RESEARCH REPORT
SWINE HEALTH

Title: *Negative cohort study plan for the estimation of diagnostic specificity of Two PCR assays for the detection of Classical Swine Fever, African Swine Fever and Foot and Mouth disease viruses in oral fluid samples",* **NPB #17-220.**

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Objectives: Objective 1: To validate the diagnostic specificity of the currently approved APHIS PCR protocols for detection of CSF, ASF, and FMD in oral fluids.
Objective 2: To validate the diagnostic specificity of non-USDA licensed, Tetracore commercial RT-PCR kits for detection of each disease- CSF, ASF, and FMD in oral fluids.

Materials & Methods:
South Dakota- Animal Disease Research & Diagnostic Laboratory tested samples from districts 3-6. Each of the laboratories tested 255 oral fluid samples for the three diseases of interest by both the APHIS approved NVSL PCR assays and the Tetracore commercial kits.

- District 3: Minnesota, Wisconsin, Michigan, Ohio, Indiana, Iowa, Illinois, Kentucky
- District 4: Missouri, Arkansas, Louisiana, Mississippi, Oklahoma, Texas.
- District 5: Montana, North Dakota, South Dakota, Nebraska, Kansas, Wyoming, Idaho
- District 6: Colorado, New Mexico, Utah, Arizona, Nevada, California, Oregon, Washington

Table 2: Sample allocation by State, VS district and testing laboratory

VS District	States (red states should be prioritized)	Testing Lab	Number of samples by lab
1	NC		
N=170	VA	NC	128
	WV	IA	21
	PA	MN	21
	The rest (negligible swine production)		
2	SC	NC	127
N=170*	TN- GA	IA	22
	AL -FL	MN	21
3	IA		
N=170	MN		
	IL	SD	64
	OH	IA	53
	IN	MN	53
	MI		
	KY-WI		
4	OK		
N=170	MO	SD	64
	TX	IA	53
	AR-LA-MS	MN	53
5	NE		
N=170	KS	SD	64
	SD	IA	53
	ND-WY	MN	53
	MT-ID		
6	UT		
N=170	CO		
	NM-AZ	SD	63
	NV-CA	IA	53
	OR-WA	MN	54

*Option to reduce District 2 overall sampling in favor of other more densely populated districts (i.e. District 1)

Each lab to test 255 samples for all three diseases by NAHLN PCR and commercial kit PCR

States in red represent the top 16 market hog inventories nationwide

Tetratcore kits using only controls supplied by Tetracore

Extraction:
SOP-DS-0074 Nucleic Acid Extraction using the MagMAX Pathogen RNA/DNA kit on a Magnetic Particle Processor.
PCR:
Tertacore kits for FMD, CSF, and ASF

INTERNAL CONTROLS:

- 6ul of Tetracore FMD/CSF IC plus 6ul of Tetracore ASF IC
    - Test were valid with Ct value less than 37.5

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NVSL-NAHLN Protocol using controls supplied by FADDL

Extraction:
SOP-DS-0074 Nucleic Acid Extraction using the MagMAX Pathogen RNA/DNA kit on a Magnetic Particle Processor.
PCR:
SOP-DS-0080 Classical Swine Fever and Foot and Mouth Disease rRT-PCR Using the TaqMan® Fast Virus 1-Step Master Mix on the Applied Biosystems 7500 Real-time PCR Platform

SOP-DS-0071 Preparation, Performance, and Interpretation of the African Swine Fever rPCR Assay on the Applied Biosystems 7500 Real-time PCR System

INTERNAL CONTROLS:

- Xeno - 1ul for CSF/FMD and ASF
    - Test were valid with Ct value less than 40

Results: There were 255 oral fluid samples used for all 3 assays (FMD, CSF, ASF) with 2 different PCR protocols (NAHLN and Tetracore). The assays were compared between 3 different laboratories, but for the SDSU data, there were no false positive results, indicating the excellent specificity of the assay on "negative" samples for both the USDA-APHIS or Tetracore assays. All results were sent to the NAHLN office for analysis.

NAHLN Negative Cohort Study Data Collection Sheet

These samples were run using 1 ul per reaction of Xeno control for the NVSL-NAHLN protocols, as well as extracted using the SOP-DS-0074 Nucleic Acid Extract

The Tetracore ASF internal control used was the new, improved IC.

Instructions:

Use one row per animal tested for the Negative Cohort Study to record CT results for each applicable test and sample type.

Acceptable samples- samples should be obtained from diagnostic submission or sampling of healthy animal. Any other, please specify in remarks.

