ASCLD/LAB

INVESTIGATION REPORT

WEST VIRGINIA STATE POLICE
CRIME LABORATORY, SEROLOGY DIVISION
SOUTH CHARLESTON, WEST VIRGINIA

INSPECTED JULY 19, 1993 THROUGH JULY 23, 1993

SUBMITTED BY INVESTIGATION TEAM

JAMES J. McNAMARA (TEAM CAPTAIN)
RONALD R. LINHART

AUGUST 6, 1993

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INTRODUCTION

At the request of the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB), in response to an order of the Circuit Court of Kanawha County, West Virginia, James J. McNamara and Ronald R. Linhart conducted a preliminary investigation which included the following:

1. An evaluation of laboratory practices in the Serology Section of the West Virginia State Police Crime Laboratory during 1986 through 1989.

2. A detailed inspection of selected laboratory case files and section records for the period. These files and records had been sealed and in the custody and control of the West Virginia State Supreme Court prior to the inspection. The case files reviewed contained reports signed by former laboratory employee Fred S. Zain.

3. A review of testimony rendered by Fred Zain in a few select cases.

The investigation was conducted at the West Virginia State Police Headquarters in South Charleston from Monday, July 19, 1993, through Friday, July 23, 1993. A meeting for orientation and introduction purposes was held Monday morning.

At the conclusion of the investigation, on Friday, July 23, 1993, a briefing was held at which time the inspectors provided their preliminary findings and recommendations.

Present at both the Monday and Friday meetings were the following:

James O. Holliday
Senior Status Judge, West Virginia

Ronald R. Linhart
Supervising Criminalist
Los Angeles County Sheriff's Department, Los Angeles, CA

James J. McNamara
Bureau Chief
Florida Department of Law Enforcement, Orlando, FL

George Castelle
Chief Public Defender
Kanawha County, West Virginia

Peggy Longwell
Public Defender Investigator

Patrick B. O'Neal
Assistant Prosecuting Attorney
Kanawha County, West Virginia

Ted Philyaw
West Virginia State Supreme Court Administrator

Also present at the Friday meeting was Mr. Ancil Ramey, West Virginia State Supreme Court Clerk.

GENERAL COMMENTS

A. Record Keeping Procedures

The case files reviewed generally contained a typewritten report, a handwritten report draft and a handwritten case worksheet, as well as chain of custody documents. The case worksheet was used to record a list of items examined from each evidence submission and the results of analyses performed. A separate case worksheet was used for each evidence submission and identified with its own laboratory number. Cases were generally filed under the latest laboratory number for that case, although some exceptions were observed.

Documentation for some of the results recorded on the case worksheets was contained on data sheets. Separate data sheets were kept for each analytical procedure so documented. Data sheets were commonly available for Group I, Group II, Absorption Elution, and Absorption Inhibition. A few data sheets were found for other tests including Group IV, Gc, P_{30}, and PGM subtyping.

Prior to April, 1986, these data sheets were kept in common for all analysts in the Serology Section. After that they were kept by each individual analyst for his own work. For each analytical procedure, each set-up would be recorded on the data sheet with the date of the set-up, followed by the next, until the sheet was full, then a new sheet would be started. Some exceptions to this sequential listing by date were observed in the data sheets of G. Midkiff. The data sheets were kept in loose leaf form. They were accumulated into files for each analyst and organized by year at the time of this investigation.

Data sheets were available for the following listed time periods and analysts.

Serology Section Common File

Group I	1981 through March 25, 1986
Group II	1981 through March 12, 1986
PGM Subtyping	1981 through July 11, 1985
Absorption Elution	1981 through March 27, 1986
Absorption Inhibition	1981 through January 21, 1986

T. A. Smith

Group I	May 7, 1986 through Dec. 28, 1989
Group II	May 7, 1986 through Dec. 27, 1989
Absorption Elution	June 6, 1986 through Dec. 22, 1989
Absorption Inhibition	Oct. 10, 1985 through Dec. 4, 1989

H. B. Meyers

Group I	July 15, 1986 through Nov. 21, 1989
Group II	July 16, 1986 through Dec. 7, 1989
Absorption Elution	Aug. 20, 1986 through Nov. 29, 1989
Abosorption Inhibition	June 18, 1986 through Oct. 25, 1989

