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Equine disease control

Surveillance report

Dourine 2025

JD Grewar & CT Weyer
2025



**Western Cape
Government**
FOR YOU

Surveillance Report

Disease	Dourine in horses
Coverage Area	Western Cape – AHS Surveillance Zone
Period	2025
Authors	John Grewar, Camilla Weyer & Lesley van Helden

Introduction

Since 2018, active dourine surveillance has been conducted in the Western Cape Province through the testing of horses enrolled either as sentinels - primarily sourced from the African horse sickness (AHS) sentinel programme - or through structured surveys of randomly selected horses within the AHS free zone, as implemented in 2020. The surveillance strategy has aimed to test sentinel animals at six-monthly intervals.

During 2018 and 2019, surveillance activities were limited to the first half of each year. In 2020, a targeted survey of horses within the AHS free zone was undertaken during the first half of the year. From 2021 onwards, the programme achieved the intended biannual testing target, with sentinel horses sampled during mid-year and end-of-year cohorts.

An overview of dourine, including its epidemiology and the rationale for ongoing surveillance, has been comprehensively described in previous reports, which are available via the referenced links or through <https://www.myhorse.org.za>. Accordingly, this report does not repeat those background details.

The purpose of the present report is to provide evidence supporting freedom from dourine within the geographic area where active surveillance is conducted for AHS, namely the AHS surveillance and free zone of the Western Cape Province, based on surveillance activities undertaken during the 2025 reporting period.

Surveillance parameters

Table 1: Surveillance parameters used in design and evaluation of the Dourine surveillance program in 2025.

Parameter	Value	Comments
Population at risk	16000	All horses in the surveillance and free zones. 16000 is an estimate we have used in the last few analyses; there are currently 20885 and 780 horses registered in the AHS surveillance and free zones respectively although data is captured only for horses entering the area.
Design Prevalence	~5%	Minimum expected prevalence in the population should dourine occur; parameter taken from the serological survey requirements of the EU for AHS sentinel surveillance given that the same population was used for the dourine sampling.
Test Sensitivity	90%	Estimate based on best scientific guess. The sensitivity of the complement fixation test (CFT) has not been established, although given the false positive rates (see specificity) the sensitivity is likely to be relatively high. The CFT is seen as a gold standard for individual horse testing prior to export and this also supports a test with relatively good sensitivity.
Test Specificity	Unknown but system specificity of 100% assumed	The CFT test is prone to false positives and probably does not have a particularly good specificity. However, for the purposes of surveillance evaluation and given that any positive CFT result will be investigated to establish a final diagnosis a specificity of 100% was used in establishing the outcome of the sensitivity of the surveillance
Type 1 error	5%	Used to provide a final probability of 95% that Dourine was not present if it was not detected using the surveillance parameters.

South Africa's African horse sickness (AHS) sentinel surveillance programme, operating within the AHS free and surveillance zones, targets the sampling of approximately 150 horses per month using PCR testing. In addition to PCR testing, serum samples are collected from all sentinel horses. A randomly selected subset of these sera is used to support the dourine surveillance system, traditionally drawing on approximately 100 samples from those collected during the June and December sentinel sampling rounds each year.

During 2025 the sample quality on arrival at the laboratory was not adequate to test for the mid-year sampling period which necessitated an adjustment to this schedule to test September 2025 samples. The December 2025 cohort was selected for testing as planned. The AHS sentinel surveillance programme is designed to sample horses in proportion to the underlying population at risk, employing a spatially stratified, gridded sampling framework to ensure geographic representativeness across the surveillance area (see Figure 1).

Consent and ethics

Ethics approval was not obtained nor required for this survey since the samples were used from the existing AHS sentinel surveillance program. Sentinel owners and managers have previously provided consent for this surveillance program.

Results

A total of 100 horses were selected from 28 locations across the AHS surveillance zone in September 2025. In December 100 horses were selected from 31 locations. Proportional numbers of horses sampled across the surveillance zone are shown in Figure 1 below. Most samples were taken from an area of approximately 50-75 km around the Kenilworth Quarantine Station, from which horses are exported.

