Appendix XII

5K96 Diet Nutrient and Contaminant Analyses Provided by Diet Manufacturer

Diet Lot #12MAY02RTD1

COVANCE

Report Number: 578339-0
Report Date: 07-Jun-2012
Report Status: Final

Certificate of Analysis

Purina

Purina Feed/Land O' Lakes
505 North 4th St.
Richmond Indiana 47374 United States

Sample Name:	**AVP Casein BS RDT 10- IF 1/2" IRR**	**Covance Sample:**	**1382247**
Project ID	PURINA-20120529-0034	**Receipt Date**	29-May-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12MAY02RTD1	**Login Date**	29-May-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810069 (5K96)		

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	5.1 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	1.6 ppb
Recovery	97.7 %
Fat by Soxhlet *	
Fat	3.7 g/100g
Crude Fiber *	
Crude Fiber	3.27 g/100g
Protein (N x 6.38) Dumas Method	
Protein	21.5 g/100g
Vitamin A *	
Vitamin A	12600 IU/kg
Elements by ICP Emission Spectrometry	
Calcium	1240 mg/100g
Phosphorus	901 mg/100g
Vitamin E *	
Vitamin E	0.0790 IU/g
Thiamin	
Thiamin	14.0 ppm
Selenium *	
Selenium	46.5 mcg/100g
Nitrate and Nitrite *	
Nitrite Anion	<0.100 mg/100g
Nitrate Anion	2.21 mg/100g
Ash	
Ash	6.16 g/100g
Moisture	
Moisture	9.63 g/100g
BHA, BHT, and TBHQ	
BHA	<1.00 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**578339-0**
Report Date:	**07-Jun-2012**
Report Status:	**Final**

Certificate of Analysis

Purina

Purina Feed/Land O' Lakes
505 North 4th St.
Richmond Indiana 47374 United States

Sample Name:	**AVP Casein BS RDT 10- IF 1/2" IRR**	**Covance Sample:**	**1382247**
Project ID	PURINA-20120529-0034	**Receipt Date**	29-May-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12MAY02RTD1	**Login Date**	29-May-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810069 (5K96)		

Analysis	Result
BHA, BHT, and TBHQ	
BHT	<1.00 ppm
Fumonisins *	
Fumonisin B1	<0.1 ppm
Fumonisin B2	<0.1 ppm
Aerobic Plate Count *	
Standard Plate Count	<10.0 CFU/g
Coliforms MPN *	
Total Coliform MPN	<3.0 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3.0 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10.0 CFU/g
Fecal Coliforms (MPN) *	
Fecal Coliform MPN	<3.0 MPN/g
Elements by ICP Mass Spectrometry	
Arsenic *	354 ppb
Cadmium *	40.0 ppb
Lead	262 ppb
Mercury *	<10.0 ppb
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<12.5 ppb
HCB	<6.5 ppb
Alpha-BHC	<12.5 ppb
Propyzamide	<25.0 ppb
DCNA	<18.5 ppb
PCNB	<10.0 ppb
Gamma-BHC	<12.5 ppb
Beta-BHC	<12.5 ppb

*** This analysis is not ISO accredited.**

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Report Number: 578339-0
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Purina

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Sample Name:	**AVP Casein BS RDT 10- IF 1/2" IRR**	**Covance Sample:**	**1382247**
Project ID	PURINA-20120529-0034	**Receipt Date**	29-May-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12MAY02RTD1	**Login Date**	29-May-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810069 (5K96)		

Analysis	Result
Organochlorinated Pesticides *	
Heptachlor	<12.5 ppb
Chlorothalonil	<12.5 ppb
Delta-BHC	<12.5 ppb
Vinclozolin	<25.0 ppb
Aldrin	<12.5 ppb
DCPA	<18.5 ppb
Heptachlor Epoxide	<12.5 ppb
Endosulfan I	<12.5 ppb
Dieldrin	<12.5 ppb
Captan	<50.0 ppb
Folpet	<31.5 ppb
p,p' - DDE	<12.5 ppb
Endrin	<18.5 ppb
Oxadiazon	<37.5 ppb
Endosulfan II	<18.5 ppb
p,p' - DDD	<18.5 ppb
p,p' - DDT	<20.0 ppb
Endosulfan Sulfate	<18.5 ppb
Captafol	<31.5 ppb
Dicofol	<31.5 ppb
Mirex	<12.5 ppb
Tetradifon	<18.5 ppb
Methoxychlor	<31.5 ppb
Cis-Permethrin	<37.5 ppb
Cypermethrin	<94.0 ppb
Toxaphene	<100 ppb
Arochlor 1254	<200 ppb
Tech Chlordane	<50.0 ppb
Trans-Permethrin	<25.0 ppb
Telodrin	<20.0 ppb
Organophosphate Pesticides *	
Vapona	<15.0 ppb
Methamidophos	<15.0 ppb

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Project ID	PURINA-20120529-0034	**Receipt Date**	29-May-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12MAY02RTD1	**Login Date**	29-May-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810069 (5K96)		

Analysis	Result
Organophosphate Pesticides *	
Mevinphos	<25.0 ppb
Acephate	<40.0 ppb
Omethoate	<35.0 ppb
Thimet	<20.0 ppb
Demeton-S	<25.0 ppb
Fonofos	<25.0 ppb
Diazinon	<20.0 ppb
Disulfoton	<25.0 ppb
Dimethoate	<20.0 ppb
Propetamphos	<30.0 ppb
Dichlofenthion	<30.0 ppb
Me-Chlorpyrifos	<20.0 ppb
Ronnel	<20.0 ppb
Me-Parathion	<20.0 ppb
Me-Pirimiphos	<25.0 ppb
Et-Chlorpyrifos	<25.0 ppb
Fenitrothion	<25.0 ppb
Malathion	<20.0 ppb
Et-Parathion	<20.0 ppb
Chlorfenvinphos	<40.0 ppb
Methidathion	<30.0 ppb
Prothiophos	<30.0 ppb
Ethion	<20.0 ppb
Trithion	<30.0 ppb
Phosmet	<35.0 ppb
EPN	<40.0 ppb
Azinphos-Methyl	<40.0 ppb
Phosalone	<40.0 ppb
Coumaphos	<50.0 ppb

Method References	Testing Location
Aerobic Plate Count (SPCM:7)	**Covance Laboratories Inc.**

*** This analysis is not ISO accredited.**

Certificate of Analysis

Purina
Purina Feed/Land O' Lakes
505 North 4th St.
Richmond Indiana 47374 United States

Method References	Testing Location

Aerobic Plate Count (SPCM:7) — **Covance Laboratories Inc.**

1. Bacteriological Analytical Manual online, Aerobic Plate Count, Chapter 3; Food and Drug Administration, Silver Spring, Maryland (January, 2001). (Modified).
2. Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001).

Aflatoxin (AHMF_S:6) — **Covance Laboratories Inc.**

Official Methods of Analysis of AOAC International, 18th Ed. Methods 991.31 and 999.07, AOAC International: Gaithersburg, Maryland, (2005).

Ash (ASHM_S:5) — **Covance Laboratories Inc.**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:7) — **Covance Laboratories Inc.**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliforms MPN (COLM:6) — **Covance Laboratories Inc.**

1. Bacteriological Analytical Manual, Escherichia coli and the Coliform Bacteria (modified), Chapter 4, 2002. Food and Drug Administration, AOAC International: Gaithersburg, Maryland. Modified.
2. Standard Methods for the Examination of Dairy Products, Coliform and Other Indicator Bacteria (modified), 17th Edition, Chapter 7, 2004.)American Public Health Association: Washington D.C. Modified.
3. Compendium of Methods for the Microbiological Examination of Foods, Enterobacteriaceae, Coliforms, Escherichia coli and its toxins 4th Ed. Chap.8, 2001. American Public Health Association: Washington D.C. Modified.

Crude Fiber (CFIB_S:2) — **Covance Laboratories Inc.**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:13) — **Covance Laboratories Inc.**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:12) — **Covance Laboratories Inc.**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

Enterobacteriaceae MPN (ENTR:6) — **Covance Laboratories Inc.**

Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).

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Certificate of Analysis

Purina

Purina Feed/Land O' Lakes
505 North 4th St.
Richmond Indiana 47374 United States

Method References	Testing Location

Escherichia coli Count (COLC:5) — **Covance Laboratories Inc.**

Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001). Modified.

Fat by Soxhlet (FSOX_S:2) — **Covance Laboratories Inc.**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.39 and 948.22. AOAC International, Gaithersburg, MD, 2005 (Modified).

Fecal Coliforms (MPN) (COLMF:3) — **Covance Laboratories Inc.**

Fumonisins (FUMONISINS:1) — **Romer Laboratories**

Test performed by a third party laboratory

Moisture (M100T100_S:5) — **Covance Laboratories Inc.**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).

Nitrate and Nitrite (NONO_S:2) — **Covance Laboratories Inc.**

Journal of chromatography A.804 (1998) 157-160 (modified)

Nitrosamines (NITG_S:8) — **Covance Laboratories Inc.**

Protocol 6497-148

Organochlorinated Pesticides (OPCL_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Organophosphate Pesticides (OPOP_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

COVANCE

Report Number: 578339-0
Report Date: 07-Jun-2012
Report Status: Final

Certificate of Analysis

Purina

Purina Feed/Land O' Lakes
505 North 4th St.
Richmond Indiana 47374 United States

Method References	Testing Location
Protein (N x 6.38) Dumas Method (DGEN_S:5)	**Covance Laboratories Inc.**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)	
Selenium (SEHG_S:5)	**Covance Laboratories Inc.**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 996.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified).	
Thiamin (BIDE_S:6)	**Covance Laboratories Inc.**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).	
Vitamin A (AFD1_S:4)	**Covance Laboratories Inc.**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 974.29, 992.04, and 992.06, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).	
Thompson, J.N., and Duval, S., "Determination of Vitamin A in Milk and Infant Formula by HPLC", Journal of Micronutrient Analysis, 6:147-159, (1989).	
Vitamin E (EFD1_S:5)	**Covance Laboratories Inc.**
Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of [Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)	
Speek, A. J., Schijver, J., and Schreurs, W. H. P., Journal of Food Science, 50:121-124 (1985). (Modified)	
McMurray, C. H., Blanchflower, W. J., and Rice, D. A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980).	

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Greenfield	**Sharon McKilligin - Associate Director**
671 S. Meridian Road Greenfield IN 46140 866-964-2034	
Covance Laboratories Inc.	**Lori Ross - Associate Director**
3301 Kinsman Blvd Madison WI 53704 608-242-2712 x4170	ACCREDITED Testing Cert #2918.01
Romer Laboratories	**Lori Ross - Associate Director**

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 578339-0
Report Date: 07-Jun-2012
Report Status: Final

Certificate of Analysis

Purina

Purina Feed/Land O' Lakes
505 North 4th St.
Richmond Indiana 47374 United States

*** This analysis is not ISO accredited.**

Diet Lot #12JUL23RTD1

COVANCE

Report Number:	**629549-5**
Report Date:	**21-Sep-2012**
Report Status:	**Final**
Supercedes :	**629549-4**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AVP Casein BS Rod 10-IF 1/2 IRR**	**Covance Sample:**	**1588032**
Project ID	PURINA-20120906-0087	**Receipt Date**	06-Sep-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12JUL23RTD1	**Login Date**	06-Sep-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810069 (5K96)		

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	2.4 ppb
N-Nitrosodimethylamine	2.4 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	<1.0 ppb
N-Nitrosopyrrolidine	<1.0 ppb
Recovery	88.2 %
Recovery	88.2 %
Fat by Soxhlet *	
Fat	4.1 g/100g
Crude Fiber *	
Crude Fiber	2.97 g/100g
Protein (N x 6.38) Dumas Method	
Protein	22.1 g/100g
Vitamin A *	
Vitamin A	11200 IU/kg
Elements by ICP Emission Spectrometry	
Calcium	1270 mg/100g
Phosphorus	986 mg/100g
Vitamin E *	
Vitamin E	0.0843 IU/g
Thiamin	
Thiamin	17.5 ppm
Nitrate and Nitrite *	
Nitrite Anion	<0.100 mg/100g
Nitrate Anion	1.09 mg/100g

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**629549-5**
Report Date:	**21-Sep-2012**
Report Status:	**Final**
Supercedes :	**629549-4**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AVP Casein BS Rod 10-IF 1/2 IRR**	**Covance Sample:**	**1588032**
Project ID	PURINA-20120906-0087	**Receipt Date**	06-Sep-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12JUL23RTD1	**Login Date**	06-Sep-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810069 (5K96)		

