Final 2 Revision 1 - Core Only

NTP Study Number:	C10260		
Lock Date:	07/22/2014		
Cage Range:	ALL		
Date Range:	ALL		
Reasons For Removal:	25021 TSAC	25020 NATD	25019 MSAC
Removal Date Range:	ALL		
Treatment Groups:	Include ALL		
Study Gender:	Both		
TDMSE Version:	3.0.2.3_002		
PWG Approval Date:	12/22/2016		

Harlan Sprague Dawley RATS MALE	0 ppm Male	1000 ppm Male	3000 ppm Male	10000 ppm Male
Disposition Summary				
Animals Initially In Study	**60**	**50**	**50**	**60**
Early Deaths				
Moribund Sacrifice	**12**	**15**	**18**	**10**
Natural Death	**8**	**6**	**8**	**7**
Survivors				
Natural Death	**1**			
Terminal Sacrifice	**29**	**29**	**24**	**33**
Animals Examined Microscopically	**50**	**50**	**50**	**50**
ALIMENTARY SYSTEM				
Esophagus	(50)	(50)	(50)	(50)
Intestine Large, Cecum	(50)	(50)	(50)	(50)
Intestine Large, Colon	(50)	(50)	(50)	(50)
Parasite Metazoan	2	6	1	2
Intestine Large, Rectum	(50)	(50)	(50)	(50)
Parasite Metazoan	7	5	5	6
Arteriole, Necrosis, Fibrinoid				1 [1.0]
Intestine Small, Duodenum	(50)	(50)	(50)	(50)
Artery, Inflammation, Chronic Active	1 [2.0]			
Intestine Small, Ileum	(50)	(50)	(50)	(50)
Intestine Small, Jejunum	(50)	(50)	(50)	(50)
Liver	(50)	(50)	(50)	(50)
Basophilic Focus	1	3	1	2
Cholangiofibrosis				1 [3.0]
Clear Cell Focus	29	28	27	29
Eosinophilic Focus	6	8	9	8
Extramedullary Hematopoiesis	3 [1.0]		1 [1.0]	2 [2.0]
Fatty Change, Focal	1 [2.0]			
Hepatodiaphragmatic Nodule	1	3		
Necrosis	1 [2.0]			
Thrombus			1 [4.0]	
Bile Duct, Cyst				1
Bile Duct, Dilation	1 [2.0]			

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS MALE	0 ppm Male	1000 ppm Male	3000 ppm Male	10000 ppm Male
Bile Duct, Hyperplasia	20 [1.1]	7 [1.1]	12 [1.0]	11 [1.0]
Hepatocyte, Hypertrophy	2 [2.5]			
Hepatocyte, Necrosis	1 [2.0]	2 [2.0]	2 [1.5]	1 [1.0]
Hepatocyte, Vacuolization Cytoplasmic	4 [1.8]	6 [1.3]	6 [2.0]	7 [1.6]
Portal, Fibrosis	1 [2.0]			
Serosa, Fibrosis	1 [2.0]			
Mesentery	(1)	(3)	(1)	(1)
Artery, Inflammation, Chronic Active	1 [2.0]			
Fat, Necrosis		2 [2.5]		
Oral Mucosa	(0)	(0)	(0)	(1)
Cyst				1
Pancreas	(50)	(50)	(50)	(50)
Acinus, Atrophy	6 [1.5]	2 [1.5]		1 [1.0]
Acinus, Atrophy, Focal		1 [1.0]		
Acinus, Cyst		1		
Acinus, Hyperplasia	14 [2.4]	7 [2.7]	14 [2.1]	6 [2.2]
Arteriole, Inflammation, Chronic Active	4 [1.5]	15 [1.2]	10 [1.4]	11 [1.3]
Arteriole, Necrosis, Fibrinoid	1 [2.0]	3 [1.7]	2 [1.5]	
Artery, Inflammation, Chronic Active	15 [1.7]	16 [1.1]	20 [1.3]	18 [1.2]
Artery, Necrosis	3 [2.3]			
Periductal, Cholangiofibrosis				1
Salivary Glands	(50)	(50)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(50)	(50)
Cyst		1		
Fibrosis			2 [1.0]	
Hemorrhage			1 [1.0]	
Inflammation, Chronic Active	2 [1.5]	1 [2.0]	3 [1.7]	2 [2.0]
Mineral				1 [1.0]
Arteriole, Necrosis, Fibrinoid				1 [2.0]
Epithelium, Hyperplasia	2 [2.0]		4 [2.0]	2 [2.5]
Stomach, Glandular	(50)	(50)	(50)	(50)
Mineral	2 [2.0]	2 [2.5]	2 [2.0]	2 [2.0]
Tongue	(0)	(0)	(0)	(1)
Epithelium, Hyperplasia				1 [3.0]

