TO: Biologics Licensees, Permittees, and Applicants Directors, Center for Veterinary Biologics Veterinary Services Leadership Team

FROM: Byron Rippke Director

SUBJECT: Availability of Avian Influenza Isolate and Sequence Information

I. PURPOSE

The purpose of this notice is to furnish interested parties with the genetic sequences from the H7N8 highly pathogenic avian influenza (HPAI) virus and low pathogenic (LPAI) viruses isolated from turkeys in Indiana on January 15, 2016. The notice is also to inform interested parties that the HPAI isolate will be available for purchase from the National Veterinary Services Laboratories (NVSL) by mid-February 2016.

II. BACKGROUND

The National Veterinary Services Laboratories confirmed H7N8 HPAI in a commercial turkey flock experiencing significant mortality in Dubois County, Indiana, on January 15, 2016. Subsequent H7N8 detections were found to be H7N8 LPAI. Based upon the full genome sequence, the index HPAI case and subsequent LPAI viruses detected in turkeys are all of North American wild bird lineage with high similarity across all eight gene segments to other wild bird viruses collected from Midwest and western states between 2011 and 2013.

North American H7N8 LPAI virus has been detected previously in wild bird surveillance in the United States, but this is the first instance of H7N8 HPAI virus detection in any species.

Further information on the H7N8 findings is available in the Newsroom 2016 section at https://www.aphis.usda.gov/wps/portal/aphis/newsroom/news.

III. ACTION

Veterinary Services is making the HPAI genomic sequence, as well as the HPAI virus courtesy of the Indiana State Board of Animal Health, available to facilities to encourage disease research and development to benefit the U.S. poultry industry. The complete genomic sequence for the HPAI can be found in the attached file. Sequence information has also been submitted to GenBank and will be available for both HPAI and LPAI viruses soon under accessions as follows: H7N8 HPAI KU558903-8910; H7N8 LPAI KU585905-12 and KU585913-20.
Available isolate:

- A/turkey/Indiana/16-001403-1/2016 – courtesy of the Indiana State Board of Animal Health

Biologics firms that wish to obtain samples of these isolates for research purposes should:

A. Contact the NVSL Diagnostic Virology Laboratory at (515) 337-7551 for guidance regarding the appropriate forms and payments to submit.

B. Submit the completed forms and the payment associated with the order by one of the following methods:

1. Mail: NVSL User Fees, Box 844, Ames, Iowa 50010
2. Email: NVSL_concerns@aphis.usda.gov.

The NVSL will inform customers when the virus is ready to ship.

C. Note that the HPAI isolate must be transferred in compliance with the Select Agent Regulations. No Material Transfer Agreement will be required. This isolate is a not pre-tested Master Seed; it is being made available for research and development. The availability of this isolate does not infer any impending change in vaccination policy.

IV. IMPLEMENTATION/ APPLICABILITY

The HPAI sequence is posted in this announcement, and the referenced reagent will be available from the NVSL no later than February 15, 2016.
>Seq1 [organism=Influenza A virus](A/turkey/Indiana/16-001403-1/2016(H7N8)) segment 1, polymerase PB2 (PB2) gene, complete cds.

ATGGAGAGAATAAAGAATTTAAAAATCTAACGCTCACGCACTCGCAGAGATACGACTACAAAAAAACGACTGTGTT
GACCACATGCGCCGATATCTACAAAAGATGACAGCCGGGAAAGCAGAGAAGAAGACCCGCACTGAGGATGAAATGGAT
GATGCGCAATGAACTACGCTAACGAGAAAAAAAATGGGAAATACGCTTTTCTGCAGAAACTTATGAAAAATGAGATTT
GAAACACGGAGACCTTTCGGTACAGAAACGAGATGTTAAAAAAAAAAAAAAATGAGATTTTCTCCCGGAAAGCATAAG
GGGAAACTTATGAAAAATGAGATTTTCTCCCGGAAAGCATAAG

>Seq2 [organism=Influenza A virus](A/turkey/Indiana/16-001403-1/2016(H7N8)) segment 2, polymerase PB1 (PB1) gene, complete cds.

