Mr. Peter McGauran
CEO, Thoroughbred Breeders Australia
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RANDWICK NSW 2031

January 25th 2010

Dear Mr. McGauran,

Please accept the following opinion on the draft **Import Risk Analysis (IRA)** report for horses entering Australia from currently approved countries. The draft report was produced by **Biosecurity Australia** on behalf of the Australian Government with the assistance of outside technical and scientific advice. We were commissioned by a key industry stakeholder to provide independent comment on the report with a focus on the diseases addressed, the recommended importation requirements for those diseases, and consideration of impact that may result from proposed guidelines.

General Comments

The draft IRA report is a comprehensive document that addresses the key diseases that pose threat to the Australian horse industry. The report, once accepted, will serve as an important and long-needed science-based document that could be easily modified to adapt to emerging diseases and improved diagnostic testing.

Several of the diseases included in the draft IRA report have the potential to affect multiple species and therefore may provide an equal or greater threat to other livestock industries in Australia. There are also several diseases that are of zoonotic risk, i.e., have the potential to impact human health if they were to become established within Australia. The document reflects a continued conservative approach to the importation of horses into Australia; this is consistent with the approach for other animal industries.

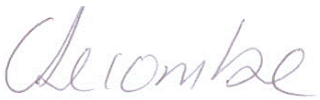
Consistent with the report title the document is heavily grounded in Risk Assessment, an epidemiological technique that includes a strong focus on **qualitative** rather than **quantitative** analysis. The likelihood estimates are determined using current knowledge of a particular disease. For diseases where the fundamental knowledge is limited or diagnostic testing lacks accuracy the resultant likelihood estimates may be open to opinion or debate. With this in mind we agree with the majority of estimates determined throughout the report; there are some exceptions that are discussed within individual disease sections that follow.

Chapter 5 of the draft IRA report uses traditional and well-established methods to determine an overall risk associated with a disease. The selection of most diseases for risk management is clearly defined. In contrast the steps taken in arriving at specific guidelines for diseases requiring management were at times difficult to follow, particularly when the guidelines exceeded those described by the OIE.

Conclusions

We conclude that this is a well-written and thorough document that addresses all of the major diseases that pose threat to the Australian Horse Industry. The report is long overdue, and although conservative with respect to conclusions and guidelines, does not suggest major changes to existing quarantine requirements. We have several minor concerns that are outlined in the text attached, principally recommending that a risk assessment be carried out for CEM, refinement of recommendations regarding Surra and Borna Disease, and several issues outside the scope of the report that relate to reporting of disease in Australia and control of Equine Infectious Anemia.

Respectively submitted,



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Specific Diseases

African Horse Sickness (AHS)

AHS is not present in any approved country and the current certification of country freedom from disease is maintained under the proposed guidelines. Primary risk of disease introduction and establishment is through importation of equids from Africa. The importation of zebras and other non-domesticated equids into Australian zoological collections from the USA, Canada, member states of the EU, and Singapore is covered by existing quarantine requirements and were not included into the draft IRA. Zebras represent a risk as they may be inapparent carriers of AHS. It would have been timely to have included non-domesticated species in the current and future IRA reports.

Comment: Zebras and other non-domesticated equids should be considered along with domesticated horses and that importation requirements by updated accordingly.

Anthrax

Horses are relatively resistant to infection with anthrax, at least when compared with ruminants. Anthrax is present in currently approved countries and within Australia. The existing OIE Code recommendations, including premises freedom or vaccination, are maintained in the proposed guidelines.

Aujeszky's Disease (Suid Herpesvirus 1)

Aujeszky's Disease does not occur in Australia but is present in pigs from several of the currently approved countries. Horses are highly unlikely to become infected or spread the virus that causes Aujeszky's disease. There are no changes to the importation guidelines for this disease.

Borna Disease

Borna Disease is an example of a disease where fundamental knowledge is lacking. The result of the risk analysis concluded that the unrestricted risk attributed to Borna disease was negligible. Furthermore, OIE Code recommendations do not exist for this disease. However the expert panel raised sufficient concerns to warrant enhanced protective guidelines. These added requirements would impact individuals that sought to import horses from certain countries within Europe, such as Germany, Austria, Switzerland, Lichtenstein, and Italy. They are likely to have a negligible direct impact on the Thoroughbred breeding industry in Australia.