Analysis	Result
Ash	
Ash	5.98 g/100g
Moisture	
Moisture	8.55 g/100g
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm
Aerobic Plate Count *	
Standard Plate Count	<10 CFU/g
Coliforms MPN *	
Total Coliform MPN	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10 CFU/g
Fecal Coliforms (MPN) *	
Fecal Coliform MPN	<3 MPN/g
Elements by ICP Mass Spectrometry	
Arsenic *	408 ppb
Cadmium *	32.3 ppb
Lead	238 ppb
Mercury *	10.4 ppb
Selenium *	
Selenium	28.8 mcg/100g
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<12.5 ppb
HCB	<6.5 ppb
Alpha-BHC	<12.5 ppb

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**629549-5**
Report Date:	**21-Sep-2012**
Report Status:	**Final**
Supercedes :	**629549-4**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AVP Casein BS Rod 10-IF 1/2 IRR**	**Covance Sample:**	**1588032**
Project ID	PURINA-20120906-0087	**Receipt Date**	06-Sep-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12JUL23RTD1	**Login Date**	06-Sep-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810069 (5K96)		

Analysis	Result
Organochlorinated Pesticides *	
Propyzamide	<25.0 ppb
DCNA	<18.5 ppb
PCNB	<10.0 ppb
Gamma-BHC	<12.5 ppb
Beta-BHC	<12.5 ppb
Heptachlor	<12.5 ppb
Chlorothalonil	<12.5 ppb
Delta-BHC	<12.5 ppb
Vinclozolin	<25.0 ppb
Aldrin	<12.5 ppb
DCPA	<18.5 ppb
Heptachlor Epoxide	<12.5 ppb
Endosulfan I	<12.5 ppb
Dieldrin	<12.5 ppb
Captan	<50.0 ppb
Folpet	<31.5 ppb
p,p' - DDE	<12.5 ppb
Endrin	<18.5 ppb
Oxadiazon	<37.5 ppb
Endosulfan II	<18.5 ppb
p,p' - DDD	<18.5 ppb
p,p' - DDT	<20.0 ppb
Endosulfan Sulfate	<18.5 ppb
Captafol	<31.5 ppb
Dicofol	<31.5 ppb
Mirex	<12.5 ppb
Tetradifon	<18.5 ppb
Methoxychlor	<31.5 ppb
Cis-Permethrin	<37.5 ppb
Cypermethrin	<94.0 ppb
Trans-Permethrin	<25.0 ppb
Organophosphate Pesticides *	

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**629549-5**
Report Date:	**21-Sep-2012**
Report Status:	**Final**
Supercedes :	**629549-4**

Certificate of Analysis

Purina
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Richmond Indiana 47374 United States

Sample Name:	**AVP Casein BS Rod 10-IF 1/2 IRR**	**Covance Sample:**	**1588032**
Project ID	PURINA-20120906-0087	**Receipt Date**	06-Sep-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12JUL23RTD1	**Login Date**	06-Sep-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810069 (5K96)		

Analysis	Result
Organophosphate Pesticides *	
Vapona	<15.0 ppb
Methamidophos	<15.0 ppb
Mevinphos	<25.0 ppb
Acephate	<40.0 ppb
Omethoate	<35.0 ppb
Thimet	<20.0 ppb
Demeton-S	<25.0 ppb
Fonofos	<25.0 ppb
Diazinon	<20.0 ppb
Disulfoton	<25.0 ppb
Dimethoate	<20.0 ppb
Propetamphos	<30.0 ppb
Dichlofenthion	<30.0 ppb
Me-Chlorpyrifos	33.0 ppb
Ronnel	<20.0 ppb
Me-Parathion	<20.0 ppb
Me-Pirimiphos	<25.0 ppb
Et-Chlorpyrifos	<25.0 ppb
Fenitrothion	<25.0 ppb
Malathion	<20.0 ppb
Et-Parathion	<20.0 ppb
Chlorfenvinphos	<40.0 ppb
Methidathion	<30.0 ppb
Prothiophos	<30.0 ppb
Ethion	<20.0 ppb
Trithion	<30.0 ppb
Phosmet	<35.0 ppb
EPN	<40.0 ppb
Azinphos-Methyl	<40.0 ppb
Phosalone	<40.0 ppb
Coumaphos	<50.0 ppb

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**629549-5**
Report Date:	**21-Sep-2012**
Report Status:	**Final**
Supercedes :	**629549-4**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Aerobic Plate Count (SPCM:7) — **Covance Laboratories - Madison**

1. Bacteriological Analytical Manual online, Aerobic Plate Count, Chapter 3; Food and Drug Administration, Silver Spring, Maryland (January, 2001). (Modified).
2. Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001).

Aflatoxin (AHMF_S:6) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC International, 18th Ed. Methods 991.31 and 999.07, AOAC International: Gaithersburg, Maryland, (2005).

Ash (ASHM_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliforms MPN (COLM:6) — **Covance Laboratories - Madison**

1. Bacteriological Analytical Manual, Escherichia coli and the Coliform Bacteria (modified), Chapter 4, 2002. Food and Drug Administration, AOAC International: Gaithersburg, Maryland. Modified.
2. Standard Methods for the Examination of Dairy Products, Coliform and Other Indicator Bacteria (modified), 17th Edition, Chapter 7, 2004.)American Public Health Association: Washington D.C. Modified.
3. Compendium of Methods for the Microbiological Examination of Foods, Enterobacteriaceae, Coliforms, Escherichia coli and its toxins 4th Ed. Chap.8, 2001. American Public Health Association: Washington D.C. Modified.

Crude Fiber (CFIB_S:2) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:14) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:12) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

Enterobacteriaceae MPN (ENTR:6) — **Covance Laboratories - Madison**

Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**629549-5**
Report Date:	**21-Sep-2012**
Report Status:	**Final**
Supercedes :	**629549-4**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Escherichia coli Count (COLC:5) — **Covance Laboratories - Madison**

Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001). Modified.

Fat by Soxhlet (FSOX_S:2) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.39 and 948.22. AOAC International, Gaithersburg, MD, 2005 (Modified).

Fecal Coliforms (MPN) (COLMF:3) — **Covance Laboratories - Madison**

Moisture (M100T100_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).

Nitrate and Nitrite (NONO_S:2) — **Covance Laboratories - Madison**

Journal of chromatography A.804 (1998) 157-160 (modified)

Nitrosamines (NITG_S:8) — **Covance Laboratories - Madison**

Protocol 6497-148

Organochlorinated Pesticides (OPCL_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Organophosphate Pesticides (OPOP_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Protein (N x 6.38) Dumas Method (DGEN_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**629549-5**
Report Date:	**21-Sep-2012**
Report Status:	**Final**
Supercedes :	**629549-4**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location
Selenium (SEICPMS_S:2)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).	
Thiamin (BIDE_S:6)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).	
Vitamin A (AFD1_S:4)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 974.29, 992.04, and 992.06, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).	
Thompson, J.N., and Duval, S., "Determination of Vitamin A in Milk and Infant Formula by HPLC", Journal of Micronutrient Analysis, 6:147-159, (1989).	
Vitamin E (EFD1_S:5)	**Covance Laboratories - Madison**
Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of [Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)	
Speek, A. J., Schijver, J., and Schreurs, W. H. P., Journal of Food Science, 50:121-124 (1985). (Modified)	
McMurray, C. H., Blanchflower, W. J., and Rice, D. A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980).	

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Greenfield	**Sharon McKilligin - Associate Director**
671 S. Meridian Road Greenfield IN 46140 866-964-2034	
Covance Laboratories - Madison	**Lori Ross - Associate Director**
3301 Kinsman Blvd Madison WI 53704 608-242-2712 x4170	ACCREDITED Testing Cert #2918.01

These results apply only to the items tested. This certificate of analysis shall not be reproduced, except in its entirety, without the written approval of Covance.

*** This analysis is not ISO accredited.**

Diet Lot #12NOV29RTD1

COVANCE

Report Number:	**702318-1**
Report Date:	**04-Jan-2013**
Report Status:	**Final**
Supercedes :	**702318-0**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**1815315 (5K96)**	**Covance Sample:**	**1803339**
Project ID	PURINA-20121218-0135	**Receipt Date**	18-Dec-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12NOV29RTD1	**Login Date**	18-Dec-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	AP VERIFIED CASEIN DIET 10 IF IRR	**Online Order**	30

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	4.7 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	1.9 ppb
Recovery	81.6 %
Fat by Soxhlet *	
Fat	4.6 %
Crude Fiber *	
Crude Fiber	3.31 %
Protein (N x 6.38) Dumas Method	
Protein	21.8 %
Vitamin A *	
Vitamin A	16900 IU/kg
Elements by ICP Emission Spectrometry	
Calcium	12300 ppm
Phosphorus	9400 ppm
Vitamin E *	
Vitamin E	0.0924 IU/g
Thiamin	
Thiamin	16.3 ppm
Nitrate and Nitrite *	
Nitrite Anion	<1.00 ppm
Nitrate Anion	13.0 ppm
Ash	
Ash	6.19 %
Moisture	
Moisture	5.34 %
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**702318-1**
Report Date:	**04-Jan-2013**
Report Status:	**Final**
Supercedes :	**702318-0**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**1815315 (5K96)**	**Covance Sample:**	**1803339**
Project ID	PURINA-20121218-0135	**Receipt Date**	18-Dec-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12NOV29RTD1	**Login Date**	18-Dec-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	AP VERIFIED CASEIN DIET 10 IF IRR	**Online Order**	30

Analysis	Result
Fumonisins *	
Fumonisin B1	0.2 ppm
Fumonisin B2	<0.1 ppm
Aerobic Plate Count *	
Standard Plate Count	<10 CFU/g
Coliforms MPN *	
Total Coliform MPN	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10 CFU/g
Fecal Coliforms (MPN) *	
Fecal Coliform MPN	<3 MPN/g
Elements by ICP Mass Spectrometry	
Arsenic *	446 ppb
Cadmium *	39.9 ppb
Lead	236 ppb
Mercury *	<10.0 ppb
Selenium *	
Selenium	351 ppb
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<12.5 ppb
HCB	<6.5 ppb
Alpha-BHC	<12.5 ppb
Propyzamide	<25.0 ppb
DCNA	<18.5 ppb
PCNB	<10.0 ppb
Gamma-BHC	<12.5 ppb

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**702318-1**
Report Date:	**04-Jan-2013**
Report Status:	**Final**
Supercedes :	**702318-0**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**1815315 (5K96)**	**Covance Sample:**	**1803339**
Project ID	PURINA-20121218-0135	**Receipt Date**	18-Dec-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12NOV29RTD1	**Login Date**	18-Dec-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	AP VERIFIED CASEIN DIET 10 IF IRR	**Online Order**	30

Analysis	Result
Organochlorinated Pesticides *	
Beta-BHC	<12.5 ppb
Heptachlor	<12.5 ppb
Chlorothalonil	<12.5 ppb
Delta-BHC	<12.5 ppb
Vinclozolin	<25.0 ppb
Aldrin	<12.5 ppb
DCPA	<18.5 ppb
Heptachlor Epoxide	<12.5 ppb
Endosulfan I	<12.5 ppb
Dieldrin	<12.5 ppb
Captan	<50.0 ppb
Folpet	<31.5 ppb
p,p' - DDE	<12.5 ppb
Endrin	<18.5 ppb
Oxadiazon	<37.5 ppb
Endosulfan II	<18.5 ppb
p,p' - DDD	<18.5 ppb
p,p' - DDT	<20.0 ppb
Endosulfan Sulfate	<18.5 ppb
Captafol	<31.5 ppb
Dicofol	<31.5 ppb
Mirex	<12.5 ppb
Tetradifon	<18.5 ppb
Methoxychlor	<31.5 ppb
Cis-Permethrin	<37.5 ppb
Cypermethrin	<94.0 ppb
Toxaphene	<100 ppb
Arochlor 1254	<200 ppb
Tech Chlordane	<50.0 ppb
Trans-Permethrin	<25.0 ppb
Telodrin	<20.0 ppb
Organophosphate Pesticides *	

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**702318-1**
Report Date:	**04-Jan-2013**
Report Status:	**Final**
Supercedes :	**702318-0**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**1815315 (5K96)**	**Covance Sample:**	**1803339**
Project ID	PURINA-20121218-0135	**Receipt Date**	18-Dec-2012
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	12NOV29RTD1	**Login Date**	18-Dec-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	AP VERIFIED CASEIN DIET 10 IF IRR	**Online Order**	30

Analysis	Result
Organophosphate Pesticides *	
Vapona	<15.0 ppb
Methamidophos	<15.0 ppb
Mevinphos	<25.0 ppb
Acephate	<40.0 ppb
Omethoate	<35.0 ppb
Thimet	<20.0 ppb
Demeton-S	<25.0 ppb
Fonofos	<25.0 ppb
Diazinon	<20.0 ppb
Disulfoton	<25.0 ppb
Dimethoate	<20.0 ppb
Propetamphos	<30.0 ppb
Dichlofenthion	<30.0 ppb
Me-Chlorpyrifos	29.6 ppb
Ronnel	<20.0 ppb
Me-Parathion	<20.0 ppb
Me-Pirimiphos	<25.0 ppb
Et-Chlorpyrifos	<25.0 ppb
Fenitrothion	<25.0 ppb
Malathion	<20.0 ppb
Et-Parathion	<20.0 ppb
Chlorfenvinphos	<40.0 ppb
Methidathion	<30.0 ppb
Prothiophos	<30.0 ppb
Ethion	<20.0 ppb
Trithion	<30.0 ppb
Phosmet	<35.0 ppb
EPN	<40.0 ppb
Azinphos-Methyl	<40.0 ppb
Phosalone	<40.0 ppb
Coumaphos	<50.0 ppb

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**702318-1**
Report Date:	**04-Jan-2013**
Report Status:	**Final**
Supercedes :	**702318-0**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Aerobic Plate Count (SPCM:7) — **Covance Laboratories - Madison**

1. Bacteriological Analytical Manual online, Aerobic Plate Count, Chapter 3; Food and Drug Administration, Silver Spring, Maryland (January, 2001). (Modified).
2. Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001).

