF), the application was withdrawn; (viii) Arbitration CAS ad hoc Division (OG Rio) 16/024 Darya Klishina v. International Association of Athletics Federations (IAAF), award of 16 August 2016 (operative part of 15 August 2016); (ix) CAS 2016/A/4745 Russian Paralympic Committee v. International Paralympic Committee (operative part of 23 August 2016).

The IP's work since July has primarily focused on identifying athletes who may have been involved in or benefited from the manipulations and cover ups of the anti-doping control processes found to have occurred in the 1st Report. In fact, it is this latter point that the IP is reporting upon, and providing evidence thereof, from both this 2nd Report and the earlier one.

This Report adds to the body of information already released while re-examining prior witnesses and examining new witnesses. Most, but not all, of the information used for both Reports is contained in the EDP.

1.6 IP Investigative Method

Immediately following the establishment of the IP's mandate, an initial meeting with Dr. Rodchenkov was conducted, wherein he provided a dossier of information from which the IP investigation was launched. Very quickly thereafter, the IP embarked on its investigation directed at determining the factual veracity of his public pronouncements. Early on, the investigative team recognised that there was far more to look into than just what went on in the Sochi Laboratory. It was apparent from that time forward, that the cover up and manipulation of the doping control processes involved many different Olympic sports, both summer and winter as well as Paralympic sport.

With this in mind, the IP wrote to the IAAF Task Force in June 2016, reporting on evidence it had obtained involving what was later described in the 1st Report as the Disappearing Positive Methodology ("DPM"). That communication led to a chain of events by the IAAF culminating in the decision not to permit the Russian Athletics Team from participating at the 2016 Rio Olympic Games.[6]

The IP engaged in: interviewing witnesses; analysing hard drives; and obtaining and reviewing a wide variety of documentary evidence. From this information, the IP developed an understanding of the cover up and manipulation of doping control processes conducted within Russia. In order to corroborate some of the information obtained through interviews, a variety of forensic and laboratory analytical work and expert evaluations of the same were undertaken.

Fundamental to the assessment of the accuracy of the allegations surrounding activity within the Sochi Laboratory was the need to determine if the B urine sample bottle caps could be removed to enable the contents to be swapped and then re-screwed on to the bottle without leaving evidence of tampering visible to the untrained eye. No interviewed witness ever observed the removal of the bottle caps, which the IP in its 1st Report established, did occur. In order to verify the truth of Dr. Rodchenkov's disclosures, the IP engaged a world recognized expert in firearms and toolmarks examinations to conduct an experiment on its behalf on unused Sochi

[6] 17 June 2016: IAAF announced that ARAF has not met conditions for restatement of membership; 21 June 2016: IAAF announced that all ARAF athletes are suspended from international competition; 23 June 2016: IAAF published exceptional eligibility guidelines for international competition under Rule 22.1A for Russian athletes who can either demonstrate they have not had any involvement in doping or that they have made a contribution to the fight against doping; 1 July 2015: IAAF announced that Yuliya Stepanova is eligible to compete internationally as a neutral athlete

B bottles. The experiment verified that the removal and re-screwing of the cap onto the bottle could be accomplished without leaving visible signs of tampering to the untrained eye.

The investigation focused principally on the following areas:

- Interviewing a number of witnesses some of whom were reluctant or refused to provide information for fear of retaliation and abuse they might receive.
- Recognising the level of fear amongst direct witnesses, the IP sought out forensic evidence and laboratory analytical evidence to establish facts in connection with Russian competitors at the London Games 2012, IAAF Moscow World Championships 2013, the Sochi Games 2014 and generally throughout the period 2011-2015. The immutable forensic and scientific facts support and corroborate the interviews of Dr. Rodchenkov by the IP. Also operating to ensure the truth of those interviews was the possibility of deportation from the United States should he be shown to have been untruthful to the IP. The coupling of the immutable facts and this incentive makes Dr. Rodchenkov a reliable witness within the context of the mandate of the IP.
- The IP sought but was unable to obtain Moscow Laboratory server or sample data. On request, such computer records were unavailable to the IP and the samples in the storage area had been sealed off by the Investigative Committee of the Russian Federation.

- The IP conducted cyber and forensic analysis of documentary evidence retrieved from hard drives and backups of Dr. Rodchenkov's laptop and access to emails.
- Through forensic analysis, the IP restored deleted documentation on the hard drives available to the investigative team.
- The metadata of all of the electronic documents upon which the IP relies have been examined and determined to have been made contemporaneously to related events.
- From the documentation retrieved on the hard drives, the IP created a working database. From the database, the following was done:
    - Reviewed 4,237 Excel schedules, thousands of documents and emails;
    - Cross-compared information available in the database against records in the Anti-Doping Administration and Management System ("ADAMS") to identify false entries;
    - Used intelligence gathered by the IP to identify witnesses to be interviewed and determine what they knew about the inquiry subject matter; and
    - Used the intelligence to identify specific samples for laboratory and forensic analysis.
- The IP conducted an experiment using a firearms and toolmarks examinations expert from a UK based, internationally recognised, forensic testing organisation. For reasons of security their details remain undisclosed.

- Conducted laboratory analysis to determine the salt level in samples obtained from the Sochi Games 2014 and other samples; retained experts to interpret the analytical results.
- Conducted DNA analysis on samples swapped at Sochi and elsewhere and undertook a search to identify same athlete suitable comparator DNA samples located throughout the world which were used to check inconsistencies in the DNA of Sochi and other samples. The IP retained experts to conduct and interpret the DNA analysis and where DNA was inconsistent, the B bottle was checked for scratches and marks.
- Identified potential samples held by the IOC, the IAAF and the IPC to be retested for long-term steroid metabolites.
- Analysed and evaluated technical evidence.
- Reviewed evidence for potential violations of the World Anti-Doping Code.

The IP encountered reluctance on the part of individual athletes and others to come forward to meet with the investigative team. In order to overcome that reluctance, the IP sought to meet Russian officials once the investigative process to identify facts was complete, so as to enable a meaningful discussing with the officials. On 13 October 2016 in Zurich, Switzerland, the IP and his Chief Investigator met with Mr. Vitaliy Smirnov, who was appointed by President Putin as the Chairman, Independent Public Anti-Doping Commission; Mr. Smirnov was accompanied by Mr. Leonoid Miroshnichenkov. The IP and his Chief Investigator also had the opportunity to meet with the new Minister of Sport, Pavel Kolobokov, in Budapest on 29 November 2016, who was accompanied by Mr. Artem S. Yakubov, Head of the

International Cooperation Division of the Ministry of Sport. The IP recognised that a meeting with the newly appointed Deputy Prime Minister, Vitaly Mutko, would be important to the inquiry as to the future of Sport in Russia. Unfortunately, the IP and Deputy Prime Minister Mutko were unable to make suitable meeting arrangements.

In addition, on 12 October 2016 in London, England the IP met with Judge Canivet, IOC Ethics Commission Vice-Chair appointed by the IOC Executive Board as the Chairman of the IOC Disciplinary Commission. The requests of Judge Canivet could not immediately be accommodated, as explained in correspondence to him following the meeting (EDP1164). An offer was extended by which the IP would assist him in any way possible following the publication of this 2nd Report. The IOC also established a second Disciplinary Commission, headed by IOC member Denis Oswald to investigate doping results. No official requests for information were made by either the IP or Mr. Oswald, although one brief discussion occurred at a conference in Zurich, Switzerland.

Members of the investigation team were in regular contact with the office of the IOC's Medical and Scientific Director. Cooperation with the IOC involved transporting samples, testing those samples, assisting the IOC with intelligence gathered by the IP indicating prospective samples to be targeted for retesting and for the prohibited substances they should be retested for. Similar cooperation occurred with the IPC, the IAAF and Fédération Internationale de Natation ("FINA").

1.7 Chronology of Events

Pre 2011	"In the field" doping- oral turinabol continued in use by coaches and doctors, sample substitution with corrupt DCOs.
Late 2011	IP's first indication of Disappearing Positive Methodology.
2011	Dr. Rodchenkov develops test for long term metabolites for oral turinabol.
01 Jan 2012	WADA Regulatory Change - ISL changed to require all sample results be reported into ADAMS.
2012	Moscow Laboratory reports false negatives into ADAMS.
2012	Dr. Rodchenkov develops "duchess" cocktail.
May-July 2012	WADA directed target testing of various Russian athletes.
19 July 2012 – 2 August 2012	Moscow Laboratory conducts washout testing in Bereg kits, all results reported negative in ADAMS, some athletes on cocktail and some on coach administered oral turinabol.
August 2012	London Games
27 September 2012	WADA requests A and B bottles of 67 samples collected between May and July 2012 to be sent to Lausanne Laboratory.
27 September 2012	Dr. Rodchenkov swaps or tampers with A samples for 10 athletes he knows are dirty. Cannot open B samples.
February 2013	First time FSB successfully removes caps from B sample bottles.
July 2013	Trial run of sample swapping at Universiade Games in Kazan.
4 July 2013 – 1 August 2013	Athletes washout urine samples prior to IAAF Moscow World Championships in non-official containers.

August 2013	IAAF Moscow World Championships- sample swapping after the event.
Late 2013 – February 2014	CSP collects athlete's clean urine for later sample swapping.
1 January 2014	WADA Regulatory Change – All athlete urine steroid profile must be uploaded into ADAMS.
February 2014	Sochi Olympics – B bottles opened and urine samples swapped.
Remainder 2014	Moscow Laboratory uses technique applied at Sochi to swap samples on monthly basis and falsifies or does not record results of athlete steroid profiles.
04 December 2014	1st ARD Documentary into doping in Russian Athletics.
17 December 2014	WADA unannounced visit to Moscow Laboratory, seizure of over 3500 samples.
July 2015	FSB bottle opening team disbanded.
November 2015	Independent Commission Report Part I
January 2016	Independent Commission Report Part II
May 2016	Dr. Rodchenkov whistleblower New York Times Article
18 July 2016	1st IP Report
05-21 August 2016	Rio 2016 Olympic Games
07-18 September 2016	Rio 2016 Paralympic Games
9 December 2016	2nd IP Report

1.8 Highlights

Chapter 2: Athletes Benefiting from Manipulations and Concealment of Positive Tests

The IP is not a Results Management Authority under the World Anti-Doping Code (WADC 2015 version). The mandate of the IP did not involve any authority to bring Anti-Doping Rule Violation ("ADRV") cases against individual athletes. What was required is that the IP identify athletes who might have benefited from manipulations of the doping control process to conceal positive doping tests. Accordingly the IP has not assessed the sufficiency of the evidence to prove an ADRV by any individual athlete. Rather, for each individual Russian athlete, where relevant evidence has been uncovered in the investigation, the IP has identified that evidence and is providing it to WADA in accordance with the mandate. It fully expects that the information will then be forwarded to the appropriate International Federation ("IF") for their action.

The main highlights regarding the identification of athletes who have benefitted from this manipulation include:

i. 695 Russian athletes and 19 foreign athletes can be identified as part of the manipulations to conceal potentially positive doping control tests. That manipulation came in various forms and was carried out by different parts of the sports infrastructure within Russia. The IP information on these athletes

has been forwarded to WADA for transmission to the International Federations.

ii. The IP analyzed 44 B urine bottles from Sochi Olympic athletes known to have been protected[7] or on the female ice hockey team. Their urine bottles showed evidence of scratches and marks indicating tampering. When the corresponding A sample bottles were analysed for salt concentration, 6 samples contained more salt than physiologically possible in the urine of a healthy human, and 2 samples contained salt concentration below what is physiologically possible in the urine of a healthy human. The results establish that the urine contents had been swapped or tampered with.

iii. Nineteen of the corresponding A bottles of the 33 protected athletes' B samples were examined for DNA. As expected, because the scheme was to swap dirty urine with the athlete's own clean urine, no inconsistences were found for the athletes known to have been protected.

iv. DNA analysis of samples from female hockey players who were initially not part of the protected athletes were conducted. That investigation revealed male DNA in 2 female hockey player urine samples. That evidence provides incontrovertible confirmation that the original urine samples had been tampered with and swapped.

[7] Referred to in the report as the Sochi Duchess List of protected athletes. This list was prepared before Sochi and included athletes known to be taking the cocktail and for whom the CSP was collecting clean urine to be stored in the urine bank at the Command Center and used to swap the athletes' dirty urine for their own clean during the Games.

v. The IP is in possession of a total of 26 samples from 25 different Russian athletes, who competed in 16 winter, summer and Paralympic sports and who were identified on a dirty sample list.[8] DNA analysis established that 10 of these samples had DNA mismatches and other inconsistencies. There are scratches and marks evidence on 25 of the B sample bottles. One sample does not have scratches and marks because it was not required to be opened.

vi. 246 athletes can be identified as potentially knowingly participating in manipulation thereby raising the possibility of a violation of WADA Code Article 2.5 (tampering). Athletes who provided clean urine to the CSP in advance, which was then swapped for a dirty sample, which he or she provided during the Sochi Games, could be in violation of Code Article 2.5. Furthermore, to the extent Russian athletes participated in washout testing with the expectation that their samples containing Prohibited Substances would never be reported, they too potentially engaged in tampering.

vii. Potential Violations of Code Article 2.8/2.9 (doping and cover up). The IP has identified athletes who have benefited from manipulations of the doping control process to conceal potential positive results. The cover up and manipulation of doping control processes involved officials in the Ministry of Sport ("MofS"), CSP, and Federal Security Service ("FSB") as well as other

[8] The December 2014 List of 37 Dirty Samples were samples that Dr. Rodchenkov knew were dirty and potentially needed to be swapped before WADA arrived to secure and seize samples from the Moscow Laboratory in December 2014. See Chapter 7.

sport officials and coaches. Also included were both the Russian Anti-Doping Agency ("RUSADA") and the Moscow Laboratory. The extent to which athletes may be in violation of these Code Articles, depends upon evidence within the control of the international and national federations and Russian officials.

viii. The IP has identified one weightlifting athlete's sample which is a possible violation of WADA Code Article 2.1. The laboratory results have been forwarded to the International Federation for results management.

ix. The intelligence the IP has obtained regarding all the samples from the Russian teams that competed at the 2011 IAAF Daegu World Championships, the 2012 London Olympic Games and the 2013 IAAF Moscow World Championships, has been provided to IOC and IAAF for action.

Chapter 3: The Moscow Laboratory and the Disappearing Positive Methodology ("DPM")

By 2011 work had begun on what became the conspiracy in doping in Russian sport. The rudiments of what would become the well-oiled systemic cheating scheme to enable Russian athletes to compete while doping was being put in place. This most recent effort appears to have been triggered by Russia's poor showing at the Vancouver Olympic Games in 2010.

The 1st IP Report uncovered the genesis of the Russian cover up and manipulation of the doping control processes. The Russian program ensured that if any doped athletes within the doping system did not achieve protection by the various in the field mechanisms in place during the sample collection and transportation process, the final, fail-safe mechanism operating at the Moscow Laboratory, the DPM, guaranteed non-detection. It did so by transforming a positive initial testing procedure ("ITP") result into a negative one on the direction of the MofS requiring the operational analytical process of the Moscow Laboratory be halted and a false record or no record filed in ADAMS.

The extended time granted to produce this 2nd Report reveals a clearer and sharper focus to the DPM.

i. The IP now has records revealing that more than 500 positive ITP results were reported negative into ADAMS, compared to 312 as set out in the 1st Report.

ii. The IP now has evidence which reveals that well-known and elite level athletes had their initial ITP results automatically falsified.

iii. Aside from email, additional communication methods were found in connection with the DPM, (such as SMS messaging and Excel spreadsheets).

Chapter 4: The Olympic Games Year and London 2012

In 2012 Dr. Rodchenkov's team's breakthrough work on detection of peptides and long-term steroid metabolites of prohibited substances was published.[9] This was a significant contribution recognised by their colleagues heading other WADA accredited laboratories. However, he was working at cross-purposes. While appearing to be at the forefront of the development of doping detection science he was secretly developing a cocktail of drugs with a very short detection window, colloquially known as the "Duchess," to assist athletes to dope and evade doping control processes. In other words, he was simultaneously improving the doping control system while using that knowledge to undermine its efficacy and integrity. The same activity functioned simultaneously to ostensibly "protect" clean athletes and further advance the Russian doping conspiracy. This knowledge by the Director of the Moscow Laboratory assisted the Russian team for the London Olympics.

In preparation for the London Olympics, washout testing was used to determine whether those athletes on a doping program were likely to test positive at the Games. The washout testing was used to ensure that the transition from the older doping program (oral turinabol, for example) to the Duchess cocktail was in effect and would result in no positive analysis of Russian samples at London 2012.

[9] Sobolevsky T and Rodchenkov G (2012) "Detection and mass spectrometric characterization of novel long-term dehydrochloromethyltestosterone metabolites in human urine", J. Steroid Biochemistry & Molecular Biology, 128, 121-127.

The weakness of the "in the field" doping programs was that individual coaches were still managing athlete's doping practices. There was, therefore, no guarantee that it would be effective.

This being said, at the actual Games in London 2012 there were no positive Russian analytical results. In two batches of retesting by the IOC there already are 11 Russian athletes who retested positive – at least 6 of these athletes retested positive for turinabol and stanozonol, both classic anabolic steroids used in the German Democratic Republic. Retesting of London 2012 samples by the IOC is ongoing.

After the Games, it was determined that a more centralised system would be required to enable the cover up at the Sochi Olympic Winter Games and the Paralympic Games.

Below are the highlights that relate to the London 2012 Olympic Games.

i. The saga of the 67 samples (discussed in Chapter 4) involves the collection of samples prior to London 2012. In 10 of those samples, the contents of the A bottle were swapped by the Moscow Laboratory, while the B samples remained unopened and dirty, demonstrating the weakness of falsifying entries into ADAMS by swapping only A samples.

ii. The unexpected request by WADA to the Moscow Laboratory in October 2012 to forward the 67 A and B samples triggered an A bottle urine swap and was

a catalyst leading to the initiation of the project on how to open the B sample bottles.

iii. The practices of using official doping control kits for the purposes of washout testing was recognised by the Moscow Laboratory as leaving an audit trail which could reveal the DPM. Change was required.

iv. The IP cooperated with the IOC by providing intelligence indicating specific prohibited substances to be targeted in their London 2012 retesting program. A total of 54 athletes' samples are been retested.

Chapter 5: IAAF Moscow World Championships and Events of 2013

The experiences of 2012 and the London Games meant that a unique system of manipulation of doping controls would be required to be in operation at the Sochi Laboratory.

The year 2013 was the game changer in the planning for Sochi. Two major international events held on Russian soil provided the opportunity for a trial run of the new doping cover up method.

Following London 2012, weaknesses in the washout testing and doping cover up scheme became evident. The covering up of falsified ADAMS information only worked if the sample stayed within the control of the Moscow Laboratory, and was

later destroyed. Given that Bereg kits are numbered and can be audited or also seized and tested, the Laboratory realised that it would be only a matter of time before the cover up and manipulations were discovered and the contents of the B sample bottles would not match the entry into ADAMS.

Thanks to the work of the Federal Security Services ("FSB"), it is the first time that the B sample bottle is opened and the cap re-screwed on to the bottle without leaving marks and scratches on the inside of the cap, visible to the untrained eye.

The first trial run of the sample swapping occurred at the 2013 Universiade Games and was replicated at the IAAF Moscow World Championships (Moscow Championships). Upon the completion of the Moscow Championships, dirty samples of at least 4 Russian Athletics athletes were swapped, including a sample belonging to Tatyana Lysenko.[10] The IP has provided this intelligence to the International Association of Athletics Federations ("IAAF") in addition to names of another 32 athletes.