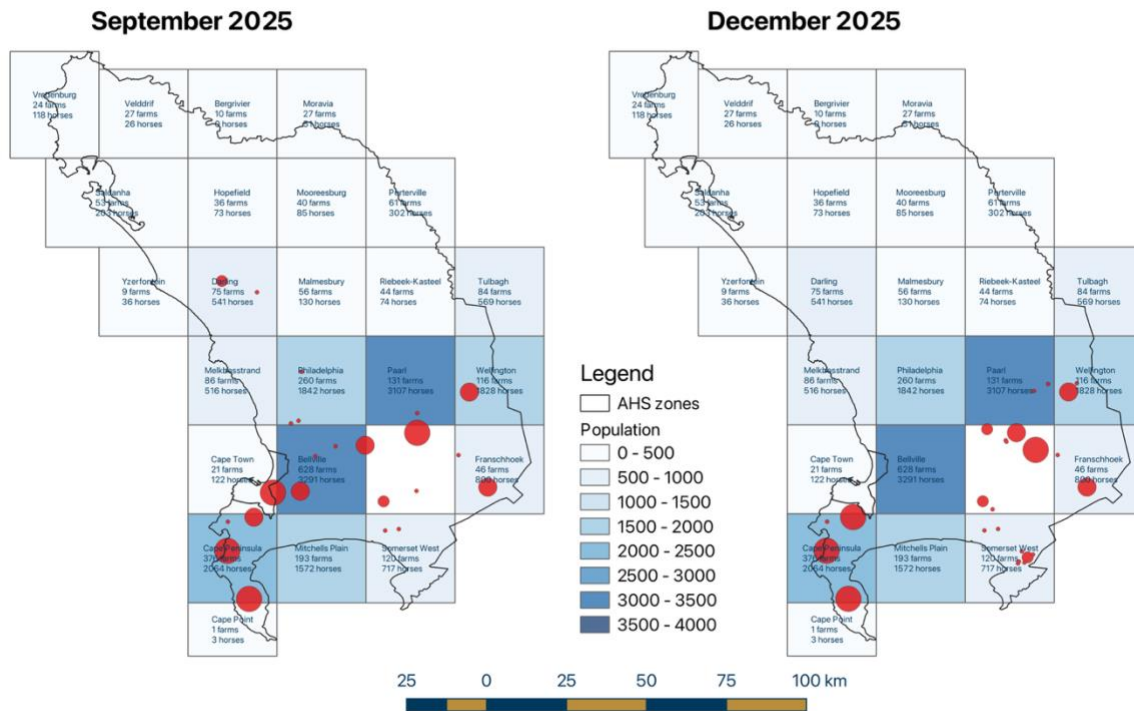


Figure 1: Dourine survey locations showing proportional circles for number of equines tested per location in September and December 2025 respectively. The underlying population at risk is shown as a light to dark blue gradient, this to show that locations were chosen to reflect the relative underlying population at risk per surveillance grid.

September 2025: all 100 samples tested negative for dourine antibody using the CFT – S2025/10_0501 (Western Cape Veterinary Laboratory Services).

December 2025: all 100 samples tested negative for dourine antibody using the CFT – S2026/01_0010 (Western Cape Veterinary Laboratory Services).

Sensitivity of the surveillance program

The sensitivity (and resulting probability of freedom) of the surveillance program is shown in Table 2 below. This evaluation is independent of any prior surveillance. While the sentinel surveillance program is based on a single stage sampling strategy (evaluated in Column 2 of Table 2) we have estimates of the underlying number of herds in the surveillance zone as well as estimates of the herd sizes of the sampled herds. This allows an estimate of surveillance sensitivity in a more realistic setting (Column 3 of Table 2). Note that in this latter analysis we reverted to an effective population design prevalence of 2% (within herd design prevalence of 20% and herd level prevalence of 10% throughout the population) – this in an effort to depict a reasonable minimum expected prevalence with so few cases of dourine reported in the prior two decades in the AHS surveillance zone (see Figure 3).