G. Midkiff

Group I	July 3, 1986 through March 3, 1987
Group II	March 13, 1986 through March 3, 1987
Absorption Elution	March 27, 1986 through Jan. 28, 1987
Absorption Inhibition	Nov. 15, 1985 through Feb. 18, 1987

J. Bolls

Group I	April 26, 1988 through Dec. 19, 1989
Group II	April 26, 1988 through Dec. 29, 1989
Absorption elution	June 13, 1989 through Dec. 31, 1989
Absorption Inhibition	Sept. 8, 1988 through Dec. 4, 1989

No data sheets for Fred S. Zain were located for the years 1986 through 1989. In a sworn statement taken May 24, 1993 in Bexar County, Texas, by William Forbes and Patrick O'Neal of the Kanawha County Prosecutor's Office, Mr. Zain denies having kept independent logs of his daily tests or having removed records when he left the West Virginia laboratory. (See pages 12 and 13 of the transcript recorded by Debra H. Alvarado)

B. Serology Laboratory Practices

The following comments pertain to the general laboratory operation of the Serology Section from 1986 through 1989 and not specifically to any one analyst conducting serological examinations at the time.

1. Quality Assurance Program

During the time period 1986 through 1989, there was apparently no Quality Assurance Program in use in the Serology Section. No documentation of such a program was provided to the inspectors, and the current supervisor of the section, Ted Smith, verifies that none existed at the time. Such a program would have included some form of proficiency testing of section members, technical review of work product, documentation of instrument maintenance and calibration, and the requirement of controls and standards.

2. Procedures Manual

An integral component of any Quality Assurance Program is the documentation of the procedures being used. No such documentation of the methods used during the time period in question could be provided to the inspectors.

3. The Use of Controls and Standards

The data sheets reflect that there was a poor understanding of the need for testing to include the use of known standards and substrate controls. For example, the data sheets showed that in absorption elution testing for ABO blood group factors, frequently no control samples from unstained areas of the item would be tested to ensure that the material itself (substrate) was not rendering a false positive interference. The use of such controls is imperative. In absorption inhibition testing there also was a general disregard for use of negative controls. PGM subtyping did not employ the use of a four band control in which the 1+,1-,2+, and 2- bands were all present.

4. The Proper Use of the Lewis Test

There was a general misuse of a test called the "Lewis" test. This test is most usually run on liquid blood samples to give an indication of secretor status, that is, whether or not the individual secretes ABO blood group substances in other body fluids such as saliva, semen or vaginal fluid. This test is commonly used in sexual assault or other cases in which body fluid evidence is to be analyzed.

While secretor status can often be inferred from the Lewis type of blood, it is incorrect to infer Lewis type from the ABO test on body fluid evidence. None the less, reports commonly listed a Lewis type on dried body fluid evidence, apparently inferred solely from an Absorption Inhibition test for ABO type.

5. Saliva Testing

Saliva samples from individuals involved in sexual assault cases were not being obtained and tested. Saliva is commonly used to confirm secretor status of individuals being tested as possible donors of body fluid evidence.

6. Documentation of Analyses

The data sheets used to document individual sample analyses were maintained in loose leaf form by each analyst. Such records which are not included in individual case files should be kept in a bound note book. This would have assisted in ascertaining that all such records for the time period were, in fact, present. Furthermore, the case files do not reflect the analyst who performed the individual tests nor the dates they were performed. This also made it difficult to assess completeness of records. Having this information in the case file would facilitate courtroom testimony as well.

7. Note taking

There were no substantial notes of any kind in those case files reviewed, only a summary worksheet. There was no description of packaging or seals. There was also no description of the exhibits examined such as color, size, location of stains, cuts and tears. There were no drawings or sketches. There was no record of data which supported the conclusions of ABO and Lewis types reported on liquid blood samples. There was no record of data to support the identification of semen on swabs and garments.

C. Specific Laboratory Practices of Fred S. Zain

These comments are the impressions of the inspectors and are the result of the review of thirty-six cases reported by Fred S. Zain.

1. The final report in the case file grouped evidence samples together in one list as though results for all genetic markers had been obtained on all samples, when often they had not. This practice is not an accurate reflection of results, and implies more weight to the evidence than is appropriate.