Below are the highlights that pertain to: the 2013 period generally; the 2013 Universiade Games and the IAAF Moscow World Championships.

i. After the 1st Report, the IP obtained one observation of the tools developed and used by the FSB to open the B sample bottles. The tools are similar to those developed by the IP's expert for its experiment.

[10] Tatyana Lysenko has been stripped of her medals from London 2012 by IOC Disciplinary committee. Her case has been referred to the IAAF.

2013 Universiade Games

ii. The first trial run of B sample swapping occurred at these Games. It represented the first opening of B samples at a competition. The weakness identified in 2012 was overcome.

2013 IAAF Moscow World Championships

iii. Washout testing samples collected exclusively in unofficial containers thereby circumventing the audit trail created by using official doping control kits. The weakness identified in 2012 was overcome.

iv. Thirty-three athletes have been referred to IAAF for retesting as a result of the IP investigation. Results are unknown at the time of publication.

Chapter 6: Sochi 2014 The XXII Olympic Winter Games

At the opening of the Olympic year 2014, the improvement of prior years had been implemented and planning in earnest for the winter Olympic games was in progress.

The Winter Olympics in Sochi debuted the ultimate fail-safe mechanism in the Russian's sample swapping progression. A protected winter Olympics competitor likely to medal did not have to worry about his or her doping activities. They could

dope up to, and possibly throughout, the Games as they could count on their dirty sample being swapped at the Sochi Laboratory.

Prior to the night-time sample swapping, the athlete's clean urine would be withdrawn from the FSB Command Center controlled urine bank. The samples were placed in the operations room to be thawed and adjusted for specific gravity, where required before sample swapping occurred. As described in the 1st Report, during the night, the samples were passed through, what the IP described as "a mouse hole," from inside the Laboratory's secure perimeter to an adjacent operations room contiguous to the secure perimeter. The B sample bottles were picked up and returned by an FSB officer, open, with the caps removed. The dirty urine would be disposed of in both A and B samples and replaced with the athlete's own clean urine, and the bottles passed back through the mouse hole.

The work of the IP team within the extended period to complete the IP mandate resulted in the following highlights:

i. Six Paralympic athletes winning a total of 21 medals all had their samples swapped.

ii. Two [sport] athletes, winners of 4 Sochi Olympic Gold medals, and a female Silver medal winner in [sport] had samples with salt readings that were physiologically impossible. That scientific determination provides uncontradicted evidence of tampering with the original sample.

iii. The quantity of forensic and analytical evidence increased substantially in respect of the existence and use of sample swapping. Forensic experiments and laboratory analytical work provide additional confirmation of the 1st Report conclusions.

iv. Two female hockey player samples contain male DNA. Eight Sochi samples revealed salt content not physiologically possible in a healthy human. The DNA and salt analyses corroborate *viva voce* evidence of tampering with the urine samples.

v. The number of samples exhibiting scratches and marks on the inside of the bottle caps increased by examining a greater number of B samples and provides further confirmation of opening and tampering with sample bottles.

Chapter 7: Samples Swapping After Sochi

The Russian cover up and manipulation of the doping process did not end with the Sochi Games. The balance of 2014 saw the use of the methodology developed for Sochi on various occasions to open the B bottle samples to enable sample swapping.

i. Sample swapping technique used at Sochi became a regular monthly practice of the Moscow Laboratory.

ii. WADA action requiring steroid profile reports result in Russian reaction to also falsify steroid profiles in ADAMS.

iii. No direct instructions from the MofS required to swap samples involving high profile summer and winter athletes.

iv. Close of the year, the last known opening of B samples occurred when the FSB "magicians" were called in to the Laboratory as a result of the WADA visit to seize samples.

1.9 Conclusion

I would like to thank WADA for the trust they placed in me to supervise this investigation. I also want to thank all of my very hard working investigative team. I owe each of them very grateful thanks for their assistance. My thanks to Diana Tesic, lawyer, who worked diligently with me on the report and did most of the translation work; Martin Dubbey my Chief Investigator who was relentless in his pursuit of the investigative information along with many of his staff; Richard Young, my counsel; Dr. Christiane Ayotte, my scientific advisor; Matthieu Holtz who interfaced with WADA and assisted on sample work; and, three Western University law students who did background research: Kaleigh Hawkins Schulz, Karen Luu and Rebecca Curcio.

Finally, the investigation is now finished. I have tabled two Reports that taken together paint a detailed, but not fully complete picture of the doping control

processes in Russia. It is time for everyone to step down from their positions and end the accusations against each other. I would urge international sport leadership to take account of what is known and contained in the Reports, use the information constructively to work together, and correct what is wrong.

Chapter 2: Athletes Benefiting from Manipulations Concealing Positive Doping Tests

Chapter 2 Highlights

i. 695 Russian athletes and 19 foreign athletes' can be identified as part of the manipulations to conceal potentially positive doping control tests. That manipulation came in various forms and was carried out by different parts of the sports infrastructure within Russia. The IP information on these athletes has been forwarded to WADA for transmission to the International Federations.

ii. The IP analyzed 44 B urine bottles from Sochi Olympic athletes known to have been protected[11] or on the female ice hockey team. Their urine bottles showed evidence of scratches and marks indicating tampering. When the corresponding A sample bottles were analyzed for salt concentration, 6 samples contained more salt than physiologically possible in the urine of a healthy human, and 2 samples contained salt concentration below what is physiologically possible in the urine of a healthy human. The results establish that the urine contents had been swapped or tampered with.

[11] Referred to in the report as the Sochi Duchess List of protected athletes. This list was prepared before Sochi and included athletes known to be taking the cocktail and for whom the CSP was collecting clean urine to be stored in the urine bank at the Command Center and used to swap the athletes' dirty urine for their own clean during the Games.

iii. Nineteen of the corresponding A bottles of the 33 protected athletes' B samples were examined for DNA. As expected, because the scheme was to swap dirty urine with the athlete's own clean urine, no inconsistences were found for the athletes known to have been protected.

iv. DNA analysis of samples from female hockey players who were initially not part of the protected athletes were conducted. That investigation revealed male DNA in 2 female hockey player urine samples. That evidence provides unequivocal confirmation that the original urine samples had been tampered with and swapped.

v. The IP is in possession of total of 26 samples from 25 different Russian athletes, who competed in 16 winter, summer and Paralympic sports and who were identified on a dirty sample list.[12] DNA analysis established that 10 of these samples had DNA mismatches and other inconsistencies. There are scratches and marks evidence on 25 of the B sample bottles. The remaining sample bottle was identified as not requiring to be opened because the laboratory analysis was only arguably positive.

vi. 246 athletes can be identified as potentially knowingly participating in manipulation thereby raising the possibility of a violation of WADA Code Article 2.5 (tampering). Athletes who provided clean urine to the CSP in

[12] The December 2014 List of 37 Dirty Samples were samples that Dr. Rodchenkov knew were dirty and potentially needed to be swapped before WADA arrived to secure and seize samples from the Moscow Laboratory in December 2014. See Chapter 7.

advance, which was then swapped for a dirty sample, which he or she provided during the Sochi Games, could be in violation of Code Article 2.5. Furthermore, to the extent Russian athletes participated in washout testing with the expectation that their samples containing Prohibited Substances would never be reported, they too potentially engaged in tampering.

vii. Potential Violations of Code Article 2.8/2.9 (doping and cover up). The IP has identified athletes who have benefited from manipulations of the doping control process to conceal potential positive results. The cover up and manipulation of doping control processes involved officials in the MofS, CSP, and FSB as well as other sport officials and coaches. Also included were both RUSADA and the Moscow Laboratory. The extent to which athletes may be in violation of these Code Articles, depends upon evidence within the control of the international and national federations and Russian officials.

viii. The IP has identified one weightlifting athlete's sample which is a possible violation of WADA Code Article 2.1. The laboratory results have been forwarded to the International Federation for results management.

ix. The intelligence the IP has obtained regarding all the samples from the Russian teams that competed at the 2011 IAAF Daegu World Championships, the 2012 London Olympic Games and the 2013 IAAF Moscow World Championships, has been provided to IOC and IAAF for action.

2.1 Introduction

The Terms of Reference requested the Independent Person ("IP") *"identify an athlete that might have benefited from those* [Dr. Rodchenkov's] *alleged manipulations to conceal positive doping tests."* The extended time period was provided by the World Anti-Doping Agency ("WADA") to complete the mandate. This Chapter serves as a compilation of the IP's results with respect to athletes. The IP has established that between 2011 and 2015 there was an institutionalised manipulation and cover up of the doping control process in Russia. The conspiracy and cover up involved Russian athletes in virtually all of the Olympic sports. This Chapter addresses the IP's evidence which may identify athletes who benefited from manipulations to conceal positive tests.

2.2 Individual Russian Athletes

The IP is not a Results Management Authority under the World Anti-Doping Code and therefore there does not have the authority to bring forward ADRV cases against individual athletes. Accordingly the IP has not assessed the sufficiency of the evidence to prove an ADRV by any individual athlete. Rather, for each individual Russian athlete, where relevant evidence of possible manipulation to conceal positive tests has been uncovered in the investigation, the IP has identified that evidence and will have provided it to WADA. See also Appendix A.

The different types of evidence provided with respect to any individual athlete are like strands in a cable. It will be up to each Results Management Authority to

determine whether the provided strands of evidence, standing alone or together build a sufficiently strong cable to support an ADRV in an individual case. Alternatively, the information may simply provide intelligence of that athlete as "*benefit*[ing] *from alleged manipulations to conceal positive doping tests"* and may inform possible future targeted testing by the federation.

The strands of evidence the IP reports on are discussed below.

2.3 Potential Violations of Code Article 2.2

A "use" case against an athlete may be established by "any reliable means" (Code Article 3.2). As relevant to the IP's investigation, reliable means includes:

i. Contextual evidence - which identifies how the athlete fits into the doping program which the IP investigation has established;
ii. Initial Testing Procedure ("ITP") screen of the Moscow Laboratory indicating possible prohibited substances (DPM);
iii. Forensic evidence related to sample tampering or substitution; and
iv. Dr. Rodchenkov's evidence linking a particular athlete to doping.

The IP's evidence in each of these categories with respect to individual Russian athletes is described in more detail below:

2.3.1 Contextual Evidence

The IP reviewed a number of documents in which the mere inclusion of an athlete's name in that document is potential evidence of doping. Those documents include:

Exhibit EDP0055. ***Sochi Duchess List****.*

As is more fully discussed in Chapter 6, Dr. Rodchenkov's evidence is that Alexey Velikodniy, one of the Center of Sports Preparation of National Teams of Russia ("CSP") Liaison Persons provided him the Sochi Duchess List.[13] It identified those Russian athletes whose samples were to be automatically swapped for their own clean urine stored in the FSB Command Center at Sochi. The reason these athlete samples needed to be swapped is because they had been authorised to use the cocktail of oxandrolone, methenolone and trenbolone during the Games.

There were 37 athletes named on the Sochi Duchess List. Urine samples from 27 of these athletes were collected during the Games and were subsequently sent for storage to the Lausanne Laboratory. There were 62 samples provided by the 27 athletes stored in the Lausanne Laboratory. At the request of the IP and with the cooperation of the International Olympic Committee these samples were transferred to the London Laboratory for forensic and other analysis.

[13] Referred to in the report as the Sochi Duchess List of protected athletes. This list was prepared before Sochi and included athletes known to be taking the cocktail and for whom the CSP was collecting clean urine to be stored in the urine bank at the Command Center and used to swap the athletes' dirty urine for their own clean during the Games.

From these samples, the IP analyzed 33 B bottles for evidence of scratches and marks indicating tampering. All of those bottles were found to have scratches and marks evidence. The IP has also found, in analyzing these samples for salt concentration, that 4 samples contained more salt than physiologically possible in the urine of a healthy human, and in 2 samples the salt concentration was below what is physiologically possible in the urine of a healthy human.

DNA analysis of these samples confirmed that the urine contained in the sample bottle was that of the athlete who originally supplied the urine sample. That finding corroborates Dr. Rodchenkov's evidence that the dirty urine in these athletes' A and B bottles was replaced with their own clean urine. Overall, the forensic evidence with respect to the Sochi Duchess List corroborates Dr. Rodchenkov's evidence that, indeed, all of the individuals on the Sochi Duchess List were understood by the CSP, the FSB, and MofS to be on the doping program prior to and possibly during the Sochi Games.

Exhibit EDP1162. ***Sochi Medals by Day List.***

Alexey Velikodniy created a daily competition schedule that identified protected athletes. The schedule was continuously updated during the Games and included all those on the Sochi Duchess List and athletes added during the Games, such as the female hockey team.

Exhibit EDP0648. ***"December 2014 List of 37 Dirty Samples."***

As will be more fully discussed in Chapter 7, the Moscow Laboratory received notice from WADA on 09 December 2014 to save all samples from 10 September 2014. This created a significant problem, since it was realised that the notice from WADA would result in the seizure of samples. Dr. Rodchenkov knew that a number of the samples stored in the laboratory were dirty but had been reported negative in ADAMS. In response, the laboratory prepared a contemporaneous list of the samples to be swapped. That list is the "December 2014 List of 37 Dirty Samples".

Clean urine from the athletes on the December 2014 List of 37 Dirty Samples was not, in all cases, available in the laboratory for substitution. Given the very short time frame during which the sample swapping could occur, the laboratory was forced in some cases to take the substitute urine from clean samples provided by other athletes. By this date, the steroid profile of athletes was being tracked in their individual Athlete Biological Passport ("ABP"). Therefore, it was important that the steroid profile of the substitute urine be consistent with the steroid profile of the athlete whose urine was being replaced. In some cases, that required substituting urine that came from a mixture of the urine of more than one athlete.

The IP is in possession of total of 26 samples from 25 different Russian athletes on the December 2014 List of 37 Dirty Samples. The athletes come from 16 winter, summer and Paralympic sports. DNA analysis established that 10 of these samples had DNA mismatches and other inconsistencies. There is scratches and marks

evidence on 25 of the B sample bottles. It was known that one sample had not been tampered with and confirmed by the forensic examination.

Exhibit EDP0650 ***December 2014 List of 21 Dirty Samples That Were Likely Swapped.***

Created 13 December 2014. This is a sub-list of the 37 samples described above. This exhibit also identifies a corresponding source of clean urine to be used for the samples to be swapped.

Exhibit EDP0019, EDP0020, EDP0021, EDP0022, EDP0023, EDP0024, EDP0025, EDP0026, EDP0027. ***London 2012 Washout Lists.*** Created 19 July – 01 August 2012. Further described in Chapter 3.

Exhibit EDP0039. ***"Athletes" List Created 04 July 2013.*** A list of eight athletes with laboratory results. Six show prohibited substances and 2 show clean.

Exhibit EDP0028, EDP0029, EDP0030, EDP0031, EDP0032, EDP0033, EDP0034, EDP0035, EDP0036, EDP0037, EDP0038. ***Moscow Washout Testing 2013.*** **Initially** Created 04 July 2013. Further described in Chapter 4.

2.3.2 ITP Screen of the Moscow Laboratory Indicating Possible Prohibited Substances (DPM)

Hundreds of reviewed documents have analytical findings by the Moscow Laboratory identifying prohibited substances. These results and analysis were either never reported or falsely reported as negative into ADAMS. There is no Adverse Analytical Finding ("AAF") but likely would have been had the Moscow Laboratory completed its analytical work.

It may be the case that, had the analysis been carried out, there would not necessarily have been an AAF resulting in an ADRV. In a few cases, the ITP indicated that because of the low quantity of the prohibited substance detected, the sample might not end up being a positive test after complete laboratory processing. In other cases, the Moscow Laboratory identified substances that are only prohibited above a certain quantitative threshold and no quantity was reported. In some cases the Laboratory would report the sample as containing a substance like marijuana or a stimulant that is only prohibited in competition. Finally, it is possible that in a few cases an athlete might have had a Therapeutic Use Exemption ("TUE") for the prohibited substance indicated in the ITP. However, even taking all of the above into consideration, it is fair to say that the vast majority of these ITPs would have resulted in positive tests and likely ADRVs but for the manipulation and cover up by the Moscow Laboratory.

The DPM identification of prohibited substances in the urine of individual Russian athletes is found in the following documents:

Exhibit from EDP0078 through to EDP0882. **DPM Emails**.

As discussed in more detail in Chapter 3, in the DPM the Moscow Laboratory reported all ITPs of Russian athletes where a prohibited substance was identified to the MofS for a decision. The IP has identified more than 1231 samples where the Moscow Laboratory communicated the presence of a prohibited substance in a Russian athlete's sample to the MofS and later reported that sample as negative in ADAMS or did not report the sample at all.

Exhibit EDP1166. **Exhibit XXA Operational Document with Names, Nationality, ADAMS Report and AAF Added by IP Team**.

Exhibit EDP0269. **A0228 T/E profile.** Created 12 January 2014 by A Prokofiev from the Russian Anti-Doping Agency ("RUSADA"). Shows 2 abnormal T/E results.

Exhibit EDP0052. **A0383 T/E Profile**. Created 19 August 2013. Shows 2 abnormal T/E results.

Exhibit EDP0336. **Swimming 13-17 May 2014**. Compiled by RUSADA to demonstrate testing in swimming. Eight samples identify prohibited substances.

Exhibit EDP0343. **2014 Russian Swimming Championship SAVED list**. Created by Alexey Velikodniy provides SAVE or QUARANTINE instruction for each of the 8 swimmers described in Exhibit EDP0336 above.

Exhibit EDP0051. **University Games SAVE and QUARANTINE Schedule – Stats by Day.** Created by Alexey Velikodniy and updated throughout the 2013 University Games competition. Further described in Chapter 4.

Exhibit EDP0552. **September 2014 Weightlifting Pre-Departure List.** Created 26 September 2014. Prohibited Substances identified in weightlifters' samples.

Exhibit EDP0531. **Weightlifting Steroid Profile ADAMS.** Created 5 September 2014 and sent by the Moscow Laboratory to Alexey Velikodniy. Identifies raw data that should be uploaded into ADAMS following Russian National Championships in Grozny. Eight abnormal steroid profiles are highlighted.

Exhibit EDP0530. **Weightlifting Steroid Profile ADAMS – "Critical".** Created 6 September 2014. Sent by Alexey Velikodniy back to Moscow Laboratory. Lists the same 8 abnormal steroid profiles.

Exhibit EDP003. **Weightlifters.** Sent by Moscow Laboratory to Alexey Velikodniy. Provides the steroid profile of the 8 "critical" weightlifters identified above over

multiple years. [Note: The steroid profiles in ADAMS for these 8 weightlifting samples are blank.]

Exhibit EDP0379**. Pre-Departure Testing for Weightlifting, Athletics, Canoe, and Fencing.** Created 17 June 2014. Alexey Velikodniy instructs the type of testing and analytic methods to be used, e.g. EPO analysis.

Exhibit EDP0380. **Analytical Results of Pre-Departure Testing.** Created 17 June 2014. Results of pre-departure testing in EDP0379. Multiple Prohibited Substances identified.

Exhibit EDP0079. **2013 Weightlifting Testing.** Created 4 April 2013. Multiple Prohibited Substances identified.

2.3.3 Forensic Evidence

As part of the investigation, the IP commissioned experts to conduct three different types of forensic analysis:

i. Examination of selected B sample bottles for scratches and marks;

ii. Analysis of selected samples for salt content beyond human physiological capability; and

iii. Examination of selected samples for DNA confirmation.

The purpose of all three of these forensic and laboratory analyses was to corroborate and establish that tampering had occurred and it was probable that dirty urine was swapped with clean urine.

Exhibit EDP0902. ***Scratches & Marks***. As discussed in more detail in various chapters in the Report. Images from report from EDP0903 through to EDP1139.

Exhibit EDP1140, EDP1141, EDP1142, EDP1143, EDP1144, EDP1147. ***Salt Analysis***. As discussed in more detail in Chapters 6 and 7.