We agree that strengthened importation requirements are justified for horses coming to Australia from regions where the disease is endemic. The recommendation is based on a range of factors, including a lack of understanding of the biology of this disease, variability in clinical presentation of horse cases, and the likelihood of latently-infected animals developing clinical disease when stressed, as may occur during transportation. The potential for zoonosis is also recognized.

There are however several ambiguous statements in the guidelines that require clarification. The proposed wording requires that certification of country freedom from clinical signs of Borna

disease during the previous two years was required. However, if a country was unable to declare freedom then certification of "defined areas" of freedom within countries was possible, thereby allowing importation. The ambiguity surrounds how "defined areas" are determined and how cases are reported. The clinical presentation of Borna disease in horses is highly variable. The literature suggests that clinical disease associated with Borna Disease occurs in humans. It is unclear if human clinical disease in a country or defined region where there is no evidence of animal clinical disease would preclude export of horses.

The recommended restriction of two years is greater than that declared for other countries. New Zealand has a 12-month disease-free requirement. The proposed restriction could argued as being too severe given the estimated incubation period and the conclusion of the risk analysis study.

Comment: That consideration be given to reducing the disease-free period to 12 months and that defined regions be more accurately described in the report.

Brucellosis

Brucella abortus is absent in Australia but present in many of the approved countries. Horses were unlikely to become infected with or transmit the bacteria to other animals. No changes are recommended therefore no impact predicted to industry stakeholders.

Contagious equine metritis (CEM - *Taylorella equigenitalis)*

CEM has the potential to cause significant economic losses to the Thoroughbred breeding industry in Australia. This statement is supported by previous evidence from an outbreak in this country 30 years ago. The infectious and contagious nature of CEM was identified by the most recent outbreak in the United States in 2009. Culture is the primary method of detection but does not have 100% sensitivity. Others have recommended consideration be given to increasing the number of cultures or the interval between cultures before declaring disease-free status.

The panel has not recommended any new strategies regarding this disease. Given the pre-export quarantine failure of horses coming into the USA from Europe between 1997 and 2007 and the problems with diagnostic testing we believe that adoption of the OIE code recommendations may not be sufficient to prevent introduction into Australia and that a risk assessment should be undertaken.

Comment: We recommend that a risk assessment be undertaken into CEM and that current guidelines are reassessed.

Dourine (*Trypanosoma equiperdum)*

Dourine is a sexually-transmitted disease of horses and donkeys. There are similarities between the causative agent, *T. equiperdum,* and the organism that causes Surra (*T. evansi*), such that some have suggested they are the same organism. (Surra is addressed in greater detail below) Most reports of Dourine emanate from Russian Federation, Eastern Europe and Africa. Dourine has never been reported in Australia. The disease is not present in any of the approved countries therefore no new recommendations were made in draft IRA report. Existing OIE Code guidelines remain and are appropriate for the local horse industry.

Echinococcosis

Echinococcus granulosis and *E. equinus* are present in some approved countries but horses are rarely infected and rarely develop clinical signs. Transmission would be via carnivore consumption of horse offal. Transmission cannot occur via live horses. There are no current or proposed recommendations and no anticipated impact to the Australian Thoroughbred Breeding Industry.

Epizootic lymphangitis (*Histoplasma capsulatum* var. *Farciminosum*)

This disease is not present in currently approved countries but is prominent in northern Africa, Asia (China, India, Pakistan). Current OIE recommendations should suffice and no impact to stockholder is anticipated.

Equid Herpesviruses

The introduction of the neuropathic strain of EHV-1 into Australia would have a significant impact on the horse industry. It is probable that this particular variant of EHV-1 is already present in this country as the identification of latent carriers is difficult and therefore impractical. The proposed guidelines are adequate given the limitations of diagnostic testing. Of more concern is the lack of an AUSVET plan to deal with the inevitable outbreak of equine herpesvirus myelitis.

Comment: The proposed guidelines appear adequate based on the difficulties in identifying carrier horses. Outbreaks attributed to the neuropathic strain of EHV-1 appear to be inevitable; therefore we strongly recommend development of an AUSVET or similar response plan. This recommendation is beyond the scope of the IRA report.