Aflatoxin (AHMF_S:7) — **Covance Laboratories - Madison**

Official Method No. 991.31, Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Official Method No. 999.07, Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Ash (ASHM_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliforms MPN (COLM:6) — **Covance Laboratories - Madison**

1. Bacteriological Analytical Manual, Escherichia coli and the Coliform Bacteria (modified), Chapter 4, 2002. Food and Drug Administration, AOAC International: Gaithersburg, Maryland. Modified.
2. Standard Methods for the Examination of Dairy Products, Coliform and Other Indicator Bacteria (modified), 17th Edition, Chapter 7, 2004.)American Public Health Association: Washington D.C. Modified.
3. Compendium of Methods for the Microbiological Examination of Foods, Enterobacteriaceae, Coliforms, Escherichia coli and its toxins 4th Ed. Chap.8, 2001. American Public Health Association: Washington D.C. Modified.

Crude Fiber (CFIB_S:2) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:16) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:12) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**702318-1**
Report Date:	**04-Jan-2013**
Report Status:	**Final**
Supercedes :	**702318-0**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location
Enterobacteriaceae MPN (ENTR:6)	**Covance Laboratories - Madison**
Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).	
Escherichia coli Count (COLC:5)	**Covance Laboratories - Madison**
Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001). Modified.	
Fat by Soxhlet (FSOX_S:2)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.39 and 948.22. AOAC International, Gaithersburg, MD, 2005 (Modified).	
Fecal Coliforms (MPN) (COLMF:3)	**Covance Laboratories - Madison**
Fumonisins (FUMONISINS:1)	**Romer Laboratories**
Test performed by a third party laboratory	
Moisture (M100T100_S:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).	
Nitrate and Nitrite (NONO_S:2)	**Covance Laboratories - Madison**
Journal of chromatography A.804 (1998) 157-160 (modified)	
Nitrosamines (NITG_S:8)	**Covance Laboratories - Madison**
Protocol 6497-148	
Organochlorinated Pesticides (OPCL_GRN_S:1)	**Covance Laboratories - Greenfield**
Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).	
Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).	

*** This analysis is not ISO accredited.**

COVANCE

Certificate of Analysis

Report Number:	**702318-1**
Report Date:	**04-Jan-2013**
Report Status:	**Final**
Supercedes :	**702318-0**

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Organophosphate Pesticides (OPOP_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Protein (N x 6.38) Dumas Method (DGEN_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Selenium (SEICPMS_S:2) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).

Thiamin (BIDE_S:6) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).

Vitamin A (AFD1_S:4) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 974.29, 992.04, and 992.06, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).

Thompson, J.N., and Duval, S., "Determination of Vitamin A in Milk and Infant Formula by HPLC", Journal of Micronutrient Analysis, 6:147-159, (1989).

Vitamin E (EFD1_S:5) — **Covance Laboratories - Madison**

Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of [Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)

Speek, A. J., Schijver, J., and Schreurs, W. H. P., Journal of Food Science, 50:121-124 (1985). (Modified)

McMurray, C. H., Blanchflower, W. J., and Rice, D. A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980).

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COVANCE

Report Number:	**702318-1**
Report Date:	**04-Jan-2013**
Report Status:	**Final**
Supercedes :	**702318-0**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Greenfield 671 S. Meridian Road Greenfield IN 46140 866-964-2034	**Sharon McKilligin - Associate Director**
Covance Laboratories - Madison 3301 Kinsman Blvd Madison WI 53704 608-242-2712 x4170	**Lori Ross - Associate Director** ACCREDITED Testing Cert #2918.01
Romer Laboratories	**Lori Ross - Associate Director**

*** This analysis is not ISO accredited.**

Diet Lot #12DEC10RTD1

COVANCE

Report Number:	**713313-0**
Report Date:	**22-Jan-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**1820396**
Project ID	PURINA-20121231-0139	**Receipt Date**	28-Dec-2012
PO Number	NA	**Receipt Condition**	Ambient temperature
Lot Number	12DEC10RTD1	**Login Date**	31-Dec-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	1815315 (5K96)	**Online Order**	0

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	1.0 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	1.0 ppb
Recovery	59.6 %
Fat by Soxhlet *	
Fat	4.7 %
Crude Fiber *	
Crude Fiber	3.26 %
Protein (N x 6.38) Dumas Method	
Protein	21.2 %
Vitamin A *	
Vitamin A	21700 IU/kg
Elements by ICP Emission Spectrometry	
Calcium	12100 ppm
Phosphorus	9110 ppm
Vitamin E *	
Vitamin E	86.4 IU/kg
Thiamin	
Thiamin	18.1 ppm
Nitrate and Nitrite *	
Nitrite Anion	<1.00 ppm
Nitrate Anion	14.4 ppm
Ash	
Ash	6.24 %
Moisture	
Moisture	5.37 %
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm
TBHQ	<1.00 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**713313-0**
Report Date:	**22-Jan-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**1820396**
Project ID	PURINA-20121231-0139	**Receipt Date**	28-Dec-2012
PO Number	NA	**Receipt Condition**	Ambient temperature
Lot Number	12DEC10RTD1	**Login Date**	31-Dec-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	1815315 (5K96)	**Online Order**	0

Analysis	Result
Fumonisins *	
Fumonisin B1	0.2 ppm
Fumonisin B2	<0.1 ppm
Aerobic Plate Count *	
Standard Plate Count	20 CFU/g
Coliforms MPN *	
Total Coliform MPN	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10 CFU/g
Fecal Coliforms (MPN) *	
Fecal Coliform MPN	<3 MPN/g
Elements by ICP Mass Spectrometry	
Arsenic *	411 ppb
Cadmium *	43.2 ppb
Lead	220 ppb
Mercury *	10.9 ppb
Selenium *	
Selenium	368 ppb
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<12.5 ppb
HCB	<6.5 ppb
Alpha-BHC	<12.5 ppb
Propyzamide	<25.0 ppb
DCNA	<18.5 ppb
PCNB	<10.0 ppb
Gamma-BHC	<12.5 ppb
Beta-BHC	<12.5 ppb

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**713313-0**
Report Date:	**22-Jan-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**1820396**
Project ID	PURINA-20121231-0139	**Receipt Date**	28-Dec-2012
PO Number	NA	**Receipt Condition**	Ambient temperature
Lot Number	12DEC10RTD1	**Login Date**	31-Dec-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	1815315 (5K96)	**Online Order**	0

Analysis	Result
Organochlorinated Pesticides *	
Heptachlor	<12.5 ppb
Chlorothalonil	<12.5 ppb
Delta-BHC	<12.5 ppb
Vinclozolin	<25.0 ppb
Aldrin	<12.5 ppb
DCPA	<18.5 ppb
Heptachlor Epoxide	<12.5 ppb
Endosulfan I	<12.5 ppb
Dieldrin	<12.5 ppb
Captan	<50.0 ppb
Folpet	<31.5 ppb
p,p' - DDE	<12.5 ppb
Endrin	<18.5 ppb
Oxadiazon	<37.5 ppb
Endosulfan II	<18.5 ppb
p,p' - DDD	<18.5 ppb
p,p' - DDT	<20.0 ppb
Endosulfan Sulfate	<18.5 ppb
Captafol	<31.5 ppb
Dicofol	<31.5 ppb
Mirex	<12.5 ppb
Tetradifon	<18.5 ppb
Methoxychlor	<31.5 ppb
Cis-Permethrin	<37.5 ppb
Cypermethrin	<94.0 ppb
Trans-Permethrin	<25.0 ppb
Toxaphene	<100 ppb
Arochlor 1254	<200 ppb
Tech Chlordane	<50.0 ppb
Telodrin	<20.0 ppb
Organophosphate Pesticides *	
Vapona	<15.0 ppb
Methamidophos	<15.0 ppb

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 713313-0
Report Date: 22-Jan-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**1820396**
Project ID	PURINA-20121231-0139	**Receipt Date**	28-Dec-2012
PO Number	NA	**Receipt Condition**	Ambient temperature
Lot Number	12DEC10RTD1	**Login Date**	31-Dec-2012
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	1815315 (5K96)	**Online Order**	0

Analysis	Result
Organophosphate Pesticides *	
Mevinphos	<25.0 ppb
Acephate	<40.0 ppb
Omethoate	<35.0 ppb
Thimet	<20.0 ppb
Demeton-S	<25.0 ppb
Fonofos	<25.0 ppb
Diazinon	<20.0 ppb
Disulfoton	<25.0 ppb
Dimethoate	<20.0 ppb
Propetamphos	<30.0 ppb
Dichlofenthion	<30.0 ppb
Me-Chlorpyrifos	39.9 ppb
Ronnel	<20.0 ppb
Me-Parathion	<20.0 ppb
Me-Pirimiphos	<25.0 ppb
Et-Chlorpyrifos	<25.0 ppb
Fenitrothion	<25.0 ppb
Malathion	<20.0 ppb
Et-Parathion	<20.0 ppb
Chlorfenvinphos	<40.0 ppb
Methidathion	<30.0 ppb
Prothiophos	<30.0 ppb
Ethion	<20.0 ppb
Trithion	<30.0 ppb
Phosmet	<35.0 ppb
EPN	<40.0 ppb
Azinphos-Methyl	<40.0 ppb
Phosalone	<40.0 ppb
Coumaphos	<50.0 ppb

Method References	Testing Location
Aerobic Plate Count (SPCM:7)	**Covance Laboratories - Madison**

*** This analysis is not ISO accredited.**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Aerobic Plate Count (SPCM:7) — **Covance Laboratories - Madison**

1. Bacteriological Analytical Manual online, Aerobic Plate Count, Chapter 3; Food and Drug Administration, Silver Spring, Maryland (January, 2001). (Modified).
2. Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001).

Aflatoxin (AHMF_S:7) — **Covance Laboratories - Madison**

Official Method No. 991.31, Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Official Method No. 999.07, Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Ash (ASHM_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliforms MPN (COLM:6) — **Covance Laboratories - Madison**

1. Bacteriological Analytical Manual, Escherichia coli and the Coliform Bacteria (modified), Chapter 4, 2002. Food and Drug Administration, AOAC International: Gaithersburg, Maryland. Modified.
2. Standard Methods for the Examination of Dairy Products, Coliform and Other Indicator Bacteria (modified), 17th Edition, Chapter 7, 2004.)American Public Health Association: Washington D.C. Modified.
3. Compendium of Methods for the Microbiological Examination of Foods, Enterobacteriaceae, Coliforms, Escherichia coli and its toxins 4th Ed. Chap.8, 2001. American Public Health Association: Washington D.C. Modified.

Crude Fiber (CFIB_S:2) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:16) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:12) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

COVANCE

Report Number: 713313-0
Report Date: 22-Jan-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location
Enterobacteriaceae MPN (ENTR:6)	**Covance Laboratories - Madison**
Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).	
Escherichia coli Count (COLC:5)	**Covance Laboratories - Madison**
Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001). Modified.	
Fat by Soxhlet (FSOX_S:2)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.39 and 948.22. AOAC International, Gaithersburg, MD, 2005 (Modified).	
Fecal Coliforms (MPN) (COLMF:3)	**Covance Laboratories - Madison**
Fumonisins (FUMONISINS:1)	**Romer Laboratories**
Test performed by a third party laboratory	
Moisture (M100T100_S:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).	
Nitrate and Nitrite (NONO_S:2)	**Covance Laboratories - Madison**
Journal of chromatography A.804 (1998) 157-160 (modified)	
Nitrosamines (NITG_S:8)	**Covance Laboratories - Madison**
Protocol 6497-148	
Organochlorinated Pesticides (OPCL_GRN_S:1)	**Covance Laboratories - Greenfield**
Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).	
Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).	