Table 2: Design prevalence with resulting surveillance sensitivity and probability of freedom outcomes for two different scenarios independently analysed: the sentinel program design prevalence and the generic values used given the history of cases in the AHS controlled area. NOTE: This evaluation is for a single point in time and does not consider previous surveillance outcomes.

Parameter	Descriptions and values based on varying data sources			
	Single stage population sensitivity		Generic prevalence to result in effective design prevalence of 2% with 2-stage analysis	
Animal level prevalence (P^*_u)	0.05		0.2	
Herd level prevalence (P^*_c)	n/a		0.1	
Effective population prevalence ($P^*_u \times P^*_c$)	0.05		0.02	
	2025 H1	2025 H2	2025 H1	2025 H2
MeanSSH - Mean herd level surveillance sensitivity	n/a		0.507	0.499
SeP - Population surveillance sensitivity	0.989	0.989	0.761	0.790
PFreeU - Confidence of population freedom – uninformed prior	0.986	0.986	0.774	0.796

With surveillance evaluation it is also appropriate to evaluate probability of freedom outcomes given prior surveillance events. In Figure 2 below, we show all 13 surveillance events undertaken to date in the AHS surveillance and free zones (see previous reports). Where surveillance was missed (second half of 2018 (H2), 2019 (H4) and 2020 (H6)) a zero sensitivity is assumed. Note also that the surveillance in 2020 (H5) was targeting the AHS free zone only, but the evaluation below assumes a population at risk across the AHS free and surveillance zone for standardisation purposes.

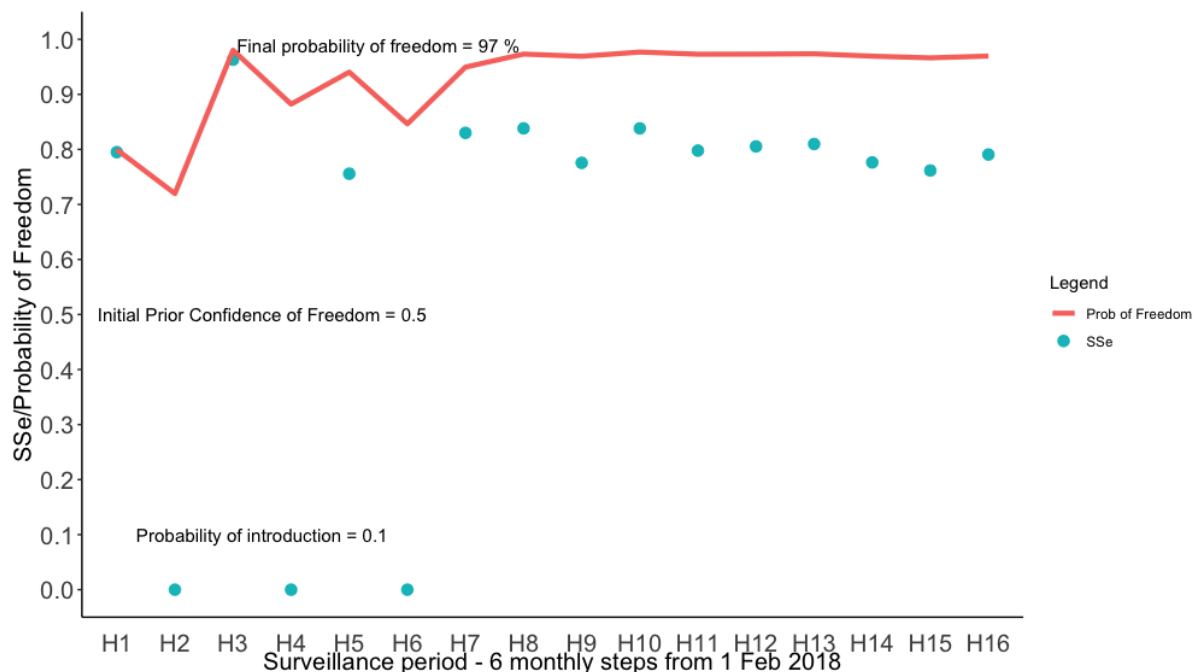


Figure 2: Surveillance system sensitivity and probability of freedom assuming an introduction probability of 10%, an underlying herd and animal prevalence of 20 % and 10% respectively and an uninformed prior probability of 50% in period 1.