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS MALE	0 ppm Male	1000 ppm Male	3000 ppm Male	10000 ppm Male
CARDIOVASCULAR SYSTEM				
Blood Vessel	(50)	(50)	(50)	(50)
Aorta, Hemorrhage		1 [3.0]		
Aorta, Mineral		2 [2.5]	1 [1.0]	3 [2.7]
Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	37 [1.4]	44 [1.2]	42 [1.2]	41 [1.2]
Fibrosis		1 [1.0]		
Infiltration Cellular, Mononuclear Cell	1 [1.0]			
Inflammation, Chronic Active			1 [1.0]	
Arteriole, Necrosis, Fibrinoid		1 [1.0]		
Artery, Inflammation, Chronic Active	1 [1.0]			
Atrium, Thrombus		1 [4.0]	2 [2.5]	
Endocardium, Proliferation				1 [2.0]
Schwann Cell, Hyperplasia	2 [2.0]			
Ventricle, Hypertrophy	1 [3.0]			
ENDOCRINE SYSTEM				
Adrenal Cortex	(50)	(50)	(50)	(50)
Angiectasis		1 [1.0]		
Hyperplasia, Focal	18 [1.6]	18 [1.7]	19 [1.6]	20 [1.5]
Hyperplasia, Diffuse				1 [3.0]
Hypertrophy, Focal	20 [1.8]	23 [1.3]	23 [1.3]	27 [1.3]
Metaplasia, Osseous		1 [2.0]		
Necrosis	1 [1.0]	1 [3.0]	1 [2.0]	
Thrombus			1 [2.0]	1 [1.0]
Vacuolization Cytoplasmic	5 [1.2]	2 [1.0]	3 [2.3]	5 [2.8]
Bilateral, Atrophy	1 [3.0]			
Adrenal Medulla	(50)	(50)	(50)	(50)
Hyperplasia	27 [1.7]	13 [1.5]	15 [1.5]	12 [1.5]
Bilateral, Hyperplasia			1 [2.0]	
Islets, Pancreatic	(50)	(50)	(50)	(50)
Fibrosis				1 [3.0]
Parathyroid Gland	(49)	(47)	(45)	(48)

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS MALE	0 ppm Male	1000 ppm Male	3000 ppm Male	10000 ppm Male
Hyperplasia	27 [2.9]	18 [3.8]	15 [3.3]	23 [3.6]
Pituitary Gland	(50)	(50)	(50)	(50)
Pars Distalis, Hyperplasia	16 [1.7]	17 [2.1]	10 [1.8]	16 [1.6]
Pars Intermedia, Hyperplasia		3 [1.7]	1 [1.0]	
Thyroid Gland	(50)	(50)	(50)	(50)
C-cell, Hyperplasia	7 [2.6]	9 [2.8]	7 [2.9]	4 [2.5]
GENERAL BODY SYSTEM				
Peritoneum	(1)	(0)	(1)	(1)
GENITAL SYSTEM				
Epididymis	(50)	(50)	(50)	(50)
Hypospermia	7 [4.0]	11 [4.0]	9 [4.0]	8 [4.0]
Artery, Inflammation, Chronic Active	1 [1.0]			
Penis	(2)	(0)	(0)	(1)
Edema	1 [2.0]			
Inflammation, Chronic Active	1 [2.0]			
Preputial Gland	(49)	(50)	(49)	(50)
Prostate	(50)	(50)	(50)	(49)
Inflammation, Suppurative	4 [1.8]	2 [3.5]	5 [2.0]	4 [2.0]
Epithelium, Hyperplasia				2 [1.0]
Seminal Vesicle	(50)	(50)	(50)	(50)
Atrophy				1 [3.0]
Inflammation, Suppurative	1 [1.0]	2 [3.5]	2 [3.0]	2 [2.5]
Testes	(50)	(50)	(50)	(50)
Edema	1 [3.0]	1 [3.0]		
Necrosis			1 [4.0]	
Arteriole, Necrosis, Fibrinoid	16 [2.3]	19 [2.6]	16 [2.6]	25 [2.4]
Germinal Epithelium, Atrophy	13 [2.9]	18 [2.4]	12 [3.0]	20 [2.2]
Interstitial Cell, Hyperplasia	1 [1.0]			5 [2.0]