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 713313-0
Report Date: 22-Jan-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Organophosphate Pesticides (OPOP_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Protein (N x 6.38) Dumas Method (DGEN_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Selenium (SEICPMS_S:2) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).

Thiamin (BIDE_S:6) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).

Vitamin A (AFD1_S:4) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 974.29, 992.04, and 992.06, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).

Thompson, J.N., and Duval, S., "Determination of Vitamin A in Milk and Infant Formula by HPLC", Journal of Micronutrient Analysis, 6:147-159, (1989).

Vitamin E (EFD1_S:5) — **Covance Laboratories - Madison**

Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of [Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)

Speek, A. J., Schijver, J., and Schreurs, W. H. P., Journal of Food Science, 50:121-124 (1985). (Modified)

McMurray, C. H., Blanchflower, W. J., and Rice, D. A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980).

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**713313-0**
Report Date:	**22-Jan-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Greenfield	**Sharon McKilligin - Associate Director**
671 S. Meridian Road Greenfield IN 46140 866-964-2034	
Covance Laboratories - Madison	**Lori Ross - Associate Director**
3301 Kinsman Blvd Madison WI 53704 608-242-2712 x4170	ACCREDITED Testing Cert #2918.01
Romer Laboratories	**Lori Ross - Associate Director**

These results apply only to the items tested. This certificate of analysis shall not be reproduced, except in its entirety, without the written approval of Covance.

*** This analysis is not ISO accredited.**

Diet Lot #13MAR01RTD1 (NCTR Designation; Covance Designation #13MAR13RTD1)

COVANCE

Report Number:	**766314-0**
Report Date:	**12-Apr-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AVP CASEIN BS RDT DT - 10IF M IR**	**Covance Sample:**	**2021119**
Project ID	PURINA-20130401-0022	**Receipt Date**	29-Mar-2013
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	13MAR13RTD1	**Login Date**	01-Apr-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810726 (5K96M)	**Online Order**	30

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	6.2 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	2.1 ppb
Recovery	79.1 %
Fat by Soxhlet *	
Fat	5.1 %
Crude Fiber *	
Crude Fiber	3.18 %
Protein (N x 6.38) Dumas Method	
Protein	21.1 %
Vitamin A *	
Vitamin A	18900 IU/kg
Elements by ICP Emission Spectrometry	
Calcium	11400 ppm
Phosphorus	9360 ppm
Thiamin	
Thiamin	16.3 ppm
Nitrate and Nitrite *	
Nitrite Anion	<1.00 ppm
Nitrate Anion	14.9 ppm
Ash	
Ash	5.95 %
Moisture	
Moisture	10.0 %
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm
Aerobic Plate Count *	
Standard Plate Count	<10 CFU/g
Coliforms MPN *	

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**766314-0**
Report Date:	**12-Apr-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AVP CASEIN BS RDT DT - 10IF M IR**	**Covance Sample:**	**2021119**
Project ID	PURINA-20130401-0022	**Receipt Date**	29-Mar-2013
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	13MAR13RTD1	**Login Date**	01-Apr-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810726 (5K96M)	**Online Order**	30

Analysis	Result
Coliforms MPN *	
Total Coliform MPN	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10 CFU/g
Fecal Coliforms (MPN) *	
Fecal Coliform MPN	<3 MPN/g
Elements by ICP Mass Spectrometry	
Arsenic *	0.438 ppm
Cadmium *	0.0431 ppm
Lead	0.511 ppm
Mercury *	0.0103 ppm
Selenium *	
Selenium	0.453 ppm
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<0.0125 ppm
HCB	<0.0065 ppm
Alpha-BHC	<0.0125 ppm
Propyzamide	<0.0250 ppm
DCNA	<0.0185 ppm
PCNB	<0.0100 ppm
Gamma-BHC	<0.0125 ppm
Beta-BHC	<0.0125 ppm
Heptachlor	<0.0125 ppm
Chlorothalonil	<0.0125 ppm
Delta-BHC	<0.0125 ppm
Vinclozolin	<0.0250 ppm
Aldrin	<0.0125 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**766314-0**
Report Date:	**12-Apr-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AVP CASEIN BS RDT DT - 10IF M IR**	**Covance Sample:**	**2021119**
Project ID	PURINA-20130401-0022	**Receipt Date**	29-Mar-2013
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	13MAR13RTD1	**Login Date**	01-Apr-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810726 (5K96M)	**Online Order**	30

Analysis	Result
Organochlorinated Pesticides *	
DCPA	<0.0185 ppm
Heptachlor Epoxide	<0.0125 ppm
Endosulfan I	<0.0125 ppm
Dieldrin	<0.0125 ppm
Captan	<0.0500 ppm
Folpet	<0.0315 ppm
p,p' - DDE	<0.0125 ppm
Endrin	<0.0185 ppm
Oxadiazon	<0.0375 ppm
Endosulfan II	<0.0185 ppm
p,p' - DDD	<0.0185 ppm
p,p' - DDT	<0.0200 ppm
Endosulfan Sulfate	<0.0185 ppm
Captafol	<0.0315 ppm
Dicofol	<0.0315 ppm
Mirex	<0.0125 ppm
Tetradifon	<0.0185 ppm
Methoxychlor	<0.0315 ppm
Cis-Permethrin	<0.0375 ppm
Cypermethrin	<0.0940 ppm
Toxaphene	<0.100 ppm
Arochlor 1254	<0.200 ppm
Tech Chlordane	<0.0500 ppm
Trans-Permethrin	<0.0250 ppm
Telodrin	<0.0200 ppm
Organophosphate Pesticides *	
Vapona	<0.0150 ppm
Methamidophos	<0.0150 ppm
Mevinphos	<0.0250 ppm
Acephate	<0.0400 ppm
Omethoate	<0.0350 ppm
Thimet	<0.0200 ppm
Demeton-S	<0.0250 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**766314-0**
Report Date:	**12-Apr-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AVP CASEIN BS RDT DT - 10IF M IR**	**Covance Sample:**	**2021119**
Project ID	PURINA-20130401-0022	**Receipt Date**	29-Mar-2013
PO Number	N/A	**Receipt Condition**	Ambient temperature
Lot Number	13MAR13RTD1	**Login Date**	01-Apr-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1810726 (5K96M)	**Online Order**	30

Analysis	Result
Organophosphate Pesticides *	
Fonofos	<0.0250 ppm
Diazinon	<0.0200 ppm
Disulfoton	<0.0250 ppm
Dimethoate	<0.0200 ppm
Propetamphos	<0.0300 ppm
Dichlofenthion	<0.0300 ppm
Me-Chlorpyrifos	0.0533 ppm
Ronnel	<0.0200 ppm
Me-Parathion	<0.0200 ppm
Me-Pirimiphos	<0.0250 ppm
Et-Chlorpyrifos	<0.0250 ppm
Fenitrothion	<0.0250 ppm
Malathion	<0.0200 ppm
Et-Parathion	<0.0200 ppm
Chlorfenvinphos	<0.0400 ppm
Methidathion	<0.0300 ppm
Prothiophos	<0.0300 ppm
Ethion	<0.0200 ppm
Trithion	<0.0300 ppm
Phosmet	<0.0350 ppm
EPN	<0.0400 ppm
Azinphos-Methyl	<0.0400 ppm
Phosalone	<0.0400 ppm
Coumaphos	<0.0500 ppm

Method References	Testing Location
Aerobic Plate Count (SPCM:7)	**Covance Laboratories - Madison**

1. Bacteriological Analytical Manual online, Aerobic Plate Count, Chapter 3; Food and Drug Administration, Silver Spring, Maryland (January, 2001). (Modified).
2. Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001).

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 766314-0
Report Date: 12-Apr-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Aflatoxin (AHMF_S:7) — Covance Laboratories - Madison

Official Method No. 991.31, Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Official Method No. 999.07, Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Ash (ASHM_S:5) — Covance Laboratories - Madison

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:7) — Covance Laboratories - Madison

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliforms MPN (COLM:6) — Covance Laboratories - Madison

1. Bacteriological Analytical Manual, Escherichia coli and the Coliform Bacteria (modified), Chapter 4, 2002. Food and Drug Administration, AOAC International: Gaithersburg, Maryland. Modified.
2. Standard Methods for the Examination of Dairy Products, Coliform and Other Indicator Bacteria (modified), 17th Edition, Chapter 7, 2004.)American Public Health Association: Washington D.C. Modified.
3. Compendium of Methods for the Microbiological Examination of Foods, Enterobacteriaceae, Coliforms, Escherichia coli and its toxins 4th Ed. Chap.8, 2001. American Public Health Association: Washington D.C. Modified.

Crude Fiber (CFIB_S:2) — Covance Laboratories - Madison

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:17) — Covance Laboratories - Madison

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:12) — Covance Laboratories - Madison

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

Enterobacteriaceae MPN (ENTR:6) — Covance Laboratories - Madison

Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).

Escherichia coli Count (COLC:5) — Covance Laboratories - Madison

Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001). Modified.

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 766314-0
Report Date: 12-Apr-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location
Fat by Soxhlet (FSOX_S:2)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.39 and 948.22. AOAC International, Gaithersburg, MD, 2005 (Modified).	
Fecal Coliforms (MPN) (COLMF:3)	**Covance Laboratories - Madison**
Moisture (M100T100_S:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).	
Nitrate and Nitrite (NONO_S:2)	**Covance Laboratories - Madison**
Journal of chromatography A.804 (1998) 157-160 (modified)	
Nitrosamines (NITG_S:8)	**Covance Laboratories - Madison**
Protocol 6497-148	
Organochlorinated Pesticides (OPCL_GRN_S:1)	**Covance Laboratories - Greenfield**
Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).	
Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).	
Organophosphate Pesticides (OPOP_GRN_S:1)	**Covance Laboratories - Greenfield**
Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).	
Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).	
Protein (N x 6.38) Dumas Method (DGEN_S:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)	
Selenium (SEICPMS_S:2)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).	

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 766314-0
Report Date: 12-Apr-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location
Thiamin (BIDE_S:6)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).	
Vitamin A (AFD1_S:4)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 974.29, 992.04, and 992.06, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). Thompson, J.N., and Duval, S., "Determination of Vitamin A in Milk and Infant Formula by HPLC", Journal of Micronutrient Analysis, 6:147-159, (1989).	

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Greenfield 671 S. Meridian Road Greenfield IN 46140 866-964-2034	**Sharon McKilligin - Associate Director**
Covance Laboratories - Madison 3301 Kinsman Blvd Madison WI 53704 608-242-2712 x4170	**Lori Ross - Associate Director** ACCREDITED Testing Cert #2918.01

*** This analysis is not ISO accredited.**

Diet Lot #13JUL01RTD1

COVANCE

Report Number:	**847591-0**
Report Date:	**02-Aug-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2273542**
Project ID	PURINA-20130719-0060	**Receipt Date**	19-Jul-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13JUL01RTD1	**Login Date**	19-Jul-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	2
		Online Order	30

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	2.9 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	1.3 ppb
Recovery	84.8 %
Fat by Soxhlet *	
Fat	4.2 %
Crude Fiber *	
Crude Fiber	2.79 %
Protein (N x 6.38) Dumas Method	
Protein	21.3 %
Vitamin A as Retinol	
Vitamin A from Retinol	1600 IU/100g
Elements by ICP Emission Spectrometry	
Calcium	49.9 ppm
Phosphorus	641 ppm
Vitamin E (Synthetic)	
Vitamin E	7.73 IU/100g
Thiamin	
Thiamin	16.0 ppm
Ash	
Ash	5.85 %
Moisture	
Moisture	8.57 %
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm
Fumonisins *	
Fumonisin B1	0.3 ppm
Fumonisin B2	<0.1 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 847591-0
Report Date: 02-Aug-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2273542**
Project ID	PURINA-20130719-0060	**Receipt Date**	19-Jul-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13JUL01RTD1	**Login Date**	19-Jul-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	2
		Online Order	30