2. In the final report the frequency of the reference blood profiles (standards from victim or suspect) was provided rather than the frequency for the combination of those genetic markers obtained on the questioned samples which matched the reference blood types. This, too, is misleading and suggests a greater likelihood that the samples originated from a particular individual than would be determined by using the frequency of the results from the questioned samples.

3. Some genetic typing results recorded on the worksheets could not be found in any of the data sheets. Typically, some samples from the case would be found in the data sheets. Those not found in the data sheets would be recorded on the case worksheets with identical results as those on the data sheet. Considering the relative completeness of the data sheets for most of the review period, it appears that results were recorded for items that were not analyzed.

4. In some instances, results recorded on the case worksheets differed from the results recorded on the data sheets. This took the form either of a conclusive result recorded on the case worksheet with a different conclusive result recorded on the data sheet, or of a conclusive result recorded on the worksheet when the data sheet reflected an inconclusive or no result obtained.

5. If multiple tests of the same sample gave conflicting results, one result would occasionally be chosen with no record of additional tests to resolve the discrepancy.

6. Worksheets reflected alterations in entries which caused the result to differ from that on the data sheet, although the entry appeared to have originally agreed with the data sheet.

7. In some instances both worksheets and data sheets showed alterations to the same result. No record was available to show when or by whom those alterations were made.

8. In sexual assault cases the reported conclusions often implied a match with the suspect even though the results were consistent with the victim only, and, therefore, not informative as to the identity of the semen donor.

COMMENTS ON INDIVIDUAL CASES REVIEWED

Case number 86-007 Defendant Ronald Fields

No record was found in the data sheets for any work done on this case. No evaluation could be made.

Case number 86-035 Defendant Robert Wallace

No record was found in the data sheets for enzyme typing on this case, so that portion of the work could not be evaluated. The conclusion in the report included the defendant as a semen donor with a frequency of types of 6.8%. This included a genetic marker where the result was identical to the victim. This marker should not have been included. The correct frequency is approximately 28%.

Case number 86-075 Defendant Gerald Davis

No record was found in the data sheets for typing on this case, so that portion of the work could not be evaluated. The reported results showed an ABO type foreign to both victim and defendant. The remaining marker was identical to the victim. This would normally be interpreted as excluding defendant as the semen donor. The report incorrectly implied a match between the semen and the defendant. The ABO mismatch was dismissed as bacterial contamination by Mr. Zain. However, no satisfactory foundation for that opinion was found in the laboratory records nor the transcript of testimony. If the ABO result is discounted, the correct conclusion is no information regarding the semen donor.

Case number 86-097 Defendant Kimberly Walker

No record was found in the data sheets of typing work done on this case. No evaluation could be made.

Case number 86-166 Defendant Allan Asbury

No record was found in the data sheets of typing work done on this case. No evaluation could be made.

Case number 86-240 Defendant Charles Scott

This report was only a record of the reference blood from the defendant. A discrepancy was found in the EAP system between the data sheet and the case work sheet. This was a sexual assault case. If the evidence samples were semen only, this discrepancy would not effect the conclusion as EAP is not a semen marker.

Case number 86-313 Defendant Oscar Finley

Several of the enzyme and ABO typing results listed on the case worksheet could not be located in the data sheets, including the ABO on the victim reference sample which was liver tissue. The report should have listed only the blood on the "blue jeans" as matching the victim and only in the EAP, PGM, and EsD systems. The correct frequency is approximately 0.5%.

Case number 86-4111 Defendant James McClure

Most of the evidence samples recorded as typed on the case worksheet could not be found in the data sheets. For some samples found in the data sheets, a result was recorded on the worksheet when the data sheet reflected no results obtained for that marker.

Case number 86-414 Defendant David McDonald

All samples recorded with enzyme typing on the case worksheet were found on the data sheets. However, many of the samples gave no results with some markers, but a result was listed on the worksheet. ABO types were listed for all samples on the worksheet. However, no ABO typing was found for this case in the data sheets.