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b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS MALE	0 ppm Male	1000 ppm Male	3000 ppm Male	10000 ppm Male
HEMATOPOIETIC SYSTEM				
Bone Marrow	(50)	(50)	(50)	(50)
Hypercellularity	9 [2.9]	12 [2.9]	17 [2.4]	10 [2.8]
Lymph Node	(4)	(0)	(1)	(5)
Lumbar, Ectasia	2 [3.5]			2 [3.5]
Mediastinal, Congestion				1 [1.0]
Mediastinal, Ectasia	1 [3.0]			
Renal, Congestion				1 [2.0]
Renal, Ectasia				2 [3.5]
Lymph Node, Mandibular	(50)	(50)	(50)	(50)
Congestion	1 [3.0]			
Inflammation, Suppurative				1 [2.0]
Lymph Node, Mediastinal	(1)	(0)	(1)	(0)
Lymph Node, Mesenteric	(50)	(50)	(50)	(50)
Congestion	1 [3.0]			
Spleen	(50)	(50)	(50)	(50)
Congestion		1 [1.0]		
Extramedullary Hematopoiesis	21 [1.8]	14 [2.4]	14 [2.2]	17 [2.2]
Pigment	21 [1.6]	24 [1.5]	28 [1.4]	27 [1.5]
White Pulp, Atrophy	5 [3.0]	5 [2.6]	3 [3.7]	9 [3.1]
Thymus	(46)	(48)	(48)	(49)
Atrophy	17 [3.4]	19 [2.8]	21 [3.1]	16 [3.1]
Arteriole, Necrosis, Fibrinoid			1 [2.0]	
INTEGUMENTARY SYSTEM				
Mammary Gland	(49)	(50)	(50)	(50)
Skin	(50)	(50)	(50)	(50)
Cyst Epithelial Inclusion	1	1	4	3
Hyperkeratosis	1 [3.0]			
Inflammation, Suppurative			3 [2.7]	
Inflammation, Chronic		1 [3.0]		1 [3.0]
Inflammation, Chronic Active	3 [3.0]	3 [3.3]		
Metaplasia, Osseous				1 [2.0]

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS MALE	0 ppm Male	1000 ppm Male	3000 ppm Male	10000 ppm Male
Ulcer	1 [2.0]			1 [2.0]
Epidermis, Hyperplasia		1 [2.0]		
MUSCULOSKELETAL SYSTEM				
Bone	(50)	(50)	(50)	(50)
Skeletal Muscle	(2)	(0)	(1)	(2)
Degeneration	1 [3.0]			
NERVOUS SYSTEM				
Brain	(50)	(50)	(50)	(50)
Hemorrhage	1 [1.0]			
Necrosis	1 [2.0]			
Cerebrum, Edema		1 [4.0]		
Cerebrum, Hemorrhage		1 [1.0]		
Cerebrum, Neuron, Necrosis		1 [4.0]		
Nerve Trigeminal	(0)	(0)	(1)	(0)
Peripheral Nerve	(2)	(1)	(1)	(0)
Axon, Degeneration	1 [1.0]			
Sciatic, Degeneration	1 [1.0]			
Trigeminal, Degeneration	1 [1.0]			
Spinal Cord	(2)	(1)	(1)	(0)
Axon, Degeneration	2 [1.5]		1 [2.0]	
RESPIRATORY SYSTEM				
Lung	(50)	(50)	(50)	(50)
Hemorrhage	1 [1.0]	2 [3.0]	3 [2.7]	1 [2.0]
Inflammation, Suppurative		1 [2.0]		
Inflammation, Granulomatous	1 [1.0]	1 [1.0]		
Inflammation, Histiocytic				1 [1.0]
Necrosis		1 [1.0]		
Proteinosis				1 [3.0]