Analysis	Result
Aerobic Plate Count *	
Standard Plate Count	<10 CFU/g
Coliforms MPN *	
Total Coliform MPN	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10 CFU/g
Fecal Coliforms (MPN) *	
Fecal Coliform MPN	<3 MPN/g
Elements by ICP Mass Spectrometry	
Arsenic *	0.320 ppm
Cadmium *	0.0313 ppm
Lead	0.214 ppm
Mercury *	<0.0100 ppm
Selenium *	
Selenium	0.358 ppm
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<0.0125 ppm
HCB	<0.0065 ppm
Alpha-BHC	<0.0125 ppm
Propyzamide	<0.0250 ppm
DCNA	<0.0185 ppm
PCNB	<0.0100 ppm
Gamma-BHC	<0.0125 ppm
Beta-BHC	<0.0125 ppm
Heptachlor	<0.0125 ppm
Chlorothalonil	<0.0125 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 847591-0
Report Date: 02-Aug-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2273542**
Project ID	PURINA-20130719-0060	**Receipt Date**	19-Jul-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13JUL01RTD1	**Login Date**	19-Jul-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	2
		Online Order	30

Analysis	Result
Organochlorinated Pesticides *	
Delta-BHC	<0.0125 ppm
Vinclozolin	<0.0250 ppm
Aldrin	<0.0125 ppm
DCPA	<0.0185 ppm
Heptachlor Epoxide	<0.0125 ppm
Endosulfan I	<0.0125 ppm
Dieldrin	<0.0125 ppm
Captan	<0.0500 ppm
Folpet	<0.0315 ppm
p,p' - DDE	<0.0125 ppm
Endrin	<0.0185 ppm
Oxadiazon	<0.0375 ppm
Endosulfan II	<0.0185 ppm
p,p' - DDD	<0.0185 ppm
p,p' - DDT	<0.0200 ppm
Endosulfan Sulfate	<0.0185 ppm
Captafol	<0.0315 ppm
Dicofol	<0.0315 ppm
Mirex	<0.0125 ppm
Tetradifon	<0.0185 ppm
Methoxychlor	<0.0315 ppm
Cis-Permethrin	<0.0375 ppm
Cypermethrin	<0.0940 ppm
Toxaphene	<0.100 ppm
Arochlor 1254	<0.200 ppm
Tech Chlordane	<0.0500 ppm
Trans-Permethrin	<0.0250 ppm
Telodrin	<0.0200 ppm
Organophosphate Pesticides *	
Vapona	<0.0150 ppm
Methamidophos	<0.0150 ppm
Mevinphos	<0.0250 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 847591-0
Report Date: 02-Aug-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2273542**
Project ID	PURINA-20130719-0060	**Receipt Date**	19-Jul-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13JUL01RTD1	**Login Date**	19-Jul-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	2
		Online Order	30

Analysis	Result
Organophosphate Pesticides *	
Acephate	<0.0400 ppm
Omethoate	<0.0350 ppm
Thimet	<0.0200 ppm
Demeton-S	<0.0250 ppm
Fonofos	<0.0250 ppm
Diazinon	<0.0200 ppm
Disulfoton	<0.0250 ppm
Dimethoate	<0.0200 ppm
Propetamphos	<0.0300 ppm
Dichlofenthion	<0.0300 ppm
Me-Chlorpyrifos	0.0658 ppm
Ronnel	<0.0200 ppm
Me-Parathion	<0.0200 ppm
Me-Pirimiphos	<0.0250 ppm
Et-Chlorpyrifos	<0.0250 ppm
Fenitrothion	<0.0250 ppm
Malathion	<0.0200 ppm
Et-Parathion	<0.0200 ppm
Chlorfenvinphos	<0.0400 ppm
Methidathion	<0.0300 ppm
Prothiophos	<0.0300 ppm
Ethion	<0.0200 ppm
Trithion	<0.0300 ppm
Phosmet	<0.0350 ppm
EPN	<0.0400 ppm
Azinphos-Methyl	<0.0400 ppm
Phosalone	<0.0400 ppm
Coumaphos	<0.0500 ppm

Method References	Testing Location
Aerobic Plate Count (SPCM:7)	**Covance Laboratories - Madison**

*** This analysis is not ISO accredited.**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Aerobic Plate Count (SPCM:7) — **Covance Laboratories - Madison**

1. Bacteriological Analytical Manual online, Aerobic Plate Count, Chapter 3; Food and Drug Administration, Silver Spring, Maryland (January, 2001). (Modified).
2. Compendium of Methods for the Microbiological Examination of Foods, Colony Count Methods, 4th Edition, Chapter 6,7, American Public Health Association: Washington, D.C. (2001).

Aflatoxin (AHMF_S:7) — **Covance Laboratories - Madison**

Official Method No. 991.31, Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Official Method No. 999.07, Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Ash (ASHM_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliforms MPN (COLM:6) — **Covance Laboratories - Madison**

1. Bacteriological Analytical Manual, Escherichia coli and the Coliform Bacteria (modified), Chapter 4, 2002. Food and Drug Administration, AOAC International: Gaithersburg, Maryland. Modified.
2. Standard Methods for the Examination of Dairy Products, Coliform and Other Indicator Bacteria (modified), 17th Edition, Chapter 7, 2004.)American Public Health Association: Washington D.C. Modified.
3. Compendium of Methods for the Microbiological Examination of Foods, Enterobacteriaceae, Coliforms, Escherichia coli and its toxins 4th Ed. Chap.8, 2001. American Public Health Association: Washington D.C. Modified.

Crude Fiber (CFIB_S:2) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:17) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:12) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

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Report Number: 847591-0
Report Date: 02-Aug-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location
Enterobacteriaceae MPN (ENTR:6)	**Covance Laboratories - Madison**
Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).	
Escherichia coli Count (COLC:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 991.14, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)	
Fat by Soxhlet (FSOX_S:2)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.39 and 948.22. AOAC International, Gaithersburg, MD, 2005 (Modified).	
Fecal Coliforms (MPN) (COLMF:3)	**Covance Laboratories - Madison**
Fumonisins (FUMONISINS:1)	**Romer Laboratories**
Test performed by a third party laboratory	
Moisture (M100T100_S:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).	
Nitrosamines (NITG_S:8)	**Covance Laboratories - Madison**
Protocol 6497-148	
Organochlorinated Pesticides (OPCL_GRN_S:1)	**Covance Laboratories - Greenfield**
Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).	
Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).	
Organophosphate Pesticides (OPOP_GRN_S:1)	**Covance Laboratories - Greenfield**
Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).	
Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).	

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Report Number: 847591-0
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Purina
505 North 4th st
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Method References	Testing Location
Protein (N x 6.38) Dumas Method (DGEN_S:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)	
Selenium (SEICPMS_S:2)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).	
Thiamin (BIDE_S:6)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).	
Vitamin A as Retinol (VALC_S:9)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 2001.13, 992.04, AND 992.06, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)	
Vitamin E (Synthetic) (LCE1_S:11)	**Covance Laboratories - Madison**
Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)	
Speek, A. J., Schijver, J., and Schreurs, W. H. P., Journal of Food Science, 50:121-124 (1985). (Modified)	
McMurray, C. H., Blanchflower, W. J., and Rice, D. A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980). (Modified)	

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Greenfield	**Sharon McKilligin - Associate Director**
671 S. Meridian Road Greenfield IN 46140 866-964-2034	
Covance Laboratories - Madison	**Lori Ross - Associate Director**
3301 Kinsman Blvd Madison WI 53704 608-242-2712 x4170	ACCREDITED Testing Cert #2918.01
Romer Laboratories	**Lori Ross - Associate Director**

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 847591-0
Report Date: 02-Aug-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

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COVANCE

Report Number:	**847592-0**
Report Date:	**02-Aug-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2273542**
Project ID	PURINA-20130719-0060	**Receipt Date**	19-Jul-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13JUL01RTD1	**Login Date**	19-Jul-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	2
		Online Order	30

Analysis	Result
Nitrate and Nitrite	
Nitrite Anion	<0.0500 mg/100g
Nitrate Anion	2.28 mg/100g

Method References	Testing Location
Nitrate and Nitrite (NO2NO3_S:2)	**Covance Laboratories - Madison**

Casanova, J., Gross, L., McMullen, S., and Schenck, F. “Use of Griess Reagent Containing Vanadium (III) for Post-Column Derivitization and Simultaneous Determination of Nitrite and Nitrate in Baby Food,” *J. AOAC Int.*, 89(2): 447-451 (2006) (Modified)

Gapper, L., Fong, B., Otter, D., Indyk, H., and Woollard, D. “Determination of Nitrite and Nitrate in Dairy Products by Ion Exchange LC with Spectrophotometric Detection,” *Int Dairy J.*, 14: 881-887 (2004) (Modified)

Pickering Laboratories “Method Abstract for Post-column Liquid Chromatography 123” (Modified)

Griess Reaction Diagram, www.biotek.com <http://www.biotek.com> (Modified)

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Madison	**Lori Ross - Associate Director**

3301 Kinsman Blvd
Madison WI 53704
608-242-2712 x4170

Diet Lot #13SEP19RTD1

COVANCE

Report Number:	**905508-0**
Report Date:	**11-Nov-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2528556**
Project ID	PURINA-20131104-0110	**Receipt Date**	04-Nov-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13SEP19RTD1	**Login Date**	04-Nov-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Online Order**	30

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	<1.0 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	<1.0 ppb
Fat by Soxhlet *	
Fat	4.3 %
Crude Fiber *	
Crude Fiber	3.42 %
Protein (N x 6.38) Dumas Method	
Protein	20.1 %
Vitamin A as Retinol	
Vitamin A from Retinol	22700 IU/kg
Elements by ICP Emission Spectrometry	
Calcium	12300 ppm
Phosphorus	9200 ppm
Vitamin E (Synthetic)	
Vitamin E	9.67 IU/100g
Thiamin	
Thiamin	17.6 ppm
Nitrate and Nitrite *	
Nitrite Anion	<0.500 ppm
Nitrate Anion	16.6 ppm
Ash	
Ash	5.97 %
Moisture	
Moisture	8.30 %
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm
Fumonisins *	
Fumonisin B1	0.4 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**905508-0**
Report Date:	**11-Nov-2013**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2528556**
Project ID	PURINA-20131104-0110	**Receipt Date**	04-Nov-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13SEP19RTD1	**Login Date**	04-Nov-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Online Order**	30

Analysis	Result
Fumonisins *	
Fumonisin B2	<0.1 ppm
Aerobic Plate Count *	
Standard Plate Count	<10 CFU/g
Coliform MPN *	
Coliform	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10 CFU/g
Elements by ICP Mass Spectrometry	
Arsenic *	0.308 ppm
Cadmium *	0.0369 ppm
Lead	0.184 ppm
Mercury *	0.0100 ppm
Selenium *	
Selenium	0.361 ppm
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<0.0125 ppm
HCB	<0.0065 ppm
Alpha-BHC	<0.0125 ppm
Propyzamide	<0.0250 ppm
DCNA	<0.0185 ppm
PCNB	<0.0100 ppm
Gamma-BHC	<0.0125 ppm
Beta-BHC	<0.0125 ppm
Heptachlor	<0.0125 ppm
Chlorothalonil	<0.0125 ppm
Delta-BHC	<0.0125 ppm

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COVANCE

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Purina
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Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2528556**
Project ID	PURINA-20131104-0110	**Receipt Date**	04-Nov-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13SEP19RTD1	**Login Date**	04-Nov-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Online Order**	30

Analysis	Result
Organochlorinated Pesticides *	
Vinclozolin	<0.0250 ppm
Aldrin	<0.0125 ppm
DCPA	<0.0185 ppm
Heptachlor Epoxide	<0.0125 ppm
Endosulfan I	<0.0125 ppm
Dieldrin	<0.0125 ppm
Captan	<0.0500 ppm
Folpet	<0.0315 ppm
p,p' - DDE	<0.0125 ppm
Endrin	<0.0185 ppm
Oxadiazon	<0.0375 ppm
Endosulfan II	<0.0185 ppm
p,p' - DDD	<0.0185 ppm
p,p' - DDT	<0.0200 ppm
Endosulfan Sulfate	<0.0185 ppm
Captafol	<0.0315 ppm
Dicofol	<0.0315 ppm
Mirex	<0.0125 ppm
Tetradifon	<0.0185 ppm
Methoxychlor	<0.0315 ppm
Cis-Permethrin	<0.0375 ppm
Cypermethrin	<0.0940 ppm
Toxaphene	<0.100 ppm
Arochlor 1254	<0.200 ppm
Tech Chlordane	<0.0500 ppm
Trans-Permethrin	<0.0250 ppm
Telodrin	<0.0200 ppm
Organophosphate Pesticides *	
Vapona	<0.0150 ppm
Methamidophos	<0.0150 ppm
Mevinphos	<0.0250 ppm
Acephate	<0.0400 ppm
Omethoate	<0.0350 ppm

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Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP Verified Casein Diet 10 IF IRR**	**Covance Sample:**	**2528556**
Project ID	PURINA-20131104-0110	**Receipt Date**	04-Nov-2013
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	13SEP19RTD1	**Login Date**	04-Nov-2013
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Online Order**	30

Analysis	Result
Organophosphate Pesticides *	
Thimet	<0.0200 ppm
Demeton-S	<0.0250 ppm
Fonofos	<0.0250 ppm
Diazinon	<0.0200 ppm
Disulfoton	<0.0250 ppm
Dimethoate	<0.0200 ppm
Propetamphos	<0.0300 ppm
Dichlofenthion	<0.0300 ppm
Me-Chlorpyrifos	0.0896 ppm
Ronnel	<0.0200 ppm
Me-Parathion	<0.0200 ppm
Me-Pirimiphos	<0.0250 ppm
Et-Chlorpyrifos	<0.0250 ppm
Fenitrothion	<0.0250 ppm
Malathion	<0.0200 ppm
Et-Parathion	<0.0200 ppm
Chlorfenvinphos	<0.0400 ppm
Methidathion	<0.0300 ppm
Prothiophos	<0.0300 ppm
Ethion	<0.0200 ppm
Trithion	<0.0300 ppm
Phosmet	<0.0350 ppm
EPN	<0.0400 ppm
Azinphos-Methyl	<0.0400 ppm
Phosalone	<0.0400 ppm
Coumaphos	<0.0500 ppm

Method References	Testing Location
Aerobic Plate Count (APC_BAM:2)	**Covance Laboratories - Madison**

Maturin, L., and Peeler, J. T., "Chapter 3 - Aerobic Plate Count," *Bacteriological Analytical Manual*, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Jan 2001. (Modified).