Case number 87-008 Defendant Robert Parsons

No record was found in the data sheets for enzyme typing recorded on the case worksheet for a blue sheet submitted under 87-026. The enzyme typing on blood on an orange towel submitted under 86-436 gave results consistent with the victim, excluding the defendant. This was run four times, as reflected on the data sheets, with equivalent results. The ABO type was run once and gave a result consistent with the defendant, excluding the victim. The case worksheet reflected some enzyme types different from the data sheet. The final report attributed the blood to the defendant based on ABO type only. The enzymes were not reported. This appears to be an incorrect attribution of donor of the blood on the towel.

Case number 87-199 Defendant Darrell Lee White

This case was originally examined and reported by Midkiff under case number 86-466. The defendant's blood was reported by Zain under 87-199. All items were listed together on the report of typing results implying, incorrectly, that all typing markers gave results for all items. No incorrect attribution appears to have been made, but the weight of the match was overstated.

Case number 87-250 Defendant Greg Black

This case was analyzed and reported initially by Midkiff. The defendant's reference blood was reported by Zain. Results recorded on the case worksheet were found in the data sheets. No discrepancy was noted in this case.

Case number 87-266 Defendant Thomas Sayre

Some results reported on the case worksheet were recorded as no result in the data sheets. Others were not found in the data sheets. This was a sexual assault case in which the typing results were identical to the victim. The reported conclusion was ambiguous but implied a match with the defendant. The report should have stated no information on the semen donor.

Case number 87-398 Defendant Dale S. O'Neil

Some results recorded on the case worksheet could not be found in the data sheets. Some samples critical to the final conclusion reflected a difference between the worksheet and the data sheet, with the data sheet reflecting the victim's type and the worksheet reflecting a mixture which included the defendant. The worksheet showed evidence of alteration.

Case number 87-436 Defendant Phillip A. Ward

Some enzyme results and most ABO results recorded on the case worksheet were not found in the data sheets. The results which were located in the data sheets were in agreement with the attribution of donor in the report. This resulted only in an overstatement of the value of the match.

Case number 87-442 Defendant Russel Sayer

Most of the enzyme and all of the ABO types recorded on the case worksheet were not found in the data sheets. The few results found agreed with the attribution of donor stated in the report.

Case number 87-457 Defendant Richard Mount

No record was found in the data sheets for any of the bloodstained items nor the qenital swab, for which ABO and enzyme results were recorded on the case worksheet. Some results on the worksheet were modified with a different ink from a result that initially was victim's type to a result that included the defendant as a possible semen donor. Some modifications were also apparent on the data sheet for the vaginal sample. It appears that the report should reflect no information on the donor(s) of the blood and semen evidence samples.

Case number 88-21 Defendant Elwood Lyndon Johnson
88-47 Defendant William Mark Johnson
87-283

This case involved a kidnapping/sexual battery, victim Virginia Runner. The worksheet was consistent with the results reached in the report. No results, however, could be located within the data sheets provided for a variety of the items reported. This was true for both ABO and enzyme typing. The final report was misleading since a complete blood profile (ABO, Lewis, and six enzymes) was given for a variety of swabs, garments, and victim's liquid blood. The reported frequency for this combination was .3%. This frequency was correctly calculated but, again, data to verify that these results were actually obtained was not located and the Lewis test was not conducted on the stains. Semen was found on defendant Elwood Johnson's underwear and the ABO "O" factor, PGM 1+, and Lewis a-b+ were reported. Here again, the Lewis test was not performed on the stain. No descriptive notes of any sort were found on the serological or the hair examinations.

Case number 88-114 Defendant Ronald Gene Daniel
88-47
87-283

This case involved a homicide, victim Tammy Jean Daniel. The first report stated blood was detected on a variety of items from the scene, no semen was found, and a request was made for standards. The second report dealt with hair exams. The third report contained a complete blood profile (ABO and six enzymes) for scene items. No liquid blood standard from the victim was ever submitted. The impact of these findings cannot be determined since no reference blood from the victim was tested.

Case number 88-132 Defendant Robert Counts
88-105

This case involved a father-daughter sexual assault, victim Drema Counts. The 3/22/88 report stated semen was found on slides, swabs, and panties. A request was made for standards. The 4/4/88 report gave ABO and Lewis for both victim and suspect. The same report stated that with regard to hair from a vehicle, some was like the victim's and some like the suspect's. The report went on to say that the slides, swabs, and panties demonstrated ABO "O" and Lewis a-b+. The Lewis was not done on these items as implied by the report. It is also probable that the ABO typing was not done on the slides. No grouping results could be found within the data sheets for the swabs or panties.