The dourine probability of freedom in the AHS free and surveillance zone in H1 and H2 2025, given the 2025 surveillance efforts alone, ranges between 77.4% and 98.6% depending on the analysis used. The overall probability of freedom taking prior surveillance into account is 97%.

Discussion

Stand-alone surveillance efforts like the one described here supplement the current clinical passive surveillance and Thoroughbred pre-breeding dourine surveillance efforts in South Africa.

Figure 3 shows all dourine cases reported in South Africa from 1993 through Dec 2025 (data accessed Jan 2026 from the National Department of Agriculture (DOA) and collated to South African local municipalities). The last case in the Western Cape in 2012 occurred in a working mule in the Bredasdorp region – details of that case can be found at http://www.elsenburg.com/vetepi/epireport_pdf/February2012.pdf.

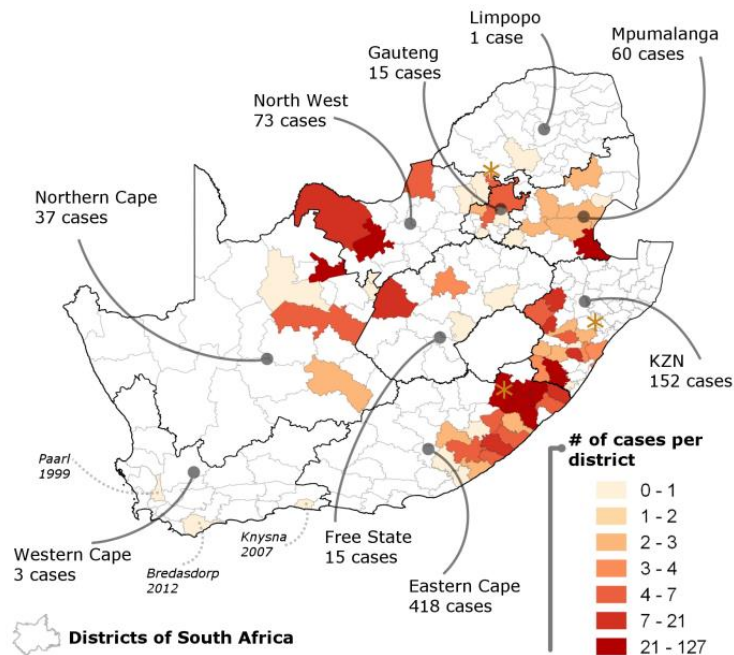


Figure 3: Historical dourine cases reported to DOA from 1993 through Dec 2025 (the last case as reported was in 2018 in the Eastern Cape) to date. Cases have been aggregated by municipality while case totals per province are labelled. The three cases reported in the Western Cape are also labelled specifically with the last case reported in 2012.

Acknowledgments

We are very grateful to our colleagues in the National Department of Agriculture (DOA), the Western Cape Department of Agriculture and particularly its Veterinary Laboratory who assisted in and facilitated this work. Funding for this project was obtained from the South African Equine Health and Protocols (SAEHP - sampling, logistic and testing costs). We are, as always, very grateful to the owners and managers of the sentinel horses in the AHS controlled area in the Western Cape.