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 905508-0
Report Date: 11-Nov-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Aflatoxin (AHMF_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., Methods 991.31 and 999.07 AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Ash (ASHM_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:9) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliform MPN (COLIMPN:11) — **Covance Laboratories - Madison**

Feng, P., Weagant, S. D., Grant, M. A., and Burkhardt, W., "Chapter 4 - Enumeration of *Escherichia* coli and the Coliform Bacteria," *Bacteriological Analytical Manual*, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Feb 2013. (modified).

Crude Fiber (CFIB_S:4) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:19) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:14) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

Enterobacteriaceae MPN (EBMPN:1) — **Covance Laboratories - Madison**

Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).

Escherichia coli Count (ECPET:9) — **Covance Laboratories - Madison**

AOAC 991.14

Fat by Soxhlet (FSOX_S:3) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.39 and 948.22. AOAC International, Gaithersburg, MD, 2005 (Modified).

Fumonisins (FUMONISINS:1) — **Romer Laboratories**

Test performed by a third party laboratory

Moisture (M100T100_S:6) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).

*** This analysis is not ISO accredited.**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Nitrate and Nitrite (NO2NO3_S:2) — **Covance Laboratories - Madison**

Casanova, J., Gross, L., McMullen, S., and Schenck, F. "Use of Griess Reagent Containing Vanadium (III) for Post-Column Derivatization and Simultaneous Determination of Nitrite and Nitrate in Baby Food," *J. AOAC Int.*, 89(2): 447-451 (2006) (Modified)
Gapper, L., Fong, B., Otter, D., Indyk, H., and Woollard, D. "Determination of Nitrite and Nitrate in Dairy Products by Ion Exchange LC with Spectrophotometric Detection," *Int Dairy J.*, 14: 881-887 (2004) (Modified)
Pickering Laboratories "Method Abstract for Post-column Liquid Chromatography 123" (Modified)
Griess Reaction Diagram, www.biotek.com <http://www.biotek.com> (Modified)

Nitrosamines (NITG_S:8) — **Covance Laboratories - Madison**

Protocol 6497-148

Organochlorinated Pesticides (OPCL_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Organophosphate Pesticides (OPOP_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Protein (N x 6.38) Dumas Method (DGEN_S:6) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Selenium (SEICPMS_S:3) — **Covance Laboratories - Madison**

Sullivan, D., Zywicki, R., Yancey, M., "Method for the Determination of Total Selenium in a Wide Variety of Foods Using Inductively Coupled Plasma/Mass Spectrometry" Journal of the AOAC INTERNATIONAL, 96 (4): 786-794 (2013). (Modified).

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 905508-0
Report Date: 11-Nov-2013
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location
Thiamin (BIDE_S:8)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).	
Vitamin A as Retinol (VALC_S:10)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 2001.13, 992.04, AND 992.06, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)	
Vitamin E (Synthetic) (LCE1_S:12)	**Covance Laboratories - Madison**
Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)	
Speek, A. J., Schijver, J., and Schreurs, W. H. P., Journal of Food Science, 50:121-124 (1985). (Modified)	
McMurray, C. H., Blanchflower, W. J., and Rice, D. A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980). (Modified)	

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Greenfield	**Sharon McKilligin - Associate Director**
671 S. Meridian Road Greenfield IN 46140 866-964-2034	
Covance Laboratories - Madison	**Lori Ross - Associate Director**
3301 Kinsman Blvd Madison WI 53704 608-242-2712 x4170	ACCREDITED Testing Cert #2918.01
Romer Laboratories	**Lori Ross - Associate Director**

*** This analysis is not ISO accredited.**

Diet Lot #14JAN08RTD1

COVANCE

Report Number:	**962092-0**
Report Date:	**24-Feb-2014**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**2753203**
Project ID	PURINA-20140212-0016	**Receipt Date**	12-Feb-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14JAN08RTD1	**Login Date**	12-Feb-2014
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	3
		Online Order	30

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	<1.0 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	<1.0 ppb
Recovery	78.9 %
Fat by Acid Hydrolysis	
Fat	5.1 g/100g
Crude Fiber *	
Crude Fiber	2.75 %
Protein (N x 6.38) Dumas Method	
Protein	21.4 %
Vitamin A as Retinol	
Vitamin A from Retinol	22300 IU/kg
Elements by ICP Emission Spectrometry	
Calcium	10000 ppm
Phosphorus	9020 ppm
Vitamin E (Synthetic)	
Vitamin E	9.49 IU/100g
Thiamin	
Thiamin	15.4 ppm
Nitrate and Nitrite *	
Nitrite Anion	<1.00 ppm
Nitrate Anion	12.5 ppm
Ash	
Ash	5.46 %
Moisture	
Moisture	7.58 %
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**962092-0**
Report Date:	**24-Feb-2014**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**2753203**
Project ID	PURINA-20140212-0016	**Receipt Date**	12-Feb-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14JAN08RTD1	**Login Date**	12-Feb-2014
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	3
		Online Order	30

Analysis	Result
Fumonisins *	
Fumonisin B1	<0.1 ppm
Fumonisin B2	<0.1 ppm
Aerobic Plate Count *	
Standard Plate Count	<10 CFU/g
Coliform MPN *	
Coliform	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3 MPN/g
Enterobacteriaceae MPN	<3 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10 CFU/g
Elements by ICP Mass Spectrometry	
Arsenic *	0.520 ppm
Cadmium *	0.0333 ppm
Lead	0.174 ppm
Mercury *	<0.0100 ppm
Selenium *	
Selenium	0.319 ppm
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<0.0125 ppm
HCB	<0.0065 ppm
Alpha-BHC	<0.0125 ppm
Propyzamide	<0.0250 ppm
DCNA	<0.0185 ppm
PCNB	<0.0100 ppm
Gamma-BHC	<0.0125 ppm
Beta-BHC	<0.0125 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 962092-0
Report Date: 24-Feb-2014
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**2753203**
Project ID	PURINA-20140212-0016	**Receipt Date**	12-Feb-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14JAN08RTD1	**Login Date**	12-Feb-2014
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	3
		Online Order	30

Analysis	Result
Organochlorinated Pesticides *	
Heptachlor	<0.0125 ppm
Chlorothalonil	<0.0125 ppm
Delta-BHC	<0.0125 ppm
Vinclozolin	<0.0250 ppm
Aldrin	<0.0125 ppm
DCPA	<0.0185 ppm
Heptachlor Epoxide	<0.0125 ppm
Endosulfan I	<0.0125 ppm
Dieldrin	<0.0125 ppm
Captan	<0.0500 ppm
Folpet	<0.0315 ppm
p,p' - DDE	<0.0125 ppm
Endrin	<0.0185 ppm
Oxadiazon	<0.0375 ppm
Endosulfan II	<0.0185 ppm
p,p' - DDD	<0.0185 ppm
p,p' - DDT	<0.0200 ppm
Endosulfan Sulfate	<0.0185 ppm
Captafol	<0.0315 ppm
Dicofol	<0.0315 ppm
Mirex	<0.0125 ppm
Tetradifon	<0.0185 ppm
Methoxychlor	<0.0315 ppm
Cis-Permethrin	<0.0375 ppm
Cypermethrin	<0.0940 ppm
Toxaphene	<0.100 ppm
Arochlor 1254	<0.200 ppm
Tech Chlordane	<0.0500 ppm
Trans-Permethrin	<0.0250 ppm
Telodrin	<0.0200 ppm
Organophosphate Pesticides *	
Vapona	<0.0150 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 962092-0
Report Date: 24-Feb-2014
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**2753203**
Project ID	PURINA-20140212-0016	**Receipt Date**	12-Feb-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14JAN08RTD1	**Login Date**	12-Feb-2014
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
Description	Product: 1815315 (5K96)	**Number Composited**	3
		Online Order	30

Analysis	Result
Organophosphate Pesticides *	
Methamidophos	<0.0150 ppm
Mevinphos	<0.0250 ppm
Acephate	<0.0400 ppm
Omethoate	<0.0350 ppm
Thimet	<0.0200 ppm
Demeton-S	<0.0250 ppm
Fonofos	<0.0250 ppm
Diazinon	<0.0200 ppm
Disulfoton	<0.0250 ppm
Dimethoate	<0.0200 ppm
Propetamphos	<0.0300 ppm
Dichlofenthion	<0.0300 ppm
Me-Chlorpyrifos	<0.0200 ppm
Ronnel	<0.0200 ppm
Me-Parathion	<0.0200 ppm
Me-Pirimiphos	<0.0250 ppm
Et-Chlorpyrifos	<0.0250 ppm
Fenitrothion	<0.0250 ppm
Malathion	<0.0200 ppm
Et-Parathion	<0.0200 ppm
Chlorfenvinphos	<0.0400 ppm
Methidathion	<0.0300 ppm
Prothiophos	<0.0300 ppm
Ethion	<0.0200 ppm
Trithion	<0.0300 ppm
Phosmet	<0.0350 ppm
EPN	<0.0400 ppm
Azinphos-Methyl	<0.0400 ppm
Phosalone	<0.0400 ppm
Coumaphos	<0.0500 ppm

Method References **Testing Location**

*** This analysis is not ISO accredited.**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Aerobic Plate Count (APC_BAM:2) — **Covance Laboratories - Madison**

Maturin, L., and Peeler, J. T., "Chapter 3 - Aerobic Plate Count," *Bacteriological Analytical Manual*, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Jan 2001. (Modified).

Aflatoxin (AHMF_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., Methods 991.31 and 999.07 AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Ash (ASHM_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:9) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliform MPN (COLIMPN:11) — **Covance Laboratories - Madison**

Feng, P., Weagant, S. D., Grant, M. A., and Burkhardt, W., "Chapter 4 - Enumeration of *Escherichia* coli and the Coliform Bacteria," *Bacteriological Analytical Manual*, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Feb 2013. (modified).

Crude Fiber (CFIB_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:21) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:15) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

Enterobacteriaceae MPN (EBMPN:1) — **Covance Laboratories - Madison**

Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).

Escherichia coli Count (ECPET:10) — **Covance Laboratories - Madison**

AOAC 991.14

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Fat by Acid Hydrolysis (FAT_AH_S:4) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 922.06 and 954.02, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 933.05. (Modified)

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 925.32. (Modified)

Fumonisins (FUMONISINS:1) — **Romer Laboratories**

Test performed by a third party laboratory

Moisture (M100T100_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).

Nitrate and Nitrite (NO2NO3_S:2) — **Covance Laboratories - Madison**

Casanova, J., Gross, L., McMullen, S., and Schenck, F. “Use of Griess Reagent Containing Vanadium (III) for Post-Column Derivatization and Simultaneous Determination of Nitrite and Nitrate in Baby Food,” *J. AOAC Int.*, 89(2): 447-451 (2006) (Modified)
Gapper, L., Fong, B., Otter, D., Indyk, H., and Woollard, D. “Determination of Nitrite and Nitrate in Dairy Products by Ion Exchange LC with Spectrophotometric Detection,” *Int Dairy J.*, 14: 881-887 (2004) (Modified)
Pickering Laboratories “Method Abstract for Post-column Liquid Chromatography 123” (Modified)
Griess Reaction Diagram, www.biotek.com <http://www.biotek.com> (Modified)

Nitrosamines (NITG_S:9) — **Covance Laboratories - Madison**

Protocol 6497-148

Organochlorinated Pesticides (OPCL_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

COVANCE

Report Number: 962092-0
Report Date: 24-Feb-2014
Report Status: Final

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Method References	Testing Location

Organophosphate Pesticides (OPOP_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Protein (N x 6.38) Dumas Method (DGEN_S:6) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Selenium (SEICPMS_S:3) — **Covance Laboratories - Madison**

Sullivan, D., Zywicki, R., Yancey, M., “Method for the Determination of Total Selenium in a Wide Variety of Foods Using Inductively Coupled Plasma/Mass Spectrometry” Journal of the AOAC INTERNATIONAL, 96 (4): 786-794 (2013). (Modified).