Exhibit EDP1145, EDP1146. ***DNA Analysis***. As discussed in more detail in Chapters 6 and 7.

2.3.4 Additional Evidence of Doping and Doping Cover-Up Related to Individual Athletes Provided by Dr. Rodchenkov.

The IP team has conducted extensive interviews with Dr. Rodchenkov. He identified a number of athletes, or groups of athletes, who he knew, or had strong reason to believe, were doping which are not referenced in the documents set out in Sections 2.3.1 and 2.3.2 above. "Dr. Rodchenkov's Personal Recollection List" (EDP1158).

2.4 Potential Violations of Code Article 2.5.

"Tampering," which is prohibited in Section 2.5, is defined to include "any fraudulent conduct to alter results or prevent normal procedures from occurring…" The Independent Commission ("IC") Report discussed corruption at the Russian doping control stations where Russian athletes who were doping would arrive with bottles of clean urine or clean urine would otherwise be substituted for their samples. That is tampering. The same is true for an athlete who provided clean urine to the CSP in advance that was then swapped for a sample which he or she provided during the Sochi Games. Finally, to the extent Russian athletes participated in washout testing with the expectation that their samples containing Prohibited Substances would never be reported, they too engaged in tampering.

2.5 Potential Violations of Code Article 2.8/2.9

Article 2.8 of the 2009 Code prohibited "…assisting, encouraging, aiding, abetting, covering up or any other type of intentional complicity involving an anti-doping rule violation or any *Attempted* anti-doping rule violation." Article 2.9 of the 2015 Code prohibits "Assisting, encouraging, aiding, abetting, conspiring, covering up or any other type of intentional complicity involving an anti-doping rule violation…."

There was a program of doping and doping cover up in Russia, which may have been engaged in to enhance the image of Russia through sport. That doping manipulation and cover up of doping control processes was institutionalised

through government officials in the MofS, RUSADA, CSP, the Moscow Laboratory and FSB, as well as sport officials and coaches.

It is unknown whether athletes knowingly or unknowingly participated in the processes involved. However they may be part of the conspiracy. Whether the conduct of the athletes who knowingly participated in the Russian doping and doping cover up program is described as "complicity" or "conspiracy," either way it constitutes an anti-doping rule violation.

Together, all of these parties were implicated parts amounting to a conspiracy with a common goal – to use doping products, and then cover up their use. As has been fully described in this Report, each party had a role to play in the conspiracy.

2.6 Potential Violations of Code Article 2.1

Violations of Article 2.1 are commonly referred to as "positive tests" or Adverse Analytical Findings ("AAF"). The analytical process for establishing an AAF in a single sample involves:

i. An ITP, commonly called a screen, in which the A sample is analyzed to determine which, if any, of the substances on the Prohibited List are found in the sample;
ii. If a prohibited substance is found in the ITP, then a confirmation analysis focusing on that substance is conducted on the A sample; and,

iii. If the athlete so requests, a confirmation analysis is also conducted on the B sample.

The IP investigation has identified one instance involving a weightlifting athlete where the Moscow Laboratory's ITP identified a prohibited substance, reported as negative in ADAMS as part of the DPM, and where the A and B sample bottles are still available for confirmation analysis. The results of the IP investigation have been turned over to the federation for sample confirmation and consequent results management.

Chapter 3: The Moscow Laboratory & the Disappearing Positive Methodology ("DPM")

Chapter 3 Highlights

i. The IP now has records revealing that more than 500 positive ITP results were reported negative into ADAMS, compared to 312 as set out in the 1st Report.

ii. The IP now has evidence which reveals that well-known summer and winter elite level athletes had their initial ITP results automatically falsified.

iii. Aside from email, additional communication methods were found in connection with the DPM, (such as SMS messaging and Excel spreadsheets).

3.1 Introduction

After a period of illness during 2011, and an investigative committee inquiry that was terminated, Dr. Rodchenkov returned to his position as Director of the World Anti-Doping Agency ("WADA") accredited Moscow Laboratory. During his absence, WADA questioned the Ministry of Sport ("MofS") as to Dr. Rodchenkov's whereabouts and indicated that if his return was unlikely, WADA intended to appoint a foreign director as his replacement. This was not a satisfactory situation as far as the MofS was concerned, as it would be infinitely more difficult to continue a systematic manipulation and cover up of the doping control processes with a non-

Russian Director. This led the then Minister of Sport, Vitaliy Mutko, to reconfirm Dr. Rodchenkov in his position as Director, being fully aware and satisfied with his personal history.

When Dr. Rodchenkov reassumed his role as Director, the "in the field" corrupt practices in the manipulation and corruption of the doping control system in Russia were operating to evade doping controls. The earlier Independent Commission (the "IC") reported on these activities as it related to the sport of Athletics. These methods included the common practice of top-level National Team coaches buying and reselling performance enhancing drugs ("PEDs") to their elite athletes; the involvement of the Russian Anti-Doping Agency ("RUSADA") in corrupting Doping Control Officers ("DCOs") who would warn athletes in advance of out of competition testing, or appear to take samples from the athlete while allowing others to provide the actual sample instead; and allowing athletes to provide a previously collected sample known to be clean.

After Dr. Rodchenkov's return to take up his directorship, the IP has no evidence of his being directly involved in distributing prohibited substances to athletes, medical, technical or coach officials. However, Dr. Rodchenkov was able to identify a number of athletes or athlete groups who he knew, or had strong reason to believe, were doping and whose dirty samples had been covered up. A summary of this evidence by Dr. Rodchenkov is set forth in Exhibit EDP1158.

As WADA continued to update and implement new regulatory changes,[14] however, the "in the field" manipulation and corruption became unreliable and less effective in the doping cover up. Through the efforts of the MofS and Dr. Rodchenkov, the DPM was developed as a final failsafe mechanism, vastly improving upon the "in the field" practices and overall reducing the likelihood of doped athletes getting caught.

The work on what became the doping conspiracy in Russian sport began in earnest with the deployment of the DPM in 2011, which improved on the previous level of doping control mechanisms for manipulation and concealment. It applied to all athletes from all sports both winter and summer. This enhanced the confidence that an athlete would not be caught doping and sanctioned for an Anti-Doping Rule Violation ("ADRV") because the DPM would be triggered on the Initial Testing Procedure ("ITP"). A sample would be identified as a possible Adverse Analytical Finding ("AAF") and at the discretion of Yuri, Nagornykh, the then Deputy Minister of Sport, the sample would be reported negative in both the Moscow Laboratory's Laboratory Information Management System ("LIMS") and WADA's Anti-Doping Management System ("ADAMS"). Ultimately this practice led to a problem in 2012 (see Chapter 4) because while the A sample was recorded negative in ADAMS, it would test positive if the samples were ever retested.

[14] Effective 1 January 2012, WADA required that all Doping Control Forms and all laboratory analytical data for all laboratory results be uploaded into ADAMS. Previously it only required the negative results to be uploaded.

The DPM was a simple and effective system operating to conceal Russian athletes' PED use, which allowed them to train and compete at national and international competitions while doping. It operated consistently throughout the period from 2011 to 2015 until the Moscow Laboratory was suspended by WADA after the first IC Report and then later, lost its accreditation[15]. Throughout this period, other new doping cover up methods were being developed by the primary participants the MofS, RUSADA, the Center of Sports Preparation of National Teams of Russia ("CSP"), the Federal Security Service ("FSB"), and the Moscow Laboratory which collectively form the coterie of conspirators in Russian doping manipulation and cover up scheme. These processes and procedures are the subject of discussion in the chapters that follow. All of these developments were leading towards the penultimate scheme to cheat at the Sochi Games described in Chapter 6.

3.2 The IP's Findings on the Moscow Laboratory and the DPM

The DPM process was described in the 1st IP Report and is not reiterated here. Further work undertaken by the IP since the publishing of its 1st Report confirms the accuracy of the IP's initial findings and enhances the picture of how it operated. No party has come forward to deny the description of the DPM contained in the 1st Report.

The IP investigation assessed significant digital data retrieved from various hard drives and other sources, documentary and *viva voce* evidence. The evidence that

[15] The operations of the Moscow Laboratory were suspended as of 10 November 2015. The loss of accreditation by WADA was effective as of 15 April 2016.

the IP has relied upon is contained in the Evidence Disclosure Package ("EDP"). The IP has also had the benefit of significant analytical, forensic and DNA examination of stored urine samples. That evidence substantiated the existence of this failsafe method of the DPM with respect to urine samples that passed through the Moscow Laboratory within a system that was managed and dictated by the MofS. The Laboratory with its DPM was the vital final cog in a much larger machine that enabled athletes to compete while using PEDs and resulted in unprecedented cheating within the doping control mechanism in Russia.

3.3 DPM Communication Methods

Since the 1st IP Report, a number of varying communications methods used to transmit the instructions of the MofS, have been discovered. In particular, elite Olympic athletes were, for the most part, understood to be an automatic SAVE and communications regarding their samples were, to the extent required, done orally or in person.

The IP has extensive written communication evidencing the DPM. An example[16] is as follows:

> *"From: Dr. Grigory Rodchenkov [mailto: grodchen@yandex.ru]*
> *Sent: 29 October 2013 4:46*
> *To: Alexey Velikodniy <avsochi2014@gmail.com>; tim.sobolevsky@gmail.com*
> *Subject: Fwd: hCG kickboxing, 5 EPO, growth hormone and 3 somatotropin*
>
> *Dear Alex, it's an emergency!!*

[16] This is the IP's unofficial translation of email communication between the Moscow Laboratory and the Liaison Person, Alexey Velikodniy. For confidentiality purposes The IP has removed athletes' names and dates of birth, and competition placements and replaced it by [Athlete Name], [DOB], [#] respectively. There have been no other alterations to the emails.

Its just mayhem in the martial arts in St. Petersburg (and for the greater majority)

-------- Sending message--------
28.10.2013, 18:48, "Grigory Krotov" <grigory.krotov@gmail.com>:

Grigory Mikhailovich!

When screening the urine sample 2844839 (extension 15658) found beta subunit of hCG in a concentration of 51.83 mIU / mL. Was repeated twice. Man, kickboxing, from international competition in St. Petersburg.

The urine samples found the recombinant EPO:
15573 (2845984), F, cycle track, St. Petersburg)
15574 (2846583), F, cycle track, St. Petersburg)
15575 (2846719), F, cycle track, St. Petersburg)
15576 (2847067), F, cycle track, St. Petersburg)
15637 (3689022), F, cross-country skiing (PARA), Moscow)

In samples of serum growth hormone was found:
3864 (581633, M, wrestling, St. Petersburg) - 1.52
3865 (581760, M, grappling, St. Petersburg) - 2.05
3868 (831576, M, handball, Novogorsk) - 1.80
3871 (831546, M, handball, Novogorsk) - 2.31
3875 (831558, M, handball, Novogorsk) - 2.02

Yours faithfully,
Gregory

Head of peptide and blood doping
Federal State Unitary Enterprise "Anti-Doping Center"

+7 (499) 267 7320
+7 (499) 261 9943
grigory.krotov@gmail.com
http://www.dopingcontrol.ru/

Head of Peptide Doping and Blood Analysis Department
Anti-Doping Centre
Moscow, Russia

+7 (499) 267 7320 (fax mode at night)
+7 (499) 261 9943 (daytime fax)
grigory.krotov@gmail.com

http://www.dopingcontrol.ru/

-------- -------- End of forwarded message

From: Alex Velikodniy [mailto: avsochi2014@gmail.com]
Sent: 29 October 2013 13:31
To: Tim Sobolevsky <tim.sobolevsky@gmail.com>; Grigory Rodchenkov <grodchen@yandex.ru>
Subject:

SAVE

2846629, [Athlete Name], *Judo, Training Camp | 17509, RU St. Petersburg, selection 22/10/2013 canrenone (diuretic)*

2846509, [Athlete Name], *wrestling, gold, international competitions, RU Saint-Petersburg, the selection of 24.10.2013, synthetic marijuana*

EPO:
2845984, [Athlete Name], [DOB], *KMS, junior reserve, cycle track, Training Camp St. Petersburg, PM-[#] position, Team Pursuit.*
2846583, [Athlete Name], [DOB], *MSMK, main team, cycle track, Training Camp St. Petersburg, Euro [#] place, Team Pursuit.*
2846719, [Athlete Name], [DOB], *MSMK, main team, cycle track, Training Camp St. Petersburg, the EKM-[#] place, Team Pursuit.*
2847067 [Athlete Name], [DOB], *cycle track, Training Camp St. Petersburg, 13th place in the championship of Russia among juniors*

3689022, F, cross-country skiing (PARA), Training Camp Moscow, the PWC selection, the name is not known.

A growth hormone:
581,760, [Athlete Name], [DOB], *kickboxing, silver, MS, St. Petersburg - 2.05*
831,576, [Athlete Name], *"Chekhov Bears", Chekhov, Mos. Region / 23.2.86, height 192 cm, handball, Training Camp, Novogorsk -. 1.80*
831,546, [Athlete Name], *handball, TCB, Novogorsk - 2.31*
831,558, [Athlete Name], *handball, TCB, Novogorsk - 2.02*

QUARANTINE

2844839, [Athlete Name], *France, kickboxing, international competition | M-176511271, RU Saint-Petersburg, the selection of 23.10.2013, beta-subunit of human chorionic gonadotropin (beta-hCG) is a high concentration of 51.83 mIU / mL. (A hormone that is produced in the membranes of the human embryo). The rate is less than 5.*
2844985, [Athlete Name], *judo (blind), Russian Cup | 19439, RU Ramenskoye, selection 20/10/2013 marijuana.*

2846674, [Athlete Name]*, Croatia, Savate (French boxing), international competitions | M-176 213 640, RU St. Petersburg, selection 22/10/2013 marijuana (probably will be below the threshold)*
581633, [Athlete Name]*, AZE, Grappling, MS, St. Petersburg - 1.52"*

All e-mail communication in the IP's possession can be found in the Evidence Disclosure Package from EDP0078 through to EDP0882.

Since the 1st Report, the IP investigation team has had the opportunity to examine all 4,237 spreadsheets in its database. The use of spreadsheets is another method of communication for the DPM. The following is a spreadsheet created by Alexey Velikodniy in relation to the Russian National Swimming Championships in 2014.[17] See EDP0343.

Чемпионат России 2014 по плаванию											
№	Состав	Пол	Фамилия	Имя	Отчество	Дата теста	C+ЭПО+IRMS	Кровь ГР + CERA	Паспорт стероидн	Паспорт кров	Результат тестирования
Сохранить, расследование, с последущем включением на двухлетнюю программу мониторинга											
1	Открытая вода		Last Name	First name		DOB	2869041	864901	1023071	809551	сальбутамол
2	2. Резера основного состава	Мужчины	Last Name	First name	Patronymic	DOB	2917224	864925	1022778	809609	сальбутамол
3	1. Основной состав	Мужчины	Last Name	First name	Patronymic	DOB	2917436	864893	1023123	809572	формотерол, будесонид, следы марихуаны - чисто
4	1. Основной состав	Женщины	Last Name	First name	Patronymic	DOB	2917444	864956	1022976	806318	переливание крови?
5	2. Резера основного состава	Мужчины	Last Name	First name	Patronymic	DOB	2917217	864730	1022994	809633	амфетамин
6	1. Основной состав	Женщины	Last Name	First name	Patronymic	DOB	2917227		1023114		7кето-дегидроэпиандростерон
7	1. Основной состав	Мужчины	Last Name	First name	Patronymic	DOB	2917063	864930	1022971	821969	узнать какое спортивное питание принимает! стимулятор
Карантин											
8	2. Резера основного состава	Женщины	Last Name	First Name	Patronymic	2014-05-16	2917285	864642	1023064	822051	ацетазоламид

[17] The IP has removed athletes' last names, first names, patronymic names and dates of birth and replaced it by [Last Name], [First Name], {Patronymic] and [DOB] respectively, for confidentiality purposes. There have been no other alterations to the schedule. The Russian terms сохранить and карантин translate to save and quarantine, respectively.

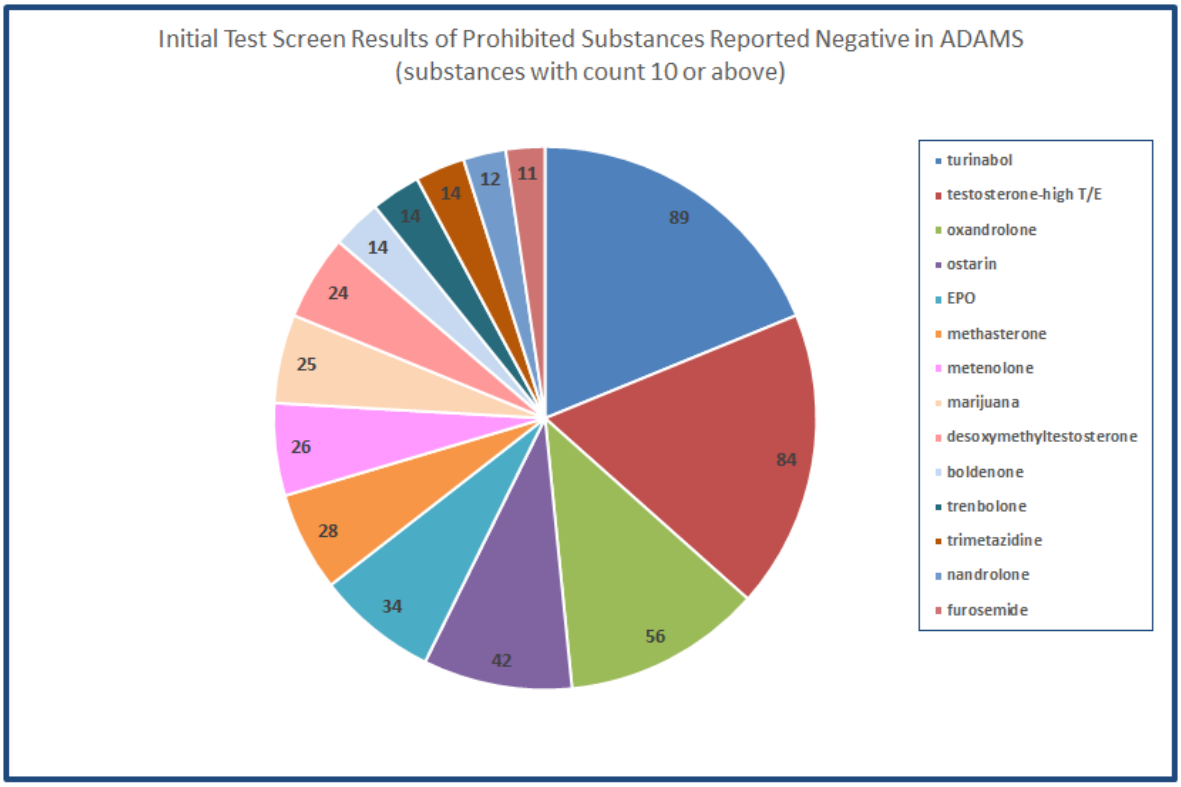
3.4 DPM Investigative Results

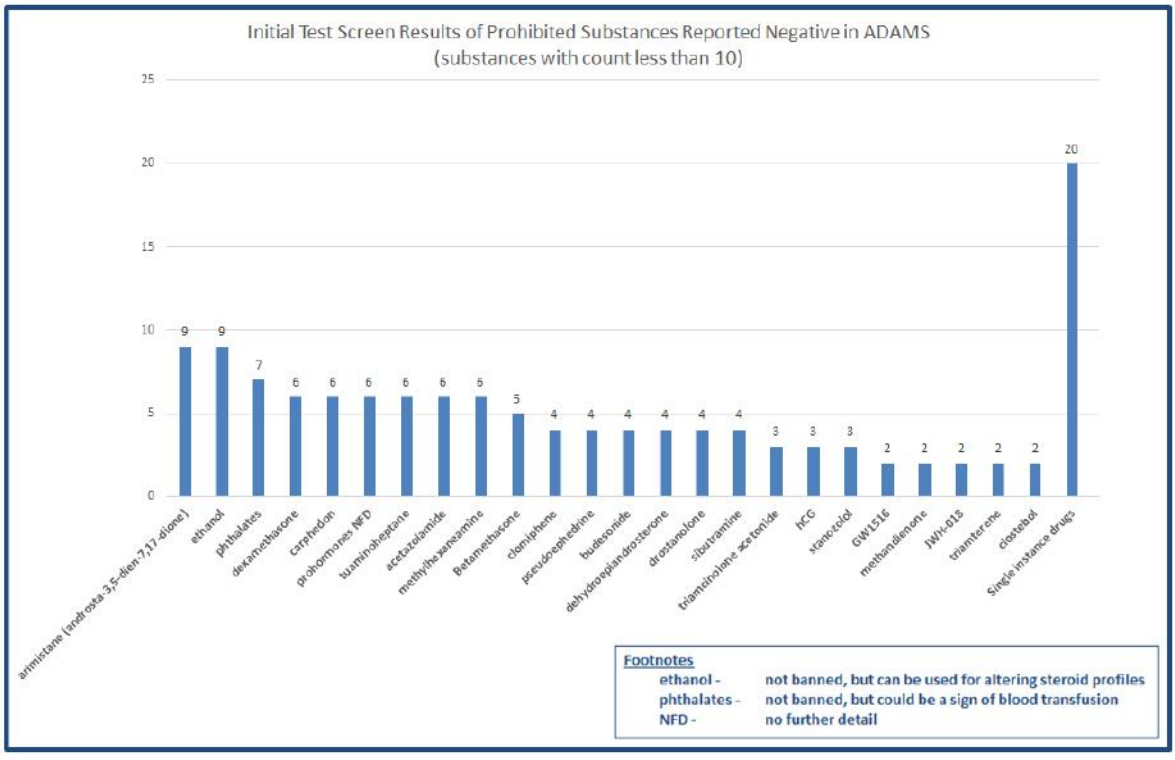
These statistics are a compilation of the evidence that the IP has reviewed for both Reports.