NAHLN Laboratory name	Sample State of origin	District (1-6)	Swine group or Breeder >5 mo of age)	dividual sample	Sample collectio date	Sample received in the lab date	Sample tested date	NVSL-NAHLN RT-PCR CT values						Tetracore RT-PCR CT values					
								CSF	CSF Control	ASF	ASF Control	FMD	FMD Control	CSF	CSF Control	ASF	ASF Control	FMD	FMD Control
SDSU ADRDL	MN	3	Grower	18538	9/25/2017	9/26/2017	1/28/2018	Not Detected	34.6832	Not Detected	35.8092	Not Detected	34.4408	Not Detected	33.199	Not Detected	35.123	Not Detected	32.6205
SDSU ADRDL	MN	3	Grower	18588	9/28/2017	9/27/2017	1/28/2018	Not Detected	35.5954	Not Detected	37.4124	Not Detected	34.4857	Not Detected	33.3011	Not Detected	35.7003	Not Detected	33.8546
SDSU ADRDL	WI	3	Grower	18580	9/25/2017	9/27/2017	1/28/2018	Not Detected	35.1842	Not Detected	36.632	Not Detected	35.5513	Not Detected	33.4026	Not Detected	Not Detected	Not Detected	35.235
SDSU ADRDL	IA	3	Grower	18680	9/27/2017	9/28/2017	1/28/2018	Not Detected	35.3431	Not Detected	37.2571	Not Detected	35.5473	Not Detected	34.5426	Not Detected	35.2192	Not Detected	34.5467
SDSU ADRDL	IA	3	Grower	18679	9/27/2017	9/28/2017	1/28/2018	Not Detected	35.0374	Not Detected	36.3658	Not Detected	34.7161	Not Detected	34.6398	Not Detected	33.9737	Not Detected	34.3127
SDSU ADRDL	MN	3	Grower	19016	10/2/2017	10/3/2017	1/28/2018	Not Detected	35.8017	Not Detected	37.5084	Not Detected	35.0246	Not Detected	34.4074	Not Detected	35.2497	Not Detected	35.188
SDSU ADRDL	MN	3	Grower	18990	10/2/2017	10/3/2017	1/28/2018	Not Detected	34.9453	Not Detected	35.8887	Not Detected	34.8348	Not Detected	33.8799	Not Detected	35.9181	Not Detected	34.3392
SDSU ADRDL	IA	3	Grower	19282	10/5/2017	10/6/2017	1/28/2018	Not Detected	34.8586	Not Detected	36.5816	Not Detected	34.7997	Not Detected	34.3353	Not Detected	36.4096	Not Detected	34.6596
SDSU ADRDL	IA	3	Grower	19281	10/5/2017	10/6/2017	1/28/2018	Not Detected	35.4113	Not Detected	37.8616	Not Detected	35.5014	Not Detected	33.8882	Not Detected	37.4743	Not Detected	34.0578
SDSU ADRDL	MN	3	Grower	19492	10/9/2017	10/11/2017	1/28/2018	Not Detected	35.1204	Not Detected	37.9335	Not Detected	35.5089	Not Detected	33.7636	Not Detected	39.0588	Not Detected	34.4661
SDSU ADRDL	IA	3	Grower	19591	10/5/2017	10/12/2017	1/28/2018	Not Detected	34.1639	Not Detected	36.2713	Not Detected	33.8086	Not Detected	33.1856	Not Detected	35.5755	Not Detected	33.2422
SDSU ADRDL	IA	3	Grower	19774	10/15/2017	10/16/2017	1/28/2018	Not Detected	35.1963	Not Detected	35.8709	Not Detected	35.0149	Not Detected	34.5989	Not Detected	35.8302	Not Detected	34.5903
SDSU ADRDL	IA	3	Grower	19776	10/13/2017	10/16/2017	1/28/2018	Not Detected	36.6955	Not Detected	37.8149	Not Detected	36.2473	Not Detected	33.8056	Not Detected	41.7974	Not Detected	35.3137
SDSU ADRDL	IA	3	Grower	19865	10/16/2017	10/17/2017	1/28/2018	Not Detected	36.1454	Not Detected	37.242	Not Detected	36.4011	Not Detected	33.7547	Not Detected	36.0643	Not Detected	34.0104
SDSU ADRDL	MN	3	Grower	19849	10/16/2017	10/17/2017	1/28/2018	Not Detected	35.1158	Not Detected	37.2677	Not Detected	34.6193	Not Detected	34.0693	Not Detected	38.358	Not Detected	34.4675
SDSU ADRDL	MN	3	Grower	19838	10/16/2017	10/17/2017	1/28/2018	Not Detected	36.4304	Not Detected	37.3474	Not Detected	36.2085	Not Detected	33.9395	Not Detected	34.8255	Not Detected	35.3088
SDSU ADRDL	MN	3	Grower	19940	10/16/2017	10/18/2017	1/28/2018	Not Detected	35.975	Not Detected	36.9211	Not Detected	35.0067	Not Detected	34.3026	Not Detected	36.4086	Not Detected	36.6966
SDSU ADRDL	MN	3	Grower	20288	10/23/2017	10/24/2017	1/28/2018	Not Detected	35.9662	Not Detected	37.9385	Not Detected	35.875	Not Detected	34.7651	Not Detected	35.2347	Not Detected	34.4456
SDSU ADRDL	IA	3	Grower	20289	10/23/2017	10/24/2017	1/28/2018	Not Detected	35.3057	Not Detected	37.9621	Not Detected	35.0309	Not Detected	33.8645	Not Detected	37.0327	Not Detected	36.0162
SDSU ADRDL	IA	3	Grower	20290	10/20/2017	10/24/2017	1/28/2018	Not Detected	34.9986	Not Detected	36.3983	Not Detected	35.0207	Not Detected	34.0411	Not Detected	35.5345	Not Detected	34.1406
SDSU ADRDL	MN	3	Grower	20294	10/23/2017	10/24/2017	1/28/2018	Not Detected	35.4424	Not Detected	36.2197	Not Detected	35.5212	Not Detected	34.1592	Not Detected	35.3	Not Detected	33.8864
SDSU ADRDL	MN	3	Grower	20328	10/23/2017	10/24/2017	1/28/2018	Not Detected	35.357	Not Detected	37.5284	Not Detected	34.9533	Not Detected	33.8257	Not Detected	36.812	Not Detected	33.6673
SDSU ADRDL	MN	3	Grower	20519	10/25/2017	10/26/2017	1/28/2018	Not Detected	34.8004	Not Detected	36.3245	Not Detected	34.8183	Not Detected	33.2588	Not Detected	33.4748	Not Detected	33.3266
SDSU ADRDL	SD	5	Grower	20528	10/25/2017	10/26/2017	1/28/2018	Not Detected	34.6883	Not Detected	36.3662	Not Detected	34.5775	Not Detected	33.3476	Not Detected	36.5497	Not Detected	34.8852
SDSU ADRDL	IA	3	Grower	20618	10/25/2017	10/27/2017	1/28/2018	Not Detected	34.9212	Not Detected	36.5679	Not Detected	35.9436	Not Detected	34.2001	Not Detected	35.1547	Not Detected	34.9322