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS MALE	0 ppm Male	1000 ppm Male	3000 ppm Male	10000 ppm Male
Alveolar Epithelium, Hyperplasia			1 [2.0]	
Alveolus, Hemorrhage	1 [2.0]			
Alveolus, Infiltration Cellular, Histiocyte	20 [1.5]	15 [1.5]	18 [1.6]	17 [1.5]
Alveolus, Infiltration Cellular, Mixed Cell	2 [3.5]			
Interstitium, Edema			1 [2.0]	
Interstitium, Fibrosis	1 [1.0]		3 [1.7]	1 [2.0]
Interstitium, Inflammation, Chronic				1 [2.0]
Nose	(50)	(50)	(50)	(50)
Olfactory Epithelium, Accumulation, Hyaline Droplet	42 [1.6]	47 [1.5]	47 [1.6]	44 [1.4]
Trachea	(50)	(50)	(50)	(50)
SPECIAL SENSES SYSTEM				
Eye	(50)	(50)	(50)	(50)
Anterior Chamber, Inflammation, Suppurative		1 [2.0]		
Bilateral, Cornea, Inflammation, Chronic Active	1 [2.0]		1 [2.0]	
Cornea, Inflammation, Chronic Active	2 [2.0]			
Lens, Degeneration		1 [2.0]		
Harderian Gland	(50)	(50)	(50)	(50)
Lacrimal Gland	(0)	(0)	(1)	(0)
Metaplasia, Harderian Gland			1 [3.0]	
Zymbal's Gland	(0)	(1)	(0)	(0)
URINARY SYSTEM				
Kidney	(50)	(50)	(50)	(50)
Cyst	1	2	1	3
Hyperplasia		1 [1.0]		
Nephropathy, Chronic Progressive	50 [2.9]	50 [2.7]	50 [2.7]	50 [3.0]
Capsule, Hemorrhage		1 [4.0]		
Epithelium, Accumulation, Hyaline Droplet			1 [4.0]	
Pelvis, Dilation				2 [2.0]
Pelvis, Inflammation, Suppurative	1 [1.0]	1 [2.0]	2 [1.0]	3 [2.7]
Urinary Bladder	(50)	(50)	(50)	(50)

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS MALE	0 ppm Male	1000 ppm Male	3000 ppm Male	10000 ppm Male
Inflammation, Suppurative	1 [3.0]	1 [1.0]		3 [1.7]

*** END OF MALE ***

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS FEMALE	0 ppm Female	1000 ppm Female	3000 ppm Female	10000 ppm Female
Disposition Summary				
Animals Initially In Study	**60**	**50**	**50**	**60**
Early Deaths				
Moribund Sacrifice	**15**	**13**	**10**	**16**
Natural Death	**5**	**4**	**6**	**8**
Survivors				
Terminal Sacrifice	**30**	**33**	**34**	**26**
Animals Examined Microscopically	**50**	**50**	**50**	**50**
ALIMENTARY SYSTEM				
Esophagus	(50)	(50)	(50)	(50)
Intestine Large, Cecum	(50)	(50)	(50)	(50)
Intestine Large, Colon	(50)	(50)	(50)	(50)
Parasite Metazoan	2	2	4	
Artery, Inflammation, Chronic Active			1 [3.0]	1 [3.0]
Intestine Large, Rectum	(50)	(50)	(50)	(50)
Parasite Metazoan	2	3	7	10
Arteriole, Necrosis, Fibrinoid				1 [3.0]
Artery, Inflammation, Chronic Active			1 [3.0]	
Intestine Small, Duodenum	(50)	(50)	(50)	(50)
Intestine Small, Ileum	(49)	(50)	(50)	(50)
Intestine Small, Jejunum	(50)	(50)	(50)	(50)
Artery, Inflammation, Chronic Active			1 [3.0]	
Liver	(50)	(50)	(50)	(50)
Angiectasis	1 [1.0]	3 [1.3]		2 [1.5]
Basophilic Focus	6	11	12	4
Clear Cell Focus	12	9	14	7
Congestion		1 [3.0]		
Cyst			1	
Eosinophilic Focus	15	6	16	12
Extramedullary Hematopoiesis	8 [1.0]	7 [1.0]	3 [1.3]	7 [1.1]
Mixed Cell Focus	1			
Pigment			1 [2.0]	
Bile Duct, Cyst	2	2	8	2