Case number 88-176 Defendant Joseph Lyle Decker
88-119
88-118

This case involved a sexual assault, victim Rhea Knight. Blood and semen were found on the nightgown. The "A" factor was identified in the semen stain according to the data sheets. Two other suspects (Shingleton Sr., Shingleton) were listed on 88-176. They were both ABO "O", Lewis a-b+. Decker was ABO type "A". There appears to be no incorrect attribution of donor.

Case number 88-186 Defendant Douglas Montgomery
88-163

This case involved a homicide, victim Boyd T. Riggins. A review of the data sheets and the worksheet indicate differences with the two enzyme types (PGM and GLO I) between victim Riggins' liquid blood and the plywood and swabs from scene. Reports issued in this case showed no differences. The discrepancies were reflected in the data sheets and worksheet only. Additionally, no results of ABO typing tests were found in the data sheets for either the plywood or the swabs. This case should be further reviewed if the swabs or the plywood played a significant role.

Case number 88-272 Defendant Ronald Bennett
88-253

This case involved a homicide, victim Virginia Bennett. ABO grouping test results (5/19/88) indicated A, B, and O activity on a napkin (run one time with no negative control), yet the result was reported as "A". Data sheets also showed one enzyme type (EAP) to be not callable on the napkin, yet it was reported on the 6/3/88 report, grouped together with the suspect's liquid blood. Another enzyme (EsD) was shown in parentheses on the data sheets which usually meant inconclusive, yet it, too, was called. No liquid blood from the victim was ever submitted. The data in this case does not support the attribution of donor stated in the case report.

Case number 88-341 Defendant Charles E. Simmons

This case involved a sexual assault, victim Virginia Lovejoy. Lewis typing on both victim and suspect indicated non-secretors (a+b-). Additionally, both were PGM 1+ and ABO "O". No blood group factors were found with grouping tests, run one time with no negative controls. The report incorrectly stated a frequency of 3.7%. If these stains were mixed semen/vaginal fluid, the PGM 1+ of the victim may have masked the 1+ of the suspect. The report should have stated no information on the semen donor. The frequency of ABO "O" and ABO non-secretors should not have been multiplied simply because no blood group factors were found.

Therefore, there was no incorrect attribution of donor based on the data, but certainly there was an overstatement regarding the weight of the match.

Case number 88-461 Defendant John E. McLaurin

This case involved a sexual assault, victim Connie Capone, cross referenced to 88-555, victim Beth Sparks. ABO typing tests on several samples with stains containing semen were performed with no negative controls. The 7/26/89 supplemental report issued by Myers showed no incorrect attribution of donor. The only information provided on 88-555 were the two reports. A complete evaluation of this case could not be made.

Case number 88-577 Defendant Buddy Wayne Martin

This case involved a homicide, victim Olive Martin. The worksheet showed a blood profile on several items from the scene as well as the victim's liquid blood. This profile was consistent with blood on the suspect's blue jeans. Two additional types were found on the jeans. No case report was included in the case jacket, making it difficult to completely evaluate.

Case number 88-641 Defendant Micah D. Truitt
88-635

This case involved a malicious wounding, victim Debra Farrar. Bolls' data sheet showed "O" activity on a knife if, indeed, "635 Bkn" was the Butterfly Knife, yet the report stated that ABO "A" was found on the knife. It also showed "635 Jkt R Sleeve" with "O" activity, but this was not reported at all. There appears to be an incorrect attribution of donor.

Case number 88-678 Defendant Robert Earl Lawson

This case involved a sexual assault, victim Sharon Spurlin. No semen was found on any items. Hairs consistent with the victim's own hair were found. Human blood on a bedsheet was consistent with the victim. No incorrect attribution of donor is apparent.

Case number 89-144 Defendant James E. Lilly
89-121

This case involved a malicious wounding, victim Steven Moses. One enzyme (GLO I) was inconclusive on the data sheet for a pair of blue jeans, but was included on the genetic marker chart of the report as a 2-1. Additionally, victim Moses was called a 1 at one time and a 2-1 another time. The report stated GLO I 2-1. On a photograph of electrophoretic results provided by supervisor Ted Smith, Moses did appear to be a type 1. With a discrepancy like this there should have been a retest. Other than this

discrepancy, there appears to be no incorrect attribution of donor. Since the one enzyme result should have been left off the report, there was a slight overstatement of the weight of the match.