SDSU ADRDL	IA	3	Grower	20612	10/26/2017	10/27/2017	1/28/2018	Not Detected	34.9987	Not Detected	36.7228	Not Detected	35.6835	Not Detected	34.2156	Not Detected	35.5765	Not Detected	33.8911
SDSU ADRDL	MN	3	Grower	20747	10/30/2017	10/31/2017	1/28/2018	Not Detected	35.9526	Not Detected	37.965	Not Detected	35.2889	Not Detected	34.0653	Not Detected	37.19	Not Detected	34.5321
SDSU ADRDL	MN	3	Grower	20855	10/30/2017	11/1/2017	1/28/2018	Not Detected	36.2625	Not Detected	36.676	Not Detected	35.9248	Not Detected	34.2893	Not Detected	35.4835	Not Detected	35.0282
SDSU ADRDL	MN	3	Grower	20808	10/31/2017	11/1/2017	1/28/2018	Not Detected	35.3097	Not Detected	36.1998	Not Detected	35.077	Not Detected	34.2657	Not Detected	34.9355	Not Detected	33.572
SDSU ADRDL	IA	3	Grower	21121	11/2/2017	11/3/2017	1/28/2018	Not Detected	35.1295	Not Detected	36.4683	Not Detected	35.4664	Not Detected	34.2164	Not Detected	37.2043	Not Detected	35.2051
SDSU ADRDL	IA	3	Grower	21122	11/2/2017	11/3/2017	1/28/2018	Not Detected	35.3934	Not Detected	36.9603	Not Detected	35.5247	Not Detected	34.2773	Not Detected	34.5939	Not Detected	34.6366
SDSU ADRDL	MN	3	Grower	21214	11/5/2017	11/6/2017	1/28/2018	Not Detected	38.1517	Not Detected	38.0464	Not Detected	39.1791	Not Detected	33.4977	Not Detected	34.1221	Not Detected	34.3702
SDSU ADRDL	MN	3	Grower	21235	11/6/2017	11/6/2017	1/28/2018	Not Detected	35.7129	Not Detected	35.3472	Not Detected	35.6113	Not Detected	34.0724	Not Detected	33.6618	Not Detected	35.0118
SDSU ADRDL	MN	3	Grower	21275	11/6/2017	11/7/2017	1/28/2018	Not Detected	34.3536	Not Detected	36.2064	Not Detected	34.9473	Not Detected	33.9889	Not Detected	33.4043	Not Detected	33.3517
SDSU ADRDL	MN	3	Grower	21314	11/6/2017	11/7/2017	1/28/2018	Not Detected	36.1369	Not Detected	37.6948	Not Detected	35.364	Not Detected	33.9723	Not Detected	35.6212	Not Detected	34.2687
SDSU ADRDL	IA	3	Grower	21294	11/6/2017	11/7/2017	1/28/2018	Not Detected	35.6723	Not Detected	38.8645	Not Detected	35.4539	Not Detected	33.2871	Not Detected	Not Detected	Not Detected	35.3655
SDSU ADRDL	MN	3	Grower	21523	11/9/2017	11/9/2017	1/28/2018	Not Detected	37.3223	Not Detected	Not Detected	Not Detected	37.2431	Not Detected	34.9079	Not Detected	36.2585	Not Detected	35.934
SDSU ADRDL	IA	3	Grower	21621	11/12/2017	11/13/2017	1/28/2018	Not Detected	35.6124	Not Detected	35.941	Not Detected	35.0146	Not Detected	34.1476	Not Detected	37.4503	Not Detected	34.7813
SDSU ADRDL	MN	3	Grower	21723	11/13/2017	11/14/2017	1/28/2018	Not Detected	35.8594	Not Detected	36.1169	Not Detected	35.6173	Not Detected	34.0991	Not Detected	36.3013	Not Detected	35.6507
SDSU ADRDL	IA	3	Grower	21726	11/13/2017	11/14/2017	1/28/2018	Not Detected	35.809	Not Detected	36.433	Not Detected	35.0963	Not Detected	33.9633	Not Detected	37.315	Not Detected	34.3114
SDSU ADRDL	MN	3	Grower	21698	11/13/2017	11/14/2017	1/28/2018	Not Detected	35.0655	Not Detected	35.9292	Not Detected	34.8999	Not Detected	32.7059	Not Detected	35.1113	Not Detected	34.2567
SDSU ADRDL	MN	3	Grower	21959	11/15/2017	11/16/2017	1/28/2018	Not Detected	36.1433	Not Detected	36.678	Not Detected	35.3736	Not Detected	34.1946	Not Detected	37.1737	Not Detected	34.2947
SDSU ADRDL	MN	3	Breeder	20332	11/24/2017	11/24/2017	1/28/2018	Not Detected	35.832	Not Detected	37.4164	Not Detected	35.4602	Not Detected	33.9133	Not Detected	34.6005	Not Detected	35.8048
SDSU ADRDL	MN	3	Breeder	20377	10/25/2017	10/25/2017	1/28/2018	Not Detected	34.0788	Not Detected	35.8248	Not Detected	34.554	Not Detected	33.3257	Not Detected	36.1914	Not Detected	32.6335
SDSU ADRDL	IA	3	Breeder	20387	10/20/2017	10/25/2017	1/28/2018	Not Detected	35.1578	Not Detected	36.6991	Not Detected	35.3638	Not Detected	Not Detected	Not Detected	34.2386	Not Detected	34.6892
SDSU ADRDL	MN	3	Breeder	20392	10/20/2017	10/25/2017	1/28/2018	Not Detected	35.2145	Not Detected	37.6009	Not Detected	35.142	Not Detected	Not Detected	Not Detected	34.3214	Not Detected	43.2609
SDSU ADRDL	IA	3	Breeder	20390	10/23/2017	10/25/2017	1/28/2018	Not Detected	35.8621	Not Detected	36.7576	Not Detected	35.3323	Not Detected	34.0694	Not Detected	33.4903	Not Detected	35.804
SDSU ADRDL	IA	3	Breeder	20397	10/19/2017	10/25/2017	1/28/2018	Not Detected	34.316	Not Detected	36.2966	Not Detected	34.4638	Not Detected	32.529	Not Detected	Not Detected	Not Detected	33.6592
SDSU ADRDL	IA	3	Breeder	20389	10/23/2017	10/25/2017	1/28/2018	Not Detected	34.2429	Not Detected	36.1794	Not Detected	34.356	Not Detected	32.6922	Not Detected	34.1775	Not Detected	32.4716
SDSU ADRDL	IA	3	Breeder	20461	10/19/2017	10/26/2017	1/28/2018	Not Detected	35.6375	Not Detected	38.9366	Not Detected	35.6423	Not Detected	33.8071	Not Detected	37.3913	Not Detected	34.1449
SDSU ADRDL	MN	3	Breeder	20504	10/24/2017	10/26/2017	1/28/2018	Not Detected	34.373	Not Detected	36.2174	Not Detected	34.712	Not Detected	32.3477	Not Detected	34.0854	Not Detected	32.5065