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS FEMALE	0 ppm Female	1000 ppm Female	3000 ppm Female	10000 ppm Female
Bile Duct, Hyperplasia			2 [1.5]	1 [4.0]
Hepatocyte, Hypertrophy	5 [2.6]	2 [2.5]	2 [1.5]	3 [2.7]
Hepatocyte, Necrosis	2 [1.0]	3 [1.7]	2 [2.0]	4 [1.3]
Hepatocyte, Vacuolization Cytoplasmic		1 [1.0]	1 [3.0]	3 [1.3]
Mesentery	(1)	(0)	(0)	(1)
Fat, Necrosis	1 [4.0]			
Pancreas	(50)	(50)	(50)	(50)
Acinus, Atrophy	2 [1.0]			
Acinus, Hyperplasia				1 [3.0]
Arteriole, Inflammation, Chronic Active	1 [1.0]	3 [1.0]	3 [1.7]	
Artery, Inflammation, Chronic Active	1 [1.0]	3 [1.0]	3 [2.3]	2 [2.0]
Salivary Glands	(49)	(50)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(50)	(50)
Cyst, Squamous				1
Ulcer			1 [1.0]	
Epithelium, Hyperplasia			1 [2.0]	2 [1.5]
Stomach, Glandular	(50)	(50)	(50)	(50)
CARDIOVASCULAR SYSTEM				
Blood Vessel	(50)	(50)	(50)	(50)
Heart	(49)	(50)	(50)	(50)
Cardiomyopathy		1 [1.0]	3 [1.0]	1 [1.0]
Epicardium, Inflammation, Suppurative				1 [1.0]
ENDOCRINE SYSTEM				
Adrenal Cortex	(50)	(50)	(50)	(50)
Angiectasis		2 [3.0]	1 [4.0]	
Hyperplasia, Focal	9 [1.2]	8 [1.6]	12 [1.5]	13 [1.8]
Hypertrophy, Focal	24 [2.0]	42 [1.8]	39 [1.6]	27 [1.7]
Necrosis		1 [1.0]	2 [1.0]	
Thrombus				1 [1.0]
Vacuolization Cytoplasmic		3 [1.0]	3 [1.3]	1 [1.0]
Bilateral, Hyperplasia, Focal		1 [2.0]		

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS FEMALE	0 ppm Female	1000 ppm Female	3000 ppm Female	10000 ppm Female
Bilateral, Hypertrophy, Focal	1 [3.0]			
Adrenal Medulla	(50)	(50)	(50)	(50)
Hyperplasia	12 [1.4]	4 [1.0]	11 [1.7]	5 [1.0]
Islets, Pancreatic	(50)	(50)	(50)	(50)
Parathyroid Gland	(41)	(47)	(43)	(42)
Hyperplasia		1 [2.0]	5 [1.2]	3 [1.7]
Pituitary Gland	(50)	(50)	(50)	(50)
Pars Distalis, Hyperplasia	13 [2.2]	13 [1.8]	9 [2.1]	15 [2.1]
Pars Intermedia, Hyperplasia	1 [1.0]		2 [1.5]	1 [4.0]
Pars Nervosa, Cyst	1			
Thyroid Gland	(50)	(50)	(50)	(50)
C-cell, Hyperplasia	11 [2.0]	11 [2.4]	9 [1.9]	9 [2.4]
GENERAL BODY SYSTEM				
Peritoneum	(0)	(0)	(0)	(1)
GENITAL SYSTEM				
Clitoral Gland	(48)	(50)	(50)	(48)
Fibrosis	1 [4.0]			
Ovary	(50)	(50)	(50)	(50)
Cyst	5	2	7	9
Inflammation, Suppurative		1 [2.0]		
Bursa, Cyst		4		2
Periovarian Tissue, Inflammation, Suppurative				1 [4.0]
Uterus	(50)	(50)	(50)	(50)
Adenomyosis	3 [2.7]	8 [2.3]	3 [2.0]	7 [2.3]
Dilation	2 [1.5]	2 [1.5]	1 [2.0]	3 [3.0]
Hemorrhage		2 [2.5]		
Inflammation, Suppurative	2 [3.5]	1 [4.0]		1 [2.0]
Perforation				1
Cervix, Stromal Hyperplasia		1 [3.0]		1 [4.0]
Endometrium, Atypical Hyperplasia	9 [2.0]	14 [1.5]	19 [1.4]	14 [2.1]
Endometrium, Hyperplasia, Cystic	35 [1.9]	30 [1.7]	28 [1.9]	25 [1.8]