Case number 89-211 Defendant James Dary
89-45

This case involved a homicide, victim Tammy Dary. ABO and enzyme results could not be located within the data sheets for several of the items reported. Based on what was tested and reported, there appears to be no errors of inclusion. However, there was an apparent overstatement of what was actually tested.

Case number 89-225 Defendant Rodney L. Stokes
89-215
89-209

This case involved a homicide, victim Thomas Fisher. No final report was located in the case jacket making it impossible to evaluate the impact of the report or subsequent testimony, if any was given. However, there was an indication from data sheets and worksheets that at least two individuals bled if, indeed, blood was deposited at the time of the incident in question. The worksheet showed evidence of alterations with respect to GLO I types. Most of the 1's have been changed to 2's.

Case number 89-252 Defendant Keith Heath Beaman
88-541
88-507

This case involved a homicide, victim Chris Smith. There were discrepancies between the conclusions reached in the final report regarding whose blood may have been deposited on the left shoe and the results of typing tests as evidenced in the data sheets. A liquid blood sample was submitted from 'Tim Brown' who differed in AK and EAP phenotypes. There was evidence of alterations to the worksheet at a later time with a different colored ink. It should be noted that the ABO "B" was identified without the use of negative controls and was not run in duplicate. It is difficult to evaluate the importance of the left shoe (the right shoe contained bloodstaining consistent with the victim). The case should be further reviewed if the left shoe played any importance.

Case number 89-293 Defendant James E. Richardson

This case involved a rape/homicide, victim Kelley Gilfilen. Lewis typing indicated that the victim, victim's husband, and defendant were all non-secretors. Liquid blood samples from suspects Fisher and Carnes were consistent with secretors. No blood group factors were found on the vaginal swab. ABO typing on a washcloth found at the burned residence/scene indicated the "B" factor. This was not run in duplicate and no negative control was used. Richardson was ABO "B". There was no evidence that Lewis testing was performed on the swab, but the report implied that it was. The conclusion did not include any frequency, but a transcript was reviewed to see how these results were explained in court by Mr. Zain. He incorrectly multiplied the non-secretor frequency (as evidenced by the lack of any detectable blood group factors) by 50% since the stain included semen (from males only) and finally by the PGM 1+ frequency, even though there may have been masking by the victim's PGM type. That the semen could not have originated from a secretor based on the absence of any blood group factors is not a certainty as stated in his testimony. Also, the PGM type of the victim, 2+1+, could have masked the defendant's PGM 1+, as well as the phenotypes 2+1+ and 2+, if the sample on the swab was a "mixture of secretions" as stated by Mr. Zain on Page 981. Finally, to multiply again by 50% because the semen donor was a male is erroneous because a <u>semen</u> donor is <u>always</u> male. The value of the serological testing was overstated in both the report and the testimony.

Case number 89-304 Defendant Janice Diers

This case involved a homicide, victim Betty Samuels. The blouse from the victim was the only item tested that was bloodstained. Although one reported enzyme on the victim's blouse could not be verified, there was no apparent incorrect attribution of donor.

Case number 89-390 Defendant Daniel Ritchie

This case involved a homicide, victim Perry Sovine. Based on the data sheets, PGM 1+1- on the suspect's shirt could have been reported but wasn't. It would have been consistent with the victim's PGM type. There appears to be no improper attribution of donor in this case.

Case number 89-423 Defendant Jimmie Gardner
89-266
88-328
87-359
87-278
87-236

This case involved two separate sexual assaults on victims Galati and Ferrell (5/16/87) and Ruckman (7/24/87). The ABO typing results found in the data sheets showed type "O" only on item 236V (Galati vaginal swab). Gardner was ABO "A", with a Lewis indicative of a secretor. The report on 88-328 also showed vaginal swabs from Ruckman to display PGM 2+, 1+, 1- when nowhere in the data sheets was the 1- actually recorded. An ABO typing test on a cigarette with only "O" activity was not reported. Therefore, there was a consistency between the worksheet and the report, but not total consistency between the data sheets and the worksheet. There was, however, no incorrect statements of attribution of donor regarding these sample simply because nowhere in the series of reports were such statements made.