Equine encephalosis

Equine encephalosis is typically a mild disease of African horses. The virus is not present in any approved country. The advisory panel recommended that country freedom of disease was appropriate given similar epidemiological characteristics to AHS. These recommendations are not likely to have any impact on the breeding industry in Australia.

Equine granulocytic anaplasmosis (*Anaplasma phagocytophilium*)

Horses are not reservoirs for this tick-borne disease, rather aberrant hosts as they do not become persistently infected. The overall risk was evaluated as very low and consequently no risk management strategy was developed. The disease is not OIE listed, nor is it notifiable. There are no proposed changes that will impact the breeding industry in Australia.

Comment: Although beyond the scope of the document we believe that this disease should be notifiable in all states and territories within Australia.

Equine infectious anemia (EIA)

EIA occurs in some currently approved countries and is endemic in regions of Queensland. Establishment of EIA within Australia would have significant economic consequences for the horse industry in this country. The existing Code recommendations including premises freedom and diagnostic testing were considered adequate for horses entering Australia.

Comment: Although beyond the scope of the document consideration should be given to development of a control program for EIA in Queensland.

Equine Influenza

As clearly demonstrated in 2007 the release and subsequent eradication of equine influenza (EI) is an extremely costly exercise. Other than New Zealand the majority of horses are imported into Australia from countries where the EI virus (EIV) is present, the disease may not be notifiable, and vaccination is common. As a consequence future entry into Australia would likely be a vaccinated horse shedding virus yet displaying no clinical signs. Given the disease characteristics and the naïvety of the Australian equine population these cases must be identified. It is agreed that a combination of measures involving premises status, pre-export quarantine (PEQ), vaccination, pre-export and post arrival diagnostic testing, and post arrival quarantine (PAQ) are all required to reduce the likelihood of release of EI from moderate to very low.

The increased costs of these quarantine regulations are borne predominately by members of the equine industry. Consequently the industry must be satisfied that these enhanced requirements reflect an appropriate level of protection and are not excessive. Additional quantitative epidemiological analysis of the proposed recommendations may alleviate any concern that the proposed changes may reduce Australia's ALOP to a point well below the minimum acceptable level of risk. Alternatively the horse industry may be comfortable with a maximal reduction in risk of disease entry and release, particularly given the costs of containment and eradication.

It is also acknowledged that the majority of the recommendations in the draft IRA report have already been adopted in response to the outbreak in 2007 and appear to be well accepted by the industry. Any easing of these existing regulations would be resisted.

EI is the only disease where a recommendation for prevention of splitting of consignments on entry to Australia is made. Justification being that an outbreak could be managed more effectively and continued importation to other uninfected PAQ facilities could continue. Given there are only 2 quarantine stations that accept horses within Australia and the disease characteristics this recommendation is acceptable provided the authorities would allow continuation of importation of horses into the unaffected quarantine stations to minimize disruption to the equine industry.

Comment: Recommend that additional quantitative analysis of the proposed guidelines be undertaken to reassure stakeholders of the magnitude of the risk reduction relative to Australia's ALOP. Assurance from AQIS and Biosecurity Australia that importation of horses would continue into Australia to unaffected quarantine stations in the advent of identification of a single EI infected horse.

Equine paratyphoid (Salmonella enterica subspecies enterica serovar Abortusequi)

This disease is no longer listed on the OIE schedule but is considered exotic to Australia and is notifiable. Although the identification of a carrier animal is extremely difficult and the risk of exposure to an infected or carrier animal was considered high, the very low likelihood of release and consequences of establishment and/or spread place the overall unrestricted risk at negligible. This disease is not likely to have any impact to the industry stakeholders.

Equine piroplasmosis

This disease is present in several of the currently approved countries. There are limitations with the recommended serologic test (IFAT) and it may not identify all cases. These facts, coupled with the presence of a potential vector in Australia, lead to the conclusion that equine piroplasmosis poses a risk to the horse industry in Australia.

We support the findings in the report and note that the proposed changes in the importation requirements are minimal. This includes the permanent and temporary importation of seronegative horses and the temporary importation of seropositive animals. It is assumed that should improved diagnostic tests, e.g., PCR, become commercially available that they would be adopted by Biosecurity Australia.