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS FEMALE	0 ppm Female	1000 ppm Female	3000 ppm Female	10000 ppm Female
Endometrium, Metaplasia, Squamous	36 [2.2]	35 [2.0]	25 [2.0]	32 [2.2]
Vagina	(50)	(50)	(50)	(50)
Mucification	9 [1.9]	2 [2.0]	7 [1.9]	6 [1.8]
Parasite Metazoan		1		
HEMATOPOIETIC SYSTEM				
Bone Marrow	(50)	(50)	(50)	(50)
Hypercellularity	34 [3.7]	26 [3.5]	25 [3.5]	32 [3.3]
Lymph Node	(0)	(1)	(2)	(1)
Mediastinal, Congestion			2 [2.5]	
Lymph Node, Mandibular	(49)	(50)	(49)	(50)
Lymph Node, Mesenteric	(49)	(50)	(50)	(50)
Hemorrhage		1 [4.0]		
Spleen	(50)	(50)	(50)	(50)
Extramedullary Hematopoiesis	33 [2.6]	26 [2.5]	30 [2.3]	24 [2.7]
Hemorrhage		1 [4.0]		
Necrosis				1 [2.0]
Pigment	31 [1.3]	33 [1.3]	37 [1.3]	34 [1.7]
White Pulp, Atrophy	2 [3.0]	2 [3.0]		4 [3.0]
Thymus	(49)	(50)	(47)	(49)
Atrophy	17 [2.6]	16 [2.9]	12 [2.8]	22 [2.6]
Inflammation, Suppurative				1 [1.0]
INTEGUMENTARY SYSTEM				
Mammary Gland	(50)	(50)	(50)	(49)
Galactocele	3 [2.7]	5 [2.4]	3 [3.7]	1 [4.0]
Hyperplasia	1 [1.0]	2 [2.0]	3 [1.0]	1 [1.0]
Skin	(50)	(50)	(50)	(50)
Erosion			1 [1.0]	
MUSCULOSKELETAL SYSTEM				

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS FEMALE	0 ppm Female	1000 ppm Female	3000 ppm Female	10000 ppm Female
Bone	(50)	(50)	(50)	(50)
NERVOUS SYSTEM				
Brain	(50)	(50)	(50)	(50)
Gliosis			1 [1.0]	
Hemorrhage				1 [3.0]
Hydrocephalus	1 [2.0]			
Inflammation, Histiocytic			1 [1.0]	
Necrosis			1 [3.0]	
Cerebrum, Gliosis				1 [1.0]
Cerebrum, Necrosis				1 [4.0]
Meninges, Hyperplasia, Granular Cell	1 [1.0]			
RESPIRATORY SYSTEM				
Lung	(49)	(50)	(50)	(50)
Hemorrhage		1 [3.0]		3 [4.0]
Hyperplasia, Squamous		1 [4.0]		
Pigment		1 [2.0]		
Alveolus, Cytoplasmic Alteration		1 [2.0]		
Alveolus, Hyperplasia, Cystic		1 [1.0]		
Alveolus, Infiltration Cellular, Histiocyte	38 [1.9]	38 [1.9]	45 [1.6]	40 [1.9]
Interstitium, Fibrosis		1 [2.0]		
Nose	(50)	(50)	(50)	(50)
Olfactory Epithelium, Accumulation, Hyaline Droplet	49 [1.9]	48 [2.0]	50 [1.7]	47 [1.7]
Trachea	(50)	(50)	(50)	(50)
SPECIAL SENSES SYSTEM				
Eye	(50)	(50)	(50)	(50)
Lens, Degeneration				1 [3.0]
Retina, Degeneration				1 [3.0]

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Harlan Sprague Dawley RATS FEMALE	0 ppm Female	1000 ppm Female	3000 ppm Female	10000 ppm Female
Harderian Gland	(50)	(50)	(50)	(50)
Zymbal's Gland	(0)	(0)	(0)	(1)
URINARY SYSTEM				
Kidney	(50)	(50)	(50)	(50)
Atrophy	1 [4.0]			
Infarct		1 [2.0]		
Mineral			2 [2.0]	
Nephropathy, Chronic Progressive	44 [1.1]	46 [1.3]	46 [1.3]	45 [1.3]
Papilla, Degeneration				1 [2.0]
Pelvis, Dilation	1 [4.0]			
Pelvis, Inflammation, Suppurative		1 [2.0]		1 [1.0]
Urinary Bladder	(49)	(50)	(50)	(50)
Inflammation, Suppurative		1 [1.0]		

*** END OF REPORT ***

a - Number of animals examined microscopically at site and number of animals with lesion
b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)