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).

Thiamin (BIDE_S:10) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).

Vitamin A as Retinol (VALC_S:13) — **Covance Laboratories - Madison**

Official Methods of Analysis, Methods 992.04, 992.06, and 2001.13, AOAC INTERNATIONAL (Modified).

Vitamin E (Synthetic) (LCE1_S:13) — **Covance Laboratories - Madison**

Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)

Speek, A. J., Schijver, J., and Schreurs, W. H. P., Journal of Food Science, 50:121-124 (1985). (Modified)

McMurray, C. H., Blanchflower, W. J., and Rice, D. A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980). (Modified)

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**962092-0**
Report Date:	**24-Feb-2014**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th st
Richmond Indiana 47374 United States

Testing Location(s)	Released on Behalf of Covance by
Covance Laboratories - Greenfield 671 S. Meridian Road Greenfield IN 46140 866-964-2034	**Sharon McKilligin - Associate Director**
Covance Laboratories - Madison 3301 Kinsman Blvd Madison WI 53704 608-242-2712 x4170	**Lori Ross - Associate Director** ACCREDITED Testing Cert #2918.01
Romer Laboratories	**Lori Ross - Associate Director**

These results apply only to the items tested. This certificate of analysis shall not be reproduced, except in its entirety, without the written approval of Covance.

*** This analysis is not ISO accredited.**

Diet Lot # 14APR30RTD1

COVANCE

Report Number:	**1024796-0**
Report Date:	**13-Jun-2014**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3017269**
Project ID	PURINA-20140603-0047	**Receipt Date**	03-Jun-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14APR30RTD1	**Login Date**	03-Jun-2014
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
		Number Composited	10
		Online Order	30

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	<1.0 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	<1.0 ppb
Recovery	67.2 %
Fat by Soxhlet *	
Fat	4.5 %
Crude Fiber *	
Crude Fiber	2.90 %
Protein (N x 6.38) Dumas Method	
Protein	21.5 %
Vitamin A as Retinol	
Vitamin A from Retinol	25600 IU/kg
Elements by ICP Emission Spectrometry	
Calcium	10900 ppm
Phosphorus	9240 ppm
Vitamin E (Synthetic)	
Vitamin E	86.5 IU/kg
Thiamin	
Thiamin	16.2 ppm
Nitrate and Nitrite *	
Nitrite Anion	<0.500 ppm
Nitrate Anion	15.8 ppm
Ash	
Ash	5.51 %
Moisture	
Moisture	7.83 %
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 1024796-0
Report Date: 13-Jun-2014
Report Status: Final

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3017269**
Project ID	PURINA-20140603-0047	**Receipt Date**	03-Jun-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14APR30RTD1	**Login Date**	03-Jun-2014
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
		Number Composited	10
		Online Order	30

Analysis	Result
Fumonisins *	
Fumonisin B1	<0.1 ppm
Fumonisin B2	<0.1 ppm
Aerobic Plate Count *	
Standard Plate Count	<10 CFU/g
Coliform MPN *	
Coliform	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3.0 MPN/g
Escherichia coli Count *	
Escherichia Coli	<10 CFU/g
Elements by ICP Mass Spectrometry	
Arsenic *	0.387 ppm
Cadmium *	0.0362 ppm
Lead	0.188 ppm
Mercury *	<0.0100 ppm
Selenium *	
Selenium	0.362 ppm
Aflatoxin *	
B1	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<0.0125 ppm
HCB	<0.0065 ppm
Alpha-BHC	<0.0125 ppm
Propyzamide	<0.0250 ppm
DCNA	<0.0185 ppm
PCNB	<0.0100 ppm
Gamma-BHC	<0.0125 ppm
Beta-BHC	<0.0125 ppm
Heptachlor	<0.0125 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 1024796-0
Report Date: 13-Jun-2014
Report Status: Final

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3017269**
Project ID	PURINA-20140603-0047	**Receipt Date**	03-Jun-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14APR30RTD1	**Login Date**	03-Jun-2014
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
		Number Composited	10
		Online Order	30

Analysis	Result
Organochlorinated Pesticides *	
Chlorothalonil	<0.0125 ppm
Delta-BHC	<0.0125 ppm
Vinclozolin	<0.0250 ppm
Aldrin	<0.0125 ppm
DCPA	<0.0185 ppm
Heptachlor Epoxide	<0.0125 ppm
Endosulfan I	<0.0125 ppm
Dieldrin	<0.0125 ppm
Captan	<0.0500 ppm
Folpet	<0.0315 ppm
p,p' - DDE	<0.0125 ppm
Endrin	<0.0185 ppm
Oxadiazon	<0.0375 ppm
Endosulfan II	<0.0185 ppm
p,p' - DDD	<0.0185 ppm
p,p' - DDT	<0.0200 ppm
Endosulfan Sulfate	<0.0185 ppm
Captafol	<0.0315 ppm
Dicofol	<0.0315 ppm
Mirex	<0.0125 ppm
Tetradifon	<0.0185 ppm
Methoxychlor	<0.0315 ppm
Cis-Permethrin	<0.0375 ppm
Cypermethrin	<0.0940 ppm
Toxaphene	<0.100 ppm
Arochlor 1254	<0.200 ppm
Tech Chlordane	<0.0500 ppm
Trans-Permethrin	<0.0250 ppm
Telodrin	<0.0200 ppm
Organophosphate Pesticides *	
Vapona	<0.0150 ppm
Methamidophos	<0.0150 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number: 1024796-0
Report Date: 13-Jun-2014
Report Status: Final

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3017269**
Project ID	PURINA-20140603-0047	**Receipt Date**	03-Jun-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14APR30RTD1	**Login Date**	03-Jun-2014
Sample Serving Size		**Storage Condition**	-20 (+/- 10) Degrees Celsius
		Number Composited	10
		Online Order	30

Analysis	Result
Organophosphate Pesticides *	
Mevinphos	<0.0250 ppm
Acephate	<0.0400 ppm
Omethoate	<0.0350 ppm
Thimet	<0.0200 ppm
Demeton-S	<0.0250 ppm
Fonofos	<0.0250 ppm
Diazinon	<0.0200 ppm
Disulfoton	<0.0250 ppm
Dimethoate	<0.0200 ppm
Propetamphos	<0.0300 ppm
Dichlofenthion	<0.0300 ppm
Me-Chlorpyrifos	<0.0200 ppm
Ronnel	<0.0200 ppm
Me-Parathion	<0.0200 ppm
Me-Pirimiphos	<0.0250 ppm
Et-Chlorpyrifos	<0.0250 ppm
Fenitrothion	<0.0250 ppm
Malathion	<0.0200 ppm
Et-Parathion	<0.0200 ppm
Chlorfenvinphos	<0.0400 ppm
Methidathion	<0.0300 ppm
Prothiophos	<0.0300 ppm
Ethion	<0.0200 ppm
Trithion	<0.0300 ppm
Phosmet	<0.0350 ppm
EPN	<0.0400 ppm
Azinphos-Methyl	<0.0400 ppm
Phosalone	<0.0400 ppm
Coumaphos	<0.0500 ppm

Method References	Testing Location

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**1024796-0**
Report Date:	**13-Jun-2014**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Method References	Testing Location

Aerobic Plate Count (APC_BAM:2) — **Covance Laboratories - Madison**

Maturin, L., and Peeler, J. T., "Chapter 3 - Aerobic Plate Count," *Bacteriological Analytical Manual*, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Jan 2001. (Modified).

Aflatoxin (AHMF_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., Methods 991.31 and 999.07 AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Ash (ASHM_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:9) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliform MPN (COLIMPN:13) — **Covance Laboratories - Madison**

Feng, P., Weagant, S. D., Grant, M. A., and Burkhardt, W., "Chapter 4 - Enumeration of *Escherichia* coli and the Coliform Bacteria," *Bacteriological Analytical Manual*, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Feb 2013. (modified).

Crude Fiber (CFIB_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.

Elements by ICP Emission Spectrometry (ICP_S:21) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

Elements by ICP Mass Spectrometry (ICP_MS_S:15) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).

Enterobacteriaceae MPN (EBMPN:1) — **Covance Laboratories - Madison**

Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).

Escherichia coli Count (ECPET:10) — **Covance Laboratories - Madison**

AOAC 991.14

Fat by Soxhlet (FSOX_S:5) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.39 and 948.22. AOAC International, Gaithersburg, MD, 2005 (Modified).

Fumonisins (FUMONISINS:1) — **3rd Party Laboratory**

Test performed by a third party laboratory

*** This analysis is not ISO accredited.**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Method References	Testing Location

Moisture (M100T100_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).

Nitrate and Nitrite (NO2NO3_S:2) — **Covance Laboratories - Madison**

Casanova, J., Gross, L., McMullen, S., and Schenck, F. "Use of Griess Reagent Containing Vanadium (III) for Post-Column Derivatization and Simultaneous Determination of Nitrite and Nitrate in Baby Food," *J. AOAC Int.*, 89(2): 447-451 (2006) (Modified)

Gapper, L., Fong, B., Otter, D., Indyk, H., and Woollard, D. "Determination of Nitrite and Nitrate in Dairy Products by Ion Exchange LC with Spectrophotometric Detection," *Int Dairy J.*, 14: 881-887 (2004) (Modified)

Pickering Laboratories "Method Abstract for Post-column Liquid Chromatography 123" (Modified)

Griess Reaction Diagram, www.biotek.com <http://www.biotek.com> (Modified)

Nitrosamines (NITG_S:9) — **Covance Laboratories - Madison**

Protocol 6497-148

Organochlorinated Pesticides (OPCL_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Organophosphate Pesticides (OPOP_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Protein (N x 6.38) Dumas Method (DGEN_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**1024796-0**
Report Date:	**13-Jun-2014**
Report Status:	**Final**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Method References	Testing Location

Selenium (SEICPMS_S:3) — **Covance Laboratories - Madison**

Sullivan, D., Zywicki, R., Yancey, M., "Method for the Determination of Total Selenium in a Wide Variety of Foods Using Inductively Coupled Plasma/Mass Spectrometry" Journal of the AOAC INTERNATIONAL, 96 (4): 786-794 (2013). (Modified).

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).

Thiamin (BIDE_S:11) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).

Vitamin A as Retinol (VALC_S:14) — **Covance Laboratories - Madison**

Official Methods of Analysis, Methods 992.04, 992.06, and 2001.13, AOAC INTERNATIONAL (Modified).