SDSU ADRDL	IA	3	Breeder	20510	10/25/2017	10/26/2017	1/28/2018	Not Detected	35.4075	Not Detected	38.9332	Not Detected	35.5499	Not Detected	33.3844	Not Detected	34.179	Not Detected	34.9743
SDSU ADRDL	MN	3	Breeder	20517	10/26/2017	10/26/2017	1/28/2018	Not Detected	36.1141	Not Detected	39.1003	Not Detected	36.2003	Not Detected	33.5391	Not Detected	32.8798	Not Detected	33.0234
SDSU ADRDL	MN	3	Breeder	20518	10/25/2017	10/26/2017	1/28/2018	Not Detected	35.73	Not Detected	36.1481	Not Detected	35.261	Not Detected	33.9143	Not Detected	35.2676	Not Detected	35.564
SDSU ADRDL	MN	3	Breeder	20550	10/23/2017	10/26/2017	1/28/2018	Not Detected	35.2287	Not Detected	37.6928	Not Detected	34.9768	Not Detected	33.8096	Not Detected	35.7733	Not Detected	34.0831
SDSU ADRDL	MN	3	Breeder	20551	10/24/2017	10/26/2017	1/28/2018	Not Detected	35.4177	Not Detected	38.0055	Not Detected	35.1126	Not Detected	33.068	Not Detected	35.2557	Not Detected	34.82
SDSU ADRDL	MN	3	Breeder	20650	10/27/2017	10/27/2017	1/28/2018	Not Detected	35.6398	Not Detected	38.1832	Not Detected	35.3287	Not Detected	33.4219	Not Detected	34.6921	Not Detected	34.6345
SDSU ADRDL	MN	3	Breeder	20640	10/25/2017	10/27/2017	1/28/2018	Not Detected	35.447	Not Detected	36.4681	Not Detected	34.6282	Not Detected	33.3267	Not Detected	35.9042	Not Detected	30.3551
SDSU ADRDL	IA	3	Breeder	20625	10/26/2017	10/27/2017	1/28/2018	Not Detected	35.5834	Not Detected	37.3409	Not Detected	36.0489	Not Detected	33.6453	Not Detected	39.2339	Not Detected	35.3208
SDSU ADRDL	MN	3	Breeder	20642	10/26/2017	10/27/2017	1/28/2018	Not Detected	35.5677	Not Detected	37.4937	Not Detected	34.6149	Not Detected	33.5946	Not Detected	Not Detected	Not Detected	35.8164
SDSU ADRDL	IA	3	Breeder	20624	10/26/2017	10/27/2017	1/28/2018	Not Detected	35.5552	Not Detected	38.1133	Not Detected	35.9689	Not Detected	33.5169	Not Detected	35.5291	Not Detected	35.4375
SDSU ADRDL	MN	3	Breeder	20696	10/27/2017	10/30/2017	1/28/2018	Not Detected	35.6247	Not Detected	37.6903	Not Detected	34.7198	Not Detected	34.6844	Not Detected	36.2362	Not Detected	35.42
SDSU ADRDL	MN	3	Breeder	20717	10/29/2017	10/30/2017	1/28/2018	Not Detected	36.0146	Not Detected	36.3799	Not Detected	35.4334	Not Detected	33.9302	Not Detected	34.7964	Not Detected	34.5992
SDSU ADRDL	IL	3	Breeder	20756	10/30/2017	10/31/2017	1/28/2018	Not Detected	35.2933	Not Detected	36.3902	Not Detected	35.4992	Not Detected	32.6249	Not Detected	32.2859	Not Detected	32.4441
SDSU ADRDL	WI	3	Breeder	20776	10/30/2017	10/31/2017	1/28/2018	Not Detected	35.779	Not Detected	37.3246	Not Detected	35.3593	Not Detected	33.6846	Not Detected	37.4543	Not Detected	36.0469
SDSU ADRDL	MN	3	Breeder	20777	10/30/2017	10/31/2017	1/28/2018	Not Detected	34.9079	Not Detected	36.3464	Not Detected	35.1234	Not Detected	33.864	Not Detected	37.3363	Not Detected	35.6603
SDSU ADRDL	MN	3	Breeder	20875	10/31/2017	11/1/2017	1/28/2018	Not Detected	35.2588	Not Detected	37.8228	Not Detected	35.174	Not Detected	33.3899	Not Detected	35.1845	Not Detected	33.3517
SDSU ADRDL	IA	3	Breeder	20814	10/30/2017	11/1/2017	1/28/2018	Not Detected	34.7587	Not Detected	37.8672	Not Detected	34.6289	Not Detected	33.129	Not Detected	33.3835	Not Detected	34.4184
SDSU ADRDL	MN	3	Breeder	20856	10/31/2017	11/1/2017	1/28/2018	Not Detected	35.5122	Not Detected	36.684	Not Detected	34.9915	Not Detected	33.4165	Not Detected	34.2709	Not Detected	34.1162
SDSU ADRDL	MN	3	Breeder	20859	10/30/2017	11/1/2017	1/28/2018	Not Detected	36.1753	Not Detected	Not Detected	Not Detected	36.0126	Not Detected	34.2591	Not Detected	34.016	Not Detected	35.115
SDSU ADRDL	MN	3	Breeder	20874	11/1/2017	11/1/2017	1/28/2018	Not Detected	34.4406	Not Detected	36.3653	Not Detected	34.6129	Not Detected	33.7462	Not Detected	34.2042	Not Detected	33.7036
SDSU ADRDL	MN	3	Breeder	20863	11/1/2017	11/1/2017	1/28/2018	Not Detected	34.9971	Not Detected	37.2587	Not Detected	34.9912	Not Detected	32.8777	Not Detected	33.4367	Not Detected	33.3783
SDSU ADRDL	IA	3	Breeder	21037	11/1/2017	11/2/2017	1/28/2018	Not Detected	34.9485	Not Detected	36.1102	Not Detected	35.0346	Not Detected	33.6963	Not Detected	36.1526	Not Detected	35.3049
SDSU ADRDL	MN	3	Breeder	21044	11/1/2017	11/2/2017	1/28/2018	Not Detected	36.1176	Not Detected	37.0031	Not Detected	35.4611	Not Detected	34.8276	Not Detected	36.4484	Not Detected	35.8273
SDSU ADRDL	IA	3	Breeder	21035	11/1/2017	11/2/2017	1/28/2018	Not Detected	34.8774	Not Detected	36.4356	Not Detected	34.8265	Not Detected	33.3064	Not Detected	37.367	Not Detected	33.7335
SDSU ADRDL	MN	3	Breeder	21116	11/3/2017	11/3/2017	1/28/2018	Not Detected	34.9667	Not Detected	37.4346	Not Detected	35.6275	Not Detected	33.8233	Not Detected	35.1698	Not Detected	35.0035
SDSU ADRDL	MN	3	Breeder	21151	11/3/2017	11/3/2017	1/28/2018	Not Detected	35.2566	Not Detected	36.6387	Not Detected	34.761	Not Detected	33.5606	Not Detected	35.857	Not Detected	34.5377