The DPM was identified as operating over the period from at least late 2011 to August 2015. From our more enhanced database for this 2nd Report, the IP developed certain statistics that explain the overall results of the DPM.

The 1st IP Report reported that a total of 643 positive ITP screens were identified, that number has now changed to more than 1000. Further, the IP reported that there were 577 instructions from the MofS as to the processing of the sample in the 1st Report. That number is now more than 800. The 1st Report identified 312 positive ITP screens, which were reported negative into ADAMS. As a result of the extended time period to complete the mandate, that number has risen to more than 500.

The IP has the identified types of prohibited substances included in the ITP and are illustrated in the charts below.


Initial Test Screen Results of Prohibited Substances Reported Negative in ADAMS
(substances with count 10 or above)
89
84
56
42
34
28
26
25
24
14
14
12
11
turinabol
testosterone-high T/E
oxandrolone
ostarin
EPO
methasterone
metenolone
marijuana
desoxymethyltestosterone
boldenone
trenbolone
trimetazidine
nandrolone
furosemide


Initial Test Screen Results of Prohibited Substances Reported Negative in ADAMS
(substances with count less than 10)
25
20
15
10
5
0
9 9 7 6 6 6 6 6 6 5 4 4 4 4 4 4 3 3 3 2 2 2 2 2 20
androstatrienedione (androsta-1,4,6-triene-3,17-dione)
ethanol
phthalates
dexamethasone
carphedon
prohormones NFD
tuaminoheptane
acetazolamide
methylhexaneamine
Betamethasone
clomiphene
pseudoephedrine
budesonide
dehydroepiandrosterone
drostanolone
sibutramine
triamcinolone acetonide
hCG
stanozolol
GW1516
methandienone
JWH-018
triamterene
clostebol
Single instance drugs
Footnotes
ethanol - not banned, but can be used for altering steroid profiles
phthalates - not banned, but could be a sign of blood transfusion
NFD - no further detail

3.5 Summary

The foundation of what ultimately would become the well-oiled systemic cheating to enable Russian athletes to compete while doping was being formulated and evolving following the introduction of the DPM. What follows in subsequent chapters is the discussions of the other moving parts of this picture that demonstrate the conspiracy of doping in Russian sport. Throughout the period beginning in late 2011 the methodology operated efficiently and effectively, undisturbed by foreign observers.

The participants in the DPM were so confident in the inability of outsiders to detect what was going on that the methodology operated even during the time of the IC in 2015. Although it did appear to slow down, Dr. Rodchenkov indicated that in 2015 the Deputy Minister had wanted to close the whole system down as he thought it was too risky, but was persuaded to keep it going by Rodionova.

Chapter 4: The Olympic Games Year and London 2012

Chapter 4 Highlights

i. The saga of the 67 samples involves the collection of samples prior to London 2012. In 10 of those samples the contents of the A bottle were swapped by the Moscow Laboratory, while the B samples remained unopened and dirty, demonstrating the weakness of falsifying entries into ADAMS by swapping only A samples.

ii. The unexpected request by WADA to the Moscow Laboratory in October 2012 to forward the 67 A and B samples triggered an A bottle urine swap and ultimately led to the initiation of the project on how to open the B sample bottles.

iii. The practices of using official doping control kits for the purposes of washout testing was recognised by the Moscow Laboratory as leaving an audit trail which could reveal the DPM. Change was required.

iv. The IP's cooperation and intelligence provided to the IOC enhanced the IOC retesting program for London 2012. A total of 54 athletes' samples are been retested.

4.1 Introduction

In 2011, preparations for the 2012 London Olympic Games were ramping up around the world. Like all Olympic hopefuls the world over, Russian athletes were training, preparing and competing for places on Russia's Olympic team. What was different in Russia (although almost certainly not exclusively there) was the fact that the repetitive eat, sleep, train, repeat schedule was supplemented, for some Russian Olympic hopefuls, by a steady program of performance enhancing drugs ("PEDs").

The Independent Commission ("IC") Report of November 2015 identified Russian Athletics athletes working with national team coaches (and other officials, such as Dr. Portugalov) who were, with medical and laboratory assistance, providing athletes with PEDs. The coaches provided the PEDs regimen to their athletes and instructed how to administer them. The IC prepared and sent sanction packages to the World Anti-Doping Agency ("WADA") where it had specific evidence that an Anti-Doping Rule Violation ("ADRV") had been committed. The results management by the International Association of Athletics Federation ("IAAF") resulted in sanctions against one medical doctor[18]; and four coaches[19]; one of whom has received a lifetime ban from sport[20]. While the doping model in Athletics may have been repeated in other sports, the IC mandate was restricted to investigating Russian Athletics athletes.

[18] Dr. Portugalov has not been tracked down and no case has proceeded.

[19] Alexey Melnikov is currently appealing the CAS 7 January 2016 decision that sanctioned him with a lifetime ban, see CAS 2016/A/4419. See also Vladimir Kazarin CAS; Vladimir Mokhnev CAS; and Viktor Chegin. Kazarin and Melnikov were heard at the end of September, and Melnikov's continued to be heard in November. Mokhnev and Portugalov will be decided on the papers.

[20] Coach Chegin was banned for life in Russia and so his case never got before the CAS. Russian Athletics Federation (RAF) 2016. Lifetime ban for Viktor Chegin. [press release] 26 March 2016. Available at: http://eng.rusathletics.com/nov/news.15348.htm [Accessed 23 November 2016].

Coaches, not being scientists, did not keep up with the development of the Athlete Biological Passport ("ABP"). Instead, they were well versed in manipulating doping control procedures such as ensuring athletes were only tested when clean and using bribes to eradicate positive laboratory findings. Although the actions of long established coaches were effective in evading previous detection methods, they paid no attention to ABP profiles which had been legally recognised by the Court of Arbitration for Sport ("CAS") in 2011 as a basis for findings of Anti-Doping Rule Violations ("ADRV"). To solve the problem of ABP positives, an elaborate scheme of corruption unfolded involving the All-Russia Athletic Federation ("ARAF") and some IAAF personnel, the criminal investigations of which are still ongoing.

The introduction of the ABP and Dr. Rodchenkov's knowledge of developments to detect long-term metabolites of oral turinabol[21] combined with the lack of discipline of coaches and athletes in their doping programs, caused the Ministry of Sport ("MofS") to realise that the decentralised doping model operating "in the field" was under stress and vulnerable to detection. New developments in anti-doping detection and reporting were derailing the old doping model and, without the understanding of how the science was catching up, coaches were putting Russian athletes at risk of being caught.

[21] Sobolevsky, T. and Rodchenkov, G., 2012. Detection and mass spectrometric characterization of novel long-term dehydrochloromethyltestosterone metabolites in human urine. *Journal of Steroid Biochemistry and Molecular Biology,*128, pp.121-127.

It became increasingly evident to the MofS that current methods of doping had to change. Control over doping had to become centralised and, from 2012, the MofS was working to discipline athletes into taking the 'cocktail' of steroids trenbolone, oxandrolone and methenalone[22] developed by Dr. Rodchenkov and distributed by others. This 2nd Report of the IP describes how this centralisation evolved and grew, culminating in the doping cover up at the Sochi Olympic Winter Games and the Paralympic Games.

4.2 The Lay of the Land in Russia 2012

London 2012 was the first major external sporting event for Dr. Rodchenkov since returning to the Moscow Laboratory after his illness in 2011 and the discharge of his case by the Russian Investigative Committee. Following his re-confirmation as Director, Dr. Rodchenkov played an important role in the events that were to unfold from 2011 onwards, culminating in the Sochi Laboratory operation at the Sochi Games.

After Dr. Rodchenkov's return, various steps and actions were initiated by the MofS, under the leadership and knowledge of both Minister Mutko and Deputy Minister Nagornykh, with direct involvement of the Federal Security Service ("FSB"). These initiatives depict a doping regime in transition from uncontrolled chaos to institutionalised, controlled and disciplined.

[22] The 1st IP Report incorrectly identified the contents of the cocktail.

Dr. Rodchenkov's secondary function as an FSB agent, a position he held since becoming director of the Moscow Laboratory in 2007, was a key aspect in these plans. He was directed to inform on developments internationally among WADA Laboratories as well as to report what was occurring in his own Laboratory, all the while advancing his own scientific experimentation.

One of his contributions to the changes in the doping scheme occurred as a direct result of his comprehensive knowledge of the testing capabilities of other WADA accredited laboratories worldwide. This knowledge enabled Dr. Rodchenkov to develop the "cocktail," a method to administer PEDs having a shorter detection window than what other laboratories, and the London Laboratory in particular, could detect.

Centralising and controlling distribution of PEDs to athletes became an increasingly important element of the doping control system and manipulation. As the MofS was trying to harmonise its doping regime and test the use of the Dr. Rodchenkov's "cocktail", the old system consisting of coaches and sports doctors providing contaminated nutritional supplements and old school anabolic steroids to athletes was still common practice in the field.[23] This made monitoring athletes' PED levels through the use of washout testing critical to (i) minimise the likelihood of future in competition positive results and (ii) continue the doping regime of various Russian athletes up until the London Games.

[23]For example, Dr Rodchenkov stated that retesting will yield samples positive for PEDs because of this in the field doping. This intelligence has been provided to the IAAF which has agreed to retest Russian athletes who participated in the 2011 IAAF Daegu World Championships.

While this transition period occurring in 2012 had many cross currents for Russian doping, times of transition frequently highlight existing weaknesses. Strategic changes were made as a result of identifying these weaknesses in the lead up to and post London 2012, which directly impacted the methods developed and used at the Sochi Games.

4.3 Incident: WADA Directed Testing of "67 Samples"

Examined against the mosaic of the narrative described in this 2nd IP Report, the destruction of the 67 Russian samples at the Lausanne Laboratory following the London Olympics was an important catalyst in the evolution of the Russian doping, manipulation and cover up scheme. The IC reported on this incident, however at that time, the full picture and the potential significance of this event was not known. The IP has discovered additional evidence and, through the course of witness interviews, has been able to sharpen the focus regarding events that led to the destruction of the WADA directed testing of 67 Russian samples.

In the months leading up the London Games - from May to July 2012 - WADA conducted targeted testing in Russia across different sporting disciplines. Depending on the sporting discipline, the agency responsible for the sample collection was either the Russian Anti-Doping Agency ("RUSADA") or an International Federation. As samples were collected they were transported to the

Moscow Laboratory for analysis and subsequent storage. The foregoing actions resulted in the testing of 67 samples from 56 athletes.

During this time, the Disappearing Positive Methodology ("DPM") was in operation at the Moscow Laboratory. This meant that any sample that tested positive on the Initial Testing Procedure ("ITP") was reported to the MofS and in some cases, covered up and reported as negative into WADA's Anti-Doping Administration and Management System ("ADAMS"). Each of the requested 67 samples were analysed and those that were positive for prohibited substances in the ITP were reported negative in ADAMS. The samples were then stored in the Moscow Laboratory. The International Standard for Laboratories ("ISL") requires that laboratories retain negative samples for a three-month period prior to their destruction.

On 3 August 2012 Dr. Rodchenkov received a communication from WADA directing the Moscow Laboratory to save the targeted WADA samples (see EDP1160). On 27 September 2012 he received a second communication from WADA to send those samples to the Lausanne Laboratory (see EDP0890).

The WADA request was unexpected. It worried Dr. Rodchenkov because he knew that there were dirty samples that would test positive in that batch of samples requested by WADA. The weakness in the DPM became apparent and the Laboratory realised that it was sitting on a potential time bomb.

The Laboratory had been operating under the assumption that as long as a positive sample was reported negative in ADAMS, there was little to no risk that the sample would be requested for retesting in light of the three-month retention requirement of the ISL. Once the retention period expired, all evidence of a positive sample would disappear with the destruction of the sample. WADA's request to retest the samples could expose the fraudulent entries in ADAMS and lead to the Laboratory's loss of accreditation.

Dr. Rodchenkov knew that 10 athlete's samples on the list were dirty, but when he went to swap those samples, the Laboratory had clean urine stored for only 8 of these athletes. The evening following WADA's request to ship the samples to Lausanne, Dr. Rodchenkov swapped the dirty samples by replacing the urine in 8 of the A bottles with the athlete's own clean urine. He altered the clean A samples either by diluting with water, adding salt, sediment or Nescafe granules when needed to match the specific gravity and appearance of the dirty B samples.

The swapped A samples would now return negative results upon retesting by WADA, while the B sample bottles would be dirty. At the time, the bottle cap opening know-how had not been developed and the B sample caps could not be removed without destruction. It was thought that there was no reason to suspect that B bottles would ever be tested. The two samples without corresponding clean

urine belonged to Anastasiya Kapachinskaya[24] and Darya Pishchalnikova.[25] Dr. Rodchenkov had specific recollection concerning these two athletes.

As it relates to Kapachinskaya, upon retesting of these samples at the Lausanne Laboratory, as reported in the IC, "*one previously unreported AAF* [Adverse Analytical Finding] *was discovered, the levels were below the required limit of detection and, therefore, the negative report was not deemed, at that time, to be an error of the Moscow Laboratory*." Dr. Rodchenkov explained to the IP that he had no way to swap Kapachinskaya's A sample because her clean sample in storage was not clean. He simply diluted her sample to dilute the concentration of PEDs. Kapachinskaya has recently had her Beijing silver medal stripped by the International Olympic Committee ("IOC") after the retesting of her Beijing sample found stanozol and turinabol.[26]

Pishchalnikova, the Russian discus thrower, was caught by the surprise WADA retesting carried out at the Lausanne Laboratory. Dr. Rodchenkov recalls that she was considered untouchable throughout her career, meaning that none of her samples would or could be reported positive. He described that he did not have any clean urine for her, so he substituted her dirty urine with her own less dirty urine

[24] WADA, 2016. *IOC sanctions three athletes for failing anti-doping tests at Beijing 2008*. [press release] 19 August 2016. Available at: https://www.olympic.org/news/ioc-sanctions-three-athletes-for-failing-anti-doping-tests-at-beijing-2008 [Accessed 22 November 2016]. See decision of the IOC Disciplinary Commission at https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/IOC/Who-We-Are/Commissions/Disciplinary-Commission/IOC-Disciplinary-Commission-Decision-Anastasia-Kapachinskaya.pdf#_ga=1.126555333.973565250.1480877412 [Accessed 5 December 2016].

[25] The IP has possession of an email from Pishchalnikova where it appears that athletes had to pay Coach Melnikov and Rodchenkov for positive samples to be clean. See ARAF,2013 *Дисквалификация*. [press release] 30 April 2013. Available at http://www.rusathletics.com/ant/news.12839.htm [Accessed 5 December 2016].

[26] IOC, 2016. *IOC sanctions three athletes for failing anti-doping tests at Beijing 2008*. [press release] 19 August 2016. Available at: https://www.olympic.org/news/ioc-sanctions-three-athletes-for-failing-anti-doping-tests-at-beijing-2008 [Accessed 23 November 2016].

from a prior sample. Upon retesting, both her A and B samples were confirmed for oxandrolone.

When Pishchalnikova learned about her AAF in December 2012, she sent an email to WADA on 23 December 2012 (EDP1157). She alleged that the A samples had been swapped and requested that WADA retest all of the B samples in Lausanne to prove her allegations. WADA did not retest those samples following her email. ARAF disciplined her subsequently with a ten-year ban.

During the IC investigation in February 2015, the IC learned that although WADA had specifically requested that those particular 67 samples be retained until further notice, they were all destroyed by the Lausanne Laboratory in March 2013 (EDP0899). The destruction was alleged to have been an accidental error due to an administrative misunderstanding within the Laboratory. The IC did not accept this explanation but, in the light of a lack of evidence, was unable to pursue the matter any further.

Dr. Rodchenkov's account of events is also largely supported by other whistleblowers: former RUSADA employee, Vitaliy Stepanov; and former coach, Oleg Popov, who provided evidence on the matter to the IC. The collective view of the whistleblowers and Pishchalnikova was that if the B samples were tested, there would have been more positive results. Unfortunately, the allegations of Stepanov, Popov and Pishchalnikova could not be confirmed by testing the B samples because they were destroyed by the Lausanne Laboratory.

4.4 Reaction: Russian Response as a result of WADA Testing Incident

This saga was an early demonstration of the process where every WADA action triggered a Russian cover up reaction.

The 67 samples incident revealed the weakness in the methods of manipulation and cover up of doping results. The Moscow Laboratory, and thus the MofS, learned that WADA was going to request samples for retesting more frequently to check up on the ongoing work of its accredited laboratories. It became apparent to all making strategic decisions within Russian sport that the B sample bottles were the weakness in the manipulation of results and cover up scheme. While the A bottle urine could be swapped with ease, the urine in the B bottle could not be swapped without breaking open the cap. The development of a method to surreptitiously remove the caps of the B bottles became a priority.

The surprise request by WADA to the Moscow Laboratory for both A and B sample bottles, and the potential for the B bottles to be tested, thus revealing the dirty samples, could expose the clandestine activities of the Laboratory and cause the entire scheme of manipulation and cover up to unravel. This meant that for competitions occurring within the Russian Federation, such as the upcoming IAAF Moscow World Championships in 2013 and the Sochi Olympics in 2014, the risk was too great to only swap A sample urine. The answer became clear to Dr. Rodchenkov – it became obvious that there was a pressing need for both A and B bottles to be swapped at the same time and thus MofS had to ensure that a solution would be developed.