Vitamin E (Synthetic) (LCE1_S:15) — **Covance Laboratories - Madison**

Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)

Speek, A. J., Schijver, J., and Schreurs, W. H. P., Journal of Food Science, 50:121-124 (1985). (Modified)

McMurray, C. H., Blanchflower, W. J., and Rice, D. A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980). (Modified)

Testing Location(s)	Released on Behalf of Covance by

Covance Laboratories - Greenfield — **Sharon McKilligin - Associate Director**

671 S. Meridian Road
Greenfield IN 46140
866-964-2034

Covance Laboratories - Madison — **Lori Ross - Associate Director**

3301 Kinsman Blvd
Madison WI 53704
608-242-2712 x4170

ACCREDITED
Testing Cert #2918.01

*** This analysis is not ISO accredited.**

Diet Lot #14AUG08RTD1

COVANCE

Report Number:	**1078860-1**
Report Date:	**19-Sep-2014**
Report Status:	**Final**
Supercedes :	**1078860-0**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3276030**
Project ID	PURINA-20140909-0096	**Receipt Date**	09-Sep-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14Aug08 RTD1	**Login Date**	09-Sep-2014
Sample Serving Size		**Storage Condition**	Ambient temperature
Description	Product# 1815315 (5K96)	**Online Order**	30

Analysis	Result
Nitrosamines *	
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodibutylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodiethylamine	<1.0 ppb
N-Nitrosodimethylamine	<1.0 ppb
N-Nitrosodimethylamine	<1.0 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosomorpholine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopiperidine	<1.0 ppb
N-Nitrosopyrrolidine	1.3 ppb
N-Nitrosopyrrolidine	1.3 ppb
Recovery	74.7 %
Fat by Acid Hydrolysis	
Fat	5.3 %
Crude Fiber *	
Crude Fiber	2.97 %
Protein (N x 6.38) Dumas Method	
Protein	21.2 %
Vitamin A as Retinol	
Vitamin A from Retinol	23.6 IU/g
Elements by ICP Emission Spectrometry	
Calcium	10300 ppm
Phosphorus	8290 ppm
Vitamin E (Synthetic)	
Vitamin E	0.0807 IU/g
Thiamin	
Thiamin	14.6 ppm
Nitrate and Nitrite *	
Nitrite Anion	<0.500 ppm
Nitrate Anion	11.8 ppm
Ash	

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**1078860-1**
Report Date:	**19-Sep-2014**
Report Status:	**Final**
Supercedes :	**1078860-0**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3276030**
Project ID	PURINA-20140909-0096	**Receipt Date**	09-Sep-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14Aug08 RTD1	**Login Date**	09-Sep-2014
Sample Serving Size		**Storage Condition**	Ambient temperature
Description	Product# 1815315 (5K96)	**Online Order**	30

Analysis	Result
Ash	
Ash	5.32 %
Moisture	
Moisture	9.63 %
BHA, BHT, and TBHQ	
BHA	<1.00 ppm
BHT	<1.00 ppm
Fumonisins *	
Fumonisin B1	<0.1 ppm
Fumonisin B2	<0.1 ppm
Aerobic Plate Count *	
Standard Plate Count	<10 CFU/g
Coliform MPN *	
Coliform	<3 MPN/g
Enterobacteriaceae MPN *	
Enterobacteriaceae MPN	<3 MPN/g
Enterobacteriaceae MPN	<3 MPN/g
Escherichia coli Count	
Escherichia Coli	<10 CFU/g
Elements by ICP Mass Spectrometry	
Arsenic *	0.397 ppm
Cadmium *	0.0382 ppm
Lead	0.176 ppm
Mercury *	0.0108 ppm
Selenium *	
Selenium	0.292 ppm
Aflatoxin *	
B1	<0.500 ppb
B1	<0.500 ppb
B2	<0.500 ppb
B2	<0.500 ppb
G1	<0.500 ppb
G1	<0.500 ppb

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**1078860-1**
Report Date:	**19-Sep-2014**
Report Status:	**Final**
Supercedes :	**1078860-0**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3276030**
Project ID	PURINA-20140909-0096	**Receipt Date**	09-Sep-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14Aug08 RTD1	**Login Date**	09-Sep-2014
Sample Serving Size		**Storage Condition**	Ambient temperature
Description	Product# 1815315 (5K96)	**Online Order**	30

Analysis	Result
Aflatoxin *	
G2	<0.500 ppb
G2	<0.500 ppb
Organochlorinated Pesticides *	
Tecnazene	<0.0125 ppm
HCB	<0.0065 ppm
Alpha-BHC	<0.0125 ppm
Propyzamide	<0.0250 ppm
DCNA	<0.0185 ppm
PCNB	<0.0100 ppm
Gamma-BHC	<0.0125 ppm
Beta-BHC	<0.0125 ppm
Heptachlor	<0.0125 ppm
Chlorothalonil	<0.0125 ppm
Delta-BHC	<0.0125 ppm
Vinclozolin	<0.0250 ppm
Aldrin	<0.0125 ppm
DCPA	<0.0185 ppm
Heptachlor Epoxide	<0.0125 ppm
Endosulfan I	<0.0125 ppm
Dieldrin	<0.0125 ppm
Captan	<0.0500 ppm
Folpet	<0.0315 ppm
p,p' - DDE	<0.0125 ppm
Endrin	<0.0185 ppm
Oxadiazon	<0.0375 ppm
Endosulfan II	<0.0185 ppm
p,p' - DDD	<0.0185 ppm
p,p' - DDT	<0.0200 ppm
Endosulfan Sulfate	<0.0185 ppm
Captafol	<0.0315 ppm
Dicofol	<0.0315 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**1078860-1**
Report Date:	**19-Sep-2014**
Report Status:	**Final**
Supercedes :	**1078860-0**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3276030**
Project ID	PURINA-20140909-0096	**Receipt Date**	09-Sep-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14Aug08 RTD1	**Login Date**	09-Sep-2014
Sample Serving Size		**Storage Condition**	Ambient temperature
Description	Product# 1815315 (5K96)	**Online Order**	30

Analysis	Result
Organochlorinated Pesticides *	
Mirex	<0.0125 ppm
Tetradifon	<0.0185 ppm
Methoxychlor	<0.0315 ppm
Cis-Permethrin	<0.0375 ppm
Cypermethrin	<0.0940 ppm
Toxaphene	<0.100 ppm
Arochlor 1254	<0.200 ppm
Tech Chlordane	<0.0500 ppm
Trans-Permethrin	<0.0250 ppm
Telodrin	<0.0200 ppm
Organophosphate Pesticides *	
Vapona	<0.0150 ppm
Methamidophos	<0.0150 ppm
Mevinphos	<0.0250 ppm
Acephate	<0.0400 ppm
Omethoate	<0.0350 ppm
Thimet	<0.0200 ppm
Demeton-S	<0.0250 ppm
Fonofos	<0.0250 ppm
Diazinon	<0.0200 ppm
Disulfoton	<0.0250 ppm
Dimethoate	<0.0200 ppm
Propetamphos	<0.0300 ppm
Dichlofenthion	<0.0300 ppm
Me-Chlorpyrifos	0.0603 ppm
Ronnel	<0.0200 ppm
Me-Parathion	<0.0200 ppm
Me-Pirimiphos	<0.0250 ppm
Et-Chlorpyrifos	<0.0250 ppm
Fenitrothion	<0.0250 ppm
Malathion	<0.0200 ppm

*** This analysis is not ISO accredited.**

COVANCE

Report Number:	**1078860-1**
Report Date:	**19-Sep-2014**
Report Status:	**Final**
Supercedes :	**1078860-0**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Sample Name:	**AP VERIFIED CASEIN DIET 10 IF IRR**	**Covance Sample:**	**3276030**
Project ID	PURINA-20140909-0096	**Receipt Date**	09-Sep-2014
PO Number	CVD	**Receipt Condition**	Ambient temperature
Lot Number	14Aug08 RTD1	**Login Date**	09-Sep-2014
Sample Serving Size		**Storage Condition**	Ambient temperature
Description	Product# 1815315 (5K96)	**Online Order**	30

Analysis	Result
Organophosphate Pesticides *	
Et-Parathion	<0.0200 ppm
Chlorfenvinphos	<0.0400 ppm
Methidathion	<0.0300 ppm
Prothiophos	<0.0300 ppm
Ethion	<0.0200 ppm
Trithion	<0.0300 ppm
Phosmet	<0.0350 ppm
EPN	<0.0400 ppm
Azinphos-Methyl	<0.0400 ppm
Phosalone	<0.0400 ppm
Coumaphos	<0.0500 ppm

Method References — Testing Location

Aerobic Plate Count (APC_BAM:5) — **Covance Laboratories - Madison NE**

Maturin, L., and Peeler, J. T., "Chapter 3 - Aerobic Plate Count," *Bacteriological Analytical Manual*, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Jan 2001. (Modified).

Aflatoxin (AHMF_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (modified), 18th Ed., Methods 991.31 and 999.07 AOAC INTERNATIONAL: Gaithersburg, Maryland (2005).

Ash (ASHM_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

BHA, BHT, and TBHQ (BHAL_S:9) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 968.17. (Modified)

Coliform MPN (COLIMPN:14) — **Covance Laboratories - Madison NE**

Feng, P., Weagant, S. D., Grant, M. A., and Burkhardt, W., "Chapter 4 - Enumeration of *Escherichia* coli and the Coliform Bacteria," *Bacteriological Analytical Manual*, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Feb 2013. (modified).

*** This analysis is not ISO accredited.**

COVANCE

Certificate of Analysis

Report Number:	**1078860-1**
Report Date:	**19-Sep-2014**
Report Status:	**Final**
Supercedes :	**1078860-0**

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Method References	Testing Location
Crude Fiber (CFIB_S:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 962.09.	
Elements by ICP Emission Spectrometry (ICP_S:21)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 984.27 and 985.01, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)	
Elements by ICP Mass Spectrometry (ICP_MS_S:15)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 993.14 (Modified).	
Enterobacteriaceae MPN (EBMPN:2)	**Covance Laboratories - Madison NE**
Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, Chapter 8, 2001. American Public Health Association: Washington D.C. (Modified).	
Escherichia coli Count (ECPET:11)	**Covance Laboratories - Madison NE**
AOAC 991.14	
Fat by Acid Hydrolysis (FAT_AH_S:5)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 922.06 and 954.02, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)	
Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 933.05. (Modified)	
Official Methods of Analysis of AOAC INTERNATIONAL (2005) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 925.32. (Modified)	
Fumonisins (FUMONISINS:1)	**3rd Party Laboratory**
Test performed by a third party laboratory	
Moisture (M100T100_S:7)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 925.09 and 926.08, AOAC INTERNATIONAL, Gaithersburg, MD, USA,(2005). (Modified).	

*** This analysis is not ISO accredited.**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Method References	Testing Location

Nitrate and Nitrite (NO2NO3_S:2) — **Covance Laboratories - Madison**

Casanova, J., Gross, L., McMullen, S., and Schenck, F. "Use of Griess Reagent Containing Vanadium (III) for Post-Column Derivatization and Simultaneous Determination of Nitrite and Nitrate in Baby Food," *J. AOAC Int.*, 89(2): 447-451 (2006) (Modified)

Gapper, L., Fong, B., Otter, D., Indyk, H., and Woollard, D. "Determination of Nitrite and Nitrate in Dairy Products by Ion Exchange LC with Spectrophotometric Detection," *Int Dairy J.*, 14: 881-887 (2004) (Modified)

Pickering Laboratories "Method Abstract for Post-column Liquid Chromatography 123" (Modified)

Griess Reaction Diagram, www.biotek.com <http://www.biotek.com> (Modified)

Nitrosamines (NITG_S:9) — **Covance Laboratories - Madison**

Protocol 6497-148

Organochlorinated Pesticides (OPCL_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automated Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Organophosphate Pesticides (OPOP_GRN_S:1) — **Covance Laboratories - Greenfield**

Hopper, M. L. and Griffitt, K. R., "Evaluation of an Automatic Gel Permeation Cleanup and Evaporation Systems for Determining Pesticide Residues in Fatty Samples", Journal of the Association of Official Analytical Chemists, Vol. 70, No. 4, pp. 724-726 (1987) (Modified).

Pesticide Analytical Manual, Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3, "Multiclass Multiresidue Methods: 304 Method for Fatty Foods", Food and Drug Administration, Washington, D.C. (1999) (Modified).

Protein (N x 6.38) Dumas Method (DGEN_S:7) — **Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 968.06 and 992.15, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005). (Modified)

COVANCE

Report Number:	**1078860-1**
Report Date:	**19-Sep-2014**
Report Status:	**Final**
Supercedes :	**1078860-0**

Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Method References	Testing Location
Selenium (SEICPMS_S:3)	**Covance Laboratories - Madison**
Sullivan, D., Zywicki, R., Yancey, M., "Method for the Determination of Total Selenium in a Wide Variety of Foods Using Inductively Coupled Plasma/Mass Spectrometry" Journal of the AOAC INTERNATIONAL, 96 (4): 786-794 (2013). (Modified).	
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, USA, Official Method 2011.19 (2011). (Modified).	
Thiamin (BIDE_S:12)	**Covance Laboratories - Madison**
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).	
Vitamin A as Retinol (VALC_S:15)	**Covance Laboratories - Madison**
Official Methods of Analysis, Methods 992.04, 992.06, and 2001.13, AOAC INTERNATIONAL (Modified).	
Vitamin E (Synthetic) (LCE1_S:17)	**Covance Laboratories - Madison**
Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., Journal of Agricultural Food Chemistry, 31:1330-1333 (1983). (Modified)	
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*** This analysis is not ISO accredited.**

COVANCE

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Certificate of Analysis

Purina
505 North 4th Street
Richmond Indiana 47374 United States

Testing Location(s)	Released on Behalf of Covance by
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Covance Laboratories Inc. 3301 Kinsman Blvd Madison WI 53704 800-675-8375 x4170	**Lori Ross - Associate Director** ACCREDITED Testing Cert #2918.01
Covance Laboratories Inc. 2102 Wright Street Madison WI 53704 855-83-MICRO	**Lori Ross - Associate Director** ACCREDITED Testing Cert #2918.05

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