SDSU ADRDL	MN	3	Breeder	21216	11/6/2017	11/6/2017	1/28/2018	Not Detected	35.0007	Not Detected	38.1573	Not Detected	34.9075	Not Detected	34.2434	Not Detected	36.5187	Not Detected	35.0515
SDSU ADRDL	IA	3	Breeder	21187	11/5/2017	11/6/2017	1/28/2018	Not Detected	35.4072	Not Detected	37.9256	Not Detected	35.5502	Not Detected	33.5642	Not Detected	35.6205	Not Detected	34.417
SDSU ADRDL	IA	3	Breeder	21186	11/5/2017	11/6/2017	1/28/2018	Not Detected	35.0439	Not Detected	36.7775	Not Detected	35.2525	Not Detected	33.3886	Not Detected	36.3004	Not Detected	35.5551
SDSU ADRDL	MN	3	Breeder	21222	11/6/2017	11/6/2017	1/28/2018	Not Detected	35.4609	Not Detected	38.1793	Not Detected	35.9755	Not Detected	34.0688	Not Detected	35.6979	Not Detected	35.885
SDSU ADRDL	MN	3	Breeder	21212	11/2/2017	11/6/2017	1/28/2018	Not Detected	34.8943	Not Detected	37.0497	Not Detected	34.8226	Not Detected	32.3459	Not Detected	34.4802	Not Detected	32.3009
SDSU ADRDL	IA	3	Breeder	21217	11/6/2017	11/6/2017	1/28/2018	Not Detected	34.9755	Not Detected	37.4249	Not Detected	34.7221	Not Detected	33.0789	Not Detected	36.3586	Not Detected	32.8097
SDSU ADRDL	IA	3	Breeder	21283	11/4/2017	11/7/2017	1/28/2018	Not Detected	35.7736	Not Detected	36.5756	Not Detected	35.4098	Not Detected	33.8381	Not Detected	35.8532	Not Detected	34.5749
SDSU ADRDL	IL	3	Breeder	21297	11/6/2017	11/7/2017	1/28/2018	Not Detected	35.1587	Not Detected	37.2849	Not Detected	35.1123	Not Detected	33.0832	Not Detected	32.9276	Not Detected	32.7774
SDSU ADRDL	IA	3	Breeder	21295	11/6/2017	11/7/2017	1/28/2018	Not Detected	35.5202	Not Detected	37.2781	Not Detected	35.4422	Not Detected	35.0761	Not Detected	37.2235	Not Detected	36.1158
SDSU ADRDL	MN	3	Breeder	21315	11/6/2017	11/7/2017	1/28/2018	Not Detected	35.1729	Not Detected	36.9051	Not Detected	35.2447	Not Detected	32.8965	Not Detected	34.6552	Not Detected	33.5928
SDSU ADRDL	IA	3	Breeder	21307	11/6/2017	11/7/2017	1/28/2018	Not Detected	34.6422	Not Detected	37.0179	Not Detected	34.4505	Not Detected	33.052	Not Detected	34.5646	Not Detected	32.8331
SDSU ADRDL	IA	3	Breeder	21299	11/6/2017	11/7/2017	1/28/2018	Not Detected	36.1955	Not Detected	37.2878	Not Detected	36.9063	Not Detected	34.4498	Not Detected	37.1123	Not Detected	35.5777
SDSU ADRDL	MN	3	Breeder	21386	11/6/2017	11/8/2017	1/28/2018	Not Detected	34.7252	Not Detected	35.6929	Not Detected	34.2485	Not Detected	32.823	Not Detected	37.3517	Not Detected	30.076
SDSU ADRDL	MN	3	Breeder	21381	11/6/2017	11/8/2017	1/28/2018	Not Detected	36.2211	Not Detected	Not Detected	Not Detected	35.3882	Not Detected	34.2998	Not Detected	37.296	Not Detected	35.9126
SDSU ADRDL	MN	3	Breeder	21385	11/7/2017	11/8/2017	1/28/2018	Not Detected	35.1052	Not Detected	37.345	Not Detected	35.3525	Not Detected	33.197	Not Detected	35.9639	Not Detected	36.0103
SDSU ADRDL	SD	5	Grower	18623	9/27/2017	9/27/2017	1/28/2018	Not Detected	34.3004	Not Detected	37.5881	Not Detected	34.5586	Not Detected	34.4562	Not Detected	35.1457	Not Detected	36.4455
SDSU ADRDL	SD	5	Grower	18829	9/29/2017	10/2/2017	1/28/2018	Not Detected	35.1732	Not Detected	35.5721	Not Detected	35.0078	Not Detected	Not Detected	Not Detected	34.1787	Not Detected	Not Detected
SDSU ADRDL	SD	5	Grower	18860	10/2/2017	10/2/2017	1/28/2018	Not Detected	34.634	Not Detected	36.9606	Not Detected	34.6081	Not Detected	34.2308	Not Detected	36.7688	Not Detected	36.0778
SDSU ADRDL	SD	5	Grower	19054	9/28/2017	10/4/2017	1/28/2018	Not Detected	34.9603	Not Detected	36.0091	Not Detected	34.719	Not Detected	34.7297	Not Detected	36.2871	Not Detected	36.6628
SDSU ADRDL	NE	5	Grower	19105	10/2/2017	10/4/2017	1/28/2018	Not Detected	35.3103	Not Detected	36.0751	Not Detected	35.1626	Not Detected	35.2459	Not Detected	36.2217	Not Detected	36.7452
SDSU ADRDL	MN	3	Grower	19284	10/5/2017	10/6/2017	1/28/2018	Not Detected	36.156	Not Detected	35.9943	Not Detected	35.24	Not Detected	35.0165	Not Detected	36.5309	Not Detected	36.5029
SDSU ADRDL	SD	5	Grower	19538	10/11/2017	10/11/2017	1/28/2018	Not Detected	35.0249	Not Detected	37.0575	Not Detected	35.2	Not Detected	34.7973	Not Detected	36.8021	Not Detected	36.551
SDSU ADRDL	SD	5	Grower	19655	11/11/2017	11/12/2017	1/28/2018	Not Detected	35.4139	Not Detected	37.0842	Not Detected	34.7134	Not Detected	35.5273	Not Detected	36.2239	Not Detected	36.282
SDSU ADRDL	NE	5	Grower	19717	10/12/2017	10/13/2017	1/28/2018	Not Detected	35.1799	Not Detected	38.7839	Not Detected	35.5574	Not Detected	34.3509	Not Detected	35.0507	Not Detected	36.2309
SDSU ADRDL	SD	5	Grower	19752	10/13/2017	10/16/2017	1/28/2018	Not Detected	35.0431	Not Detected	35.8294	Not Detected	35.1988	Not Detected	35.3145	Not Detected	36.4488	Not Detected	36.4234
SDSU ADRDL	SD	5	Grower	19991	10/18/2017	10/18/2017	1/28/2018	Not Detected	35.2857	Not Detected	36.4326	Not Detected	34.9267	Not Detected	34.9086	Not Detected	35.3407	Not Detected	35.8059
SDSU ADRDL	SD	5	Grower	20011	10/17/2017	10/19/2017	1/28/2018	Not Detected	34.4971	Not Detected	36.1996	Not Detected	34.9477	Not Detected	34.4532	Not Detected	35.8462	Not Detected	35.3721