A solution to surreptitiously remove the caps on B bottles had become a project of the FSB as early as 2011, but finding a solution became more pressing following the incident of the 67 WADA directed samples. In the early part of 2013, the method for removing the caps of B bottles had been developed and perfected by the FSB. The B bottle cap removal and swapping of urine in the bottle was used in a trial run in February 2013 and ultimately became the primary method of doping evasion at the Sochi Laboratory in 2014. The experiment by the IP investigative team to remove bottle caps was reported on in the 1st IP Report. The documents in support of the experiments and the experts' reports are in the evidence disclosure package at EDP0902.

4.5 The Bereg Kit Washout Technique: London 2012

Every country, through its Olympic Committee, wants to ensure that its Olympic athletes provide clean doping control samples at the Games. Therefore, testing before the competition is normal. In that testing, if an athlete tests positive it will result in discipline for an ADRV and non-attendance at the Olympics. The difference in the case of potential Russian Olympians was that the MofS directed pre-competition testing not to catch doping athletes, but rather to ensure that they would be able to compete at the Games without being detected by doping control analysis. If they became clean, they went. This process of pre competition testing to monitor if a dirty athlete would test "clean" at an upcoming competition is known as washout testing.

The IP has evidence that washout testing was being performed for at least athletics and weightlifting athletes prior to London 2012. Weekly sample collections and testing of those samples were occurring to monitor whether athletes would likely test positive at the London Games.

Dr. Rodchenkov explained that, unlike other models of washout testing where samples are collected in non-official bottles to ensure that no auditable record of the testing exits, Russian athletes were providing samples in official doping control Bereg kits. While the Laboratory's initial testing procedure ("ITP") – which show the presence of prohibited substances – were recorded on the washout list, the samples were automatically reported as negative in ADAMS.

4.5.1 Weakness of Bereg kit Washout Testing

Following London 2012, weaknesses in the washout testing and doping cover up scheme became evident. The covering up of falsified ADAMS information only worked if the sample stayed within the control of the Laboratory, and later destroyed. Given that Bereg kits are numbered and can be audited or also seized and tested, the Laboratory realised that it would be only a matter of time before it was uncovered that the contents of samples bottle would not match the entry into ADAMS.

Having to record positive A sample results as negatives in ADAMS, and keeping dirty A and B samples in the Laboratory, left the overall doping cover up scheme

vulnerable to being exposed (as learned from the incident of the WADA directed samples). While the washout program remained firmly within the doping arsenal of the Russian team, as a result of the events prior to and post London 2012, the washout program evolved into the program in use prior to 2013 IAAF Moscow World Championships. According to Dr. Rodchenkov, it was decided following the London Games that washout testing would no longer be conducted in Bereg bottles but in non-official collection containers instead.

The IP identified 38 athletes included on the washout lists who competed at the London Games. A copy of the London washout list was produced in redacted form in the first IP Report (See EDP0019-EDP0027). Dr. Christiane Ayotte, Medical and Scientific Adviser to the IP, advised that a number of the positive results indicated on the washout list demonstrated significantly high levels of prohibited substances. The samples have since been destroyed by the Moscow Laboratory so they cannot be retested.

4.6 The XXX Olympiad: London 2012

At London 2012, the Russian Olympic team won 24 gold, 26 silver and 32 bronze medals[27]. No Russian athlete was found positive for a prohibited substance during the Games. The success of the doping cover up program for Russian athletes seemed to be confirmed. With a combination of Dr. Rodchenkov's knowledge of the London Laboratory's testing capabilities, the distribution of his "cocktail" and the

[27] BBC Sport, 2016. *London 2012 Medal Table*. 13 August 2012. Available at: http://www.bbc.co.uk/sport/olympics/2012/medals/countries [Accessed 23 November 2016].

washout testing program, the Russian team had succeeded in apparently getting dirty athletes to compete undetected and win medals at the Olympics. The subsequent retesting of London samples by the IOC, which is ongoing, reveals that the Russian doping program still had flaws.

Dr. Rodchenkov knew, however, that there was a risk that the apparent pristine London 2012 Games could soon be a big problem for the Russian Olympic team. He warned Minister Mutko that the Russian team would be in trouble if the samples were ever retested. Since Dr. Rodchenkov was instrumental in the development of new testing methodologies, which he knew would be implemented in other WADA accredited laboratories after the London Games, he knew that the long term metabolites of oral turinabol and other prohibited substances supplied by the Russian coaches could soon be detected in retesting.

4.6.1 London 2012 Retesting Results and IP Intelligence given to the IOC

The evidence evaluated by the IP demonstrates the institutionalised use of prohibited substances at London 2012. This evidence confirms what the IC referred to as the "hijacking of the London 2012 Games."

As part of its general retesting program the IOC conducted retesting of a sample of 25 Russian athletes who completed in London. From those 25 athletes a total of 8 athletes tested positive principally for the presence of long-term metabolites of

turinabol. An additional 8 athletes who competed in London have been sanctioned for their atypical ABP profiles.[28]

Based on its analysis of the WADA directed list of 67 samples, the IP identified 32[29] Russian athletes whose London samples should be a high priority for additional retesting by the IOC. The IP also identified 38 Russian athletes from the pre-London washout list whose London samples should be a high priority for retesting. A number of athletes appear on both lists. The names of these athletes and the prohibited substance(s) identified in their urine in the Moscow Laboratory ITP have been given to the IOC for priority retesting. The IP has requested that, at a minimum, the samples be retested for long-term steroid metabolites and peptides. The IP also requested the priority retesting of samples from the sports of weightlifting, rowing and canoe. Beyond these priority retesting requests, the IP has recommended that the IOC retest all of the Russian samples from London since the IP has evidence that Russian doping and cover-up involved almost all of the Olympic sports.

There is a high likelihood that, consistent with Dr. Rodchenkov's warning to the then Minister Mutko, IOC retesting of Russian samples from London will result in a significant number ofadditional positive tests. Prior to the IP's request, the IOC had already retested samples from 16 of the 38 athletes identified on the pre-London washout list. Four of the 16 athletes tested positive for turinabol, which was a

[28] IOC, 2016. *IOC sanctions eight athletes for failing anti-doping test at London 2012*. [press release] 27 October 2016. Available at: https://www.olympic.org/news/ioc-sanctions-eight-athletes-for-failing-anti-doping-test-at-london-2012 [Accessed 22 November 2016].

[29]Nine additional athletes identified from the WADA directed 67 samples have already been sanctioned through retesting their samples or ABP.

substance identified for those athletes in the intelligence uncovered by the IP. A fifth athlete on the washout list, whose washout testing results were not available at the time the list was prepared, also tested positive for turinabol in the IOC retesting. The results of the IOC retesting to date confirm the reliability of the evidence gathered by the IP.[30]

It is noted that 6 other athletes, who were included on the washout list, have subsequently been sanctioned for ABP violations. These athletes include race walkers Sergey Kirdyapkin, Igor Erokhin, Valeriy Borchin, Vladimir Kanaykin, Olga Kaniskina, and 3000m steeplechase athlete Yuliya Zaripova.[31] With the exception of Zaripova, these athletes' London samples have not been retested.

The result of the IOC's retesting to date and the subsequent ABP positives confirm the reliability of the pre-London evidence and other intelligence gathered by the IP.

The IP has been coordinating the retesting of Russian samples from London with the IOC since the beginning of September 2016. The IOC has committed to retest all of the Russian samples from London as requested by the IP. Six of these samples which the IP identified for the IOC, based on our intelligence and documentation,

[30]Interestingly,three of the athletes identified in the IP's washout information whose London samples retested negative, retested positive when their Beijing samples were retested by the IOC. In each case where a prohibited substance was identified in the washout testing, the Beijing retesting identified one or more of the same prohibited substances.

[31] Court of Arbitration for Sport (CAS), 2016. *The Court of Arbitration for Sport (CAS) to substitute for the All-Russia Athletics Federation (ARAF) in adjudicating eight anti-doping rule violations*. [press release] 21 March 2016. Available at: http://www.tascas.org/fileadmin/user_upload/Media_Release_announce_date.pdf [Accessed 23 November 2016].

have been reported positive by the Lausanne laboratory and are in the process of IOC results management.

4.7 Athlete Case Study

The system for evading doping controls at the London 2012 Olympic Games was described in the 1st IP Report. This can be seen in the significant number of positive retests. The IP has been able to further review the preparation for London and study activity during the year in more detail, in combination with the results of retesting of samples by the IOC.

Yuliya Zaripova, winner of gold in the 3000m steeple chase, is one athlete featured on the London Washout Lists. Her entry on the washout list dated 17 July 2012, indicates "oxandrolone 20,000 and oralturinabol 20,000." As confirmed by Dr. Ayotte these are high levels of prohibited substances detected weeks before she competed in the London games, yet recorded as negative in ADAMS. On retesting, her London 2012 sample tested positive for turinabol. After London and before the IOC retesting, Zaripova had been sanctioned for an ADRV as a result of her ABP profile during this period.

4.8 Summary of Findings

The Russian Olympic team corrupted the London Games 2012 on an unprecedented scale, the extent of which will probably never be fully established. This corruption involved the ongoing use of prohibited substances, manipulation of samples and

false reporting into ADAMS. These activities were supported by senior Russian officials, including the Minister and Deputy Minister of Sport, senior and national team coaches, RUSADA, the CSP and the Moscow Laboratory. The preparation for the Games together with the WADA actions that occurred soon thereafter provided instructive lessons on how the doping cover up and manipulation required adjusting. The desire to win medals superseded their collective moral and ethical compass and Olympic values of fair play.

Chapter 5: Moscow Championships and Events of 2013

Chapter 5 Highlights

i. After the 1st Report, the IP obtained one observation of the tools developed and used by the FSB to open the B sample bottles. The tools are similar to those developed by the IP's expert for its experiment.

2013 Universiade Games

ii. The first trial run of B sample swapping occurred at these Games. It represented the first opening of B samples at a competition. The weakness identified in 2012 was overcome.

2013 IAAF Moscow World Championships

iii. Washout testing samples collected exclusively in unofficial containers thereby circumventing the audit trail created by using official doping control kits. The weakness identified in 2012 was overcome.

iv. Thirty-three athletes have been referred to IAAF for retesting as a result of the IP investigation. Results are unknown at the time of publication.

5.1 Introduction

The International Association of Athletics Federation ("IAAF") World Championships were being held in Russia while the country's sports infrastructure, including the Ministry of Sport ("MofS"), the All-Russia Athletic Federation ("ARAF"), the Russian Anti-Doping Agency ("RUSADA"), the Federal Security Service ("FSB"), the Center of Sports Preparation of National Teams of Russia ("CSP"), the Moscow Laboratory and coaches were engaged in the development of a doping conspiracy. At the time, the media had its own suspicions of what was going on in Russian Athletics at the time.[32]

There was a realisation that the absence of a centralised doping model and the lack of understanding, by the long term coaches and medical advisors, related to the Athlete Biological Passport ("ABP") was putting Russian Athletics athletes at risk of anti-doping rule violations ("ADRV") prior to the IAAF World Championships showcase event to be held in Moscow in 2013. In light of this, and considering the strategic errors committed in the doping manipulation and cover up pre and post London 2012, corrective operational modalities were put in place in 2013.

[32] Kelner, M., 2013. *Special investigation: Drugs, bribery and the cover-up! Russian athletes - including those who robbed Brits of medals - 'ordered to dope by coaches' and officials 'demanded cash to mask positive tests'*. Daily Mail [online] 6 July. Available at: http://www.dailymail.co.uk/sport/othersports/article-2357501/World-Athletic-Championships-rocked-Mail-Sunday-special-investigation-doping-Russia.html#ixzz4QoCrapWH [Accessed 22 November 2016]. The article states: "Russia's suitability to host the World Athletics Championships next month and the Winter Olympics in February has been plunged into doubt by allegations that Russian athletes are doping under instruction from coaches and are assisted by cover-ups at the country's main anti-doping laboratory…The claims centre on the lab which will handle samples taken at the world athletics showpiece in Moscow from August 10-18 and the 2014 Sochi Games between February 7-23."

Some strategic changes were straightforward and better organised. For example, washout testing continued to be done, but official doping control kits were no longer being used to collect urine samples. As described in Chapter 4, using these kits was a problem as they could be audited and required false reporting into the World Anti-Doping Agency's ("WADA") Anti-Doping Administration and Management System ("ADAMS"). The events of 2012 had also demonstrated that urine samples could be subject to seizure and external testing that would conflict with the falsified results entered into ADAMS by the Moscow Laboratory.

A decision had been made through the channels of the MofS, the FSB and the Moscow Laboratory Director to determine how to surreptitiously remove and re-screw the cap on the B bottles of urine. The timing was particularly important as the world would be watching Russia in 2013 not only during the IAAF's marquee event, its World Championships in Moscow, but also earlier in the year during the Summer Universiade Games in Kazan. The objective of the decision was to be able to remove the cap, swap the urine in the B bottle and screw the cap back on without leaving any obvious indication of invasion. The time was nearing in the secret work of the FSB when swapping urine in the B bottle would be required.

The goal following the abject failures of Russian athletes at the Vancouver Games was to win as many medals as possible on home territory while not exposing its institutionalised doping scheme. Operational adjustments would have to be made to continue the doping cover up and manipulation during the upcoming 2013

sporting events. The consequence was that both the Universiade Games and IAAF Moscow World Championships saw the inaugural swapping of B samples take place in a systematic fashion and in a manner designed to evade the attention of international observers.

5.2 Eliminating the Identified Vulnerabilities in the Doping Cover up and Manipulation Conspiracy

5.2.1. Sample Swapping

On Deputy Minister Nagornykh's instructions, the first phase in developing the sample swamping technique was launched. The FSB was put on a project to remove and replace the bottle caps from the sample bottles. No witnesses interviewed by the IP said they ever saw how the FSB removed the caps from the sample bottles. During follow- up interviews with the IP, Dr. Rodchenkov recalled that he personally witnessed the actual tooling that was used laid out on the workbench of the FSB agent charged with removing the caps. He described instruments, no bigger than a traditional Mont-Blanc pen, and similar to the instruments that a dentist would use in examining teeth, with a handle and thin metallic portion that was bent at various angles. His description of the tools used by the FSB is largely corroborated by the IP's forensic expert who stated that *"thin strips of metal…were most likely used. They had to be flexible enough to bend and fit between the lid and bottle, but also strong enough to push up the metal ratchet ring."*(EDP0902).

By February 2013 the Laboratory received the first indication that the FSB was successful in their project. Before the procedure could be implemented operationally

it was tested in the Moscow Laboratory on the samples of two cyclists. The FSB worked within the Moscow Laboratory opening the B bottle caps. The test case on the cyclists was successful which meant that a new era of sample swapping could commence. The groundwork for Sochi had been laid.

Dirty samples needed to be replaced with clean urine. As reported by the IC, in Russia's decentralised doping model, the coaches, trainers and doctors were responsible for collecting the athlete's clean urine, which would be substituted at the point of collection. However, there continued to be a significant risk of coaches keeping potentially tainted urine on hand and unknowingly substituting samples with it. As the MofS continued its consolidation of control over the doping scheme, it meant that all clean urine samples would now be controlled by the MofS. It was decided that a clean bank of urine would be established in the Moscow Laboratory for members of the Russian National Team, Olympic Champions, season leaders and medal candidates. At the direction of the MofS, these athletes would collect clean urine in baby bottles, Coke bottles or similar containers and supply it to the CSP.

This urine would then be sent to the Laboratory where it underwent mandatory testing for prohibited substances before it could be placed into frozen storage. Witnesses remember that it became a familiar sight to see urine being aliquoted from Coke bottles. This enabled a store of clean urine for certain athletes to be maintained in the Laboratory for use in the event of a positive result requiring substitution.

At the time, it was not critical to ensure that the athlete provided his or her actual urine. It was learned that there could be instances if the athlete was not clean, the coach or family member would provide a clean sample. The IP notes that an inherent risk existed to the scheme if the athlete did not provide his or her own clean urine at the time, as DNA profiling testing could expose the urine substitution element of the conspiracy.

The B sample swapping was used at both the Universiade Games and the Moscow Championships as a dry run for implementation at Russia's most important upcoming sporting event, the Sochi Olympics and Paralympics in 2014.

5.2.2 "Under the Table" Washout Testing

One of the lessons learned from the preparations for London 2012 and described in Chapter 4 was to no longer use the official doping control kits. By direction of Minister Mutko and Deputy Minister Nagornykh all pre-competition washout samples for testing were to be collected only "under the table" in unofficial containers.

The "under the table" system consisted of collecting samples in regular intervals and subsequently testing those samples for quantities of prohibited substance to determine the rate in which those quantities were declining so that there was certainty the athlete would test "clean" in competition. If the washout testing determined that the athlete would not test "clean" at competition, he or she was left at home. The main difference for the Moscow Laboratory was that now they were

not testing samples in official doping control bottles, rather from containers selected by athletes, such as Coke and baby bottles filled with their urine. The athlete's name would be written on the selected container to identify his or her sample. A copy of the Moscow Washout schedule is attached as Exhibits from EDP0031 through to EDP0038.

5.3 Universiade Games: Trial Run on Sample Swapping

The city of Kazan hosted the Summer Universiade Games during 7-16 July 2013. Over 10,400 students from 162 countries participated, making it the biggest Universiade in the history of the event. It was organised by the International University Sports Federation ("FISU") and by the authorities in the Republic of Tatarstan. The Russian team was first in the medal count winning 156 Gold medals, 74 Silver and 62 Bronze, for a total of 292 medals.

Assisting the success of the Russians on the podium were the methods of doping cover up that were in operation during the event. These were sample swapping and the Disappearing Positive Methodology ("DPM"). While these methods were in place to act as a defence for the Russian athletes, the cover up was not as pervasive as at other events. The competition was used as an evaluation of new athletes who would compete clean in order for Russian coaches to determine which athletes were naturally talented and might likely become future medalists with pharmacological help. The event also effectively functioned as a sample swapping dry run for the upcoming IAAF Moscow World Championship.

The IP has recovered a number of different versions of the same schedule created over the course of the event, the last version being created on 18 July 2013 by Alexey Velikodniy. (See EDP0051) Featured on the schedules in separate columns are sport discipline, sample code number, name, country, banned substance or method found, a decision to SAVE or QUARANTINE and what place the athlete finished in the competition.

These schedules illustrate a variation in the communication pattern for the DPM where the SAVE instruction on positive tests was communicated to the Laboratory by updating a schedule rather than responding through email. Dr. Rodchenkov described how the schedules were taken as an instruction from the MofS to SAVE the athletes involved. On a daily basis the Laboratory would fill in the chart with any new positive samples found and forward the chart with the newly added athlete profiles to the MofS for a SAVE or QUARANTINE instruction. This process continued throughout the competition, culminating with the final version of the schedule from 18 July 2013 which consolidated all the MofS instructions for the entire event.

The 18 July 2013 version identifies 32 athletes, of which 17 are Russian. All of the Russian athletes were given SAVE instructions. The ADAMS results corresponding to the Russian athletes' samples are all negative findings. Of the 17 Russian athletes saved, 8 won medals including 6 Golds.

A brief excerpt from the schedule makes the point. A gold medalist in weightlifting was the subject of a SAVE instruction but found positive for oxandralone as was Athletics competitor Tatyana Chernova[33] for the same substance. Another Athletics competitor was also the subject of a SAVE instruction and was positive for EPO.