SUMMARY COMMENTS

Irregularities were found in most of the cases reviewed in this investigation, and one, therefore, believed to have been the result of systematic practice rather than an occasional inadvertant error. The majority of the irregularities were in the incompleteness of records or appeared to affect the weight given to a genetic match of evidence samples to possible donors. A few cases reflected possibly incorrect attributions of donors. (See comments on individual cases)

The time available for this investigation prohibited an in depth review for most of the relatively large number of cases presented to the inspectors. We recommend a more thorough technical review of individual cases in which the irregularities may have had a significant impact on pleas or convictions. A review of transcripts of trials and/or other court proceedings may be required to identify those cases.

James J. McNamara — Date: 8-9-93

Ronald R. Linhart — Date: 8-6-93

SUMMARY OF INVESTIGATION
OF
WEST VIRGINIA STATE POLICE
CRIME LABORATORY, SEROLOGY DIVISION

by: JAMES J. McNAMARA
RONALD R. LINHART

Introduction

Pursuant to an order of the Circuit Court of Kanawha County, West Virginia, directed to the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB), a preliminary investigation was conducted of the practices of the Serology Laboratory of the West Virginia State Police during the years 1986 through 1989, with specific attention to cases reported by Fred S. Zain, then supervisor of that laboratory. The investigation was conducted primarily by review of laboratory records previously confiscated and kept under seal by the West Virginia Supreme Court. The examination of records was made at the West Virginia State Police Headquarters in South Charleston from July 19 through 23, 1993.

Findings regarding the Serology Laboratory in general

- The laboratory lacked a documented quality assurance program.
- The laboratory lacked a manual of technical procedures.
- There was improper use or lack of use of controls and standards for analytical tests.
- The "Lewis" test was incorrectly reported and interpreted.
- Documentation of analytical tests was kept in loose leaf, making it difficult to ascertain the completeness of records.
- Documentation of evidence examinations and analytical tests kept in the case files was inadequate.

Findings regarding to the work of Fred S. Zain

- Items were reported as analyzed in the reports and typing results were record on the case worksheets on items for which no record of analysis was found in the analytical data sheets.
- Typing results were recorded on the case worksheets on items for which the analytical data sheets reflected that no results were obtained.
- Typing results were recorded on the case worksheets which differed from the results reflected on the analytical data sheets.

- Typing results recorded on the analytical data sheets and/or the case worksheets appeared to have been altered from the original entry, with no record of when or by whom the alterations were made. These altered results commonly permitted an inclusion of either the victim or the defendant in a manner that was incriminating to the defendant, and were so reported.

- The final case reports listed multiple evidence samples together with the reference blood typing profile with a statement that implied a match of the complete profile, even though some of the listed evidence samples may not have been tested and others yielded only partial typing profiles. Furthermore, the only frequency figure reported was for the reference blood profile, implying that as the match frequency. This practice overstated the weight to be given to the typing match.

- A match with the suspect was implied in the final report of semen typed in sexual assault cases when the results matched the victim and were, therefore, not informative as to the identity of the semen donor.

Conclusions

Each of these findings was observed in multiple cases reported by Fred S. Zain and are, therefore, believed to have been systematic practice rather than inadvertent error.

In most cases these practices appeared to increase the weight to be given to a match between evidence samples and possible donors beyond that supported by the analytical data, although, in a few cases there may have been an attribution of donor reported contrary to the typing data obtained.

The effect these practices may have had on pleas and trials could not be determined from the records examined in this investigation. We recommend a review of transcripts of court proceedings to ascertain which cases may have been adversely affected.

James J. McNamara — 8-9-93
James J. McNamara — Date

Ronald R. Linhart — 8-6-93
Ronald R. Linhart — Date

AMERICAN SOCIETY OF CRIME LABORATORY DIRECTORS

LABORATORY ACCREDITATION BOARD

October 21, 1993

The Honorable James O. Holliday
Senior Status Judge
West Virginia Judicial District
Route 4, Box 250
Hurricane, West Virginia 25526

Dear Judge Holliday:

This is a supplement to the investigation report signed August 6, 1993, and August 9, 1993, by Ronald R. Linhart and James J. McNamara, respectively. This supplement is prepared to clarify issues raised during a telephonic conference on October 14, 1993.