September 2025 results (S2025/10_0501)



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LABORATORY REPORT No: S2025/10_0501

Sender: Dr John Grever 0836420610
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Contact number(s): -, 0761522782; 073799818
Email: zebra@myhorse.org.za; results@myhorse.org.za

Owner: Sender is owner
Company: -
Farm Name (GPS): - (-,-)
Street address: -
PO Box address: -
Town, postal code: -, -
Contact number(s): -, -
Email: -

Sender reference: SAEHP_Dourine_H22025

State Vet Area: Contact Sender for SV details

Purpose of sampling: Diagnostic

SPECIMEN INFORMATION

Species: Equine - Horse

Specimen condition: Suitable

Client sampling date, if indicated: 01-09-2025

Date & Time Received: 27-10-2025 15:11:03

Specimen Type

Serum

Quantity

100

Test(s) Required

Complement Fixation Test (CFT) for Dourine (P-SER-M-018)

RESULTS AND REPORT

Specimen Type: Serum

DOURINE CFT Result

Specimen ID / Horse Name	Result	Date Tested
ESS250028	Negative	04-11-2025
ESS250029	Negative	04-11-2025
ESS250030	Negative	04-11-2025
ESS250031	Negative	04-11-2025
ESS250032	Negative	04-11-2025
ESS250033	Negative	04-11-2025
ESS250034	Negative	04-11-2025
ESS250035	Negative	04-11-2025
ESS250036	Negative	04-11-2025
ESS250038	Negative	04-11-2025
ESS250041	Negative	04-11-2025
ESS250042	Negative	04-11-2025
ESS250043	Negative	04-11-2025
ESS250045	Negative	04-11-2025
ESS250046	Negative	04-11-2025
JSS250065	Negative	04-11-2025
JSS250066	Negative	04-11-2025
JSS250067	Negative	04-11-2025
JSS250068	Negative	04-11-2025

SEROLOGY

The result(s) apply only to the sample(s) that were tested, as received from the client. Client(s) information and sample(s) information is indicated as received from the client(s). This test report shall not be reproduced except in full.

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JCH

LABORATORY REPORT (CONTINUED)

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RESULTS AND REPORT

Specimen Type: Serum (continued)

DOURINE CFT Result

Specimen ID / Horse Name	Result	Date Tested
JSS250069	Negative	04-11-2025
JSS250070	Negative	04-11-2025
JSS250071	Negative	04-11-2025
JSS250072	Negative	04-11-2025
JSS250073	Negative	04-11-2025
JSS250074	Negative	04-11-2025
JSS250075	Negative	04-11-2025
JSS250076	Negative	04-11-2025
JSS250077	Negative	04-11-2025
LSS250235	Negative	04-11-2025
LSS250236	Negative	04-11-2025
LSS250237	Negative	04-11-2025
LSS250238	Negative	04-11-2025
LSS250239	Negative	04-11-2025
LSS250272	Negative	04-11-2025
LSS250273	Negative	04-11-2025
LSS250274	Negative	04-11-2025
LSS250275	Negative	04-11-2025
LSS250276	Negative	04-11-2025
LSS250277	Negative	04-11-2025
LSS250278	Negative	04-11-2025
LSS250279	Negative	04-11-2025
LSS250280	Negative	04-11-2025
LSS250281	Negative	04-11-2025
LSS250282	Negative	04-11-2025
LSS250283	Negative	04-11-2025
LSS250284	Negative	04-11-2025
LSS250287	Negative	04-11-2025
LSS250288	Negative	04-11-2025
LSS250289	Negative	04-11-2025
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LSS250293	Negative	04-11-2025
LSS250294	Negative	04-11-2025
LSS250295	Negative	04-11-2025
LSS250296	Negative	04-11-2025
LSS250297	Negative	04-11-2025
LSS250298	Negative	04-11-2025
LSS250299	Negative	04-11-2025
LSS250300	Negative	04-11-2025

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RNP

LABORATORY REPORT (CONTINUED)

Submission No: S2025/10_0501

RESULTS AND REPORT

Specimen Type: Serum (continued)