Weight lifting	2810484	A0018	Russia	Oxandrolone	Save	1st place Gold
Athletics	2781486	A0837	Russia	EPO	Save	1st place Gold
Athletics	2809250	Chernova	Russia	Oxandrolone	Save	1st place Gold

After retesting Chernova's samples from the 2009 IAAF World Championships, Chernova was found to have been doping. Her results from 15 August 2009 to 14 August 2011 were annulled and she was suspended for two years from 22 July 2013.[34] On 25 March 2015, the IAAF filed an appeal with the Court of Arbitration for Sport ("CAS"), acting as first instance in replacement of the All Russian Athletics Federation ("ARAF"), questioning the selective disqualification of the suspension periods of 6 other athletes disqualified about the same time. Chernova's case involves strange gaps in her suspension periods, including opening up her eligibility 2 weeks before the World Championships in Moscow and initiating another disqualification period less than 2 weeks after she won the Gold medal at the

[33] The Court of Arbitration for Sport (CAS),2016 *The Court of Arbitration for Sport (CAS) Issues Decision in the Cases of Tatyana Chernova, Ekaterina Sharmina and Kristina Ugarova* [press release] 29 November 2016. Available at: http://www.tas-cas.org/fileadmin/user_upload/Media_Release_4463_4464_4469.pdf [Accessed 6 December 2016].

[34] Russian Anti-Doping Agency (RUSADA), 2016. *Russian athletes (athletics) recognized ineligible*. [press release] 30 January 2015. Available at: http://www.rusada.ru/en/press/news/russian-athletes-athletics-recognized-ineligible-0 [Accessed 23 November 2016].

Universiade Games. [35] On 29 November 2016, CAS corrected all the gaps in the suspensions by annulling all of Chernova's results between 15 August 2011 and 22 July 2013, which includes her World Championship title in heptathlon.

Dr. Rodchenkov's evidence to the IP is that a limited number of Russian University Games B samples were swapped. The University Games samples were subsequently destroyed by the Moscow Laboratory and therefore not available for forensic testing by the IP.

5.4 2013 Moscow IAAF World Championships ("Moscow Championships")

The Championships in Athletics is a major world sporting event. In 2013 it was hosted by Moscow from 10-18 August. The Russian team won the most Gold medals for the first time since 2001.

The media reporting regarding doping that was surrounding Russian athletes in the lead-up to the Championships,[36] provided the ideal opportunity for Russia to demonstrate a positive image on and off the field. The overarching goal was to have a scandal-free Championship with Russia's best athletes competing and winning. This sentiment was captured in the email sent by Nick Davies, former IAAF Communications Director to Lamine Diack prior to the Championships. It read in part:

[35] IAAF, 2016. *IAAF appeals six decisions recently made by RUSADA*. [press release] 25 March 2015. Available online: http://www.iaaf.org/news/iaaf-news/russian-doping-appeal-rusada [Accessed 23 November 2016].

[36] For example the doping headlines included the suspension of 31 Turkish athletes, See http://www.telegraph.co.uk/sport/othersports/athletics/10223276/Turkey-hands-out-two-year-drug-bans-to-31-of-its-track-and-field-athletes-including-Olympic-medallist-Esref-Apak.html.

> *"…*
> *4. Finally, as soon as possible, and 'unofficially' PR campaign to ensure we avoid international media scandals related to the Moscow Championships especially in the British press, where the worst of the articles is coming from…We can work extremely hard in stopping any planned 'attack' on Russia from the British press in the coming weeks.*
> *5. Finally, I need to be able to sit down with the Anti-doping department and understand exactly what Russian 'skeleton' we still have in the cupboard regarding doping. I think that the time to have unveiled the various athletes was a long time ago and that we now need to be smart. These athletes, of course, should NOT be part of any Russian team for these World Championships and Valentin should be pressurized to make sur (sic) this is the case. If the guilty ones are not competing then we might as well wait until the event is over to announce them. Or we announce one or two BUT AT THE SAME TIME as athletes from other countries. Also we can prepare a special dossier on IAAF testing which will show that one of the main reasons why these Russian athletes come up positive is that they get tested a lot!!! In the same way, we can make the point that the WADA laboratory is the responsibility of WADA not IAAF and that if WADA decides there really is a problem, we have a plan B to do the tests in Lausanne instead (Gabriel confirmed this to me yesterday)."*

A combination of the former soviet style administration of prohibited substances to athletes and doping cover-up and corruption of the IAAF and ARAF were the pillars upon which the Russian podium successes were built.

5.5 Corruption Related to Positive Doping Results

In 2011 Valentin Balakhnichev, the President of ARAF, was elected to the position of IAAF Treasurer. As a result of the IC investigation, the IAAF Ethics Commission[37] imposed a lifetime ban from sport. His case has been appealed and argued at CAS.

[37] International Association of Athletics Federations (IAAF), 2016 *IAAF Ethics Commission decision - IAAF Ethics Board* [published decision] Available at: https://www.iaafethicsboard.org/Download/download?filename=cee7544f-e2aa-4c17-b32b-ace4cb76226f.pdf&urlslug=Ethics%20Commission%20Decision%20%E2%80%93%20VB%2C%20AM%2C%20GD%2C%20PMD%20-%20Decision%20No%2002%2F2016. [Accessed 6 December 2016].

Balakhnichev's presence within the formal governance structure of the IAAF and his position as President of the ARAF facilitated the fraud in covering up and delaying athletes' sanctions and corruption perpetrated by the IAAF and ARAF from 2011 onward, until his dismissal in 2015. As reported by the IC, this fraud and corruption started partially as a result of the lack of understanding surrounding the "*binding legal effect of the ABP from 2009 onwards and the enhanced ability to sanction athletes as a result of its use. In essence, they ignored the development and did not understand how it would impact anti-doping controls*."

Ultimately, information provided to Balakhnichev originating from the IAAF allowed ARAF and some Russian athletics coaches to enable Russian athletics athletes to continue competing despite being dirty.

Prior to the Championships, there were some high profile Russian athletes that had tested positive which, if made public, would negatively affect the image of the Moscow Championships. It was Thomas Capdevielle, IAAF Deputy Anti-Doping Director who advised Huw Roberts, legal advisor to the IAAF, that a number of delayed sanction cases of Russian athletes had still not been dealt with and that some of those athletes had been entered into events for the Moscow Championship. See IC Report.

The IC reported that athletes were paying to have their sanction case delayed or disappear completely by corrupt payments involving ARAF President Vladimir

Balakhnichev, Head Coach Melnikov, Gabrielle Dollé IAAF Anti-Doping Administrator, and IAAF Consultants Papa Massata Diack and Habib Cisse, with the knowledge and understanding of IAAF President Lamine Diack. This matter is now the subject of a French Police corruption investigation as a result of evidence turned over by the IC. See second Report of the IC on 17 January 2016.

5.6 Washout Prior to Moscow Championships

The preparation for the Moscow Championships was more disciplined than what had occurred in the past. The MofS now had centralised control over athlete doping. It instructed the CSP to prepare Dr. Rodchenkov's "cocktail" and administer the cocktail to the athletes. An improved system of washout testing was implemented in advance of the Moscow Championships.

The Moscow Laboratory was given the samples of the athletes on the washout program typically from Irina Rodionova, Alexey Velikodniy, or Athletics Head Coach, Alexei Melnikov. From those samples, the Moscow Laboratory developed a schedule to keep track of the athletes who were tested that included their corresponding results. This schedule was updated regularly when new washout samples arrived in the Laboratory for testing. This schedule was provided to the IP by Dr. Rodchenkov and contains the athletes' names and the substances they tested positive for in the weeks prior to the Moscow Championships (See from EDP0028 through to EDP0038).

The IP has forwarded these washout lists to the IAAF, which is using them to review results management information and to conduct laboratory analysis of samples from Moscow. In total the IP referred the names of 33 athletes to the IAAF. The IP derived these names from the washout lists, intelligence from Dr. Rodchenkov where he specifically recalled swapping their samples, and other intelligence. The IAAF has agreed to retest the samples belonging to these athletes and depending on the results, it may test all of the Russian samples. Based on its evidence, the IP has also recommended that the IAAF retest Russian samples from the Daegu Championships.

5.7 Sample Swapping at the Moscow Championships

Throughout the Championships the Moscow Laboratory continued to keep a look out for Russian positive samples. As they arrived into the Laboratory and were identified, they were simply reported as negative, without further instruction from the MofS. Following the Championships, and before the Moscow Laboratory shipped the samples to the Lausanne Laboratory, as instructed by the IAAF, the Moscow Laboratory replaced the dirty urine in those A and B bottles with clean urine stored in the Laboratory. Dr. Rodchenkov recalled that he swapped the samples for 4 or 5 athletes, including Tatyana Lysenko's sample[38] (See EDP1158).

[38]IOC, 2016. *IOC sanctions Tatyana Lysenko for failing anti-doping test at London 2012*. [press release] 11 October 2016. Available at: https://www.olympic.org/news/ioc-sanctions-tatyana-lysenko-for-failing-anti-doping-test-at-london-2012 [Accessed 23 November 2016]. The full decision is available at: https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/IOC/Who-We-Are/Commissions/Disciplinary-Commission/IOC-Disciplinary-Commission-Decision-Tatyana-LYSENKO.pdf#_ga=1.5874486.468985223.1479591256 [Accessed 23 November 2016].

Chapter 6: Sochi 2014 The XXII Olympic Winter Games

Chapter 6 Highlights

i. Six Paralympic athletes winning a total of 21 medals all had their samples swapped.

ii. Two [sport] athletes, winners of 4 Sochi Olympic Gold medals, and a female Silver medal winner in [sport] had samples with salt readings that were physiologically impossible. That scientific determination provides un-contradicted evidence of tampering with the original sample.

iii. The quantity of forensic and analytical evidence increased substantially in respect of the existence and use of sample swapping. Forensic experiments and laboratory analytical work provide additional confirmation of the 1st Report conclusions.

iv. Two female hockey player samples contain male DNA. Eight Sochi samples revealed salt content not physiologically possible in a healthy human. The DNA and salt analyses corroborate *viva voce* evidence of tampering with the urine samples.

v. The number of samples exhibiting scratches and marks on the inside of the bottle caps increased by examining a greater number of B samples and provides further confirmation of opening and tampering with sample bottles.

6.1 Introduction

At the outset of the Olympic year 2014 and following the Russian success at the 2013 IAAF Moscow World Championships, the Ministry of Sport ("MofS") focused more intently its attention to ensuring that the Sochi Games would be the apex of Russian sporting triumphs. The 1st IP Report detailed the process by which the Russian Olympic doping and cover-up plan was implemented. The Report substantially corroborated *The New York Times* article[39] that exposed the doping cover up at Sochi and brought about the appointment of the IP.

The failure in the collection of medals by the Russian Olympic Team at the Vancouver Winter Games would not be repeated. A comprehensive strategy was designed to ensure that Russia, as the host country, was able to win as many medals as possible by allowing its elite, medal contending athletes to dope up to and in some cases, through the Games. Nothing was left to chance – from the meticulous planning of the surreptitious activities within the anti-doping laboratory at Sochi; to the harvesting of clean urine for participating athletes; to perfecting the cap removing technique; and controlling athletes' disciplined doping regimes. All these

[39] Ruiz, R., and Schwirtz, M., 2016. Russian Insider Says State-Run Doping Fueled Olympic Gold. [Online] Available at: http://www.nytimes.com/2016/05/13/sports/russia-doping-sochi-olympics-2014.html?_r=0 [Accessed 15 July 2016].

various moving parts of the conspiracy were setting up the Russian team for Olympic success while continuing their doping regimes.

The doping cover-up and manipulation became increasingly centralised by the MofS. At its core, the MofS had control and was in charge of planning and directing the unique scheme of doping manipulation that would occur in Sochi. The plans were carried out by a combination of Russian officials working for the Russian Anti-Doping Agency ("RUSADA"), the Federal Security Service ("FSB"), the Center of Sports Preparation of National Teams of Russia ("CSP"), some of the Moscow Laboratory personnel assigned to the Sochi Laboratory, and persons working for the Sochi Organising Committee. They were all required to coordinate and play a role in the sample swapping that was unique to Sochi.

There existed a carefully orchestrated conspiracy, which included the complicity of Russian sports officials within the MofS, CSP, Moscow based Sochi Laboratory personnel, RUSADA, the Russian Olympic Organising Committee, athletes, and the FSB. While it will never be possible to establish the exact number of individuals involved or their specific roles, the sum of all their collective group efforts undoubtedly denied other competitors a level playing field which would generate an equal opportunity for a fair chance to win medals at Sochi. Following the 1st IP Report the media widely described what transpired at Sochi as the greatest scandal in sporting history.

Throughout the course of completing its mandate, the IP has uncovered additional evidence which provides further detail and clarification of the Sochi plan. The overall picture is unchanged, but the focus is clearer with a sharper image of what occurred. Further forensic and analytical testing completed since the 1st Report provides additional confirmatory evidence of the conspiracy. While the 1st Report is not without critics as to its contents, the fundamental findings contained therein have not been challenged or refuted by anyone in the months since publication. Indeed, there was an ideal opportunity to have refuted the evidence in the application to the ad hoc division of CAS at the Rio Olympic Games involving Paralympic competitors. No evidence was introduced and the CAS decision states:

> *"While the IP Report did not refer to any particular athlete, the McLaren affidavit included evidence not present in the IP Report. The RPC made submissions as to the McLaren affidavit, including that it was "not proven" and that it was "one-sided". However, such challenges are not substantiated. According to Swiss procedural law, a valid contestation of facts needs to be specific, i.e. it must be directed and attributable to an individual fact submitted by the party bearing the burden of proof (ATF 117 II 113, E. 2; ATF 115 II 1, E. 4; see also SFT 4A_299/2015, E. 2.3; DIKE-ZPO/LEU, 2011, Art 150 no 59). The challenges made by the Appellant are generic in nature and do not meet this threshold. Furthermore, Professor McLaren's evidence was given by sworn affidavit. The RPC decided not to cross-examine him although given the opportunity to do so and the RPC called no evidence to rebut his evidence. Thus, Professor McLaren's evidence stands uncontradicted."*

6.2 The Protected Athletes

The rationale for urine swapping was to allow athletes to engage in their doping practices right up to the eve of the Games, or even during them, to ensure a greater likelihood of medal success. As part of the MofS's centralised control over all aspects of the plan, the MofS developed a list of athletes who would be taking the 'cocktail' as part of their preparation (see Sochi Duchess List EDP at EDP0055).

These athletes were considered protected and their samples would be automatically swapped during the Games.

6.3 Clean Urine Harvesting

One of the key facets to the comprehensive strategy leading up to Sochi was ensuring that a catalogued bank of clean urine from the protected athletes was maintained on site to facilitate the swapping. This was the responsibility of the CSP under the direction of Irina Rodionova and coordination of the Liaison Person, Alexey Velikodniy. Rodionova implemented a process where athletes were required to supply up to four or five samples of clean urine, collected at various times of the day, to the CSP.

Clean urine samples provided by the protected athletes were controlled by either Rodionova or Velikodniy. One or the other would physically bring the samples to the Moscow Laboratory for testing and confirmation that they were in fact clean. Given the common practice of screening urine supplied in Coke or baby bottles, for washout purposes, it did not appear to alert Laboratory staff that these particular samples were predetermined to be used for the sample swapping process at Sochi. Dr. Rodchenkov confirmed that while the staff did the analytical work on the samples to determine if they were clean, they apparently did not know the reasons behind the testing. The confirmed clean samples were returned to the CSP and catalogued under each athlete's name for future delivery by the FSB to Sochi for later use at the Games.

Dr. Rodchenkov left Moscow for the Sochi Laboratory in January prior to the start of the Games. He did so, in part to organise and finalise the Laboratory processes, and in part to finalise the details for the sample swapping. The FSB had been responsible for the transportation to, and storage of, the clean urine bank at Sochi. The clean urine bank was stored at the FSB Command Centre adjacent to the Sochi Laboratory.

As the start of the Games approached, Dr. Rodchenkov recalls that he was not confident the bank of clean urine was adequately organised and he asked the FSB to see it. On the instructions of Deputy Minister Nagornykh, Dr. Rodchenkov was allowed access to the part of the Command Centre where the samples were stored. The room contained 3 or 4 full size freezer units. Inside were numerous shopping bags labelled with the athlete's family name and he was advised they were filled with bottles of that athlete's pre tested clean urine. Following his attendance at the clean urine storage facility in the Command Center, Dr. Rodchenkov was satisfied that samples of clean urine would be available on a timely basis to swap during the competition period.

6.4 The Mechanics of Sample Swapping

6.4.1 Preparation of the Urine Prior to Swap

In some manner unknown to the IP, at some point during the day, Rodionova became aware of the names of athletes who were to be tested on that particular day. Dr. Rodchenkov recalled that Rodionova gave him advance notice of those athlete's

names. Thus, the names could then be matched later in the day with the corresponding sample numbers when the samples were provided.

According to Dr. Rodchenkov, all the information related to an athlete's sample was communicated directly to either Rodionova or Velikodniy after the athlete provided his or her sample at the doping control station. After giving their sample, the athlete snapped a picture of their Doping Control Form ("DCF") and transmitted the picture to Rodionova. The athletes did not communicate directly with the Laboratory.

As the Laboratory learned the names of the athletes who provided samples throughout the day, so too did FSB Agent Blokhin. He would go to the Command Center, obtain the athlete's corresponding clean urine and set it in the operations room to be defrosted.

Knowing the names in advance of the night-time sample swapping was critical for the preparation of clean urine samples. Since mechanical heating of the sample could trigger degradation of the urine, this time before the samples were swapped allowed the clean samples to thaw naturally. Once the urine was thawed, Dr. Rodchenkov's second in command at the Sochi Laboratory, Yuri Chizov, would adjust the specific gravity of the samples to reflect the values of the original dirty sample indicated on the DCF. All this preparation would occur before the late night swapping. The actual swapping of the urine samples would await the departure of the last international personnel working in the Laboratory before the night's work would begin.

Dr. Rodchenkov was provided with a list of protected athletes (see Sochi Duchess List at EDP0055). He recalled that several other athletes who were not on the list were added to the protected list on an ad hoc basis throughout the Games. He was concerned that he would not have clean urine in the bank for these late additions. None of the female ice hockey members, for example, were originally on the protected list and were not, as far as the IP can determine, originally part of the system. The female athletes were added to the protected athlete list during or just before the Games. Rodionova was in charge of the protection and could extend it to other athletes at her discretion.

6.4.2 Movement of A and B Samples within the Laboratory

Samples collected throughout the day at doping control stations located at various Olympic venues would be consolidated in the Olympic Village and transported to the Laboratory. The 1st IP Report explained how the samples were received at the Laboratory and how samples marked for swapping were identified, and does not require reiteration here.

When the samples were identified, Evgeny Kudryatsev and his personnel were integral to the success of the movement of samples within the Laboratory. Indeed, Kudryatsev was the only Laboratory employee who had access to the long-term storage area where the B sample bottles were stored. When the samples were received and split into the respective A and B carts, Kudryatsev would wheel the B bottles into the long term storage room where he would slip the samples designated for the evening swapping into his coat pocket and leave the other B bottles in the

storage area. His unrestricted access allowed him to enter and exit the long-term storage without signaling any nefarious conduct. With the B samples in his pocket, he returned to the A samples and wheeled them into the aliquoting room where the process of removing the A bottle caps would begin.