SDSU ADRDL	SD	5	Grower	20197	10/20/2017	10/23/2017	1/28/2018	Not Detected	35.1824	Not Detected	38.4888	Not Detected	34.7868	Not Detected	34.4439	Not Detected	37.1604	Not Detected	35.5701
SDSU ADRDL	NE	5	Grower	20306	10/23/2017	10/24/2017	1/28/2018	Not Detected	35.0396	Not Detected	38.4174	Not Detected	35.4476	Not Detected	33.9421	Not Detected	35.2757	Not Detected	36.0358
SDSU ADRDL	SD	5	Grower	20348	10/24/2017	10/25/2017	1/28/2018	Not Detected	35.0641	Not Detected	37.4305	Not Detected	34.6512	Not Detected	34.3549	Not Detected	35.6437	Not Detected	35.253
SDSU ADRDL	SD	5	Grower	20596	10/26/2017	10/27/2017	1/28/2018	Not Detected	35.5641	Not Detected	37.8009	Not Detected	35.2253	Not Detected	34.5963	Not Detected	36.3846	Not Detected	36.145
SDSU ADRDL	SD	5	Grower	20605	10/24/2017	10/27/2017	1/28/2018	Not Detected	35.9285	Not Detected	36.5856	Not Detected	35.5385	Not Detected	34.2047	Not Detected	36.4105	Not Detected	35.8027
SDSU ADRDL	SD	5	Grower	20601	10/25/2017	11/27/2017	1/28/2018	Not Detected	35.0653	Not Detected	37.0996	Not Detected	35.2	Not Detected	35.4008	Not Detected	35.2168	Not Detected	36.1967
SDSU ADRDL	SD	5	Grower	20688	10/27/2017	10/30/2017	1/28/2018	Not Detected	35.7679	Not Detected	Not Detected	Not Detected	35.1746	Not Detected	35.2329	Not Detected	35.3039	Not Detected	35.9424
SDSU ADRDL	SD	5	Grower	20877	11/1/2017	11/1/2017	1/28/2018	Not Detected	35.4887	Not Detected	37.1988	Not Detected	35.2241	Not Detected	34.1574	Not Detected	35.0107	Not Detected	35.2268
SDSU ADRDL	NE	5	Grower	21057	11/1/2017	11/2/2017	1/28/2018	Not Detected	36.0021	Not Detected	37.2517	Not Detected	36.6008	Not Detected	34.8553	Not Detected	35.32	Not Detected	35.803
SDSU ADRDL	SD	5	Grower	21210	11/3/2017	11/6/2017	1/28/2018	Not Detected	35.1123	Not Detected	38.9485	Not Detected	34.5208	Not Detected	34.1166	Not Detected	35.5019	Not Detected	35.6637
SDSU ADRDL	SD	5	Grower	21260	11/1/2017	11/7/2017	1/28/2018	Not Detected	35.3569	Not Detected	38.8385	Not Detected	34.9783	Not Detected	35.5692	Not Detected	36.1444	Not Detected	36.3214
SDSU ADRDL	SD	5	Grower	21360	11/7/2017	11/8/2017	1/28/2018	Not Detected	35.1201	Not Detected	36.2838	Not Detected	34.3362	Not Detected	34.8614	Not Detected	36.3712	Not Detected	36.3085
SDSU ADRDL	SD	5	Grower	21338	11/7/2017	11/7/2017	1/28/2018	Not Detected	35.1521	Not Detected	37.4325	Not Detected	35.959	Not Detected	34.4997	Not Detected	36.2459	Not Detected	36.3689
SDSU ADRDL	SD	5	Grower	21405	11/8/2017	11/8/2017	1/28/2018	Not Detected	35.0491	Not Detected	37.2291	Not Detected	34.6886	Not Detected	34.4838	Not Detected	35.2291	Not Detected	36.5099
SDSU ADRDL	SD	5	Grower	21406	11/8/2017	11/8/2017	1/28/2018	Not Detected	35.2273	Not Detected	36.8098	Not Detected	34.4401	Not Detected	33.1617	Not Detected	36.3994	Not Detected	34.5318
SDSU ADRDL	SD	5	Grower	21626	11/10/2017	11/13/2017	1/28/2018	Not Detected	34.9875	Not Detected	37.2293	Not Detected	34.4083	Not Detected	34.7931	Not Detected	35.2022	Not Detected	35.616
SDSU ADRDL	NE	5	Grower	21706	11/13/2017	11/14/2017	1/28/2018	Not Detected	35.2429	Not Detected	36.5447	Not Detected	35.2777	Not Detected	33.1725	Not Detected	33.9608	Not Detected	34.9003
SDSU ADRDL	SD	5	Grower	21832	11/15/2017	11/15/2017	1/28/2018	Not Detected	34.7589	Not Detected	35.844	Not Detected	34.4464	Not Detected	33.6526	Not Detected	36.1491	Not Detected	35.2136
SDSU ADRDL	SD	5	Grower	21829	11/15/2017	11/15/2017	1/28/2018	Not Detected	34.6564	Not Detected	36.4592	Not Detected	35.0529	Not Detected	34.0075	Not Detected	34.3546	Not Detected	35.1327
SDSU ADRDL	MN	3	Breeder	21512	11/8/2017	11/9/2017	1/28/2018	Not Detected	34.9982	Not Detected	36.8008	Not Detected	34.7184	Not Detected	34.2108	Not Detected	37.1187	Not Detected	35.7467
SDSU ADRDL	SD	5	Breeder	18495	9/25/2017	9/26/2017	1/28/2018	Not Detected	35.5547	Not Detected	38.5951	Not Detected	36.0043	Not Detected	34.6972	Not Detected	37.4738	Not Detected	36.9185
SDSU ADRDL	SD	5	Breeder	18465	9/25/2017	9/26/2017	1/28/2018	Not Detected	34.7787	Not Detected	36.6053	Not Detected	34.1402	Not Detected	34.3921	Not Detected	35.8464	Not Detected	35.5852
SDSU ADRDL	SD	5	Breeder	18567	9/24/2017	9/27/2017	1/28/2018	Not Detected	35.4963	Not Detected	37.1377	Not Detected	35.575	Not Detected	34.4811	Not Detected	36.3512	Not Detected	36.5857
SDSU ADRDL	SD	5	Breeder	18581	9/26/2017	9/27/2017	1/28/2018	Not Detected	34.3183	Not Detected	37.6985	Not Detected	34.3758	Not Detected	33.4082	Not Detected	35.1905	Not Detected	35.2144
SDSU ADRDL	SD	5	Breeder	18621	9/27/2017	9/27/2017	1/28/2018	Not Detected	35.0792	Not Detected	36.6137	Not Detected	34.7845	Not Detected	34.4071	Not Detected	36.0238	Not Detected	35.4162
SDSU ADRDL	SD	5	Breeder	18624	9/27/2017	9/27/2017	1/28/2018	Not Detected	34.7399	Not Detected	36.0985	Not Detected	35.2184	Not Detected	34.2687	Not Detected	35.162	Not Detected	36.4901