DOURINE CFT Result		
Specimen ID / Horse Name	Result	Date Tested
LSS250301	Negative	04-11-2025
LSS250303	Negative	04-11-2025
TSS250210	Negative	04-11-2025
TSS250211	Negative	04-11-2025
TSS250212	Negative	04-11-2025
TSS250213	Negative	04-11-2025
TSS250214	Negative	04-11-2025
TSS250215	Negative	04-11-2025
TSS250216	Negative	04-11-2025
TSS250217	Negative	04-11-2025
TSS250218	Negative	04-11-2025
TSS250219	Negative	04-11-2025
TSS250220	Negative	04-11-2025
TSS250221	Negative	04-11-2025
TSS250222	Negative	04-11-2025
TSS250223	Negative	04-11-2025
TSS250224	Negative	04-11-2025
TSS250225	Negative	04-11-2025
TSS250226	Negative	04-11-2025
TSS250227	Negative	04-11-2025
TSS250228	Negative	04-11-2025
TSS250229	Negative	04-11-2025
TSS250230	Negative	04-11-2025
TSS250231	Negative	04-11-2025
TSS250232	Negative	04-11-2025
TSS250233	Negative	04-11-2025
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TSS250241	Negative	04-11-2025
TSS250242	Negative	04-11-2025
TSS250243	Negative	04-11-2025
TSS250244	Negative	04-11-2025
TSS250245	Negative	04-11-2025
TSS250246	Negative	04-11-2025
TSS250247	Negative	04-11-2025

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KH

LABORATORY REPORT (CONTINUED)

Submission No: S2025/10_0501

RESULTS AND REPORT

NOTE: Opinions and interpretations expressed herein are outside the scope of SANAS accreditation.

Thank you for submitting these samples to the Western Cape Provincial Veterinary Laboratory. Please do not hesitate to contact us should you have any queries.

Authorised signatory

D.S. CONRADIE

Name

Signature: 05 NOV 2025

Report date

State Veterinarian

DR K.I. HARRIS

Name

Signature: 2025/11/06


Date

SEROLOGY

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December 2025 results (S2026/01_0010)



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LABORATORY REPORT
No: S2026/01_0010

Sender: Dr John Grever 0836420610
Clinic or Company: SA Equine Health and Protocol NPC
PO Box or Street: Postnet Suit 474; Baker Square Block, Paardeveel
Town, postal code: Somerset West, 7600
Contact number(s): -, 0761522782; 073799818
Email: zebra@myhorse.org.za; results@myhorse.org.za

Owner: Sender is owner
Company: -
Farm Name (GPS): - (-,-)
Street address: -
PO Box address: -
Town, postal code: -, -
Contact number(s): -, -
Email: -

Sender reference: SAEHP_Dourine-H22025
State Vet Area: Contact Sender for SV details
Purpose of sampling: Diagnostic

SPECIMEN INFORMATION

Species: Equine - Horse.
Specimen condition: Suitable
Client sampling date, if indicated: 17-12-2025
Date & Time Received: 05-01-2026 11:25:51
Specimen Type: Serum
Quantity: 100
Test(s) Required: Complement Fixation Test (CFT) for Dourine (P-SER-M-018)

RESULTS AND REPORT

Specimen Type: Serum

Specimen ID / Horse Name	Result	Date Tested
JSS250102	Negative	08-01-2026
JSS250103	Negative	08-01-2026
JSS250104	Negative	08-01-2026
JSS250105	Negative	08-01-2026
JSS250106	Negative	08-01-2026
JSS250107	Negative	08-01-2026
JSS250108	Negative	08-01-2026
JSS250109	Negative	08-01-2026
JSS250110	Negative	08-01-2026
JSS250111	Negative	08-01-2026
JSS250112	Negative	08-01-2026
JSS250113	Negative	08-01-2026
JSS250114	Negative	08-01-2026
LSS250435	Negative	08-01-2026
LSS250436	Negative	08-01-2026
LSS250437	Negative	08-01-2026
LSS250438	Negative	08-01-2026
LSS250439	Negative	08-01-2026
LSS250440	Negative	08-01-2026

LABORATORY REPORT (CONTINUED)
Submission No: S2026/01_0010

RESULTS AND REPORT

Specimen Type: Serum (continued)