In the above referenced report, we addressed seven areas of deficiency in the general practices of the West Virginia State Police Serology Laboratory during the period reviewed, 1986 through 1989. The areas of deficiency described were:

Absence of a documented Quality Assurance Program
Absence of a written Procedures Manual
Insufficient use of controls and standards
Improper reporting of the Lewis Test
Lack of routine use of saliva samples for Secretor testing
Analytical documentation kept in a manner precluding assessment of completeness
Inadequate examination notes

With the exception of the Lewis reporting, none of these areas of deficiency necessarily indicates that inaccurate results were obtained or reported. They do, however, limit the ability to assess the reliability of analytical results. In the absence of these records, we attempted to assess the laboratory operation by interviewing Ted Smith regarding laboratory practices during the review period. Based on his description, we have no reason to believe that the analytical methods used were improper, nor that tests were incorrectly performed.

With regard to the Lewis reporting, in any case in which a Lewis result was reported but the Lewis test was not performed, the result reported is potentially inaccurate. Please refer to our original report for a more complete discussion of this defect.

Ted Smith has stated that the Lewis type was only used as an alternate means of stating the subject's secretor status, and that the statistical calculation was based on the secretor frequency rather than the Lewis frequency. Treated in this manner, in cases reported as Lewis a-b+ based on a finding of ABO antigens, a correct attribution of donor and statistical frequency was likely. However, in cases reported as Lewis a+b- based on the absence of ABO antigens, an incorrect attribution of donor was possible if the subject was concluded to be a non-secretor based on the inferred Lewis type. In any case, determination of non-secretors from body fluid stains requires a quantitative test. According to Ted Smith, no such tests were in use in the West Virginia laboratory during the review period.

In fairness to the West Virginia serology laboratory, it should be noted that many forensic laboratories in this country developed and documented their quality assurance programs during the 1980's. West Virginia was undoubtedly not unique in not having such programs in place during the review period.

Please contact us if you require further elaboration of our findings from this investigation.

Sincerely,

James J. McNamara

Ronald R. Linhart

AMERICAN SOCIETY OF CRIME LABORATORY DIRECTORS

LABORATORY ACCREDITATION BOARD

(213) 974-7018

February 10, 1994

The Honorable James O. Holliday
Senior Status Judge
West Virginia Judicial District
Route 4, Box 250
Hurricane, West Virginia 25526

Dear Judge Holliday:

At the request of Ted Philyaw, Administrative Director of the Courts, we have reviewed 22 case files from analysts other than Fred Zain who were assigned to the West Virginia State Police Serology Laboratory. Case files were reviewed for S. Gayle Midkiff (2 files), Lynn C. Inman (2 files), T. A. Smith (6 files), H. B. Myers (8 files), and J. A. Bowles (4 files). The earliest report was dated October 1982 and the latest was dated November 1990.

Additionally, a transcript of court testimony was received for review from at least one of those cases for each analyst.

Occasional errors were noted in reporting of analytical findings, and some of the results recorded on the worksheets were not confirmed to be present in the submitted data sheets. At least some of these apparent discrepancies may be due to missing data sheets, especially with the earlier cases; the use of cryptic nomenclature, making it difficult to associate a data sheet entry with the corresponding evidence item; or poor copy quality, rendering some entries illegible.

No instance was found, however, where an item of evidence listed in the worksheets or reported as analyzed was confirmed to be totally absent from the data sheets. No pattern was observed in the missing or incorrectly transcribed data. Furthermore, no instance was found in which an error or omission was likely to have had a significant impact on the conclusion, nor the weight given to the conclusion, on an apparently probative item of evidence.

The transcripts of testimony reviewed revealed observations and conclusions substantially consistent with the reports. Some of the errors noted in the reports were not addressed in testimony since they related to non probative items. On at least one occasion, data and conclusions which were omitted from the typed report were accurately addressed in the testimony.

In summary, the defects seen in the case files of these five analysts differ in character from those observed in the previously reviewed case files of Fred Zain. The defects here observed are sporadic, exhibit no discernable pattern, and do not appear to have adversely impacted the defendants.

Sincerely,

James J. McNamara

Ronald R. Linhart