Equine protozoal myeloencephalitis (EPM)

EPM is a parasitic disease with a complex lifecycle that causes neurological disease in the horse. The only known definitive host of the parasite is not present in Australia and the horse is a dead end host. As a consequence the disease would have no impact on the Thoroughbred breeding industry.

Equine Viral Arteritis (EVA)

EVA is an important disease that is characterised clinically by vasculitis, abortion, or respiratory disease. The disease occurs sporadically in several of the approved countries and strains of low pathogenicity apparently circulate in horses in Australia. EVA is listed disease with the OIE and there are no proposed changes to the Code recommendations that are currently in place.

Equine viral encephalitides

This represents a group of insect-borne viruses of horses and humans that tend to occur in narrow geographic ranges within the western hemisphere. The current guidelines of premises freedom and vaccination should be sufficient to prevent entry into Australia. For Western and Eastern Encephalitis viruses the horse is considered to be a “dead-end” host and therefore the presence of an infected horse in this country would pose no risk to other animals. Venezuelan Equine Encephalitis is a OIE-listed disease and is not present in any approved country.

Fascioliasis

The liver fluke *Fasciola hepatica* occurs within approved countries and in eastern Australia. *Fasciola gigantica* is extremely rare in horses and therefore poses minimal risk through importation.

Glanders *(Burkholderia mallei)*

Glanders is a highly contagious bacterial disease of horses that has zoonotic potential. The disease does not occur in any approved country and therefore poses little to no risk under current guidelines.

Horse Pox

This disease appears to be of historical interest only and is not present in any approved country.

Japanese Encephalitis

Japanese encephalitis is a mosquito-borne viral disease of horses and humans that is widely distributed throughout Asia, including Japan. It is an OIE-listed disease with Code recommendations. The current Code recommendations are adequate to achieve Australia's ALOP for this disease.

Leptospirosis

Leptospiral infection occurs in a number of species, including horses. In most cases equine infection is subclinical, however horses may exhibit a number of clinical signs across multiple body systems. Pregnant mares may abort, usually in the last trimester. The requirement of an imported pregnant mare to deliver a healthy term foal under quarantine surveillance will identify abortions caused by these bacteria. As the disease is present in Australia, is not notifiable, or subject to quarantine controls introduction of infected imported horses is unlikely to pose additional risk to the Thoroughbred industry.

Louping Ill

Louping Ill is a multi-species disease but primarily affects sheep. The disease is not OIE-listed but is present in some approved countries, however there are no known tick vectors in Australia. The disease was not considered in the draft IRA. We agree with the assessment.

Lyme Disease

This a tick-borne disease that affects multiple species including humans and horses. The disease occurs in several of the approved countries. The diagnosis of active Lyme disease is not straightforward. The clinical signs can be vague, diagnostic testing is limited, and antibody responses can be difficult to interpret. It is not an OIE-listed disease but given the difficulties associated with diagnosis and the presence of potential tick vectors within Australia a risk assessment was undertaken and the risk was deemed to exceed Australia's ALOP. We are concerned that this probably over-estimates the importance of Lyme Disease as a risk to the horse industry.

Problems associated with disease diagnosis also restrict importation guidelines. The final recommended guidelines of premise freedom for 90 days and tick inspection and treatment are not considered onerous.

Comment: We believe that the risk assessment for this disease over-estimated it's importance as a threat to the horse industry. However given that the recommendations for minimisation of release are not onerous it has little to no impact to key stakeholders. Although beyond the scope of this document we would suggest that Lyme Disease be added to the national notifiable disease list.

Nipah virus encephalitis

Nipah virus is closely related to Hendra virus, which is present in Australia. The virus causes severe clinical disease in humans and pigs, and is readily spread between both species. Nipah virus naturally infects a number of other species including horses. Contact with pigs is usually required to cause infection in humans and horses. The literature suggests that the seroprevalence in horses is lower than other species and clinical disease is even less common. Given that the disease has not been reported in horses in any approved country it is unlikely to pose a risk to the equine industry. The emergence of this disease in neighbouring countries should be monitored and guidelines modified as per the draft IRA recommendations.

Potomac horse fever

The disease is more correctly termed Equine Monocytic Ehrlichiosis. It is caused by *Neorickettsia risticii* and occurs in some of the currently approved countries. The horse is considered to be a "dead end" host. Consequently the disease was not considered in the draft IRA. We agree with this conclusion.