Specimen ID / Horse Name	Result	Date Tested
LSS250441	Negative	08-01-2026
LSS250442	Negative	08-01-2026
LSS250443	Negative	08-01-2026
LSS250444	Negative	08-01-2026
LSS250445	Negative	08-01-2026
LSS250446	Negative	08-01-2026
LSS250447	Negative	08-01-2026
LSS250448	Negative	08-01-2026
LSS250449	Negative	08-01-2026
LSS250450	Negative	08-01-2026
LSS250451	Negative	08-01-2026
LSS250452	Negative	08-01-2026
LSS250453	Negative	08-01-2026
LSS250454	Negative	08-01-2026
LSS250455	Negative	08-01-2026
LSS250456	Negative	08-01-2026
LSS250457	Negative	08-01-2026
LSS250458	Negative	08-01-2026
LSS250459	Negative	08-01-2026
LSS250460	Negative	08-01-2026
LSS250461	Negative	08-01-2026
LSS250462	Negative	08-01-2026
LSS250463	Negative	08-01-2026
LSS250464	Negative	08-01-2026
LSS250465	Negative	08-01-2026
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LSS250473	Negative	08-01-2026
LSS250474	Negative	08-01-2026
LSS250475	Negative	08-01-2026
LSS250476	Negative	08-01-2026
LSS250477	Negative	08-01-2026
LSS250478	Negative	08-01-2026
LSS250479	Negative	08-01-2026
LSS250480	Negative	08-01-2026
LSS250481	Negative	08-01-2026
LSS250482	Negative	08-01-2026

SEROLOGY
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LABORATORY REPORT (CONTINUED)

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RESULTS AND REPORT

Specimen Type: Serum (continued)

DOURINE CFT Result		
Specimen ID / Horse Name	Result	Date Tested
LSS250483	Negative	08-01-2026
LSS250484	Negative	08-01-2026
LSS250485	Negative	08-01-2026
LSS250486	Negative	08-01-2026
LSS250487	Negative	08-01-2026
LSS250488	Negative	08-01-2026
TSS250342	Negative	08-01-2026
TSS250343	Negative	08-01-2026
TSS250344	Negative	08-01-2026
TSS250345	Negative	08-01-2026
TSS250346	Negative	08-01-2026
TSS250347	Negative	08-01-2026
TSS250348	Negative	08-01-2026
TSS250349	Negative	08-01-2026
TSS250350	Negative	08-01-2026
TSS250351	Negative	08-01-2026
TSS250352	Negative	08-01-2026
TSS250353	Negative	08-01-2026
TSS250354	Negative	08-01-2026
TSS250355	Negative	08-01-2026
TSS250356	Negative	08-01-2026
TSS250357	Negative	08-01-2026
TSS250358	Negative	08-01-2026
TSS250359	Negative	08-01-2026
TSS250360	Negative	08-01-2026
TSS250361	Negative	08-01-2026
TSS250362	Negative	08-01-2026
TSS250363	Negative	08-01-2026
TSS250364	Negative	08-01-2026
TSS250365	Negative	08-01-2026
TSS250366	Negative	08-01-2026
TSS250367	Negative	08-01-2026
TSS250368	Negative	08-01-2026
TSS250369	Negative	08-01-2026
TSS250370	Negative	08-01-2026
TSS250371	Negative	08-01-2026
TSS250372	Negative	08-01-2026
TSS250373	Negative	08-01-2026
TSS250374	Negative	08-01-2026
TSS250375	Negative	08-01-2026

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LABORATORY REPORT (CONTINUED)

Submission No: S2026/01_0010

RESULTS AND REPORT

REMARKS:

All samples negative for Dourine.

NOTE: Opinions and Interpretations expressed herein are outside the scope of SANAS accreditation.

Thank you for submitting these samples to the Western Cape Provincial Veterinary Laboratory. Please do not hesitate to contact us should you have any queries.

Authorised signatory

M. DREYER

Name

M. Dreyer

Signature

2026/01/08

Report date

State Veterinarian

DR T. ANTHONY

Name

Dr T. Anthony

Signature

Dr T. Anthony

Date

08 JAN 2026

PRIVATE RAS X500, STELLENBOSCH, 7520

PROVINCIAL VETERINARY LABORATORY

DEPT. OF AGRICULTURE, WESTERN CAPE

SEROLOGY

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