ATGGATGTCAATCCGACTTTACTTTTCTTGAAAGTTCCAGCGCAAAATGCCATAAGCACCACATTCCCGTATACTGG
AGATCCTTCATTACGACAGGAGCAATGGGAAGGGCAAGAGAAGAAGACCCGCACTGAGGATGAAATGGAT
GATGCGCAATGAACTACGCTAACGAGAAAAAAAATGGGAAATACGCTTTTCTGCAGAAACTTATGAAAAATGAGATTT
GAAACACGGAGACCTTTCGGTACAGAAACGAGATGTTAAAAAAAAAAAAAAATGAGATTTTCTCCCGGAAAGCATAAG
GGGAAACTTATGAAAAATGAGATTTTCTCCCGGAAAGCATAAG

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>Seq4 [organism=Influenza A virus][A/turkey/Indiana/16-001403-1/2016(H7N8)] segment 4, hemagglutinin (HA) gene, complete cds.
>Seq5 [organism=Influenza A virus] (A/turkey/Indiana/16-001403-1/2016(H7N8)) segment 5, nucleoprotein (NP) gene, complete cds.

TCACTCAGTAGCTGACATCACCATCTGGGTCTCAAGGCGACCACCAAGCATCTTGACGAACAAAATGGAAAAACTGTGGG
GGAAAGCCAGAATGCCCCGATCGGATCGAAGATGTGGTGGGGGAAGGTAATCAGGGAAAAATGGTTACGAGGGAGATGAAT
CGAGGGATATGGGCTGACGAAAGATGGTGAAGGAGGACGTTGCGTTTGCGCTGAGGTGGAAGGACGTTGGATGGTGGATG

>Seq6 [organism=Influenza A virus] (A/turkey/Indiana/16-001403-1/2016(H7N8)) segment 6, neuraminidase (NA) gene, complete cds.

ATAGAATCCAAATAAGAAAAATAAATACCATTTGCTCACAGTCTTTAGGTGGAATGTCACTTTACAAATTCTCTCACATAT
AGTTAGCATTACGATACAGTTGTTAGTTCTTTCTGGAATGGGAAAAACTGGGAGATGGAATGACAGGAACTGAGTGTGAC
GAATAGCTAGGAAAGATCAGGACTAGGAAAGATGGAATGACAGGAACTGAGTGTGAC

ACAGTGGTTTCCCTCACACTACCGGTTGGGACAAAAAGAAATTCTGTGTTGCATGCTTTTGGGTTGAGATGAT
AAGGGGGAAGCCAGAAGAAAAGACTATATGGACCTCAAGTAGCTCCATTGTGATGTGAGATAGCCTAGA
TTGCCGACTGTTGTCAGGGGACAGGAGCTATTCTCTTCTTTTGACATCGACAGTAAATTACG

>Seq7 [organism=Influenza A virus](A/turkey/Indiana/16-001403-1/2016(H7N8)) segment 7, matrix
protein 2 (M2) and matrix protein 1 (M1) genes, complete cds.

GAAAGATGAGTCTTCTAACCGAGGTAGAAACGTACGTTCTCTCTATCGTCCCGTCAGGCCCCCTCAAAGCCGAGAT
CGCGCAGAGACTTGAGATGTGTTTGCAGGAAAAACACCGACCTTGAGCGCTCATGGAATGGCTAAAGACA
GACCAATCTGTCACCTGCTAAGGGGATTITGGGATTTGTGGTTCACTAAGCTCCATTGTGATGTGAGATAGC
TCAGCCAGGCTAGCCAATACACAGAAGGGGATTITGGGATTITGGGTGATGAGACAGGATGAGA

>TACATAATGGATTCTCAACATCGCAGGTTAGTTATGTTAGCTATATGGCAGGACTGACATGCAAAAGAGGAGGTGAC
ACACCTTGGCTCAGTGCTCAGGCTCCCTTGGGATCTGGGATGAGACTCAGGAGGGACAGGAGGACTGAC
ACACCTTGGCTCAGTGCTCAGGCTCCCTTGGGATCTGGGATGAGACTCAGGAGGGACAGGAGGACTGAC

ACACCTTGGCTCAGTGCTCAGGCTCCCTTGGGATCTGGGATGAGACTCAGGAGGGACAGGAGGACTGAC