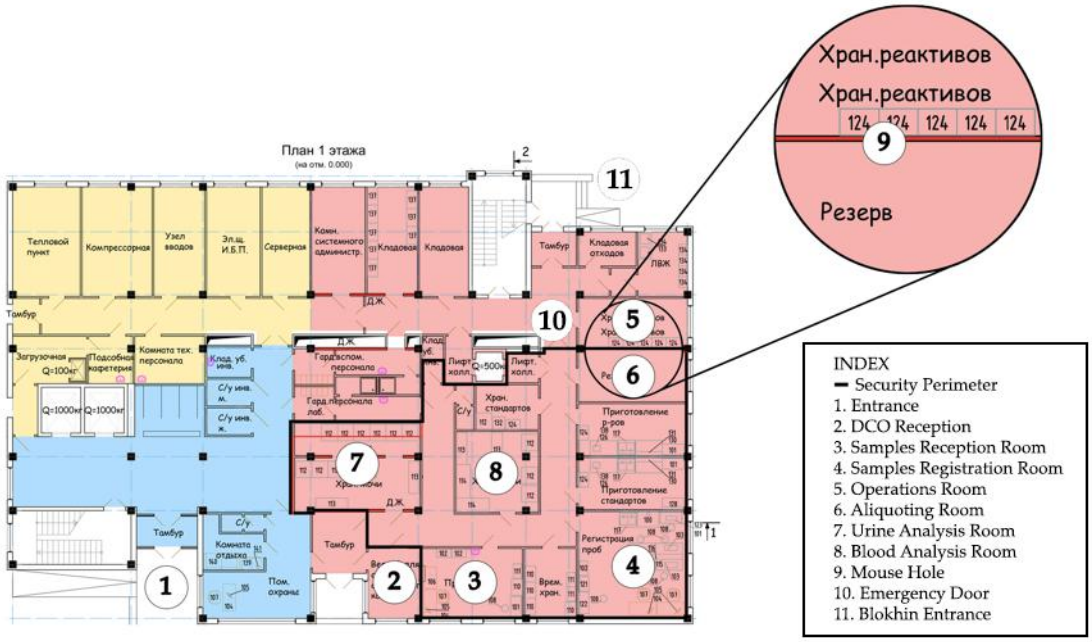
It was Kudryatsev who would pass both A and B bottles out through the mouse hole to Dr. Rodchenkov, Chizhov and Agent Blokhin waiting on the other side with the clean urine prepared earlier that day ready to be swapped. The actual swapping of samples occurred in the adjacent room to the secure area of the Laboratory. Following the swapping, the samples would be returned back through the mouse hole to Kudryatsev, as described in the 1st IP Report.

As a result of reviewing the movement of the samples within the Laboratory and re-examination of the floor plan of the Sochi Laboratory, there are two important points to note for this 2nd IP Report. Dr. Rodchenkov indicated that a fire exit door[40] by the Operations Room and Aliquoting Room was always locked. Any attempt to use the door, regardless of security clearance, would have set off alarms and automatic CCTV recording.

He also pointed out to the IP that Agent Blokhin used the rear exit[41] to enter and depart the Laboratory. This was the primary exit Agent Blokhin used when he went to the Command Centre to pick up the clean urine samples from the urine bank. This exit needed special clearance to access, which Agent Blokhin had. The 1st IP

[40] Marked by the number 10 on the reproduced Sochi Laboratory floor plan.
[41] Marked by the number 11 on the reproduced Sochi Laboratory floor plan.

Report described that Agent Blokhin posed as a maintenance engineer from the Bilfinger Company and therefore had the perfect cover for moving around the building.



6.5 Results of the Sochi Forensic Investigation

This section focuses on the forensic investigation conducted by the IP investigation team. The plan for Sochi and its execution was meticulously organised and disciplined. Its successful execution depended on each person involved meticulously performing their role in the overall scheme. This included: the athletes who supplied clean urine; the maintenance of the clean urine bank; the movement of clean samples into the Laboratory by the FSB; the Laboratory personnel who prepared the clean urine for swapping; and the Laboratory personnel involved in the actual swapping - everyone had to do their job like clockwork for the plan to succeed. The entire system operated with the precision of a Swiss watch.

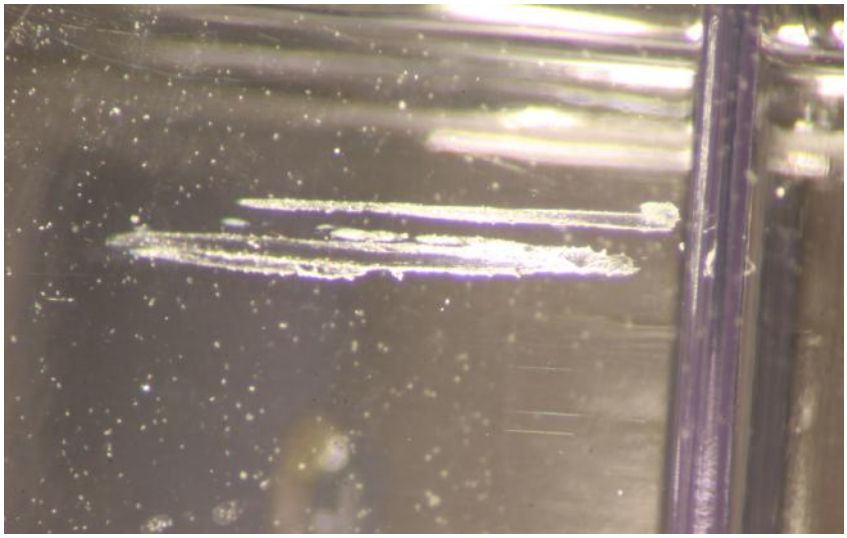
While the narrative of how all these pieces fit together seems like fiction, the forensic testing, which is based on immutable facts, is conclusive. The forensic evidence does not depend on verbal testimony to draw a conclusion. Rather, it tests the physical evidence and a conclusion is drawn from the results. The results of forensic and laboratory analysis initiated by the IP establish the conspiracy that was perpetrated at the Sochi Games.

6.5.1 Bottle Tampering and Confirmation of Scratches and Marks

The 1st IP Report described how the IP's expert was able to unscrew the caps off of B sample bottles leaving scratches and marks, which were only visible upon microscopic examination. These scratches and marks in the experiment by the IP's expert were comparable to the scratches and marks which the IP observed on a number of B sample bottles taken at the Sochi Games. The IP has now had the time to examine further Sochi B sample bottles from athletes named on the protected list or of those belonging to athletes who were added to the list. A total of 96 B samples bottles from protected athletes at the Sochi Olympic Games and 21 from the Sochi Paralympic Games have been examined by the IP's expert. All exhibit evidence of scratches and marks indicative of tampering.

In its 1st Report, the IP stated he did not know the precise method the FSB used to remove the bottle caps. As discussed in Chapter 5, in a recent interview Dr. Rodchenkov revealed that he saw the tools used by the FSB. The picture below demonstrates the type of markings left on the inside of the bottle caps using tools similar to those described by Dr. Rodchenkov. Further detail regarding these types

of markings are found in the IP's forensic expert report at EDP0902. See EDP1029 for the photograph below.



6.5.2 Laboratory Analysis Confirming Salt Adjustments for Specific Gravity ("SG")

Dr. Rodchenkov's evidence was that, when necessary, he would add salt to an athlete's clean urine, or dilute it with water to match the SG reported on the DCF for the sample at the Sochi doping control station. The London Doping Control Centre ("DCC"), at the request of the IP, has now analysed the salt content of all the samples listed on or added to the protected list. The DCC's results have been reviewed by Dr. M.E. Thomas, a highly regarded Nephrologist in the UK. Dr. Thomas' opinion is that: i) 6 samples contain salt levels above what is physiologically possible and that these samples must have had salt added to them, and ii) 2 samples had a salt content below what is physiologically possible and therefore must have been diluted. All of the 8 samples with physiologically impossible levels of salt belonged to athletes on the Sochi protected list or who were later added to that list for sample swapping. All of the 8 corresponding B bottle samples had evidence of scratches and marks indicative of tampering.

The IP had 40 salt results for its 1st Report and carried out a further 56 results since then.

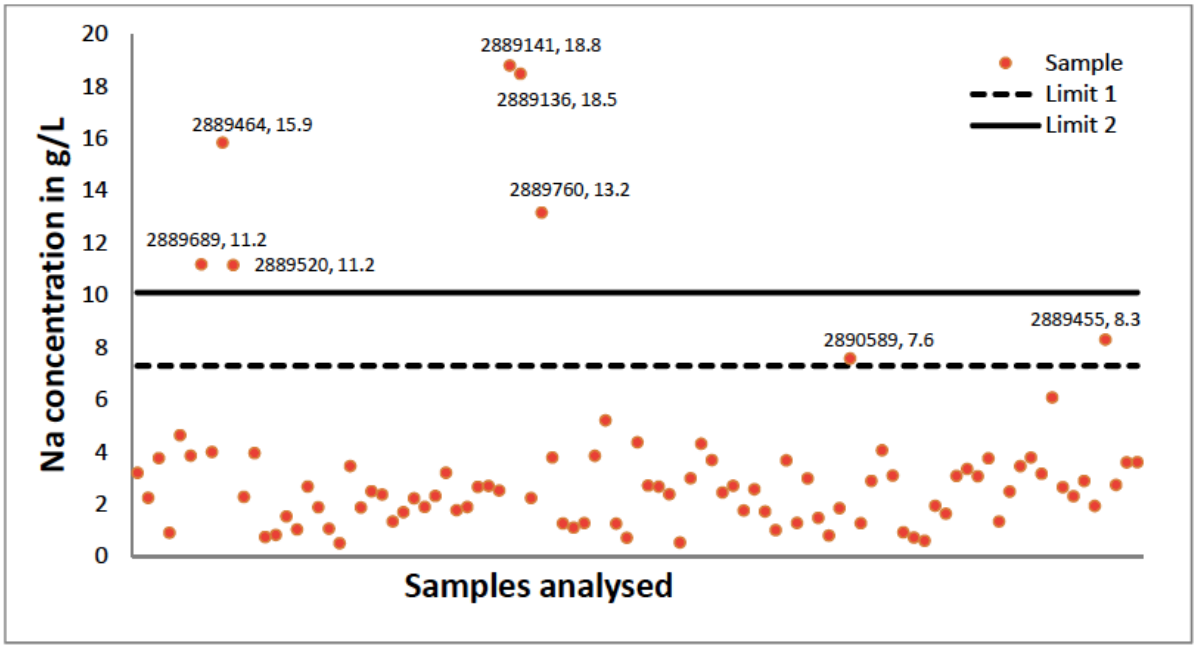


Figure 1. Urinary sodium concentration (g/L). Results are displayed as red circles, with selected values also displaying the sample number and sodium concentration next to the appropriate data point. The upper limit of 10.1 g/L, represents the maximum expected sodium concentration based on worldwide data and is displayed by the solid black line. The lower limit 7.3 g/L limit represents the maximum expected sodium concentration based on data assumed to represent a modern Russian population and is displayed as a dashed black line.

6.5.3 DNA Analysis

The IP analysed 16 samples from Sochi athletes who were recorded on the Sochi Duchess List for DNA. The IP conducted a worldwide search to obtain other samples for DNA comparison purposes. Comparator samples were found in Stockholm, Cologne and Lausanne and were then sent to London for comparative DNA analysis. The DNA analysis for all the swapped samples containing clean urine from the FSB storage revealed nothing, indicating that the swapped urine was originally from the competitor who provided the sample. The IP also specifically

targeted athletes who Dr. Rodchenkov recalls were added ad hoc to the protected athlete list, and for whom he was concerned there was insufficient, or no, clean urine in the storage bank. It revealed that out of the 12 targeted athletes, 2 female competitors' samples were mixed with male DNA. Both female sample bottles showed scratches and marks indicative of tampering; one of them had a level of salt in her urine that was physiologically impossible.

6.6 Subsequent Forensic Analysis of Paralympic Samples

Following the issuance of the 1st IP Report, the International Paralympic Committee asked the IP to conduct forensic and analytical analysis on 21 samples from seven different Russian Paralympic athletes. Dr. Rodchenkov's evidence was that he recalled from memory swapping samples for four of these athletes, and it was very likely that he also swapped samples for two others. Six of these seven athletes won 21 medals in the Sochi Paralympic Games. From memory Dr. Rodchenkov could not specifically recall the names of other Paralympic athletes whose samples may have been swapped.

In summary, the forensic examination of 21 Sochi Paralympic samples from these seven athletes established that: 18 sample caps were found to have tamper marks similar to those found on the Sochi Olympic Games samples, determined by the IP's scratches and marks expert in his own forensic experiment. In the remaining three bottles, no marks were observed as vision was obscured by leaked urine sediment making forensic examination impossible.

There were no significant findings to report concerning levels of salt in any of the samples. The limited DNA cross profiling of contributing athletes which could be done has not revealed any anomalies. These results, which looked for further confirmatory evidence of tampering, are not surprising. The fact that physiologically impossible levels of salt were not found simply means that the specific gravity of the clean urine swapped into these bottles did not need to be dramatically increased by the addition of substantial levels of salt. The fact that the DNA in multiple samples from the same athlete was consistent, simply establishes that the clean urine which was swapped came from the same athlete, which we know occurred during the Sochi Olympics. The compelling evidence that these samples were tampered with is the evidence of scratches and marks on the inside of the bottle caps. While the IP only forensically examined a representative number of samples, the scratches and marks evident on these samples clearly establish the application of Sochi sample swapping scheme to the Sochi Paralympics.

6. 7 Case Studies

6.7.1 Sochi Female Hockey Player 1 (A0790)

This female hockey player's name did not appear on the Sochi Duchess List for automatic sample swapping, but she was one of the athletes who Dr. Rodchenkov recalls being told to swap samples for during the Sochi Games. In his interviews with the IP, Dr. Rodchenkov questioned whether this athlete and others who were not on the Sochi Duchess List had provided their own clean urine for swapping prior to the games. He thought it was possible that, for these athletes, the FSB may

have provided clean urine from other athletes to be used in the sample swapping. Forensic examination of this athlete's Sochi sample corroborated Dr. Rodchenkov's comments. The B bottle of sample 2889681 showed evidence of scratches and marks consistent with the removal and replacement of the bottle cap. The DNA analysis of her urine revealed the presence of male DNA. When combined with the scratches and marks, it is incontrovertible evidence of tampering at Sochi.

6.7.2 Sochi Female Ice Hockey Player 2 (A0866)

Similar to the example above, this female hockey player's name did not appear on the Sochi Duchess List for automatic sample swapping and the forensic examination of this athlete's Sochi samples further corroborated Dr. Rodchenkov's comments. This female provided urine samples numbers 2889760 and 2889520 during Sochi. Both of the B bottles showed evidence of scratches and marks consistent with the removal and replacement of the bottle cap. An examination of the salt content of the A samples revealed readings of 13.2 ng/ml and 11.2 ng/ml, respectively. The IP's expert has confirmed that the salt levels in these two samples are physiologically impossible in a healthy human. Furthermore, DNA analysis of both samples revealed the presence of male DNA. The salt and DNA impossibilities together with the scratches and marks on the inside of the bottle cap, present incontrovertible evidence of tampering with samples at Sochi.

Chapter 7: 2014: Sample Swapping After Sochi

Chapter 7 Highlights

i. Sample swapping technique used at Sochi became a regular monthly practice of the Moscow Laboratory.

ii. WADA action requiring steroid profile reports result in Russian reaction to also falsify steroid profiles in ADAMS.

iii. No direct instructions from the MofS required to swap samples involving high profile summer and winter athletes.

iv. Close of the year, the last known opening of B samples occurred when the FSB "magicians" were called in to the Laboratory as a result of the WADA visit to seize samples.

7.1 Introduction

While what went on in the Laboratory during the Sochi Winter Olympic Games was a unique one off method of cheating, the large scale sample swapping first used there was adopted into the Moscow Laboratory's operations, when required, for the balance of 2014. The mechanics of the manipulation and cover up of doping control processes evolved as the World Anti-Doping Agency ("WADA") updated and changed the regulatory landscape. The ongoing investigation by the IP has revealed that for every action by WADA there was a Russian reaction to counter their

measures. This theme of action and reaction has been repeated several times over the years from 2012 through 2014. The year 2014 marks yet another reactionary change in the Russian doping cover-up and manipulation scheme. WADA introduced new reporting requirements that came into force 1 January 2014, mandating that the steroid profile for each sample be uploaded into ADAMS for Athlete Biological Passport ("ABP") analysis. This brought new challenges to the doping cover up and manipulation status quo in Russia. Yet again, WADA action caused a reaction in the evolving Russian scheme for evading doping controls.

The changes implemented in 2014 had a direct impact on both sample swapping and the Disappearing Positive Methodology ("DPM"), which had, since at least 2011, been operating consistently as a failsafe at the Moscow Laboratory. Evidence from 2014 revealed that the DPM system had a different communication structure related to high profile athletes. The Moscow Laboratory had knowledge of athletes who were high profile and whose samples would not go through the normal process for instruction from the MofS, but would be considered an automatic SAVE.

7.2 Action: WADA's 2014 Regulatory Changes - Steroid Profile ABP

As of 1 January 2014 it became mandatory for all WADA accredited laboratories to input steroid profile ABP data on each sample into WADA's Anti-Doping Administration and Management System ("ADAMS"). This important change to WADA's anti-doping program tackled the abuse of steroids which might not have otherwise been detected. Since WADA accredited Laboratories already tested urine for the natural steroids which made up the profile, it was only a matter of inputting

the variables into ADAMS. Prior to 2014, while WADA could request to review an athlete's steroid profile, it had not been a requirement to input the steroid profile information into ADAMS.

The function of the steroid profile is to monitor an athlete's natural steroid profile[42] over time. Every person has a unique steroid profile, which over time will be in large measure consistent. Abuse of steroids can affect an athlete's natural steroid profile. Significant variances in the profile are indicative of steroid abuse. Simply, significant changes to the profile, without a medical explanation, means that an athlete is manipulating his or her profile or doping is ongoing.

7.3 Reaction: The WADA Steroid Profile Action & the Russian Response

Until 2014, the Moscow Laboratory followed the very straightforward DPM process to enter a false record in ADAMS following the detection of a prohibited substance in the Initial Testing Procedure ("ITP") on the instruction of the Ministry of Sport ("MofS"). Moreover, in the instances where the Laboratory swapped dirty urine samples for clean, there was little risk to the Laboratory that WADA would run a steroid profile on the sample, and therefore a mismatched steroid profile was not much of a concern. After every sample became subject to steroid profiling it was imperative that any manipulation of the sample match the athlete's unique steroid profile. This meant that manipulation of the records became much more difficult. As can be seen on several occasions throughout this Report, every regulatory change

[42] It consists of the urinary concentrations of Testosterone, Epitestosterone, Androsterone, Etiocholanolone, 5a-androstane-3a,17β-diol and 5β-androstane-3a,17β-diol, together with the specific gravity of the urine sample.

or other action by WADA precipitated a reaction in response from the sports infrastructure in Russia to ameliorate its impact on the doping evasion system in use at that time.

WADA's regulatory action triggered the necessity in the Moscow Laboratory to modify the DPM process. While the process remained substantially the same as described in the 1st IP Report, in 2014 any athletes with a SAVE instruction might require adjustment of the reported steroid profile, if that profile itself could be evidence of doping. In those instances, the Laboratory would either record false profile information or leave the profile information in ADAMS blank. This process is demonstrated by the case studies below.

7.3.1 High Profile Athletics Athlete (A0363)

Sample 2870234 was collected on 26 February 2016 from a high profile female Russian athlete in athletics. The steroid profile data for that sample entered in ADAMS reflected a very normal testosterone/epitestosterone ("T/E") ratio of 1.3. However, in 2016 when the IP's scientific Advisor, Dr. Christiane Ayotte asked the new Moscow Laboratory Director for more information on this athlete's samples, the information which the Laboratory Director provided from the Laboratory Information Management System ("LIMS") reflected the actual T/E ratio of 2870234 as being 6.7, with different values for both testosterone/epitestosterone recorded as well. Standing alone, or more so in the context of this athlete's natural steroid profile, the T/E ratio of 6.7 is strong evidence of doping. The Moscow Laboratory simply reported false values into ADAMS to avoid raising any suspicions.