NAHLN Negative Cohort Study Data Collection Sheet

Instructions:
Use one row per animal tested for the Negative Cohort Study to record CT results for each applicable test and sample type.
Acceptable samples- samples should be obtained from diagnostic submission or sampling of healthy animal. Any other, please specify in remarks.

NAHLN Laboratory name	Sample State of origin	District (1-6)	Swine group (Grower or Breeder >5 mo of age	Individual sample ID	Sample collection date	Sample received in the lab date	Sample tested date	USDA ASF	USDA Xeno	Sample tested date	Tetracore ASF	Tetracore Xeno	Remarks
SDSU ADRDL	MN	3	Breeder	20859	10/30/2017	11/1/2017	1/28/2018	Not Detected	Not Detected	1/28/2018	Not Detected	34.016	
SDSU ADRDL	MN	3	Breeder	21381	11/6/2017	11/8/2017	1/28/2018	Not Detected	Not Detected	1/28/2018	Not Detected	37.296	
SDSU ADRDL	MN	3	Grower	21523	11/9/2017	11/9/2017	1/28/2018	Not Detected	Not Detected	1/28/2018	Not Detected	36.2585	
SDSU ADRDL	IA	3	Grower	21294	11/6/2017	11/7/2017	1/28/2018	Not Detected	38.8645	1/28/2018	Not Detected	Not Detected	
SDSU ADRDL	MN	3	Grower	19492	10/9/2017	10/11/2017	1/28/2018	Not Detected	37.9335	1/28/2018	Not Detected	39.0588	
SDSU ADRDL	IA	3	Grower	19776	10/13/2017	10/16/2017	1/28/2018	Not Detected	37.8149	1/28/2018	Not Detected	41.7974	
SDSU ADRDL	MN	3	Breeder	20642	10/26/2017	10/27/2017	1/28/2018	Not Detected	37.4937	1/28/2018	Not Detected	Not Detected	
SDSU ADRDL	IA	3	Breeder	20625	10/26/2017	10/27/2017	1/28/2018	Not Detected	37.3409	1/28/2018	Not Detected	39.2339	
SDSU ADRDL	MN	3	Grower	19849	10/16/2017	10/17/2017	1/28/2018	Not Detected	37.2677	1/28/2018	Not Detected	38.358	
SDSU ADRDL	WI	3	Grower	18580	9/25/2017	9/27/2017	1/28/2018	Not Detected	36.632	1/28/2018	Not Detected	Not Detected	
SDSU ADRDL	IA	3	Breeder	20397	10/19/2017	10/25/2017	1/28/2018	Not Detected	36.2966	1/28/2018	Not Detected	Not Detected	
SDSU ADRDL	MO	4	Breeder	21334	11/6/2017	11/7/2017	1/30/2018	Not Detected	Not Detected	1/30/2018	Not Detected	36.5826	
SDSU ADRDL	MO	4	Breeder	19710	10/11/2017	10/13/2017	1/30/2018	Not Detected	Not Detected	1/30/2018	Not Detected	34.2351	
SDSU ADRDL	OK	4	Grower	45870	12/7/2017	12/8/2017	1/30/2018	Not Detected	Not Detected	1/30/2018	Not Detected	34.5446	
SDSU ADRDL	OK	4	Breeder	44508	11/28/2017	11/29/2017	1/30/2018	Not Detected	Not Detected	1/30/2018	Not Detected	35.222	
SDSU ADRDL	OK	4	Breeder	45499	12/5/2017	12/6/2017	1/30/2018	Not Detected	43.8132	1/30/2018	Not Detected	35.1176	
SDSU ADRDL	OK	4	Breeder	20299	10/23/2017	10/24/2017	1/30/2018	Not Detected	38.947	1/30/2018	Not Detected	40.6255	
SDSU ADRDL	MO	4	Breeder	18483	9/25/2017	9/26/2017	1/30/2018	Not Detected	37.7661	1/30/2018	Not Detected	Not Detected	
SDSU ADRDL	TX	4	Breeder	44750	11/29/2017	11/30/2017	1/30/2018	Not Detected	36.6521	1/30/2018	Not Detected	Not Detected	
SDSU ADRDL	OK	4	Breeder	20376	10/24/2017	10/25/2017	1/30/2018	Not Detected	36.5113	1/30/2018	Not Detected	Not Detected	
SDSU ADRDL	OK	4	Breeder	19851	10/16/2017	10/17/2017	1/30/2018	Not Detected	36.4949	1/30/2018	Not Detected	Not Detected	
SDSU ADRDL	MO	4	Breeder	19607	10/9/2017	10/12/2017	1/30/2018	Not Detected	36.4738	1/30/2018	Not Detected	Not Detected	
SDSU ADRDL	OK	4	Breeder	44507	11/28/2017	11/29/2017	1/30/2018	Not Detected	36.4455	1/30/2018	Not Detected	Not Detected	
SDSU ADRDL	SD	5	Grower	20688	10/27/2017	10/30/2017	1/28/2018	Not Detected	Not Detected	1/28/2018	Not Detected	35.3039	
SDSU ADRDL	SD	5	Breeder	19191	10/4/2017	10/5/2017	1/28/2018	Not Detected	44.4247	1/28/2018	Not Detected	36.2813	
SDSU ADRDL	SD	5	Breeder	19994	10/18/2017	10/18/2017	1/28/2018	Not Detected	37.0624	1/28/2018	Not Detected	38.1079	
SDSU ADRDL	SD	5	Breeder	19719	10/12/2017	10/13/2017	1/28/2018	Not Detected	36.6303	1/28/2018	Not Detected	37.9235	
SDSU ADRDL	SD	5	Breeder	20262	10/23/2017	10/24/2017	1/28/2018	Not Detected	36.5033	1/28/2018	Not Detected	37.768	
SDSU ADRDL	SD	5	Breeder	19693	10/13/2017	10/13/2017	1/28/2018	Not Detected	36.3933	1/28/2018	Not Detected	40.001	
SDSU ADRDL	NE	5	Breeder	18732	9/28/2017	9/29/2017	1/28/2018	Not Detected	35.3837	1/28/2018	Not Detected	37.8498	
SDSU ADRDL	MN	3	Breeder	20859	10/30/2017	11/1/2017	6/15/2018	Not Detected	37.9	6/15/2018	Not Detected	31.01	RE-RUNS
SDSU ADRDL	MN	3	Breeder	21381	11/6/2017	11/8/2017	6/15/2018	Not Detected	36.47	6/15/2018	Not Detected	31.54	RE-RUNS
SDSU ADRDL	MN	3	Grower	21523	11/9/2017	11/9/2017	6/15/2018	Not Detected	35.93	6/15/2018	Not Detected	30.86	RE-RUNS
SDSU ADRDL	IA	3	Grower	21294	11/6/2017	11/7/2017	6/15/2018	Not Detected	36.5	6/15/2018	Not Detected	31.41	RE-RUNS
SDSU ADRDL	MN	3	Grower	19492	10/9/2017	10/11/2017	6/15/2018	Not Detected	37.94	6/15/2018	Not Detected	31.91	RE-RUNS
SDSU ADRDL	IA	3	Grower	19776	10/13/2017	10/16/2017	6/15/2018	Not Detected	37.05	6/15/2018	Not Detected	31.73	RE-RUNS
SDSU ADRDL	MN	3	Breeder	20642	10/26/2017	10/27/2017	6/15/2018	Not Detected	35.98	6/15/2018	Not Detected	31.49	RE-RUNS
SDSU ADRDL	IA	3	Breeder	20625	10/26/2017	10/27/2017	6/15/2018	Not Detected	38.26	6/15/2018	Not Detected	31.6	RE-RUNS
SDSU ADRDL	MN	3	Grower	19849	10/16/2017	10/17/2017	6/15/2018	Not Detected	35.16	6/15/2018	Not Detected	30.8	RE-RUNS
SDSU ADRDL	WI	3	Grower	18580	9/25/2017	9/27/2017	6/15/2018	Not Detected	36.23	6/15/2018	Not Detected	29.76	RE-RUNS
SDSU ADRDL	IA	3	Breeder	20397	10/19/2017	10/25/2017	6/15/2018	Not Detected	35.99	6/15/2018	Not Detected	31.48	RE-RUNS
SDSU ADRDL	MO	4	Breeder	21334	11/6/2017	11/7/2017	6/15/2018	Not Detected	36.09	6/15/2018	Not Detected	32.12	RE-RUNS
SDSU ADRDL	MO	4	Breeder	19710	10/11/2017	10/13/2017	6/15/2018	Not Detected	35.78	6/15/2018	Not Detected	31.78	RE-RUNS
SDSU ADRDL	OK	4	Grower	45870	12/7/2017	12/8/2017	6/15/2018	Not Detected	37	6/15/2018	Not Detected	31.22	RE-RUNS
SDSU ADRDL	OK	4	Breeder	44508	11/28/2017	11/29/2017	6/15/2018	Not Detected	37.45	6/15/2018	Not Detected	31.93	RE-RUNS
SDSU ADRDL	OK	4	Breeder	45499	12/5/2017	12/6/2017	6/15/2018	Not Detected	36.39	6/15/2018	Not Detected	31.65	RE-RUNS
SDSU ADRDL	OK	4	Breeder	20299	10/23/2017	10/24/2017	6/15/2018	Not Detected	36.06	6/15/2018	Not Detected	32.1	RE-RUNS
SDSU ADRDL	MO	4	Breeder	18483	9/25/2017	9/26/2017	6/15/2018	Not Detected	36.66	6/15/2018	Not Detected	31.24	RE-RUNS
SDSU ADRDL	TX	4	Breeder	44750	11/29/2017	11/30/2017	6/15/2018	Not Detected	35.68	6/15/2018	Not Detected	32.07	RE-RUNS
SDSU ADRDL	OK	4	Breeder	20376	10/24/2017	10/25/2017	6/15/2018	Not Detected	38.61	6/15/2018	Not Detected	31.82	RE-RUNS
SDSU ADRDL	OK	4	Breeder	19851	10/16/2017	10/17/2017	6/15/2018	Not Detected	39.12	6/15/2018	Not Detected	32.07	RE-RUNS
SDSU ADRDL	MO	4	Breeder	19607	10/9/2017	10/12/2017	6/15/2018	Not Detected	36.29	6/15/2018	Not Detected	31.17	RE-RUNS
SDSU ADRDL	OK	4	Breeder	44507	11/28/2017	11/29/2017	6/15/2018	Not Detected	35.98	6/15/2018	Not Detected	32.36	RE-RUNS
SDSU ADRDL	SD	5	Grower	20688	10/27/2017	10/30/2017	6/15/2018	Not Detected	37.66	6/15/2018	Not Detected	32.19	RE-RUNS
SDSU ADRDL	SD	5	Breeder	19191	10/4/2017	10/5/2017	6/15/2018	Not Detected	NOT DETECTED	6/15/2018	Not Detected	30.96	RE-RUNS
SDSU ADRDL	SD	5	Breeder	19994	10/18/2017	10/18/2017	6/15/2018	Not Detected	36.55	6/15/2018	Not Detected	31.11	RE-RUNS
SDSU ADRDL	SD	5	Breeder	19719	10/12/2017	10/13/2017	6/15/2018	Not Detected	37.11	6/15/2018	Not Detected	31.67	RE-RUNS
SDSU ADRDL	SD	5	Breeder	20262	10/23/2017	10/24/2017	6/15/2018	Not Detected	37.07	6/15/2018	Not Detected	31.87	RE-RUNS
SDSU ADRDL	SD	5	Breeder	19693	10/13/2017	10/13/2017	6/15/2018	Not Detected	35.52	6/15/2018	Not Detected	31.96	RE-RUNS
SDSU ADRDL	NE	5	Breeder	18732	9/28/2017	9/29/2017	6/15/2018	Not Detected	37.81	6/15/2018	Not Detected	32.21	RE-RUNS
SDSU ADRDL	SD	5	Breeder	19191	10/4/2017	10/5/2017	6/15/2018	Not Detected	36.98				PCR RE-RUN IN DUPLICATE
SDSU ADRDL	SD	5	Breeder	19191	10/4/2017	10/5/2017	6/15/2018	Not Detected	36.51				PCR RE-RUN IN DUPLICATE

NAHLN Negative Cohort Study Data Collection Sheet

Instructions:
Use one row per animal tested for the Negative Cohort Study to record CT results for each applicable test and sample type.
Acceptable samples- samples should be obtained from diagnostic submission or sampling of healthy animal. Any other, please specify in remarks.