Comment: We suggest a change in terminology to Equine Monocytic Ehrlichiosis; the term Potomac horse Fever has been discouraged in the United States.

Rabies

Rabies is a viral disease causing fatal neurological disease in most mammals, including horses. Horses uncommonly succumb to the disease and very rarely transmit the virus to other species. Reliable diagnosis is not possible in the live horse and definitive diagnosis requires examination of brain tissue. Although rabies does occur in approved countries the current OIE code recommendations to be incorporated into Australia's quarantine measures will achieve Australia's ALOP.

Rift Valley fever

This is an arthropod-borne viral disease that affects a large number of species. Horses become viremic but do not show signs of disease. The disease is not present in any approved country and therefore poses no risk to the equine industry.

Shistosomiasis

Shistosomiasis is a parasitic disease that may affect a variety of species including horses. Although the shistosomiasis species affecting horses are present in some approved countries it, nor its intermediate host, are present in Australia. Should a horse infected with this parasite enter

Australia, the inability for the parasite to complete its lifecycle would prevent establishment in naïve horses. The disease presents no risk to the Thoroughbred industry.

Screw Worm Myiasis

This includes the New World Screw-worm, *Cochlioma hominivorax* and the Old World screw-worm *Chrysomya bezziana*. The disease does not occur in horses in any approved country but has been reported in other species in some countries. The proposed guidelines to examine any infected wounds for larvae should provide appropriate protection.

Surra

Surra is disease of camels, dogs, horses and water buffalo caused by the protozoan parasite *Trypanosoma evansi*. All susceptible species can act as reservoirs of infections. The United Arab Emirates (UAE) is the only approved country in which Surra is present and is endemic in camels, with only a single equine clinical case reported occurring in 1996. Surra is notifiable within the UAE, however as there are no recommendations within the OIE Code a risk assessment was undertaken. The conclusion was that Surra presented a low likelihood of infection with unrestricted entry. This exceeded the required ALOP and a risk management strategy refined.

The majority of proposed guidelines would further reduce the risk to Australia's required ALOP. The restriction of importation of horses where a single horse has become infected in the country is rigid and given the draft recommendations allow for defined areas of freedom with other diseases this may be more appropriate.

Comment: Given the circumstances of the most recent reported case that consideration is given to changing the guidelines such that a clinical equine case of Surra within a country should not preclude exportation if other requirements are met. Alternatively establishment of defined areas of freedom may be considered.

Taylorella asinigenitalis

This bacteria is closely related to *T. equigenitalis*, the bacteria causing contagious equine metritis (CEM, see above), but unlike *T. equigenitalis* it is not considered to cause disease within horses. As the bacteria is present in some approved countries and there are no Code recommendations a risk assessment was undertaken. Given the disease characteristics the overall unrestricted risk assessment of negligible is appropriate. The disease presents no significant risk to stakeholders.

Trichinellosis

Infection of horses with parasites of the *Trichenella* species do not cause clinical signs. The risk is associated with consumption of infected horse meat and live horses pose no risk of disease spread. The current guidelines are adequate.

Tuberculosis (*Mycobacterium bovis*)

Bovine tuberculosis was eradicated in Australia in 1997. In countries where there are high rates of infection in other species infection of horses is relatively rare and transmission unlikely. As a consequence, although present in approved countries, the disease poses little risk to the stakeholders.

Vesicular stomatitis (VS) virus

VS is a disease of ruminants and horses with a potential for zoonosis. The major impact of VS is in ruminants where the disease can mimic Foot and Mouth disease and cause a temporary loss of production. VS typically has minimal impact on horses, but equids may spread the disease. A risk assessment was undertaken as Australia's quarantine requirements differed from the OIE Code. The unrestricted risk was deemed to be low, thereby exceeding Australia's ALOP. The proposed recommendations are appropriate in minimizing the risk of disease entry into Australia.

West Nile Virus

WNV is closely related to Kunjin virus, which circulates in certain regions of Australia. Humans and horses can develop clinical illness, but are considered "dead end" hosts because they do not produce a sufficient viremia to infect mosquitoes. Importation of an infected horse poses no threat to the equine industry but could disrupt post-arrival quarantine and as such the recommendations are appropriate.