7.3.2 Case study: Russian Weightlifters (A0076, A0101, A0193, A0459, A0514, A0552, A0325, A0789)

In August 2014, the Russian National Weightlifting Championships were held in Grozny. The samples collected from the weightlifters as part of the competition's doping control process were all processed in the Moscow Laboratory. The results, which were all compiled into an ADAMS Excel format ready to be uploaded into ADAMS, were first sent to the Liaison Person, Alexey Velikodniy at the Center of Sports Preparation of National Teams of Russia ("CSP") (see EDP0531).

The communication to Velikodniy indicated that although all the samples were negative, the highlighted names were "testosterone lovers." Eight weightlifters on this schedule were highlighted. The communication further indicated that if those weightlifters did not provide information about their past numbers when they were clean, the Laboratory would only upload the T/E value to ADAMS, which in their case would still be a problem as ADAMS would send a biometric passport notice to the Russian Anti-Doping Agency ("RUSADA"). The communication ends by saying that the problem needs to be solved and that it should be conveyed to [weightlifting] that the longitudinal profile is automatically in ADAMS and that normal numbers are needed.

In response, Alexey created a new Excel spreadsheet by compiling only the profiles of the 8 highlighted weightlifters and titled the schedule "critical" (see EDP0530). Following this, the Laboratory generated an Excel spreadsheet which included

historical samples for each weightlifter taken over a number of years and each sample's corresponding steroid profile in raw data form (see EDP0003).

The IP investigative team examined this document and the IP's scientific Advisor, Christianne Ayotte confirmed that such T/E and T values as well as the rest of the profile, are so extremely high that each of the eight are clear positives. Furthermore, the individual passports for these athletes clearly show many abnormal values in these weightlifter's other samples. She had never seen anything like it in years of experience reviewing thousands of profiles including for the International Olympic Committee ("IOC") and the International Association of Athletics Federation ("IAAF"). A further examination of ADAMS records revealed that while each weightlifter's testing result from that competition was recorded, no data was entered for their steroid profiles. This is but one of several examples examined by the IP where the steroid profile entered into ADAMS was falsified or left blank by the Laboratory.

7.4 Sample Swapping in 2014

Throughout the investigation, the IP investigative team noticed an interesting anomaly: of the many athletes known to be involved in the DPM, it was striking that very few top level, elite Russian athletes were named in the correspondence. Were these athletes not involved in the doping program or was another method in operation? The IP's investigation and forensic and laboratory analysis has revealed that indeed there was another method operating to protect high profile athletes. In 2014, this method involved a combination of all the evasion techniques the

Laboratory had learned over the previous years: DPM, sample swapping, and false reporting of steroid profiles.

Similar to the process that occurred leading up to the Sochi Games, the Moscow Laboratory was made aware through a telephone call or personal contact of certain high level Russian athletes who should be regarded as an automatic SAVE and swap. If their sample was positive on ITP, there was no need to refer them up the chain to MofS for a SAVE or QUARANTINE decision. The DPM system was to be triggered automatically without further MofS intervention or instructions. Their dirty sample would be automatically swapped with their own clean urine.

Similar to Sochi, in most cases Irina Rodionova directed the collection of clean urine from athletes for swapping. Each athlete provided several clean samples, collected at different times so that urine with different specific gravities would be available. These clean samples would be stored in the Laboratory's clean urine bank. As an aid in sample swapping, the Moscow Laboratory developed a data bank to track stored clean samples, so that: i) if one of the athletes tested positive on the ITP they could swap out the dirty sample with the athlete's own clean urine; and, ii) to have a variety of different steroid profiles to swap. Each sample in the bank was allocated a special code identifying clean urines for this purpose. The IP has reviewed examples of schedules created by the Laboratory to organise the samples it was keeping in the clean urine bank (see EDP0736, EDP0686, EDP0757).

The athlete's dirty sample could now be swapped out with his or her own clean samples. The clean urine bank made it easier to match a swapped sample to the athlete's own normal steroid profile.

This system worked seamlessly only if the athlete provided truly clean urine and if there were no surprise additions to the athletes considered as automatic SAVE and swap. Sometimes, however, if the athlete provided dirty urine; or if the athlete's urine was unacceptable for other reasons; or if the athlete had insufficient urine in the urine bank for a full swap; or if there was an athlete that was an unexpected addition to the SAVED athletes and had no clean urine in the bank, another solution was crafted. Dr. Rodchenkov's evidence was that when the athlete's own clean urine was not available, the athlete's dirty urine was replaced with clean urine from another athlete or in a combination of different athlete's clean urine that provided a matching steroid profile to the urine which was being replaced. If the concentration of the prohibited substances in the dirty urine was low, sometimes the dirty urine was diluted with another athlete's clean urine with a similar steroid profile in order to bring the concentration of prohibited substances below the reporting threshold.

Illustrative of this process is an email communication from 27 May 2015 concerning sample 3880014 belonging to a high profile boxer. Referring to the chart[43] below, the email states "he has a strange combination of high density and low concentrations… take GG8053, dilute two time, and increase the density by adding salt".

[43] This chart is partially reproduced, the full email and chart is located in the EDP.

Варианты									
Проба	**T/Epi**	**Andro**	**Etio**	**T**	**Epi**	**5a-diol**	**5b-diol**	**sg**	**ph**
GG8077	0.81	1742.06	749.44	21.16	25.31	40.46	86.50	1,0115	5,37
GG8046	0.52	2861.37	2892.27	38.02	73.47	61.60	119.37	1,0245	5,47
GG8053	0.92	4168.95	4565.62	43.18	51.50	62.27	295.79	1,0258	5,98

Оригинал

Проба	**T/Epi**	**Andro**	**Etio**	**T**	**Epi**	**5a-diol**	**5b-diol**	**sg**	**ph**
3880014	0.86	1437.28	1412.08	24.99	29.04	46.46	137.57	?	?

The reference to GG8053 is to a clean urine sample held in the Laboratory clean urine bank. A redacted copy of this email appears in the EDP.

Unlike Sochi however, the sample swapping would not happen daily. Dr. Rodchenkov informed the IP investigative team that approximately every month he would call in the 'magicians,' otherwise known as the Federal Security Service ("FSB") cap removal team, to the Laboratory to remove the caps off of the B samples that needed to be swapped. The number of samples swapped averaged 5-20 samples a month. Should an unexpected audit by WADA occur, for example, the swapped sample would be clean and the steroid profile of the sample would match the athlete's normal profile.

The FSB, however, would not typically remove the caps off of samples belonging to low profile athletes. For these cases the typical DPM applied and the Laboratory would store the samples for the International Standard for Laboratories ("ISL") mandated 90-day period before they were destroyed.

7.5 The Penultimate Action/Reaction Dichotomy Occurred in the WADA Unannounced Visit of December 2014

As reported by the IC, as a result of the ARD documentary, on 09 December 2014 WADA issued a memorandum to Dr. Rodchenkov requiring the Moscow Laboratory to retain all test samples until further notice. A copy of the correspondence is provided at EDP0894, EDP0893. The IP notes however, that the memorandum did not announce to the Moscow Laboratory that WADA would be visiting nor did it indicate an intention to collect samples. The memorandum only requested that the samples from 10 September 2014 forward, as required by the ISL, be kept in secure storage.

On 11 December 2014, Dr. Rodchenkov received a call from the MofS informing him that a WADA visit was planned because visas had been requested. Since WADA's audit team members each required official letters of invitation in order to obtain the necessary visas to enter the country, the MofS was tipped off to the WADA visit several days ahead of their arrival. The confirmation of WADA's arrival combined with the memorandum requiring the samples be kept in secure storage made it obvious to Dr. Rodchenkov that an unannounced inspection and removal of samples from the Laboratory was planned.

The prospect of WADA removing samples caused Dr. Rodchenkov and the MofS to react. They knew a number of dirty samples were in storage at the Moscow Laboratory with falsified negative reports in ADAMS. In consultation with the MofS, a solution was devised to bring in the "magicians" to open the B bottles so that the Laboratory could swap out the dirty samples.

To facilitate the sample swapping process, Dr. Rodchenkov prepared a schedule of 37 samples that he knew were dirty (EDP0648). From those samples, he informed the IP that for 6 of those samples he could have argued that the concentration of prohibited substances fell below the minimum reporting thresholds. Ten samples, belonging to high profile boxing athletes, for which Dr. Rodchenkov knew were dirty but could not swap, were turned over to RUSADA. A subsequent schedule of potential clean urine samples was created as a reference for samples where they had problems matching the profiles of the dirty samples. This is the list of "21 likely swapped samples" (see EDP0650).

That list of 21 likely swapped samples details the internal Laboratory reference numbers associated with clean samples that could be matched with other athletes for swapping and further indicated the amount of salt to be added, or at what proportions it needed to be diluted in order to match the SG of the original sample (see EDP0650). In some instances it indicated that a mix of 2 different athlete's samples was required.

On 12 December 2014 the "magicians" (the FSB team) visited the Laboratory to remove the sample bottle caps off of the dirty samples[44]. That action enabled the samples to be swapped. Aside from the swapping of samples, Dr. Rodchenkov also arranged for the destruction of 1417 samples stored in the Laboratory from previous doping control procedures collected prior to 10 September 2014. That date was crucial because the ISL only requires a Laboratory to retain samples for a period of 90 days. Other samples stored in the Laboratory, collected before 10 September 2014, were also destroyed.

The WADA audit team arrived at the Moscow Laboratory on 17 December 2014, on what they thought was an "unannounced" visit. The intention was to carry out a seizure of samples for removal and testing. Upon arrival, and to the surprise of the WADA team, they were notified that approximately only 3,000 samples were currently in storage, despite the Laboratory's capacity to store 8000-10,000 samples.

Twenty-six samples from the Dr. Rodchenkov's original list of 37 dirty samples were included in that seizure. WADA removed a total of 3571 samples from the Moscow Laboratory in December 2014 and over two other subsequent visits.

It should also be noted that WADA did not seize all the sample bottles available from this period and many remain in storage at the Moscow Laboratory. The IP has identified over 300 samples remaining at the Moscow Laboratory to be targeted for

[44] The IP wishes to correct the first report that this visit took place during the day, not the night as previously reported and that the Laboratory was not notified by Dr. Rabin that WADA was going to visiting the Moscow Laboratory.

forensic and laboratory analyses. Approximately 58 relate to high profile athletes. Despite WADA's and the IP's requests, those sample bottles have not been released from the Moscow Laboratory because they are under the control of the Russian Investigation Committee.

7.6 Forensic and Documentary Evidence Related to the WADA Seized Samples

The course of events that transpired between Dr. Rodchenkov's receipt of the WADA memorandum and WADA's "unannounced" visit has been substantially corroborated through the IP's forensic, documentary and laboratory analyses. An update on each follows.

7.6.1 DPM Evidence

The IP began with examining Dr. Rodchenkov's list of 37 known dirty samples (EDP0648) which details the sample numbers of various athletes, internal laboratory references and an indication of the prohibited substance found following the ITP. The IP updated this schedule with the names of the athletes corresponding to the indicated sample numbers, and the associated entry into ADAMS (see EDP0895, EDP0901). All of the 37 samples had negative results entered. By conducting a cross reference with the IP's database, it was revealed that 28 of these samples were specifically involved in the DPM process. There are high profile athletes on the list for which no other documentary evidence exists.

7.6.2 Scratches and Marks Evidence

A forensic examination of 26 A and B bottles that were available to the IP from this list of 37 known dirty samples has been completed. A total of 25 bottle caps showed signs of tampering. There was 1 bottle cap with no markings. This corroborates Dr. Rodchenkov's *viva voce* evidence that not all samples from this list were swapped, and specifically for this bottle where the IP expert found no markings.[45]

7.6.3 DNA Evidence

Not all of the 26 samples underwent DNA analysis because no comparative DNA sample could be located in a search of WADA accredited laboratories. On the schedule of 21 likely swapped samples, sample number 2944667 indicates a Laboratory reference of 14390 and a SG of 1.017. The IP identified this sample as belonging to a female wrestler, A0613. In order to swap this sample the Laboratory searched its urine bank for a sample with matching steroid profile. The schedule indicates that internal laboratory reference sample number 10885 with an SG of 1.025 and sample number 10825 with an SG of 1.026 were a satisfactory match. The IP obtained another sample provided by the athlete and requested a comparison DNA analysis. The forensic comparison of the DNA found that her 2944667 sample shows the presence of two female DNA profiles, one belonging to the athlete, the second DNA belonging to another female.

[45] The IP's expert identified that this bottle had no markings without any knowledge of Dr. Rodchenkov's specific *viva voce* evidence that this bottle was not swapped.

This same process was followed for all of the remaining names on the list of 21 likely swapped samples. A total of 8 samples were found to have DNA inconsistencies supporting Dr. Rodchenkov's *viva voce* and documentary evidence that the samples had been swapped. The results are outlined in the table below.

Athlete	**Discipline**	**Sample No**	**Scratch and Marks evidence**	**DNA Evidence**
Male	Skating	2944217	Yes	DNA did not match previous samples provided at Sochi
Female	Powerlifter	2944566	Yes	DNA matched a male
Female	Judo	2944003	Yes	DNA did not match previously provided sample
Female	Athletics	2946989	Yes	DNA did not match previously provided sample
Female	Weightlifter	2992632	Yes	DNA did not match previously provided sample
Male	Athletics	2947074 2945498	Yes Yes	DNA did not match within the two samples
Female	Weightlifter	2944667	Yes	DNA split of two females

7.6.4 Salt Analysis

The samples were examined for salt content. The urine provided by 3 athletes had such a low salt content that it is physiologically impossible in a healthy human.[46] These samples were measured at 0.3, 0.3 and 0.4 ng/ml, respectively well below the threshold of what is considered normal at 0.57 ng/ml set by the IP's expert.

7.6.5 Conclusions

The IP's documentary, scratches and marks, DNA and salt evidence, corroborates that swapping occurred prior to the December 2014 WADA seizure and is consistent with Dr. Rodchenkov's evidence. What went on surrounding the seizure of samples was an effort to protect and preserve the system being used by the Moscow Laboratory and the Moscow Laboratory itself. Later in 2015 the difficulties related herein resulted in the disbanding of the "magicians" and their magic work on the B bottle caps.

7.7 2014 Case Studies

7.7.1 Sochi Male Skater (A0978)

A male skater athlete provided 3 urine samples during the Sochi games, sample numbers 2888538, 2888691 and 2880926. The B bottle cap of sample 2888538 had evidence of scratches and marks consistent with the removal and subsequent replacement of the bottle cap. The DNA in all of these samples was the same, an outcome which would be expected provided that clean urine was previously

[46]To reach this conclusion the IP relies on its expert Nephrologist opinion regarding the limitation level of human excretion of salt of Sochi samples, which he analysed.

supplied to the CSP and stored in the FSB's command center in Sochi. Later in the year, this athlete provided sample number 2944217 on 14 October 2014 and it was included in the batch of samples seized by WADA in December 2014.

Upon forensic examination, the B bottle of sample 2944217 showed evidence of scratches and marks consistent with the removal and subsequent replacement of the bottle cap. The DNA found in sample 2944217, however, came from a different person than the 3 samples provided by this athlete in Sochi. This additional evidence of tampering is consistent with Dr. Rodchenkov's evidence that sample swapping in 2014 after Sochi would sometimes involve replacement of an athlete's dirty urine with clean urine from another athlete coming from the Laboratory's clean urine bank.

7.7.2 High-Profile Female Competitor in Athletics (A0363)

This athlete's B sample number 2808427 from the 2013 IAAF Moscow Championships showed evidence of scratches and marks indicating tampering. That sample is in the possession of the IAAF. Secondly, as noted in Section 6.2.1, this athlete's sample number 2868433 from February 2014 had a highly abnormal T/E ratio of 6.1 which the Moscow Laboratory falsely reported as 1.3 in ADAMS. That sample was also subsequently destroyed by the Moscow Laboratory.

In October 2014, this athlete provided sample number 2818541, which was one of the samples seized by WADA in December 2014. Forensic examination of the B bottle of that sample revealed the presence of scratches and marks on the inside of the cap

and DNA analysis of the sample showed DNA from two women in a 75%/25% ratio. Comparison with a sample that this athlete provided during the 2013 IAAF Moscow World Championships confirms that 75% of sample 2818541 came from the athlete.

The scratches and marks, and DNA evidence taken together provide incontrovertible evidence that the B bottle of sample 2818541 had been opened and the urine in the sample replaced, at least partially, with clean urine from another athlete consistent with the 2014 sample swapping process described by Dr. Rodchenkov. Sample number 2818541 does not appear on the list of 21 likely samples swapped on the eve of WADA's 17 December 2014 inspection. Nor has the IP found DPM evidence addressing this sample. This absence of documentary evidence is consistent with Dr. Rodchenkov's testimony that in 2014, the dirty samples of high-profile athletes were automatically swapped on a monthly basis without further instruction.

7.7.3 Male Competitor in Athletics (A0871)

This athlete's samples 2947074 and 2945498 were identified in DPM correspondence between the Moscow Laboratory and the Liaison Person, Alexey Velikodniy on 23 October 2014 and 25 November 2014, respectively. On both occasions, the samples indicated the presence of ostarin and were ordered SAVE. Both of these samples were subsequently seized by WADA in December 2014, and are included on the List of 21 likely samples swapped.

Forensic examination of the B bottle of both samples reveals the presence of scratches and marks on the inside of the cap and DNA analysis of the samples showed that the DNA in the 2 bottles did not match. It is not known to the IP who provided the urine for either of the sample. Furthermore, the notes on the List of 21 likely swapped samples corresponding to sample 2945498 states "[internal laboratory reference 8521] dilute 1.5 times with water." The salt analysis revealed that sample 2945498 has a physiologically impossible low level of salt concentration.

APPENDIX A

Sources									
EDP No.	2012 London Washout	Forensic Reports	DPM	Moscow Washout	New IP2 Schedules	University Games	Urine Bank	EDP1158 Names	Grand Total
A0001			1						1
A0002					1				1
A0005					1				1
A0006			1						1
A0007					1	1			2
A0009	2		1	3	3				9
A0010			1						1
A0011			1						1
A0012			1						1
A0013			1						1
A0014			2						2
A0015			1		1		1		3
A0016					1				1
A0018			1		2	1	1	1	6
A0021						1			1
A0022		1	1						2
A0023					1				1
A0025	1				1				2
A0026			1						1
A0029			1						1
A0030		1							1
A0031					2				2
A0032		9							9
A0033					1				1
A0034					1				1
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A0036			1				1		2
A0037					2				2
A0038			1						1
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A0040					1				1
A0042				1					1
A0043					1				1
A0047			1		1				2

A0048					1				1
A0049					2				2
A0050	1				1		1		3
A0052					1				1
A0053					1				1
A0054					1		1		2
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A0069			1						1
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A0075					2				2
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A0077			1						1
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A0083					1				1
A0084					1				1
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A0104			1						1
A0105			1						1
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A0109					1					1
A0110					1					1
A0111					1					1
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A0113			1							1
A0115			1							1
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A0129					2					2
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A0136					1					1
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A0148					1					1
A0149		1					1	1		3
A0150					4					4
A0152		3								3
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A0228			2		4			6
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A0230	1				1			2
A0231				3				3
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A0531		1							1
A0532			1						1

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A0536				2				2
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A0538		1						1
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A0548				1				1
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A0550			1					1
A0551				1				1
A0552			2	1	1	1		5
A0554				1				1
A0555				1				1
A0556	1							1
A0557			1					1
A0558			3	1				4
A0559				1				1
A0563			1					1
A0564		1	1	1				3
A0565				3				3
A0567				1				1
A0568				1				1
A0570			1					1
A0571				1				1
A0572			1					1
A0574			1	1		1		3
A0575				3				3
A0576				1				1
A0577				1				1
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