NAHLN Laboratory name	Sample State of origin	District (1-6)	Swine group (Grower or Breeder >5 mo of age	Individual sample ID	Sample collection date	Sample received in the lab date	Sample tested date	VSL-NAHLN RT-PCR CT values CSF	VSL-NAHLN RT-PCR CT values Xeno	Sample tested date	Tetracore RT-PCR CT values CSF	Tetracore RT-PCR CT values Xeno	Remarks
SDSU ADRDL	MN	3	Breeder	20392	10/20/2017	10/25/2017	1/28/2018	Not Detected	35.2145	1/28/2018	Not Detected	Not Detected	
SDSU ADRDL	IA	3	Breeder	20387	10/20/2017	10/25/2017	1/28/2018	Not Detected	35.1578	1/28/2018	Not Detected	Not Detected	
SDSU ADRDL	MO	4	Breeder	21281	11/6/2017	11/7/2017	1/30/2018	Not Detected	35.1003	1/30/2018	Not Detected	37.7256	
SDSU ADRDL	AR	4	Breeder	19114	10/3/2017	10/4/2017	1/30/2018	Not Detected	35.6497	1/30/2018	Not Detected	37.7103	
SDSU ADRDL	SD	5	Grower	18829	9/29/2017	10/2/2017	1/28/2018	Not Detected	35.1732	1/28/2018	Not Detected	Not Detected	
SDSU ADRDL	SD	5	Breeder	19042	10/2/2017	10/4/2017	1/28/2018	Not Detected	35.3931	1/28/2018	Not Detected	Not Detected	
SDSU ADRDL	SD	5	Breeder	21752	11/14/2017	11/14/2017	1/30/2018	Not Detected	35.619	1/30/2018	Not Detected	38.2408	
SDSU ADRDL	MN	3	Breeder	20392	10/20/2017	10/25/2017	5/17/2018	Not Detected	35.1	5/17/2018	Not Detected	34.38	re-run
SDSU ADRDL	IA	3	Breeder	20387	10/20/2017	10/25/2017	5/17/2018	Not Detected	35.21	5/17/2018	Not Detected	32.58	re-run
SDSU ADRDL	MO	4	Breeder	21281	11/6/2017	11/7/2017	5/17/2018	Not Detected	35.48	5/17/2018	Not Detected	33.35	re-run
SDSU ADRDL	AR	4	Breeder	19114	10/3/2017	10/4/2017	5/17/2018	Not Detected	35	5/17/2018	Not Detected	33.93	re-run
SDSU ADRDL	SD	5	Grower	18829	9/29/2017	10/2/2017	5/17/2018	Not Detected	34.64	5/17/2018	Not Detected	33.01	re-run
SDSU ADRDL	SD	5	Breeder	19042	10/2/2017	10/4/2017	5/17/2018	Not Detected	36.85	5/17/2018	Not Detected	33.56	re-run
SDSU ADRDL	SD	5	Breeder	21752	11/14/2017	11/14/2017	5/17/2018	Not Detected	35.76	5/17/2018	Not Detected	32.73	re-run

NAHLN Negative Cohort Study Data Collection Sheet

Instructions:
Use one row per animal tested for the Negative Cohort Study to record CT results for each applicable test and sample type.
Acceptable samples- samples should be obtained from diagnostic submission or sampling of healthy animal. Any other, please specify in remarks.

NAHLN Laboratory name	Sample State of orig	District (1-6)	Swine group (Grower or Breeder >5 mo of age	Individual sample ID	Sample collection date	Sample received in the lab date	Sample tested date	NAHLN		Sample tested date	Tetracore		Remarks
								FMD	Xeno		FMD	Xeno	
SDSU ADRDL	MN	3	Breeder	20392	10/20/2017	10/25/2017	1/28/2018	Not Detected	35.142	1/28/2018	ot Detecte	43.2609	
SDSU ADRDL	AR	4	Breeder	20196	10/20/2017	10/23/2017	1/30/2018	Not Detected	33.5529	1/30/2018	ot Detecte	Not Detected	
SDSU ADRDL	SD	5	Grower	18829	9/29/2017	10/2/2017	1/28/2018	Not Detected	35.0078	1/28/2018	ot Detecte	Not Detected	
SDSU ADRDL	SD	5	Breeder	19042	10/2/2017	10/4/2017	1/28/2018	Not Detected	35.102	1/28/2018	ot Detecte	Not Detected	
SDSU ADRDL	MN	3	Breeder	20392	10/20/2017	10/25/2017	5/17/2018	Not Detected	35.82	5/17/2018	ot Detecte	36	re-run
SDSU ADRDL	AR	4	Breeder	20196	10/20/2017	10/23/2017	5/17/2018	Not Detected	36.72	5/17/2018	ot Detecte	34.92	re-run
SDSU ADRDL	SD	5	Grower	18829	9/29/2017	10/2/2017	5/17/2018	Not Detected	35.83	5/17/2018	ot Detecte	34.45	re-run
SDSU ADRDL	SD	5	Breeder	19042	10/2/2017	10/4/2017	5/17/2018	Not Detected	36.55	5/17/2018	ot Detecte	36.56	re-run

Discussion: Explain your research results and include a summary of the results that is of immediate or future benefit to pork producers.

There is some variability among internal control (IC) values both for the NVSL-NAHLN protocol and for the Tetracore kits. The extraction method for oral fluids mandated for this project was minimally evaluated on a relatively small number of positive samples at FADDL to determine if the standard protocol would yield expected results. The variation in IC values seen in this study might be resolved with a simple centrifugation step of the oral fluid sample prior to extraction. The SDSU-ADRDL processes thousands of oral fluid samples on a monthly basis and all samples tested for viruses are centrifuged prior to extraction. SDSU-ADRDL also uses Tetracore PCR technology for PRRSV testing (at the same concentration used in this study for CSF/FMD) on oral fluids and does not see the variability in IC seen in this study. The major difference between the two protocols is the centrifugation step of the oral fluids prior to extraction.

Additional studies are on-going with the National USDA-NAHLN office and FADDL and aggregated results from other laboratories participating in the negative cohort study will be reported from Christina M. Loiacono, DVM, PhD, DACVP, Coordinator, National Animal Health Laboratory Network, USDA, APHIS, VS, NVSL
While the negative cohort is being completed, the USDA-NAHLN are working towards planning several phases of testing positive samples including a positive cohort